

THORN LIGHTING

Comprehensive Catalogue 1973/74

J. Payne.

Lamp Training .

THORN LIGHTING

A MEMBER OF THE THORN GROUP

CONTENTS

This catalogue lists and describes all fittings, equipment, accessories, lamps and tubes normally manufactured by Thorn Lighting Limited. The catalogue is indexed by sections, and there is also an applications index. An alphabetical index of catalogue numbers and the locations and addresses of Thorn Lighting order offices and regional headquarters are shown at the back.

BRITISH STANDARD SPECIFICATIONS

In general, Thorn Lighting design and manufacture products to meet BSS where appropriate, and reference is made in the text where applicable.

In the particular case of Lighting Fittings or Luminaires, there is a change in progress where we have previously manufactured to BS 3820 (inoperative from July 1973) and will in future manufacture to BS 4533.

We have an extensive retesting programme under way, to fully ensure compliance with this new Specification. The testing on our very wide range is not complete at the time of going to press, but up to date information on compliance with Specifications may be obtained through your local Thorn Lighting office.

Thorn Lighting Limited is constantly developing and improving its products. All descriptions, illustrations, drawings and specifications in this catalogue present only general particulars of the goods to which they refer and shall not form part of any contract. The right is reserved to change specifications without prior notification or public announcement. The majority of the products in this catalogue are manufactured in the United Kingdom. Those products not so manufactured will bear an appropriate indication.



SECTION 1

FLUORESCENT COMMERCIAL AND INDUSTRIAL

POPULAR PACK (pp 1:2 to 1:20)

NEW ARROWSLIM, MINIPACK AND NOMAD (pp 1:21 to 1:30)

INVINCIBLE RANGE (pp 1:31 to 1:45)

ATLANTIC RANGE (pp 1:46 to 1:63)

POLRIZED PANELS (pp 1:64 to 1:65)

AIRLUME AND SPECIAL FITTINGS (pp 1:66 to 1:70)

FORMAT RANGE (pp 1:71 to 1:75)

NEW FORMAT RANGE (pp 1:76 to 1:82)

EMERGENCY LIGHTING (p 1:84)

OF HOSPITAL FITTINGS (p 1:85)

ISORA (pp 1:86 to 1:110)

TRUNKING AND TRAKLINE (pp 1:111 to 1:120)



SECTION 2

INCANDESCENT AND DISCHARGE EXTERIOR AND STREET LIGHTING

ESCORT (pp 2:1 to 2:8)

FLOODLIGHTING (pp 2:9 to 2:21)

STREETLIGHTING (pp 2:22 to 2:48)



SECTION 3

INCANDESCENT AND DISCHARGE FITTINGS

INDUSTRIAL (pp 3:1 to 3:13)

COMMERCIAL

(a) **HI-SPOT** (pp 3:14 to 3:26)

(b) **OTHER DISPLAY** (pp 3:27 to 3:38)

(c) **HOSPITAL & SCHOOL** (p 3:39)

(d) **DECORATIVE & COMMERCIAL** (pp 3:40 to 3:60)



SECTION 4

DOMESTIC LIGHTING FITTINGS

JUNIOR STAR & MODERN (pp 4:2 to 4:3)

DROPLETTE AND DOLLY (pp 4:4 to 4:5)

MODERN ADJUSTABLE PENDANTS (pp 4:6 to 4:7)

SHOW-OFF (p 4:8)

SPOT-ON (pp 4:9 to 4:11)

PIN-UP (p 4:12)

PAN FLOOR (p. 4:13)

PUMPKIN (p 4:14)

OCCASIONAL (p 4:15)

DOMESTIC CYLINDER (p 4:16)

HOMELITE (p 4:17)

VIEWPOINT (p 4:18)

NETALINE (p 4:19)

CIRCLINE (pp 4:20 to 4:22)



SECTION 5

STANDARD INCANDESCENT LAMPS

GLS LAMPS (p 5:2)

HOME LIGHTING LAMPS (p 5:3)

COLOURED LAMPS (pp 5:4 to 5:5)

TUBULAR LAMPS (p 5:6)

SPECIAL SERVICE LAMPS (pp 5:7 to 5:8)

REFLECTOR LAMPS (p 5:9)

SEALED BEAM REFLECTOR LAMPS (p 5:10)

LOW VOLTAGE DISPLAY LAMPS (p 5:11)

TUNGSTEN-HALOGEN LAMPS (pp 5:12 to 5:13)

PHOTOCOPYING LAMP (p 5:14)

FLOODLIGHTING LAMPS (p 5:15)

DECORATION SETS (p 5:16)

LAMP CAP CODE (p 5:17)



SECTION 6

FLUORESCENT TUBES

GENERAL

INFORMATION (pp 6:2 to 6:3)

RANGE (p 6:4)

COLOUR & APPLICATIONS (p 6:5)

SPECTRAL DISTRIBUTION (p 6:6)

COLOUR DATA (p 6:7)

LIGHT OUTPUT (pp 6:8 to 6:9)

ELECTRICAL

DATA (pp 6:10 to 6:11)

DIMENSIONS (p 6:12)



SECTION 9

PHOTOGRAPHIC LAMPS

PROJECTOR LAMPS (pp 9:2 to 9:10)

PHOTO LAMPS (pp 9:11 to 9:13)

PHOTO FLASHBULBS (p 9:14)

FLASHCUBES (p 9:15)

MAGICUBE X (p 9:16)



SECTION 7

DISCHARGE LAMPS

MERCURY LAMPS (pp 7:2 to 7:8)

SODIUM LAMPS (pp 7:9 to 7:11)

HYTEK

MERCURY LAMPS (pp 7:12 to 7:34)



SECTION 10

CONTROL GEAR AND ACCESSORIES

THEATRE LIGHTING (pp 10:2 to 10:6)

FLUORESCENT TUBES CONTROL GEAR (pp 10:7 to 10:33)

DISCHARGE LAMPS CONTROL GEAR (pp 10:34 to 10:45)

CAPACITORS (pp 10:46 to 10:47)

VOLTAGE TRANSFORMERS & EMERGENCY LIGHTING (p 10:48)

ACCESSORIES (pp 10:49 to 10:57)



SECTION 8

VEHICLE AND MINIATURE LAMPS

LAMP NO. INDEX (pp 8:2 to 8:3)

SEALED BEAM

HEADLAMPS (p 8:4)

TUNGSTEN-HALOGEN (pp 8:5 to 8:6)

PREFOCUS AND ORDINARY HEADLAMPS (p 8:7)

FLASHER AND ST LAMPS (p 8:8)

PANEL AND INDICATOR LAMPS (p 8:9)

CYCLE DYNAMO (p 8:10)

MARKER LIGHTS (p 8:11)

MINERS LAMPS AND FLASH (p 8:12)

RADIO AND MINIATURE LAMPS (p 8:13)

SEMI-CONDUCTOR LAMPS (p 8:14)

LAMP CAP DIMENSIONS (p 8:15)

- (I) *Fittings Application Index*
(II) *Fittings Application Index*
(III) *Index of Catalogue nos.*
(IV) *Index of Catalogue nos.*
(V) *Index of Catalogue nos.*
(VI) *Index of Catalogue nos.*
(VII) *Index of Catalogue nos.*
(VIII) *Index of Catalogue nos.*
(IX) *General Conditions of Sale*
(X) *Addresses*



Fluorescent Lighting Fittings

Introduction

The lighting fittings illustrated in these pages cover an enormous range: there is a fitting for every purpose and to suit every pocket.

The leading position of these fittings is due to exceptional standards of design and production. Only the best materials are used, and all fittings are designed to please the eye. All fittings are initially subjected to rigorous photometric and physical tests, and periodic tests are also carried out.

1 Popular Pack (1:3 to 1:20) A range of inexpensive but well made and elegant fittings suitable for most commercial and industrial installations. A simple backspine forms the basis for a variety of diffusers and light controllers.

2 New Arrow-slim Minipack and Nomad (1:21 to 1:30) Slender backspines designed to take the smaller diameter and shorter fluorescent lamps. These fittings have a number of applications in the commercial field.

3 Invincible Range (1:31 to 1:45) Special purpose fittings designed to give satisfactory performance under arduous conditions. Flameproof, dust-tight, weatherproof and similar types.

4 Atlantic Range (1:46 to 1:63) A wide range of commercial and industrial fittings for situations where price is less important than elegant appearance, silent operation, rugged construction and fitness of purpose.

5 Polirized Panels (1:64 to 1:65)

6 Airlume and Special Fittings (1:66 to 1:70)

7 Format Range (1:71 to 1:75) Modular fittings, both recessed and surface-mounted, designed to suit both metric and imperial modular ceilings. Diffusing and prismatic enclosures are securely held by simple yet effective methods.

8 Recessed Troffer Range (1:76 to 1:83)

9 Emergency Lighting (1:84)

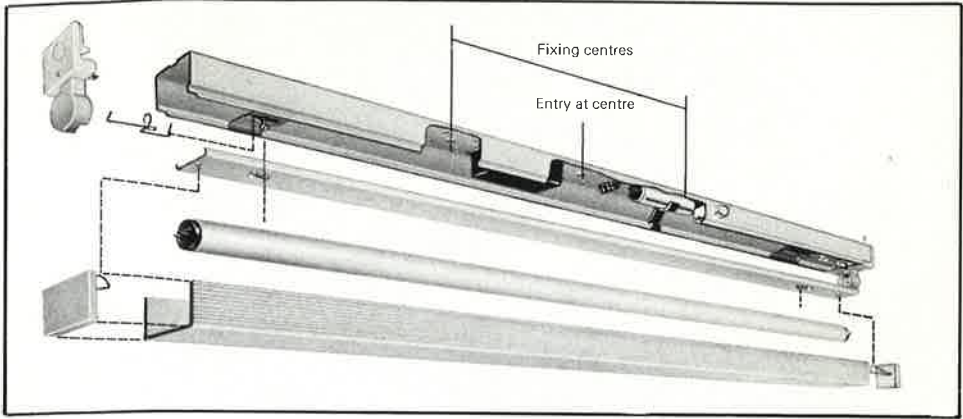
10 OF Hospital Fittings (1:85)

11 Isora Ceiling Systems (1:86 to 1:110)

12 Trunking Systems (1:111 to 1:120) Trakline, the most versatile busbar trunking system sold at the most economical price and the well tried and proved lightweight trunking, Liteline and Atlantic trunking systems.

Popular Pack, Arrow-slim, Minipack & Nomad fittings

Index	Popular Pack Fittings
1:3	Introduction – the top ten
1:4	Popular Pack (PP) single and wide twin batten fittings
1:5	Popular Pack (XPP) Slim Twin batten fitting
1:6	Popular Pack (PPA & PPTA) single and twin Angle reflector fittings
1:7	Popular Pack (PPC) single and twin Prismatic controller fittings
1:8	Popular Pack (PPL) single Prismatic controller fittings
1:9	Popular Pack (PPD) single and twin Plastic diffuser fittings
1:10	Popular Pack (PPM) single Plastic diffuser fittings
1:11	Popular Pack (PPE) single and twin Opal sided prismatic controller fittings
1:12	Popular Pack (PPO) single and twin Plastic trough reflector fittings
1:13	Popular Pack (PPR) single and twin Metal reflector fittings
1:14	Popular Pack (PPT) Twindustrial twin reflector fittings
1:15	Popular Pack (PPU) Sentinel single and twin anti-corrosive fittings
1:16	Popular Pack One-Plus-One attachment
1:17	Popular Pack Clipluve sectional louvres
1:18-19	Popular Pack Accessories
1:20	Popular Pack Circuits Data
	New Arrow-slim, Minipack and Nomad Ranges
1:21	New Arrow-slim AS batten fittings
1:22	New Arrow-slim ASG, ASO and ASC attachments
1:23	New Arrow-slim ASU and ASF attachments
1:24	New Arrow-slim ASA, ASB and ASR attachments
1:25	New Arrow-slim ASK attachment
1:26	New Arrow-slim ASD diffuser
1:27	Minipack LJ fittings
1:28	Minipack LJA and LJN attachments
1:29	Nomad 12V and 24V Miniature lighting fittings
1:30	New Arrow-slim accessories



TOP TEN FEATURES

- 1 Extensive range of 2400mm/8ft, 1800mm/6ft, 1500mm/5ft, 1200mm/4ft and 600mm/2ft single and twin tube fittings finished in white stoved enamel.
- 2 All fittings completely wired and fully tested to ensure reliable performance and quality.
- 3 Supplied complete with high efficiency white tube(s).
- 4 Diffusers and prismatic controllers in light stabilized polystyrene with spring-mounted end plates.
- 5 Spring-mounted lampholders with knock-outs for end entry.
- 6 Control gear with long life and reliable operation.
- 7 Three-way mains terminal block.
- 8 Time and money saved by fast fixing features.
- 9 Slim twin types designed specifically for industrial use.
- 10 All fittings power factor corrected except the 600mm/2ft single. The 2400mm/8ft fittings operate at 0.66 leading power factor. The 1800mm/6ft 75W fittings operate at 0.55 leading power factor.

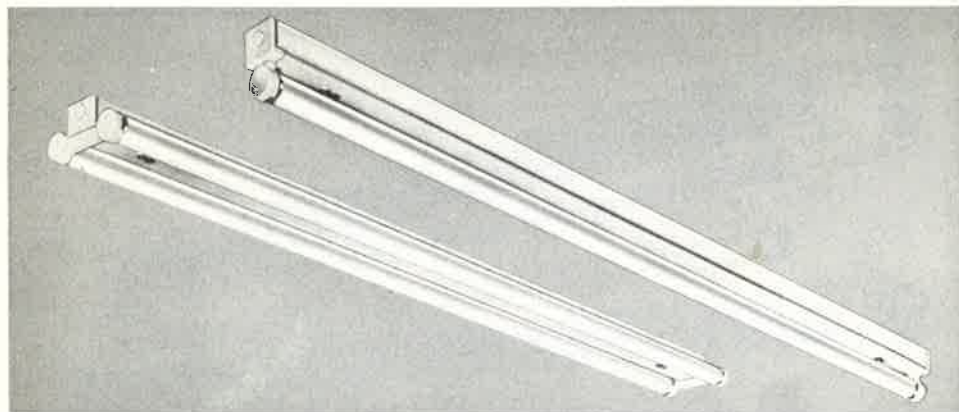
Five-year guarantee

Popular Pack fittings are guaranteed against defects which under proper use appear within five years after they have been delivered and which arise from faulty design, materials or workmanship.

This guarantee excludes the starter switch and fluorescent tube which are subject to separate guarantees.

In the event of the fitting, or any components thereof becoming faulty after installation and during the period of guarantee, the fitting or component (with the exception of the starter switch and fluorescent tube) will be repaired or replaced at the company's discretion at no charge, provided it has been used correctly and returned carriage paid and adequately packed to the nearest company depot.

Popular Pack batten fittings



PP 265

PP 65

The Popular Pack batten is available in 600mm/2ft, 1200mm/4ft, 1500mm/5ft, 1800mm/6ft and 2400mm/8ft single tube and twin tube fittings. The batten is packed complete with tube(s) in the same carton which effectively reduces handling costs. Spring-loaded lampholders are incorporated which embrace the lamp cap to prevent any strain on the lamp pins. Relamping from either end is possible even on 2400mm/8ft fittings. The batten totally encloses the control gear and the cover plate is speedily detached. The starter switch is readily accessible through the side of the fitting. End conduit entry is through knock-outs in the ends of the lampholders and a bracket (Catalogue no. PP 4620) is available free of charge to secure the conduit into the fitting. Through-wiring facilities are available using the end entries and accessory kit (Catalogue no. PP 4618).

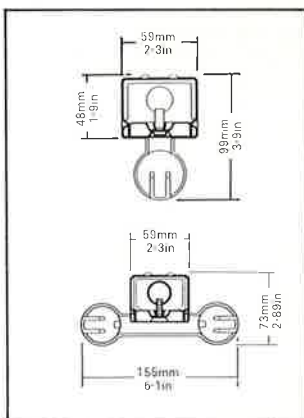
For continuous mounting a space of 13mm/0.5in between battens and trough reflectors and 48mm/1.875in between diffusers is essential so that correct maintenance can be performed. Fittings are finished in white stoved enamel for maximum reflection and efficiency.

These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C.

Supply voltage

Standard fitting 230/240V 50Hz. Fittings listed below can be supplied to order at the voltages shown at no extra charge:

20W 600mm/2ft } 200/210V, 220V
 40W 1200mm/4ft } and 250VHz.
 65W 1500mm/5ft }



RANGE: Packed complete with White tube(s)

Nominal length		Rating	Circuit	Batten Catalogue no.	Length		Weight (incl. tubes)		Fixing centres	
mm	ft				mm	in	kg	lb	mm	in
600	2	20W Single	Switchstart	PP 20	615	24.2	1.8	4	500	19.7
600	2	20W Twin	Switchstart	PP 220	615	24.2	2.16	2.16	500	19.7
1200	4	40W Single	Switchstart	PP 40	1224	48.2	2.6	5.75	595-615	24
1200	4	40W Single	Resonant Start	PPQ 40	1224	48.2	3.0	6.65	595-615	24
1200	4	40W Twin	Switchstart	PP 240	1224	48.2	4.1	9	595-615	24
1200	4	40W Twin	Resonant Start	PPQ 240	1224	48.2	4.9	10.75	595-615	24
1500	5	65W Single	Switchstart	PP 65	1525	60.1	3.4	7.5	595-615	24
1500	5	65W Single	Resonant Start	PPQ 65	1525	60.1	3.8	8.4	595-615	24
1500	5	65W Twin	Switchstart	PP 265	1525	60.1	5.45	12	595-615	24
1500	5	65W Twin	Resonant Start	PPQ 265	1525	60.1	6.25	13.75	595-615	24
1800	6	75W Single	Switchstart	PP 675	1788	70.4	3.7	8.14	595-615	24
1800	6	75W Twin	Switchstart	PP 2675	1788	70.4	6.12	13.46	595-615	24
1800	6	85W Single	Resonant Start	PPQ 685	1788	70.4	4.32	9.5	595-615	24
1800	6	85W Twin	Resonant Start	PPQ 2685	1788	70.4	6.7	14.75	595-615	24
2400	8	125W Single	Switchstart	PP 125	2398	94.4	5.23	11.5	1200-1220	48
2400	8	125W Twin	Switchstart	PP 2125	2398	94.4	7.95	17.5	1200-1220	48

Popular Pack slim twin batten fittings



XPP 265

This twin batten is designed with closely spaced lampholders and is the basis of a number of reflector fittings in the Popular Pack range. Since it is intended for industrial use, the ends of the fitting are provided with knock-outs permitting direct end-to-end mounting. Battens are made of sheet steel, bonderized and finished white.

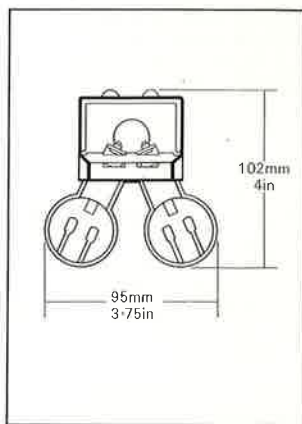
These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C.

Supply voltage

Standard fitting 230/240V 50Hz.

Fittings listed below can be supplied to order at the voltages shown at no extra charge:

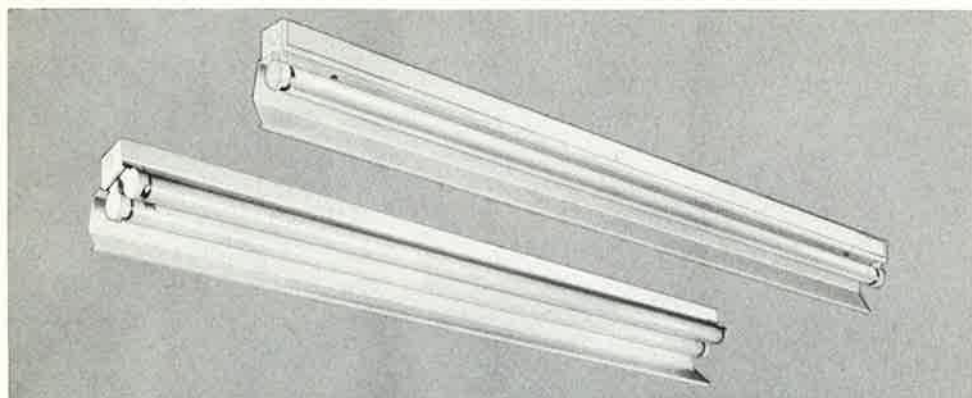
40W 1200mm/4ft | 200/210, 220
65W 1500mm/5ft | and 250V 50Hz.



RANGE: Packed complete with White tube(s)

Nominal length		Rating	Circuit	Batten Catalogue no.	Length		Weight (incl. tubes)		Fixing centres	
mm	ft				mm	in	kg	lb	mm	in
1200	4	40W Twin	Switchstart	XPP 240	1241	48.8	4.1	9	595-615	24
1200	4	40W Twin	Resonant Start	XPPQ 240	1241	48.8	4.9	10.75	595-615	24
1500	5	65W Twin	Switchstart	XPP 265	1545	60.8	5.45	12	595-615	24
1500	5	65W Twin	Resonant Start	XPPQ 265	1545	60.8	6.25	13.75	595-615	24
1800	6	75W Twin	Switchstart	XPP 2675	1806	71.1	6.12	13.46	595-615	24
1800	6	85W Twin	Resonant Start	XPPQ 2685	1806	71.1	6.7	14.75	595-615	24
2400	8	125W Twin	Switchstart	XPP 2125	2416	95.1	7.94	17.5	1200-1220	48

Popular Pack PPA and PPTA angle reflector fittings



PPTA/265

PPA/65

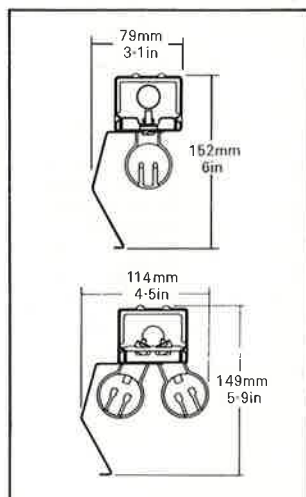
These are asymmetrical metal reflectors attached to the Popular Pack batten by means of screws fitted into slideable spring nuts retained in the batten. These screws engage into keyhole slots in the reflectors.

Applications include blackboards, wall charts, shop window lighting, etc. Reflectors are finished in white stoved enamel for maximum reflection and fittings may be close ceiling or conduit mounted.

These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C.

Supply voltage

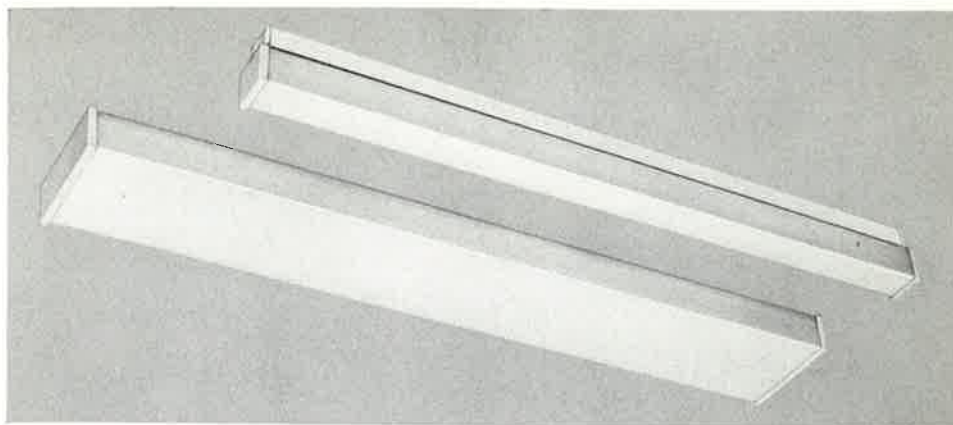
Standard fitting 230/240V 50Hz.
Fittings listed below can be supplied to order at the voltages shown at no extra charge:
40W 1200mm/4ft (200/210V, 220V)
65W 1500mm/5ft (and 250V 50Hz)



RANGE: Packed complete with White tube(s)

Nominal length		Rating	Circuit	Fitting Catalogue no.	Length		Weight		Fixing centres		Reflector Catalogue no.	Batten Catalogue no.
mm	ft				mm	in	kg	lb	mm	in		
1200	4	40W Single	SS	PPA/40	1224	48.2	3.97	8.75	595-615	24	PPA 4	PP 40
1200	4	40W Single	SRS	PPA/Q40	1224	48.2	4.37	9.65	595-615	24	PPA 4	PPQ 40
1200	4	40W Twin	SS	PPTA/240	1241	48.8	5	11	595-615	24	PPA 24	XPP 240
1200	4	40W Twin	SRS	PPTA/Q240	1241	48.8	5.8	12.75	595-615	24	PPA 24	XPPQ 240
1500	5	65W Single	SS	PPA/65	1525	60.1	5.1	11.25	595-615	24	PPA 5	PP 65
1500	5	65W Single	SRS	PPA/Q65	1525	60.1	5.5	12.15	595-615	24	PPA 5	PPQ 65
1500	5	65W Twin	SS	PPTA/265	1545	60.8	6.3	13.7	595-615	24	PPA 25	XPP 265
1500	5	65W Twin	SRS	PPTA/Q265	1545	60.8	7.1	15.60	595-615	24	PPA 25	XPPQ 265
1800	6	75W Single	SS	PPA/675	1788	70.4	5.4	11.9	595-615	24	PPA 6	PP 675
1800	6	75W Twin	SS	PPTA/2675	1866	71.1	6.92	15.2	595-615	24	PPA 26	XPP 2675
1800	6	85W Single	SRS	PPA/Q685	1788	70.4	6	13.25	595-615	24	PPA 6	PPQ 685
1800	6	85W Twin	SRS	PPTA/Q2685	1806	71.1	7.5	16.5	595-615	24	PPA 26	XPPQ 2685
2400	8	125W Single	SS	PPA/125	2398	94.4	7.85	17.25	1200-1220	48	PPA 8	PP 125
2400	8	125W Twin	SS	PPTA/2125	2416	95.1	10	22	1200-1220	48	PPA 28	XPP 2125

Popular Pack PPC prismatic controller fittings



PPC/265

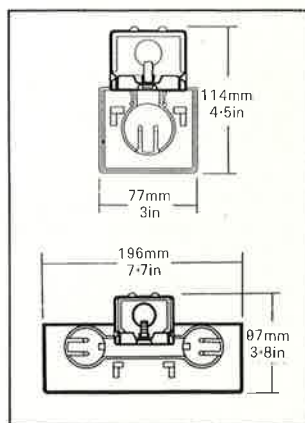
PPC/65

These attachments are made of transparent extruded plastic with side prisms, the base being embossed with a fine prismatic pattern. They are quickly attached or detached from the batten by the clip-on action of the end caps. These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C.

Supply voltage

Standard fitting 230/240V 50Hz.
Fittings listed below can be supplied to order at the voltages shown at no extra charge:

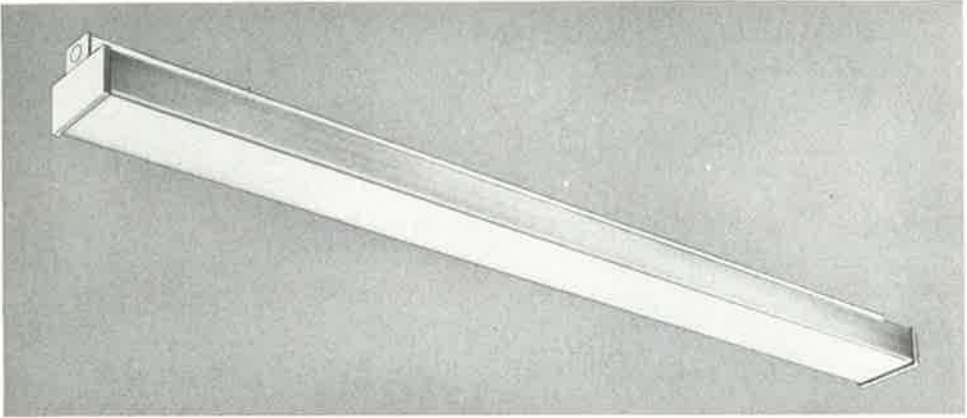
20W 600mm/2ft	200/210V,
40W 1200mm/4ft	220V and 250V
65W 1500mm/5ft	50Hz.



RANGE: Packed complete with White tube(s)

Nominal length		Rating	Circuit	Fitting Catalogue no.	Length		Weight		Fixing centres		Diffuser Catalogue no.	Batten Catalogue no.
mm	ft				mm	in	kg	lb	mm	in		
600	2	20W Single	SS	PPC/20	638	25.1	2.1	4.64	500	19.7	PPC 2	PP 20
600	2	20W Twin	SS	PPC/220	638	25.1	2.84	6.25	500	19.7	PPC 22	PP 220
1200	4	40W Single	SS	PPC/40	1248	49.1	3.2	7	595-615	24	PPC 24	PP 40
1200	4	40W Single	SRS	PPC/Q40	1248	49.1	3.6	7.9	595-615	24	PPC 4	PPQ 40
1200	4	40W Twin	SS	PPC/240	1248	49.1	5.23	11.5	595-615	24	PPC 24	PP 240
1200	4	40W Twin	SRS	PPC/Q240	1248	49.1	6.03	13.25	595-615	24	PPC 24	PPQ 240
1500	5	65W Single	SS	PPC/65	1550	61	4.2	9.2	595-615	24	PPC 5	PP 65
1500	5	65W Single	SRS	PPC/Q65	1550	61	4.6	10.1	595-615	24	PPC 5	PPQ 65
1500	5	65W Twin	SS	PPC/265	1550	61	6.2	13.5	595-615	24	PPC 25	PP 265
1500	5	65W Twin	SRS	PPC/Q265	1550	61	7.0	15.40	595-615	24	PPC 25	PPQ 265
1800	6	75W Single	SS	PPC/675	1818	71.4	3.9	8.6	595-615	24	PPC 6	PP 675
1800	6	75W Twin	SS	PPC/2675	1818	71.4	5.9	12.98	595-615	24	PPC 26	PP 2625
1800	6	85W Single	SRS	PPC/Q685	1818	71.4	4.5	10	595-615	24	PPC 6	PPQ 685
1800	6	85W Twin	SRS	PPC/Q2685	1818	71.4	6.49	14.3	595-615	24	PPC 26	PPQ 2685
2400	8	125W Single	SS	PPC/125	2428	95.4	6.53	14.4	1200-1220	48	PPC 8	PP 125
2400	8	125W Twin	SS	PPC/2125	2428	95.4	9.8	21.5	1200-1220	48	PPC 28	PP 2125

Popular Pack PPL prismatic controller fittings

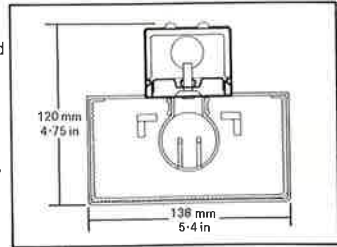


PPL/Q685

This prismatic controller for single tube fittings is a larger version of the single PPC type described on the previous page. The increased size makes possible a higher degree of light control and the attachment is designed to provide lower brightness lighting in situations where glare could present problems. These diffusers are quickly attachable or detachable from the batten by the clip-on action of the end caps.

These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C.

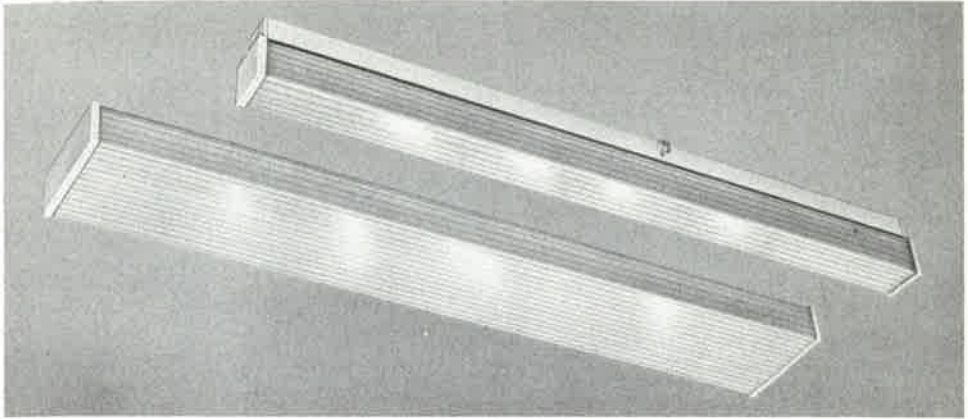
Supply voltage
Standard fitting 230/240V 50Hz.
Fittings listed below can be supplied to order at the voltages shown at no extra charge:
40W 1200mm/4ft], 200/210V, 220V
65W 1500mm/5ft] and 250V 50Hz.



RANGE: Packed complete with White tube

Nominal length		Rating	Circuit	Fitting Catalogue no.	Length		Weight		Fixing centres		Reflector Catalogue no.	Batten Catalogue no.
mm	ft				mm	in	kg	lb	mm	in		
1200	4	40W Single	SS	PPL/40	1248	49.1	3.6	8	595-615	24	PPL 4	PP 40
1200	4	40W Single	SRS	PPL/Q40	1248	49.1	4.0	8.8	595-615	24	PPL 4	PPQ 40
1500	5	65W Single	SS	PPL/65	1550	61	4.7	10.25	595-615	24	PPL 5	PP 65
1500	5	65W Single	SRS	PPL/Q65	1550	61	5.1	11.20	595-615	24	PPL 5	PPQ 65
1800	6	75W Single	SS	PPL/675	1818	71.4	5.2	11.4	595-615	24	PPI 6	PP 675
1800	6	85W Single	SRS	PPL/Q685	1818	71.4	5.8	12.75	595-615	24	PPL 6	PPQ 685
2400	8	125W Single	SS	PPL/125	2428	95.4	7	15.5	1200-1220	48	PPL 8	PP 125

Popular Pack PPD plastic diffuser fittings



PPD/265

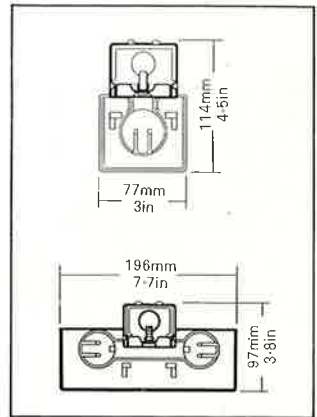
PPD/65

This white opal diffuser in extruded plastic with external reeding provides an extremely attractive and efficient fitting designed for general commercial use. The white plastic end plates are simply fitted to the batten and enable the diffuser to be quickly and easily removed for cleaning and general maintenance.

These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C.

Supply voltage

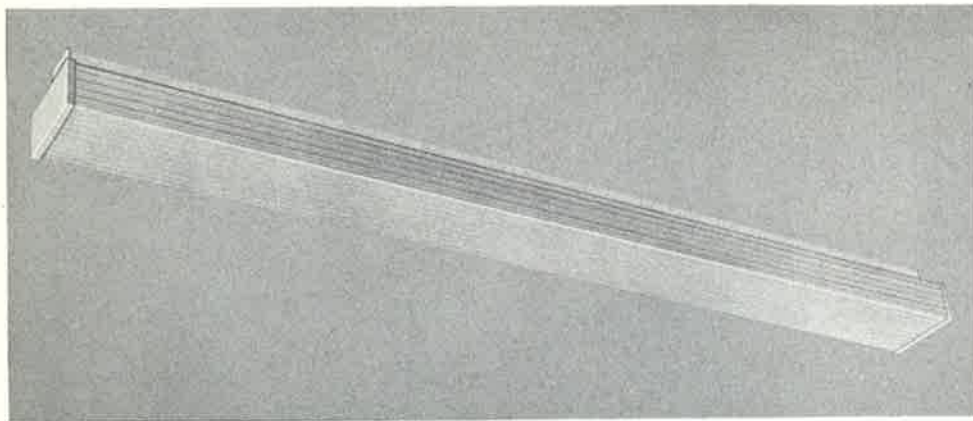
Standard fitting 230/240V 50Hz.
Fittings listed below can be supplied to order at the voltages shown at no extra charge:
20W 600mm/2ft } 200/210V,
40W 1200mm/4ft } 220V and 250V
65W 1500mm/5ft } 50Hz.



RANGE: Packed complete with White tube(s)

Nominal length		Rating	Circuit	Fitting Catalogue no.	Length		Weight		Fixing centres		Diffuser Catalogue no.	Batten Catalogue no.
mm	ft				mm	in	kg	lb	mm	in		
600	2	20W Single	SS	PPD/20	638	25.1	2	4.5	500	19.7	PPD 2	PP 20
600	2	20W Twin	SS	PPD 220	638	25.1	2.6	5.75	500	19.7	PPD 22	PP 220
1200	4	40W Single	SS	PPD/40	1248	49.1	3	6.75	595-615	24	PPD 4	PP 40
1200	4	40W Single	SRS	PPD/Q40	1248	49.1	3.4	7.50	595-615	24	PPD 4	PPQ 40
1200	4	40W Twin	SS	PPD/240	1248	49.1	5	11	595-615	24	PPD 24	PP 240
1200	4	40W Twin	SRS	PPD/Q240	1248	49.1	5.8	12.75	595-615	24	PPD 24	PPQ 240
1500	5	65W Single	SS	PPD/65	1550	61	4	8.75	595-615	24	PPD 5	PP 65
1500	5	65W Single	SRS	PPD/Q65	1550	61	4.4	9.65	595-615	24	PPD 5	PPQ 65
1500	5	65W Twin	SS	PPD/265	1550	61	6.6	14.5	595-615	24	PPD 25	PP 265
1500	5	65W Twin	SRS	PPD/Q265	1550	61	7.4	16.25	595-615	24	PPD 25	PPQ 265
1800	6	75W Single	SS	PPD/675	1818	71.4	4.3	9.5	595-615	24	PPD 6	PP 675
1800	6	75W Twin	SS	PPD/2675	1818	71.4	7.2	15.8	595-615	24	PPD 26	PP 2675
1800	6	85W Single	SRS	PPD/Q685	1818	71.4	4.9	10.75	595-615	24	PPD 6	PPQ 685
1800	6	85W Twin	SRS	PPD/Q2685	1818	71.4	7.8	17.25	595-615	24	PPD 26	PPQ 2685
2400	8	125W Single	SS	PPD/125	2428	95.4	5.9	13	1200-1220	48	PPD 8	PP 125
2400	8	125W Twin	SS	PPD/2125	2428	95.4	9.6	21.25	1200-1220	48	PPD 28	PP 2125

Popular Pack PPM plastic diffuser fittings



PPM/65

These attachments for single tube fittings are a larger version of the PPD type, but have a lower BZ rating, making them suitable in situations where such a fitting is specified.

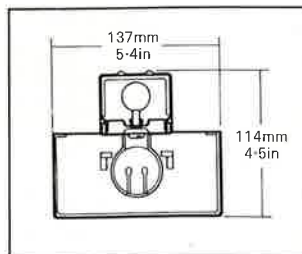
They are quickly attached and detached from the batten by the clip-on action of the end caps.

These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C.

Supply voltage

Standard fitting 230/240V 50Hz.
Fittings listed below can be supplied to order at the voltages shown at no extra charge:

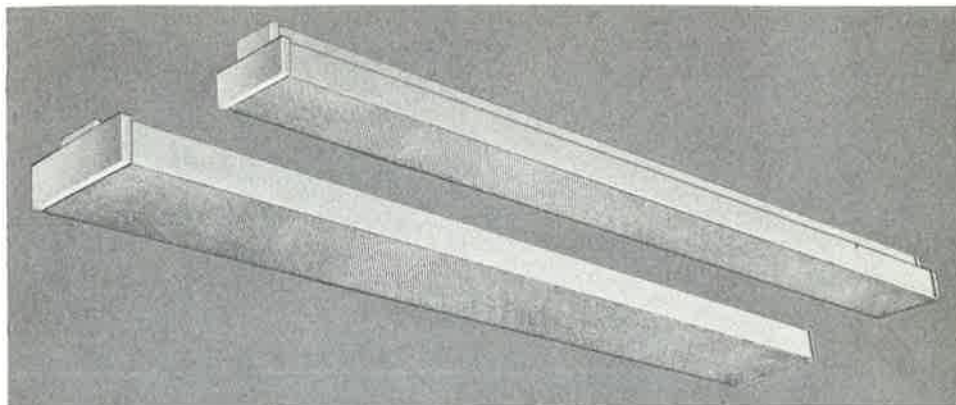
40W 1200mm/4ft } 200/210V, 220V
65W 1500mm/5ft } and 250V 50Hz.



RANGE: Packed complete with White tube

Nominal length		Rating	Circuit	Fitting Catalogue no.	Length		Weight		Fixing centres		Reflector Catalogue no.	Batten Catalogue no.
mm	ft				mm	in	kg	lb	mm	in		
1200	4	40W Single	SS	PPM/40	1248	49.1	3.4	7.5	595-615	24	PPM 4	PP 40
1200	4	40W Single	SRS	PPM/Q40	1248	49.1	3.8	8.4	595-615	24	PPM 4	PPQ 40
1500	5	65W Single	SS	PPM/65	1550	61	4.3	9.5	595-615	24	PPM 5	PP 65
1500	5	65W Single	SRS	PPM/Q65	1550	61	4.7	10.4	595-615	24	PPM 5	PPQ 65
1800	6	75W Single	SS	PPM/675	1818	71.4	4.9	10.8	595-615	24	PPM 6	PP 675
1800	6	85W Single	SRS	PPM/Q685	1818	71.4	5.5	12	595-615	24	PPM 6	PPQ 685
2400	8	125W Single	SS	PPM/125	2428	95.4	6.7	14.75	1200-1220	48	PPM 8	PP 125

Popular Pack PPE opal sided prismatic controller fittings



PPE/265

PPE/65

These attachments are for use in situations where visual comfort is of primary importance. The sides have an opal finish and the base is embossed with a fine prismatic pattern.

They are quickly and easily attached or detached from the batten by the clip-on action of the end caps.

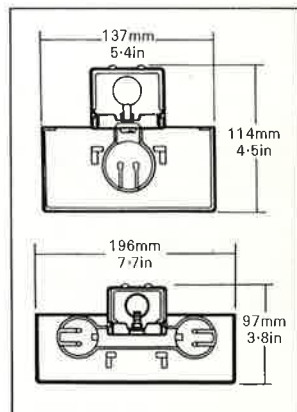
These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C.

Supply voltage

Standard fitting 230/240V 50Hz.

Fittings listed below can be supplied to order at the voltages shown at no extra charge :

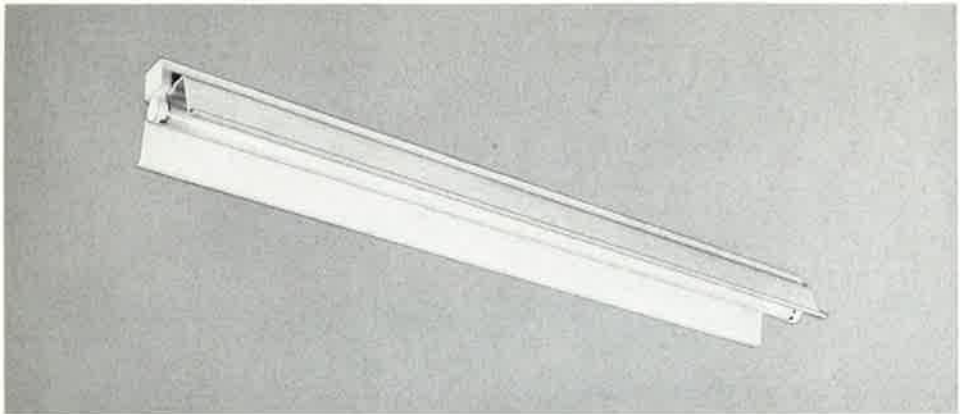
40W 1200mm/4ft } 200/210, 220
65W 1500mm/5ft } and 250V 50Hz.



RANGE: Packed complete with White tube(s)

Nominal length		Rating	Circuit	Fitting Catalogue no.	Length		Weight		Fixing centres		Diffuser Catalogue no.	Batten Catalogue no.
mm	ft				mm	in	Kg	lb	mm	in		
1200	4	40W Single	SS	PPE/40	1248	49.1	3.4	7.5	595-615	24	PPE 4	PP 40
1200	4	40W Single	SRS	PPE/Q40	1248	49.1	3.8	8.4	595-615	24	PPE 4	PPQ 40
1200	4	40W Twin	SS	PPE/240	1248	49.1	5.23	11.5	595-615	24	PPE 24	PP 240
1200	4	40W Twin	SRS	PPE/Q240	1248	49.1	6.03	13.25	595-615	24	PPE 24	PPQ 240
1500	5	65W Single	SS	PPE/65	1550	61	4.42	9.75	595-615	24	PPE 5	PP 65
1500	5	65W Single	SRS	PPE/Q65	1550	61	4.82	10.65	595-615	24	PPE 5	PPQ 65
1500	5	65W Twin	SS	PPE/265	1550	61	6.2	13.5	595-615	24	PPE 25	PP 265
1500	5	65W Twin	SRS	PPE/Q265	1550	61	7.0	15.25	595-615	24	PPE 25	PPQ 265
1800	6	75W Single	SS	PPE/675	1818	71.4	5.0	11.0	595-615	24	PPE 6	PP 675
1800	6	75W Twin	SS	PPE/2675	1818	71.4	6.9	15.2	595-615	24	PPE 26	PP 2675
1800	6	85W Single	SRS	PPE/Q685	1818	71.4	5.67	12.25	595-615	24	PPE 6	PPQ 685
1800	6	85W Twin	SRS	PPE/Q2685	1818	71.4	7.5	16.53	595-615	24	PPE 26	PPQ 2685
2400	8	125W Single	SS	PPE/125	2428	95.4	6.8	15	1200-1220	48	PPE 8	PP 125
2400	8	125W Twin	SS	PPE/2125	2428	95.4	9.8	21.5	1200-1220	48	PPE 28	PP 2125

Popular Pack PPO plastic reflector fittings



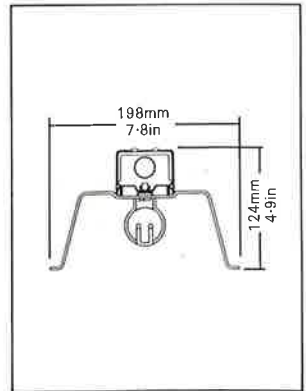
PPO/65

This opal plastic trough reflector provides generous upward light and an even spread of light in the downward plane. The plastic material is strong and sufficiently light-fast to maintain its efficiency with adequate maintenance throughout the life of the fitting. The reflector is easily attached to the batten by two screws retained by slideable spring nuts.

These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C.

Supply voltage

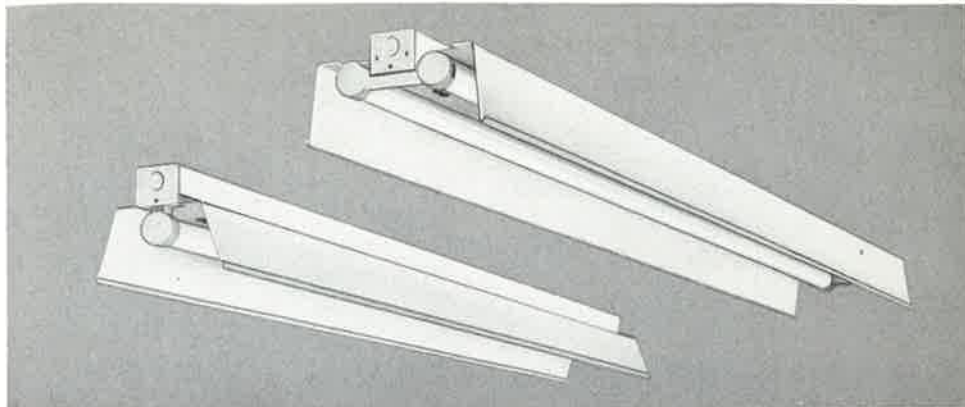
Standard fitting 230/240V 50Hz.
Fittings listed below can be supplied to order at the voltages shown at no extra charge:
40W { 1200mm/4ft } 200/210V, 220V
65W { 1500mm/5ft } and 250V 50Hz.



RANGE: Packed complete with White tube

Nominal length	ft	Rating	Circuit	Fitting Catalogue no.	Length		Weight		Fixing centres		Reflector Catalogue no.	Batten Catalogue no.
					mm	in	kg	lb	mm	in		
1200	4	40W Single	SS	PPO/40	1224	48.2	3.5	7.7	595-615	24	PPO 4	PP 40
1200	4	40W Single	SRS	PPO/Q40	1224	48.2	3.9	8.6	595-615	24	PPO 4	PPQ 40
1500	5	65W Single	SS	PPO/65	1525	60.1	4.6	10.1	595-615	24	PPO 5	PP 65
1500	5	65W Single	SRS	PPO/Q65	1525	60.1	5	11	595-615	24	PPO 5	PPQ 65
1800	6	75W Single	SS	PPO/675	1788	70.4	5.1	11.4	595-615	24	PPO 6	PP 675
1800	6	85W Single	SRS	PPO/Q685	1788	70.4	5.7	12.5	595-615	24	PPO 6	PPQ 685
2400	8	125W Single	SS	PPO/125	2398	94.4	7.1	15.5	1200-1220	48	PPO 8	PP 125

Popular Pack PPR metal reflector fittings



PPR/65

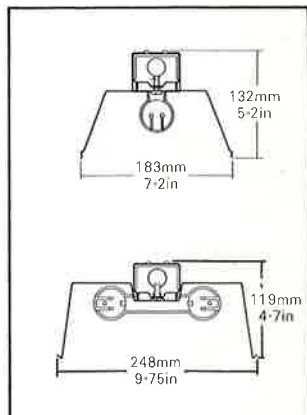
PPR/265

These open-ended slotted metal trough reflectors give generous upward lighting. Finished in white stoved enamel, they are easily fitted by means of sliding captive screws, providing extremely attractive and efficient attachments. These reflectors are suitable for many industrial applications where high efficiency and easy maintenance are important features.

These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C.

Supply voltage

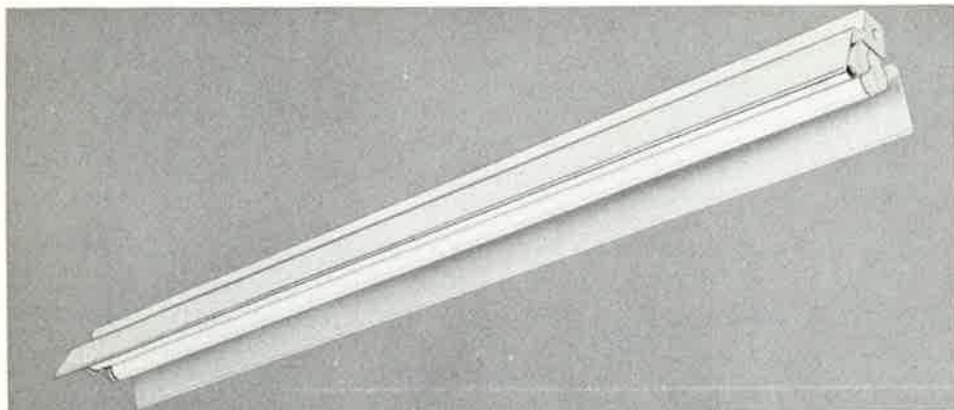
Standard fitting 230/240V 50Hz.
Fittings listed below can be supplied to order at the voltages shown at no extra charge:
40W 1200mm/4ft} 200/210V, 220V
65W 1500mm/5ft} and 250V 50Hz.



RANGE: Packed complete with White tube(s)

Nominal length		Rating	Circuit	Fitting Catalogue no.	Length		Weight		Fixing centres		Reflector Catalogue no.	Batten Catalogue no.
mm	ft				mm	in	kg	lb	mm	in		
1200	4	40W Single	SS	PPR/40	1224	48.2	4.8	10.5	595-615	24	PPR 4	PP 40
1200	4	40W Single	SRS	PPR/Q40	1224	48.2	5.2	11.4	595-615	24	PPR 4	PPQ 40
1200	4	40W Twin	SS	PPR/240	1224	48.2	6.8	15	595-615	24	PPR 24	PP 240
1200	4	40W Twin	SRS	PPR/Q240	1224	48.2	7.6	16.75	595-615	24	PPR 24	PPQ 240
1500	5	65W Single	SS	PPR/65	1525	60.1	6.3	13.75	595-615	24	PPR 5	PP 65
1500	5	65W Single	SRS	PPR/Q65	1525	60.1	6.7	14.65	595-615	24	PPR 5	PPQ 65
1500	5	65W Twin	SS	PPR/265	1525	60.1	8.3	18.3	595-615	24	PPR 25	PP 265
1500	5	65W Twin	SRS	PPR/Q265	1525	60.1	9.1	20.0	595-615	24	PPR 25	PPQ 265
1800	6	75W Single	SS	PPR/675	1788	70.4	6.9	15.2	595-615	24	PPR 6	PP 675
1800	6	75W Twin	SS	PPR/2675	1788	70.4	9.6	20.2	595-615	24	PPR 26	PP 2675
1800	6	85W Single	SRS	PPR/Q685	1788	70.4	7.5	16.5	595-615	24	PPR 6	PPQ 685
1800	6	85W Twin	SRS	PPR/Q2685	1788	70.4	10.2	22.5	595-615	24	PPR 26	PPQ 2685
2400	8	125W Single	SS	PPR/125	2398	94.4	9.2	20.25	1200-1220	48	PPR 8	PP 125
2400	8	125W Twin	SS	PPR/2125	2398	94.4	14.0	30.8	1200-1220	48	PPR 28	PP 2125

Popular Pack PPT Twindustrial twin reflector fittings



PPT/Q2685

These twin open-ended slotted metal reflector fittings incorporate all the well-proven design features of the existing Popular Pack types plus a number of additional features of maximum advantage in a fitting for industrial use.

Metal end plates incorporating knock-outs are used and the tube spacing enables a smaller reflector to be employed.

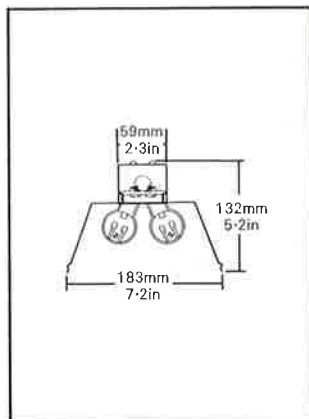
These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C

Supply voltage

Standard fitting 230/240V 50Hz.

Fittings listed below can be supplied to order at the voltages shown at no extra charge:

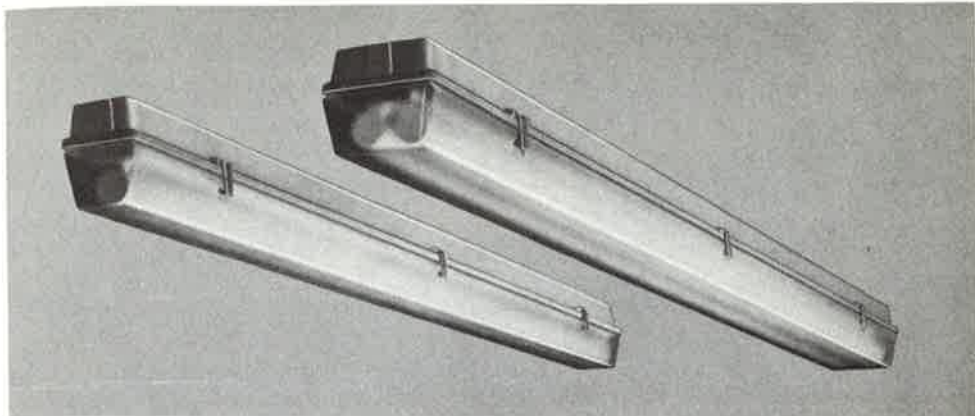
40W 1200mm/4ft } 200/210V, 220V
65W 1500mm/5ft } and 250V 50Hz



RANGE: Packed complete with White tubes

Nominal length		Rating	Circuit	Fitting Catalogue no.	Length		Weight		Fixing centres		Reflector Catalogue no.	Batten Catalogue no.
mm	ft				mm	in	kg	lb	mm	in		
1200	4	40W Twin	SS	PPT/240	1241	48.8	5.9	13	595-615	24	PPT 24	XPP 240
1200	4	40W Twin	SRS	PPT/Q240	1241	48.8	6.7	14.75	595-615	24	PPT 24	XPPQ 240
1500	5	65W Twin	SS	PPT/265	1545	60.8	7.2	16.2	595-615	24	PPT 25	XPP 265
1500	5	65W Twin	SRS	PPT/Q265	1545	60.8	8.0	17.95	595-615	24	PPT 25	XPPQ 265
1800	6	75W Twin	SS	PPT/2675	1806	71.1	8.2	18	595-615	24	PPT 26	XPP 2675
1800	6	85W Twin	SRS	PPT/Q2685	1806	71.1	8.8	19.25	595-615	24	PPT 26	XPPQ 2685
2400	8	125W Twin	SS	PPT/2125	2416	95.1	11.8	26	1200-1220	48	PPT 28	XPP 2125

Popular Pack PPU Sentinel fittings



PPUQ 685 PPUQ 2685

Sentinel enclosures combined with 1800mm/6ft Popular Pack fittings fulfil the protection needs for many under-canopy, open building and corrosive situations.

The construction is a simple but effective two-piece structure, formed by the combination of a grey glass fibre canopy and an acrylic lower moulding. Six captive clips provide easy, positive fastening and soft gaskets seal the enclosures from external environmental conditions. The Sentinel is available in single and twin forms. Battens, tubes and enclosures are supplied complete in one pack.

Comparable fittings generally employ 1500mm/5ft tubes as the accepted size but with the 1800mm/6ft 85W tube the Sentinel supplies

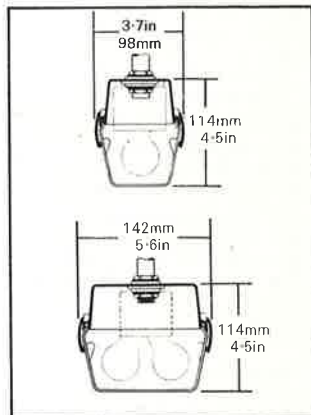
some 25% more light, which is particularly important in situations for which this product is employed.

Although functional in design the grey glass fibre canopy and clear stippled lower enclosure form a combination which is attractive in appearance and tough in use. It is important to ensure that the entry points into these fittings are adequately sealed against the ingress of water.

These fittings are rainproof, dustproof, and are suitable for use outdoors and in chemically corrosive atmospheres.

Supply Voltage

Standard fitting 230/240V 50Hz.

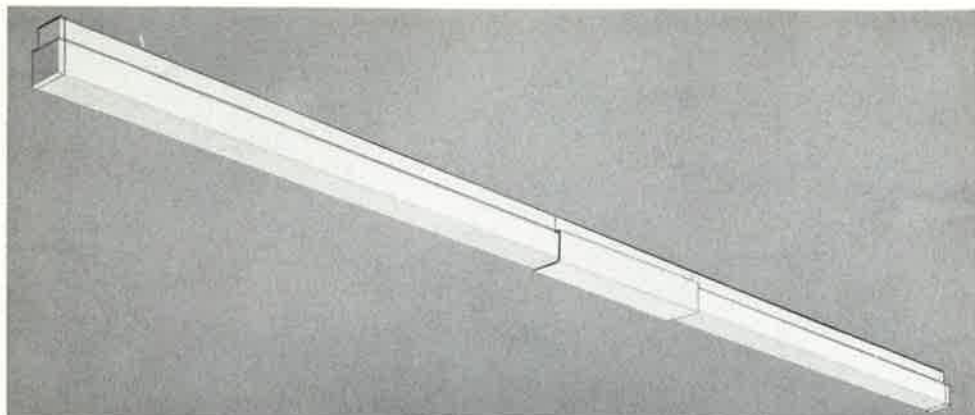


Range: Packed complete with White tube(s)

Nominal length		Rating	Circuit	Catalogue no.	Description	Length		Fixing centres		Weight	
mm	ft					mm	in	mm	in	kg	lb
1800	6	85W Single	SRS	PPUQ 685	Single Sentinel fitting	1850	72.8	610	24	5.95	13
1800	6	85W Twin	SRS	PPUQ 2685	Twin Sentinel fitting	1850	72.8	610	24	9.1	20

Toggle clip PP 4609, single tube acrylic enclosure PP 4611 and twin-tube acrylic enclosure PP 4615 are available as replacement items.

Popular Pack One-Plus-One attachment



PP 4621

The One-Plus-One fitting is formed from a combination of a central box housing and two individual Pop Pack fittings in tandem, an arrangement that can be extended to give a continuous structure. This is particularly suitable for schools, supermarkets, shops and all indoor establishments where a good general level of illumination is required.

The One-Plus-One can be used to form combinations of various sizes, dependent only on the type of Pop Pack employed, with a choice of opal diffuser (PPD) or prismatic controller (PPC) single tube attachments.

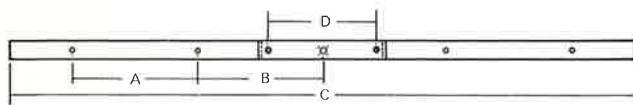
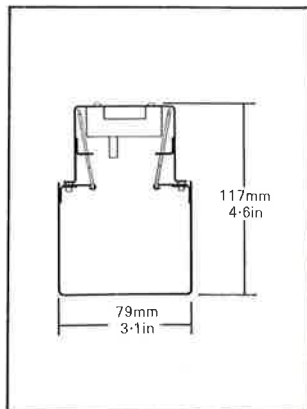
Details of single tube fittings as used with the One-Plus-One attachment are given on pages 1:7 and 1:9.

It should be noted that the One-Plus-One is suitable for ceiling mounting only.

These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C, when used in conjunction with Popular Pack fittings mentioned.

Arrangement data

Dimensions shown include various size fittings combined with the One-Plus-One attachment.

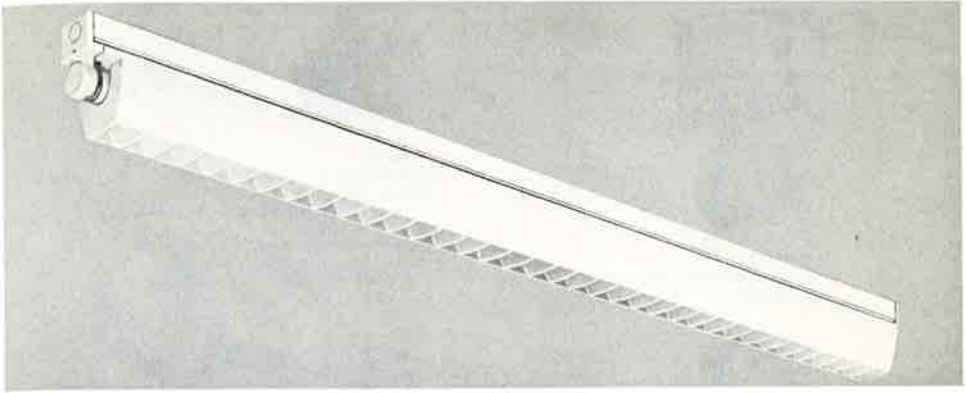


Catalogue no.	Length		Weight		Fixing centres	
	mm	in	kg	lb	mm	in
PP 4621	610	24	1.5	3.25	457	18

and centre BS box piercing

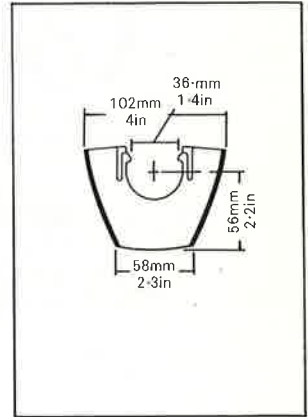
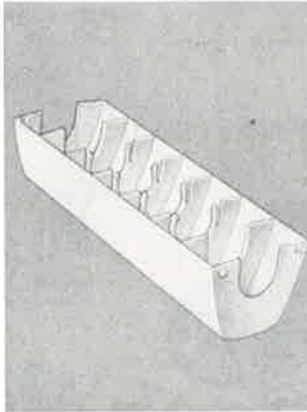
Nominal fitting size	A		B		C PPC or PPD		D		
	mm	ft	mm	in	mm	in	mm	in	
600	2	500	19.7	357	14.06	1852	72.93	457	18
1200	4	595-615	24	607	23.91	3070	120.93	457	18
1500	5	595-615	24	758	29.86	3655	144.73	457	18
1800	6	595-615	24	889	35.01	4199	165.33	457	18
2400	8	1200-1220	48	889	35.01	5118	213.33	457	18

Popular Pack Clipluve sectional louvers



KU5 P Clipluve on PP 65 Batten

Bare lamp shielding in an economical form is provided by these practical and decorative opal plastic units which clip directly on to the lamp. The KU5 P Pack contains five 292mm/11.5in sections suitable for bi-pin tubes. Four, five, six or eight sections are required according to the length of tube. The sections are fully interlocking to ensure alignment and are quickly detachable in sections for easy maintenance and washing. Clipluve (patent no. 751990) meets the maximum brightness requirements set by the Standards for School Regulations 1959.



Catalogue no.	Description
KU5 P	Five-piece pack

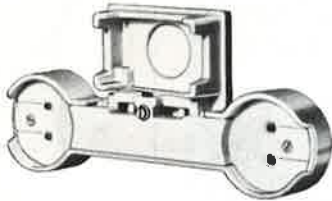
Popular Pack accessories



G B1562
Single bi-pin white plastic grip-pin lampholder



G B1548/A3
Replacement lampholder for Slim Twin fittings.



G B1563
Wide twin bi-pin white plastic grip-pin lampholder



PP 4601
Used with PP 4602 screw to fix single and twin Popular Pack metal attachments.



PP 4612
End cap for single tube PPC and PPD diffusers. Complete with fixing spring.



PP 4616
Clip-in fused terminal block assembly with 3A fuse. Primary use for Popular Pack fitting when used on TrakLine. Encroaches on centre entry on 2ft 20W twin only. Not normally required in SRS fittings which contain a fuse as standard practice. Standard quantity 5 per pack.



G M6064/12/Loop Starter Socket
White PVC moulding enclosing starter switch contacts crimped to 12in loop of 0.5sq mm white PVC cable which can be cut at a point to suit wiring layout. Current item for 2ft fittings and for earlier Popular Pack fittings in other sizes.



PP 4602
Reflector and coverplate fixing screw.



G T1281/3
Three way terminal block. Each way will accept one 2.5sq mm cable or two 1.5sq mm cables together.



PP 4613
End cap for twin tube PPC and PPD diffusers. Complete with fixing spring.

Popular Pack accessories



G A5051
Current starter socket except for 2ft size.



G A5019/X Starter Socket
Used in earlier Popular Pack fittings.
Fixed by clip **G Y5285**



PP 4600
Lampholder tension spring for single and wide twin fittings.



G Y5283
Fixing clip for $1\frac{1}{2}$ in dia. capacitors. **G Y5273** for $1\frac{1}{4}$ in dia. capacitors.



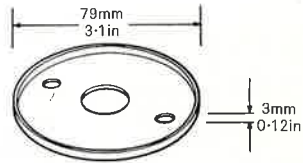
PP 4609
Replacement plastic clip for Sentinel fittings.



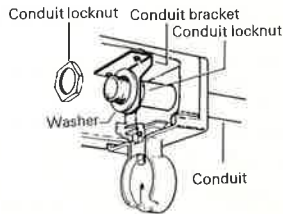
FUSE
BS 1362 dimensions
G T1299 3 amp single and twin tube SRS fittings.



PP 4617
End cap for single tube PPE, PPL and PPM diffusers. Complete with fixing spring.



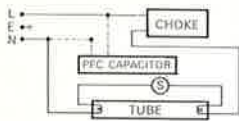
PP 4619: Free on request.
Patress block cover can be used to shield a conduit box or to cover marks left on the ceiling by original fitting or ceiling plate; 26 swg mild steel, white stoved enamel.



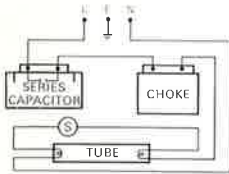
PP 4620: Free on request.
End conduit bracket is used when single or wide twin fittings are installed on surface conduit systems or where conduit is required to enter at the end of the fitting. This component is not needed for slim twin fittings.

Popular Pack Circuits Data

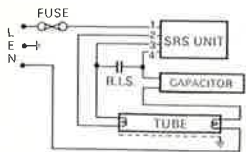
230/240V 50Hz CIRCUIT DIAGRAMS



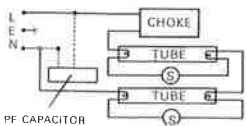
1 Standard starter switch circuit with optional PFC capacitor.



2 Leading power factor starter switch circuit.



7 Semi-resonant start circuit.



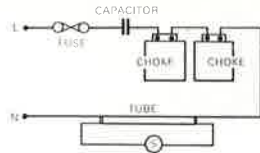
10 Starter switch circuit for series pair tube operation.

A The standard electricity supply in the UK is 230/240V 50Hz and fittings suitable for this supply are standard stock lines.

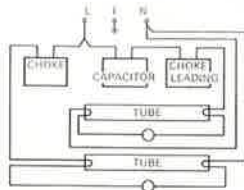
B Other voltage 50Hz fittings are available as shown below at no extra charge in UK. Delivery and details on application.
 20W 2ft } 200/210V, 220V and 250V
 40W 4ft }
 65W 5ft }

C Popular Pack fittings are also available outside the UK for the electricity supplies shown alongside. Price and delivery details on application.

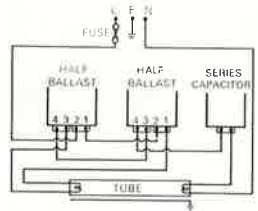
SS = Switchstart SRS = Semi Resonant Start



228 Leading power factor starter switch circuit.



233 lead/lag Starters switch circuit



244 Semi-resonant start circuit with essential circuit capacitor.

REPLACEMENT CONTROL GEAR

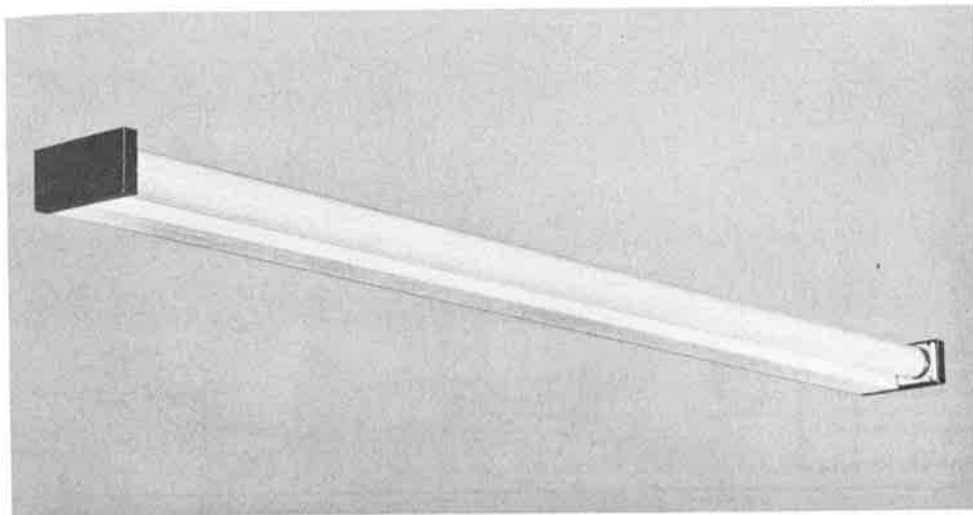
These items are selected from the extensive range of control gear for UK Regional stocking to give ready availability. The reference numbers quoted will be different from those marked on the control gear in the fitting, but the units are equally applicable to Popular Pack fittings.

			Choke	Capacitor	Starter Switch	Circ dia
125W 8ft	SS	Single Tube	1-G.CU/125	1-G C2344	1-155/800	228
		Twin Tube	2-G.CU/125	2-G C2344	2-155/800	2x228
85W 6ft	SRS	Single Tube	1-G.BU/685	1-G C2220	—	7
		Twin Tube	4-G.BUH/685	2-G C2220	—	2x233
85W 6ft	SRS	Single tube	1-G. 69295 4	1-GC 2220	—	7
		Twin tube	2-G. 69383 4	2-GC 2220	—	2x7
75W 6ft	SS	Single tube	1-G.CU/65	1-GC 2226	1-155/800	2
		Twin tube	1-CU/65 /75	1-GC 2226	2-155/800	244
65W 5ft	SS	Single Tube	1-G.CU/65	1-G C2241	1-155/500	1
		Twin Tube	2-G.CU/65	1-G C2274	2-155/500	2x1
65W 5ft	SRS	Single Tube	1-G.BU/65	1-G C2220	—	7
		Twin Tube	2-G.BU/65	2-G C2220	—	2x7
40W 4ft	SS	Single Tube	1-G.CU/40	1-G C2092	1-155/500	1
		Twin Tube	2-G.CU/40	1-G C2222	2-155/500	2x1
40W 4ft	SRS	Single Tube	1-G.BU/40	1-G C2273	—	7
		Twin Tube	2-G.BU/40	2-G C2273	—	2x7
20W 2ft	SS	Single Tube	1-G.CU/20	—	1-155/200	1
		Twin Tube	1-G.CU/40	1-G C2092	2-155/200	10

ELECTRICITY SUPPLY VARIATIONS

		50Hz	60Hz
125W 8ft	Leading SS only	220V	—
85W 6ft	HPF, SRS only	220V	—
65W 5ft	HPF or LPF, SS	110/120V (twin fittings LPF only), 200/210V, 220V, 230/240V, 250V	110/120V (twin fittings LPF only) 200/210V, 220V, 230/240V
65W 5ft	HPF, SRS	220V	—
40W 4ft	HPF or LPF, SS	110/120V, 200/210V, 220V, 230/240V, 250V	110/120V 200/210V, 220V, 230/240V
40W 4ft	HPF, SRS	220V	—
20W 2ft	HPF or LPF, SS	110/120V, 200/210V, 220V, 230/240V, 250V	110/120V, 200/210V, 220V, 230/240V

New Arrow-slim AS batten fittings



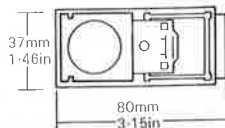
AS single batten fitting

The New Arrow-slim basic batten, with its three-position twist lampholder, can be used in any location where an unshielded fluorescent tube is acceptable. These batten fittings are available in 900mm/3ft 30W and 1500mm/5ft 50W sizes and are supplied ready packed complete with 26mm/1in diameter Warm White tubes.

Supply voltage

Standard fitting 230/240V 50Hz. Details of fittings for other supplies are available on application.

In exceptionally quiet locations the small amount of noise emitted by these fittings should be considered. Noise can be limited by the use of rubber grommets to 'soften' the mounting.



AS 30
AS 50

RANGE: Fittings are packed complete with Warm White tube

Rating	Circuit	Complete Fitting		Weight		Fixing centres	
		Catalogue no.	Length mm in	kg lb	mm in		
30W Single	Switchstart	AS 30	914 36	1.82 4	600-610	23-6-24	
50W Single	Resonant start	ASQ 50	1519 59.8	2.64 5.8	600-610	23-6-24	

Push Switch

A push switch (Catalogue No. AS 4601) is available for wall-mounted fittings.

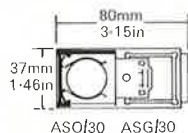
New Arrow-slim ASG, ASO and ASC attachments



ASG (Gold) and ASO (Orange) attachments

These attachments are slim acrylic extrusions to which is applied a plastic trim with a gold or orange fabric appearance.

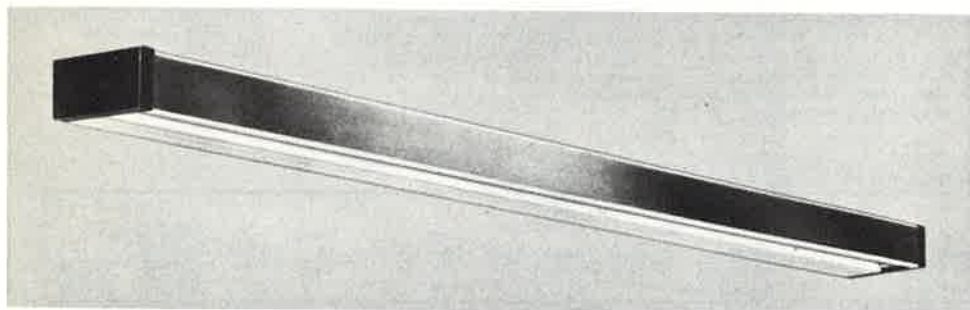
The attachments are retained in position on the wall-mounted fitting by engagement with the lampholders.



ASO/30 ASG/30

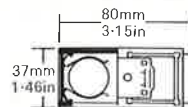
RANGE: Fittings are packed complete with Warm White tube

Rating	Circuit	Catalogue no.	Length		Weight		Fixing centres		Attachment Catalogue no.	Batten Catalogue no.	Trim Colour
			mm	in	kg	lb	mm	in			
30W Single	Switchstart	ASG/30	914	36	2	4.4	600-610	23-6-24	ASG 3	AS 30	Gold
30W Single	Switchstart	ASO/30	914	36	2	4.4	600-610	23-6-24	ASO 3	AS 30	Orange



ASC attachment

This attachment is similar in construction to those above except that the front trim has the appearance of brushed copper.



ASC/30

RANGE: Fittings are packed complete with Warm White tube

Rating	Circuit	Catalogue no.	Length		Weight		Fixing centres		Attachment Catalogue no.	Batten Catalogue no.
			mm	in	kg	lb	mm	in		
30W Single	Switchstart	ASC/30	914	36	2	4.4	600-610	23-6-24	ASC 3	AS 30

Supply voltage

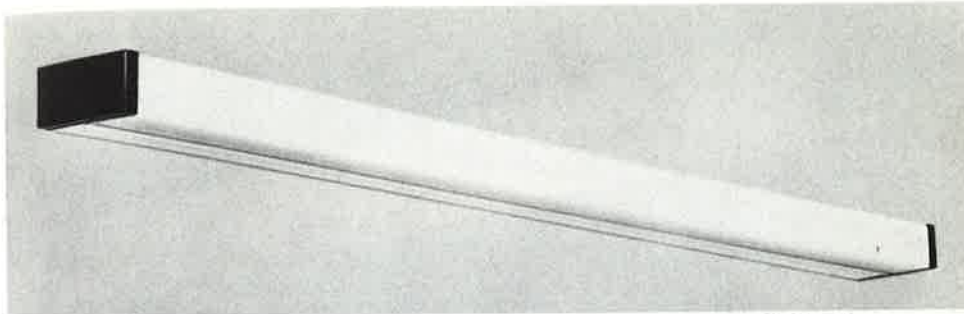
Standard fitting 230/240V 50Hz. Details of fittings for other supplies are available on application. In exceptionally quiet locations

the small amount of noise emitted by these fittings should be considered. Noise can be limited by the use of rubber grommets to 'soften' the mounting.

Push Switch

A push switch (Catalogue no. AS 4601) is available for wall-mounted fittings

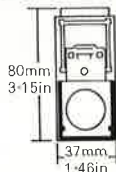
New Arrow-slim ASU and ASF attachments



ASU attachment

A closely fitting acrylic extrusion forming, in conjunction with the 900mm/3ft batten, an extremely slim diffuser fitting for many lighting

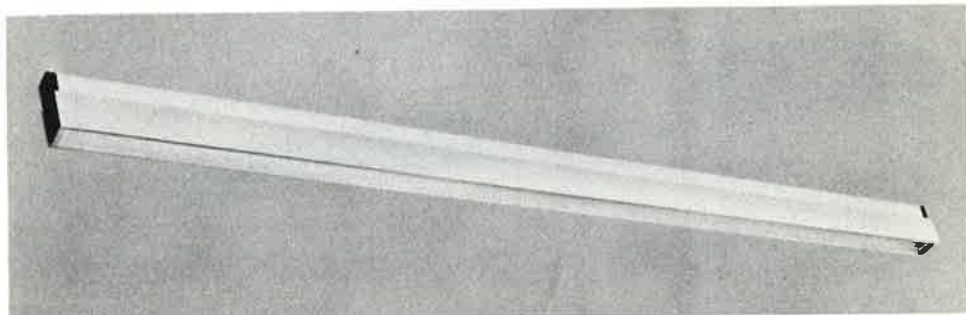
purposes. The attachment is fixed to the basic fitting by engagement with the lampholders.



ASU/30

RANGE: Fittings are packed complete with Warm White tube

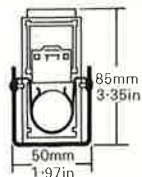
Rating	Circuit	Complete Fitting		Length mm in	Weight kg lb	Fixing centres mm in		Attachment Catalogue no.	Batten Catalogue no.
		Catalogue no.	ASU/30			600-610	23-6-24		
30W Single	Switchstart	ASU/30	ASU/30	914 36	2-03 4-46	600-610	23-6-24	ASU 3	AS 30



ASF two-tone diffuser

Extruded plastic diffuser with clear fine reeded base and opal sides which gives an even downward distribution of light, yet cuts fitting brightness to the minimum.

Fixing is by means of spring clips fitted to the end of the diffuser.



ASF/50

RANGE: Fittings are packed complete with Warm White tube

Rating	Circuit	Complete Fitting		Length mm in	Weight kg lb	Fixing centres mm in		Attachment Catalogue no.	Batten Catalogue no.
		Catalogue no.	ASF/50			600-610	23-6-24		
50W Single	Resonant start	ASF/50	ASF/50	1519 59-8	3-1 6-8	600-610	23-6-24	ASF 5	ASQ 50

A set of two clips and plastic studs for ASF attachments (Catalogue no. AS 4610) is available as a replacement item

Supply voltage

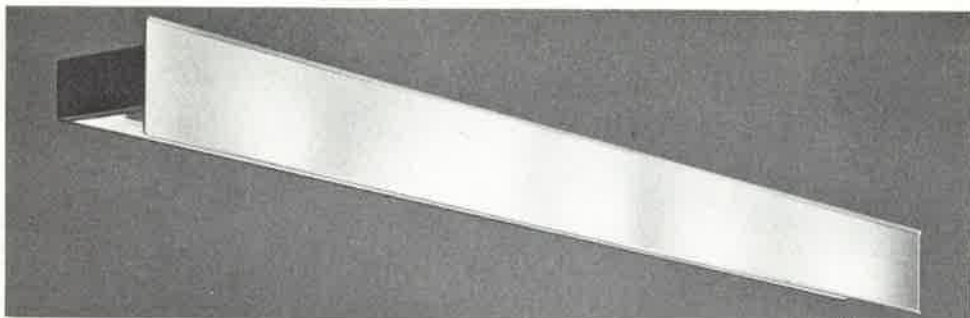
Standard fitting 230/240V 50Hz. Details of fittings for other supplies are available on application. In exceptionally quiet locations the

small amount of noise emitted by these fittings should be considered. Noise can be limited by the use of rubber grommets to 'soften' the mounting.

Push Switch

A push switch (Catalogue no. AS 4601) is available for wall-mounted fittings.

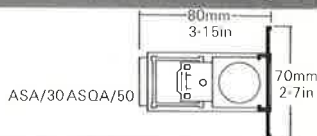
New Arrow-slim ASA, ASB and ASR attachments



ASA attachments

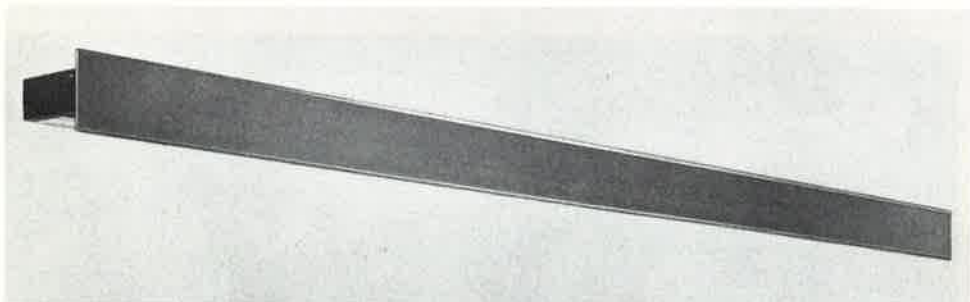
Satin etched front baffles in extruded aluminium for upward and downward lighting and a sophisticated decorative appearance.

These attachments are retained in position on the wall-mounted fittings by engagement with the lampholders.



RANGE: Fittings are packed complete with Warm White tube

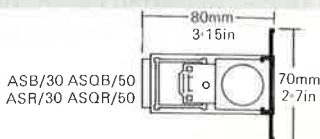
Rating	Circuit	Complete Fitting		Length		Weight		Fixing centres		Attachment	Batten
		Catalogue no.	mm	in	kg	lb	mm	in	Catalogue no.	Catalogue no.	
30W Single	Switchstart	ASA/30	914	36	2.21	4.86	600-610	23.6-24	ASA 3	AS 30	
50W Single	Resonant start	ASQA/50	1519	59.8	3.28	7.24	600-610	23.6-24	ASA 5	ASQ 50	



ASB (Beige) and ASR (Red) attachments

Aluminium front baffles to which trims having the appearance of beige or red leather are applied.

These attachments are retained in position on the wall-mounted fittings by engagement with the lampholders.



RANGE: Fittings are packed complete with Warm White tube

Rating	Circuit	Complete Fitting		Length		Weight		Fixing centres		Attachment	Batten
		Catalogue no.	mm	in	kg	lb	mm	in	Catalogue no.	Catalogue no.	
30W Single	Switchstart	ASB/30	914	36	2.24	4.93	600-610	23.6-24	ASB 3	AS 30	
50W Single	Resonant start	ASQB/50	1519	59.8	3.35	7.37	600-610	23.6-24	ASB 5	ASQ 50	
30W Single	Switchstart	ASR/30	914	36	2.24	4.93	600-610	23.6-24	ASR 3	AS 30	
50W Single	Resonant start	ASQR/50	1519	59.8	3.35	7.37	600-610	23.6-24	ASR 5	ASQ 50	

Supply voltage

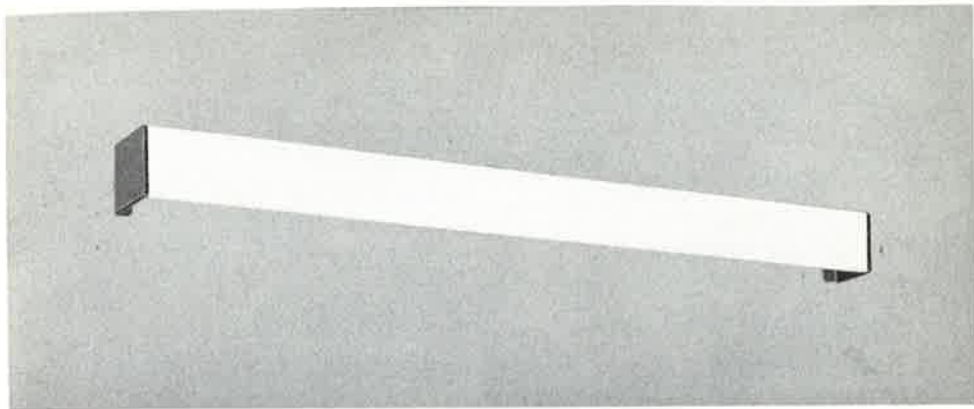
Standard fitting 230/240V 50Hz.
Details of fittings for other supplies are available on application.

Push Switch

A push switch (Catalogue no. AS4601) is available for wall-mounted fittings. In exceptionally quiet locations the

small amount of noise emitted by these fittings should be considered. Noise can be limited by the use of rubber grommets to 'soften' the mounting.

New Arrow-slim ASK attachment

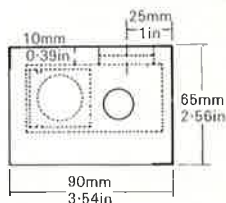


ASK attachment

This is a baffle in white stoved enamel steel designed for use under wall-mounted cabinets in kitchens to provide light over working surfaces. The ends of the baffle are closed by black plastic end plates to give an attractive and streamlined appearance and to conceal the batten fitting within the baffle.

Supply voltage

Standard fitting 230/240V 50Hz. Details of fittings for other supplies are available on application. In exceptionally quiet locations the small amount of noise emitted by these fittings should be considered. Noise can be limited by the use of rubber grommets to 'soften' the mounting.

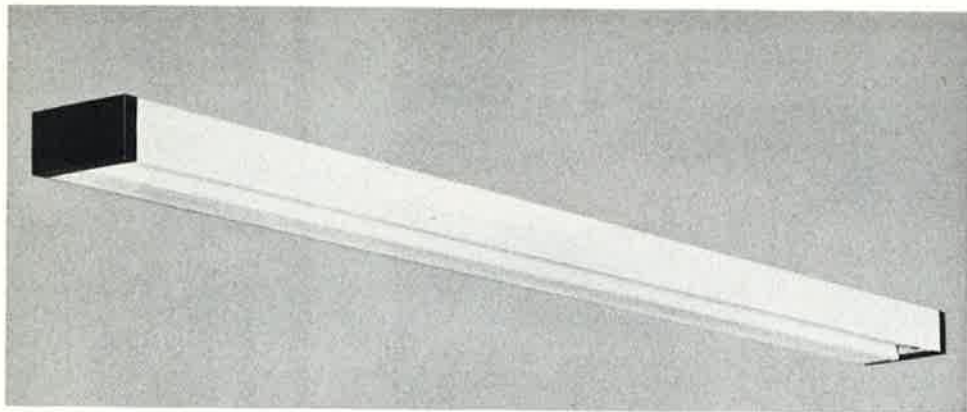


KITCHEN BAFFLE ASK30

RANGE: Fittings are packed complete with Warm White tube

Rating	Circuit	Complete Fitting		Length mm in	Weight kg lb	Fixing centres		Attachment Catalogue no.	Batten Catalogue no.
		Catalogue no.				mm	in		
30W Single	Switchstart	ASK30		1000 39.4	2.73 6	605	23.8	ASK 3	AS 30

New Arrow-slim ASD diffuser



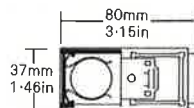
This diffuser is extruded from opal acrylic and is easily attached to the fitting. The diffuser may be used with a wall-mounted batten fitting to give unobstructed downward light and general diffused upward light.

Push Switch

A push switch (Catalogue no. AS4601) is available for wall-mounted fittings.

Supply Voltage

Standard fitting 230/240V 50Hz. Details of fittings for other supplies are available on application. In exceptionally quiet locations the small amount of noise emitted by these fittings should be considered. Noise can be limited by the use of rubber grommets to 'soften' the mounting.

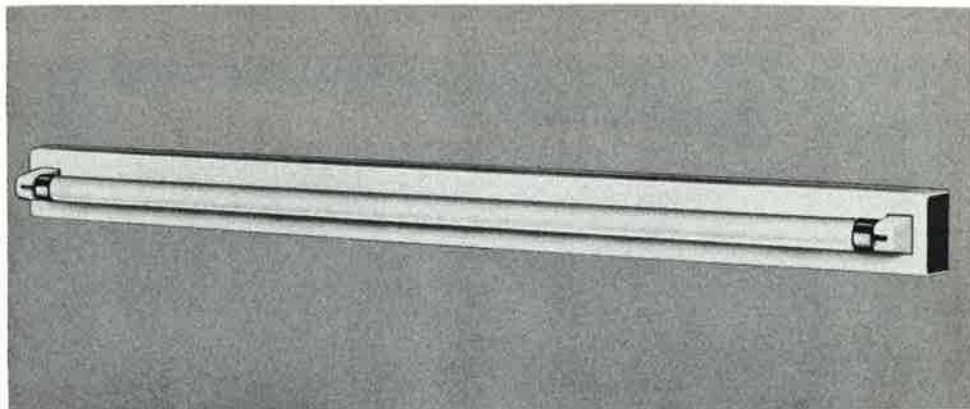


ASD/30
ASD/50 (Clips supplied with 1500mm/5ft only)

RANGE: Fittings are packed complete with Warm White tube

Rating	Circuit	Complete Fitting		Length		Weight		Fixing centres		Diffuser Catalogue no.	Batten Catalogue no.
		Catalogue no.		mm	in	kg	lb	mm	in		
30W Single	Switchstart	ASD/30		914	36	2	4.4	600-610	23-6-24	ASD 3	AS 30
50W Single	Resonant start	ASD/50		1519	59.8	2.9	6.4	600-610	23-6-24	ASD 5	ASQ 50

LJ Series Minipack fittings



LJS1013

The Minipacks are the smallest fluorescent fittings offered for everyday use. They provide miniature fluorescent lighting for many purposes, including display cabinets, public notice signs and hotel mirrors. The range of attachments (*see next page*) broadens the application even further. The 324mm/12.75in long version gives more light than a 40W tungsten lamp. Especially impressive, the 552mm/21.75in model gives a better output than

three 30W tungsten striplights. The body assembly has two-tone colouring: the channel cover is white and the channel and end plates are grey. To gain access to the control gear, the white moulded lampholders are rocked slightly forward to release the cover which can be completely removed for installation and servicing.

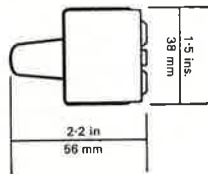
PULL SWITCH, Catalogue no. LJ 4600. A pull switch is an added convenience and is available for all models.

SHELF CLIPS, Catalogue no. LJ 4601. An elegant form of accent lighting is to use this fitting to illuminate objects on shelves. For this purpose two single clips are available which locate inside the batten and securely onto the shelf, accommodating shelf thickness up to 26mm/1in.

These fittings are suitable for use in ordinary indoor atmospheres, where ambient temperature does not exceed 25°C.

Supply voltage

Standard fitting 230/250V 50Hz. Details of fittings for other supplies are available on application.



RANGE: Packed complete with Warm White tube

Batten Fitting

Rating	Circuit	Catalogue no.	Length		Weight		Fixing centres	
			mm	in	kg	lb	mm	in
8W Single	Switchstart	LJ S1008.H	324	12.75	.85	2	279	11
13W Single	Switchstart	LJ S1013.H	552	21.75	1.1	2.5	457	18

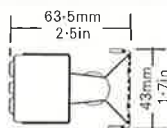
LJA, LJN Minipack attachments

Minipacks offer a choice of attractive attachments suitable for domestic and commercial situations.



LJA Raffia attachment

This woven natural raffia attachment is easily clipped on to the tube by a spring clip mounted at each end of the attachment.



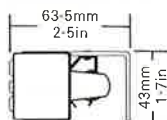
RANGE

Attachments only			
Type	Length		Catalogue no.
	mm	in	
Raffia	305	12	LJA 112
Raffia	533	21	LJA 121



LJN Opal plastic diffuser

This attractive white opal diffuser is designed for more general use, and is attached easily and quickly by spring clips.



RANGE

Attachments only			
Type	Length		Catalogue no.
	mm	in	
Opal plastic	305	12	LJN 112
Opal plastic	533	21	LJN 121

This range of transistorised fluorescent fittings is designed to provide efficient battery operated lighting, independent of a mains supply. The olive green body and clear reeded prismatic controller are made of high impact and light stabilised polystyrene. An integral

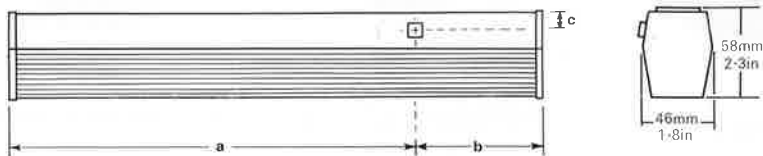
push switch controls the fitting. The control gear operates the fluorescent tube at a high frequency so that the fitting is inaudible in use. Protection against accidental polarity reversal is incorporated within the fitting. 12V versions may be used in

conjunction with the AME R2463 emergency lighting unit.

Registered design numbers :
 NOM 1008 - 943061
 NOM 1013 - 943063
 These fittings are Class II items.



8W fitting in mobile shop



Range: Packed complete with Warm White tube

Rating	Volts	Catalogue no.	Length		Weight		Fixing centres	
	(d.c. only)		mm	in	kg	lb	mm	in
8W Single	12	NOM 1008.12	343	13.5	0.34	0.75	318	12.5
13W Single	12	NOM 1013.12	569	22.4	0.49	1.1	551	21.7
8W Single	24	NOM 1008.24	343	13.5	0.34	0.75	318	12.5
13W Single	24	NOM 1013.24	569	22.4	0.49	1.1	551	21.7

Other voltages: Transistorised fluorescent fittings suitable for operation on 6 volt supplies are also available. Details can be obtained on application. Prismatic controller extrusions NOM 4600 (8W), NOM 4601 (13W) and end plate NOM 4602 are available as replacement items.

Dimensions

Rating	a		b		c	
	mm	in	mm	in	mm	in
8W	262	10.3	79	3.1	10	0.4
13W	490	19.3	79	3.1	10	0.4

Battery Information

Rating	Supply current (amps)	Battery rating (amp/hours)		
		38	42	60
8W 12V	0.7	50	56	80
13W 12V	1.1	31	34	49
8W 24V	0.3	114	126	180
13W 24V	0.5	68	75	108

*Assuming the efficiency of the battery to be 90%.

New Arrow-slim, Minipack & Nomad Accessories



GB 1586 New Arrow Slim bi-pin lampholder. Black/white plastic.



AS 4611 New Arrow Slim lampholder tension spring.



AS 4601 New Arrow Slim push switch for wall mounted fittings.



AS 4612 New Arrow Slim capacitor clip.



G A5089 LOOP Starter socket for New Arrow Slim 3ft and Mini-pack fittings.



LJ 4600 Pull switch for wall mounted Mini-pack fittings.



GB 1556/3X Lampholder for Mini-pack fittings

GB 1556/1 Lampholder for Nomad fittings



G T1281/3
Three way terminal block. Each way will accept one 2.5sq mm cable or two 1.5sq mm cables together.



AS 4600 Pattress block cover for ceiling mounted New Arrow Slim fittings.

Replacement control gear for 240V 50Hz supply

Tube size	Fitting	Choke	Capacitor	Starter Switch
8W 12in	Minipack	1—CD8	—	1—155/100
13W 21in	Minipack	1—CD13	—	1—155/100
30W 3ft	New Arrow Slim AS 30	1—CJ30	—	1—155/400
50W 5ft	New Arrow Slim AS 50	1—CJ50	1—G C2229	1—155/501
50W 5ft	New Arrow Slim ASQ50	1—BJ50	1—G C2368	—

Invincible range is the name given to a selection of fittings each of which has been carefully designed to ensure satisfactory performance under certain arduous service conditions. The range comprises the following fittings:

LU Series 1:33

This diffuser fitting is resistant to numerous adverse conditions. Suitable applications would be certain chemical laboratories, pickle factories and food factories. It is completely enclosed with a GRP canopy and a plastic enclosure which is simply clipped into position.

LV Series 1:34

A vapourproof fitting, resistant to corrosion by water vapour, highly humid conditions, certain chemicals, etc., and suitable for use in food factories, storage bays and general conditions where frequent washing is required. (This fitting is not jetproof.) The relamping features are of extreme importance. Completely enclosed single or twin tube opal enclosure.

LW Series 1:35

This design has been fully tested to international specifications for corrosion resistant, rainproof and dustproof fittings. When used in conjunction with the plastic cylinders a stronger fitting results, resisting mechanical damage. These cylinders also enable the fitting (coupled with the necessary low temperature control gear) to be used in temperatures down to -30°C (-22°F).

Suitable applications for this fitting would be certain chemical laboratories, plating shops, pickle factories, food factories, cold stores and general indoor and outdoor applications.

Flameproof 1:36/37

In addition to being certified as suitable for use in all Division 1 areas, having flammable atmospheres falling within the General Industrial Groups II and III, the fitting is also dust-tight and rainproof so it may be used in areas containing explosive dusts or outside e.g. on an oil loading jetty.

Dust-Tight 1:38

This fitting has been designed in accordance with the following requirements.

- a British Standard Specification No. 3820:1964 Class 1 construction for Outdoor Pendant use.
- b Jetproof to BS.3820, Clause 18 (iii).
- c Dust-tight to BS.3820 Clause 18 (iv).

Suitable applications for these fittings would be flour mills, certain laboratories, food factories and areas which are frequently hosed down. It may also be pressurised.

Food Factory 1:39

Suitable for applications where hygiene is of the utmost importance. There are no crevices to harbour dirt or dust and the enclosing acrylic prevents any possible danger in the event of a lamp breaking.

For damp and sometimes humid places such as abattoirs and bottling plants, paper mills and laundries. The fitting is sealed by a neoprene gasket to prevent the ingress of steam or moisture and its easily-wiped surfaces make it most suitable for use in awkward, out-of-the-way places.

Directional Floodlight 1:40

This is a versatile fluorescent floodlight for interior use or in protected situations outside. It is available for single- or twin-tube operation with clear or opal laminated glass cover. The fitting is *not* flameproof but could be used for floodlighting garage workshop areas, greasing bays, canopied loading bays, etc.

Under Canopy 1:41

Single or twin-tube fittings for use in sheltered outdoor positions such as multi-storey car parks or shopping precincts. It will withstand normal humid atmospheres such as fog, but is not non-corrosive and will not withstand conditions such as heavily salt-laden atmospheres indefinitely.

Glendale 1:42

A range of totally enclosed, rainproof, dust-tight, corrosion resistant BASEEFA certified Division 2 fittings (Certificate of Approval No. 72064). All external parts are acrylic, neoprene and stainless steel. 2ft and 5ft single or twin lamp versions are available.

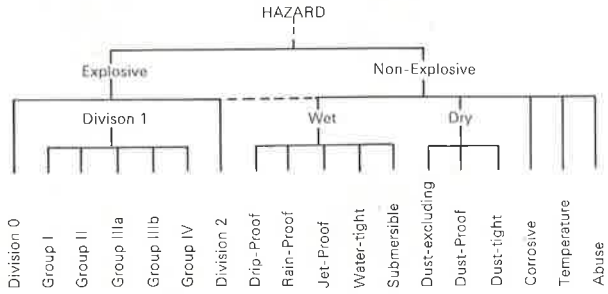
Ribble 1:43

A range of rainproof, dust-tight, corrosion resistant, BASEEFA certified Division 2 fittings (Certificate of Approval No. 72036). Bodies are constructed from P.V.C. coated sheet steel and the tubes are enclosed in plastic cylinders and are held by special centre twist lampholders. 2ft, 4ft and 5ft single or twin lamp versions are available.

Invincible range of lighting equipment

On this page will be found, in tabulated form, an easy guide to the choice of an Invincible Range Fitting for use in most hazardous situations.

This table also indicates fittings which can be easily modified either by the user or by Thorn Lighting Ltd., by negotiation, for use in conditions other than that for which they were designed.



Fitting

Fitting	Division 0	Group I	Group II	Group IIIa	Group IIIb	Group IV	Division 2	Drip-Proof	Rain-Proof	Jet-Proof	Water-tight	Submersible	Dust-excluding	Dust-Proof	Dust-tight	Corrosive	Temperature	Abuse
FP Range	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Glendale Range	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
LW Range	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Ribble Range	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DT Range	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Dreadnought Range	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Renown Range	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Grenville Range	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
M25 J Range (see also Exterior Catalogue)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Bulkhead Range (see also Exterior Catalogue)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
LU	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
LV Range	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
FF Range	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
UC Range	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DF Range	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
MCF Bulkhead (see Exterior Catalogue)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
GLS Bulkhead (see Exterior Catalogue)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
GLS Wellglass (see Exterior Catalogue)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Submersible (G) (Special)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

- A When pressurised
- B With small modifications to make suitable for pressurisation
- C To agreed depths
- D Dependent on corrosive agent
- E Available for use down to -30°C (-22°F)
- F Special finishes can be supplied by negotiation
- G To special order
- H Cold temperature or with GLS lamps up to 50°C

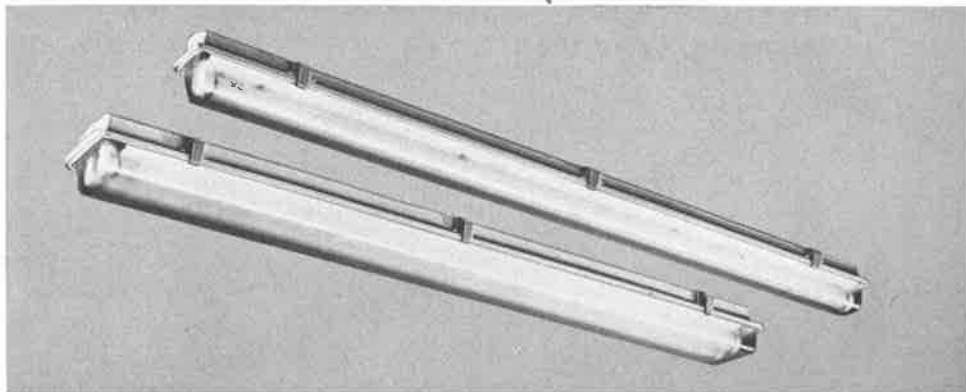
Invincible LU corrosion-resistant fittings

This corrosion-resistant GRP fitting is suitable for any application where excessive humidity is present, such as swimming baths, slaughter houses, breweries, or where corrosive elements are involved, such as some plating shops, dye works, chemical works or where fittings are used outdoors. The GRP body has bushes moulded in the back to receive the gear tray. The tray carries the usual components, and brackets are

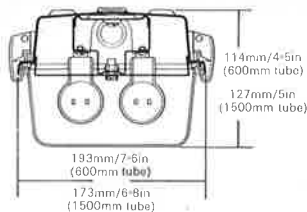
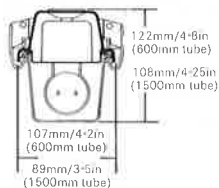
provided at each end to support the lampholders. These same brackets provide fixing for a metal reflector to enclose the gear. The lamps are enclosed with a vacuum-formed plastic cover which is supported from the GRP canopy by means of injection moulded brackets secured against the edge of the canopy. A gasket is positioned between the canopy and cover to form an effective seal. The plastic cover is held firmly against the gasket by six

plastic toggles (four on the 600mm/2ft) which engage under the lip of the plastic cover. These toggles are captive on the canopy. All fittings are for 240V 50Hz. Details of fittings for other supplies are available on application.

These fittings comply fully with BS 3820 : 1964 for categories Class IIA, rainproof, dustproof, outdoors and chemically corrosive (except for 600mm/2ft which are not dustproof).



LUD R2065 LUD R1065



RANGE

Complete fitting				Components		Dimensions							
Nominal length				No. of tubes	Circuit	Catalogue no.	Enclosure Catalogue no.	Length		Weight (incl. tubes)		Fixing centres *	
mm	ft	Rating	mm					in	kg	lb	mm	in	
600	2	20W	One	QS	LUD Q1020	LUD 12	711	28	3.4	7.5	500	19.7	
600	2	20W	Two	QS	LUD Q2020	LUD 22	711	28	4.4	9.7	500	19.7	
1500	5	65W	One	RS	LUD R1065	LUD 15	1594	62.8	6.9	15.3	610	24	
1500	5	65W	Two	RS	LUD R2065	LUD 25	1594	62.8	9.8	21.7	610	24	

* Fixing holes: 600mm/2ft fitting, 6.4mm/0.25 in dia, clear
1500mm/5ft fitting, 25mm/1 in dia, clear fitted with graniset to take 20mm/0.75 in conduit

Invincible LV corrosion-resistant fittings

This fitting is designed for use in the many adverse atmospheric conditions where corrosive fumes and water vapour prevent the use of conventional fittings.

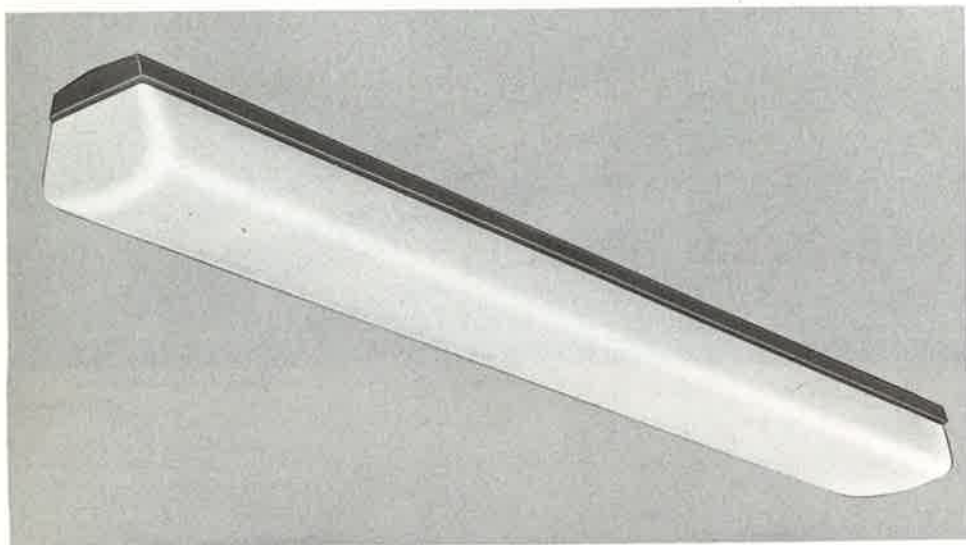
The fitting is sealed against these extraneous conditions by a wiper gasket between the plastic-coated steel canopy and the opal plastic enclosure. A concealed quick release catch is used to attach the enclosure to the canopy, the wiper gasket eliminating any need to clamp these two items together, thus relieving the enclosure of all strain.

The lamps are fitted into the enclosure bowl, minimising any possibility of broken glass falling from the fitting in the event of lamps being broken during maintenance. All internal metal parts, including the removable control gear tray, are specially coated to withstand these adverse conditions.

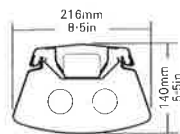
Eye bolts are provided on the back of the channel to receive a male hook attached to either a 19mm/0.75in rod or chain with consumer hooks. Chain or rod suspension only is recommended for this fitting.

Mains entry is via a cable gland in back of fitting using three-core cable. Suspensions must be a minimum of 76mm/3in long to obtain access to the enclosure release mechanism on the back of the fitting.

All fittings are for 240V 50Hz. Details of fittings for other supplies are available on application. These fittings comply fully with BS.3820:1964 for categories Class I, drip-proof, dustproof, indoors, high humidity and chemically corrosive.



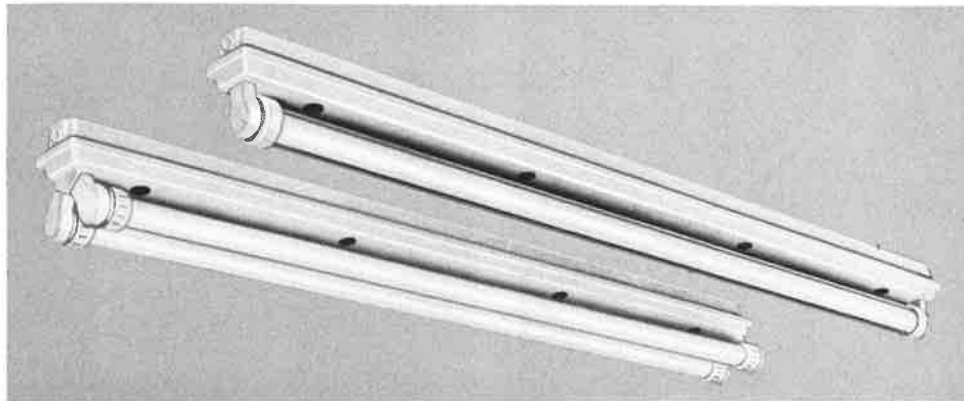
LVD/R2065



RANGE

Complete fitting				Components			Dimensions		Weight		Fixing centres	
Nominal length	Rating	Circuit	Catalogue no.	Enclosure Catalogue no.	Batten Catalogue no.	Length mm	in	kg	lb	mm	in	
1500	5 65W Single	RS	LVD/R1065	LVD 15	LV R1065	1587	62.5	13.3	29.3	610	24	
1500	5 65W Twin	RS	LVD/R2065	LVD 25	LV R2065	1587	62.5	17	37.6	610	24	

Invincible LW corrosion-resistant fittings



Suspension is by 20mm/0.75 in dia. conduit hook, etc., into the top elliptical grommeted holes for either imperial or metric suspension centres. Suitable washers and nuts must be used on both sides of the grommet to achieve an adequate seal.

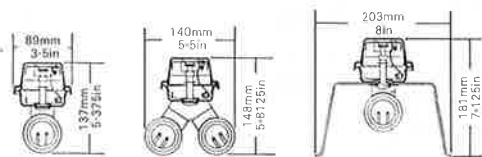
LWM/R2065 and LWC/R1065

This range of fittings is designed to combat the most arduous atmospheres. Some fittings in this range are designed to withstand conditions of high humidity and temperatures down to -30°C (-22°F): special low temperature control gear is used for operation at these temperatures and a double walled cylinder, LWD 15, is necessary). The body is moulded in two halves from glass reinforced plastic, each half screwed together against a neoprene gasket with four nylon screws to form a joint which is proof against most hostile atmospheres.

The lamps are fitted into special sealed lampholders which either

grip the glass of the fluorescent tube (LWM types) or grip the outside of a LWC 15 plastic cylinder to maintain a completely weatherproof fitting. Cable entry is achieved via 25mm/1 in dia. grommeted holes in the top or a 20mm/0.75 in dia. grommeted hole at one end of the fitting. The LWC 15 plastic cylinder attachment can be provided to give complete mechanical protection to the fluorescent tube. All internal metal parts, including the removable control gear tray, are coated to withstand these adverse conditions during maintenance.

A plastic trough reflector, LWU25, is available to give added protection to the tube and to concentrate the light in the downward plane. All fittings are for 240V 50Hz. Details of fittings for other supplies are available on application. Fully Rainproof. Dustproof and Corrosion-resistant to BS.3820:1964.



RANGE

Complete fitting					Components		Dimensions					
Nominal length					Plastic cylinder or lampholder ring assembly	Batten (less lampholder ring)	Length		Weight (incl. tubes)		Fixing centres	
mm	ft	Rating	Circuit	Catalogue no.	Catalogue no.	Catalogue no.	mm	in	kg	lb	mm	in
1500	5	65W Single	RS	LWM/R1065	AME M6116	LW R1065	1587	62.5	8-1	17.8	610	24
1500	5	65W Twin	RS	LWM/R2065	AME M6116 × 2	LW R2065	1587	62.5	10.8	23.7	610	24
1500	5	65W Single	RS	LWC/R1065	LWC 15	LW R1065	1587	62.5	9	19.8	610	24
1500	5	65W Twin	RS	LWC/R2065	LWC 15 × 2	LW R2065	1587	62.5	12.5	27.7	610	24
1500	5	80W Single	SS	LWM/S1080†	AME M6116	LW S1080	1587	62.5	8-1	17.8	610	24
1500	5	80W Single	SS	LWC/S1080*	LWC 15	LW S1080	1587	62.5	9	19.8	610	24
1500	5	80W Single	SS	LWD/S1080‡	LWD 15	LW S1080	1587	62.5	10.1	22.3	610	24

† Suitable for temperatures ranging between 5°C (41°F) and -5°C (23°F) at 240V only [15°C (59°F) for short periods]

* Suitable for temperatures ranging between 5°C (41°F) and -10°C (14°F) at 240V only [15°C (59°F) for short periods]

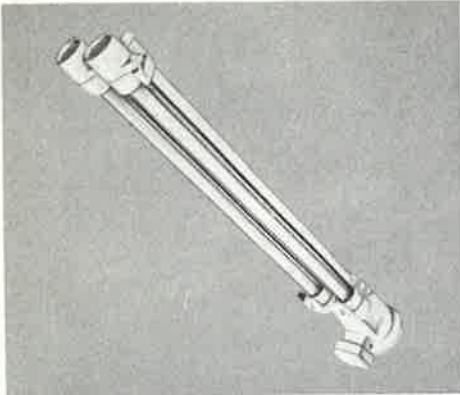
‡ Suitable for temperatures ranging between 5°C (41°F) and -30°C (-22°F) at 240V only [15°C (59°F) for short periods]

Standard 65W fittings may be used in an ambient temperature up to 40°C (104°F)

MS (Metal Sings) grade tubes (MCFA/1) are recommended for use with these fittings

All 65W fittings incorporating a plastic cylinder (LWC 15) have been approved by H.M. Factory Inspectorate for use in Division 2 areas

A plastic trough reflector, Catalogue no. LWU 25, is available for above fittings, single and twin tube



MoP Certificate no. 6055,
for groups II, III

FP 2685

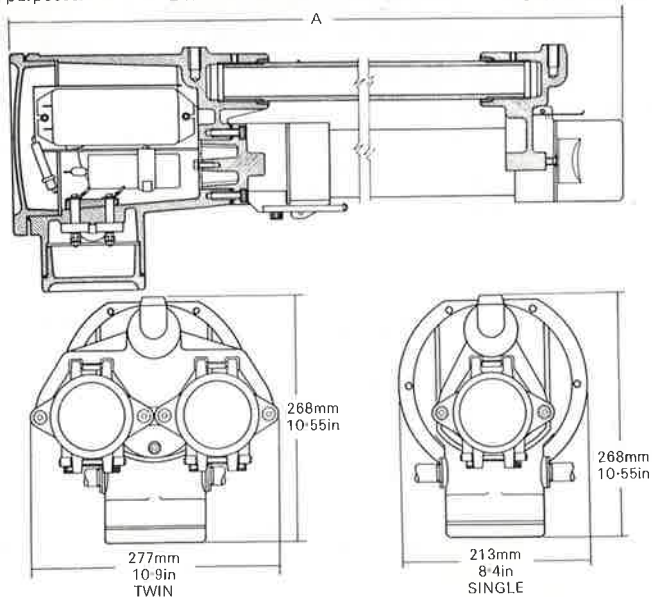


FP 1040

Temperature range Z at ambient temperature specified on fitting. The design comprises cast aluminium end boxes rigidly supported by a steel connecting tube. The main casting incorporates switchless control gear, on a removable tray, for either single or twin tube operation and also an underslung mains cable entry to facilitate installation. The remote end casting is removable, yet fully captive, for relamping purposes.

All visible joints are gasketed as necessary to ensure that the fitting is dust-tight and weatherproof. All external screws are in stainless steel and have socket heads. Maintenance of the fitting for relamping is either from one end or below and, if required, the glass tube assembly or gear tray can be removed completely without disturbing the incoming mains supply. 2 x 20mm entries are standard but

alternative entries can be supplied to special order. An all white exterior finish is applied to the fitting after assembly. Reflectors with or without wire guards are available. All fittings are for 240V 50Hz. Details of fittings for other supplies are available on application. The fittings comply fully with BS 229:1957; BS 889:1965; and BS 3820:1964 rainproof and dust-tight.



Invincible FP Flameproof Range

RANGE

Complete fitting

Nominal tube length	Rating		Circuit	Catalogue no.
	mm	ft		
600	2	40W Single	QS	FP 1240
600	2	40W Twin	QS	FP 2240
1200	4	40W Single	RS	FP 1040
1200	4	40W Twin	RS	FP 2040
1500	5	65W Single	RS	FP 1065
1500	5	65W Twin	RS	FP 2065
1800	6	85W Single	RS	FP 1685
1800	6	85W Twin	RS	FP 2685

OPTIONAL EXTRAS AND SPARES

Catalogue no.	Description
FP 12	600mm/2ft Glass tube assembly
FP 14	1200mm/4ft Glass tube assembly
FP 15	1500mm/5ft Glass tube assembly
FP 16	1800mm/6ft Glass tube assembly
FPG 22	600mm/2ft Wire guard
FPG 24	1200mm/4ft Wire guard
FPG 25	1500mm/5ft Wire guard
FPG 26	1800mm/6ft Wire guard
FPR 22	600mm/2ft Reflector
FPR 24	1200mm/4ft Reflector
FPR 25	1500mm/5ft Reflector
FPR 26	1800mm/6ft Reflector
FP 4600	Adjustable suspension bracket
FP 4601	20mm/ $\frac{3}{8}$ " ET flameproof plug
FP 4602	13mm/ $\frac{1}{2}$ " Whitworth eye bolt
FP 4603	Gear cover gasket
FP 4604	Terminal cover gasket
FP 4605	Glass tube gasket
FP 4606	Adaptor gasket

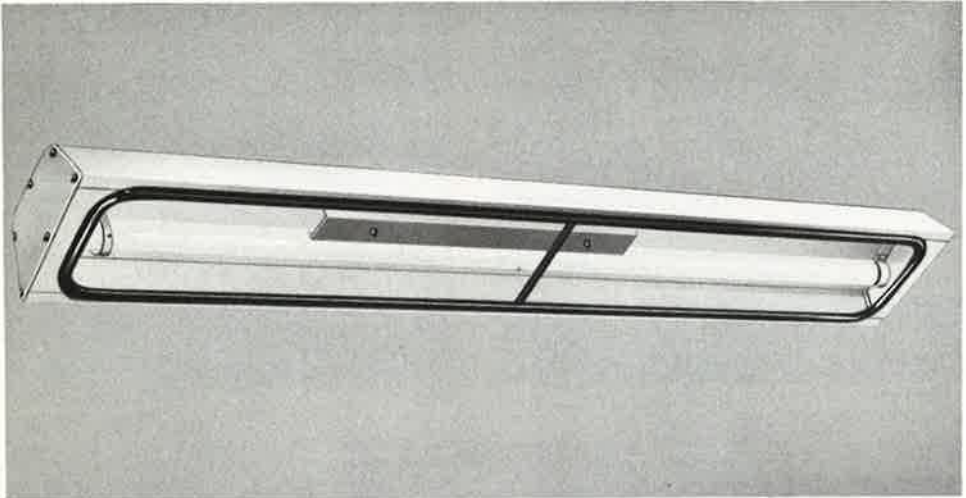
DIMENSIONS

Catalogue no.	Dimension A				Approx. weight (incl. tube)		Fixing centres	
	length		width		kg	lb	mm	in
	mm	in	mm	in				
FP 1240	971	38.2	212	8.4	17	37.5	690	27.2
FP 2240	971	38.2	278	10.9	22.7	50	690	27.2
FP 1040	1581	62.2	212	8.4	23.9	52.7	1300	51.2
FP 2040	1581	62.2	278	10.9	28.8	63.4	1300	51.2
FP 1065	1882	74.1	212	8.4	26.3	57.9	1601	63
FP 2065	1882	74.1	278	10.9	32.1	70.8	1601	63
FP 1685	2147	84.5	212	8.4	29	64	1866	73.5
FP 2685	2147	84.5	278	10.9	35.4	78	1860	73.5

With reflector width of all sizes becomes 303mm/11.9in

With reflector and wire guard width of all sizes becomes 328mm/12.9in

mm	ft	Additional Reflector weight		Additional Wire guard weight	
		kg	lb	kg	lb
600	2	2.04	4.5	0.45	1
1200	4	4.08	9	1.18	2.6
1500	5	4.99	11	1.5	3.3
1800	6	5.9	13	1.82	4



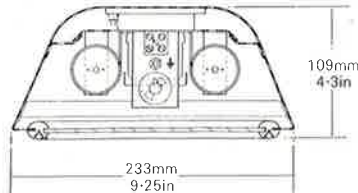
DTB/65

The housing, which is common either to one or two lamp fittings, consists of an inverted trough shape with sloping sides to discourage the collection of dust. Into the bottom surface is attached a clear plastic window by means of a special gasket to form a dust-tight, jetproof and vapour-proof seal. One end of the fitting is permanently sealed and the other end has a removable plate, normally held in position by six captive screws. This plate is suitably gasketed to maintain the 'proofness' of the fitting. The housing is manufactured in sheet steel and, following, a thorough rust-proofing process, is finished with high quality white acrylic paint. External screws, etc., are in stainless steel. The reflector/gear tray assembly for either one or two 1500mm/5ft 65W lamps slides in from one end

and is fitted with mains terminal block (clamping type), earth point and circuit fuse which are easily accessible when the end plate of the housing is removed. Single and twin lamp reflector/gear assemblies are completely interchangeable. Suspension is normally to the stainless steel hooks provided, at 1410mm (55.5in) centres, but fittings can be mounted to purpose made brackets by means of 6mm/¼in Whit. screws at the same centres. Provision is made in the fitting for mains wiring to be looped in and out if required through 2 x 20mm holes adjacent to one suspension point. The method of installation is such that for normal servicing it is not necessary to remove the mains wiring from the fitting.

All fittings are suitable for 240V 50Hz supplies. Fully Jet-proof and Dust-tight to B.S.3820:1964.

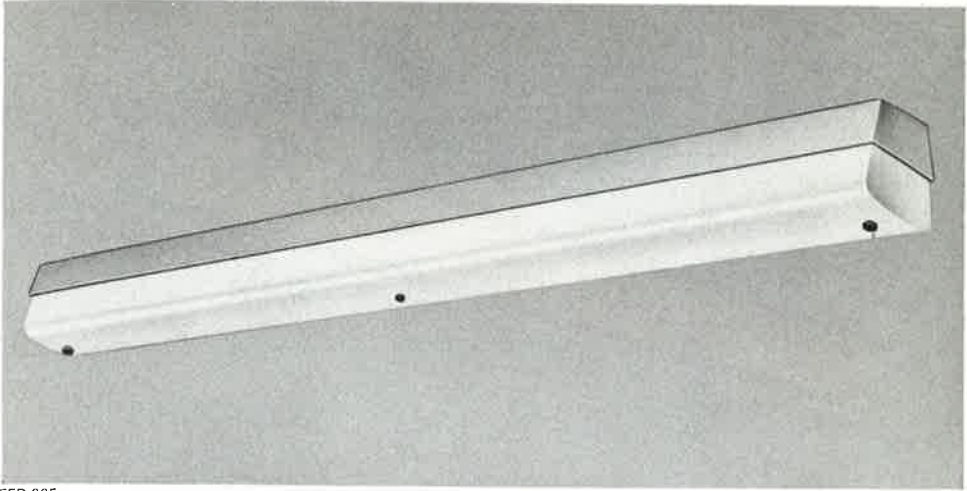
Note: Single tube version may be used up to an ambient temperature of 40°C—Twin tube to 25°C.



RANGE

Complete fitting					Components		Dimensions						
Nominal length		Rating	No. of tubes	Circuit	Catalogue no.	Enclosure Catalogue no.	Gear tray Catalogue no.	Length		Weight (incl. tubes)		Fixing centres	
mm	ft							mm	in	kg	lb	mm	in
1500	5	65W	One	RS	DTB/65	DTB 25	DT 65	1562	61.5	15.7	34.8	1410	55.5
1500	5	65W	Two	RS	DTB/265	DTB 25	DT 265	1562	61.5	18.4	40.7	1410	55.5

Invincible FF food factory fitting



FFD 265

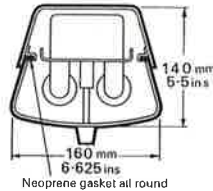
The fitting comprises a heavy gauge sheet steel housing, with flush seam welded ends, degreased and bonderised then given a high quality white plastic finish. A 3.2mm/0.125in thick 040 opal plastic closure with robustly constructed 068 white plastic rebated ends encloses the tubes.

The housing, with closure in position, has a smooth exterior to minimise the collection of moisture or dirt. The plastic closure follows

the shape of the housing metal work which is designed to overlap the diffuser and act as a water-shed. The closure is held in position by three captive nylon screws, and seats firmly on to a neoprene gasket which is cemented to an internal continuous channel inside the housing. The control gear is mounted on the upper side of a reflector gear tray and spring loaded bi-pin lampholders are mounted to the under side of this

tray. Wiring is PVC insulated, colour coded, and terminates in a three-way fused socket which fits a three-pin plug earthed to the inside of the main fitting housing. The control gear tray with gear, wiring and lampholders is removable as a complete unit by loosening three fixing screws, removing the tray and unplugging.

This fitting is for 240V 50Hz. Details of fittings for other supplies are available on application.

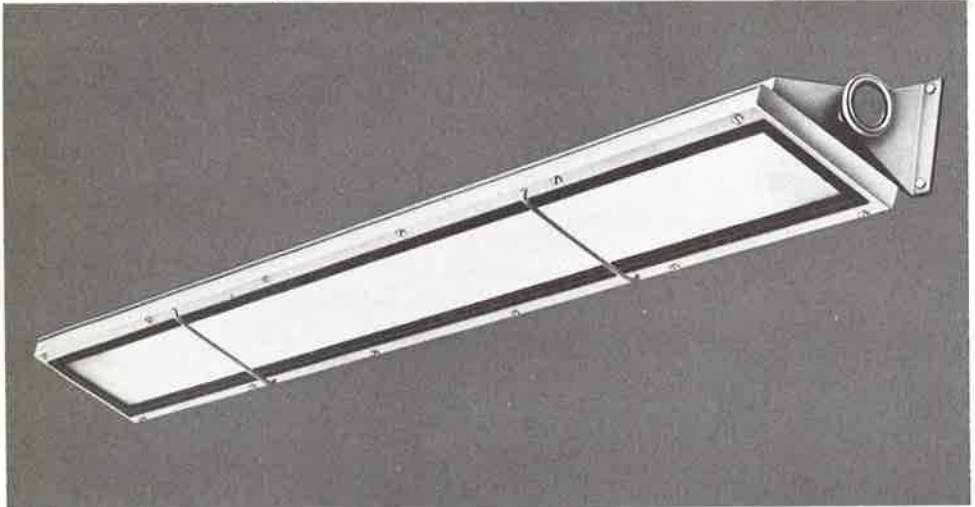


RANGE

Complete fitting				Spare Parts		Dimensions		Weight		Fixing centres		
Nominal length		Rating	No. of tubes	Circuit	Catalogue no.	Enclosure Catalogue no.	Length		(incl. tubes)			
mm	ft						mm	in	kg	lb	mm	in
1500	5	65W	Two	RS	FFD 265	FFD 25	1613	63.5	15.3	33.7	610	24

20mm/0.75in dia. conduit clearance holes are provided for suspension and mains supply entry

Invincible DF Directional floodlight fittings

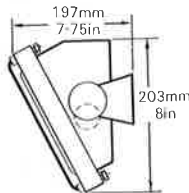


DFO 65

For some floodlighting applications. Not suitable for certified flammable areas. Zinc-coated steel finished grey stoved enamel. Supplied with

two fixing brackets, allowing 100° pivoting. These fittings comply fully with BS.3820:1964 for Class 1, drip-

proof, indoor, normal atmospheres. These fittings are for 240V 50Hz. Details of fitting for other supplies are available on application.



RANGE

Complete fitting				Spare Parts		Dimensions		Weight (incl. tubes)		Fixing centres		
Nominal length		Rating	No. of tubes	Circuit	Catalogue no.	Enclosure Catalogue no.	Length		kg	lb	mm	in
mm	ft						mm	in				
1500	5	65W	One	RS	DFG 65*	DFG 25*	1753	69	17.9	39.6	1718	67.6†
1500	5	65W	Two	RS	DFG 265*	DFG 25*	1753	69	20.2	44.7	1718	67.6†
1500	5	65W	One	RS	DFO 65†	DFO 25†	1753	69	17.9	39.6	1718	67.6†
1500	5	65W	Two	RS	DFO 265†	DFO 25†	1753	69	20.2	44.7	1718	67.6†

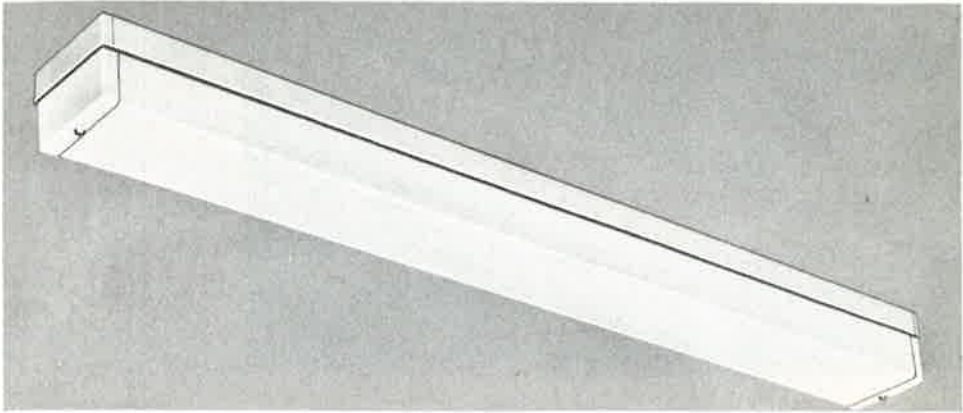
* Clear laminated glass

† Opal laminated glass

‡ Two holes at 106mm/4.25in centres and 9.5mm/0.375in diameter

Section 1:40

Invincible UC Canopy Fitting



UCD 265

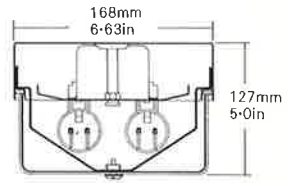
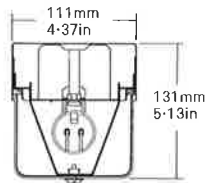
This fitting is primarily designed for under canopy, semi-sheltered locations, such as multi-storey car parks and loading bays. It is also suitable for industrial kitchens and canteens.

The spine is Zinc coated steel, finished in a Stove enamelled grey paint which gives additional protection to the metal work.

The closure and endcaps are manufactured from Opal plastic which gives an overall pleasing visual aspect. The total enclosure is achieved by simply tightening a fixing screw situated in each end cap. Maintenance is facilitated by mounting all gear on an easily removable gear tray.

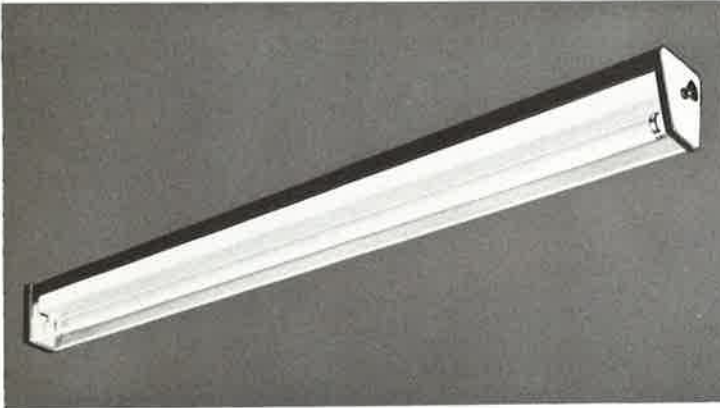
All fittings are suitable for 240V 50 Hz supplies. Other voltages on application.

(This fitting is not designed for use in corrosive atmospheres, e.g. salt laden.)

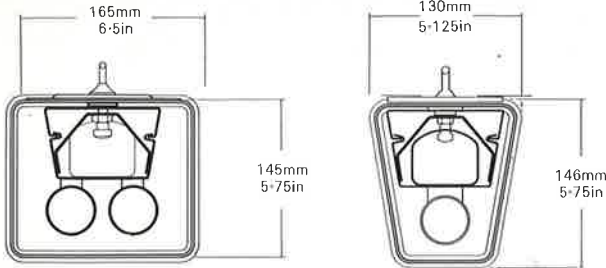


RANGE

Complete fitting			Spare Parts			Dimensions		Weight		Fixing centres	
Nominal length	Rating	No. of tubes	Circuit	Catalogue no.	Diffuser Catalogue no.	Length mm	Length in	kg	lb	mm	in
1500	5	One	RS	UCD.65	UCD.15	1583	62.4	8.8	19.4	610	24
1500	5	Two	RS	UCD.265	UCD.25	1583	62.4	13.1	28.8	610	24



FGSB 65



BASEEFA certified fittings for Division 2 areas—rainproof, dust-tight and suitable for use in most chemically corrosive atmospheres. The thick clear acrylic enclosure has stainless steel gasketed end plates, one of which can be removed to withdraw the gear channel for re-lamping. The channel slides on runners on a tray fixed inside the plastic enclosure and is provided with a nylon safety cord. It is locked in position by a thumb screw. All internal parts are rust-proofed and stove enamelled white.

Suspension and Mains Entry
Standard fittings have two eyebolts

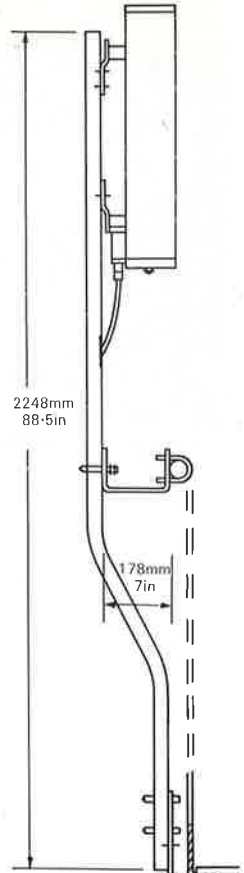
Note: Spacial Mounting Systems are available (see page 1:44)

for suspension and a nylon cable gland suitable for 0-200—0-275 o.d. cables.

Fittings with 'SB' in their catalogue numbers have fixing studs and Division 2 conduit boxes, with two 20mm entries, one plug being removable.

The fittings can be mounted horizontally or vertically and comply with BS.3820:1964 for categories Class 1 rainproof, dust-tight, outdoors and chemically corrosive. All fittings are suitable for 240W 50Hz supply.

Made to BS.4533-2.1.
BASEEFA certificate No. 72064.



See Note

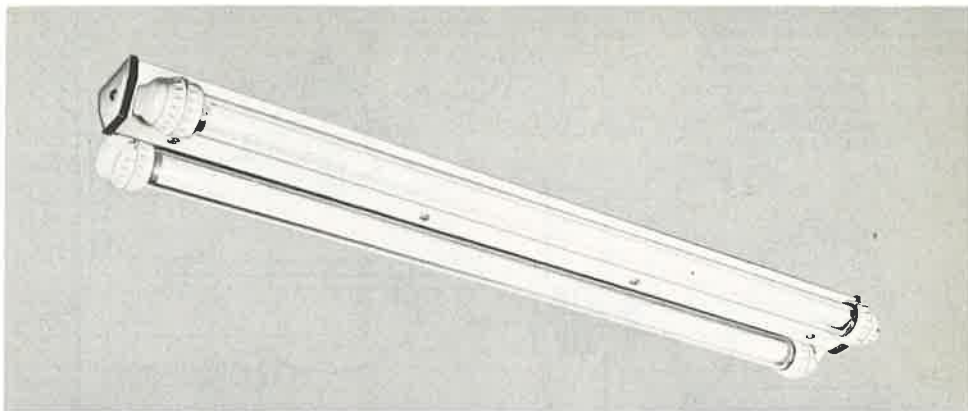
CATALOGUE NOMENCLATURE
 'A'—cable gland entry
 'B'—Div 2 box 2 x 3 in ET
 'E'—eye bolt mounting
 'S'—stud mounting

RANGE

Complete fitting					Dimensions					
Nominal length					Length		Approx. weight		Fixing centres	
mm	ft	Rating	Circuit	Catalogue no.	mm	in	kg	lb	mm	in
600	2	20W Single	QS	FGSB20	686	27	6.35	14	457	18
600	2	20W Twin	QS	FGSB220	686	27	7.25	16	457	18
600	2	20W Ttwin	QS	FGEA 220	686	27	7.25	16	457	18
1500	5	65W Single	RS	FGSB65	1595	62.8	12.7	28	610	24
1500	5	65W Twin	RS	FGSB265	1595	62.8	17.25	38	610	24
1500	5	*65W Single	RS	FGEA65	1595	62.8	12.7	28	610	24
1500	5	65W Ttwin	RS	FGEA265	1595	62.8	17.25	38	610	24

*Suspension and mains entry

Note: Change of Catalogue numbers with issue of BASEEFA certificate



FRL 265

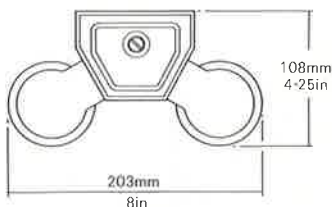
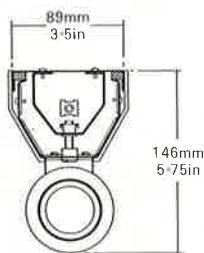
BASEEFA certified fittings for Division 2 areas—rainproof, dust-tight and for use in most chemically corrosive atmospheres. A sheet steel gear tray and ceiling plate are fixed together by four stainless steel captive screws and the joints sealed by urethane gaskets. Neoprene end-caps with PVC-coated pressure plates seal the

ends. Tubes are enclosed in 51 mm/2in diameter clear acrylic cylinders sealed to the two-pin lampholders by threaded rings and washers to allow relamping without disturbing the seals on the main channel. All visible surfaces of the metal work are PVC coated and of stainless steel.

All visible surfaces of the metal work are PVC coated and of stainless steel.

Mains entry is by a 20mm gland. Two 20mm holes are available for suspension and sealed by nuts, bolts and washers. All fittings are suitable for 240V 50Hz supplies. Other voltages on application.

Made to BS.4533-2.1.
BASEEFA certificate No. 72036.



RANGE

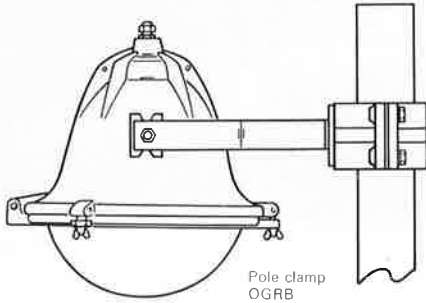
Complete fitting				Dimensions						
Nominal length				Length		Approx. weight		Fixing centres		
mm	ft	Rating	Circuit	mm	in	kg	lb	mm	in	
600	2	20W Single	QS	FRL 20	661	26	4.3	9.5	457	18
600	2	20W Twin	QS	FRL 220	661	26	6.35	14	457	18
1200	4	40W Single	QS	FRL 40	1271	50	6	13.25	610	24
1200	4	40W Twin	QS	FRL 240	1271	50	8.28	18.25	610	24
1500	5	65W Single	RS	FRL 65	1576	62	8.15	18	610	24
1500	5	65W Twin	RS	FRL 265	1576	62	11.6	25.5	610	24

Note: Change of Catalogue numbers with issue of BASEEFA certificate

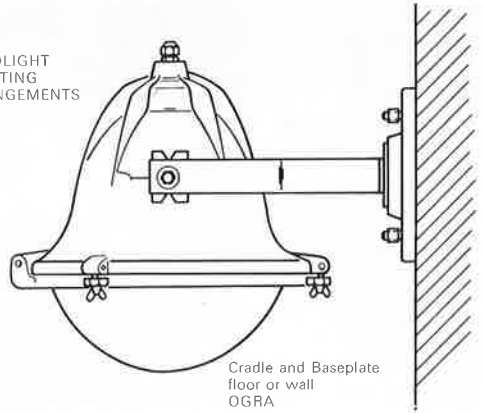
Division 2 pole mounting systems

Div 2 Pole mounting systems

A selection of the most popular mounting systems are illustrated. Systems are available on request to customers specifications and are suitable for a wide selection of fittings from the Invincible Range. Pole systems are manufactured from 42mm o.d pipe and are galvanised after cutting.

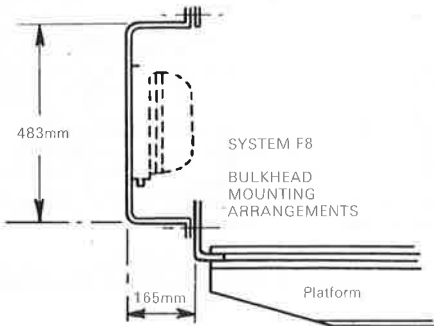
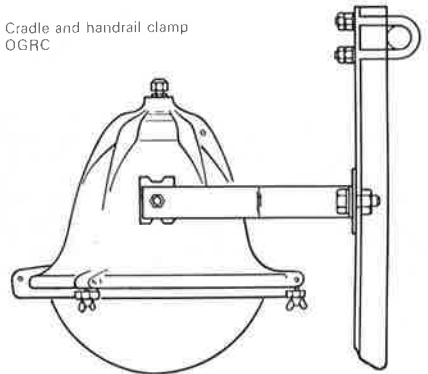


FLOODLIGHT MOUNTING ARRANGEMENTS



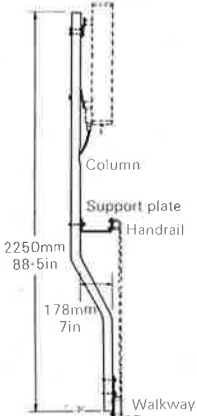
Cradle and Baseplate floor or wall OGRA

Cradle and handrail clamp OGRC

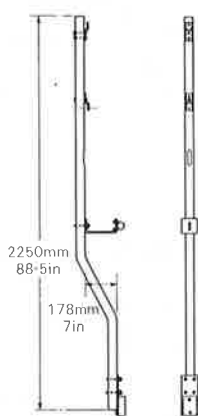


SYSTEM F8
BULKHEAD MOUNTING ARRANGEMENTS

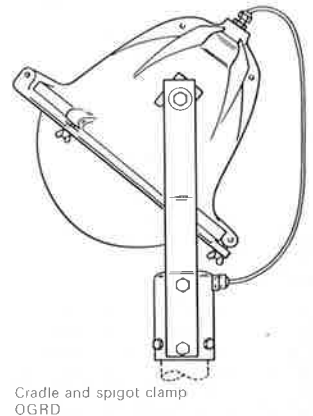
TYPICAL MOUNTING ARRANGEMENT



SYSTEM F1



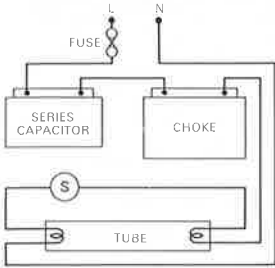
SYSTEM F5



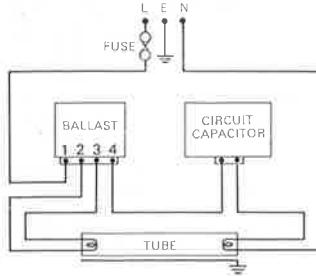
Cradle and spigot clamp OGRD

Invincible range accessories and control gear

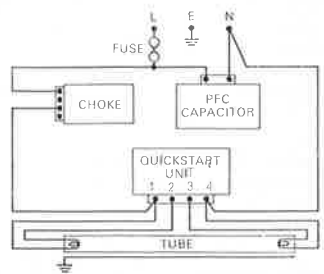
Leading power factor starter switch circuit, with cold temperature use series capacitor, for 1500mm/5ft 80W tube



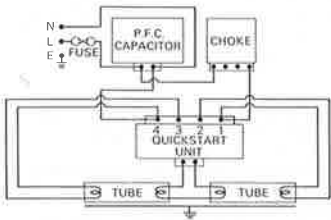
Semi-resonant start circuit for 1800mm/6ft 85W, 1500mm/5ft 65W and 1200mm/4ft 50W tube with series circuit capacitor



Quickstart circuit with PFC capacitor for 600mm/2ft 20W and 600mm/2ft 40W single tube



Quickstart circuit with PFC capacitor for 600mm/2ft 20W and 600mm/2ft 40W twin tube



	Lampholder	Fuse holder	Fuse	Fused Terminal Block	Terminal Block	Quickstart Ballast Choke	Capacitor
LUD Q1020	G B1548/B	G T1310/X	G T1299	—	G T1281/3	G QS/40, G CU/20	G C2204
LUD Q2020	G B1548/B	G T1310/X	G T1299	—	G T1281/4 G T1281/2	G QS/220, G CU/40	G C2204
LUD R1065	G B1548/B	G T1310	G T1342	—	G T1281/3	G BU/65	G C2220
LUD R2065	G B1548/A	—	G T1342	G T1265	—	G BI/65	G C2220
LV R1065	G B1573	—	G T1342	G T1265	—	G BI/65	G C2220
LV R2065	G B1573	—	G T1342	G T1265	—	G BI/65	G C2220
LW R1065	G B1550	G T1310/X	G T1342	—	G T1316/3 G T1317/3	G BU/65	G C2220
LW R2065	G B1550	G T1310/X	G T1342	—	G T1316/3 G T1317/3	G BU/65	G C2220
LW S1080*	G B1551	—	G T1299	G T1265	G T1281/2	G E69229.5	G C2167
FP 1240	G B1573	G T1310/X	G T1299	—	—	G CI/240, G QS/80	G C2222
FP 2240	G B1573	G T1310/X	G T1299	—	G T1281/1	G CI/2240, G QS/2240	G C2222
FP 1040	G B1573	G T1310/X	G T1299	—	G T1281/1	G BU/40	G C2273
FP 2040	G B1573	G T1310/X	G T1299	—	G T1281/1	G BU/40	G C2273
FP 1065	G B1573	G T1310/X	G T1342	—	G T1281/1	G BI/65	G C2220
FP 2065	G B1573	G T1310/X	G T1342	—	G T1281/1	G BI/65	G C2220
FP 1685	G B1573	G T1310/X	G T1342	—	G T1281/1	G BI/685	G C2220
FP 2685	G B1573	G T1310/X	G T1342	—	G T1281/1	G BI/685	G C2220
DTB/65	G B1573	G T1304	G T1342	—	G T1316/2	G BU/65	G C2220
DTB/265	G B1573	G T1304	G T1342	—	G T1316/2	G BU/65	G C2220
FFD/265	G B1548/B	—	G T1342	G A5079	—	G BI/65	G C2220
DFG 65	G B1512	—	G T1342	G T1265	—	G BI/65	G C2220
DFO 65	G B1512	—	G T1342	G T1265	—	G BI/65	G C2220
DFG 265	G B1512	—	G T1342	G T1265	—	G BI/65	G C2220
DFO 265	G B1512	—	G T1342	G T1265	—	G BI/65	G C2220
UCD 65	G B1548/B	—	G T1342	G A5079	—	G BI/65	G C2220
UCD 265	G B1548/B	—	G T1342	G A5079	—	G BI/65	G C2220

LW.S1080 has starter switch, 155/500, and socket, G A50191X included in accessories

Atlantic range

INDEX

- 1:47 Atlantic features
 - 1:48 Atlantic basic battens
 - 1:49 Atlantic basic battens
 - 1:50 Atlantic A4C and A4D prismatic and opal diffusers*
 - 1:51 Atlantic A4E two-tone diffuser
 - 1:52 Atlantic A4FA aluminium frame (plain trim)
 - 1:53 Atlantic A4FH aluminium frame (black hide effect trim)
 - 1:54 Atlantic A4FT aluminium frame (timber effect trim)
 - 1:55 Atlantic A4O and A4P broad opal and prismatic diffusers*
 - 1:56 Atlantic A4V vitreous enamel reflector
 - 1:57 Atlantic A4W wall washer
 - 1:58 Atlantic A4X closed-end, slotted-top reflector.
 - 1:59 Atlantic A4Y angle reflector
 - 1:60 Atlantic A4Z open-ended, slotted-top reflector
 - 1:61 Atlantic A4ZB broad open-ended, slotted-top reflector and A4Z four-tube reflector
 - 1:62 Atlantic accessories and replacement control gear
- ***Atlas Amalgam tubes** offer substantial advantages in the Atlantic range of fluorescent fittings by increasing the Light Output Ratio by between 11% and 22%. Suitable fittings are shown below.
- | Catalogue no. | Description |
|---------------|---------------------------|
| A4C/A/2685 | Prismatic controller |
| A4D/A/2685 | Opal diffuser |
| A4O/B2685 | Wide opal diffuser |
| A4P/B2685 | Wide prismatic controller |

FEATURES

1. **Battens**: the cross section gives an exceptionally strong batten with very clean lines. The 5mm/0.29in ceiling stand-off reduces the effect of ceiling unevenness against the straight batten edge. The impact resistant dark blue* plastic end plates are attached at the factory to give a smart modern appearance to the fitting.
*White ends are available as optional extras
2. **Circuits**: the latest polyester resin filled ballast units are employed in switchless start circuits (no starter switch – reduces maintenance). Capacitors are of standard high quality. Wiring is of the latest metric solid conductor, single core type, insulated with high temperature PVC connected to the components by either push-in connector or pin connectors. The side entry fuse is accessible without touching any part of the fitting or most attachments.
3. **Lampholders**: spring loaded lampholders enable either-end relamping of the fitting. They are mounted on bridge pieces which can be secured to the batten without the use of tools.
4. **Installation**: fittings are suitable for conduit, rod, chain or conduit box mounting (unless detailed otherwise) at normal suspension centres. Alternative mains entry is provided in the centre back of the battens or by a cut-out in each end plate. A heavy duty, large capacity, terminal block is capable of accepting looped 2.5mm² cables (2 x 7/-029in).
5. **Finish**: high quality acrylic enamel white finish is applied to all spines and reflectors. All diffusers and prismatic controllers are of top quality light stabilised plastic.
6. **Attachments**: two screws operating in sliding cage nuts secure the channel covers and reflectors to the spine through keyhole slots. Most commercial attachments then simply hook or spring on to channel covers or special brackets.

Catalogue numbers

The catalogue number shows how the fitting is made up and how many packs are used for each complete fitting. Oblique lines indicate separate packs.

Examples:

A4X/2685 is a twin 1800mm/6ft 85W closed-end reflector fitting made up from:

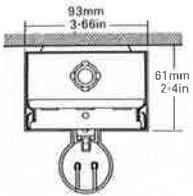
- A4.2685: Twin 1800mm/6ft 85W batten *one pack*
- A4X.26: Metal 1800mm/6ft closed-end slotted reflector *one pack*

A4FAC/B2685 is a twin 1800mm/6ft 85W plain aluminium frame fitting with a prismatic controller insert. It is made up from:

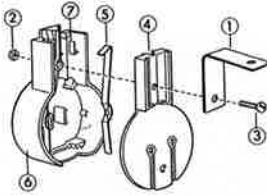
- A4.B2685: Twin 1800mm/6ft 85W batten (with broadly spaced lampholder) *one pack*
- A4FAC.26: A4FA.26—Plain aluminium frame
A4FC.26—Prismatic controller
A4.4691—Broad channel cover } *all one pack*

First and Second attachment numbers are shown only to indicate catalogue numbers of cartons to expect per fitting, and catalogue numbers for replacement purposes.

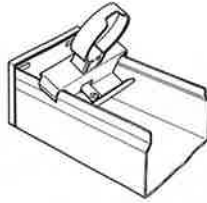
Atlantic features



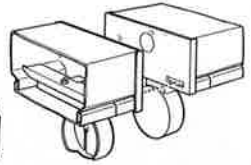
Cross section



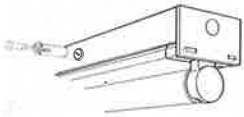
Lampholders
 1. Spring bracket
 2. Full nut
 3. Panhead fixing screw
 4. Cover moulding
 5. Terminal contact
 6. Body moulding
 7. Contact backing plate



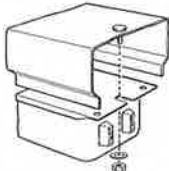
Lampholder assembly



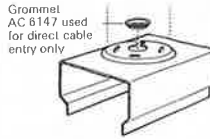
Interlocking plastic end caps



Side entry fuse

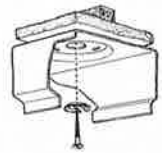


Welded-in screw studs

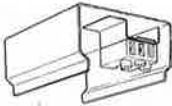


Grommet AC 6147 used for direct cable entry only

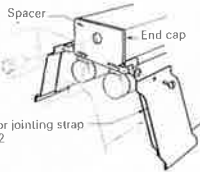
Conduit suspension



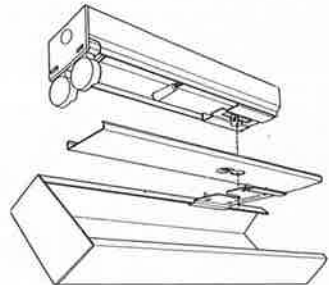
Slotted washers



Mains terminal block



Jointing strap assembly

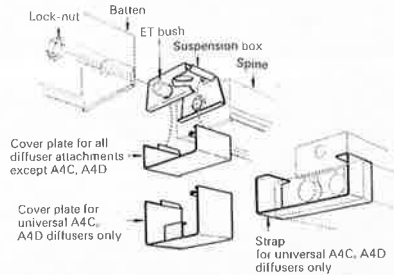


Fast positive attachment fixing

A4.4662 Reflector jointing strap: this attachment is for use when open-ended metal reflectors are being continuously mounted. It closes the gap between adjacent reflectors and ensures perfect alignment when battens are rigidly mounted.

A4.4660: This spacer assembly is available when fixed-end diffuser A4C and A4D fittings are required to be mounted continuously (space between battens: 52mm/2-05in).

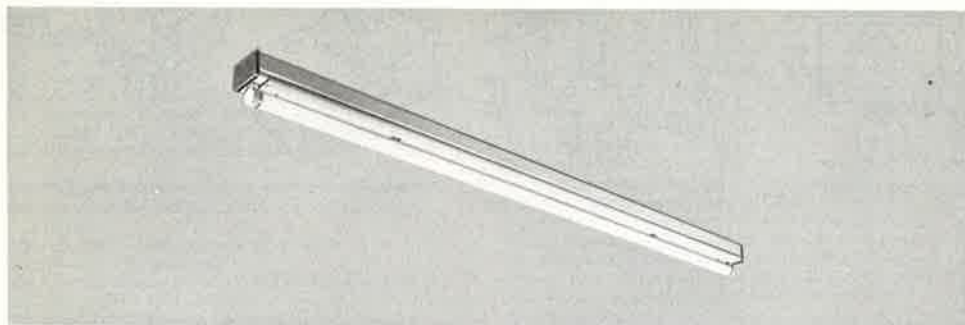
A4.4661: This spacer is available when continuous mounting of diffusers (except A4C and A4D) or closed-end reflectors is required but has no facility for the alignment of adjacent attachments which should be carried out by a manual operation on installation (space between battens: 52mm/2-05in).



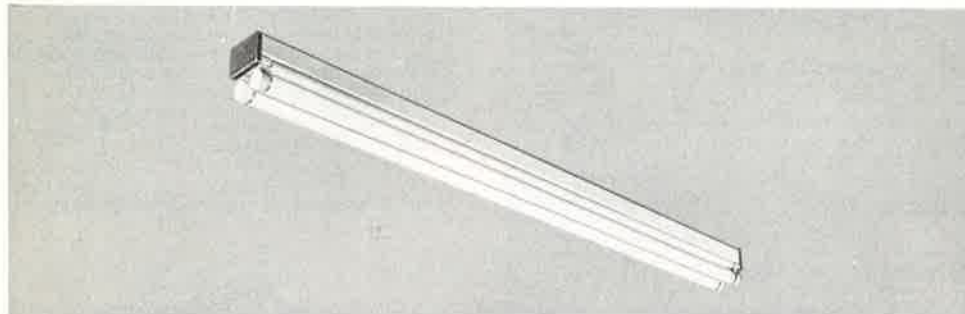
Continuous mounting jointing piece

*These items are provided with a suspension hole and small conduit box cluster to help minimize the number of suspension points required (except on 2400mm/8ft and four-tube fittings).
 A4 GC/A4.GD/A4.FM attachments are not suitable for continuous mounting with the above spacers*

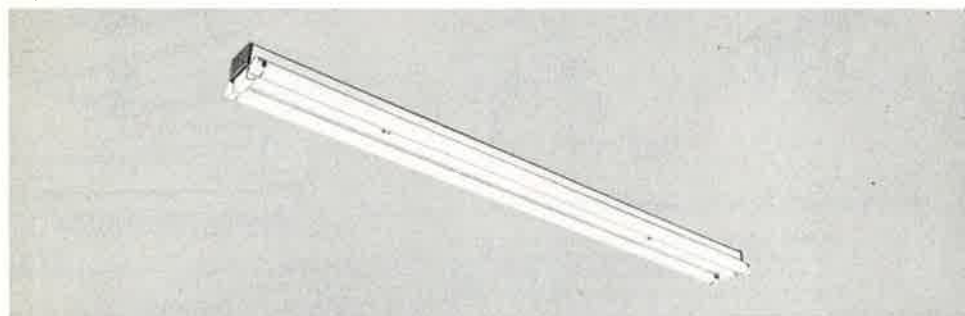
Atlantic basic battens



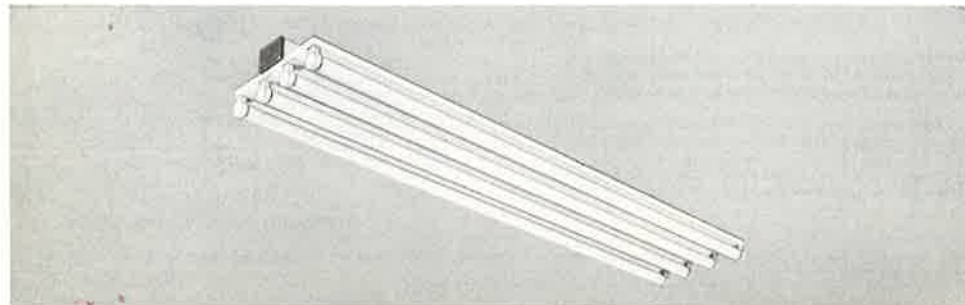
A4A/685



A4A/2685



A4A/B2685



A4B/4685

Atlantic basic battens

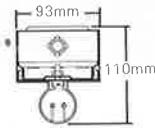
The basic spine plus the series "A" channel cover produces a range of single and twin tube batten fittings in 8ft, 6ft, 5ft, and 4ft lengths.

The 4-tube spines plus the series "B" channel cover produce a range of 4-tube batten fittings which are eminently suitable for use with suspended luminous ceilings.

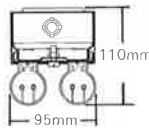
These general-purpose fittings can be used anywhere where an unshielded fluorescent tube is acceptable.

All fittings are suitable for use on 240V 50Hz supplies. Other voltages on application.

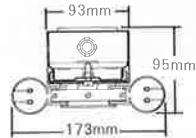
The "A" channel cover may also be used with the twin "B" spine.



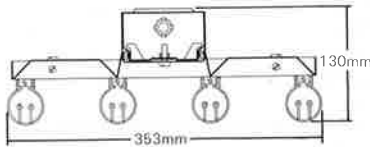
A4A (Single)



A4A (Narrow Twin)



A4A (Broad Twin)

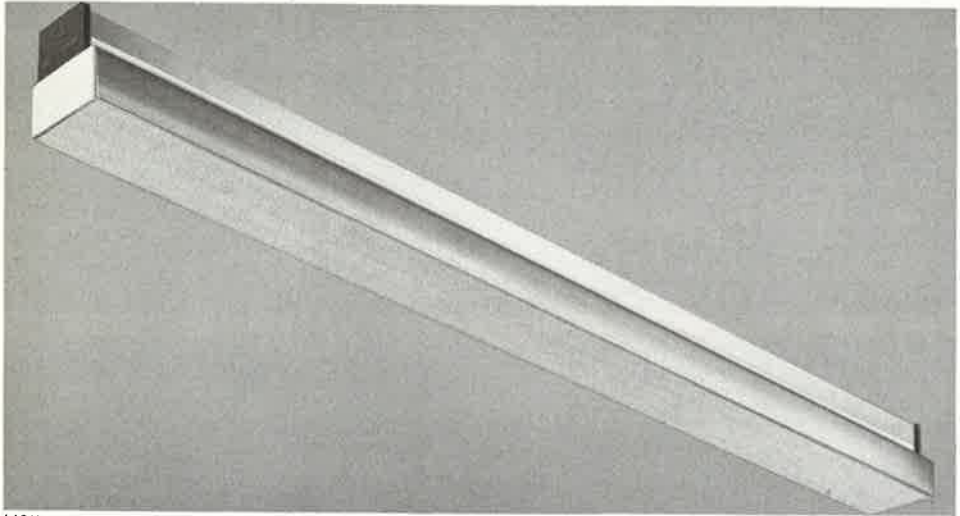


A4B (4-tube side cover reflectors)

RANGE:

Nominal Tube Length	Component			Catalogue no.				Dimensions		Weight		
	mm	ft	Rating	Circuit	Fitting Catalogue no.	1st Attachment Catalogue no.	2nd Attachment Catalogue no.	Spine Catalogue no.	o/a Length mm	Length in	kg	lb
1200	4	40W	SRS	A4A/40	A4A.24	—	—	A4.40	1241	48-8	4.4	9.7
1200	4	2x40W	SRS	A4A/240	A4A.24	—	—	A4.240	1241	48-8	6.2	13.7
1500	5	65W	SRS	A4A/65	A4A.25	—	—	A4.65	1542	60-7	5.4	11.8
1500	5	2x65W	SRS	A4A/265	A4A.25	—	—	A4.265	1542	60-7	7.5	16.5
1500	5	2x65W	SRS	A4A/B265	A4A.25	—	—	A4.B265	1542	60-7	7.7	17.1
1800	6	85W	SRS	A4A/685	A4A.26	—	—	A4.685	1805	71-1	5.6	12.4
1800	6	2x85W	SRS	A4A/2685	A4A.26	—	—	A4.2685	1805	71-1	8.1	17.5
1800	6	2x85W	SRS	A4A/B2685	A4A.26	—	—	A4.B2685	1805	71-1	8.2	18.0
1800	6	4x85W	SRS	A4B/4685	A4B.46	—	—	A4.4685	1805	71-1	20.4	45
2400	8	85W	OS	A4A/885	A4A.28	—	—	A4.885	2416	95-1	8.5	18.1
2400	8	2x85W	OS	A4A/Q2885	A4A.28	—	—	A4.Q2885	2416	95-1	13.7	29.5
2400	8	2x85W	OS	A4A/B2885	A4A.28	—	—	A4.B2885	2416	95-1	13.7	29.5
2400	8	4x85W	OS	A4B/O4885	A4B.48	—	—	A4.O4885	2416	95-1	26.0	58.0
2400	8	1x125W	OS	A4A/125	A4A.28	—	—	A4.125	2416	95-1	9.7	21.4
2400	8	2x125W	OS	A4A/2125	A4A.28	—	—	A4.2125	2416	95-1	14.2	31.1

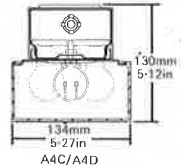
Atlantic A4C and A4D prismatic and opal diffuser



A4C/A/2685

A general purpose prismatic controller A4C and opal diffuser A4D are extruded from clear and opal plastic respectively. The controller has clear glare controlling linear prisms on each side and a fine prismatic pattern embossed in the base. The diffuser has smooth opal sides. Injection moulded white end plates are permanently attached and both the controller and diffuser are suitable for use with either single or

twin (close space) tubes. Brackets are supplied with the attachment to secure it to the batten; these are fixed by the channel cover fixing screws on the batten. Standard fittings are for 230/240V 50Hz. Details of fittings for other supplies are available on application.



A4C Universal prismatic controller
A4D Universal opal diffuser

RANGE

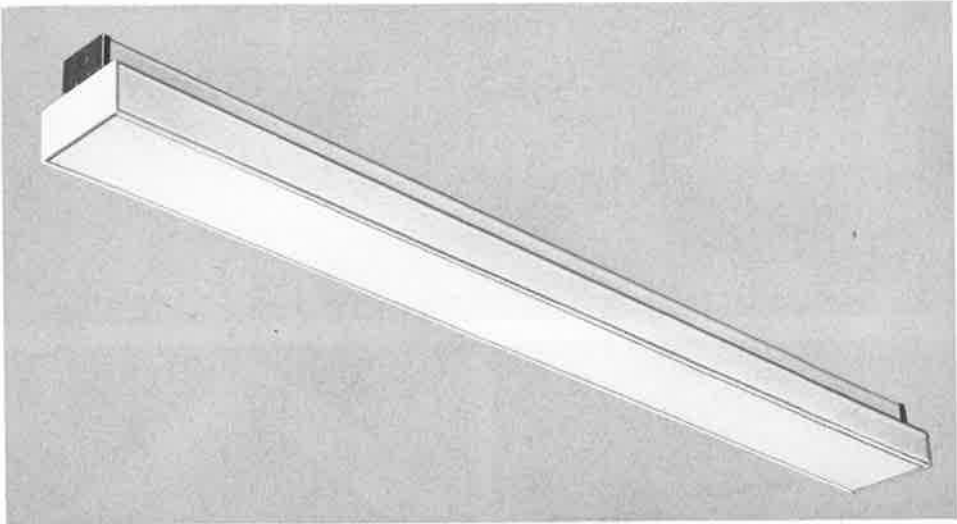
Prismatic Controller

Complete fitting				Components				Dimensions		Approx. weight	
Nominal tube length				1st Attachment	2nd Attachment	Batten	Overall length	Approx. weight	(Incl. tubes)		
mm	ft.	Rating	Circuit	Catalogue no.	Catalogue no.	Catalogue no.					
1200	4	40W	SRS	A4C/A/40	A4C.24	A4A.24	A4.40	1254	49-4	5-3	11-6
1200	4	2 x 40W	SRS	A4C/A/240	A4C.24	A4A.24	A4.240	1254	49-4	7-1	15-6
1500	5	65W	SRS	A4C/A/65	A4C.25	A4A.25	A4.65	1554	61-2	6-4	14-1
1500	5	2 x 65W	SRS	A4C/A/265	A4C.25	A4A.25	A4.265	1554	61-2	8-5	18-8
1800	6	85W	SRS	A4C/A/685	A4C.26	A4A.26	A4.685	1817	71-5	6-9	15-1
1800	6	2 x 85W	SRS	A4C/A/2685	A4C.26	A4A.26	A4.2685	1817	71-5	9-1	20
2400	8	85W	QS	A4C/A/885	A4C.28	A4A.28	A4.885	2429	95-6	10-1	22-3
2400	8	2 x 85W	QS	A4C/A/Q2885	A4C.28	A4A.28	A4.Q2885	2429	95-6	15-3	33-7
2400	8	125W	QS	A4C/A/125	A4C.28	A4A.28	A4.125	2429	95-6	11-4	25
2400	8	2 x 125W	QS	A4C/A/2125	A4C.28	A4A.28	A4.2125	2429	95-6	15-7	34-7

Opal Diffuser

1200	4	40W	SRS	A4D/A/40	A4D.24	A4A.24	A4.40	1254	49-4	5-3	11-6
1200	4	2 x 40W	SRS	A4D/A/240	A4D.24	A4A.24	A4.240	1254	49-4	7-1	15-6
1500	5	65W	SRS	A4D/A/65	A4D.25	A4A.25	A4.65	1554	61-2	6-4	14-1
1500	5	2 x 65W	SRS	A4D/A/265	A4D.25	A4A.25	A4.265	1554	61-2	8-5	18-8
1800	6	85W	SRS	A4D/A/685	A4D.26	A4A.26	A4.685	1817	71-5	6-9	15-1
1800	6	2 x 85W	SRS	A4D/A/2685	A4D.26	A4A.26	A4.2685	1817	71-5	9-1	20
2400	8	85W	QS	A4D/A/885	A4D.28	A4A.28	A4.885	2429	95-6	10-1	22-3
2400	8	2 x 85W	QS	A4D/A/Q2885	A4D.28	A4A.28	A4.Q2885	2429	95-6	15-3	33-7
2400	8	125W	QS	A4D/A/125	A4D.28	A4A.28	A4.125	2429	95-6	11-4	25
2400	8	2 x 125W	QS	A4D/A/2125	A4D.28	A4A.28	A4.2125	2429	95-6	15-7	34-7

Atlantic A4E two-tone diffuser



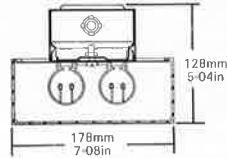
A4E/A/2685

This compact two-tone extruded plastic controller gives good light control. The sides are in opal to give adequate shielding and freedom from glare, while the base is embossed with a clear prismatic pattern for high efficiency.

The controller has permanently attached injection moulded ends and is supported by brackets, supplied with it, which are secured to the channel cover fixing screws onto the batten. For use with twin (close spaced) tubes (or single tube if required).

Standard fittings are for 230/240V 50Hz.

Details of fittings for other supplies are available on application.

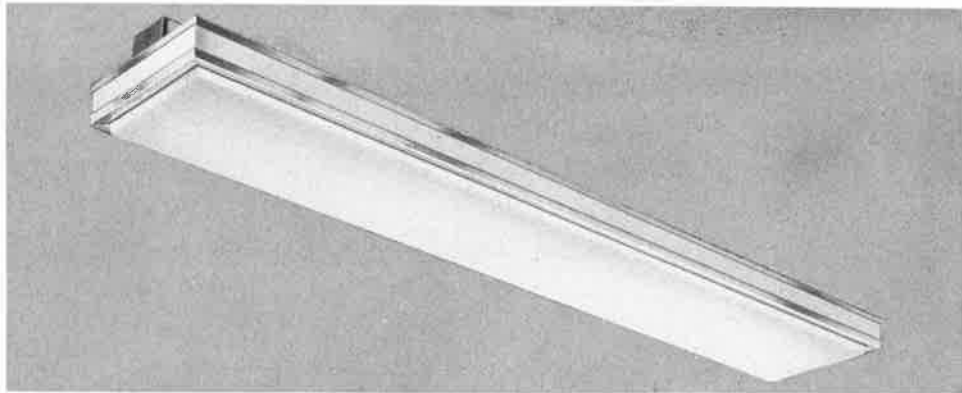


A4E Two-tone diffuser

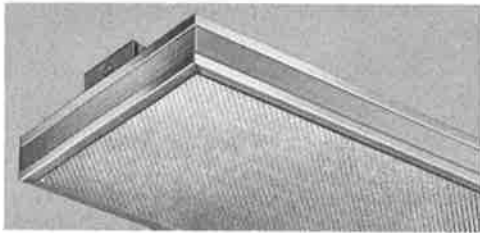
RANGE

Complete fitting					Components			Dimensions		Approx. weight (incl. tubes)	
Nominal tube length		Rating	Circuit	Catalogue no.	1st Attachment	2nd Attachment	Batten	Overall length			
mm	ft.				Catalogue no.	Catalogue no.	Catalogue no.	Catalogue no.	mm	in	kg	lb
1200	4	2 x 40W	SRS	A4E/A/240	A4E.24	A4A.24	A4.240	1265	49-8	7-4	16-2
1500	5	2 x 65W	SRS	A4E/A/265	A4E.25	A4A.25	A4.265	1565	61-6	8-9	19-6
1800	6	2 x 85W	SRS	A4E/A/2685	A4E.26	A4A.26	A4.2685	1829	72	9-4	20-7
2400	8	2 x 85W	OS	A4E/A/Q2885	A4E.28	A4A.28	A4.Q2885	2440	96	15-6	34-4
2400	8	2 x 125W	OS	A4E/A/2125	A4E.28	A4A.28	A4.2125	2440	96	16	35-4

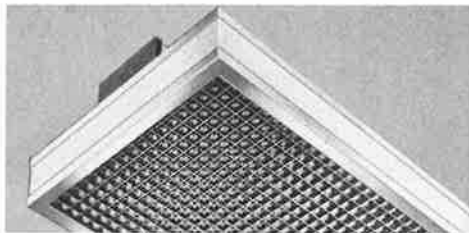
Atlantic A4FA aluminium frame plain trim



A4FAD/B2685



A4FAC/B2685



A4FAL/B2685

The satin anodized extruded aluminium frame surrounding the fitting provides precise detailing and a crisp appearance to the fitting.

Into the base of this aluminium frame can be fitted either a metalised louver, (L), opal dish (D) or prismatic controller (C) to provide the appearance or light control required.

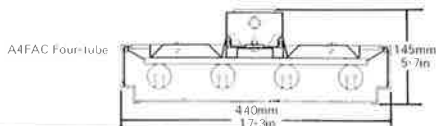
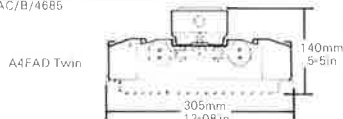
The attachment hooks onto a standard broad channel cover, using special clips provided, and allows a small percentage of upward light.

A larger version of this aluminium frame attachment is available, for use with four-tube battens, with a dropped prismatic panel framed in opal Z section extruded polystyrene.

Standard fittings are for 230/240V 50Hz. Details of fittings for other supplies are available on application.



A4FAC/B/4685

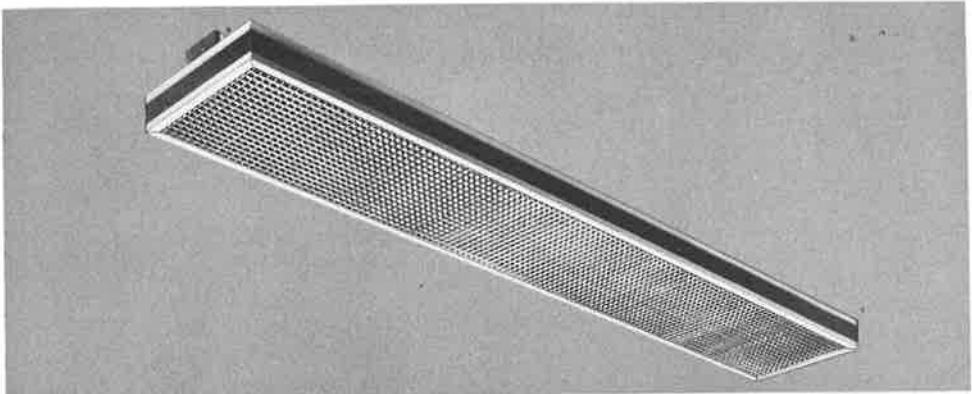


RANGE

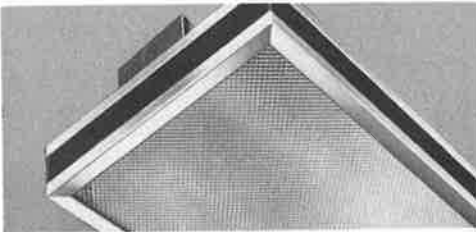
Complete fitting				Components				Dimensions			
Nominal tube length		Rating	Circuit	Catalogue no.	1st Attachment Catalogue no.	2nd Attachment Catalogue no.	Batten Catalogue no.	Overall length		Approx. weight (incl. tubes)	
mm	ft.							mm	in	kg	lb
1800	6	2 x 85W	SRS	A4FAC/B2685	A4FAC.26	*	A4.B2685	1829	72	12.6	27.9
1800	6	4 x 85W	SRS	A4FAC/B/4685	A4FAC.46	A4B.46	A4.4685	1845	72.6	26.3	58
2400	8	2 x 85W	QS	A4FAC/B2885	A4FAC.28	*	A4.B2885	2439	96	19.3	42.5
2400	8	4 x 85W	QS	A4FAC/B/Q4885	A4FAC.48	A4B.48	A4.Q4885	2457	96.7	33.1	73
1800	6	2 x 85W	SRS	A4FAD/B2685	A4FAD.26	*	A4.B2685	1829	72	12.8	26.1
2400	8	2 x 85W	QS	A4FAD/B2885	A4FAD.28	*	A4.B2885	2439	96	19.3	42.5
1800	6	2 x 85W	SRS	A4FAL/B2685	A4FAL.26	*	A4.B2685	1829	72	13.2	29.2
2400	8	2 x 85W	QS	A4FAL/B2885	A4FAL.28	*	A4.B2885	2439	96	20	44.2

*Channel cover included with 1st attachment.
Overall depth of Twin FAC and FAL is 122mm/4.8in

Atlantic A4FH aluminium frame, black hide effect trim



A4FHL/B2685



A4FHC/B2685



A4FHD/B2685

The satin anodized extruded aluminium frame surrounding the fitting has a simulated black hide trim and provides precise detailing and a crisp appearance to the fitting.

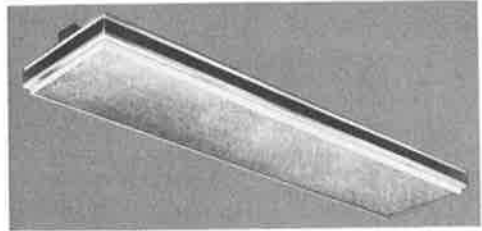
Into the base of the aluminium frame can be fitted either a metalised louver (L), opal dish (D) or prismatic controller (C) as required.

The attachment hooks onto a standard broad channel cover, using special clips provided, and allows a small percentage of upward light.

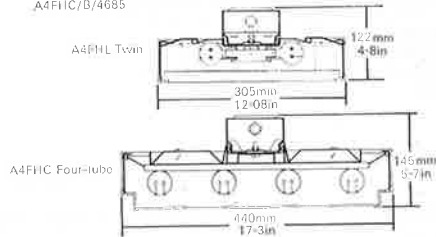
A larger version of this aluminium frame attachment is available, for use with four-tube battens, with a dropped prismatic panel framed in opal Z section extruded polystyrene.

Standard fittings are for 230/240V 50Hz.

Details of fittings for other supplies are available on application.



A4FHC/B/4685



A4FHL Twin

A4FHC Four-tube

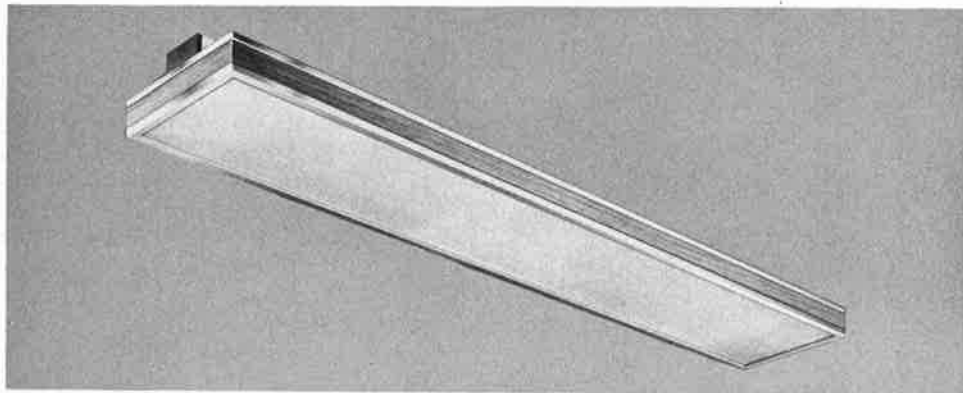
RANGE

Complete fitting				Components			Dimensions		Approx. weight (incl. tubes)		
Nominal tube length	Rating	Circuit	Catalogue no.	1st Attachment Catalogue no.	2nd Attachment Catalogue no.	Batten Catalogue no.	Overall length				
mm	ft.						mm	in	kg	lb	
1800	6	2 x 85W	SRS	A4FHC/B/2685	A4FHC.26	*	A4.B2685	1829	72	12.6	27.9
1800	6	4 x 85W	SRS	A4FHC/B/4685	A4FHC.46	A4B.46	A4.4685	1845	72.6	26.3	58
2400	8	2 x 85W	QS	A4FHC/B/2885	A4FHC.28	*	A4.B2885	2439	96	19.3	42.5
2400	8	2 x 85W	QS	A4FHC/B/Q4885	A4FHC.48	A4B.48	A4.BQ4885	2457	96.7	33.1	73
1800	6	2 x 85W	SRS	A4FHD/B2685	A4FHD.26	*	A4.B2685	1829	72	12.8	28.1
2400	8	2 x 85W	QS	A4FHD/B2885	A4FHD.28	*	A4.B2885	2439	96	19.3	42.5
1800	6	2 x 85W	SRS	A4FHL/B2685	A4FHL.26	*	A4.B2685	1829	72	13.2	29.2
2400	8	2 x 85W	QS	A4FHL/B2885	A4FHL.28	*	A4.B2885	2439	96	20	44.2

Overall depth of Twin FHC is 122mm/4.8in and of FHD is 140mm/5.5in

*Channel cover included with 1st attachment

Atlantic A4FT aluminium frame timber effect trim



A4FTC/B2685



A4FTL/B2685



A4FTD/B2685

The anodized extruded aluminium frame surrounding the fitting has a simulated timber trim. A metalised louver (L), opal dish (D) or prismatic controller (C) can be fitted to provide the final appearance or light control required.

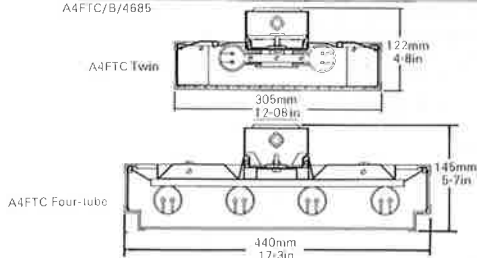
The attachment hooks onto a standard broad channel cover, using special clips provided, and allows a small percentage of upward light.

A larger version of this aluminium frame attachment is available, for use with four-tube battens, with a dropped prismatic panel framed in opal Z section extruded polystyrene.

Standard fittings are for 230/240V 50Hz. Details of fittings for other supplies are available on application.



A4FTC/B/4685



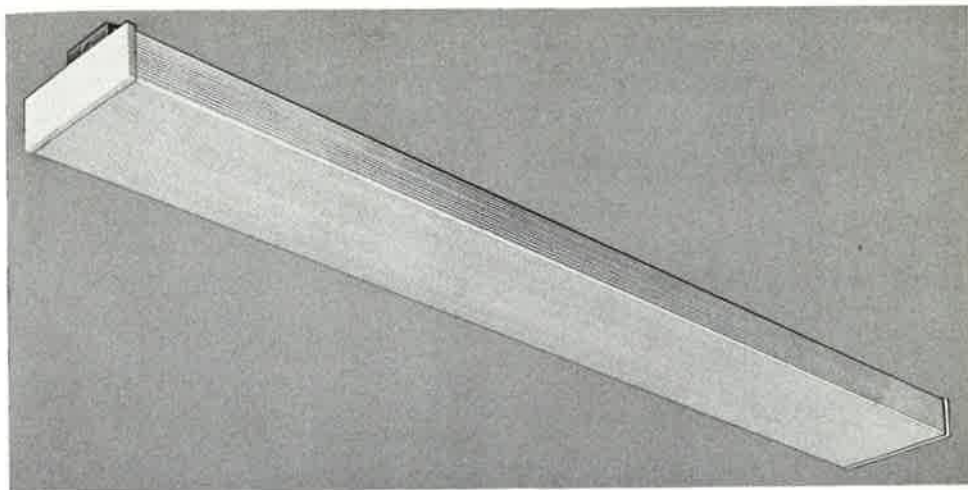
RANGE

Complete fitting				Components				Dimensions		Approx. weight	
Nominal tube length											
mm	ft	Rating	Circuit	Catalogue no.	1st Attachment Catalogue no.	2nd Attachment Catalogue no.	Batten Catalogue no.	Overall length mm	in	kg	lb
1800	6	2 x 85W	SRS	A4FTC/B2685	A4FTC.26	*	A4.B2685	1829	72	12.6	27.9
1800	6	4 x 85W	SRS	A4FTC/B/4685	A4FTC.46	A4B.46	A4.4685	1845	72.6	26.3	58
2400	8	2 x 85W	QS	A4FTC/B2885	A4FTC.28	*	A4.B2885	2439	96	19.3	42.5
2400	8	4 x 85W	QS	A4FTC/B/Q4885	A4FTC.48	A4B.48	A4.Q4885	2457	96.7	33.1	73
1800	6	2 x 85W	SRS	A4FTD/B2685	A4FTD.26	*	A4.B2685	1829	72	12.8	28.1
2400	8	2 x 85W	QS	A4FTD/B2885	A4FTD.28	*	A4.B2885	2439	96	19.3	42.5
1800	6	2 x 85W	SRS	A4FTL/B2685	A4FTL.26	*	A4.B2685	1829	72	13.2	29.2
2400	8	2 x 85W	QS	A4FTL/B2885	A4FTL.28	*	A4.B2885	2439	96	20	44.2

*Channel cover included with 1st attachment

Overall depth of Twin FTD is 140mm/5.5in and of FTL is 122mm/4.8in

Atlantic A40 and A4P broad opal and prismatic diffusers

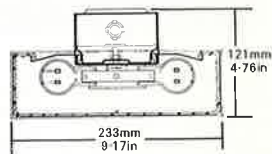


A4P/B2685

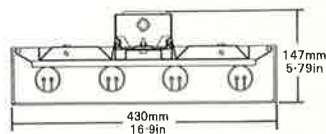
This broad prismatic controller and opal diffuser have been specifically designed for use with twin (broad spaced) tubes and the configuration of batten, lamp position and prismatic controller or diffuser allows a crisp, modern rectangular shape to be used.

The controller is extruded in clear plastic with linear side prisms and pyramidal base prisms, and the diffuser from reeded opal plastic. The function of the prisms is to re-direct light from the tubes either above the horizontal or up to 30° below it, thus ensuring the least amount of light being emitted in the zone most likely to give rise to discomfort glare. A wider version of the prismatic controller only has been designed for use on four-tube battens.

Injection moulded white end caps are supplied with the attachments and are simply attached by locating two pins at the top and one at the bottom of each end cap with corresponding holes in the ends of the attachment. Standard fittings are for 230/240V 50Hz. Details of fittings for other supplies are available on application.



A4P/A40 Broad prismatic controller or opal diffuser



A4P Four-tube wide prismatic controller only

RANGE

Prismatic Controller

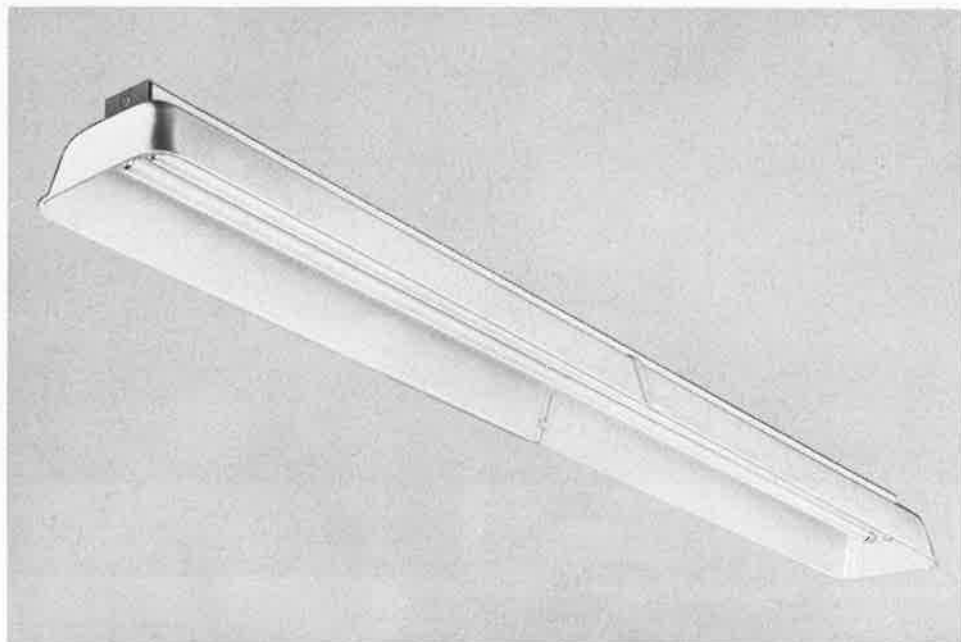
Complete fitting				Components				Dimensions		Approx. weight (incl. tubes) kg lb
Nominal tube length	Rating	Circuit	Catalogue no.	1st Attachment Catalogue no.	2nd Attachment Catalogue no.	Batten Catalogue no.	Overall length mm	in		
1500 5	2 x 65W	SRS	A4P/B265	A4P.25	*	A4.B265	1576	62	9.9	21.8
1800 6	2 x 85W	SRS	A4P/B2685	A4P.26	*	A4.B2685	1839	72.4	10.6	23.3
1800 6	4 x 85W	SRS	A4P/B/4685	A4P.46	A4B.46	A4.4685	1839	72.4	22.6	50
2400 8	2 x 85W	QS	A4P/B2885	A4P.28	*	A4.B2885	2452	96.6	15.8	35
2400 8	4 x 85W	QS	A4P/B/Q4885	A4P.48	A4B.48	A4.Q4885	2452	96.6	29.5	65

Opal Diffuser

1500 5	2 x 65W	SRS	A4O/B265	A4O.25	*	A4.B265	1576	62	9.9	21.8
1800 6	2 x 85W	SRS	A4O/B2685	A4O.26	*	A4.B2685	1839	72.4	10.6	23.3
2400 8	2 x 85W	QS	A4O/B2885	A4O.28	*	A4.B2885	2451	96.5	15.8	35

*Channel cover included with 1st attachment

Atlantic A4V vitreous enamel reflector



A4V/Q2885

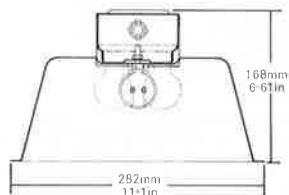
A vitreous enamel finished 2400mm/8ft reflector with closed ends and slots in the upper surface of the reflector.

These provide a generous proportion of upward lighting and reduce brightness contrasts. Convection currents through the slots assist in reducing dirt accumulation on the reflector surfaces.

For ease of assembly the reflector is supplied in two halves with a central jointing assembly.

The vitreous finish will withstand the vigorous cleaning necessary in certain dirty atmospheres. Standard fittings are for 230/240V 50Hz.

Details of fittings for other supplies are available on application.

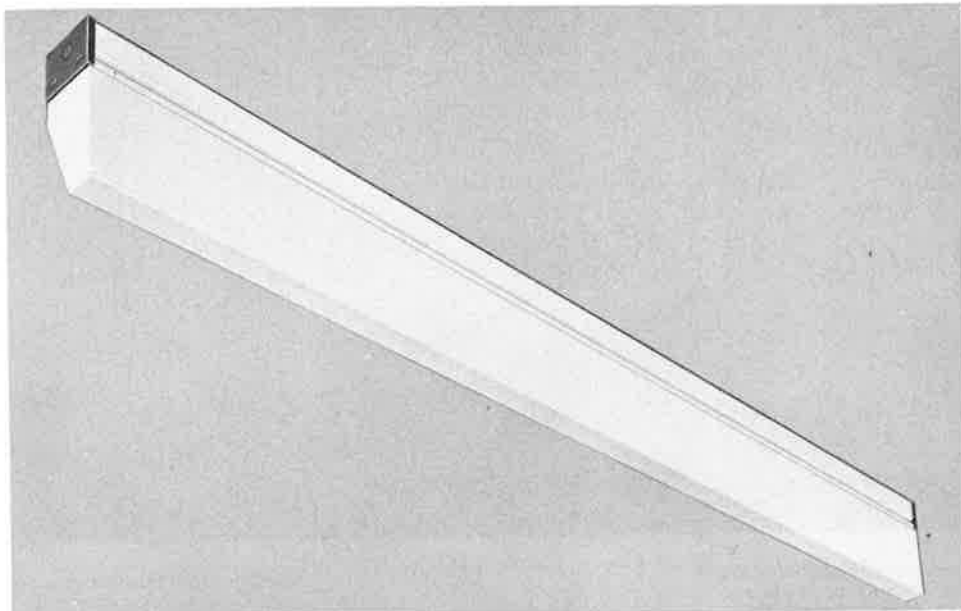


A4V Vitreous reflector

RANGE

Complete fitting				Components			Dimensions		Approx. weight		
Nominal tube length				1st Attachment	2nd Attachment	Batten	Overall length	(incl tubes)			
mm	ft.	Rating	Circuit	Catalogue no.	Catalogue no.	Catalogue no.				mm	in	kg	lb
2400	8	85W	QS	A4V/885	A4V.28	—	A4.885	2565	101	19.9	44
2400	8	2 x 85W	QS	A4V/Q2885	A4V.28	—	A4.Q2885	2565	101	25.2	55.6
2400	8	125W	QS	A4V/125	A4V.28	—	A4.125	2565	101	21.4	47.2
2400	8	2 x 125W	QS	A4V/2125	A4V.28	—	A4.2125	2565	101	25.6	56.6

Atlantic A4W wall washer



A4W/685

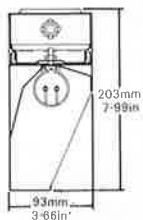
A specular reflector is designed to give an asymmetric distribution of light from this fitting. It is enclosed within a smart white enamelled framework.

The combination of single tube plus wall washer attachment gives a very smart appearance and makes the fitting particularly suitable for the lighting of office noticeboards, entrance murals, wall sculptures, shop displays and other vertical surfaces.

The designed mounting position for this fitting is on the ceiling, 610mm/2ft from the wall to be lit: this will then give an approximate 10:1 illumination ratio over a 3048mm/10ft wall.

Standard fittings are for 230/240V 50Hz.

Details of fittings for other supplies are available on application.

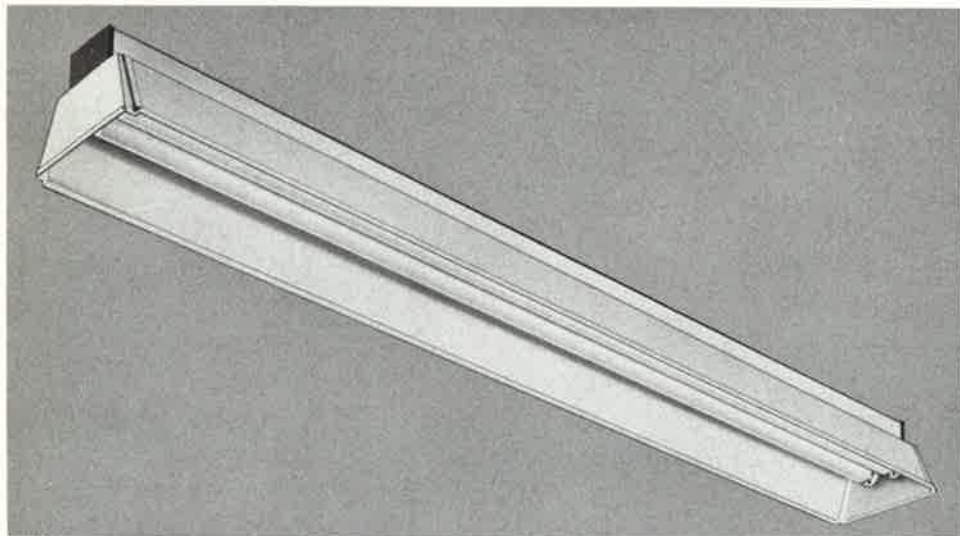


A4W Wall-washer

RANGE

Complete fitting					Components			Dimensions		Approx. weight (incl. tubes)	
Nominal tube length	Rating	Circuit	Catalogue no.	1st Attachment Catalogue no.	2nd Attachment Catalogue no.	Batten Catalogue no.	Overall length		kg	lb	
mm	ft						mm	in			
1800	6	85W	SRS	A4W/685	A4W.16	—	1805	71.1	7.7	17	

Atlantic A4X closed-end, slotted-top reflector

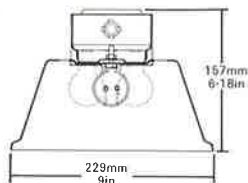


A4X/2685

A closed-end metal reflector with large slots in its upper surface to give a generous proportion of upward lighting and reduced brightness contrast. Convection currents through the slots assist in reducing dirt accumulation on the reflector surfaces and help to maintain the efficiency of the installation.

Standard fittings are for 230/240V 50Hz.

Details of fittings for other supplies are available on application.

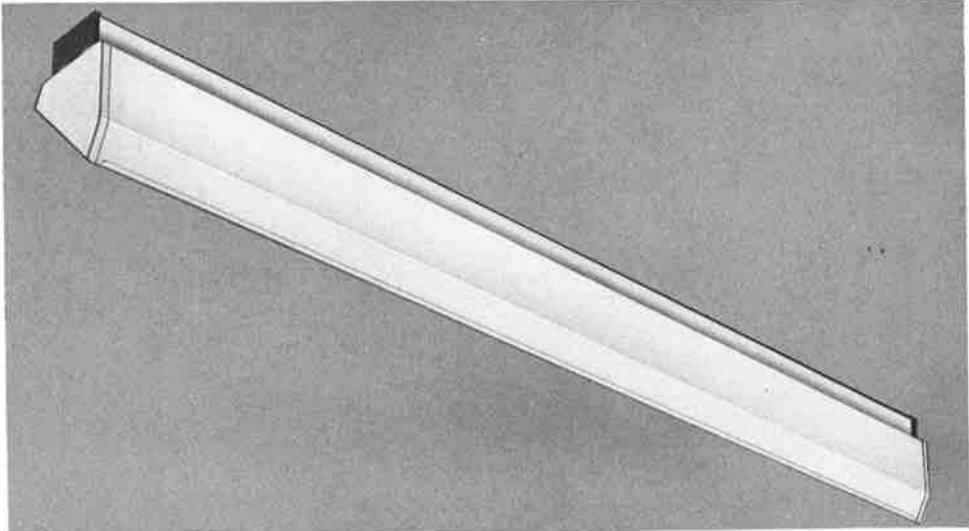


A4X Metal reflector-closed end

RANGE

Complete fitting				Components				Dimensions			Approx. weight	
Nominal tube length		Rating	Circuit	Catalogue no.	1st Attachment Catalogue no.	2nd Attachment Catalogue no.	Batten Catalogue no.	Overall length		incl. tubes		
mm	ft							mm	in	kg	lb	
1800	6	85W	SRS	A4X/685	A4X.26	—	A4.685	1834	72.2	9.9	21.8	
1800	6	2 x 85W	SRS	A4X/2685	A4X.26	—	A4.2685	1834	72.2	11.9	26.4	
2400	8	85W	QS	A4X/885	A4X.28	—	A4.885	2445	96.3	13.8	30.5	
2400	8	2 x 85W	QS	A4X/Q2885	A4X.28	—	A4.Q2885	2445	96.3	19.2	42.3	
2400	8	125W	QS	A4X/125	A4X.28	—	A4.125	2445	96.3	15.3	33.7	
2400	8	2 x 125W	QS	A4X/2125	A4X.28	—	A4.2125	2445	96.3	19.6	43.1	

Atlantic A4Y angle reflector

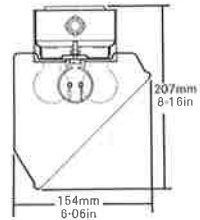


A4Y/2685

This angled reflector can be attached to either single or twin-tube battens to provide a general 'flow' of light in a required direction. It is particularly suitable for the lighting of chalk boards, work benches situated against vertical services, factory planning charts and for the general illumination of shop windows.

Standard fittings are for 230/240V 50Hz.

Details of fittings for other supplies are available on application.

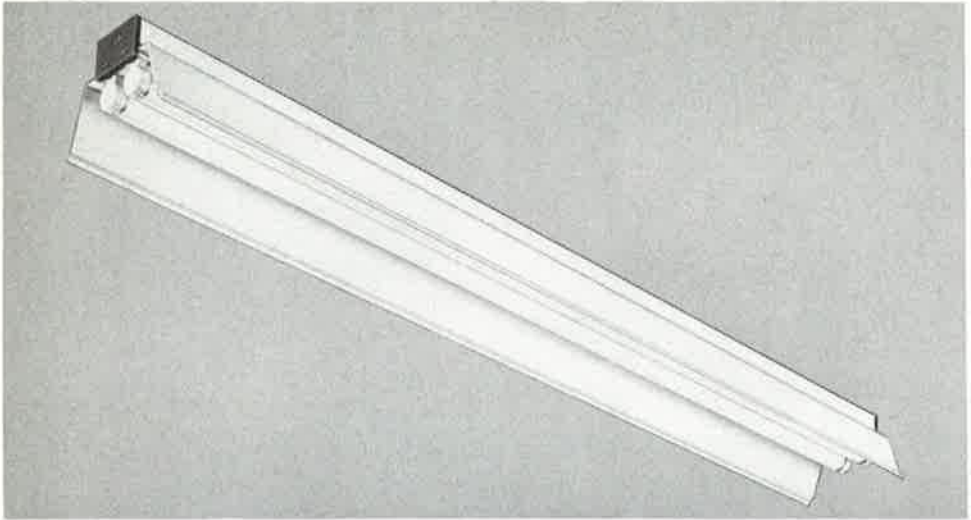


A4Y Angle reflector

RANGE

Complete fitting				Components				Dimensions		Approx. weight (incl. tubes)
Nominal tube length		Rating	Circuit	Catalogue no.	1st Attachment Catalogue no.	2nd Attachment Catalogue no.	Batten Catalogue no.	Overall length	kg lb	
mm	ft							mm		in
1500	5	65W	SRS	A4Y/65	A4Y.25	—	A4.65	1548 61.1	7.8 17.2	
1500	5	2 x 65W	SRS	A4Y/265	A4Y.25	—	A4.265	1548 61.1	10 22	
1800	6	85W	SRS	A4Y/685	A4Y.26	—	A4.885	1812 71.3	8.6 19	
1800	6	2 x 85W	SRS	A4Y/2685	A4Y.26	—	A4.2685	1812 71.3	10.7 23.6	
2400	8	85W	QS	A4Y/885	A4Y.28	—	A4.885	2423 95.4	12 26.5	
2400	8	2 x 85W	QS	A4Y/Q2885	A4Y.28	—	A4.Q2885	2423 95.4	17.3 38.1	
2400	8	125W	QS	A4Y/125	A4Y.28	—	A4.125	2423 95.4	13.4 29.7	
2400	8	2 x 125W	QS	A4Y/2125	A4Y.28	—	A4.2125	2423 95.4	17.7 39.1	

Atlantic A4Z open-ended, slotted-top reflector



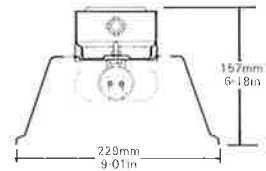
A4Z/2685

An open-ended metal reflector with large slots in its upper surface to give a generous proportion of upward lighting and reduce brightness contrast. Convection currents through the slots assist in reducing dirt accumulation on the reflector surfaces and help to maintain the efficiency of the installation.

An A4ZB version of this reflector is available for use on A4B type spines. A four-lamp version is also available. Both are shown on the next page.

Standard fittings are for 230/240V 50Hz.

Details of fittings for other supplies are available on application.

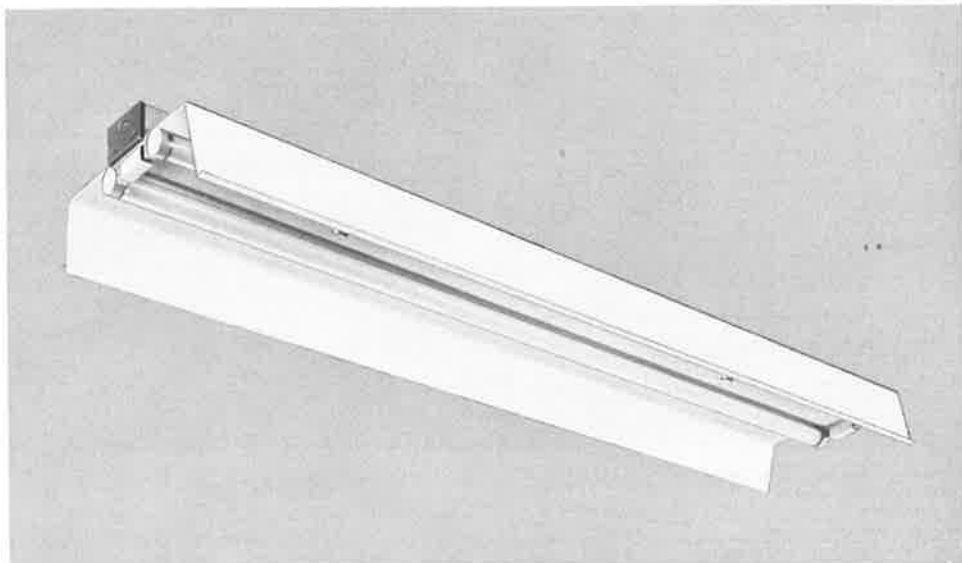


A4Z Metal reflector—open ended

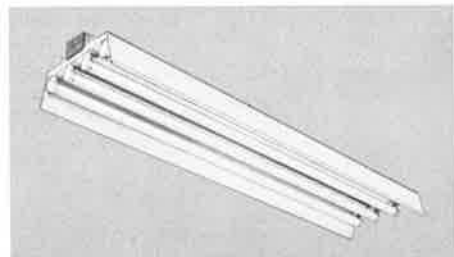
RANGE **

Complete fitting			Components				Dimensions		Approx. weight	
Nominal tube length	Rating	Circuit	Catalogue no.	1st Attachment Catalogue no.	2nd Attachment Catalogue no.	Batten Catalogue no.	Overall length		(incl. tubes)	
mm	in						mm	in	kg	lb
1200	4	40W	SRS A4Z/40	A4Z.24	—	A4.40	1241	48.8	7.1	15.6
1200	4	2 x 40W	SRS A4Z/240	A4Z.24	—	A4.240	1241	48.8	8.3	18.4
1500	5	65W	SRS A4Z/65	A4Z.25	—	A4.65	1542	60.7	8.7	19.1
1500	5	2 x 65W	SRS A4Z/265	A4Z.25	—	A4.265	1542	60.7	10.8	23.9
1800	6	85W	SRS A4Z/685	A4Z.26	—	A4.685	1805	71.1	9.7	21.3
1800	6	2 x 85W	SRS A4Z/2685	A4Z.26	—	A4.2685	1805	71.1	11.8	25.9
2400	8	85W	OS A4Z/885	A4Z.28	—	A4.885	2416	95.1	13.5	29.9
2400	8	2 x 85W	OS A4Z/Q2885	A4Z.28	—	A4.Q2885	2416	95.1	18.8	41.5
2400	8	125W	OS A4Z/125	A4Z.28	—	A4.125	2416	95.1	15	33.1
2400	8	2 x 125W	OS A4Z/2125	A4Z.28	—	A4.2125	2416	95.1	19.2	42.3

Atlantic A4Z four-tube reflector and A4ZB broad open-ended, slotted-top reflector



A4ZB/B2685

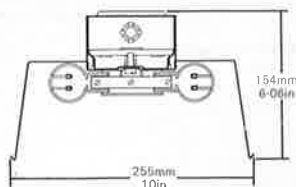


A4Z/4685

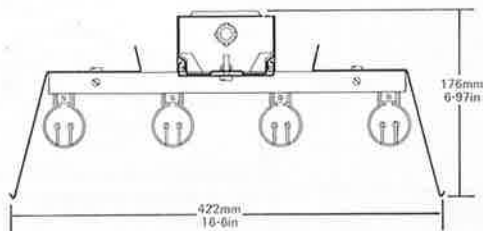
A wide version of the fitting shown on the previous page.

The A4ZB reflector fits on an A4B spine to give a broader light distribution.

A four-lamp version of the A4Z fitting is also available as shown. All fittings are for 240V 50Hz.



A4ZB Broad twin reflector



A4Z Four-tube reflector

RANGE

Complete fitting				Components				Dimensions		Approx. weight (incl. tubes)	
Nominal tube length		Rating	Circuit	Catalogue no.	1st Attachment Catalogue no.	2nd Attachment Catalogue no.	Batten Catalogue no.	Overall length		kg	lb
mm	ft							mm	in		
1500	5	2 x 65W	SRS	A4ZB/B265	A4ZB.25	—	A4.B265	1542	60.7	12.7	28
1800	6	2 x 85W	SRS	A4ZB/B2685	A4ZB.26	—	A4.B2685	1805	71.1	13.7	30.2
2400	8	2 x 85W	QS	A4ZB/B2885	A4ZB.28	—	A4.B2885	2416	95.1	20.7	45.6
1800	6	4 x 85W	SRS	A4Z/4685	A4Z.46	—	A4.4685	1805	71.1	24.6	54
2400	8	4 x 85W	QS	A4Z/Q4885	A4Z.48	—	A4.Q4885	2416	95.1	30.8	68

Atlantic Replacement Control Gear and Accessories

Batten Accessories

Description	Catalogue no.
Lampholder	AMEB.1580/A4
Lampholder (broad twin)	AMEB.1580/A4T
Lampholder plate	
single	A4.4663
twin	A4.4664
broad twin	A4.4679
4-tube	A4.4665
Terminal block	AMET.1338
Fuse-holder	AMET.1334
Capacitor clip	AMEY.5288
End-cap	A4.4666
Cage screw	AC.5768
Cage nut	AC.5656
Slotted suspension washer	AC.4861
Besa cluster cap	A4.4674

Attachment Accessories

Diffuser suspension bracket	
A4C, A4D attachments	A4.4667
Cover-plate Unicap twin (now obsolete)	A4.4668
End-cap for A4GC, A4GD attachments (now obsolete)	
single	A4.4669
twin	A4.4670
4-tube attachment suspension bracket	A4.4672
Diffuser suspension bracket	
A4E attachment	A4.4673
Cover-plate A4L (now obsolete)	A4.4675
Linear Prism Panel A4L (now obsolete)	A4.4676
5ft Broad cover-plate	A4.4690
6ft Broad cover-plate	A4.4691
8ft Broad cover-plate	A4.4692

Replacement Control Gear

These items are chosen from the extensive range of control gear stocked in, and readily available from regional stores in the U.K. The reference numbers quoted differ from those marked on the control gear in the fitting, but the units are equally applicable to A4 fittings.

Joining Pieces Accessories

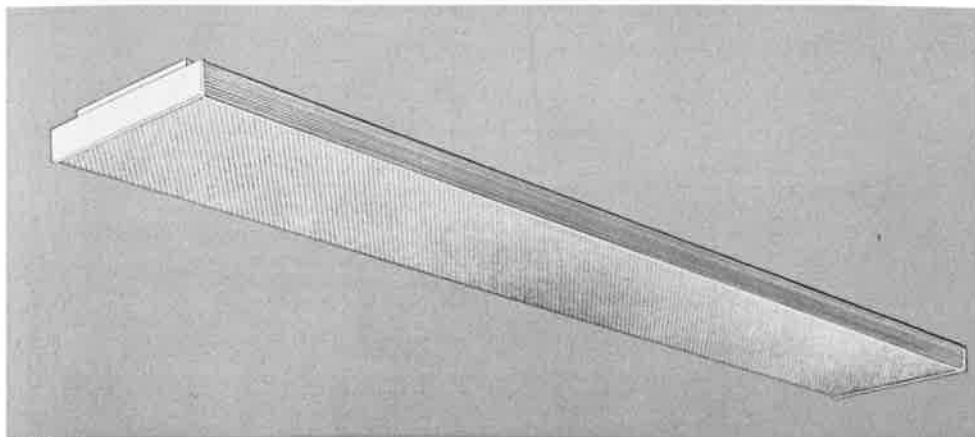
Description	Catalogue no.
Spacer for A4C, A4D diffusers	A4.4660
Spacer for closed-end reflectors and most attachments except A4C, A4D	A4.4661
Reflector jointing strap for A4Z (single/narrow twin)	A4.4662

Aluminium Frames Accessories

Description	Catalogue no.
Frame support clips (2-tube)	A4.4671
Attachment suspension bracket (4-tube)	A4.4672

		Choke(s) or ballast(s)	Quickstart Units	Capacitor(s)	Fuse
40W 4ft	Single	1 × BU/40	—	1 × GC2273	1 × GT1332
	Twin	2 × BU/40	—	1 × GC2273	1 × GT1332
65W 5ft	Single	1 × BI/65	—	1 × GC2220	1 × GT1342
	Twin Broad twin	2 × BI/65	—	2 × GC2220	1 × GT1342
85W 6ft	Single	1 × BI/685	—	1 × GC2220	1 × GT1342
	Twin Broad twin	2 × BI/685	—	2 × GC2220	1 × GT1342
	4-tube	4 × BI/685	—	4 × GC2220	2 × GT1342
85W 8ft	Single	1 × BQI/85	—	1 × GC2226	1 × GT1299
	Twin Broad twin	2 × BQI/85	—	2 × GC2226	1 × GT1299
	4-tube	4 × BQI/85	—	4 × GC2226	2 × GT1299
125W 8ft	Single	1 × CQI/125	1 × OS/125	1 × GC2228	1 × GT1299
	Twin	2 × CQI/125	2 × OS/125	2 × GC2228	1 × GT1299

KSP London line fitting

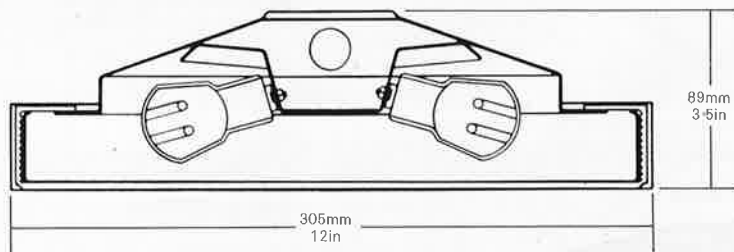


KSP/R2685

This 'Wafer Slim' fitting has a unique lightness and elegance of appearance. The complete ceiling mounted fitting projects only 89mm/3.5in from the ceiling which makes it ideal for modern low ceilings. These fittings provide a

high technical efficiency with a low glare index and also give rise to the impression of a panel of light due to the fact that from almost all normal angles of vision the batten is invisible.

All fittings are for 240V 50Hz. Details of fittings for other supplies are available on application.



RANGE

Complete fitting				Components			Dimensions		Overall weight		Fixing centres		
Nominal length			No. of tubes	Circuit	Catalogue no.	Diffuser Catalogue no.	Batten Catalogue no.	Overall length		kg	lb	mm	in
mm	ft	Rating						mm	in				
1800	6	85W	2	SRS	KSP/R2685	KSP 26	KS R2685	1829	72	12.7	28	610	24
2400	8	85W	2	QS	KSP/Q2085	KSP 28	KS Q2085	2438	96	15.3	33.9	1220	48

This fitting is not suitable for chain suspension

Polrized panels

POLRIZED panels represent a new concept in light control technique with a lighting system that ensures increased seeing ability and greater viewing comfort. The principle of polarization is used to help solve the problem of reflected glare.

Almost all viewing angles in office and school environments lie between 0° and 40° to the downward vertical. A typical viewing task may be that of reading typescript or writing on paper of varying degrees of gloss and/or reflectance.

In areas lit by conventional distribution luminaires, difficulty may be experienced in reading the text due to reflections of the light source on the paper reducing the contrast between the lettering and the background. Consequently, eye strain may be experienced. The contrast may be improved by carefully adjusting the viewing angle. But, the new approach to solving this problem is to use polarized light—whereby contrast is improved without the need to adjust the viewing angle. With POLRIZED panels an

improvement in contrast, at least equivalent to that attainable by increasing the illuminance by 45%, can be achieved. At larger viewing angles than those already noted, an even greater improvement is obtained. POLRIZED panels not only reduce reflected glare but control discomfort glare since they have a low brightness compared with an opal diffuser at high viewing angles. POLRIZED material for ceiling use transmits a countless number of cones of vertically polarized light. These cones are radially symmetrical, each cone overlapping its neighbour to ensure uniform lighting distribution. So this increased visual effectiveness applies at all points in the room and at all viewing angles. It is the only system that at the same time effectively reduces veiling reflections

and direct glare. Moreover, colour and textures are seen in their true light. Veiling reflections inherent in conventional lighting systems dilute the subtleties of many colours and surface finishes.

POLRIZED attachments are available for the following fittings ranges and ceilings:

- New Format range
- Format (SM) range
- Pop-in troffer fitting
- Arena lighting/ceiling system
- Dome and Plaza ceiling panels

Polarization offers these advantages:
*Greater visual effectiveness and contrasts for the same wattage.
*Truer textures and colour rendition.
*A dramatic reduction in eye fatigue with low brightness comfort.



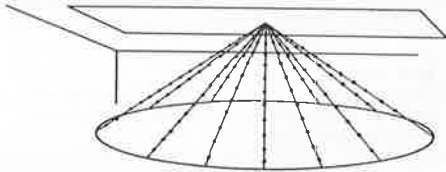
An extreme example of veiling glare and its removal by polarization

ation news

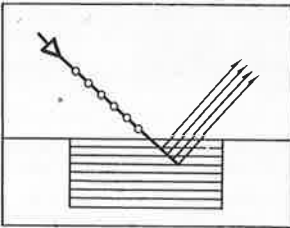


BEA hangar at Heathrow (E)
In a new engineering hangar for BEA at London's Heathrow airport Atlas 1 low discharge lamps in combination with Atlas 400 W 'Kolorac' and high pressure mercury metal halide discharge lamps are used in custom designed high bay units above roof cover. The translucent pycneter structure at 90 degrees area is 400 ft long. The illuminance is 400 lux from one lighting centre in each quadrant. Each centre consists of two matched pairs of 'Kolorac' and 'Kolorac' lamps on raising and lowering gear supplied by the T... controlled by...

Polrized panels



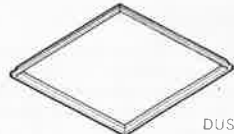
Each point in the POLRIZED panel gives radially symmetrical distribution of vertically oriented polarized light. The cones overlap to give uniform distribution.



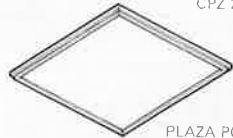
POLRIZED panels permit the passage of light with vibrations limited primarily in the vertical plane. The diagram illustrates this phenomenon and it can be seen that there are no veiling reflections from the surface of the object.

RANGE

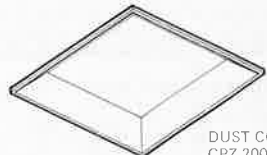
Nominal Size ft.	Catalogue no.	Description	Approximate weight gms
2x2	CPZ 1001	Dome panel (Polrized)	190
2x2	CPZ 1002	Plaza panel (Polrized)	176
2x2	CPZ 2001	Dust cover for Dome panel	176
2x2	CPZ 2002	Dust cover for Plaza panel	156



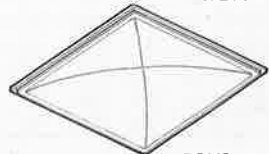
DUST COVER
CPZ 2002



PLAZA POLRIZED
PANEL CPZ 1002



DUST COVER
CPZ 2001



DOME PANEL
600mm square
CPZ 1001

GRID: Thorn Isora Grid 25.

Airlume and Special Fittings

There are many occasions when a ceiling design calls for special fittings as part of an integrated scheme. These may be recessed into the suspended ceiling and required to fulfil multiple functions such as heat recovery, air handling, etc. Air supply is usually achieved via side slots along the fitting bezel whilst air is extracted through the fitting via an open or louvered diffuser, or end slots where a closed diffuser is used.

A wide range of fittings has been designed to meet these particular requirements and to have a low brightness appearance where high levels of illumination are planned. A variety of aluminium and injection moulded louvers or prismatic panels is available.

The Technical Department of the Isora Division of Thorn Lighting is available to advise on applications and provide information generally on these products.

Advantages of Airlume fittings

When airlume fittings are used to extract room air a large proportion of the heat produced by the lighting equipment is removed before it can enter the occupied space. This results in a reduction of the air conditioning load on the room which means less air volume is required for temperature control and the air can be passed through the system with a higher temperature rise than normal, resulting in increased efficiency of the airhandling system. As less air volume is required the ductwork sizes and plenum depths can be reduced, giving economies in construction. Because an airlume fitting can be used for both supply and return two types of services can use one distribution point in the ceiling, thus helping to create a neat and tidy appearance of the ceiling.

In most recessed fittings the fluorescent tube is normally operating at a temperature above that of its optimum light output. If air is drawn through the fitting and around the lamps the tube wall is cooled to this optimum or very close to it, resulting in a greatly increased light output depending on the design and type of fitting used.

Low Brightness and Airlume Fittings

These fittings have been designed to meet the demand for lighting units that can provide high levels of illumination without glare discomfort and to meet the growing demand for integrated air handling and heat from light units.

It is possible that these fittings will not have the characteristics necessary to meet the needs of every design installation and in this event the Isora Division Technical Department, in conjunction with the Thorn Lighting designers, can undertake the development of fittings to suit specific requirements.

All fittings can be supplied manufactured to Metric or Imperial modular dimensions on application.

LBLF Fittings

Flush mounting recessed fittings with a highly efficient reflector louver assembly. All sizes of fitting can be supplied with air extract slots in the back panel. The four tube 608mm wide versions can also be supplied with

slotted trim face and mounting for air supply attachments.

Construction of the optical systems, which is of one piece unit assembly per lampway, is from figured aluminium sheet and extruded aluminium baffles. The form and profile of these assemblies, which have a specular anodized finish, have been designed to provide the efficiency necessary for the levels of illumination required for modern interiors with the comfort of a well designed optical system.

Housings are constructed in sheet metal which has stove enamelled finish.

Suspension of these fittings is by means of holes provided, from the true ceiling or by means of side suspension arms (Catalogue no. LB 4601) supported from a suspended ceiling grid. These are available at extra cost on application.

These fittings have been designed for concealed 'T' ceiling systems but before the ceiling design is complete consultation with Isora Division Technical Department would be advisable to ensure suitability of the fitting to the ceiling. The fittings are particularly suitable for continuous mounting and capping strip (Catalogue no. LB 4600) is available on request to ensure neatness of runs.

AHP Fittings

Recessed mounting fittings with a dished prismatic controller designed and developed for heat recovery installations.

This model of fitting is in service in installations where the sole source of heating for the premises is derived from the recirculated heat extracted from the lighting fittings.

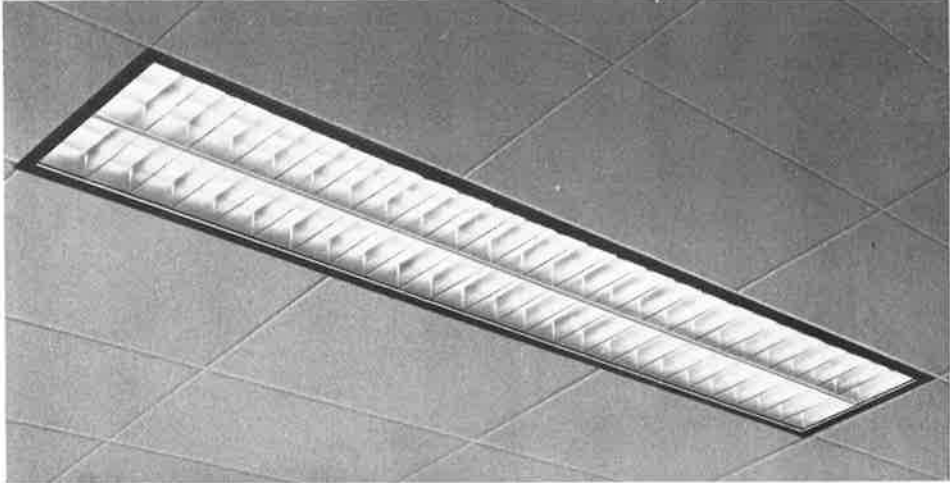
These fittings are equally suitable for use in installations as a purely extract fitting for the disposal of air from the room and to assist in dispersing heat from the fittings.

Housings are constructed from sheet metal which has stove enamelled finish.

Suspension is from holes provided in the back panel of the fittings.

These fittings comply fully with BS.3820:1964 for Class 1 ordinary, indoor, normal atmospheres.

LB Recessed fittings



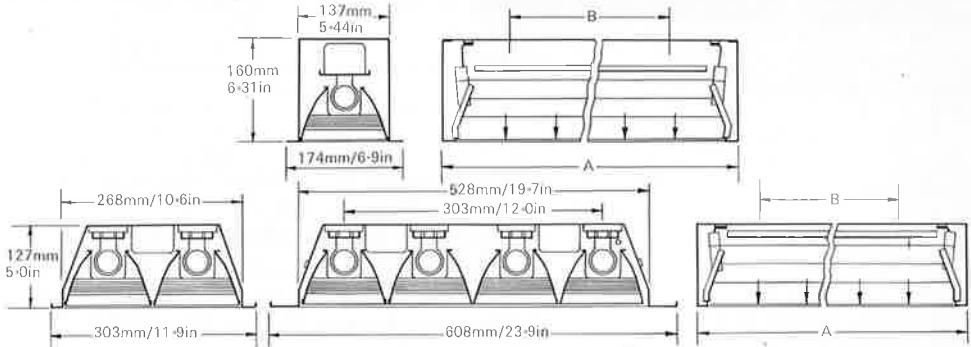
LBL.F Fittings

Flush mounting recessed fittings designed to provide high levels of illumination with effective glare control. All sizes can be supplied with slots pierced in the back plate for air extraction through the fitting. The four

tube 608mm wide versions can also be provided with slots in the trim face and fixing for air boots for the supply of air.

The metalwork of these fittings is

stove enamelled white. Other finishes can be provided on request. **Surface mounted fittings type LBLC are available to special order.**



Range and Dimensions

Catalogue no	Rating	No of Tubes	Circuit	Fitting size				Minimum ceiling opening				Fixing centres			
				A		A		Length		Width		B		B	
				Length	Width	Length	Width	Length	Width	Length	Width	Length	Width	Length	Width
				mm	mm	in	in	mm	mm	in	in	mm	mm	in	in
LBL F/Q1040	40W	One	QS	1217	174	47.9	6.9	1219	140	48	5.5	914	*CL	36	*CL
LBL F/Q2040	40W	Two	QS	1217	303	47.9	11.9	1219	305	48	12	914	*CL	36	*CL
LBL F/Q4040	40W	Four	QS	1217	608	47.9	23.9	1219	610	48	24	914	303	36	12
LBL F/R1685	85W	One	RS	1827	174	71.9	6.9	1829	140	72	5.5	1372	*CL	54	*CL
LBL F/R2685	85W	Two	RS	1827	303	71.9	11.9	1829	305	72	12	1372	*CL	54	*CL
LBL F/R4685	85W	Four	RS	1827	608	71.9	23.9	1829	610	72	24	1372	303	54	12
LBL F/Q1085	85W	One	QS	2436	174	95.9	6.9	2438	140	96	5.5	1372	*CL	54	*CL
LBL F/Q2085	85W	Two	QS	2436	303	95.9	11.9	2438	305	96	12	1372	*CL	54	*CL
LBL F/Q4085	85W	Four	QS	2436	608	95.9	23.9	2438	610	96	24	1372	303	54	12

* Centre line

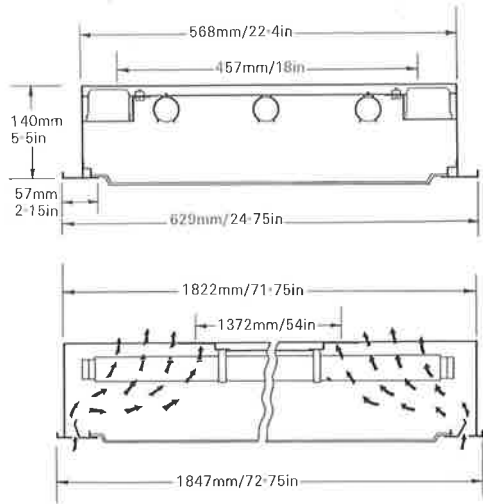
All single, twin and four tube LBL.F fittings are suitable for the extraction of air. The four tube versions, LBL F/Q4040, LBL F/R4685 and LBL F/Q4085, are also available for the supply of air. Add the following suffixes to the end of catalogue numbers when air handling facilities are required. E at end of catalogue reference denotes Extract fitting only; S denotes Supply fitting only; SE denotes Supply and Extract.

AH Recessed Air Handling fittings



AHP Fittings

Recessed fittings with a prismatic controller, designed for the extraction of air through slots at the ends of the fitting incorporating dust traps. The 1847mm long fitting shown can be manufactured to handle various volumes of air. Other sizes of fittings can be manufactured to meet specific requirements. The metalwork of these fittings is finished stove enamelled white.



Range and Dimensions

Catalogue no	Rating	No of Tubes	Circuit	Fitting size				Ceiling opening				Fixing centres			
				Length mm	Width mm	Length in	Width in	Length mm	Width mm	Length in	Width in	Length mm	Width mm	Length in	Width in
AHP/R2685	85W	Two	RS	1847	629	72.75	24.75	1829	610	72	24	1372	457	54	18
AHP/R3685	85W	Three	RS	1847	629	72.75	24.75	1829	610	72	24	1372	457	54	18
AHP/R4685	85W	Four	RS	1847	629	72.75	24.75	1829	610	72	24	1372	457	54	18

All the above fittings are available to special order, full price details available on request.

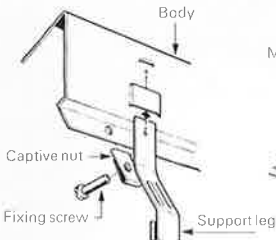
Pop-in troffer



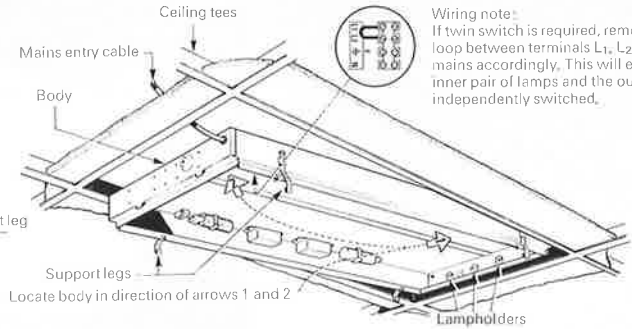
The Pop-in troffer is designed for use with both imperial and metric dimension lay-in (exposed tee) grid systems. This enables the body (which is common for metric and imperial grids) to be used in either a nominal 2ft x 4ft opening or 600 x 1200mm opening as a direct replacement for a ceiling panel. Main tees should be 1½ in (38mm) high with ⅝ in (24mm) table. Cross tees should have ⅝ in (24mm) table and up to 1½ in (38mm) high. Minimum clearance above the top of the main tee is 6 in (150mm).

A range of diffuser panels is available to fit either on the imperial 2ft x 4ft module or metric 600mm x 1200mm module. The design of the support legs enables the fitting body to be used with both metric and imperial grids.

Pop-in troffer



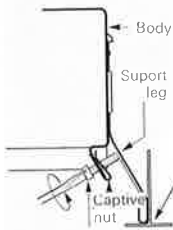
1 Assemble four support legs



Wiring note:

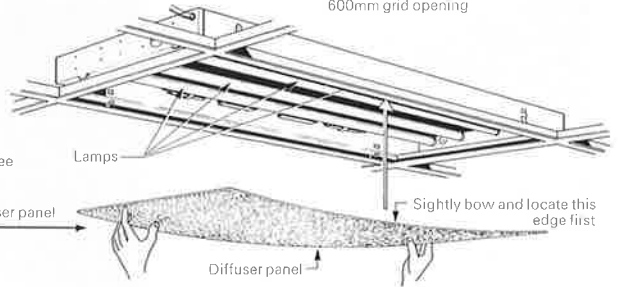
If twin switch is required, remove wire loop between terminals L₁, L₂ and connect mains accordingly. This will enable the inner pair of lamps and the outer pair to be independently switched.

2 Insert fitting in 4ft x 2ft or 1200mm x 600mm grid opening

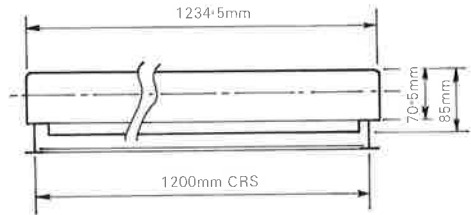
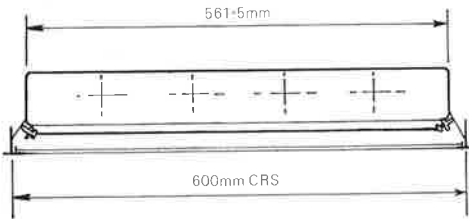


3 Locate support legs on tee bar and tighten screw

4 Insert selected diffuser panel



Fixing screw tighten to position body after centralizing



POP-IN TROFFER FITTING

Nominal length		Nominal width		Rating	Number of tubes	Circuit	Catalogue no. c/w tubes	Approx weight c/w tubes	
mm	ft	mm	ft					kg	lb
1200	4	600	2	40	4	SRS	FPMW 440	14.5	32

DIFFUSERS

Metric

Nominal panel size (mm)	Actual panel size (mm)	Catalogue no.	Type
1200 600	1190 586	FPMA 612	Polrized
1200 600	1190 586	FPMH 612	K19, Prismatic
1200 600	1190 586	FPMO 612	Opal
1200 600	1190 586	FPMP 612	K12, Prismatic

Imperial

Nominal panel size (ft)	Actual panel size (in)	Catalogue no.	Type
4 2	47.6 23.5	FPMA 24	Polrized
4 2	47.6 23.5	FPMH 24	K19, Prismatic
4 2	47.6 23.5	FPMO 24	Opal
4 2	47.6 23.5	FPMP 24	K12, Prismatic

Maximum diffuser weight 2kg/4.5lb.

Based on information obtained from a survey of Architects, the Format range combines reliability, strength and versatility, with an elegant, visually pleasing appearance.

The range comprises of metric modular fittings in 100, 200, 300, 400 or 500mm widths, to take from 1-4 1200mm (4ft) or 1800mm (6ft) tubes. To complete the range, circular (60W) and square (4 x 20W) fittings are also available.

The fittings consist of a sheet steel body finished in semi-matt black outside and white inside for maximum reflectivity. All sizes have a choice of four plastic attachments. In addition the 200mm wide, 1800mm (6ft) version can be fitted with an aluminium frame, low brightness, attachment.

'Wishbone' springs

A 'wishbone' attachment fixing has been introduced for all except the single tube (100mm) and circular sizes. 'Wishbones' provide a strong captive action, with the result that re-lamping has now become a one man operation.

Amalgam Tubes

Amalgam tubes offer a significant increase in Light Output Ratios when used with 1800mm (6ft) Format fittings.

Catalogue Numbers System

1SM - 100mm wide
2SM - 200mm wide
3SM - 300mm wide
4SM - 400mm wide
5SM - 500mm wide
QSM - 698 x 698mm square
OSM - 498mm diameter circular

D - Opal diffuser
O - Opal sided prismatic base diffuser
P - Prismatic Controller
A - Opal sided Polrized base diffuser
E - Aluminium frame with prismatic base
W - Wishbone attachment fixing
B - Body

1040 - 1 x 1200mm (4ft) tube
2040 - 2 x 1200mm (4ft) tube
3040 - 3 x 1200mm (4ft) tube
1060 - 1 x 60W Circular tube
1685 - 1 x 1800mm (6ft) tube
2685 - 2 x 1800mm (6ft) tube
3685 - 3 x 1800mm (6ft) tube
4685 - 4 x 1800mm (6ft) tube
4020 - 4 x 600mm (2ft) tube

Format 1SM and 2SM fittings

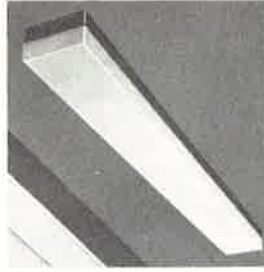
1SMD/1685



A surface-mounted fitting with black metal body and a choice of three plastic attachments. The sheet steel body is bonderized and stove enamelled semi-matt black outside and white inside, in a hard alkylid paint.

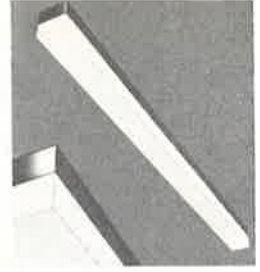
ISM fittings have spring clips for attachment fixing, and 2SM types use 'wishbone' fixing.

2SMWP/2685



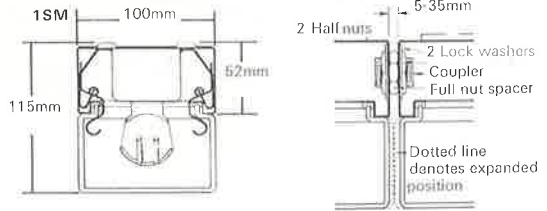
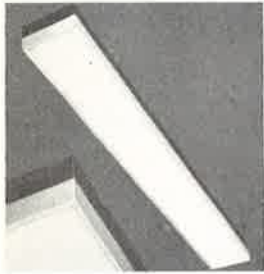
Attachments seat against foam gaskets. Control gear and wiring are connected to a three-way fused terminal block: cable entry is at the centre or at fixing centres, or by 20mm dia. knock-outs at the end of the fitting. Fittings should be ceiling mounted but can be suspended on 20mm conduits. If they are connected

1SMWO/1685



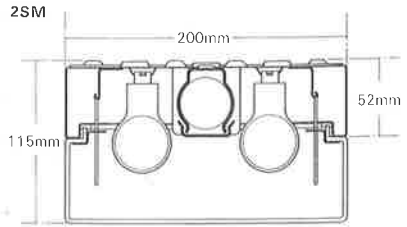
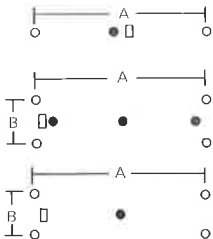
end-to-end for continuous mounting by means of a 20mm conduit coupler, a 20mm full conduit nut should be used as a spacer to leave room for the expansion of attachments (see diagram). Ambient temperatures at fitting level should not exceed 25°C. All fittings are suitable for 240V 50Hz supplies.

2SMWE/2685



- Suspension and wiring entry
- Wiring entry only
- Terminal block

CABLE AND SUSPENSION HOLE ARRANGEMENT



Diagrams are not to scale.

Information in the table is for 'D' (Opal Diffuser) version. The 'O' (opal sides, prismatic base), 'P' (prismatic), and 'A' (Polarized) versions are identical and data is obtained by substituting 'O', 'P', or 'A' for 'D' in the catalogue numbers.

1SM B 1040/1SMB 1685

Dimension A		Dimension B	
mm	in	mm	in
610	24	—	—
900	35.4	—	—

2SMWB 2685

Dimension A		Dimension B	
mm	in	mm	in
900	35.4	100	3.9

2SMWB 2040

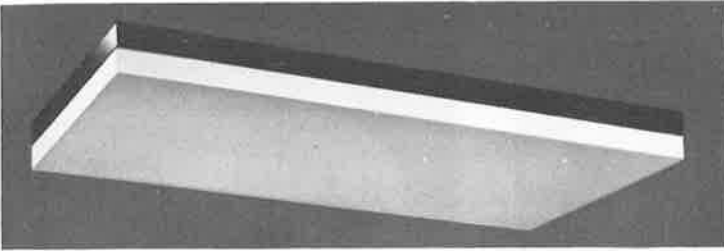
Dimension A		Dimension B	
mm	in	mm	in
610	24	100	3.9

RANGE

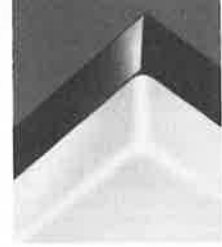
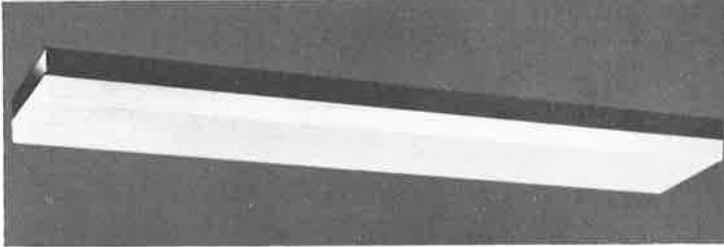
Complete fitting				Components			Dimensions				
Nominal length				Diffuser	Catalogue no.	Batten	Length			Approx. weight	
mm	ft	Rating	No. of tubes	Circuit	Catalogue no.	Catalogue no.	mm	in		(incl. tubes)	
1200	4	40W	One	QS	1SMD/1040	1SMD 4	1300	51.2	5.1	11.2	
1800	6	85W	One	SRS	1SMD/1685	1SMD 6	1850	72.8	6.6	14.7	
1200	4	40W	Two	QS	2SMWD/2040	2SMWD 4	1300	51.2	8.4	18.5	
1800	6	85W	Two	SRS	2SMWD/2685	2SMWD 6	1850	72.8	10.9	24	
1800	6	85W	Two	SRS	2SMWE/2685	2SMWE 6	1850	72.8	10.9	24	

Format 3SM and 4SM fittings

4SMWO/3685



3SMWD/2685



A wider, two or three lamp version of the 1SM and 2SM fittings with wishbone attachment fixing. The sheet steel body is bonderized and stove enamelled semi-matt black outside and white inside. Cable entry is by 20mm/25/32in dia. hole (for which a plastic grommet is provided) as shown in the diagrams below.

Fittings should be ceiling mounted but can be suspended on conduits: for diagram of end to end connection see page 1:72

Ambient temperatures at fitting level should not exceed 25°C.

All fittings are suitable for 240V 50Hz supplies.

3SMWB 2685

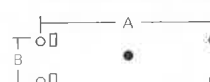
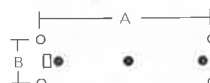
Dimension A		Dimension B	
mm	in	mm	in
900	35.4	100	3.9

4SMWB 3685

Dimension A		Dimension B	
mm	in	mm	in
900	35.4	200	7.9

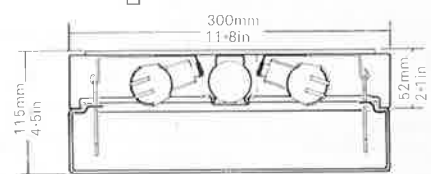
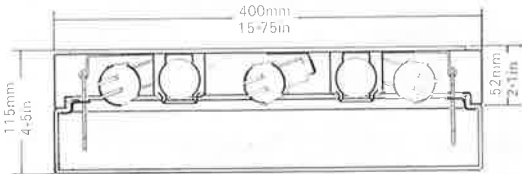
4SMWB 3040

Dimension A		Dimension B	
mm	in	mm	in
610	24	200	7.9



CABLE AND SUSPENSION HOLE ARRANGEMENT

- Suspension and wiring entry
- Wiring entry only
- Terminal block



Diagrams are not to scale

Range

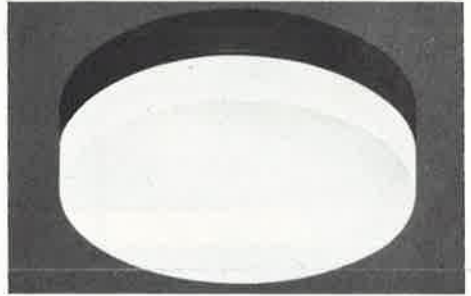
Complete fitting				Components			Dimensions		Approx. weight (incl. tubes)		
Nominal length	Rating	No. of tubes	Circuit	Diffuser	Batten	Length		kg	lb		
mm	ft			Catalogue no.	Catalogue no.	mm	in				
1800	6	85W	Two	SRS	3SMWD/2685	3SMWD 6	3SMWB 2685	1850	72.8	13.4	29.5
1800	6	85W	Two	SRS	3SMWD/2685	3SMWO 6	3SMWB 2685	1850	72.8	13.4	29.5
1800	6	85W	Two	SRS	3SMWA/2685	3SMWA 6	3SMWB 2685	1850	72.8	13.4	29.5
1200	4	40W	Three	QS	4SMWD/3040	4SMWD 4	4SMWB 3040	1300	51.2	13.7	30.2
1800	6	85W	Three	SRS	4SMWD/3685	4SMWD 6	4SMWB 3685	1850	72.8	17.9	39.5
1800	6	85W	Three	SRS	4SMWO/3685	4SMWO 6	4SMWB 3685	1850	72.8	17.9	39.5
1800	6	85W	Three	SRS	4SMWA/3685	4SMWA 6	4SMWB 3685	1850	72.8	17.9	39.5

Format 5SM, QSM and OSM fittings

5SMWO/4685



OSMD 3240



Wider versions of the two previous fittings for use on modular ceilings, and a circular fitting of matching design.

Details of the rectangular fittings are shown on pages 1:72 and 73. The circular fitting is supplied in switch start only and the cable entry and conduit suspension slots are centrally placed.

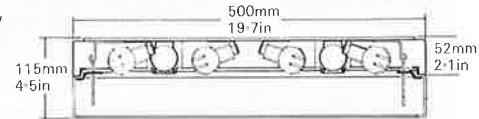
For details of continuous mounting see page 1:72.

The cable entry of the square fitting is offset on the centre-line by 203mm/8in.

The circular fitting is designed for ceiling and wall mounting only. The circular fitting only is supplied complete with 60W Warm White tube.

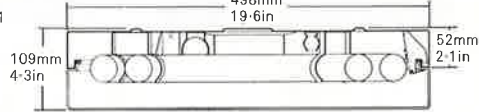
Ambient temperatures at fitting level should not exceed 25°C. All fittings are suitable for 240V 50Hz.

5SMW

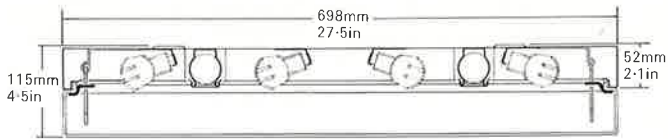


CABLE AND SUSPENSION HOLE ARRANGEMENT

OSM



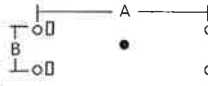
OSM



- Suspension and wiring entry
 - Terminal block
 - Wiring entry only
 - ⊙ 19.8mm conduit box entry 2in PCD
- Diagrams are not to scale

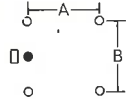
5SMWB 4040

Dimension A	Dimension B
mm in	mm in
610 24	200 7.9



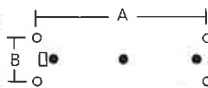
OSMWB 4020

Dimension A	Dimension B
mm in	mm in
406 16	406 16



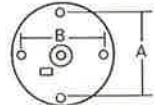
5SMWB 4685

Dimension A	Dimension B
mm in	mm in
900 35.4	200 7.9



OSMD 60

Dimension A	Dimension B
mm in	mm in
4-8mm / 5/16in dia. on	305mm / 12in PCD



Range

Complete fitting

Nominal length		Rating	No. of tubes	Circuit	Catalogue no.	Components			Dimensions		Approx. weight (incl. tubes)	
mm	ft					Diffuser Catalogue no.	Batten Catalogue no.	Length	mm in	kg	lb	
1200	4	40W	Four	QS	5SMWD/4040	5SMWD 4	5SMWB 4040	1300	51.2	17.9	39.5	
1200	4	40W	Four	QS	5SMWO/4040	5SMWO 4	5SMWB 4040	1300	51.2	17.9	39.5	
1200	4	40W	Four	QS	5SMWA/4040	5SMWA 4	5SMWA 4040	1300	51.2	17.9	39.5	
1800	6	85W	Four	SRS	5SMWD/4685	5SMWD 6	5SMWB 4685	1850	72.8	23.3	51.4	
1800	6	85W	Four	SRS	5SMWO/4685	5SMWO 6	5SMWB 4685	1850	72.8	23.3	51.4	
1800	6	85W	Four	SRS	5SMWA/4685	5SMWA 6	5SMWA 4685	1850	72.8	23.3	51.4	
600	2	20W	Four	QS	QSMWD/4020	QSMWD 2	QSMWB 4020	698	27.5	13.3	29.3	
600	2	20W	Four	QS	QSMWO/4020	QSMWO 2	QSMWB 4020	698	27.5	13.3	29.3	
Circ.	60W	One	SRS	OSMD 60*	OSMD	OSMB 60	OSMB 60	498	19.6	7.2	15.8	

*Fitting packed complete

Format accessories

Accessories

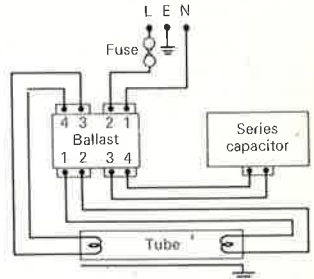
	SM Accessory Catalogue no. (excluding OSMD 60)	OSMD 60 Accessory Catalogue no.
Lampholder	GB1548/K	GB1535
Fused terminal block	GT1265	GT1265
Fuse	2ft 20W— GT1299 4ft 40W— GT1299 6ft 85W— GT1342	4ft 40W— GT1299
Capacitor clip	GY5244	GY5244
Capacitor safety clip	GY5245	GT5245
Starter switch clip	—	GY5274
Loop starter socket	—	GM8064/12
Cable cleat	AC 5363	AC 5363
Lamp clip	—	GY5294
Wiring grommet	AC 5297	AC 5297
Blind grommet	AC 5402	—
Gasket for sides/ mm length	SM 4600/-	—
Gasket for end/ mm length	SM 4601/-	—

Replacement control gear

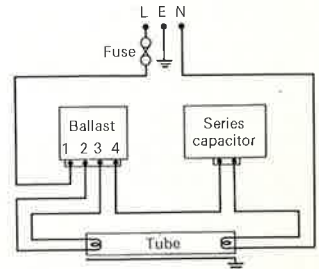
These items are selected from the extensive range of control gear stocked for ready availability. The reference numbers quoted will be different from those marked on the control gear in the fitting, but the units are equally applicable to Format fittings.

	OS Unit	Choke(s) or Ballast	Capacitor(s)	Starter Switch
35W 8ft	Single tube circuit	1-B1/85	1-GC2226	—
	Twin tube circuit	2-B1/85	2-GC2226	—
85W 6ft	Single tube circuit	1-BU/685	1-GC2220	—
	Twin tube circuit	2-BU/685	2-GC2220	—
40W 4ft	Single tube circuit	1-QS/40	1-GC2224	—
	Twin tube circuit	2-QS/40	2-GC2224	—
20W 2ft	Twin tube circuit	1-QS/220	1-CU/40	1-GC2224
OSMD 60 60W Circular	Single tube circuit	1-CU/65	GC2241	155/500

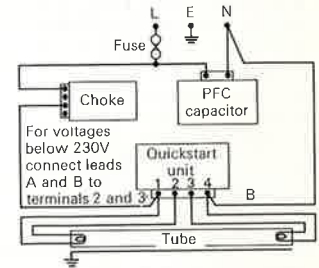
230/240V 50Hz circuit diagrams



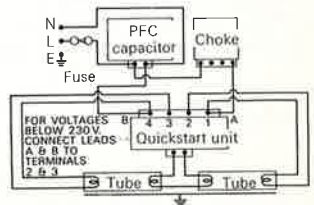
Single 8ft 85W Quickstart (QS) circuit, combined choke and transformer with essential series capacitor



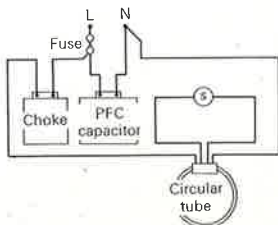
Semi-resonant start (SRS) circuit for 6ft 85W with essential circuit capacitor



Tapped quickstart (QS) transformer circuit with PFC capacitor for 4ft 40W



Twin tube Quickstart (QS) circuit with PFC capacitor for 2ft 20W



Starter switch (SS) circuit with PFC capacitor for 60W

New Format

Introduction

The new range of Recessed Troffer Fittings incorporates all the merits of previous recessed fittings but now permits even greater flexibility in methods of light control and maintaining modular discipline for both metric and imperial modules. To this should be added the facility which can, if required, be provided for air extract capabilities. The New Format successfully unites functional demands of strength, simplicity of installation and maintenance with elegance of appearance and scope for light distribution.

Light Control

For efficient control of light output from the range of fittings, the lighting engineer is offered a wide choice of attachments, each with its own particular application.

An Opal diffuser, two Prismatic Controllers and a Polarized Controller are offered complete with a simple trim frame for attachment direct to the fitting, by means of wishbone springs.

Trimless diffusers, sonically welded with opal sides with a choice of opal or prismatic bases, offer a wider distribution.

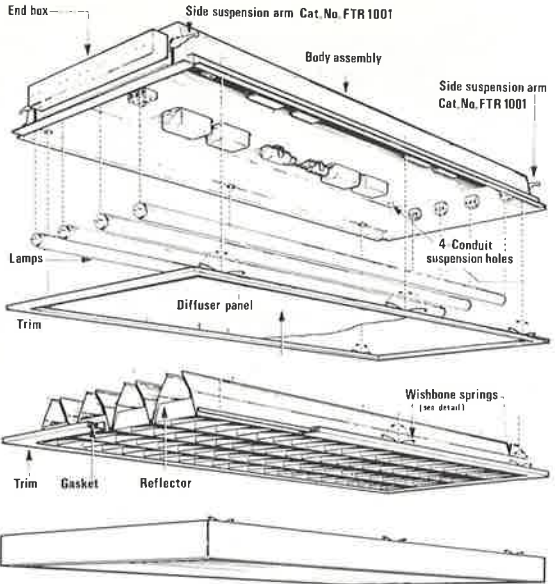
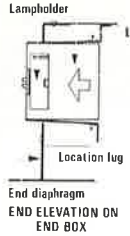
For the 4-tube fittings a symmetrical low brightness reflector giving a wide "batwing" distribution is available. As an alternative there is a low brightness louver, with a normal distribution.

Modules

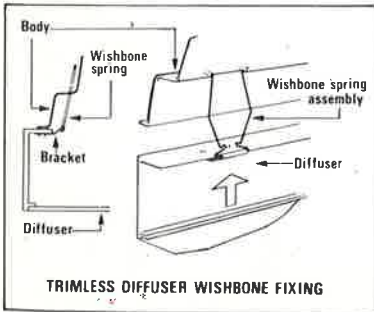
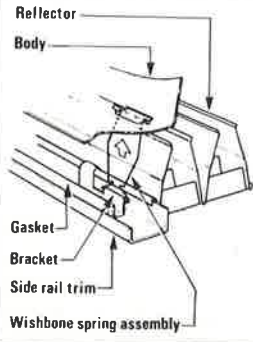
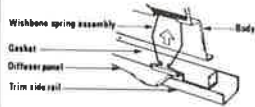
The New Format maintains its flexibility by the selection of light controllers and by its ready application to both metric and imperial ceiling modules.

Only one standard body need be used for any given length, the differences being catered for by the choice of a metric or an imperial attachment. Wishbone springs are used throughout the range to achieve a strong "positive" captive action. This, of course, is an advantage for maintenance when removal of the attachment can be satisfactorily handled by one man.

Lengths, too, follow the popular sizes for ceiling modules, 600mm, 1200mm and 1800mm (2ft, 4ft and 6ft). Standard module widths are 300mm and 600mm (1ft and 2ft).



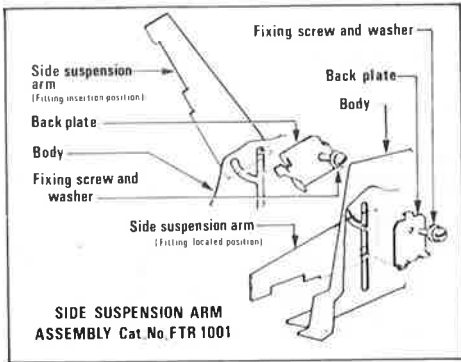
TRIM WISHBONE FIXING



The FTRA series is available for use with metric (300mm) module width or imperial (1ft) module width. Standard fitting lengths are 1200mm (4ft) and 1800mm (6ft) with a choice of 1 lamp or 2 lamp fittings. The diffuser attachments, either opal or prismatic, are supplied complete with a frame for direct attachment, by means of 'wishbone' springs to the Troffer body. Attachments are available in both metric and imperial sizes. When specifying attention should be paid to the ceiling module (and nominal body size) with either metric or imperial attachments ordered as appropriate. The fitting body is supplied complete with control gear and is common to metric and imperial modules for any nominal length.

Air-handling fittings

We can also supply the fitting bodies and attachment frames (for the full range of diffusers) suitable for air extract. Full details on request.

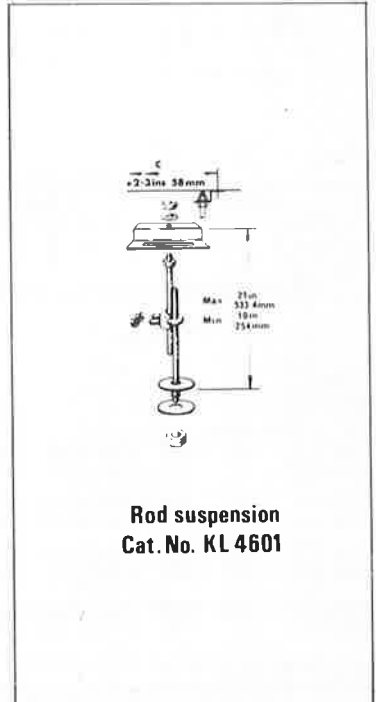


Suspension

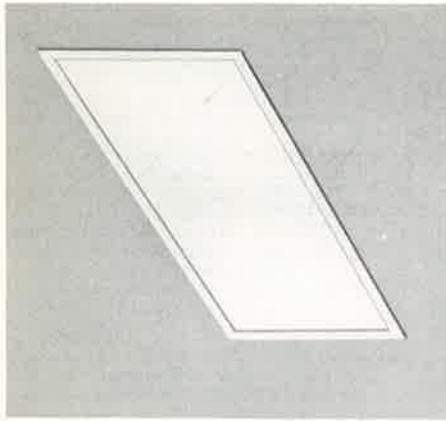
Three methods of suspension are allowed for :

1. Using standard 20mm diameter conduit
2. Using **rod suspension** set KL 4601
3. Using **side suspension arm** set FTR 1001 for direct suspension from the top edge of the 'T' bar in a lay-in grid ceiling.

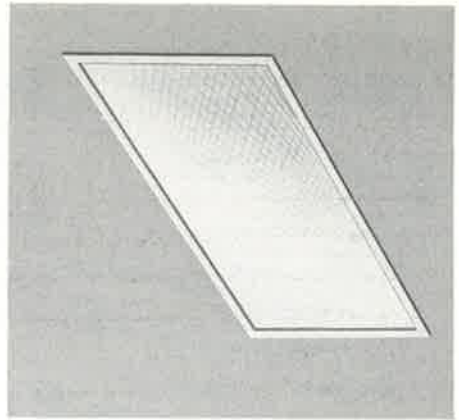
Fittings are supplied complete with control gear and an end box which covers the lampholder is pushed over locating lugs during installation.



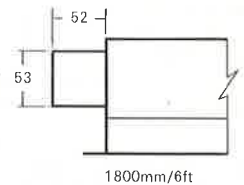
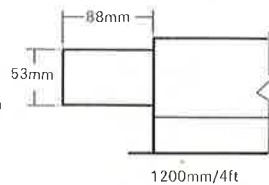
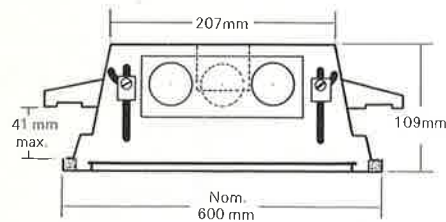
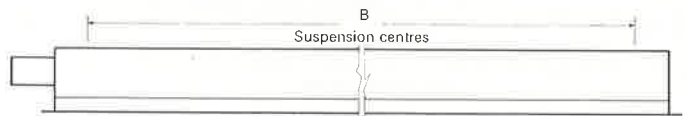
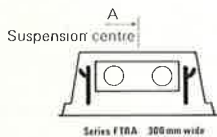
New Format



OPAL
FTRA/O 140



PRISMATIC
FTRA/P 140



Range

FTRA Series—300mm module & 1ft module.

Nominal length mm	ft	No. of Tubes	Rating	Circuit	Cat. no.	Housing c/w gear cat. no.	Metric attachment no.	Imperial attachment no.	Attachment description	Fixing centres A(mm) B(mm)
1200	4	1	40	SRS	FTRA/O 140	FTRA 140	FTRO 34	FTRO 14	Opal c/w Frame	900
1200	4	1	40	SRS	FTRA/P 140	FTRA 140	FTRP 34	FTRP 14	Prismatic (K12) c/w Frame	
1800	6	1	85	SRS	FTRA/O 1685	FTRA 1685	FTRO 16	FTRO 16	Opal c/w Frame	1350
1800	6	1	85	SRS	FTRA/P 1685	FTRA 1685	FTRP 36	FTRP 16	Prismatic (K12) c/w Frame	
1200	4	2	40	SRS	FTRA/O 240	FTRA 240	FTRO 34	FTRO 14	Opal c/w Frame	900
1200	4	2	40	SRS	FTRA/P 240	FTRA 240	FTRP 34	FTRP 14	Prismatic (K12) c/w Frame	
1800	4	2	85	SRS	FTRA/O 2685	FTRA 2685	FTRO 36	FTRO 16	Opal c/w Frame	1350
1800	4	2	85	SRS	FTRA/P 2685	FTRA 2685	FTRP 36	FTRP 16	Prismatic (K12) c/w Frame	

Cat. No. Description

FTR 1001 Side Suspension arm set (4 per set) Cat. No. FTR 1001 is for complete set of 4 suspension arms

KL 4601 Rqd suspension set—2 required per fitting.

The FTRB series of The New Format Troffer Range is available for use with metric (600mm) module width or imperial (2ft) module width. Standard fitting lengths are 600mm (2ft), 1200mm (4ft) and 1800mm (6ft). These fittings are all 3 tube versions. Framed diffuser attachments are attached to the Troffer body by means of 'wishbone' springs and there are opal, a choice of two prismatic controllers and a polrized attachment in this range. In addition there are 2 trimless diffusers one with opal base and sides and the other with a prismatic base and opal sides. Attachments are available in both metric and imperial sizes. When specifying, attention should be paid to the ceiling module nominal body size with either metric or imperial attachments ordered as appropriate. The fitting body is supplied complete with control gear and is common to metric and imperial modules for any nominal length.

Air-handling fittings

We can also supply the fitting bodies and attachment frames (for the full range of diffusers) suitable for air extract. Full details on request.

FTRB series 600mm module

Nominal length mm	No. of ft	No. of tubes	Rating	Circuit	Catalogue no.	Housing c/w gear Catalogue no.	Metric attachment no.	Imperial attachment no.	Attachment description	Fixing centres	
										A mm	B mm
600	2	3	20	QS	FTRB/O 320	FTRB 320	FTR0 62	FTR0 22	Opal c/w frame	450	450
600	2	3	20	QS	FTRB/P 320	FTRB 320	FTRP 62	FTRP 22	K12 c/w frame	450	450
600	2	3	20	QS	FTRB/H 320	FTRB 320	FTRH 62	FTRH 22	K19 c/w frame	450	450
600	2	3	20	QS	FTRB/Z 320	FTRB 320	FTRZ 62	FTRZ 22	Polrized c/w frame	450	450
600	2	3	20	QS	FTRB/D 320	FTRB 320	FTRD 62	FTRD 22	Opal trimless	450	450
600	2	3	20	QS	FTRB/E 320	FTRB 320	FTR E 62	FTR E 22	K12/Opal trimless	450	450
1200	4	3	40	SRS	FTRB/O 340	FTRB 340	FTR0 64	FTR0 24	Opal c/w frame	450	900
1200	4	3	40	SRS	FTRB/P 340	FTRB 340	FTRP 64	FTRP 24	K12 c/w frame	450	900
1200	4	3	40	SRS	FTRB/H 340	FTRB 340	FTRH 64	FTRH 24	K19 c/w frame	450	900
1200	4	3	40	SRS	FTRB/Z 340	FTRB 340	FTRZ 64	FTRZ 24	Polrized c/w frame	450	900
1200	4	3	40	SRS	FTRB/D 340	FTRB 340	FTRD 64	FTRD 24	Opal trimless	450	900
1200	4	3	40	SRS	FTRB/E 340	FTRB 340	FTR E 64	FTR E 24	K12/Opal trimless	450	900
1800	6	3	85	SRS	FTRB/O 3685	FTRB 3685	FTR0 66	FTR0 26	Opal c/w frame	450	1350
1800	6	3	85	SRS	FTRB/P 3685	FTRB 3685	FTRP 66	FTRP 26	K12 c/w frame	450	1350
1800	6	3	85	SRS	FTRB/H 3685	FTRB 3685	FTRH 66	FTRH 26	K19 c/w frame	450	1350
1800	6	3	85	SRS	FTRB/Z 3685	FTRB 3685	FTRZ 66	FTRZ 26	Polrized c/w frame	450	1350
1800	6	3	85	SRS	FTRB/D 3685	FTRB 3685	FTRD 66	FTRD 26	Opal trimless	450	1350
1800	6	3	85	SRS	FTRB/E 3685	FTRB 3685	FTR E 66	FTR E 26	K12/Opal trimless	450	1350

Accessories

Catalogue no.
FTR 1001
KL 4601

Description

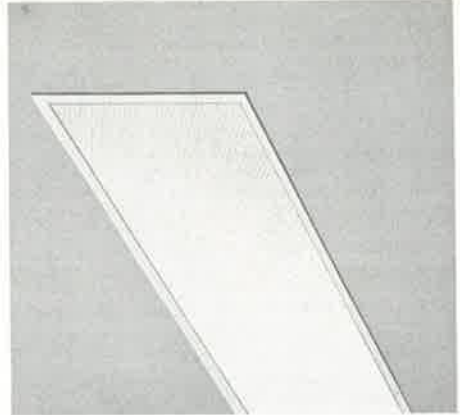
Side suspension arm set (4 per set) Note. Catalogue no. FTR 1001 is for complete set of 4 suspension arms.
Rod suspension set--4 required per fitting

New Format



OPAL
FTRB/O 340

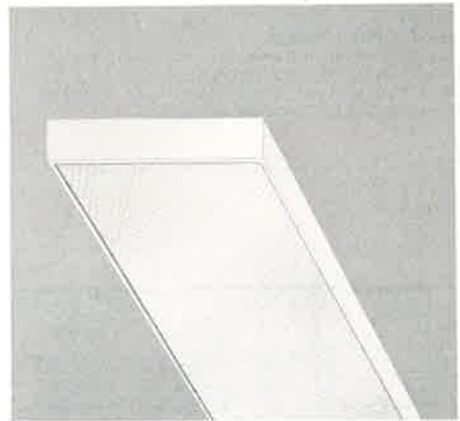
(not illustrated—Polrized FTRB/Z 340)



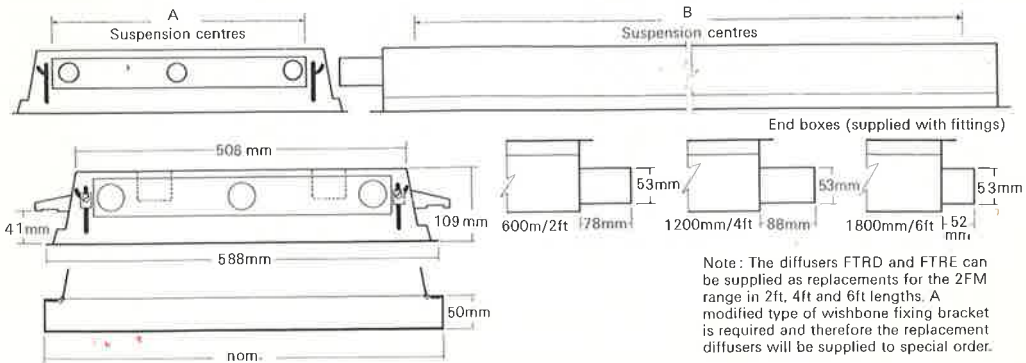
PRISMATIC
FTRB/E 340



OPAL (trimless)
FTRB/D 340



PRISMATIC (trimless) (FTRB/P 340
FTRB/E 340



The FTRB series of the New Format Range is available for use with metric (600mm) module width or imperial (2ft) module width. Standard fitting lengths are 600mm (2ft), 1200mm (4ft) and 1800mm (6ft). Those fittings illustrated are all 4 tube versions. Framed diffuser attachments are attached to the Troffer body by means of 'wishbone' springs and there are opal, a choice of 2 prismatic controllers and a polirized attachment in this range. In addition there are 2 trimless diffusers, one with opal base and sides and the other with prismatic base and opal sides. For the 4 tube versions only, a low brightness louver and a symmetrical low brightness reflector system (with a 'batwing' distribution) are also available. Attachments are available in both metric and imperial sizes. When specifying attention should be paid to the ceiling module and nominal body size and either metric or imperial attachments ordered as appropriate. The fitting body is supplied complete with control gear and is common to metric and imperial modules for any nominal length.

Air-handling fittings

We can also supply the fitting bodies and attachment frames (for the full range of diffusers) suitable for air extract. Full details on request.

Accessories

Catalogue no.
FTR 1001

KL 4601

Description

Side suspension arm set (4 per set)

Note: Catalogue no. FTR 1001 is for complete set of 4 suspension arms
Rod suspension set—4 required per fitting

RANGE

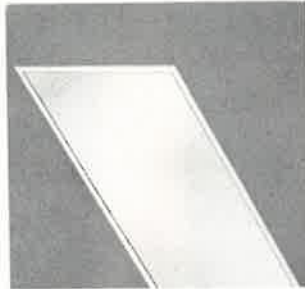
FTRB series - 600mm module = 2ft module

Nominal length*		No. of tubes	Rating	Circuit	Catalogue no.	Housing c/w gear catalogue no.	Metric attachment no.	Imperial attachment no.	Attachment description	Fixing centres	
mm	ft									A mm	B mm
600	2	4	20	QS	FTRB/O 420	FTRB 420	FTR O 62	FTR O 22	Opal c/w frame	450	450
600	2	4	20	QS	FTRB/P 420	FTRB 420	FTR P 62	FTR P 22	K12 c/w frame	450	450
600	2	4	20	QS	FTRB/H 420	FTRB 420	FTR H 62	FTR H 22	K19 c/w frame	450	450
600	2	4	20	QS	FTRB/Z 420	FTRB 420	FTR Z 62	FTR Z 22	Polirized c/w frame	450	450
600	2	4	20	QS	FTRB/D 420	FTRB 420	FTR D 62	FTR D 22	Opal trimless	450	450
600	2	4	20	QS	FTRB/E 420	FTRB 420	FTR E 62	FTR E 22	K12/Opal trimless	450	450
1200	4	4	40	SRS	FTRB/O 440	FTRB 440	FTR O 64	FTR O 24	Opal c/w frame	450	900
1200	4	4	40	SRS	FTRB/P 440	FTRB 440	FTR P 64	FTR P 24	K12 c/w frame	450	900
1200	4	4	40	SRS	FTRB/H 440	FTRB 440	FTR H 64	FTR H 24	K19 c/w frame	450	900
1200	4	4	40	SRS	FTRB/Z 440	FTRB 440	FTR Z 64	FTR Z 24	Polirized c/w frame	450	900
1200	4	4	40	SRS	FTRB/D 440	FTRB 440	FTR D 64	FTR D 24	Opal trimless	450	900
1200	4	4	40	SRS	FTRB/E 440	FTRB 440	FTR E 64	FTR E 24	K12/Opal trimless	450	900
1200	4	4	40	SRS	FTRB/L 440	FTRB 440	FTR L 64	FTR L 24	Low brightness louver	450	900
1200	4	4	40	SRS	FTRB/X 440	FTRB 440	FTR X 64	FTR X 24	Symmetrical low brightness reflector (batwing distribution)	450	900
1800	6	4	85	SRS	FTRB/O 4685	FTRB 4685	FTR O 66	FTR O 26	Opal c/w frame	450	1350
1800	6	4	85	SRS	FTRB/P 4685	FTRB 4685	FTR P 66	FTR P 26	K12 c/w frame	450	1350
1800	6	4	85	SRS	FTRB/H 4685	FTRB 4685	FTR H 66	FTR H 26	K19 c/w frame	450	1350
1800	6	4	85	SRS	FTRB/Z 4685	FTRB 4685	FTR Z 66	FTR Z 26	Polirized c/w frame	450	1350
1800	6	4	85	SRS	FTRB/D 4685	FTRB 4685	FTR D 66	FTR D 26	Opal trimless	450	1350
1800	6	4	85	SRS	FTRB/E 4685	FTRB 4685	FTR E 66	FTR E 26	K12/Opal trimless	450	1350
1800	6	4	85	SRS	FTRB/L 4685	FTRB 4685	FTR L 66	FTR L 26	Low brightness louver	450	1350
1800	6	4	85	SRS	FTRB/X 4685	FTRB 4685	FTR X 66	FTR X 26	Symmetrical low brightness reflector (batwing distribution)	450	1350

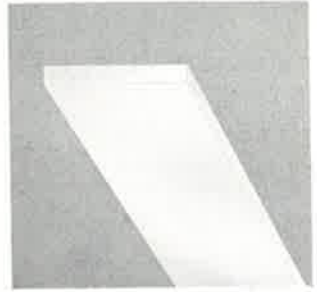
New Format



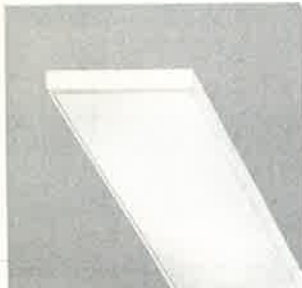
FTRB/O 440
(not illustrated FTRB/Z 440)



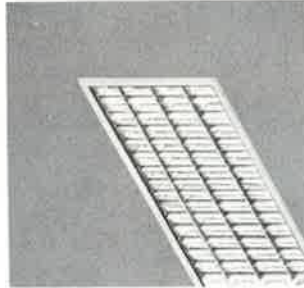
FTRB/P 440 (FTRB/H 440)



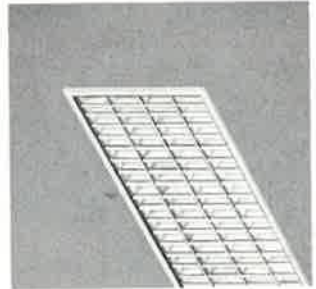
FTRB/D 440



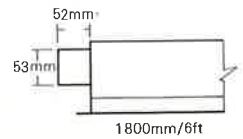
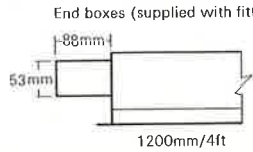
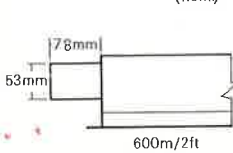
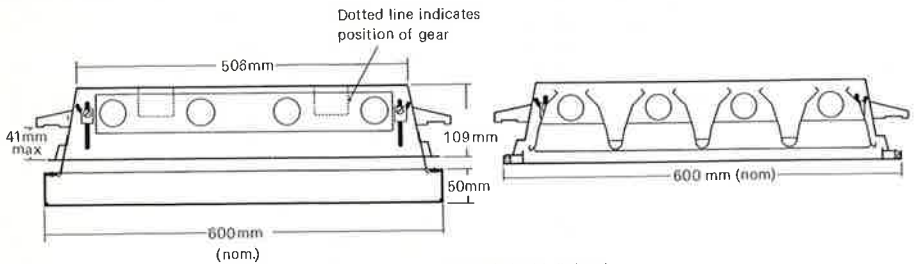
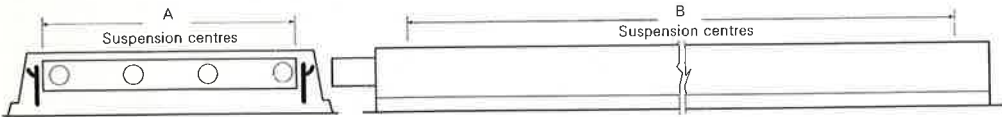
FTRB/E 440

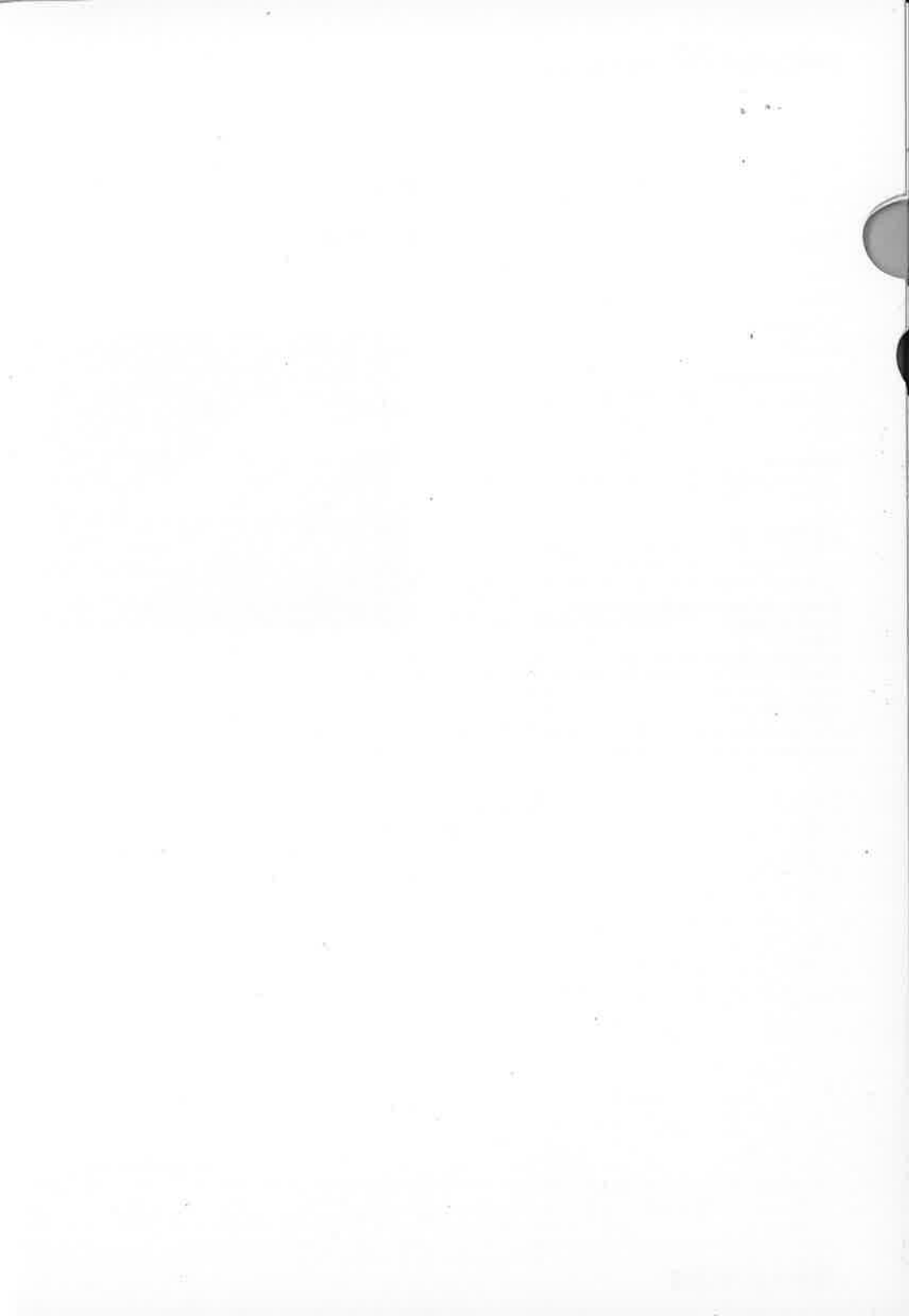


FTRB/L 440



FTRB/X 440





Emergency Lighting

At the time of the Catalogue going to print, there is no one clear-cut standard for emergency lighting. A large number of publications, ranging from Acts of Parliament to Codes of Practices, to British Standards, referring to safety precautions in cinemas, boarding houses, factories, etc, all contain clauses on emergency lighting. However, the definitions generally in use are as follows:

Emergency Lighting

Lighting which is provided in addition to, or as an alternative to, normal lighting to assist safe, unobstructed means of escape and/or safe environment.

Emergency lighting may use one of two systems:

Central System

A number of luminaires operating from a central secondary power supply.

Independent System

Each luminaire contains a secondary power source, and will function independently of all other luminaires in the system.

Within either system, the emergency lighting may be defined as either:

Maintained

Emergency lighting lamps/tubes are illuminated at all times when persons are on the premises.

or:

Non-Maintained

An emergency lighting system in which the lamp/tube is energised only when the normal supply is interrupted.

The fittings used in the latter system may be one of the following:

Sustained Emergency Lighting Luminaires

A luminaire containing both normal lighting and non-maintained emergency lighting.

Non-Sustained Lighting Luminaire

A luminaire containing non-maintained emergency lighting only.

The most common, simplest, and well established means of emergency lighting is the non-maintained system, using non-sustained fittings. These fittings may be either (1) *independent units*, with integral batteries, or (2) part of a *central system*, with one battery operating a number of luminaires.

(1) INDEPENDENT SYSTEM

Emergency Lighting Bulkhead

The Escort fluorescent bulkhead fitting (for full details of construction, see page 2:6) has been modified for emergency lighting use. This robust, but attractive fitting is suitable for use in any commercial application, indoors or out, where emergency lighting may be required in the event of mains failure. The fitting is non-sustained, which means that no light is emitted during normal healthy mains conditions, but a standard 300mm (12in) 8W tube is instantaneously lit on mains failure. On mains recovery, the internal battery is recharged automatically.

Two versions are available — a 3 hour and a 1 hour type. Following a complete discharge of the batteries the 3 hour version will give 1 hour of emergency light after 8 hours of normal mains supply, and the complete 3 hours after 24 hours charge. The 1 hour version will give 15 to 20 minutes of emergency light after 8 hours charging following complete discharge, which should be sufficient to evacuate small premises in an emergency. After 24 hours charge it will give the full 1 hour.

Range

Catalogue Number	Description
FBS 18	1 hour bulkhead c/w 8W tube
FBL 18	3 hour bulkhead c/w 8W tube

(2) CENTRAL SYSTEM

Transistorized Fittings

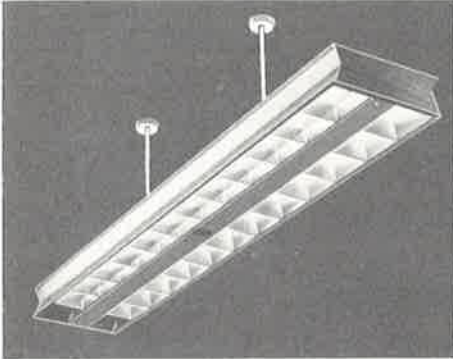
When used in conjunction with the battery charger (catalogue number G.R.2463, see Section 10) and a 12V battery, transistorized fittings provide a useful non-maintained central emergency lighting system.

Fittings suitable for use in this system are the Nomad (see page 1:29 for details) and 12V versions of the Minipack (details of 240V fittings on page 1:27), which can be supplied to special order.

For details of the above mentioned fittings, and for further advice on your emergency lighting requirements, please contact your local order office.

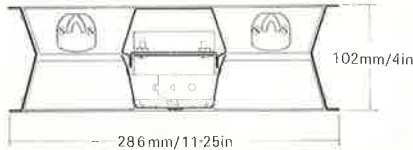
OF fittings

This fitting has been designed for various applications and is equally suitable for use in hospital wards or without the centrally mounted night light in commercial applications. Hospital lighting is a specialised subject and generally requires special consideration for each particular project. Thorn Lighting have designed and manufactured a considerable number of "special" fittings for various hospital installations. Further information and prices for all these fittings can be obtained on application to your local Thorn Lighting office.



OFL/Q2065

Construction of the main spine, containing the Quickstart control gear, is in steel. The main reflector, attached to the underside of the spine is in satin etched and anodised aluminium, and incorporates steel baffles, painted BS 8-089 colour, the assembly being easily removable for cleaning. The side reflectors are also satin etched and anodised aluminium. If required, the reflector is available without cross baffles. Particular attention has been paid to minimising projections on all surfaces, in order that in situ cleaning can be easily and thoroughly carried out and horizontal surfaces have also been reduced to a minimum. The two fluorescent tubes can be simply removed without disturbing any part of the fitting. A centrally arranged night lighting fitting is incorporated into the spine projecting through the main reflector, and screening for the 25w night light is provided by a stove enamelled cylinder.



RANGE AND DIMENSIONS

Nominal Length	Rating	Circuit	Cat. No.	Length		Fixing centres	
				mm.	ins	mm	ins
5ft	65W Twin	Resonant Start	OFLQ2065	1567	61.75	610	24

Isora Division products

Introduction

In recognition of the extent to which lighting and air terminal equipment have become integrated with the ceiling, Thorn Lighting has designed integrated lighting/ceiling systems and is actively engaged in developing new systems to meet this market.

ARENA

Arena represents the full integration of lighting, ceiling and air handling facilities – a system which permits the use of acoustic tiles and metal tray panels of standard and therefore readily obtainable sizes.

COFFERLIGHT

Cofferlight selects the 5ft SRS Pop Pack fitting as the lighting unit in a recessed coffered ceiling system based on a 1200 x 1800mm module.

METRILUX

Metrilux provides continuous recessed lighting, again using Pop Pack fittings and Atlantic fittings as well to provide a simple suspended ceiling and lighting scheme with a

choice of metal tray panels, acoustic glass fibre panels or metal louver blades. The system is based on an integral trunking support which will accommodate Trakline.

OTHER CEILING SYSTEMS

The extensive Isora range of luminous ceiling products can be categorised in two main groups – the open louvered systems and the closed translucent systems.

Open systems

Cancan, complete with a range of lampholder attachments for the Decor Spot, Decor Round and Reflector spot lamps, provides an open louver system for achieving both decorative effects and functional illuminance.

Leaf-Lite, a non-modular system, also allows a variety of design possibilities with interesting visual effects.

Aluminium Louvers, in a wide variety of cell sizes and textured configurations, permit low brightness ceilings or featured areas.

Circlgrid and Paragrid, two related open louvered panels, are available complete with their own aluminium support grid.

Closed systems

Thermalucet is a plain double-layered translucent diffusing panel suitable for many industrial and commercial applications.

The Architectural range of panels provides a variety of design shapes for overall luminous ceilings or for featured 'light bays'.

Polarized ceiling panels in two standard patterns – Dome and Plaza – complete the translucent range and give the added benefits of visual performance achieved by polarized lighting.

SUPPORTING GRIDS

The introduction of Isora-grid in two table sizes, 25mm and 40mm, gives a ceiling support grid suitable for all standard types of panel.

The Spaceliner grid remains available for use with Thermalucet panels.

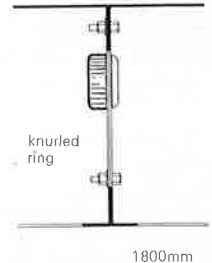
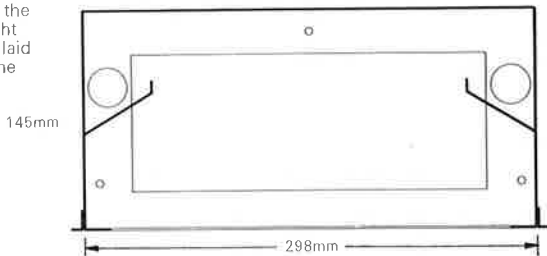
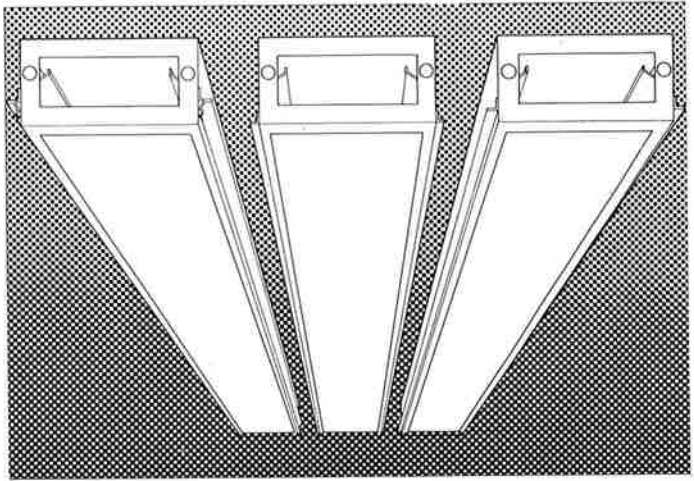
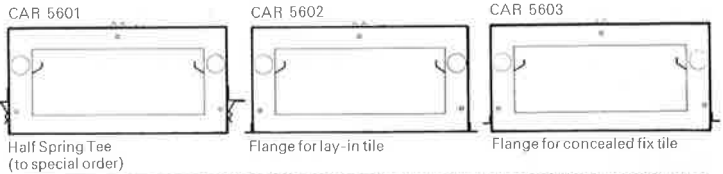
ARENA Integrated Ceiling System

In most conventional suspended ceiling systems using recessed lighting fittings either the electrical contractor first hangs the lighting fittings from the structural ceiling and the ceiling contractor installs his tiles around them, or the ceiling contractor erects his ceiling first, leaving openings within which the electrician places his fittings. Either method is expensive, requiring a large number of suspension points, time is wasted while men of different trades wait for each other to finish, and almost always adjustments have to be made in the final stages. When ventilation or air conditioning is also required, the situation is still further complicated. Yet another sub-contractor is involved, and his ducting which must be installed before either lighting fittings or suspended ceilings are in place may conflict with the positioning of these components or their suspensions.

In the ARENA system the planning starts with the lighting layout. This determines the position of all components, and since the ceiling-boxes form the main structural support for the suspended ceiling, the number of suspension points for the latter is much reduced. The air ducting is designed in relation to the ceiling construction, and flexible connections can be made to terminal equipment at an early stage. The electrician's work is to provide wiring in the ceiling-boxes already installed and to the trunking runs (if any) and finally installing the gear channels, fluorescent tubes and diffusers. The whole planning and installation process is shortened and simplified with a consequent saving in time and money.

The Ceiling-Box

This is made flangeless with half spring-tees on each side to accept metal panels or with two types of flange to accept lay-in or concealed fix tiles. It is of modular tile width and it is constructed of sheet steel to the dimensions shown and stove enamelled white. Apertures are provided at each end and in the top for air-extraction and the latter can be adapted to accept ducting. Air flow is controlled by a baffle plate. Two 26mm dia. holes are provided at each end to give access to the internal wiring channels and three holes are provided at either end to allow the boxes to be secured to each other or to air supply or extract-boxes by means of 5 SI nuts and bolts. Suspension is by hook bolts, entering four slots arranged in pairs at either end of 180mm x 1400mm centres. They are included in the ceiling-box assembly. Internal wiring channels are provided and also support the gear-trays carrying fluorescent lamps. Clip-in covers can be supplied to order to isolate the wiring. Various types of light controlling devices can be laid on the internal flanges of the ceiling-box.



2 bushes with knurled rings supplied with boxes

ARENA Ceiling Supporting and Air-flow components

Air Supply-Frames

These are made of the same width as the ceiling-box and are designed to be installed between and in line with them. The assembly consist of four parts all of which are made in 300mm (or 12in) and 600mm (or 24in) sizes.

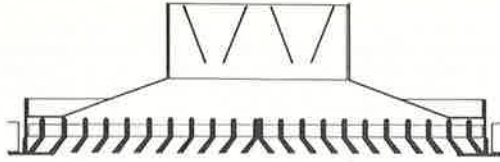
1 An open supporting frame, secured to the ends of the ceiling-boxes by nuts/bolts, and with similar fixing arrangements for ceiling tiles.

2 An extruded anodised aluminium grille which rests within it. Two types are available, with the blades arranged for single or two-way throw. They are installed with the blades in line with the major axis of the ceiling-boxes.

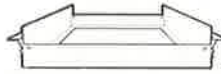
3 A 'cone' which fits on the grille and feeds air from the ducting by means of a flexible connection.

Where 600mm air supply-boxes and grilles are used it is possible to install a 300mm cone centrally, allowing the ends of the grille to act as an air-extract by-pass. Alternatively a blanking-piece is provided for use above the grille in such a case.

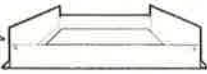
4 An opposed-blade damper fits in the throat of the cone to control air flow. This is an essential device if individual dampers are not installed in the duct-work. The damper blades must be parallel with grille.



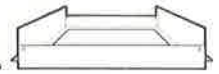
Assembly of Supply air box



CAR 5641 71
(To special order)



CAR 5642 72



CAR 5643 73



CAR 5638/68

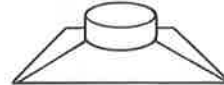


CAR 5634/64



CAR 5703/04

Dimensions of throat
300mm : 120 x 120mm
600mm : 120 x 200mm



CAR 5637/67



CAR 5639/69

300mm type shown



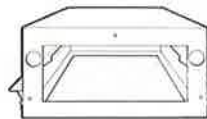
CAR 5639/69

Note that 26mm dia. (or 1 in dia.) conduits must be provided by the electrical contractor to connect the wiring channels in the ceiling-boxes on either side of the supply-boxes.

Air Extract-Boxes

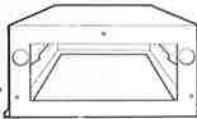
A 300mm (or 12in) or 600mm (or 24in) long closed top version of the ceiling-box, in which can be rested a grill similar to those described above. These boxes are used when the ceiling-box has a closed diffuser and are designed to allow air to pass over the lamps and control gear and out through the opening in the top of the ceiling-box. They are not necessary where a low-brightness reflector or a louver is used.

Grilles may be orientated in either direction.



CAR 5631/61

(To special order)



CAR 5632/62



CAR 5633/63

Note that where an air-box occurs at the end of a row of ceiling-boxes it may need extra support to avoid sagging. To reduce light leakage the extract boxes are finished with white flange and black interior.

Top Flow Plate

A plate is provided to restrict or obstruct air-flow through the opening in the top of the ceiling-box. Used in one position it allows 50% air-flow, in the other it blanks the hole off completely. (Supplied with ceiling box).



Arena Lighting Attachments

Gear Trays

Carry two 6ft 85W fluorescent lamps and gear. Made of sheet steel, stove enamelled white, they can be hooked on to the through-wiring channels in the ceiling-box. Wiring is of heat-resisting PVC cable, terminating in a fused three-way terminal block for connection to the through-wiring. Standard gear-trays are suitable for use on 240V 50Hz supplies. Other voltages on application.

Low-Brightness Louver/Reflector Assembly

A twin lamp assembly in anodised aluminium with white cross baffles which rests on the inner flange of the ceiling-box. It is designed to allow a free air-flow through the apertures in the top of the fitting. This type of control is suggested for situations where low glare ratings are specified.

Prismatic Panels

Two patterns of prismatic panels to give varying degrees of light control are catalogued and fit in the inner flange of the ceiling-box. Other types are available to special order. When this type of controller is used in air-handling fittings, air extract-boxes must be installed between the light-boxes.

Opal Dish Diffusers

A simple lay-in dish for situations where low glare ratings are not required. Air extract-boxes are necessary if this type of diffuser is used in an air-handling fitting.

Specular Plastic Low-Brightness Louver

A metalised plastic louver with 12mm square cells of parabolic cross section is used to produce a low-brightness surface and is suitable for situations where a very low-brightness louver of elegant appearance is required. Since the air-flow through the louvers is unrestricted air-boxes are not required.

Egg Crate Louvers

A conventional louver in satin anodised aluminium and plastic suitable for open air-handling fittings. For use where continuous unbroken lines of fittings are required with moderate glare ratings, see note C.

Line-TEX Louver

A white stove-enamelled aluminium louver for use where a more interesting texture is required. The cross blades are deepened to give a slotted appearance.

Note: Both the above louvers can be obtained in different finishes to order; other types are also available.

Polrized Panel

A flat sheet Polrized Panel can be used in installations where control of "veiling glare" and reductions in "direct glare" are sought. Air extract boxes are necessary if this type of diffuser is used in an air-handling fitting.

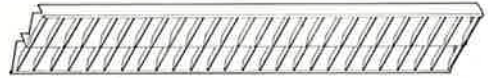
A Note: a three-lamp gear-tray can be provided on demand, but is only suitable for use with louvers or air-handling situations. Thorn Isora Division should be consulted before specifying this unit. Lamps not included.

B Note: Both the above aluminium louvers can be obtained in different finishes to order; other types are also available.

C Note: Both the above louvers can be obtained in different finishes to order; other types are also available.



A CAR 2685



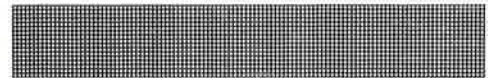
B CAR 2611



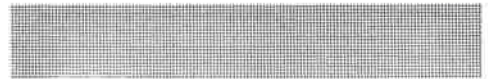
CAR 2612 and CAR 2613



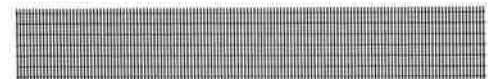
CAR 2614



CAR 2615



CAR 2616 and CAR 2617



CAR 2618



CAR 2919

Arena components list

Lighting/ceiling components

Catalogue no.	Description
CAR 5601	300×1800mm Ceiling Box for Metal Tray
CAR 5602	300×1800mm Ceiling Box for Lay-in Tile
CAR 5603	300×1800mm Ceiling Box for Concealed Fixing Tile
CAR 2685	Gear Tray Assembly (twin 6ft 85W) 1800mm
CAR 3601	300×1800mm Ceiling Box (for 3 tube version) for Metal Tray
CAR 3602	300×1800mm Ceiling Box (for 3 tube version) for Lay-in tile
CAR 3603	300×1800mm Ceiling Box (for 3 tube version) for concealed fixing tile
CAR 3685	Gear Tray Assembly (3×6ft 85W) 1800mm
CAR 2681	Top Flow Plate for Ceiling Box (1 packed with each ceiling box)
CAR 2611	1800mm Twin Low brightness louver assembly
CAR 2612	1800mm Prismatic Panel (K15)
CAR 2613	1800mm Prismatic Panel (K12)
CAR 2614	1800mm Opal dish diffuser
CAR 2615	1800mm Specular Plastic Louver
CAR 2616	1800mm Eggcrate Plastic Louver
CAR 2617	1800mm Anodised Aluminium Louver
CAR 2618	1800mm Line-TEX Louver (White)
CAR 2619	1800mm Polrized Panel

Air handling components

CAR 5631	300mm long, Extract Box for Metal Tray
CAR 5632	300mm long, Extract Box for Lay-in Tile
CAR 5633	300mm long, Extract Box for Concealed Fixing Tile
CAR 5635	300mm long, One way extract grille
CAR 5636	300mm long, Two way extract grille
CAR 5690	300mm long, Line-TEX extract grille
CAR 5661	600mm long, Extract Box for Metal Tray
CAR 5662	600mm long, Extract Box for Lay-in Tile
CAR 5663	600mm long, Extract Box for Concealed Fixing Tile
CAR 5665	600mm long, One way extract grille
CAR 5666	600mm long, Two way extract grille
CAR 5691	600mm long, Line-TEX extract grille
CAR 5637	300mm long, Input Cone (round spigot)
CAR 5667	600mm long, Input Cone (round spigot)
CAR 5703	300mm long, Input Cone (square spigot)
CAR 5704	600mm long, Input Cone (square spigot)
CAR 5634	300mm long, Input Grille (1 way throw)
CAR 5638	300mm long, Input Grille (2 way throw)
CAR 5664	600mm long, Input Grille (1 way throw)
CAR 5668	600mm long, Input Grille (2 way throw)
CAR 5639	300mm Circular Damper
CAR 5669	600mm Circular Damper
CAR 2639	300mm O/B Damper (square)
CAR 2669	600mm O/B Damper (square)
CAR 2691	1800mm length, Flowline for Metal Tray
CAR 2692	1800mm length, Flowline for Lay-in Tile
CAR 2693	1800mm length, Flowline for Concealed Fixing Tile
CAR 2655	1800mm length, Unlined Air Supply Boot for Flowline
CAR 2694	300mm long, Flowline blanking section for Metal Tray
CAR 2695	300mm long, Flowline blanking section for Lay-in Tile
CAR 2696	300mm long, Flowline blanking section for Concealed Fixing Tile
CAR 2697	600mm long, Flowline blanking section for Metal Tray
CAR 2698	600mm long, Flowline blanking section for Lay-in Tile
CAR 2699	600mm long, Flowline blanking section for Concealed Fixing Tile

Arena components list

End plates and fill-in frames

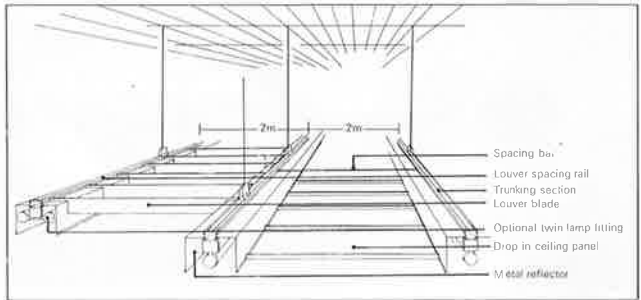
Catalogue no.	Description
CAR 5621	Ceiling box end plate (no flange)
CAR 5622	Ceiling box end plate with support for Lay-in Tile
CAR 5623	Ceiling box end plate with support for Concealed Fixing Tile
CAR 5641	300mm long, Input Cone Frame for Metal Tray
CAR 5642	300mm long, Input Cone Frame for Lay-in Tile
CAR 5643	300mm long, Input Cone Frame for Concealed Fixing Tile
CAR 5671	600mm long, Input Cone Frame for Metal Tray
CAR 5672	600mm long, Input Cone Frame for Lay-in Tile
CAR 5673	600mm long, Input Cone Frame for Concealed Fixing Tile
CAR 5644	300mm long, Infill Plate c/w Spring Clip
CAR 5674	600mm long, Infill Plate c/w Spring Clip
CAR 5647	Blanking Panel for use with 300mm Cone/600mm Grille
CAR 2680	Clip-in Wiring Cover for Ceiling Box

Suspension and accessories

CAR 2659	Suspension Hook/bolt assembly for Ceiling Box and Flowline Air Supply Boot
CAR 2657	Suspension Rod Set (for Lightweight Trunking to Arena sub-frame)
CAR 2658	Top-hat bracket (for fixing half spring tee to LTN trunking)
CAR 2677	3.6m length of half spring tee (for assembly with CAR 2658 & LTN trunking)
CAR 2660	End Bracket for Trakline with ceiling junction
CAR 2700	'C' Clamp for use with Trunking Suspension Set CAR 2667
CAR 2690	Trakline/Flowline Junction Bracket



The Metrilux system has the merits of simplicity of installation and ease of maintenance. It is based on a specially designed aluminium trunking (CMT 1006), which can be used with or without Atlas Trakline to support fluorescent batten fittings mounted within Metrilux reflectors. Either Popular Pack or Atlantic A4 (narrow twin) fittings can be used within the troughs formed by the reflectors (CMT 1007 for Pop Pack and CMT 2007 for Atlantic). With trunking runs spaced at 2 metres, reflectors locate on the trunking and these in turn support the ceiling panels (CMT 1001). The panels can also be mounted in the high position, this requires 1.8m spacing of the trunking runs. Acoustic glass fibre panels (CMT 5001) can be used with a special tee bar (CMT 5002). The tee bar locates on the reflectors (in a similar manner to the metal tray panels) and these then support the glass fibre panel. Reflectors join together with a jointing strap (CMT 1008 or CMT 2008) and the reflector runs are terminated by an end plate (CMT 1009 or CMT 2009). Louver blades (CMT 1003) 110mm deep provide an alternative treatment to panels and can be spaced at 200mm, 400mm or 600mm centres by use of the louver spacing rail (CMT 1002). The ceiling perimeter is completed by perimeter fixing channels, CMT 1005 for panels or CMT 1014 for louvers. With the



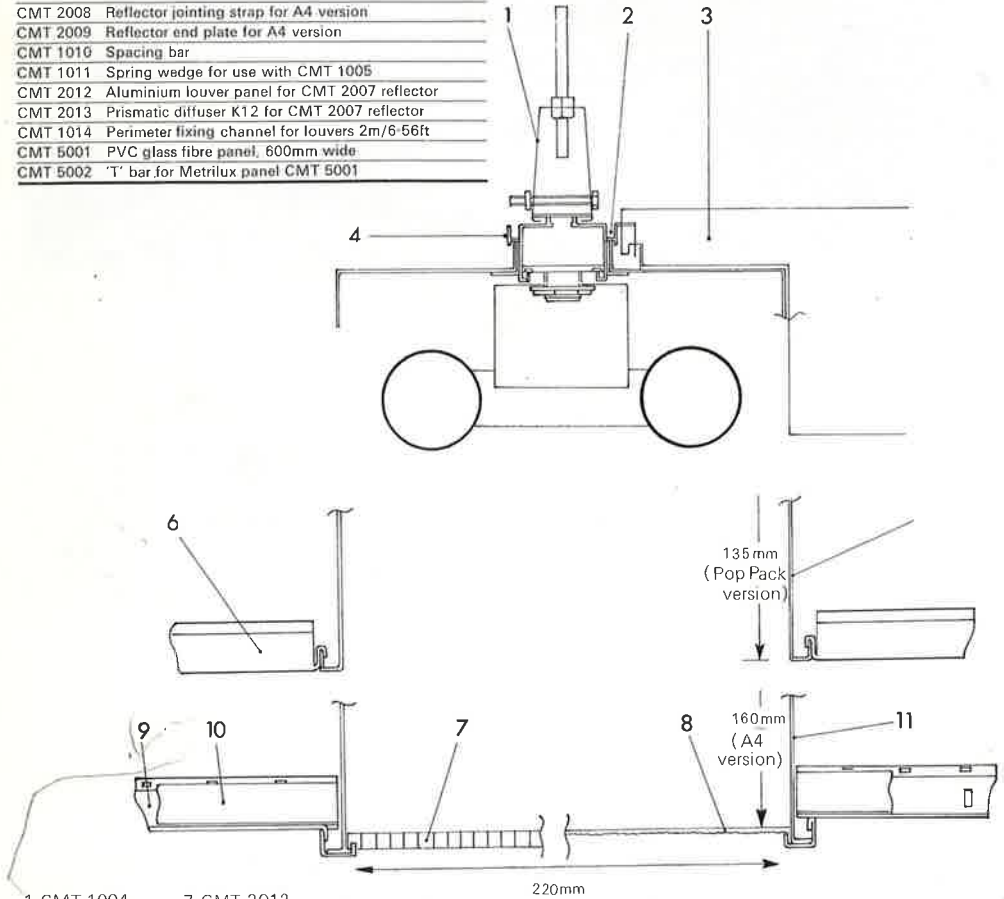
Recommended suspension centres for trunking:
 a. With metal tray panels 1 metre,
 b. With louvers or glass fibre panels 2 metres.

Atlantic version two types of diffuser can be used: an aluminium louver with a $13 \times 13 \times 13$ mm (nominal size) cube cell (CMT 2012) or a K12 pattern prismatic panel (CMT 2013). For full illustrations and descriptions of the system refer to publication TLL0099/6/72

Metrilux

RANGE

Catalogue no	Description
CMT 1001	Metal ceiling panel, 400mm wide
CMT 1002	Louver spacing rail 1.6m/5.25ft
CMT 1003	Louver blade (110mm deep)
CMT 1004	Trunking suspension assembly
CMT 1005	Perimeter fixing channel for panels 2.44m/8ft
CMT 1006	Trunking 4.5m/14.76ft
CMT 1007	Side reflector for Pop Pack version
CMT 1008	Reflector jointing strap for Pop Pack version
CMT 1009	Reflector end plate for Pop Pack version
CMT 2007	Side reflector for A4 version
CMT 2008	Reflector jointing strap for A4 version
CMT 2009	Reflector end plate for A4 version
CMT 1010	Spacing bar
CMT 1011	Spring wedge for use with CMT 1005
CMT 2012	Aluminium louver panel for CMT 2007 reflector
CMT 2013	Prismatic diffuser K12 for CMT 2007 reflector
CMT 1014	Perimeter fixing channel for louvers 2m/6.56ft
CMT 5001	PVC glass fibre panel, 600mm wide
CMT 5002	'T' bar for Mترلux panel CMT 5001



- | | |
|------------|---|
| 1 CMT 1004 | 7 CMT 2012 |
| 2 CMT 1002 | 8 CMT 2013 (only with Atlantic A4 version) |
| 3 CMT 1003 | 9 CMT 5002 |
| 4 CMT 1006 | 10 CMT 5001 |
| 5 CMT 1007 | 11 CMT 2007 (used with Atlantic A4 narrow twin filters) |
| 6 CMT 1001 | |



Cofferlight is a lighting/ceiling system with a recessed coffer design based on an 1800 x 1200mm module, formed by a supporting grid system of channels which can provide location of partitions, with complete facility for fixing anywhere on this module. The lighting unit can be selected from the Atlas Pop Pack range using 5ft 65W SRS fittings and diffusers. At normal viewing angles Cofferlight provides glare-free lighting but still permits high illuminance levels to be achieved.

Three separate methods of suspension are possible:

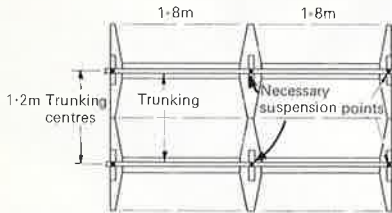
- (1) Using Liteline trunking;
- (2) Using longitudinally-mounted twin 'C' channels;
- (3) Using cross-mounted 'C' channels.

Single or dual coffer ends form the end of the individual coffers and it is these that are attached to the Liteline trunking. Main channel sections connect between the coffer ends and are terminated or joined to adjacent coffers by means of intersection assemblies. 5ft SRS Pop Pack fittings attached to top coffer plates span between the tops of the coffers and boards are laid either side to complete the recessed coffers.

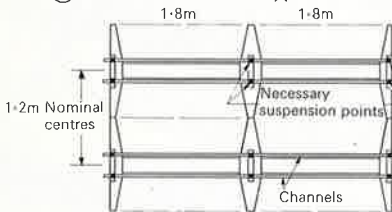
Cofferlight

METHODS OF SUSPENSION

① USING LITELINE TRUNKING



② TWIN 'C' CHANNEL GRID ★



③ SINGLE CHANNELS ★

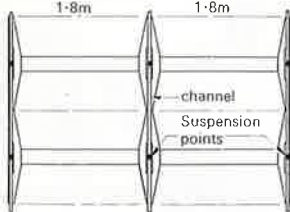
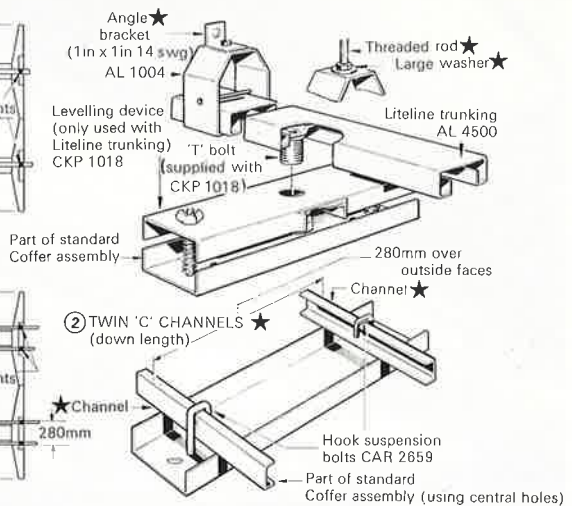
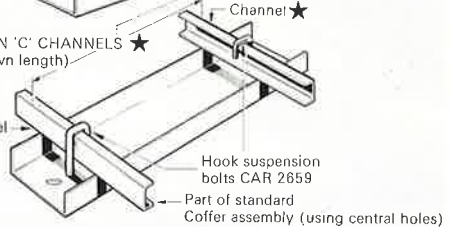


ILLUSTRATION OF PRIMARY FIXINGS ONLY

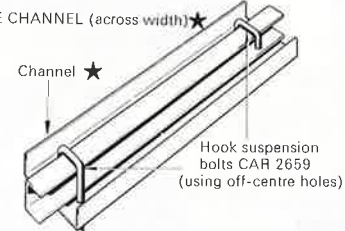
① LITELINE TRUNKING



② TWIN 'C' CHANNELS ★ (down length)



③ ONE CHANNEL (across width) ★



★denotes items supplied by contractor

1. Liteline Trunking

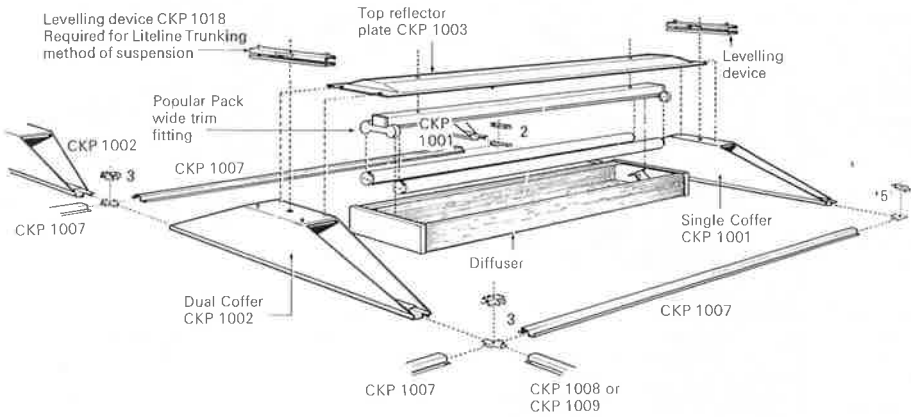
Standard Liteline Trunking (AL 4500) and associated components is used as the standard suspension system. Recommended suspension centres 1.8m. With this method of suspension, a levelling device (Catalogue no. CKP 1018) is required. Two screws, springs, wing nuts and 'T' bolt assembly are supplied to attach this to the appropriate coffer end (Catalogue no. CKP 1001 or 1002) (Diagram 1)

2. Twin 'C' Channels

Use hook bolts (CAR 2659) in the two holes of the top coffer bracket nearest the centre. A 19mm x 38mm x 19mm 14swg galvanized channel is recommended. Recommended suspension centres 1.8m. The distance between outside faces of the 'C' Channels is 280mm. (Diagram 2)

3. Transverse 'C' Channel

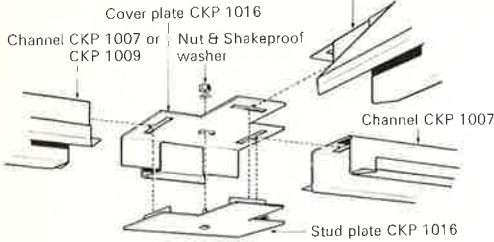
Use hook bolts (CAR 2659) in staggered holes. 'C' Channel, 19mm x 38mm x 19mm 14swg galvanized is recommended. Recommended suspension centres 1.2m. (Diagram 3)



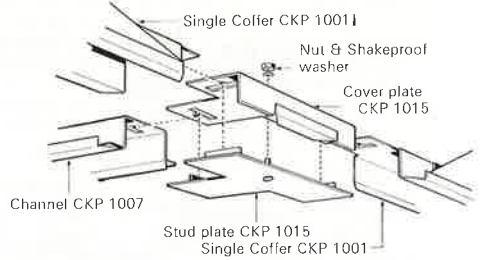
NOTE: Hook Bolts CAR 2659 required when 'c' channel method of suspension is used.

Coffersight

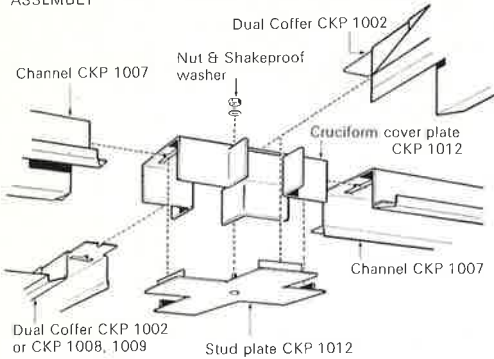
1 CHANNEL INTERSECTION 'T' ASSEMBLY (CKP 1016)



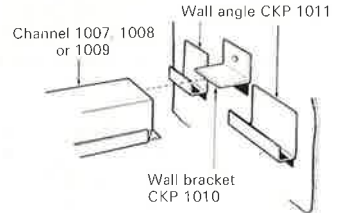
2 COFFER INTERSECTION 'T' ASSEMBLY (CKP 1015)



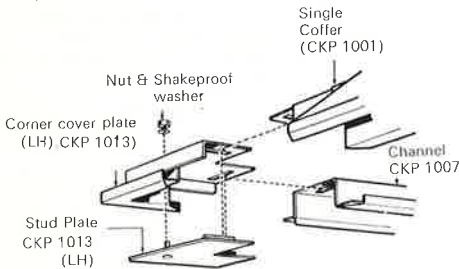
3 CRUCIFORM INTERSECTION ASSEMBLY



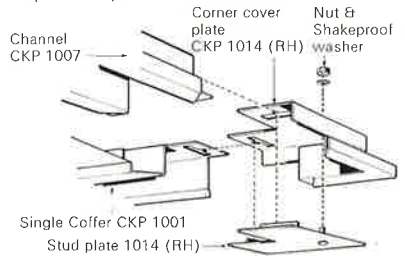
6 WALL ANGLE INTERSECTION Wall Angle (CKP 1011) & Wall Bracket (CKP 1010)



4 LEFT HAND CORNER ASSEMBLY (CKP 1013)



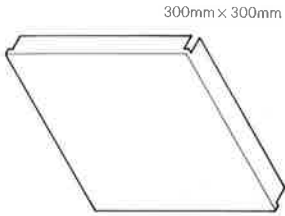
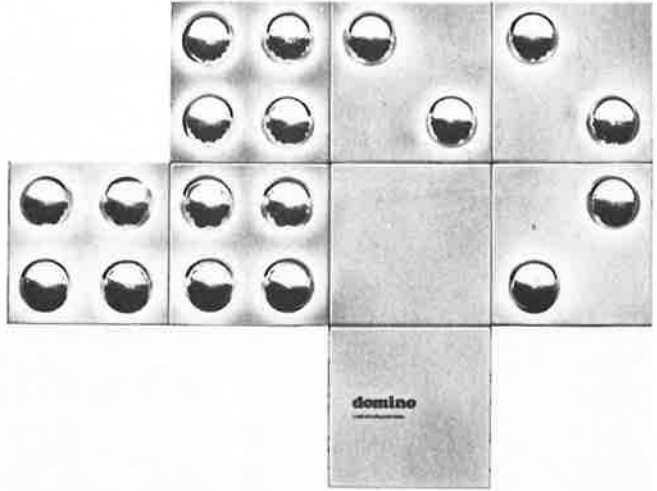
5 RIGHT HAND CORNER ASSEMBLY (CKP 1014)



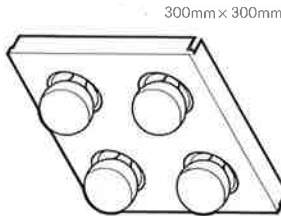
Domino is a collection of decorative ceiling panels, featuring the 40W 100mm crown silvered Decor Round lamp. The Domino panels are a nominal 300 x 300mm and designed for use with the various spring tee grid systems which are in common use.

Domino consists of plain panels (i.e. without lamps), two lamp panels or four lamp panels which can be arranged in a variety of attractive Domino patterns.

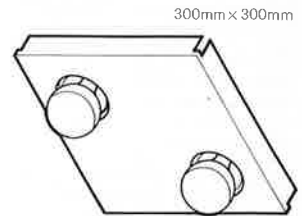
The two lamp panels are arranged with the lamps diagonally and the four lamp panels with lamps in a symmetrical pattern. Panels are supplied complete with lampholders wired to a terminal block and comply with Class 2 luminaire requirements.



Plain Panel CDO 1000



Four Lamp Panel
CDO 1004

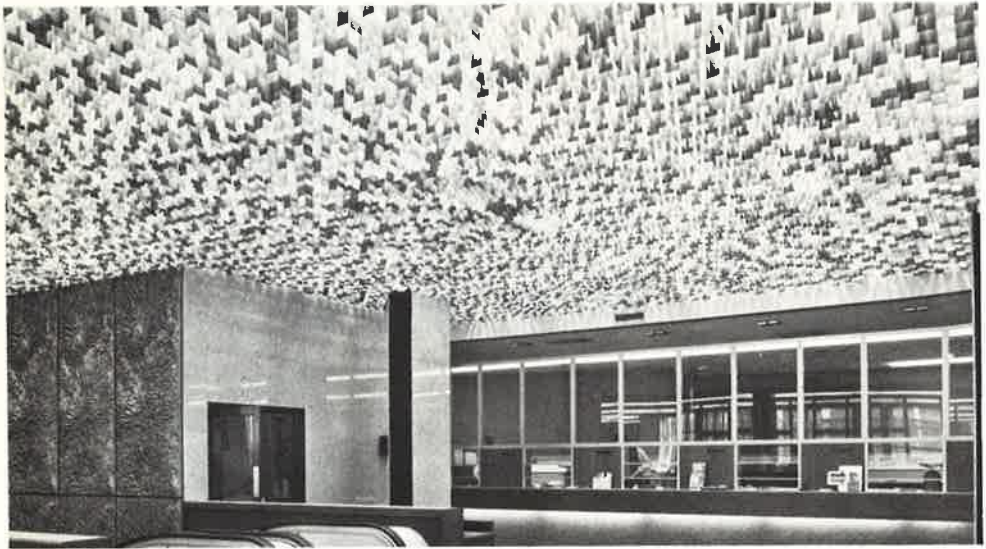


Two Lamp Panel
CDO 1002

Catalogue no.	Description	Approx Weight (gms) Complete with Lamps
CDO 1000	300 x 300 plain Domino panel	500
CDO 1002	300 x 300 Domino panel (2 lamps)	12 50
CDO 1004	300 x 300 Domino panel (4 lamps)	1800

Lamps to be ordered separately

Leaf-Lite



Leaf-Lite is a non-modular louver system of metal leaves mounted alternately at right angles to each other, giving a luminous ceiling with richly textured appearance.

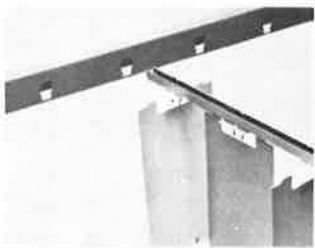
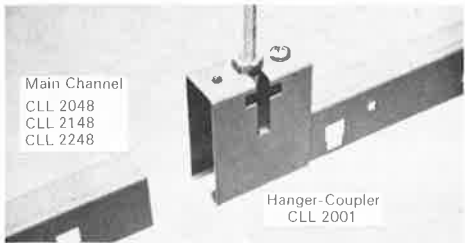
The standard leaf finish is high reflectivity semi-gloss white but colours to the BS. range can be supplied to order. Other textures and finishes, such as gold finish or stainless steel, can also be supplied. Leaf-Lite offers a wide variety of visual effects utilizing either conventional light sources or coloured PAR lamps with permutations of coloured leaves and variations in leaf shape. Leaf-Lite with its all steel construction is non-combustible and does not interfere with sprinkler systems or air supply mounted above. The system is simple and quick to install and requires only infrequent maintenance.

Weight of Leaf-Lite
For estimating ceiling loadings an approximate guide to the installed weight of Leaf-Lite would be:
4½ lb/sq ft
(22 Kg/sq m)

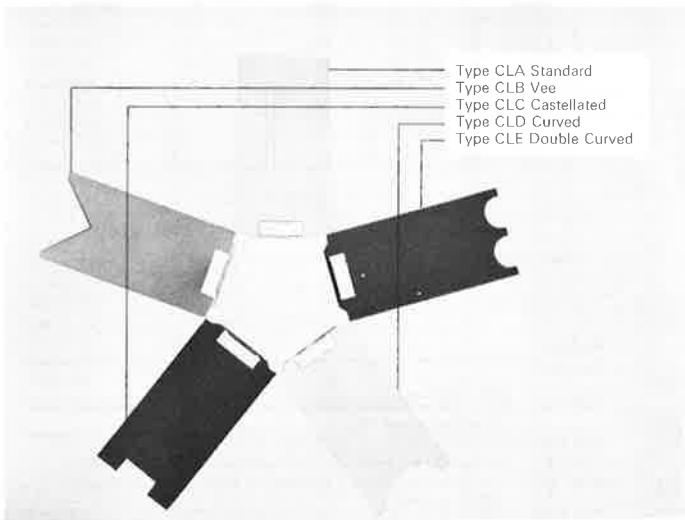
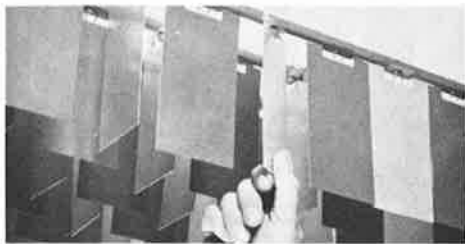
Range

Catalogue no.	Description
CLA 1036	Leaf-Lite, 3ft channel complete with white leaves
CLA 1048	Leaf-Lite, 4ft channel complete with white leaves
CLA 1136	Leaf-Lite, 3ft channel complete with gold leaves
CLA 1148	Leaf-Lite, 4ft channel complete with gold leaves
CLA 1236	Leaf-Lite, 3ft channel complete with leaves to BS. range of colours
CLA 1248	Leaf-Lite, 4ft channel complete with leaves to BS. range of colours
CLL 2048	Leaf-Lite main channel, 4ft white finish
CLL 2148	Leaf-Lite main channel, 4ft gold
CLL 2248	Leaf-Lite main channel, 4ft to BS. range of colours
CLL 2001	Leaf-Lite hanger coupler

Leaf-Lite is manufactured in this country under licence from Integrated Lighting Canada Limited.



Leaf Channel 3ft or 4ft complete with leaves
CLA 1036 CLA 1136 CLA 1236
CLA 1048 CLA 1148 CLA 1248



Standard CLA and special leaf shapes
which can be supplied to order

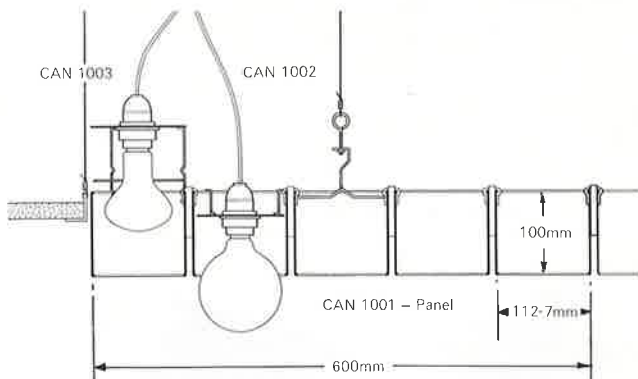
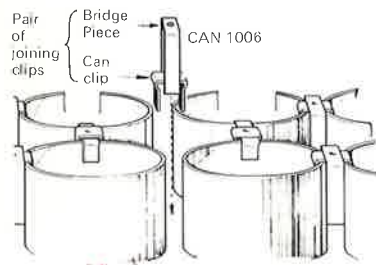
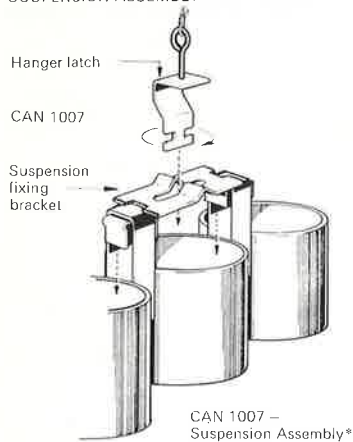
Cancan

CANCAN is a metal open louvered ceiling system based on a pre-assembled 600 × 600mm module of 25 cans. These are suspended from a centrally located hanger and adjoining panels can be connected together by means of a specially designed clip to complete the ceiling treatment.

To complement the ceiling a number of lampholder attachments have been created to incorporate decorative lighting with the system.



SUSPENSION ASSEMBLY



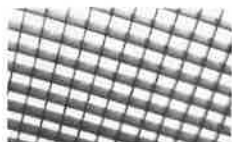
*Note: Suspension Assembly is supplied with panel CAN 1001

RANGE

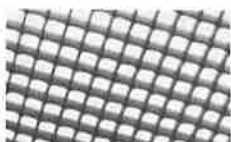
Catalogue no.	Description
CAN 1001	600 × 600mm Cancan panel—white (c/w 4 sets of joining clips and suspension assembly)
CAN 1002	Lampholder & mounting assembly for 100mm Decor Round lamp
CAN 1003	Lampholder & mounting assembly for Decor Spot lamp (R80)
CAN 1004	Lampholder & mounting assembly for 100W internally silvered Reflector lamp
CAN 1005	Individual white can
CAN 1006	Pair of joining clips
CAN 1007	Suspension assembly (1 Hanger latch & 1 suspension fixing bracket)

Approximate weight of panel CAN 1001 is 2.9 kg

Aluminium louver



Alumi-luvr
(Trackless version Intra-cel)



Texture-Cel
(Trackless version Texture-lite)



Square-TEX
(Trackless version Intra-TEX)



Chek-Cel
(Trackless version Chek-lite)



Quadracel
(Trackless version Quadillia)



Angl-Cel



Line-TEX



Arborial

Aluminium louver panels provide a wide variety of textured effects and are particularly suitable for applications where a low brightness illuminated ceiling is required. Standard panel sizes for most types are 600 × 600mm and 600 × 1200mm size in white finish. Special size panels can be supplied to order up to a maximum 1500 × 1200mm. Other colours can also be supplied to special order.

Panels can be supported by Thorn Isora Grid 25. Trackless versions are supplied complete with their own interlocking support system and a grid is not required. Trackless versions should be specially ordered, as perimeter panels may require different edge configurations from central panels. Technical advice can be provided by The Isora Division of Thorn Lighting Ltd.



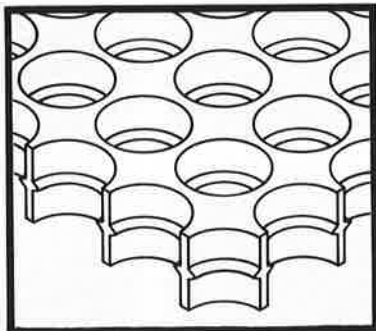
Tweed—Trackless only

Description	Catalogue no	Cell sizes (mm)			Blade Thickness (mm)	Shielding angle	Panel size (mm)	Weight (kg/m ²)
		W	L	H				
Alumi-luvr	CWA 2201	13	13	13	0.6	45°	600 × 600	3.7
Alumi-luvr	CWA 2401	13	13	13	0.6	45°	600 × 1200	3.7
Alumi-luvr	CWA 4401	13	13	13	0.6	45°	1200 × 1200	3.7
Alumi-luvr	CWA 2203	25	25	25	0.8	45°	600 × 600	4.9
Alumi-luvr	CWA 2403	25	25	25	0.8	45°	600 × 1200	4.9
Alumi-luvr	CWA 2405	50	50	50	1	45°	600 × 600	6.2
Alumi-luvr	CWA 2405	50	50	50	1	45°	600 × 1200	6.2
Texture-Cel	CWT 2201	13	13	13	0.6	45°	600 × 600	3.4
Texture-Cel	CWT 2401	13	13	13	0.6	45°	600 × 1200	3.4
Texture-Cel	CWT 2203	25	25	25	0.8	45°	600 × 600	4.4
Texture-Cel	CWT 2403	25	25	25	0.8	45°	600 × 1200	4.4
Texture-Cel	CWT 2205	50	50	50	1	45°	600 × 600	5.6
Texture-Cel	CWT 2405	50	50	50	1	45°	600 × 1200	5.6
Square-TEX	CWS 2201	13	13	13	0.6	45°	600 × 600	3.4
Square-TEX	CWS 2401	13	13	13	0.6	45°	600 × 1200	3.4
Square-TEX	CWS 2203	25	25	25	0.8	45°	600 × 600	4.4
Square-TEX	CWS 2403	25	25	25	0.8	45°	600 × 1200	4.4
Square-TEX	CWS 2205	50	50	50	1	45°	600 × 600	5.6
Square-TEX	CWS 2405	50	50	50	1	45°	600 × 1200	5.6
Chek-Cel	CWC 2205	65	65	50	1	Varies	600 × 600	7.0
		minor cell (50 + 15)						
Quadracel	CWQ 2120	65	65	50	1	Varies	600 × 600	7.2
		minor cell (50 + 15)						
Angl-Cel	CWG 2202	20	20	20	0.6	—	600 × 600	4.0
Line-TEX	CWL 2207	40	20	30/20	0.8	28°/56°	600 × 600	4.6
Line-TEX	CWL 2407	40	20	30/20	0.8	28°/56°	600 × 1200	4.6
Line-TEX	CWL 4207	40	20	30/20	0.8	28°/56°	1200 × 600	4.6
Arborial	CWR 2206	75	75	75	Block size 20 × 20 × 50	—	600 × 600	12.0
Tweed (Trackless only)	CRW 2203	25	25	30	0.8	45°/50°	600 × 600	4.7

Circlgrid and Paragrid luminous ceiling system

Circlgrid

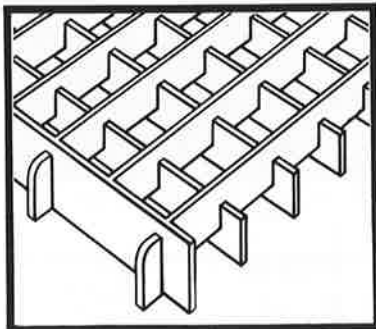
A unique louvered PVC lighting diffuser with circular cell configuration. The sandwich construction of vacuum-formed, sonically welded sheets gives rigid three-dimensional shape with great strength but minimum weight. Suitable for part or wholly luminous ceilings in prestige areas and shops, and for use in illuminated display areas. The material meets the requirements of the Building Regulations 1972. The panels are simple and quick to install. Standard panel sizes are 610mm (2ft) square.



Circlgrid

Paragrid

Paragrid panel is a one-piece precision injection moulded louvre with an open-grid bi-planar construction. It will effectively screen overhead services and permit free air circulation, thereby simplifying integration with heating and ventilation services. The panels are treated with an anti-static solution after manufacture to repel dust. This is easily renewed during cleaning operations. Standard panels are 610mm (2ft) square.



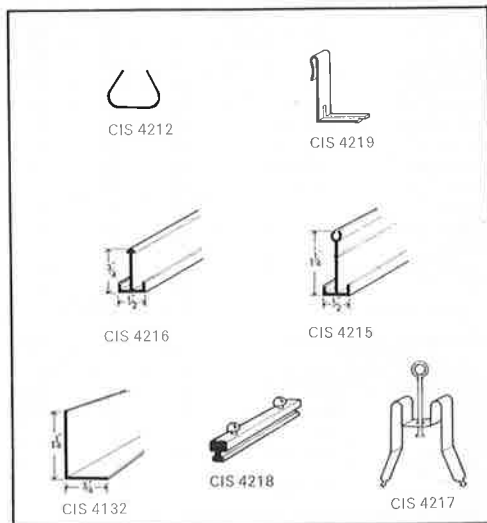
Paragrid

CIRCLGRID and PARAGRID are manufactured under licence from the WILSON RESEARCH CORPORATION of USA.

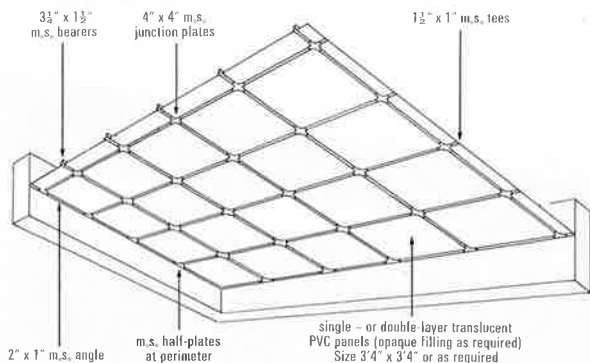
Range

Catalogue no	Description
CIRCLGRID PANELS	
CCG 4200	White perforated circular cell, 2x2ft louver panel
CCG 4202	White unperforated circular cell, 2x2ft louver panel
PARAGRID PANEL	
CPG 4140	Bi-planar opal louvre (1/2 in cell), polystyrene 2x2ft
CIRCLGRID AND PARAGRID GRID	
CIS 4215	Main track, anodized aluminium, 8ft long, 1 1/4 x 1/2 in
CIS 4216	Cross track, anodized aluminium, 2ft long (with jointing sleeve)*
CIS 4217	Hanger assembly for wire suspension
CIS 4218	Joiner for main track
CIS 4219	Wall angle end clip*
CIS 4132	Wall angle end trim, anodized aluminium, 8ft long, 1 1/4 x 1/2 in
CIS 4129	Suspension wire, 2mm gauge, 20m length
CIS 4212	Panel retaining clip*

*Items required for Circlgrid only



Thermalucent ceiling panels



View of underside of ceiling with Thermalucent panels mounted in Spaceliner Grid.



Showing how the detachable PVC skins are fitted to the m.s. panel frames.

Thermalucent is a double-layer PVC film luminous ceiling panel with a 30mm (1.18in) still air space between the translucent films, which gives a high degree of thermal insulation. The panel consists of a channel frame over which the PVC skins are stretched. The skins can be easily removed for replacement.

The Thermalucent skin is made from 0.004in thick PVC with a welded perimeter bead. CTH catalogue numbers apply to the Thermalucent panels and CVT numbers to the corresponding replacement skins.

Besides the natural PVC film with 90% transmission, the following colours are available:

- Daylight Blue 78% transmission
- Daylight Blue, high diffusion 57% transmission
- Rose Pink 57% transmission
- Golden Yellow 62% transmission
- Powder Blue 49% transmission
- Black —

Where colours are used, normally the upper skin is 'natural' and the lower coloured.

Grid

Two suitable grids recommended for use with Thermalucent panels are:

- 1) Spaceliner Grid (Section 1:109)
- 2) Isora-grid 40 (Section 1:110)

The PVC film used in Thermalucent meets the performance requirements for "flame resistance" to Clause 21 of BS1763:1967 when tested to Method 508C of BS2782:1970. The material meets the requirements of The Building Regulations 1972, Section E16, Subsection 3(a).

Rear projection screens

Rear projection screens are made from the same PVC film as used in Thermalucent panels and are tailored to meet individual requirements. Screen sizes up to 60ft wide and with a 50ft drop can be supplied to order and larger sizes can also be considered.

THERMALUCENT PANELS (Double skin)

CTH 2424	Double skin Thermalucent panel 24 × 24in
CTH 3636	Double skin Thermalucent panel 36 × 36in
CTH 4010	Double skin Thermalucent panel 40 × 10in
CTH 4020	Double skin Thermalucent panel 40 × 20in
CTH 4030	Double skin Thermalucent panel 40 × 30in
CTH 4040	Double skin Thermalucent panel 40 × 40in
CTH 4824	Double skin Thermalucent panel 48 × 24in
CTH 4848	Double skin Thermalucent panel 48 × 48in
CTH 6040	Double skin Thermalucent panel 60 × 40in
CTH 1005	Double skin Thermalucent panel 1 × 0.5m
CTH 1010	Double skin Thermalucent panel 1 × 1m
CTH 1015	Double skin Thermalucent panel 1 × 1.5m
CTH 2000	Special size panels up to 10 sq ft
CTH 3000	Special size panels over 10 sq ft

REPLACEMENT SKINS

CVT 2424	PVC skin for Thermalucent panel 24 × 24in
CVT 3636	PVC skin for Thermalucent panel 36 × 36in
CVT 4010	PVC skin for Thermalucent panel 40 × 10in
CVT 4020	PVC skin for Thermalucent panel 40 × 20in
CVT 4030	PVC skin for Thermalucent panel 40 × 30in
CVT 4040	PVC skin for Thermalucent panel 40 × 40in
CVT 4824	PVC skin for Thermalucent panel 48 × 24in
CVT 4848	PVC skin for Thermalucent panel 48 × 48in
CVT 6040	PVC skin for Thermalucent panel 60 × 40in
CVT 1005	PVC skin for Thermalucent panel 1 × 0.5m
CVT 1010	PVC skin for Thermalucent panel 1 × 1m
CVT 1015	PVC skin for Thermalucent panel 1 × 1.5m
CVS 2000	Special sizes for Spaceliner panels
CVX 2000	Special sizes for Thermalucent panels

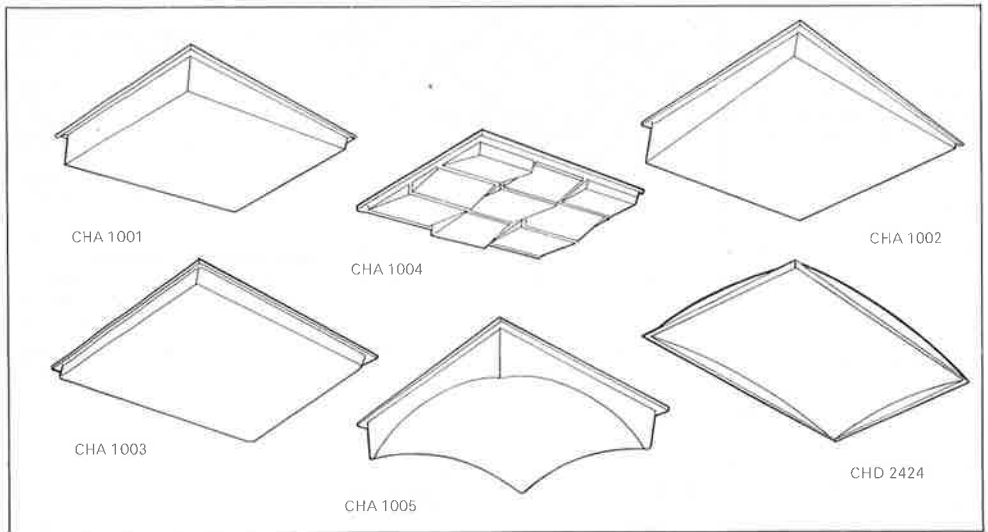
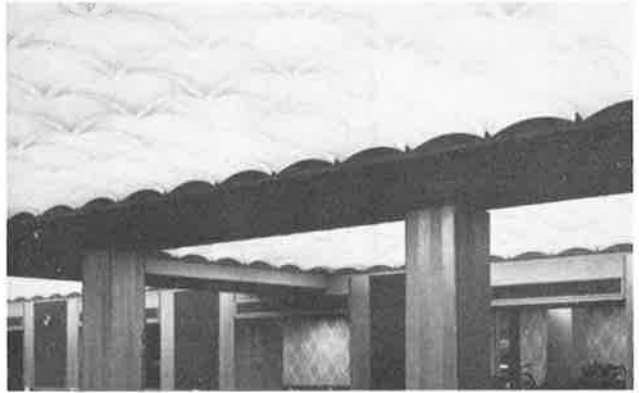
OTHER ITEMS

CTH 5001	Self-adhesive polyurethane foam plastic, 13ft roll, 1/2in wide
CTH 5002	Special clip for Spaceliner
CTH 5003	Special clip for Thermalucent

Architectural range

This range of vacuum-formed diffusing panels provides an almost unlimited variety of sculptured ceiling forms which can be re-arranged whenever a new effect is required. The panels are of light-stabilising rigid vinyl available in a number of forms: Wedge, Tilted Wedge, Multi-Wedge, Minaret, and Flat Pan. They can be installed in any suitably-sized ceiling grid. Standard panels are a nominal 609mm (2ft) square.

The Architectural range can be used either as an overall ceiling or arranged in attractive groupings when combined with other ceiling elements. It is particularly suitable for commercial interiors such as banking halls, hotel foyers and public buildings.



RANGE

Catalogue no	Description
CHA 1001	Wedge design in rigid PVC
CHA 1002	Tilted Wedge design in rigid PVC
CHA 1003	Flat Pan design in rigid PVC
CHA 1004	Multiwedge design in rigid PVC
CHA 1005	Minaret design in rigid PVC
CHD 2000	Clip for dust cover
CHD 2424	Dust cover for Architectural panels

Polrized Ceiling Panels

Polrized Ceiling panels are available in two patterns each with a nominal 2ft x 2ft panel size. Plaza is a flat dished panel and Dome, as its name suggests is formed upwards into a small dome, rising approximately 2in in the centre. In addition a softly textured surface combines both visual interest of the ceiling and improved control of reflected glare beneath.

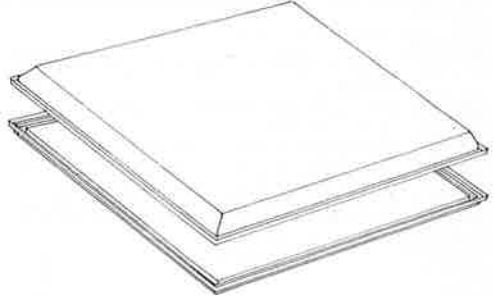
Support Grid

These panels can be used with any 25mm lay-in grid. Isora Grid 25 is recommended set out as a 2ft x 2ft module.

Dust Cover
(White)



DUST COVER
CPZ 2002



PLAZA
POLRIZED
PANEL CPZ 1002

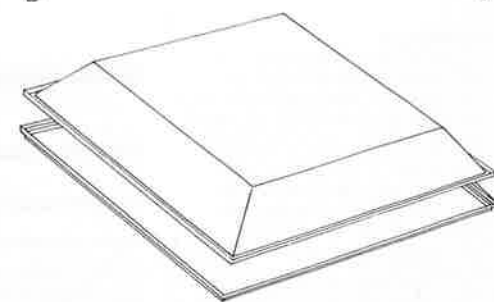
Plaza
Polrized Panel



Cover
(White)



DUST COVER
CPZ 2001



POLRIZED
PANEL
CPZ 1001
(DOME)

Polrized Dome



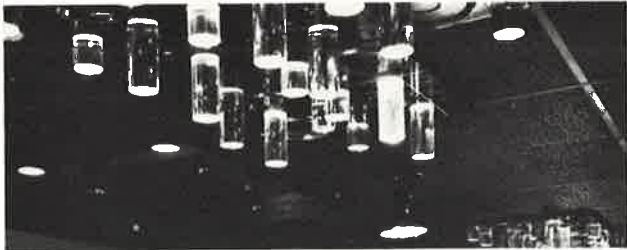
Catalogue no.	Description	Approx. weight gms	Nominal size ft.
CPZ 1001	Dome Panel (Polrized)	190	2x2
CPZ 1002	Plaza Panel (Polrized)	176	2x2
CPZ 2001	Dust cover for Dome Panel	176	2x2
CPZ 2002	Dust cover for Plaza Panel	156	2x2

Grid: Isora-grid 25.

Celestial and Lightframe

Celestial

Celestial expresses in terms of today's materials something of the opulence of the traditional crystal chandelier and is ideally suited for use in prestige areas. It consists of an inverted 'T'-bar grid supporting a 610mm x 305mm (2ft x 1ft) suspended ceiling of die-cast aluminium panels. The panels can be fly-cut to accept a variety of lighting and other services such as public address, sprinklers, air diffusers and downlighters. Celestial gives a non-modular appearance and will fit virtually any size or shape of ceiling area.



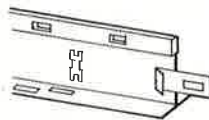
Catalogue no.	Description
CELESTIAL	
CEL 1224	1 x 2ft Celestial panel, complete with torsion-ease springs
CEL 1120	Main 'T', 10ft long, pre-slotted to accept springs
CEL 1024	Cross 'T', 2ft long
CEL 2503	2 1/2in diameter, 3in long cast and polished acrylic lens
CEL 2506	2 1/2in diameter, 6in long cast and polished acrylic lens
CEL 2509	2 1/2in diameter, 9in long cast and polished acrylic lens
CEL 2512	2 1/2in diameter, 12in long cast and polished acrylic lens



CEL 1224



CEL1024



CEL1120

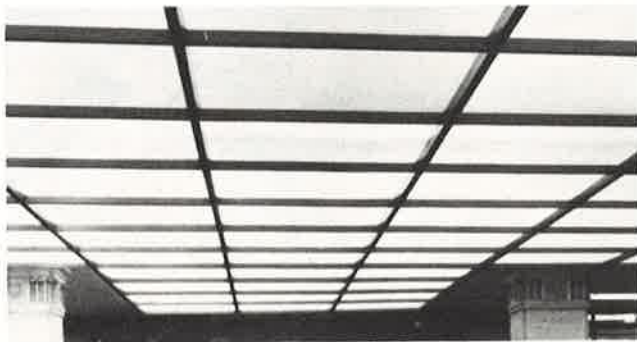


CEL 2503/6/9/12

Lightframe

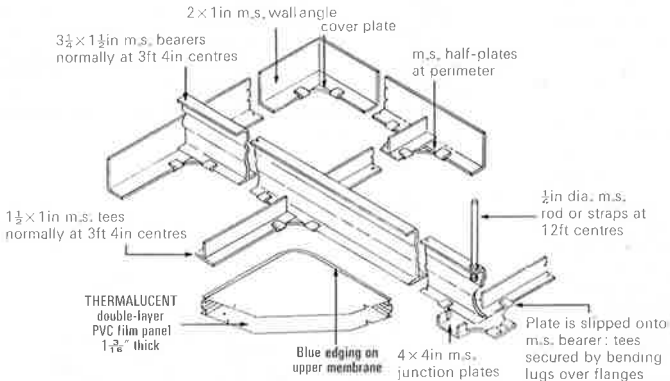
Lightframe is a profiled frame with 45° mitred corners which can be used in conjunction with a range of luminous ceiling panels. Standard finish is plain aluminium silver; a simulated wood grain finish can be produced to order. Lightframe can be used with any standard interlocking exposed tee grid system. The standard sizes fit 2ft x 2ft, 2ft x 4ft, 3ft x 3ft and 4ft x 4ft openings and other sizes can be made to order.

When Thermalucet panels are used in conjunction with Lightframe, special sizes are required to fit within the top flange of Lightframe. Panels will be produced compatible with Lightframe requirements on request.



Range

CFR 2424	2 x 2ft roll formed section, 45° mitred corner
CFR 2448	2 x 4ft roll formed section, 45° mitred corner
CFR 3636	3 x 3ft roll formed section, 45° mitred corner
CFR 4848	4 x 4ft roll formed section, 45° mitred corner
CFR 2000*	Non-standard sizes to order



DETAIL OF ASSEMBLY OF COMPONENT PARTS

Spaceliner grid

Spaceliner grid has been specially designed for use with Thermalucent panels. It consists of:

1. *The main bearer*, $3\frac{1}{2}$ in deep \times $1\frac{1}{2}$ in wide, which is the principal item of the grid,

2. *Tee Bar*, 1 in deep \times $1\frac{1}{2}$ in wide, a cross tee forming a support grid,
3. *Wall Angle*, 2 in deep by 1 in wide or 1 in deep by 1 in wide,
4. *Cover Plates* (4 in \times 4 in). These have a cruciform clamp-type junction plate used at grid intersections,

5. *Fishplates* for joining lengths of main bearer.

Components

CSP 1120	Main bearer, 10ft long, Etch prime finish
CSP 1144	Main bearer, 12ft long, Etch prime finish
CSP 1004	Main bearer, 4m long, Etch prime finish
CSP 1240	Main bearer, 20ft long, special heavy duty (14swg) $5\frac{1}{2} \times 1\frac{1}{2}$ in
CSP 2024	Tee Bar, 24in Etch prime finish
CSP 2036	Tee Bar, 36in Etch prime finish
CSP 2040	Tee Bar, 40in Etch prime finish
CSP 2048	Tee Bar, 48in Etch prime finish
CSP 2060	Tee Bar, 60in Etch prime finish
CSP 2001	Tee Bar, 1m Etch prime finish
CSP 3120	Wall angle, 10ft long, 2×1 in Etch prime finish
CSP 3144	Wall angle, 12ft long, 2×1 in Etch prime finish

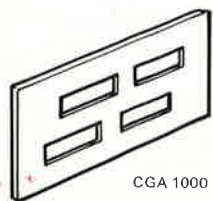
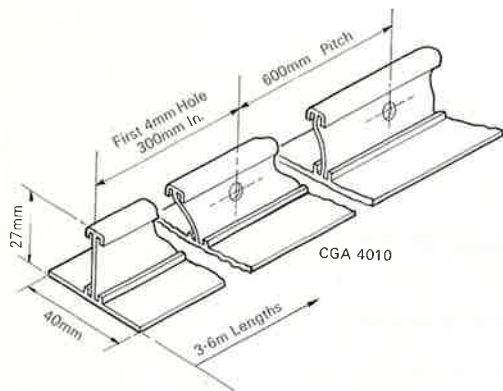
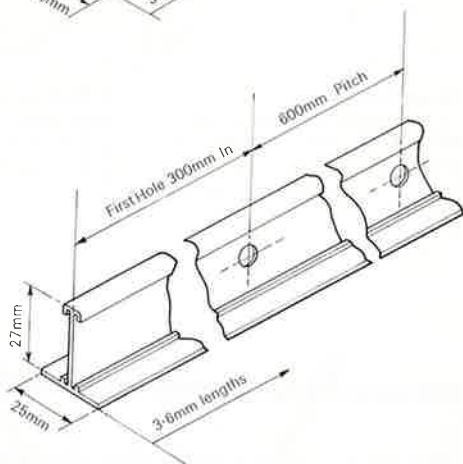
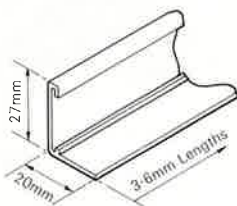
CSP 3004	Wall angle, 4m long, 2×1 in Etch prime finish
CSP 4120	Wall angle, 10ft long, 1×1 in Etch prime finish
CSP 4144	Wall angle, 12ft long, 1×1 in Etch prime finish
CSP 5001	Cover plate: full, Etch prime finish
CSP 5002	Cover plate: $\frac{3}{4}$, Etch prime finish
CSP 5003	Cover plate: $\frac{1}{2}$, Etch prime finish
CSP 5004	Cover plate: corner, Etch prime finish
CSP 5005	Cover plate: full (for sprinkler heads) Etch prime finish
CSP 5006	Fishplate, 18in long, drilled for pop riveting to join bearers
CSP 5007	Fishplate, 18in long, for HD bearer
CSP 5008	Fishplate, 18in long, for sprinklers

Isora-Grid

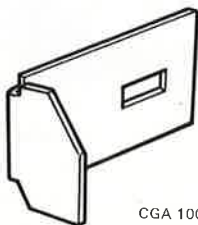
Thorn Isora grid is available in two table sizes, 25mm and 40mm. Main tees and wall angle are supplied in anodised aluminium in standard 3-6m lengths. Tees can be supplied cut to other lengths (based on 3-6m max. size) to special order, or alternatively cut on site as required. Straight connectors are used to join lengths of main tee and a pair of left-hand and right-hand connectors (one connector each end of a cross tee) are required to connect cross tees to main tees. The same grid section is used for both main and cross tees, the latter being cut to size as required. Connectors are common to both grid sizes. Main tees are punched at 600mm intervals for wire suspension. The 25mm grid is suitable for use with the following products:
 Aluminium louvers (lay-in grid versions)
 Architectural range of panels
 Polirized ceiling panels
 Any standard acoustic board
 The 40mm grid is designed for use with Thermalucet ceiling panels

Catalogue no.	Description	Length (m)
CGA 2510	Main Tee, 25mm table	3-6
CGA 2514	Wall angle	3-6
CGA 4010	Main Tee, 40mm table	3-6
CGA 1000	Straight connector for 25mm & 40mm tees	
CGA 1001	Left-hand connector	
CGA 1002	Right-hand connector	

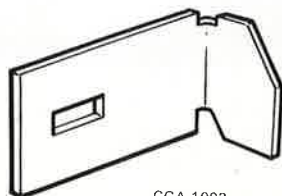
Note: Suspension wire CIS 4129 can be used with this grid.



CGA 1000



CGA 1001



CGA 1002

Suspension Sets and Trakline

Suspension sets are available for all Thorn lighting fittings. Reference should be made to maximum loading table and respective weight of fitting to determine the type of suspension required. Standard lengths of rod or chain sets is 30in. Other lengths in multiples of 6in will be supplied on request. Half sections of the suspension sets are illustrated. Catalogue number relates to complete set.

Max. loading table

Maximum loading per set		
Catalogue no.	kg	lb
A.30	18.2	40
B.30	30.9	68
H.30	123.0	270
K.30	27.3	60



Suspension Set A.30 (Light Duty)
Two malleable iron hooked ceiling plates two 30in lengths of chain, two spring loops.



Suspension Set B.30
Two pressed ceiling plates, two $\frac{1}{2}$ in by 30in rods screwed 26 T.P.I., grommets, locknuts, washers. White finish.



Suspension Set H.30
Heavy duty conduit suspension including two $\frac{3}{4}$ in by 30in rods with ball joint ceiling plates and back-nuts. White finish.



Suspension Set K.30 (Heavy Duty)
Two dome hook plates, two 30in lengths of chain, two $\frac{3}{4}$ E.T. suspension hooks, back nuts and washers.

The Trakline system is based on a PVC extrusion which contains two copper conductors for line and neutral and an aluminium earth strip. These assemblies (TK) are then housed in one of five metal trunking types.

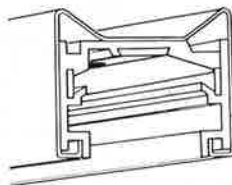
TKS 1200 (1.2 metres long) } TK in white painted rolled steel section, complete with metal end caps.
TKS 2400 (2.4 metres long)
TKS 3600 (3.6 metres long)

TKN 1200 (1.2 metres long) } TK in anodised aluminium section, complete with metal end caps.
TKN 2400 (2.4 metres long)
TKN 3600 (3.6 metres long)

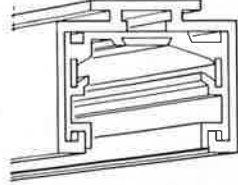
TK 4500 (4.5 metres long) TK for installation in either LTN 4500, LTR 4500, LTF 4500 or AL 4500, all of which are also 4.5 metres long. (See sections dealing with Trunking).

Mains Connectors, Adaptors and Couplers

TK 1021 L Mains connector, left handed
TK 1021 R Mains connector, right handed
TK 1031 Track coupler
TK 1051 Fittings adaptor box (white)
TK 106 Straight mechanical coupler (TKN, LTN, LTF & LTR)
TK 1121 Fluorescent fittings suspension set
TK 1121 F Fluorescent fittings suspension set with cut lead fuse
TK 127 Earth Continuity Strip (TKS)
TK 111 Clip-on cover (TKN only)
TK 1201 Spare end caps (TKN)
TK 128 Spare end caps (TKS)



TKS SECTION

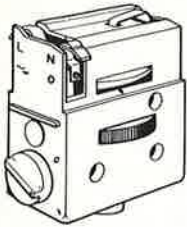


TKN SECTION

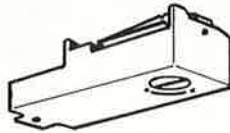
Elbows & Wiring Boxes

TK 107 Horizontal elbow assembly (TKN or LTN with TK)
TK 108 Vertical internal elbow assembly (TKN or LTN with TK)
TK 109 Vertical external elbow assembly (TKN or LTN with TK)
TK 115 End wiring box assembly (TKN or LTN with TK)
TK 116 Top entry wiring box (continuous runs, TKN or LTN with TK)
TK 1171 End wiring box assembly (TK in LTR Trunking)
TK 1181 Top entry wiring box assembly (continuous runs of TK in LTR Trunking)
TK 121 End wiring box assembly (TKN or TKS surface mtd.)
TK 122 Top entry wiring box 2 way at 90° (TKN or TKS Surface mtd.)
TK 124 Top entry wiring box 4 way "X" (TKN or TKS surface mtd.)
TK 123 Top entry wiring box 3 way "Y" (TKN or TKS surface mtd.)
TK 126 Top entry wiring box 2 way in line (TKN or TKS surface mtd.)

Trakline Components



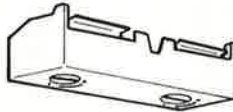
TK1051
Adaptor Box



TK1021 L&R
Mains connector



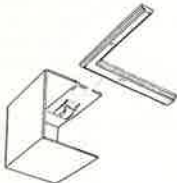
TK106
Mechanical Coupler
(TKN, LTN, LTR, LTF)



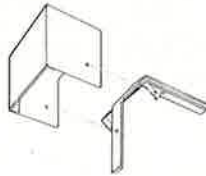
TK1031
Track Coupler



TK127
Earth Continuity Strip (TKS)



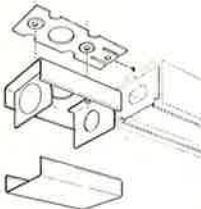
TK107 Horizontal Elbow
(TKN)



TK108 Vertical
Int. Elbow
(TKN)



TK109 Vert. Ext.
Elbow (TKN)

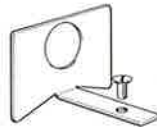


TK115 Wiring box
End Entry (TKN)

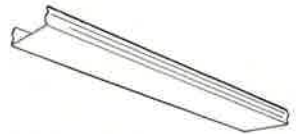
TK116 as TK115 (continuous runs)

TK1171 as TK115 (LTR)

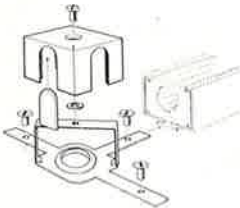
TK1181 as TK115 (continuous runs LTR)



TK128
Spare end cap
metal (TKS)

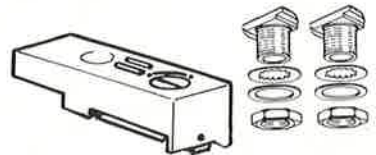


TK111
Clip-on
Cover



TK123 Wiring box (TKN and TKS)

TK121 as TK123 W for end entry } TKS
TK122 as TK123 2 way at 90° } and
TK124 as TK123 4 way "X" } TKN
TK126 as TK123 2 way in line }



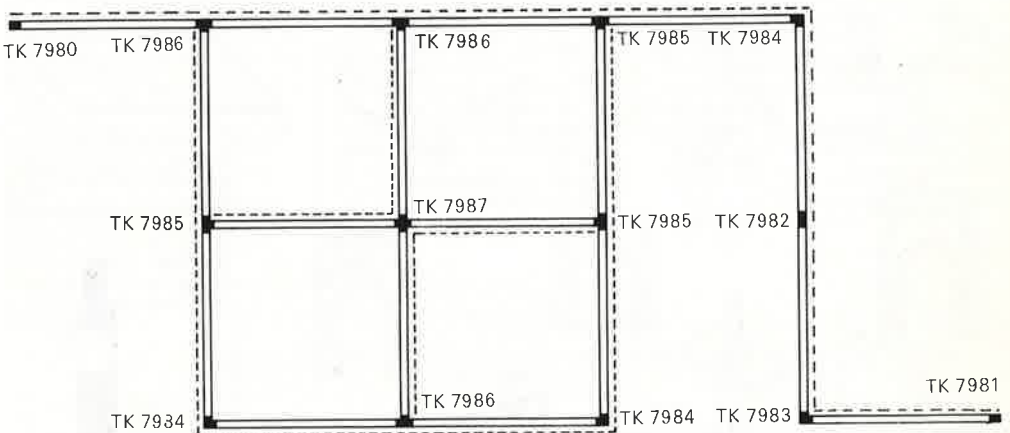
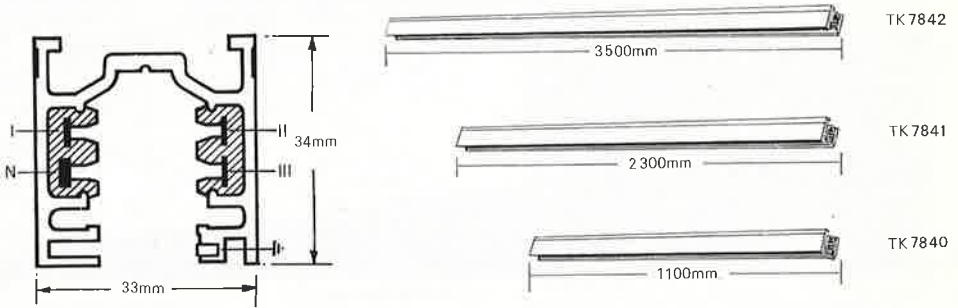
TK1121 Fluorescent Suspension Set

TK1121/F as TK1121 but
includes cut lead fuse

Multi trak

The Thorn Multi-trak consists of a neat lighting track system containing three separate circuits (I, II and III). The adaptor is switchable between these three circuits. The only wiring

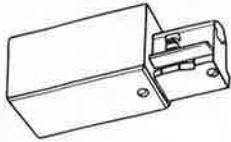
required is to the initial input, all subsequent connections being plug-in. Three track lengths are available.



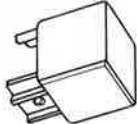
The diagram indicates the variety of possible layouts with Multi-trak. When planning layouts note the position of the earth conductor in

regard to "L", "T" and "X" connectors. The dotted line indicates the earth.

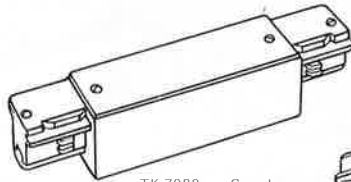
Multi-trak components



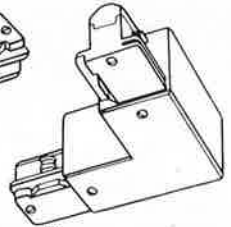
TK 7980 Live End



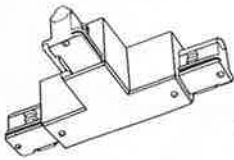
TK 7981 Dead End



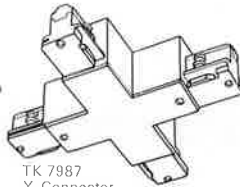
TK 7982 Coupler



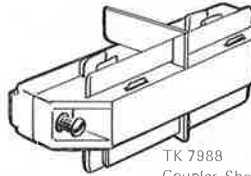
TK 7983 L-Connector



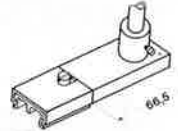
TK 7985 T-Connector



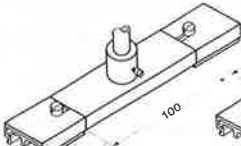
TK 7987 X-Connector



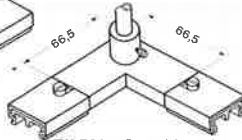
TK 7988 Coupler-Short



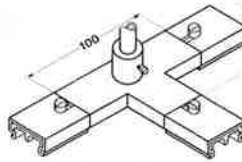
TK 7885 Stem Mounting, for live- and dead-ends



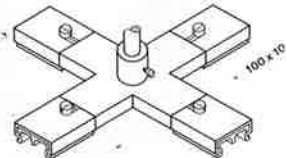
TK 7886 Stem Mounting, for coupler



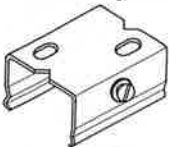
TK 7887 Stem Mounting, for L-Connector



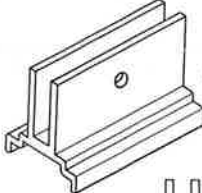
TK 7888 Stem Mounting, for T-Connector



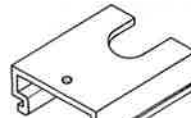
TK 7889 Stem Mounting, for X-Connector



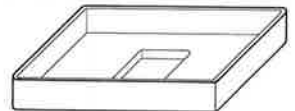
TK 7881 Mounting Clips, for track and unwired track, for surface mounting



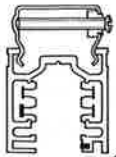
TK 7883 Support, for suspended track for recessed mounting



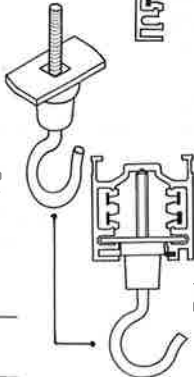
TK 7884 Pendant Mounting, for track



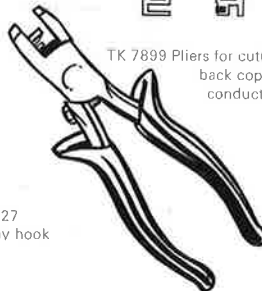
TK 7891 Outlet box cover



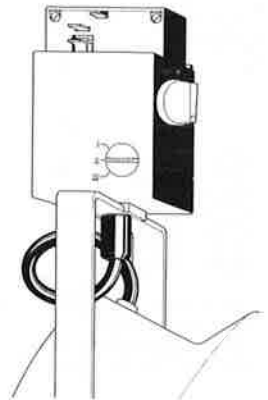
TK 7880 Support for slotted tiles



TK 7927 Display hook

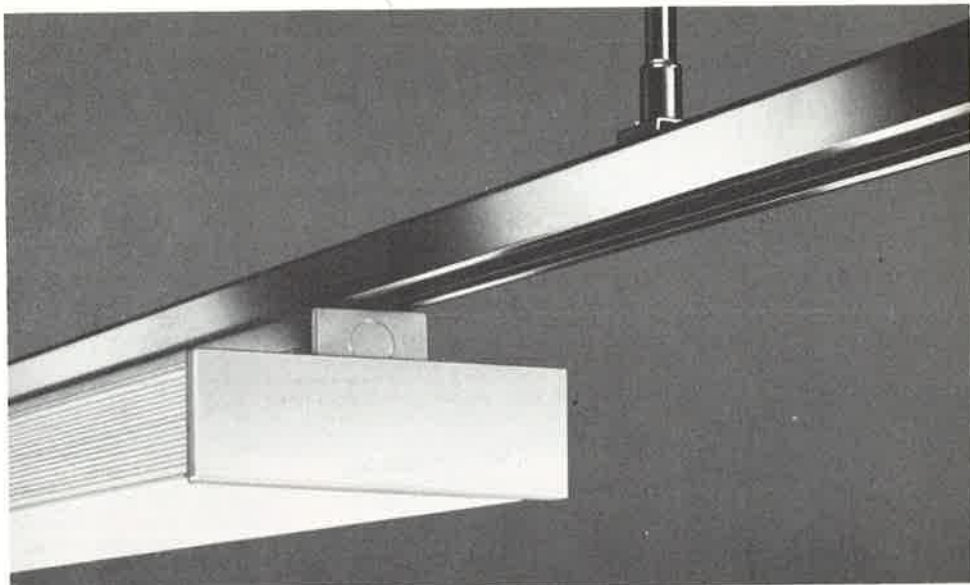


TK 7899 Pliers for cutting back copper conductors



TK 7909 Adapter Box—Fused

New lightweight trunking



This ultra-slim section anodized aluminium trunking is particularly suitable for office, store and display lighting applications where more industrial forms are too bulky and may present an unsatisfactory appearance.

Three types of trunking section are available – one for surface mounting or conduit suspension and two other types for recessing into suspended ceilings. (See illustrations on next page).

The trunking suspension assembly is used to connect the trunking section to the 19mm/¾in conduit down-drop.

Suspension of trunking by means of chains is not normally recommended.

The fitting is connected to the trunking section by means of the fittings suspension assembly. By this means extreme flexibility of suspension centres for the trunking and spacing of the fittings along the trunking is achieved.

The coupling piece to join the lengths of trunking together is fitted internally and is locked with set-screws without drilling the trunking.

A four-way coupling (Catalogue no. LTN 4510) enables continuous runs of Trakline to be used. (See perspective view on next page).

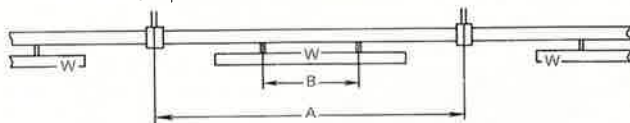
A PVC cover closes the open mouth of the trunking between the fittings and a black finished end plate closes the end of the

trunking. This end plate incorporates a knock-out to receive conduit which is used to feed into the trunking and make bends, or clear obstacles, etc. between the trunking runs.

Through-wiring cables are retained in the trunking by fibre support-pieces.

Maximum recommended trunking suspension centres 2.44m/8ft

NOTE: A gap of at least 6.35mm/0.25in must be left between trunking lengths during installation to allow for expansion.



Deflections for new lightweight trunking

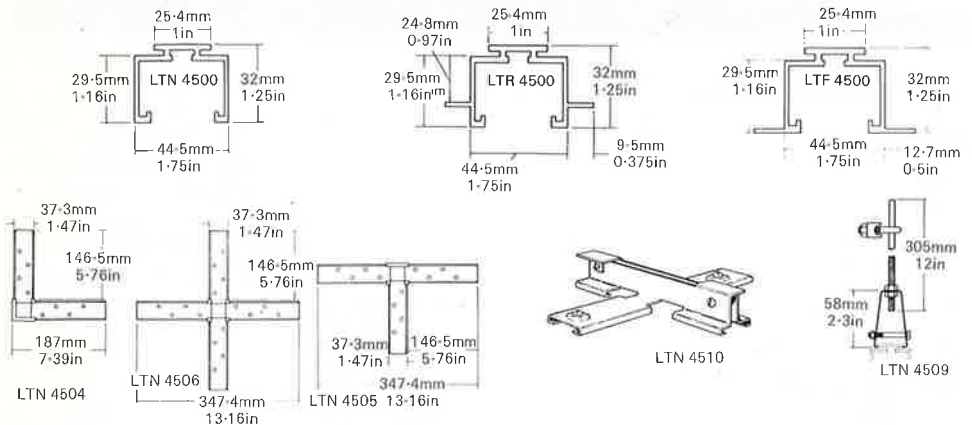
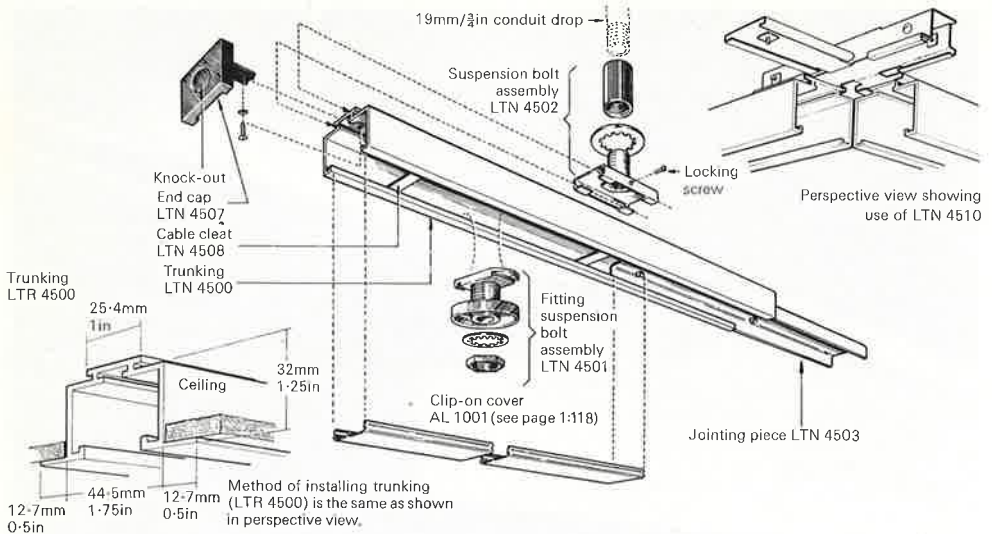
A	B	Weight W	Deflection
2.44m	0.61m	9kg	5.7mm
8ft	24in	20lb	0.225in
2.44m	1.22m	13.6kg	5.7mm
8ft	48in	30lb	0.225in

The above deflections were measured using maximum weight Popular Pack fittings. These figures assume that all loads are counter-balanced and the final trunking span will be

adequately supported at the termination point. It is important when designing trunking installations to ensure that the deflection between spans does not exceed 1/300th of the total span.

For example, an installation requires trunking to be suspended at 2.44m/8ft spans. Therefore maximum deflection = $\frac{2440}{300} = 8.1\text{mm}/0.32\text{in}$.

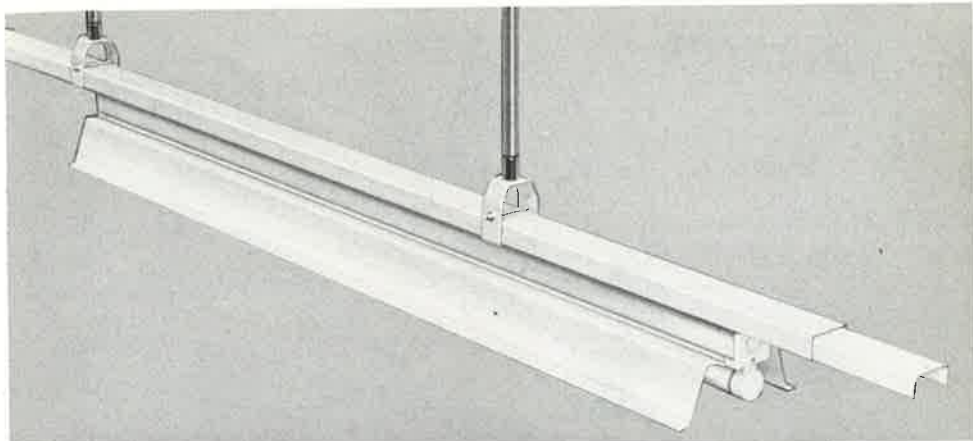
New lightweight trunking



Components table

Catalogue no.	Description	Weight	
		kg	lb
LTN 4500	4.5 metre length trunking	3.175	7
LTR 4500	4.5 metre length trunking for recessing	3.63	8
LTF 4500	4.5 metre length trunking for recessing	3.63	8
LTN 4501	Fittings hanger assembly	0.085	0.19
LTN 4502	Trunking hanger assembly	0.085	0.19
LTN 4503	Jointing piece	0.34	0.75
LTN 4504	Two-way coupling	0.23	0.5
LTN 4505	Three-way coupling	0.28	0.61
LTN 4506	Four-way coupling	0.51	1.125
LTN 4507	End cap	0.028	0.063
LTN 4508	Cable cleats	0014 (Pack of 10)	0.031
LTN 4509	New adjustable suspension	0.17	0.375
LTN 4510*	Four-way coupling	0.17	0.375
AL 1001	1.8 metre PVC cover (also used with Liteline trunking)	0.17	0.375

*Enables continuous runs of Trakline to be used with new lightweight trunking



Liteline trunking is a universal system for carrying overhead lighting, electric fittings or cables for industrial and commercial buildings.

Liteline trunking can either be suspended, fixed flush to a ceiling or, by means of the top hat section, incorporated into a suspended ceiling. Having a cross section of only 66 x 32mm/2.625 x 1.25in, it is available in 4.5m/14.75ft lengths of 18 gauge cold rolled steel. The paint surface is a single dip coat finish and is light grey in colour to BS.2260.9-094.

In certain circumstances it may be necessary to apply a final finishing coat for increased durability. Simple jointing by slide-in straight coupling piece secured by eight screws ensuring earth continuity, and removable clip-in PVC cover fillets enable easy installation.

The fittings and accessories have been designed to allow continuous unobstructed runways for the cables.

Maximum recommended suspension centres 3.35m/11ft

Neat and rigid

The trunking is small and compact in design and suitable for surface mounting installations. The design of the channel section ensures maximum rigidity and weight carrying capacity over unsupported spans up to 3.35m/11ft.

Easy to wire

When trunking is erected, there are no obstructions whatever and, therefore, cable can be fed into the trunking with ease.

Up to two lighting fittings can be supplied from any point by fitting a Parablock connector.

Flexible

The numerous junction pieces enable horizontal diversions of 90° to be made from the main trunking run.

Colour

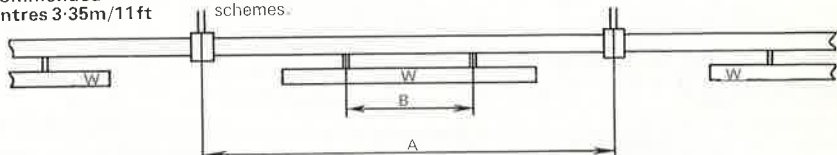
The BS.2260.9-094 light grey colour is attractive yet unobtrusive and is therefore ideal for commercial office schemes.

Simple installation

Simple jointing by slide-in straight coupling piece secured by eight screws ensuring earth continuity. Easily removable clip-in PVC cover fillet, 'Clip-over' suspension stirrup suitable for chain or conduit. Universal girder clamps for RSJ mounting.

Versatile

Any type of fitting with 19mm/3/4in conduit hole fixing can be suspended from any point by means of a special 'T' bolt assembly, which also facilitates alterations to lighting layouts. Fittings with larger conduit fixings can be mounted by means of a suitable reducer. A top hat section can be supplied where it is required to fit a flush mounted suspended ceiling.



Deflections for Liteline trunking

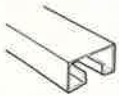
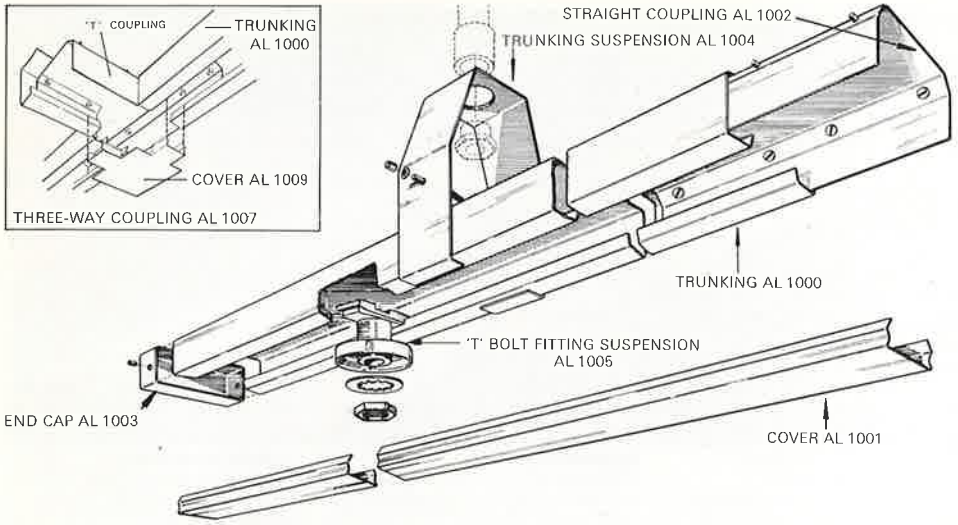
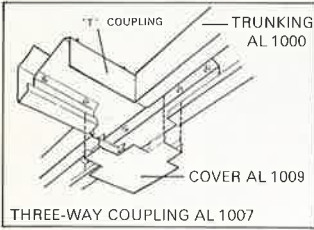
A	B	Weight W	Deflection
3.35m/11ft	0.61m/24in	18kg/40lb	6.35mm/0.25in
A	B	Weight W	Deflection
3.35m/11ft	1.22m/48in	25kg/55lb	5.1mm/0.20in

The above deflections were measured using Atlantic 4 fittings (Catalogue no. A4B/4685) at 0.61m/24in suspension centres and A4Z/T4885 at 1.22m/48in centres and suspended as detailed above.

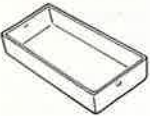
These figures assume that all loads are counter-balanced and the final trunking span will be adequately supported at the termination point. It is important when designing trunking installations to ensure that the deflection between spans does

not exceed 1/300th of the total span. For example, an installation requires trunking to be suspended at 3.35m/11ft spans. Therefore maximum deflection

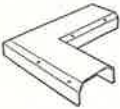
$$= \frac{3350}{300} = 11.2\text{mm}/0.44\text{in.}$$



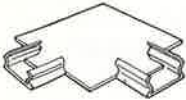
Catalogue no. AL 4500
Trunking sections
 4.5m/14.75ft length
 Weight 6.3kg/13lb 14oz
 66mm/2.6in wide x
 32mm/1.3in deep



Catalogue no. AL 1003
End cap
 Weight 0.01kg/1/3oz



Catalogue no. AL 1006
Horizontal coupling
 Weight 0.5kg/1lb 3oz



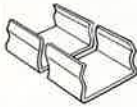
Catalogue no. AL 1009
Cover assembly
 Weight 0.06kg/2oz



Catalogue no. AL 4512
Top hat section
 4.5m/14.75ft length
 Weight 3.5kg/7lb 10oz
 106mm/4.1875in wide x 43mm/1.6875in deep



Catalogue no. AL 1015
Vertical-horizontal coupling (external)
 Weight 0.7kg/1lb 10oz



Catalogue no. AL 1001
PVC cover fillet
 1.8m/7.1in length
 Weight 0.17kg/6oz



Catalogue no. AL 1004
Trunking suspension
 Weight 0.11kg/4oz
 38mm/1.5in wide x
 86mm/3.375in deep



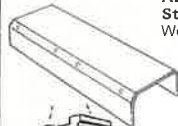
Catalogue no. AL 1007
'T' coupling
 Weight 0.7kg/1lb 10oz



Catalogue no. AL 1010
Girder clamp assembly
 Weight 0.14kg/5oz



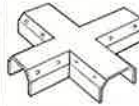
Catalogue no. AL 1013
Parablock connector
 Weight 0.03kg/1oz
 takes cable up to 7/036



Catalogue no. AL 1002
Straight coupling
 Weight 0.5kg/1lb 3oz



Catalogue no. AL 1005
'T' bolt (fitting suspension)
 Weight 0.09kg/3oz



Catalogue no. AL 1008
Four-way coupling
 Weight 0.9kg/2lb 1oz



Catalogue no. AL 1011
Suspension bracket
 Weight 0.03kg/1oz

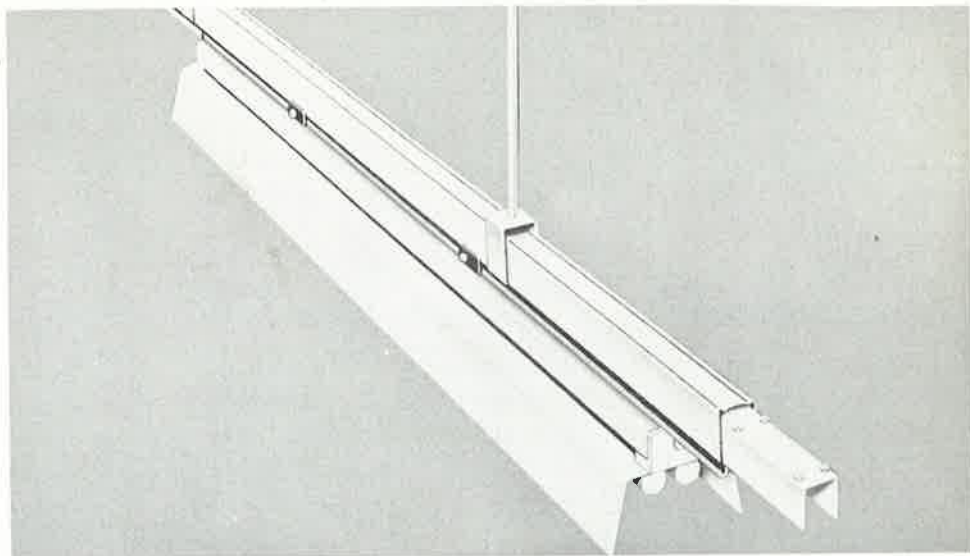


Catalogue no. AL 1014
Vertical-horizontal coupling (internal)
 Weight 0.7kg/1lb 10oz



Catalogue no. AL 1016
Stop-end junction
 Weight 0.5kg/1lb 3oz

Atlantic trunking



The Atlantic trunking system is adapted to receive lighting fittings on its underside, and provides structural support for the fittings with adequate through-wiring capacity. The system reduces installation time to the minimum.

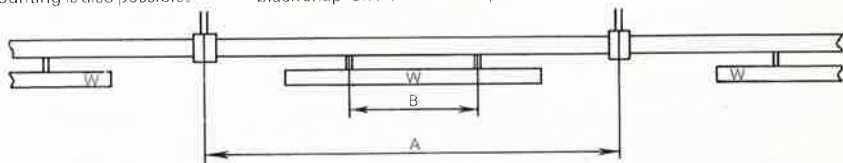
The close-top trunking is suspended by saddle brackets attached to down-drops from the ceiling or roof structure, and joint pieces hold the sections rigidly in line and provide earth continuity. The suspension of trunking by means of chains is not normally recommended. Close ceiling mounting is also possible.

Brackets are attached to the fittings by means of the threaded bush, nut and washer supplied. The brackets engage with the batten flanges of the trunking and allow the fitting to be hinged from the trunking during installation, maintenance or subsequent modification of the through-wiring in the trunking. Clip-in, 15 amp terminal blocks are available for inter-connection and looping in. Cable carriers are included in each trunking length to retain the cables neatly in position.

The trunking mouth is closed by a black snap-on PVC cover strip

which is easily cut to length on site to fit between fittings. This part is not required when the fittings are continuously mounted. To ensure satisfactory earth continuity between the fittings and the trunking an earth screw is provided on the jointing piece, a jumper cable being necessary to complete the bond.

Standard trunking is made from 18 swg galvanized sheet steel. **Maximum recommended trunking suspension centres 4.5m/14.75ft**



Deflections for Atlantic trunking

A	B	Weight W	Deflection
4.5m/14.75ft	0.61m/24in	18kg/40lb	2.54mm/0.1in
A	B	Weight W	Deflection
4.5m/14.75ft	1.22m/48in	25kg/55lb	4.32mm/0.17in

For spans less than 4.5m the deflection on this trunking was not measurable

The above deflections were measured using Atlantic 4 fittings (Catalogue no. A4B/4685) at 0.61m/24in suspension centres and A4Z/T4885 at 1.22m/48in centres and suspended as detailed above.

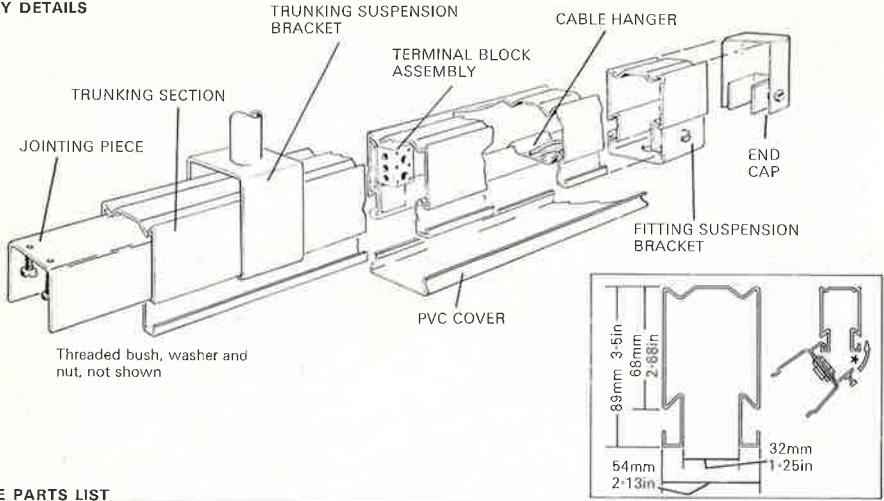
These figures assume that all loads are counter-balanced and the final trunking span will be adequately supported at the termination point. It is important when designing trunking installations to ensure that the deflection between spans does

not exceed 1/300th of the total span. For example, an installation requires trunking to be suspended at 4.5m/14.75ft spans. Therefore maximum deflection



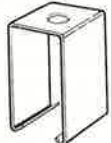


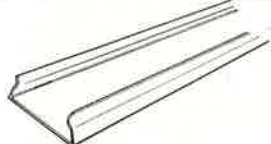


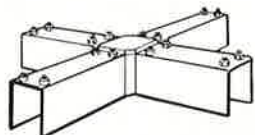


$$= \frac{4500}{300} = 15\text{mm}/0.6\text{in.}$$

Atlantic trunking

ASSEMBLY DETAILS



COMPLETE PARTS LIST

 <p>Weight 0.01kg (0.03lb) AA 4702 Cable support</p>	 <p>Weight 0.49kg (1.1lb) AA 4703 Straight coupling</p>	 <p>Weight 0.14kg (0.32lb) AA 4704 Trunking suspension</p>
 <p>Weight 0.05kg (0.12lb) AA 4705 Fitting suspension</p>	 <p>Weight 0.141kg (0.3lb) AA 4706 End cap</p>	 <p>Weight 0.20kg (0.45lb) AA 4707 PVC cover 2.4m/7.87ft</p>
 <p>Weight 0.04kg (0.1lb) AA 4708 Terminal block assembly</p>	 <p>Weight 0.11kg (0.25lb) AA 4709 Horizontal coupling</p>	 <p>Weight 0.45kg (1.0lb) AA 4712 Four-way coupling</p>
 <p>Weight 0.56kg (1.25lb) AA 4713 'T' coupling</p>	 <p>Weight 12.24kg (27lb) AA 4500 Trunking 4.5m/14.75ft length</p>	

Exterior and Street Lighting

Introduction

This section describes a wide range of fittings for exterior lighting and floodlighting, and the full range of street lighting fittings.

Bulkhead and wellglass fittings include the well known Renown and Dreadnought types, suitable for use in Division 2 areas, and the OB vandal-proof fluorescent bulkhead which has proved its worth in many situations.

The Escort and Patio ranges of wellglass fittings are suitable for situations demanding a more decorative treatment. Floodlighting equipment covers almost all requirements, from the miniature 150W Minifloods and the Sun 500 and 1000 fittings for general lighting, through the Haline and 400W Area floodlights to the Linear Halide and CSI sealed beam floodlights used in unusual and rigorous situations.

The street lighting fittings and columns described in these pages are used all over the world, and there is a type suitable for every kind of road from motorways to country lanes. The Precinct is an attractive fitting for both street lighting and bulkhead applications.

IMPORTANT

Fittings shown in the Outdoor Lighting section of this catalogue are designed to be weatherproof and suitable for operation in ambient temperatures not exceeding 15°C in accordance with current British Standard Specifications. When used indoors in situations involving higher ambient temperatures, performance may be impaired and we do not recommend such applications without our prior agreement.

Index

2:2
2:3
2:4
2:5
2:6
2:7
2:8

2:9
2:10, 2:11
2:12, 2:13
2:14
2:15
2:16
2:17
2:18
2:19
2:20
2:21

2:22
2:23
2:24, 2:25
2:26
2:27
2:28

2:29
2:30
2:31
2:32
2:33
2:34

2:35

2:36
2:37, 2:38
2:39
2:40

2:41
2:42
2:43
2:44
2:45
2:46
2:47

Exterior Lighting

Renown Division 2 wellglass
Dreadnought Division 2 bulkhead
Kolorlux bulkhead fitting
Escort tungsten bulkhead
Escort fluorescent bulkhead
Escort wellglass
Escort Patio

Floodlighting

Minifloods
Sunflood tungsten-halogen
Haline tungsten-halogen
M25 junior floodlight projector
M25F floodlight projector
Grenville Division 2 floodlight
M28 light duty floodlight
Area floodlight
M30 linear sodium floodlight
750/1600W MBL floodlight
1000W CSI sealed beam floodlight

Street Lighting

Group A

Numbering system
Alpha One semi-cut-off sodium
Alpha Three
Alpha Five semi-cut-off sodium
Alpha Six cut-off sodium
Alpha Nine semi-cut-off sodium

Group B

Beta Four top entry GLS/mercury
Beta Five side entry sodium
Beta Six side entry fluorescent
Beta Seven side entry mercury
Beta Eight side entry sodium
Precinct

Group A

Gamma Three mercury/fluorescent

Group B

Gamma Five GLS/mercury
Gamma Six GLS/sodium/mercury
Gamma Seven GLS/mercury
Gamma Eight GLS/sodium/mercury

Miscellaneous

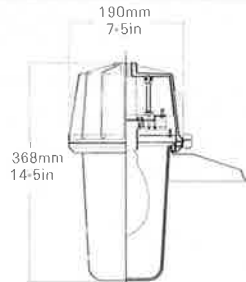
High tower lantern
Leader and Lucerna columns
Classic and Sheerline columns
10m Aluminium columns
12m Aluminium columns
Brackets
Aluminium wall brackets and boxes



DRN T160



DRN T125



BASEEFA certified wellglass fitting for Division 2 areas, dust-tight, rainproof and proof against most corrosive atmospheres, fitted with internal choke to take 80 or 125W MBF lamps. The finned body and bezel are constructed of die-cast aluminium alloy, LM6-M. The heat resisting glass with diffusing flutes is cemented to the bezel, which is retained by Allen Head stainless steel screws and sealed by a neoprene gasket.

A smaller version of the fitting, using the same glass, is available for tungsten or mercury-blended lamps (150/200W GLS or 160W MBTF).

Secondary suspension holes are provided in two of the cooling fins. Standard stock fittings: Top entry tapped 20mm conduit or twin 20mm side (adjacent) entry with removable plug. Safety cord fitted between main body and bezel.

All fittings are suitable for 240V 50Hz supplies.

Made to BS.4533-2.1
BASEEFA certificate no. 72057

Nomenclature:
S—2 x 20mm side entry
T—1 x 20mm top entry
C—Ceiling fixing strap

Optional extras and spares

Catalogue no.	Description
DRN C	Ceiling fixing strap
DRN R	Vitreous enamel external reflector
DRN W	Wire guard
DRN G	Spare glass

Range

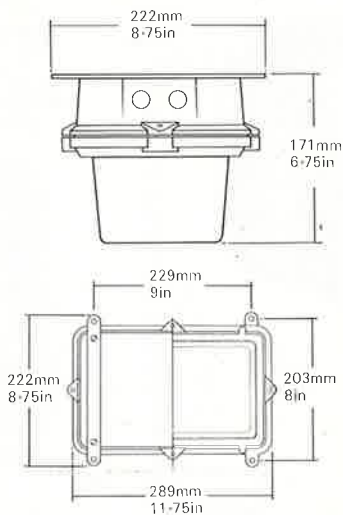
Complete fitting

Rating	Lamp type	Catalogue no.	Cable entry	Approx. weight	
				kg	lb
80W	MBF	DRN T80	Top	7.3	16
80W	MBF	DRN S80/C	Twin (adjacent) side	7.3	16
125W	MBF	DRN T125	Top	7.3	16
125W	MBF	DRN S125/C	Twin (adjacent) side	7.3	16
200W	GLS	DRN T160	Top	3.6	8
200W	GLS	DRN S160/C	Twin (adjacent) side	3.6	8
160W	MBTF	DRN T160	Top	3.6	8
160W	MBTF	DRN S160/C	Twin (adjacent) side	3.6	8

Note change of catalogue numbers with issue of BASEEFA certificate



DDRE50



BASEEFA certified fitting for Division 2 areas, rainproof, dust-tight and suitable for use in most chemically corrosive atmospheres. Bulkhead fitting in die-cast aluminium alloy LM6-M treated and stove enamelled grey. Bezel frame with neoprene gasket carrying glass is screwed to body by four Allen Head stainless steel screws. Internal choke and capacitor and reflector provided for MBF lamps. Inside of fitting is sprayed white for MBTF and tungsten lamps.

With three-way terminal block, ES lampholder and fixing straps with $\frac{1}{8}$ in dia. clear fixing holes. Recommended burning position for MBTF and GLS lamps: Cap up. Cable/mains entry via 2 x 20mm adjacent entries, one with removable plug.

All fittings are suitable for 240V 50Hz supplies.
Made to BS.4533-2.1
BASEEFA certificate no. 72061
 Catalogue nomenclature:
 E—2 x 20mm (adjacent)

Range

Complete fitting

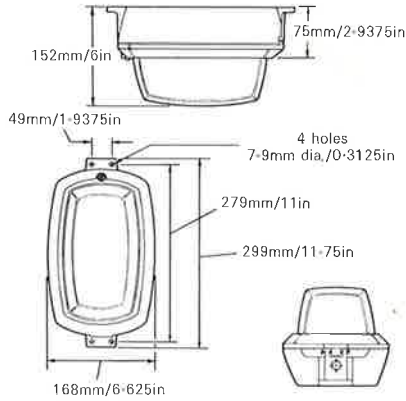
Rating	Lamp type	Catalogue no.	Cable entry	Approx. weight	
				kg	lb
50W	MBF	DDR E50	Twin (adjacent) entries	6.35	14
80W	MBF	DDR E80	Twin (adjacent) entries	6.35	14
200W	GLS	DDR E160	Twin (adjacent) entries	4.54	10
160W	MBTF	DDR E160	Twin (adjacent) entries	4.54	10

Optional extras and spares

Catalogue no.	Description
DDR W	Wire guard
DDR G	Spare glass

Note change of catalogue numbers with issue of BASEEFA certificate

Kolorlux bulkhead fitting



Description

The 50W MBF/U bulkhead has a body cast in corrosion resistant LM6 aluminium alloy with light control provided by a prismatic diffuser held firmly in position by a hinged glazing ring. The polycarbonate diffuser is held against the ring by clips. The ring seats on to a tubular neoprene gasket cemented firmly into a recess in the cast body. The cast metalwork has a sprayed aluminium finish on the exterior and the interior is painted white.

The control gear is fixed directly to the back of the casting inside, together with a porcelain terminal block suitable for looping 7 x 0.036in cable. A separate earth terminal is provided. An ES porcelain lampholder is mounted in front of a diffused aluminium reflector. The reflector is slotted at one end and has a keyhole slot at the other so that it can be easily removed from its two locating screws. A separate earth wire is provided to earth the reflector.

Alternative version

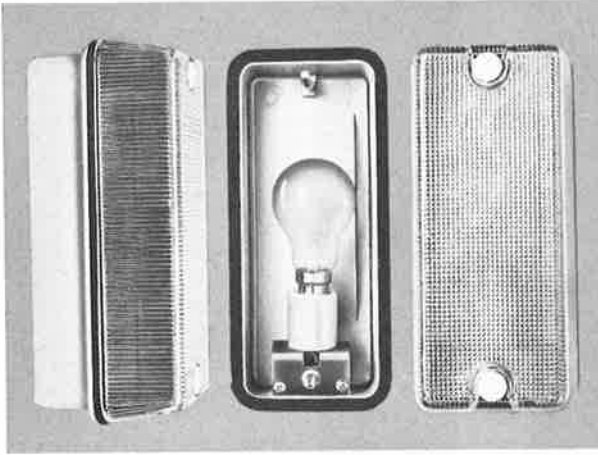
An alternative gearless version suitable for 150W GLS has a porcelain ES lampholder mounted on an easily removable bracket with a separate earth terminal on the casting. Insulating sleeves are provided to protect the incoming cable.

Division 2 type

Generally as above but fitted with enclosed break ES lampholder. Mains connector has clamp type terminals. Maximum 100W.

Catalogue no.	Description	Type	Lamp
TG 4075	MBF/U prismatic bulkhead complete with 240V gear	Standard	50W MBF/U ES cap
TG 4208	GLS prismatic bulkhead less gear	Standard	100/150W GLS ES cap
TG 4209	MBF/U prismatic bulkhead complete with 240V gear	Division 2	50W MBF/U ES cap
TG 4210	GLS prismatic bulkhead less gear	Division 2	100W GLS ES cap
TG 4069	Spare Polycarbonate front	—	—
Weight : with gear 4.76kg/10.5lb; less gear 2.5kg/5.5 lb			
Entry : 19mm/0.75in ET conduit top and bottom.			

Escort tungsten bulkhead



Escort bulkhead

APPLICATION

Bulkhead fittings for incandescent light source in a pleasing style. Well made and efficient, sets new standards of simplicity in installation and servicing, with prolonged periods between maintenance. The shallow, square styling is simple and attractive, blending well with any wall finish or decorative scheme.

Low initial cost is a feature of the miniature incandescent bulkhead fittings, which are particularly suitable for installations where manual or time switch control is in operation.

Description

Completely weatherproof and protected against corrosion, these fittings have lattice glass diffusers and are much shallower than most. They incorporate an anti-theft locking device.

Lamps 40-100W GLS BC or ES

Glass diffuser The replaceable prismatic diffuser is retained in position by two captive vandal-proof nylon screws. The diffuser fits outside the lip of the body casting and closes onto a neoprene gasket for weatherproofing.

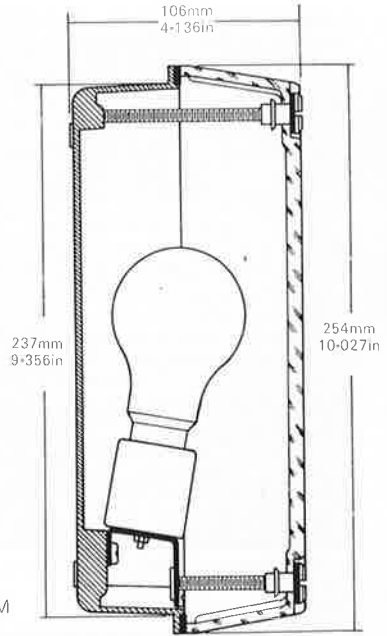
Body casting This is a pressure die-cast aluminium alloy in LM24M grey enamel hammer finish. A conduit entry knockout is provided at the lampholder end. There is also provision for Besa box and conduit entry at the back. The units can be either semi-recessed or surface mounted.

Catalogue no.

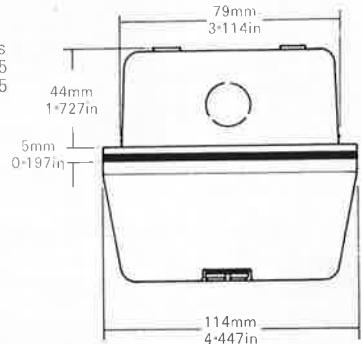
OLG 1100 BC
OLG 1100 ES

Weight

kg	lbs
1.13	2.5
1.13	2.5



CROSS SECTION AND DIMENSIONS



Note: Maximum recommended lamp wattage 100W

Escort fluorescent bulkhead

Application

A tough, stormproof fitting for surface or recess mounting anywhere outdoors.

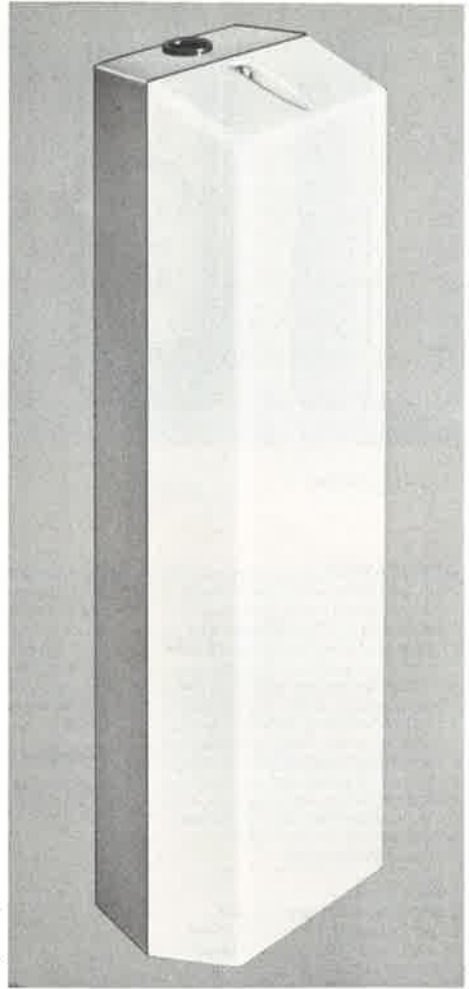
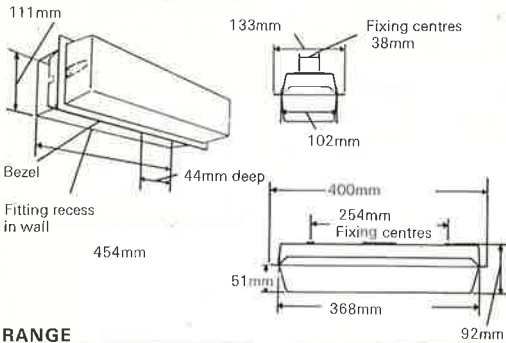
Description

The fitting comprises pressure die-cast aluminium body with high impact acrylic cover (wire guards are not a necessary accessory with this unit).

The opal cover is secured with two captive screws opened only by a special key provided with each fitting and is retained when open with a plastic toggle. Switchstart gear for 2 or 3 8W 300mm/12in fluorescent T5 lamps is mounted under a hinged reflector tray. Stock fittings are LPF (single lamp versions and HPF 2 lamp versions are available to special order).

For easy installation the die-cast body includes $\frac{3}{8}$ in ET entries at ends and $\frac{3}{8}$ in knockout in centre back (two plugs are provided). Wireways are cast in from the end entries to the central terminal block as well as alternative drill indents for fixing holes. Tubes are packed with each fitting for convenience. A bezel trim is available for use when the bulkhead is recessed.

See also page 1:84 for Emergency lighting application.



Escort fluorescent bulkhead

RANGE

Catalogue no. †	Description	kg	Weight
			lb
OBD 2008	2 lamp parallel wired SS circuit LPF, 2 x 8W 300mm/12in fluorescent tubes with acrylic diffuser	2.03	4.5
OBD 3008	3 lamp parallel wired SS circuit LPF, 3 x 8W 300mm/12in fluorescent tubes with acrylic diffuser	2.26	5.0
OBV 2008	2 lamp parallel wired SS circuit LPF, 2 x 8W 300mm/12in fluorescent tubes with polycarbonate diffuser	2.03	4.5
OBV 3008	3 lamp parallel wired SS circuit LPF, 3 x 8W 300mm/12in fluorescent tubes with polycarbonate diffuser	2.26	5.0

SPARES

OBD	Spare acrylic diffuser	0.68	1.5
OBV	Spare anti-vandal diffuser	0.68	1.5

ACCESSORIES

OBB	Bezel trim	269	9½
OBK	Diffuser fixing key	7	1

Escort wellglass

These Wellglass fittings are available in two sizes, suitable for 60/200W tungsten lamps and 80/125W mercury vapour lamps. They utilise a screw neck gallery of cast aluminium alloy (LM6-M) construction suitable for either side or top entry. The latter is also suitable for direct Besa box mounting. The two sizes of glass cater for 100W or 200W ratings but employ a common screw neck detail to match the galleries. This is internally etched and is fitted complete with a weatherproof seal. A white nylon reflector may be fitted if required over the screw neck of the glassware and is available to both sizes. For wall or corner mounting, bracket assemblies are available for use with the side entry gallery.



EMF 1200 top entry with EKR 200 reflector and EKB bracket



EKF 1100 side entry using EKC corner bracket



EKF 1200 side entry using EKB wall bracket

RANGE:

Catalogue no.	Type	GLS lamp	MBF lamp	Lampholder	Diameter		Height		Weight	
					mm	in	mm	in	kg	lb
EKF 1100	Side entry	60/100W	—	BC	114	4.5	187	7.37	0.9	2
EMF 1100	Top entry	60/100W	—	BC	114	4.5	187	7.37	0.9	2
EKF 1200	Side entry	150/200W	80/125W	ES	146	5.75	235	9.25	1.02	2.25
EMF 1200	Top entry	150/200W	80/125W	ES	146	5.75	235	9.25	1.02	2.25

Attachments

Catalogue no.	Type	Lamp watts	Dimensions		Weight	
			mm	in	g	oz
EKR 100	Reflector	60/100	184	7.25 diameter	85	3
EKR 200	Reflector	150/200	219	8.62 diameter	59	2
EKB	Wall bracket	—	120	4.75 length	113	4
EKC	Corner bracket	—	152	6 square	340	12
			120	4.75 projection		
					kg	lb
EKG 100	Replacement glass	60/100	114	4.5 diameter	0.57	1.25
EKG 200	Replacement glass	150/200	146	5.75 diameter	0.9	2.0

All fittings comply with BS.3820

Escort Patio



WPC R 1060 BC



WPW A 1060 BC

The Escort Patio range comprises two fittings and three alternative glasses.

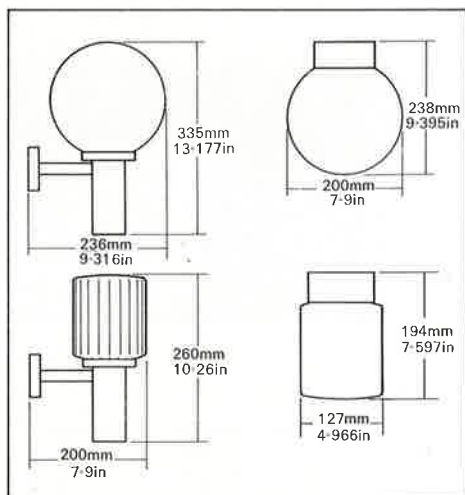
Fittings

The fittings have a matt black, weather resistant and non-corrosive finish. Each fitting has a 2BC lampholder as standard (ES lampholder is available).

The fittings take a 60W lamp, standard GLS or decorative shape.

Glassware

The glasses are interchangeable and available in two shapes, cylindrical and spherical. The cylindrical glass is ribbed with a clear finish. The spherical glasses are either amber aerated or white opal.



RANGE

Catalogue no.	Description	Weight		Catalogue no. Metalwork	Catalogue no. Glass
		kg	lb		
WPC A 1060 BC	Under-canopy fitting with amber aerated spherical glass	1.46	3.25	WPC 1060 BC	WPA
WPC R 1060 BC	Under-canopy fitting with ribbed cylindrical glass	1.46	3.25	WPC 1060 BC	WPR
WPC S 1060 BC	Under-canopy fitting with opal spherical glass	1.46	3.25	WPC 1060 BC	WPS
WPW A 1060 BC	Wall bracket with amber aerated spherical glass	1.58	3.5	WPW 1060 BC	WPA
WPW R 1060 BC	Wall bracket with ribbed cylindrical glass	1.58	3.5	WPW 1060 BC	WPR
WPW S 1060 BC	Wall bracket with opal spherical glass	1.58	3.5	WPW 1060 BC	WPS
SPARE GLASSES					
WPA	Amber aerated spherical glass	0.9	2.0		
WPR	Ribbed cylindrical glass	0.9	2.0		
WPS	Opal spherical glass	0.9	2.0		

Minifloods

The Miniflood is a weatherproof lampholder housing and mounting assembly for exterior application designed for use with the 150W mains voltage sealed reflector spot or flood lamp.

Description

The basic unit supplied with various forms of mounting comprises a satin finished extruded aluminium case housing a ready wired ES lampholder. Weather-proofing is completed by a silicone rubber sealing ring between case and lamp. Adjustment and locking are by means of a slotted thumb screw.

The ER 1150 is wired for connection to conduit installations with an alternative wall mounting bracket EKB and a corner mounting bracket EKC being available.

The M36 1150 is supplied with 1.8m/6ft of PVC 3-core cable and a black polythene coated steel bracket which allows fixing to conduit or by woodscrew, as well as free standing.



ER 1150 Miniflood using EKB flat wall bracket



M36 1150 Miniflood

RANGE

Catalogue no.	Description	Weight	
		g	oz
ER 1150	Miniflood (less brackets, less lamp)	399	14
M36 1150	Miniflood (with brackets, less lamp)	512	18
EKB	Flat wall bracket	113	4
EKC	Corner bracket	340	12

Dimensions

Catalogue no.	Length		Height		Diameter	
	mm	in	mm	in	mm	in
ER 1150 incl. lamp	191	7.5	—	—	121.5	4.75
M36 1150 incl. lamp	191	7.5	—	—	121.5	4.75
M36 1150 mounting bracket	105	4.125	132	5.1875	—	—

Lamps

	Type	Watts	Volts	Cap
Sealed beam reflector lamps (Par 38)	Spot	150	220/230, 240, 250	ES
Sealed beam reflector lamps (Par 38)	Flood	150	220/230, 240, 250	ES
Color-ray sealed beam reflector lamps (Par 38)	Spot	150	220/230, 240, 250	ES

Standard colours: blue, green, red and yellow

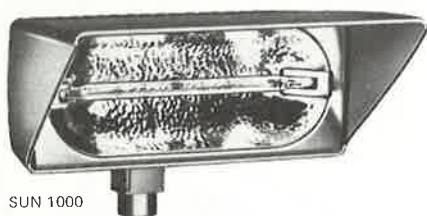
Sunflood 300/1000W tungsten-halogen floodlights



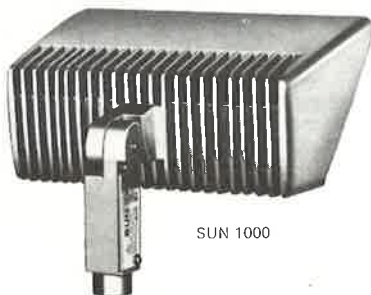
SUN 500



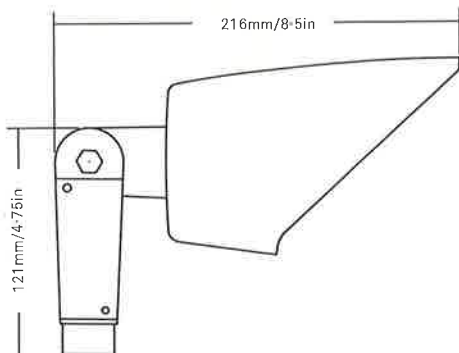
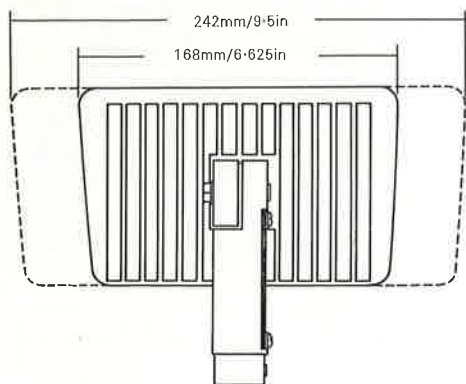
SUN 500



SUN 1000



SUN 1000



Description

The main body, with specially designed cooling fins, and the terminal block housing are pressure die-cast in LM6-M aluminium alloy. The reflector is of magnesium alloy, hammer finished, chemically brightened, and anodized.

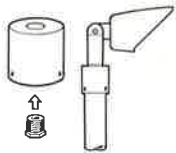
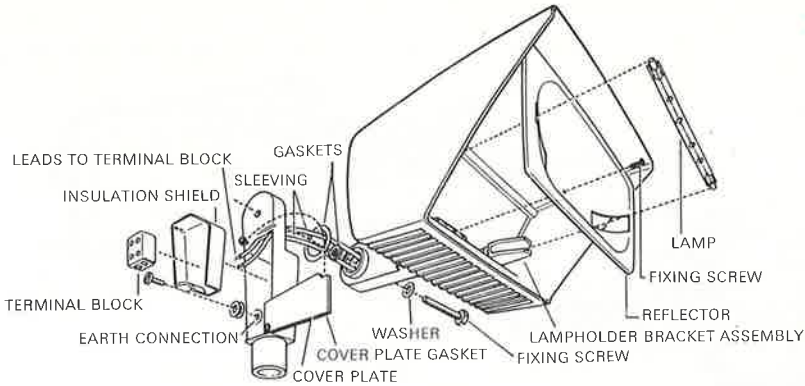
The lampholders consist of single fine silver 'button' contacts, mounted on nickel-silicon-copper alloy leaf springs, tempered, plated and housed in porcelain shrouds. Wiring is carried out with special heat-resisting cable.

All fixing screws are of stainless steel. The two-way porcelain terminal block is completely insulated by a moulded polypropylene shield. An earth terminal is provided.

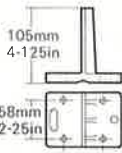
Range

Catalogue no.		Weight
SUN 500/LL	Sunflood fitting 300/500W less lamp	1.02kg 2.25lb
SUN 1000/LL	Sunflood fitting 750/1000W less lamp	1.36kg 3lb
SUN 500	Sunflood fitting packed with 240V 500W lamp	—
SUN 1000	Sunflood fitting packed with 240V 1000W lamp	—

Sunflood 300/1000W tungsten-halogen floodlights



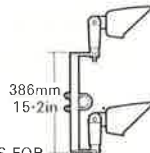
OHA 4600
51 x 51mm/2 x 2in
SPIGOT CAP



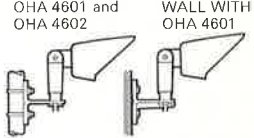
OHA 4601
WALL-FLOOR-POLE MOUNTING BRACKET



OHA 4602
PAIR OF CLAMPS FOR
51mm/2in o.d. POLE



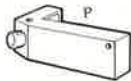
OHA 4603
CROSS ARM MOUNTING



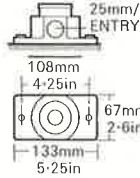
OHA 4601 and
OHA 4602
WALL WITH
OHA 4601



WIRE GUARD
FOR SUN 500
SUW500
FOR SUN 1000
SUW1000



SUC
CORNER WALL
BRACKET



OHA 4604
FLOOR MOUNTING WITH
AZIMUTH ADJUSTMENT

Accessories

A comprehensive range of mounting accessories is available, catering for most mounting requirements. Designed for simple fixing, they are interchangeable throughout the range.

Mounting accessories are attached to the 3/8in ET tapped entry boss. Accessories are supplied in a plastic bag containing all the necessary components.

Catalogue no.		Weight kg
OHA 4600	Spigot cap for 51mm/2in o.d. pole	0.241
OHA 4601	Mounting bracket for pole, wall or floor	0.340
OHA 4602	Pair of 'U' clamps for use with HA 4601	—
OHA 4603	Cross-arm bracket for 51mm/2in o.d. pole	0.480
OHA 4604	Floor bracket	—
SUC	Corner wall bracket	—

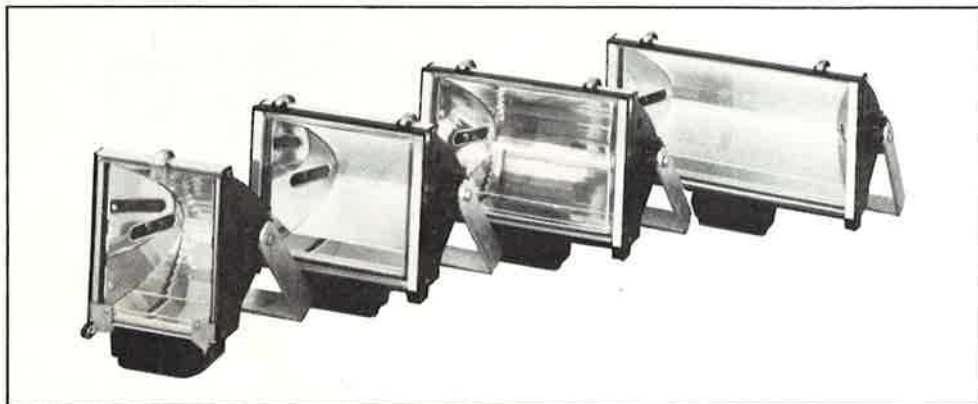
Spares

Lamp protection can be afforded by the provision of a Sunflood wire guard. It is available for both sizes of Sunflood. The wire guard is made of stainless steel and is clip hinge fixed for easy maintenance.

Spare reflectors and lampholder assemblies are also available.

Catalogue no.	
SUL500	Lampholder assembly for Sun 300/500 (comprises one bracket, two lampholders and leads)
SUL1000	Lampholder assembly for Sun 750/1000 (comprises one bracket, two lampholders and leads)
SUR500	Reflector for Sun 300/500
SUR1000	Reflector for Sun 750/1000
SUW500	Wire guard for Sun 300/500
SUW1000	Wire guard for Sun 750/1000

New Haline 300/500/750/1000/1500/2000W tungsten-halogen floodlights



Application

Suitable for area lighting, buildings, precincts, stadia, car parks, forecourts or any purpose where a wide horizontal beam spread and accurate vertical beam control are required.

Description

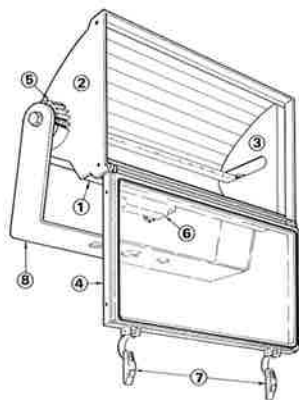
One-piece reflector/body of extruded aluminium featuring asymmetrical, faceted reflector profile. This construction gives rigidity and accuracy for the best and most consistent optical performance. Reflectors are finished polished (specular) or matt (diffuse) and provided with polished aluminium end diaphragms for improved light distribution. Die-cast LM6-M aluminium alloy end plates enclose the fitting and carry lampholders. The cool wiring box is made of glass filled epoxy resin and polycarbonate for the base and lid respectively, and contains an easy access terminal block, cable clamp and neoprene gasket complete with gland suitable for 6-11 mm O/D cable.

Access for relamping is obtained via the hinged silicone rubber gasketed front frame and glass secured with catches on all fittings.

Full weatherproofing is provided by dished borosilicate glasses on 750-1500W sizes and by flat glasses on 300/500W and 200W sizes.

Lampholders feature solid fine silver contacts for long and trouble-free life.

- 1 BODY AND REFLECTOR
- 2 END CASTING
- 3 END DIAPHRAGM
- 4 FRAME AND GLASS ASSEMBLY
- 5 STIRRUP BOSS
- 6 COOL WIRING BOX
- 7 SECURING CATCH
- 8 STIRRUP MOUNTING BRACKET



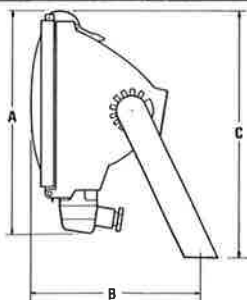
Exterior finish

Reflector/body is matt aluminium, castings matt black, glazing trim anodized aluminium, screws and catches stainless steel.

The New Haline OHS/D 500 and OHS/D 1000 are suitable for 120/240 volts ; the remainder of the range is suitable for 200-250 volt supply only.

Mounting

A 25° cranked stirrup is standard to the complete range allowing floor, wall or pendant mounting and adjustment in two planes.



Catalogue no.	Watts	Weight kg	Height A mm	Depth B mm	Overall Height C mm	Length mm
OHS/D 500	300/500	2.9	272	190	296	237
OHS/D 1000	750/1000	4	272	190	296	309
OHS/D 1500	1500	4.7	272	190	296	374
OHS/D 2000	2000	4.9	272	190	296	450

OHS=Specular reflector OHD=Diffuse reflector

New Haline 500/750/1500/2000 tungsten-halogen floodlights

FITTINGS

Catalogue no.	Lamp description
OHS 500	500W Specular reflector
OHD 500	500W Diffuse reflector
OHS 1000	750/1000W Specular reflector
OHD 1000	750/1000W Diffuse reflector
OHS 1500	1500W Specular reflector
OHD 1500	1500W Diffuse reflector
OHS 2000	2000W Specular reflector
OHD 2000	2000W Diffuse reflector

ACCESSORY PACKS SUITABLE FOR ALL NEW HALINES

Catalogue no.	Description	Weight kg
OHA 4600	51mm 2in O/D spigot cap, pole top mounting	0.241
OHA 4601	Multi-use mounting bracket	0.340
OHA 4603	Cross-arm mounting	0.480
OHA 4606	Hood 750/1000W for OHS/OHD 1000	0.142
OHA 4607	Hood 1500W for OHS/OHD 1500	0.149
OHA 4608	Hood 2000W for OHS/OHD 2000	0.150
OHA 4609	Wing universal, all sizes except OHS/OHD500	0.085
OHA 4612	76mm/3in O/D spigot cap, pole top mounting	0.354
OHA 4613	Universal pole clamp, for poles 48-89mm/ 2-3.5in O/D	0.480
OHA 4614	2-replacement lampholder contact	0.028

Accessories

Accessories are supplied packed in plastic bags containing all necessary components as follows:

OHA 4600 51mm/2in Spigot Cap

Pack contains one 51mm x 51mm/ 2in x 2in spigot cap and HEX head steel bush, washer and nut. Cap is attached to stirrup with bush and nut and wiring fed through it.

OHA 4601 Multi-use Mounting

Pack contains bracket, bush, washer and nut used for wall mounting.

OHA 4603 Cross-arm Mounting

Pack contains bracket, two bushes, washers and nuts and one pair of OHA 4602 clamps for mounting two fittings, one above the other, on a single horizontal 51mm/2in O/D bracket arm.

OHA 4606/8 Hood

Pack contains hood and four stainless steel screws. Used to control upward light. Attached to glazing-frame with longer screws provided.

OHA 4609 Wing

Pack contains one wing and two screws. Used to control side light. Attached to glazing-frame with longer screws provided.

NOTE: Not available for OHS/OHD 500.

OHA 4612 76mm/3in Spigot Cap

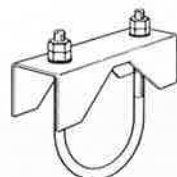
Pack contains one 76mm x 76mm/ 3in x 3in spigot cap and Hex head steel bush, washer and nut. Cap is attached to stirrup with bush and wiring fed through it.

OHA 4613 Universal Pole Clamp

Pack contains one clamping strap, a U-bolt and two nuts with washers and is capable of fixing on 51-89mm/ 2-3.5in O/D pole without adjustment.

OHA 4614 Replacement Lampholder Contact

Pack contains two contact assemblies with cable for 2000W size. Cable cut to length during installation for OHS/OHD 500, 1000 and 1500.



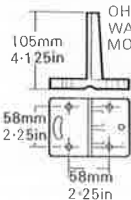
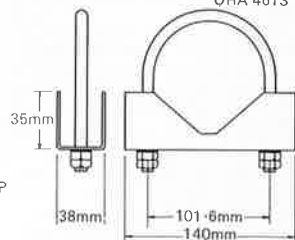
UNIVERSAL POLE CLAMP
OHA 4613



OHA 4606/8
Hood



OHA 4600
2in x 2in SPIGOT CAP
51mm x 51mm



OHA 4601
WALL-FLOOR-POLE
MOUNTING BRACKET



OHA 4603
CROSS-ARM MOUNTING



OHA 4609
Wing



OHA 4612
76mm x 76mm SPIGOT CAP



OHA 4614

REPLACEMENT LAMPHOLDER CONTACT

M25 junior floodlight projector



M25 junior floodlight

Description

The projector is of robust construction and made from first quality materials, selected to withstand corrosive atmospheres found in industrial locations. The projector comprises six major components.

A reflector spun from super purity aluminium, polished and anodised, is secured internally to an aluminium alloy ring casting which itself is pivoted in a galvanised steel stirrup assembly.

A heat-resisting front glass cover secured into the reflector by a neoprene gasket makes a weatherproof seal.

Gasketed and fastened to the body casting by stainless steel studs and wing nuts through slotted cast-on lugs, is an easily removable lampholder housing at the base of which is a detachable cast cover plate.

To complete the assembly, an auxiliary reflector is fixed between main reflector and main body casting; a GES lampholder, on a

plated steel bracket, is fixed to the appropriate pre-set focus position; and the cover plate end cap encloses a cool wiring chamber containing porcelain terminal block, earth connection and cable gland. The stirrup assembly provides locking bolts, with plastic coated heads and handles, DV bearing quadrant marked 0°-180°. All castings are aluminium alloy, LM6-M.

Available, modified for use in Division 2 areas, to special order.

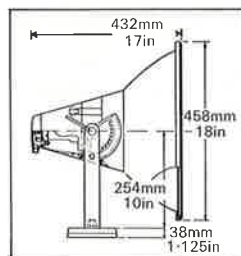
Special features and maintenance

The floodlight once aimed need not be moved for re-lamping, which is effected by removing lampholder housing complete with lamp from body casting.

The terminal block, earth screw and supply cable are located within the cool wiring chamber at base of lampholder casting, affording easy access along with protection from lamp heat.

The neoprene gasket and method of

glazing provide a very effective weatherproof seal. Details of discharge lamp control gear and weatherproof boxes are listed in Section 10



RANGE

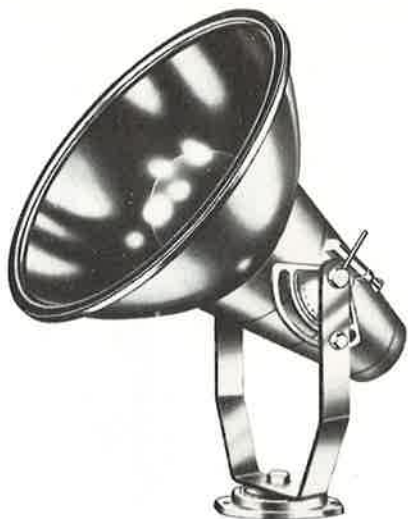
Catalogue no.	Mounting	Reflector	Weight kg
M25 S500	2 x 9.5mm/3/8in diameter clear holes at 152mm/6in centre	Specular	9.07
M25 D500	2 x 9.5mm/3/8in diameter clear holes at 152mm/6in centre	Diffuse	9.07

Complete with baseplate

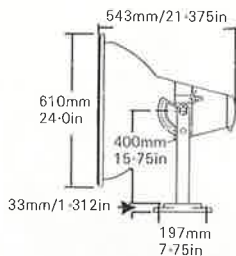
LAMPS

Lamp type	GLS	B2/1	MBF/U	MB1 & MB1F	SON	SON/T
Watts	300/500	500	250/400	250/400	250/400	250/400

M25F floodlight projector



M25F floodlight projector



Description

The projector is of robust construction and made from first quality materials, selected to withstand corrosive atmospheres found in industrial locations. The projector comprises six major components. A reflector spun from super purity aluminium, polished and anodised, is secured internally to an aluminium alloy body casting which itself is pivoted in a galvanised steel stirrup assembly. A heat-resisting front glass cover secured into the reflector by a neoprene gasket makes a weatherproof seal. Gasketed and fastened to the body casting by stainless steel studs and wing nuts through slotted cast-on lugs, is an easily removable lampholder housing at the base of which is a detachable cast cover plate. To complete the assembly, an auxiliary reflector is fixed between main reflector and main body casting; a GES lampholder is

provided and the cover plate end cap encloses a cool wiring chamber containing porcelain terminal block, earth connection and cable gland. The stirrup assembly provides locking bolts, with plastic coated heads and handles, and DV bearing quadrant marked 0° – 90° at $2\frac{1}{2}^{\circ}$ intervals. A cast baseplate, marked with azimuth bearing angles, 0° – 180° , is available as an optional extra. All castings are aluminium alloy, LM6-M.

Special features and maintenance

Provision is made for accurate lamp focusing by adjustment of three screws with screwdriver slot. The floodlight once aimed need not be moved for re-lamping, which is effected by removing lampholder housing complete with lamp from body casting. A re-setting stop situated in the quadrant makes it possible to swivel the fitting on its horizontal axis for cleaning front

glass. The fitting then returns to its predetermined aiming position.

The terminal block, earth screw and supply cable are located within the cool wiring chamber at base of lampholder casting, affording easy access with protection from lamp heat.

The neoprene gasket and method of glazing provide a very effective weatherproof seal. For replacement of glass front cover a special glazing tool is available (M25 glazing tool. Catalogue No. M25 GT.) Details of discharge lamp control gear and weatherproof boxes are in Section 10.

RANGE

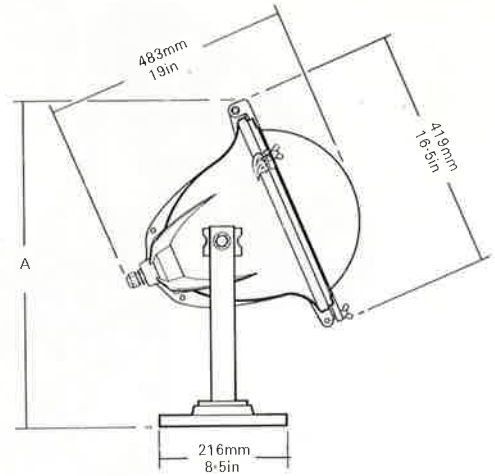
Catalogue no.	Reflector	Weight kg	Mounting
M25F D1500*	Diffuse	12.7	1 x 17mm/5/8in hole
M25F S1500*	Specular	12.7	1 x 17mm/5/8in hole
M25 BP	Baseplate (optional extra)		2 x 13mm/0.5in diameters 197mm/7.75in centre

*Excluding baseplate

Lamp type	GLS	B2/2	B2/3	MB/U	MBF/U	MBI & MBI/F.
Watts	750/1500	1000	1500	1000	1000	1000



OGR250/A



Floodlight suitable for Division 2 areas, rainproof, dust-tight and for use in most chemically corrosive atmospheres. The fitting is made of die-cast aluminium alloy stove enamelled grey, with plain heat-resisting glass bowl seated on a neoprene gasket in bezel secured by a floating hinge and three swing bolts with captive wing nuts. The fitting may be mounted by a variety of means including a cradle and 254mm/10in dia. circular base plate or cradle and 102mm/4in dia. vertical pole clamp (see page 1:44). A concentrating anodized internal reflector is used with the MBF (Kolorlux) lamp. The fitting is supplied with integral choke but no capacitor and 3m of armour cable. Made to OCMA Specification no. ELEC 7—HMFI Approved for use in Division 2 areas (BASEEFA certification applied for to BS 4533). Fully rainproof, dust-tight and corrosion-resistant to BS.3820:1964.

Range

Catalogue no.	Lamp	Holder	Dimensions		A (min.)		Weight	
			A (max.) mm	in	mm	in	kg	lb
OGR 250	MBF/U 250W	GES	635	25	483	19	16.5	36
OGR 400	MBF/U 400W	GES	635	25	483	19	16.5	36

Mountings for adjustable floodlight fitting with side bosses

- OGR A Cradle and circular baseplate (254mm/10in dia.)
- OGR B Cradle and clamp for 102mm/4in dia. column
- OGR C Cradle and handrail clamps
- OGR D Cradle and spigot clamp
- OGR G Spare glass only

Baseplate fixing: Four holes for 9mm/0.375in dia. bolts equally spaced on 216mm/8.5in dia. circle.

M28 light duty floodlight



M28 200 light duty floodlight



M28 500 light duty floodlight

The M28 is designed for general purpose light duty floodlighting for 150/500W tungsten GLS lamps.

Description

The M28.150 and M28.200 floodlights in this range are identical in construction, varying only in overall dimensions.

Mains wiring is fed via a fixed nylon gland direct into the back of the lampholder.

The M28.500 has a removable back cover with cable gland, single screw fixing, giving access to a terminal block for mains connection.

Re-lamping on all sizes is carried out by removal of front glass and glazing ring. Removal of the $\frac{3}{4}$ in packed gland on 150W and

200W sizes allows easy withdrawal of lampholder and yoke assembly for wiring.

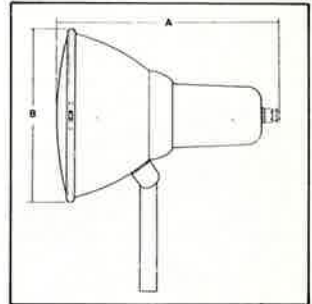
All three types have fixed focus.

Floodlight bodies are manufactured from sheet steel, the whole assembly being given anti-corrosion treatment and finished stoved aluminium lacquer.

The complete assembly is supplied mounted on an adjustable steel stirrup.

Mounting

All mounting stirrups have a centre fixing hole $10.3\text{mm}/\frac{13}{32}$ in diameter plus two holes $5.5\text{mm}/\frac{7}{32}$ in diameter on $50.8\text{mm}/2$ in centres.



RANGE

Catalogue no.	Lamp	Cap	Weight kg	Dimensions			
				A		B	
M28.150	150W GLS	BC	1.59	273mm	10.75in	203mm	8in
M28.200	200W GLS	ES	2.50	400mm	15.75in	254mm	10in
M28.500	300/500W GLS	GES	4.76	552mm	21.75in	305mm	12in

Area floodlight

The Area flood is a totally enclosed floodlight for post top, wall or stirrup mounting. Integral precision wound gear for Kolorlux, Kolorarc and SON lamps is supplied wired to the lampholder. High light output with good optical control and asymmetric light distribution fits it for area floodlighting.

Description

Support casting

The casting which includes the control spigot cap is made of LM6-M aluminium alloy. Integral control gear is mounted on the casting.

Body

The GRP body, moulded in one piece, incorporates a channel section carrying a silicone rubber gasket which provides a seal between body and casting.

Bowl ring assembly

Bowl ring is a GRP moulding with corrosion-resistant hinges at the top for easy access. A toughened flat glass is secured into the bowl ring. Both bowl and ring seat against silicone rubber gaskets for full weatherproofing. The assembly is secured by two Dzus coin-slot clips.

Reflector assembly

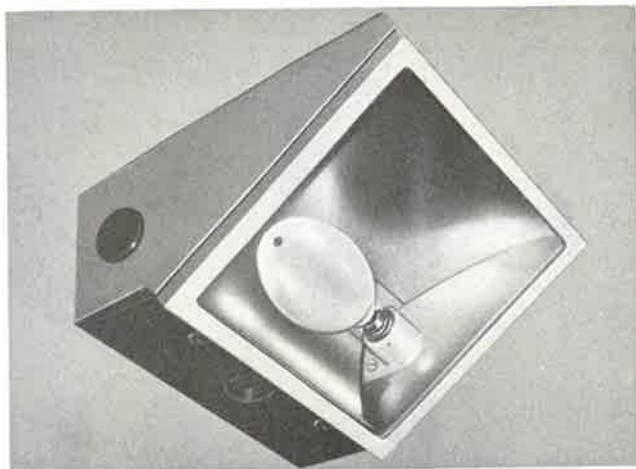
Two-part, of chemically polished aluminium, giving an asymmetric light distribution. The lower portion hinges down giving easy access to the control gear and fixing screws.

Wiring and installation

Mains wiring is fed via a cable to a 3 way 10A terminal block taking up to twin 7/-85mm (7/-036in) cable and earth.

Post top and bracket mounting

The Area floodlight is secured to post or bracket through the two

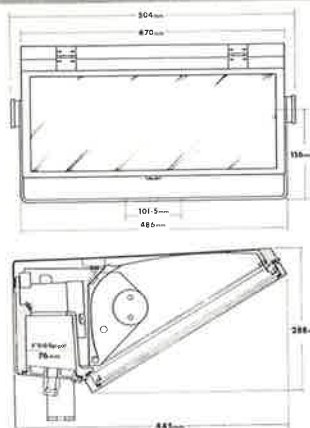


Allen type screws in the spigot cap 76mm/3in dia x 114mm/4.5in.

Wall brackets are available in 152mm/6in for close to wall fixing with limited adjustment in azimuth. The 254mm/10in bracket permits full 180° adjustment in azimuth, if required.

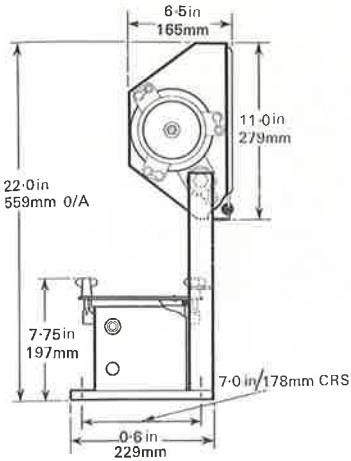
Stirrup mounting

Stirrup arms are secured to the floodlight by the black securing knobs. A blanking plate is provided for gland entry of the mains cable. With this mounting the fitting may be aimed as required in elevation.



RANGE		Fitting packed in one carton c/w lamp				LAMP	
FITTING		Weight		Type	Watts	Cap	
Catalogue no.	Bowl	kg	lb				
OAC G400	Glass	20	44	MBIF Kolorarc	400	GES	
OAC V400	Vandal	20	44	MBIF Kolorarc	400	GES	
OAK G250	Glass	13.6	30	MBF/U Kolorlux	250	GES	
OAK V250	Vandal	13.6	30	MBF/U Kolorlux	250	GES	
OAK G400	Glass	15.2	33.5	MBF/U Kolorlux	400	GES	
OAK V400	Vandal	15.2	33.5	MBF/U Kolorlux	400	GES	
OAS G250	Glass	16.8	37	SON	250	GES	
OAS V250	Vandal	16.8	37	SON	250	GES	
OAS G400	Glass	18.5	41	SON	400	GES	
OAS V400	Vandal	18.5	41	SON	400	GES	
ACCESSORIES		DESCRIPTION					
OAB 36		76mm/3in OD; 152mm/6in wall bracket 152mm/6in projection					
OAB 310		76mm/3in OD; 254mm/10in wall bracket 254mm/10in projection					
OAG		Spare front glass					
OAV		Anti-vandal bowl—polycarbonate with fixing brackets					
OAE		Stirrup assembly—comprising stirrup, blanking plate and gland					
OAA 2		Adaptor for 51mm/2in ø spigot					

M30 linear sodium floodlight

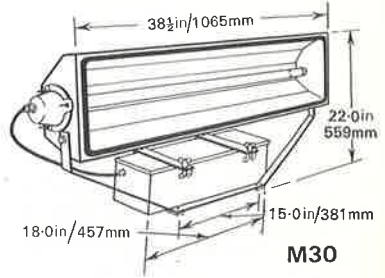


M30

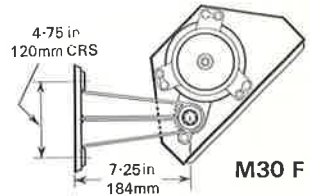


M30 FP

M30 GB P



M30



M30 F

Description

The M30 floodlight is designed for general area lighting. The projector body is of heavy gauge zinc-coated sheet steel with internal specular reflector of aluminium. The armour plate glass front is secured in a rubber weatherproof sealing gasket. Access for servicing and lamp replacement is effected by removing the die-cast aluminium end cap which has three-way quick release keyhole slots.

Finish : stove enamel grey.
Mounting cradle, wall brackets and pole clamps : mild steel strip cast aluminium LM6 and steel rod.

Control gear box : heavy gauge galvanised steel fitted with a hinged lid, fully gasketed. A removable tray for control gear is supplied complete with mains terminal block.

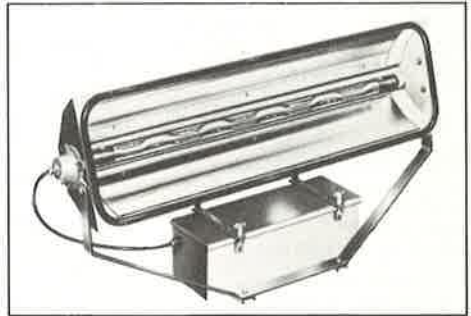
Finish : stove enamel grey.

Lamps

140W SLI/H linear sodium discharge
200W SLI/H linear sodium discharge

Control Gear

Details of control gear can be found in Section 10.



M30 linear sodium floodlight

Catalogue no.	Description	Weight kg
M30	Floodlight (excluding control gear) ; with gear box ; floor mounting. comprising : 1 M30 TS 3116 flood housing 1 M30 TS 2885 side strap 1 M30 TG 2630 gear box	28-12*
M30 F	Floodlight (excluding gear box) ; wall mounting comprising : 1 M30 TS 3116 flood housing 2 M30 TG 2586 wall bracket	12-03
M30 FP	Floodlight (excluding gear box) ; pole mounting comprising : 1 M30 TS 3116 flood housing 1 M30 TS 2885 side strap 1 M30 TG 3378 back plate 2 M30 TS 2585 pole clamps	15-42
M30 GBP	Gear box (excluding control gear) comprising : 1 M30 TG 2630 gear box 2 M30 TS 2585 pole clamps	16-78*

*weight includes gear.

750/1600W MBIL Floodlight

Features

Compactness—Low Windage—High Output
—Excellent Colour Rendering—Low Glare.

Applications

Designed to provide even illumination over a wide area with low glare at higher angles both for the large stadia requiring high illumination levels and for those requiring lower illumination levels. Also ideal for lighting any large areas from buildings, poles or short towers with high efficiency and excellent colour rendering. The asymmetric light distribution also provides a very effective means of floodlighting buildings from a short offset.

Lamp

750/1600W MBIL linear metal halide unjacketed tubular double-ended lamp with standard R7s cap. (Lamp data sheet available on request). The fitting is weatherproof. Gear is mounted remote.

Description

The contoured asymmetric reflector, polished and anodised, is located between end plates cast in LM6-M aluminium alloy. Cool chambers in the castings provide accommodation for special lampholders. At the rear of the reflector a cast chamber with a gasketed lid provides the wiring facilities. Mains entry is by a cable gland.

Mounting and aiming

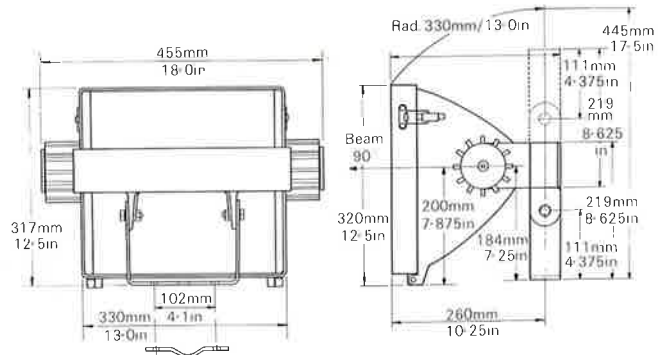
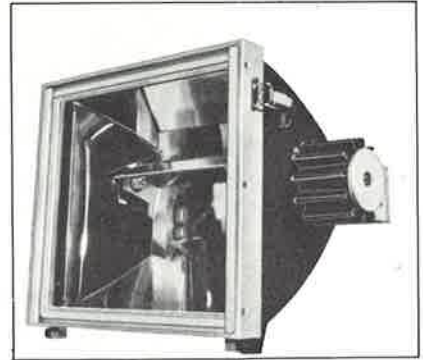
The fitting is provided with a stirrup which gives facilities for altering elevation and azimuth. A universal pole mounting bracket (OHA 4613) can be supplied. See page 19 on New Haline for Details of clamp. The cast wiring box can be reversed to provide standing or pendant mounting. The Baffle in the fitting provides sharp run-back above the peak and coverage near the base of the tower or pole, on short offset types of installation. The ONR insert reflector may be used to give wide, symmetrical beam distribution, where required.

Re-lamping

Access to the lamp for replacement purposes is made through hinging down glass front.

Gear

Ballast G 53254.4 for 240 volts or G 53254.2 for 220 volts, both ballasts are used on respective phase to phase installations also. Two G 53254.4 or 2 Ballasts are required for 1600W lamps and one with 750W lamp. Capacitors 8 x GC 2236 for 240/220V supply (200 mfd) on 1600W and 4 x GC 2236 (100 mfd) on 750W. Capacitors 4 x GC 2271 for 440V supply (68 mfd) on 1600W and 2 x GC 2271/34 (mfd) on 750W for single fittings. For large installations where bulk correction is preferred 57 mfd per fitting should be allowed on 1600W and 26 mfd per fitting on 750W. The number of capacitors calculated must be divisible by three for a balanced correction between three phases. Weatherproof boxes for capacitors. GM6172 Box complete with Terminal block will house 4 capacitors. GM6174 Box complete with Terminal block will house 8 capacitors.



Cat. No.	Description	Weight
ON1600	Flood c/w stirrup (lamps ordered separately)	16lb
OHA 4613	Clamp for 2in - 3 1/2in OD Pole (see page 19)	1lb
ONS	Spare front glass	
ONR	Diffuse reflector assembly	
750W Gear Sets		
Size		
1-G 5324.2	220V ballast 9-25in (235mm) x 8-125in (207mm) dia	55lb
4-GC 2236	220V capacitors	1-5lb (each)
1-G 53254.4	240V ballast 9-25in (235mm) x 8-125in (207mm) dia	55lb
4-GC 2236	240V capacitors	1.5lb (each)
1600W Gear Sets		
2-G 53254.2	220V ballast each 9-25in (235mm) x 8-125in (207mm) dia	55lb (each)
4-GC 2236	220V capacitors	1-5lb (each)
2-G5 3254.4	240V ballast as G53254.2	55lb (each)
4-GC 2236	240V capacitors	1-5lb (each)

1000W CSI sealed beam floodlight



Four OM 1000 C 1 kw floodlights on OMB 4 bracket



OM 1000 C 1 kw floodlight and OMA stirrup.

Lamp

1000W Compact Source Iodide PAR 64 discharge lamp with special bi-post cap.

Description

The floodlight consists of two major assemblies: a glazing ring and a lamp and pulse starter housing assembly.

Glazing ring

Cast in LM6-M aluminium with mounting lugs. The glazing ring is secured to the lamp housing by three stainless steel toggle-catches. Glass can be either clear, stippled or prismatic.

Lamp/pulse starter housing

The bi-post lampholder is contained in a cast aluminium housing of LM6-M alloy and the lamp housing between the lampholder casting

and the glazing ring is spun aluminium, finished matt black. The pulse starter unit of LM6-M alloy is mounted under the lampholder housing. Mains entry is by a cable gland. Ballasts and capacitors are mounted remote.

Mounting

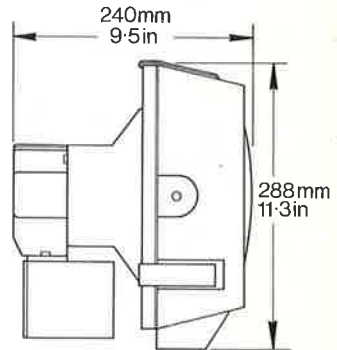
Mounting brackets give adjustment in azimuth and elevation. OMA: Stirrup assembly for mounting a single fitting.

Wind Loading

A complete four lamp unit can be mounted in the same headframe space as a 0.6m/24in diameter floodlight.

The maximum projected areas are:
Single OM 1000 fitting – 0.07sq.m. approx.

OMB4 bracket only – 0.0034sq.m. approx.



RANGE

Catalogue no.	Description	Weights
OM 1000C	1kW floodlight with clear front glass	6.34 kg (14 lbs) with lamp
OM 1000P	1kW floodlight with prismatic front glass	6.34 kg (14 lbs) with lamp
OM 1000S	1kW floodlight with stippled front glass	6.34 kg (14 lbs) with lamp
OM 1000W	1kW floodlight with extra wide prismatic front glass	6.34 kg (14 lbs) with lamp
OMA	Stirrup assembly	.9 kg (2 lbs)
OMB4	Multi-way mounting bracket assembly	2.5 kg (5½ lbs)
OMG B6	Gear tray for remote indoor use with 6 ballasts	36.74 kg (81 lbs)
OMG C16	Gear tray for remote indoor use with 16 capacitors	16.32 kg (36 lbs)
OMG B3 C8	Gear tray for remote indoor use with 3 ballasts and 8 capacitors	24.94 kg (55 lbs)
OMC	Spare clear front glass	0.34 kg (0.75 lbs)
OMP	Spare prismatic front glass	0.34 kg (0.75 lbs)
OMS	Spare stippled front glass	0.34 kg (0.75 lbs)
OMW	Spare extra wide prismatic front glass	0.34 kg (0.75 lbs)
OHA 4613	Universal pole clamp	0.45 kg (2 lbs)

Lamps are ordered separately with delay relay if required

Numbering system

Purpose

The purpose of the system is to provide an immediate and positive identification of a catalogue number in relation to range and description of the lantern.

Basic Principle

1. All items of streetlighting equipment are catalogued with prefix Q. This automatically locates the whole range in the same section of the Comprehensive Price List for easier location. It also gives an immediate statement of equipment type.

2. Second and third digits are initial letter and number of the lantern in the range description.

e.g. A3 = Alpha 3
B4 = Beta 4
G3 = Gamma 3 etc.

3. A standard vocabulary of suffix letters, indicative of type detail, with or without gear, accessories or attachments etc., is included as appropriate in the catalogue number.

e.g. S = Semi-cut-off
V = Anti-vandal bowl
B = With gear.

4. A system of four-digit numbers indicating no. of lamps and maximum wattage.

5. Where components making up a lantern are supplied as separate packages, each package has a catalogue number.

e.g. Alpha 3 Canopy SCO with gear—QA3 B1400

Alpha 3 Gear tray 400W

Kolorlux 240V 50Hz—

QA3 B1400.4

Alpha 3 Lampholder bracket for 250/400W SCO—QA3 SL

Alpha 3 bowl assembly

250/400W SCO—QA3 D.

6. When producing a complete fitting catalogue number, separate packages are indicated by an oblique stroke /.

The complete lantern Alpha 3 SCO with 400W Kolorlux becomes: QA3/SL/D/B1400.4 —indicating four packages.

A further example would be:

QB4 U1200 = Open Beta 4
canopy with
lugs
B22 = 2 Pin BC
lampholder
QB4 Y = Beta 4 refractor
dome

The complete Beta 4 open lantern for GLS lamp then becomes: QB4 U/Y/1200B22— indicating three packages.

Secondary References:

- A. Auxiliary reflector
- B. With gear
- C. Cut off
- D. Acrylic bowl/diffuser/cylinder—clear or semi-obscured with or without refractor plates.
- E. Support assembly
- F. Small canopy
- G. Glass flat or bowl—clear or refractor
- H. Bowl ring
- I. Kolorarc (MBI/F)
- J. Canopy with lugs—enclosed type
- K. Triangular spigot (QLC columns)
- L. Lampholder/bracket assembly—AMEL, lampholder only
- M. Acrylic bowl—stippled or pin spot
- N. High pressure sodium (SON)
- O. Acrylic bowl or cylinder—opal
- P. PE cell socket
- S. Semi cut-off
- T. Top entry
- V. Anti-vandal bowl—clear, opal or prismatic
- W. Large canopy
- X. Refractor ring, symmetric
- Y. Refractor ring, asymmetric—glass or plastic
- Z. Refractor ring, asymmetric—inner portion only (QBI)

Suffix Numbers—Lamps and Wattages

- 1035—1 x 35W
 - 1055—1 x 55W
 - 1080—1 x 80W
 - 1090—1 x 90W
 - 1100—1 x 100W
 - 1125—1 x 125W
 - 1135—1 x 135W
 - 1140—1 x 140W
 - 1150—1 x 150W
 - 1200—1 x 200W
 - 1250—1 x 250W
 - 1400—1 x 400W
 - 2240—2 x 600mm/2ft 40W tubes
 - 2400—2 x 400W
 - 2500—2 x 500W
 - 3080—3 x 1500mm/5ft 80W tubes
 - 3400—3 x 400W
 - 4080—4 x 1500mm/5ft 80W tubes
 - 4240—4 x 600mm/2ft 40W tubes
- Where more than one lamp is available for a fitting, the largest wattage is used for the reference number.

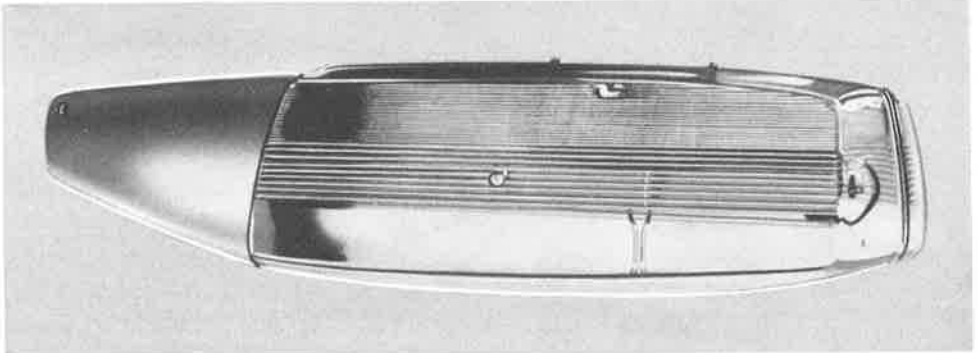
Suffix Numbers—Control Gear

- .4—240V 50 Hz
- .H—230/250V tapped
- .T—200/250V tapped

Suffix Numbers—Lampholders

- B22—2BC
 - B22-3—3BC
 - E27—ES
- Mainly for reference information only.

Alpha One semi-cut-off sodium



QA1 E/D1090



Lamps

One 55W or 90W SOX sodium discharge lamp.

Distribution

Semi-cut-off DLOR 71%.

Specification

To BS 1788, Kite marked, DOE and COID approved.

The end support is LM6-M die-cast aluminium alloy. The opticell is injection moulded clear acrylic and hermetically sealed. Other components are of stainless steel or aluminium. Control gear is mounted remote.

Mounting

Side entry for 42 x 100mm. spigot

Recommended mounting height: nominal 6-8m.

Recommended spacing/height ratio: 4:1.

Catalogue no.

Complete lanterns

Lanterns comprise end support and opticell.

QA1 E/D1055 for 55W SOX.

QA1 E/D1090 for 90W SOX.

Packages

QA1 E End support assembly.

QA1 D1055 55W SOX opticell.

QA1 D1090 90W SOX opticell.

Control gear

Gear sets required for lanterns.

Lamp

55W SOX

90W SOX

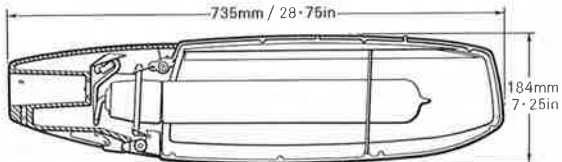
Control gear

G53182.4

GC2280

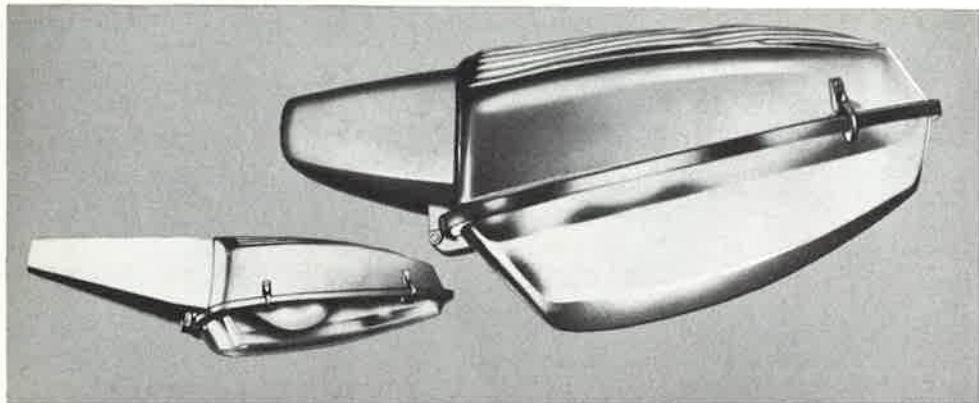
G53232.4

GC2236



Overall width 241mm/9.5in
Weight 4.1kg/9lb
Windage area 0.121m²/1.3ft²

Alpha Three mercury/metal-halide/SON lantern



QA3.DWCB.1400.4

QA3.DWS.1400.

Lamps

One 250W or 400W MBF/U or
One 400W MBI/F or
One 250W or 400W SON

Distribution

(a) Cut-off
(b) Semi-cut-off



Specification

To BS.1788, Kite marked, DOE and COID approved. The canopy is pressed aluminium and painted white internally. End support/gear slipper with porcelain lampholder is in LM6-M die-cast aluminium alloy. Bowls are moulded in clear UV stabilized acrylic plastic. Control gear for 'less gear' lanterns is mounted remote.

Mounting

Side entry for:

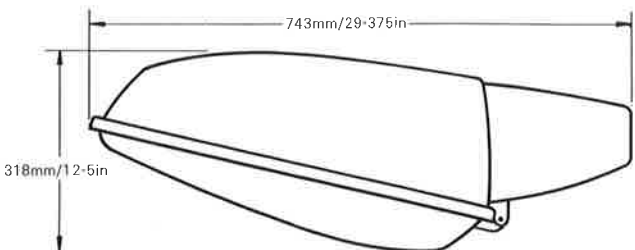
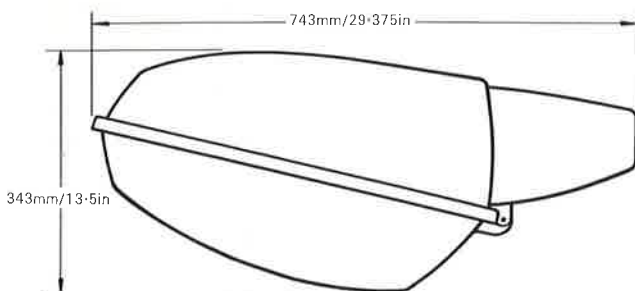
- (a) 42/48mm ϕ x 100mm horizontal spigot (less gear)
- (b) 42/48mm or 60mm ϕ x 100mm horizontal spigot (with gear)

Recommended mounting height:
nominal 8-12m.

Average spacing/height ratio: 4+5:1 (SCO)
3:1 (CO)

Catalogue no.

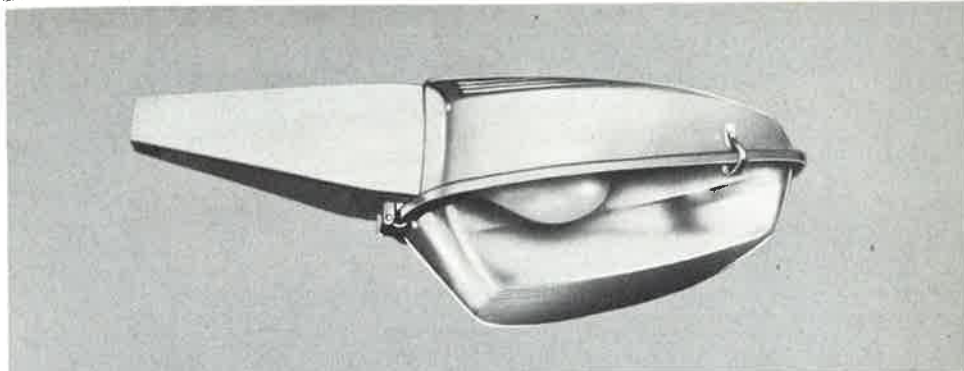
All lanterns comprise fully assembled canopy in one pack with cover bowls in separate pack for safe transit. Canopy and bowl may be ordered separately, or as a complete lantern by the insertion of the letter "D" in the appropriate canopy catalogue number.



Overall width 464mm/18.25in	Weight 4.875kg/10.75lb	Windage area .164m ² /1.75ft ²
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Alpha Three mercury/metal-halide/SON lantern

QA3 DS/NB1250.T



CANOPIES LESS GEAR

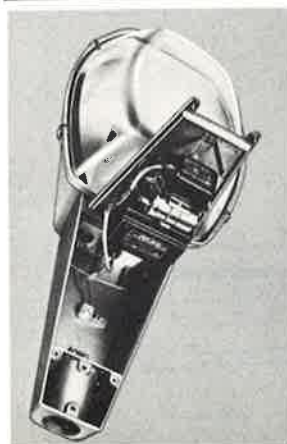
Without Photocell		With Nema Photocell Socket
QA3 WS 1400	Semi cut off canopy for 400W MBF/SON/MBIF lamp	QA3 WSP 1400
QA3 WS 1250	Semi cut off canopy for 250W MBF/SON/MBIF lamp	QA3 WSP 1250
QA3 WC 1400	Cut off canopy for 400W MBF/SON/MBIF/lamp	QA3 WCP 1400
QA3 WC 1250	Cut off canopy for 250W MBF/SON/MBIF lamp	QA3 WCP 1250

CANOPIES WITH GEAR

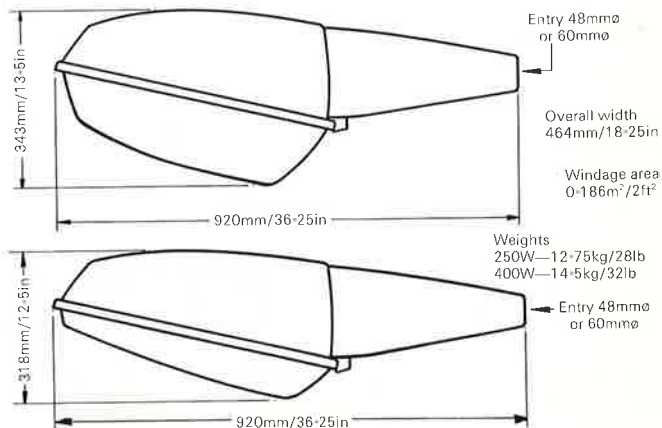
QA3 WSB 1400 4	Semi-cut-off 400W MBF 240V	QA3 WSPB 1400 4
QA3 WSB 1250 4	Semi-cut-off 250W MBF 240V	QA3 WSPB 1250 4
QA3 WSNB 1400 T	Semi-cut-off 400W SON 220/240V	QA3 WSPNB 1400 T
QA3 WSNB 1250 T	Semi-cut-off 250W SON 220/240V	QA3 WSPNB 1250 T
QA3 WSB 1400 2	Semi-cut-off 400W MBF 220V	QA3 WSPB 1400 2
QA3 WSB 1250 2	Semi-cut-off 250W MBF 220V	QA3 WSPB 1250 2
QA3 WCB 1400 4	Cut-off 400W MBF 240V	QA3 WCPB 1400 4
QA3 WCB 1250 4	Cut-off 250W MBF 240V	QA3 WCPB 1250 4
QA3 WCNB 1400 T	Cut-off 400W SON 220/240V	QA3 WCPNB 1400 T
QA3 WCNB 1250 T	Cut-off 250W SON 220/240V	QA3 WCPNB 1250 T
QA3 WCB 1400 2	Cut-off 400W MBF 220V	QA3 WCPB 1400 2
QA3 WCB 1250 2	Cut-off 250W MBF 220V	QA3 WCPB 1250 2

BOWLS

QA3 DS	Bowl for semi-cut-off Alpha 3
QA3 DC	Bowl for cut-off Alpha 3



QA3 DS/B1250.4



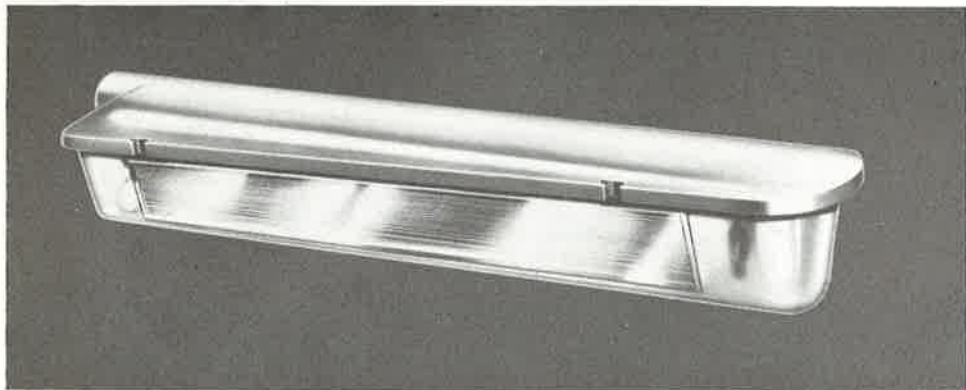
Control gear

Gear sets required for 'less gear' lanterns and supplied for 'with gear' lanterns.

Lamp	Control gear
250W MBF	G 53198.4*
	G C2214
400W MBF	G 53193.4*
	G C2218
400W MBIF/F	G 53193.T*
	G 53282
	G C2218
250W SON	G 53251.T
	G 53282
	G C2235
400W SON	G 53230.T
	G 53282
	2 x G C2218

*To BS.4782, Kite marked

Alpha Five semi-cut-off sodium



OA5,1200



Lamps

One 140W or 200W SLI/H sodium discharge lamp.

Distribution

Semi-cut-off DLOR 75%.

Specification

To BS.1788, Kite marked and DOE approved. The canopy of LM6-M die-cast aluminium alloy incorporates an aluminium reflector. The acrylic bowl has sealed-in refractor plates. Control gear is mounted remote.

Mounting

Side entry for 42 x 100mm spigot.

Recommended mounting height : 10-12m.

Average spacing/height ratio : 4 : 1

Catalogue no.

Complete lanterns

Lanterns comprise canopy assembly and bowl.

QA5 1200 for 140W or 200W SLI/H lamp.

Replacement bowls

QA5 D1200 Bowl assembly for 140W or 200W SLI/H lamp.

Control gear

Gear sets required for lanterns.

Lamp

140 SLI/H

200 SLI/H

Control gear

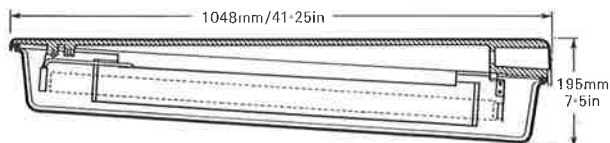
G 53232.4

G C2218

G 53261.T

G C2235

140/200W SLI/H lantern

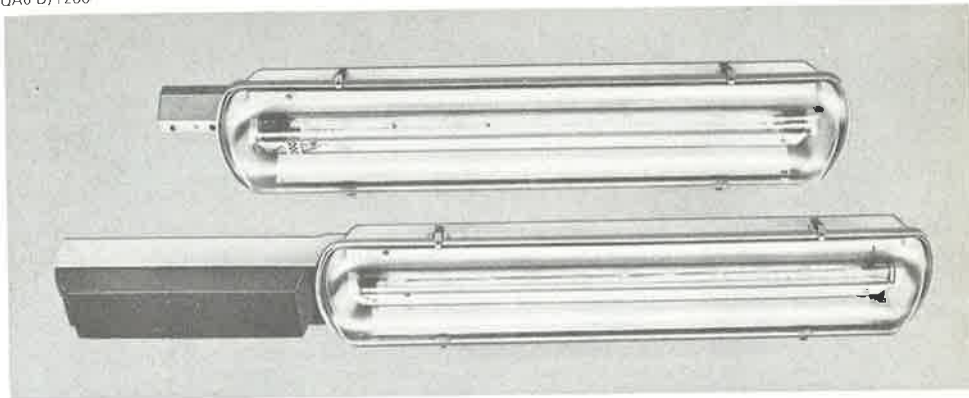


Overall width: 260mm/10.25in
Weight: 4.62kg/10.25lb

Windage area: 0.167m²/1.8ft²

Alpha Six cut-off sodium

QA6 D/1200



QA6 D/B1140.4

Lamps

One 140W or 200W SLI/H lamp.

Distribution

Cut-off DLOR 65% 140W,
77% 200W.

To BS.1788, Kite marked, DCE and COID approved. The canopy is GRP and the bowl is UV stabilized acrylic. End supports are LM6-M aluminium alloy, the cover for the geared version being Polypropylene. The control gear for 'less gear' lanterns is mounted remote.

Mounting

Side entry for 42 x 110mm/
1.649 x 3.9in spigot.
Recommended mounting height:
10-12m/32.8-39ft.
Average spacing/height ratio : 3:1.

Catalogue no.

Complete lanterns less gear

Lanterns comprise canopy assembly and bowl.

QA6 D/1140 for 140W SLI/H lamp.

QA6 D/1200 for 200W SLI/H lamp.

Complete lanterns with gear

Lanterns comprise canopy assembly (with gear) and bowl.

QA6 D/B1140.4 for 140W SLI/H lamp.

QA6 D/B1200.T for 200W SLI/H lamp.

Packages

QA6 1140 Canopy/end support assembly for 140W SLI/H ('less gear' version).

QA6 1200 Canopy/end support assembly for 200W SLI/H ('less gear' version).

QA6 B1140.4 Canopy/end support assembly (with gear for 140W SLI/H).

QA6 B1200.T Canopy/end support assembly (with gear for 200W SLI/H).

QA6 D Bowl assembly.

Control gear

Gear sets required for 'less gear' lanterns, and supplied for 'with gear' lanterns.

Lamp

140W SLI/H

200W SLI/H

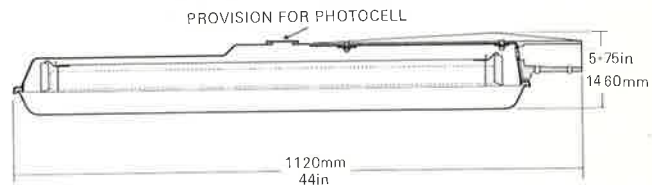
Control gear

G 53232.4

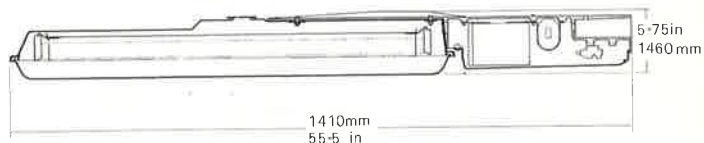
G C2218

G 53261.T

G C2355

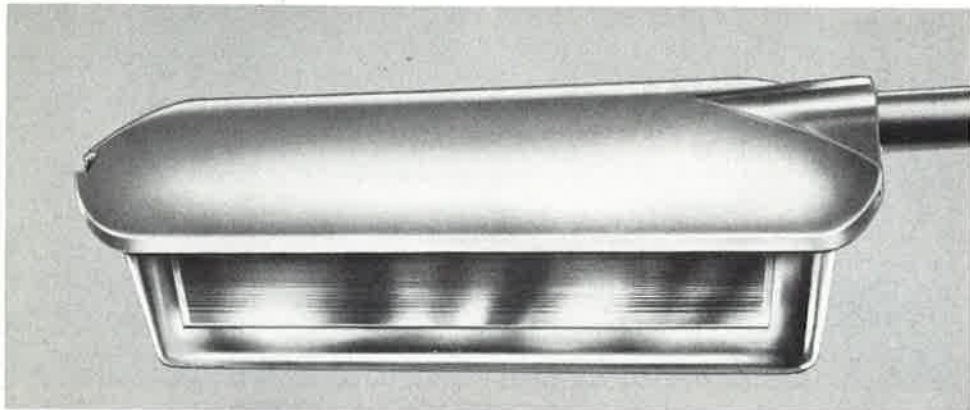


QA6 D/1200	Windage area 0.135sq.m/1.45sq.ft	Weight 6.40kg/14.125lb	Width 248mm/9.75in
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QA6 D/B.1200.T	Windage area 0.181sq.m. (1.95sq.ft)	Weight 18.26kg/ 40.25lb
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Alpha Nine semi-cut-off sodium



QA9 D B 1090, H

Lamp

One 90W SOX sodium discharge lamp.

Distribution

Semi-cut-off DLOR 60%.

Specification

To BS, 1788, Kite marked and DOE approved.

The canopy is of LM6-M aluminium alloy with a porcelain BC lampholder. The bowl is UV stabilized acrylic with bonded internal refractor plates. The control gear is mounted on the canopy of the 'with gear' lantern. Control gear for 'less gear' lantern is mounted remote.

Mounting

Side entry for 42 x 100mm spigot.

Recommended mounting height 8-10m.

Average spacing/height ratio: 4:5.

Catalogue no.

Complete lantern less gear

Lantern comprises canopy assembly and bowl assembly.

QA9 D 1090 for 90W SOX.

Complete lantern with gear

Lantern comprises canopy assembly with gear and bowl assembly.

QA9 D B 1090, H for 90W SOX.

Spare bowls

QA9 D Bowl assembly for 'less gear' lantern.

QA9 D B Bowl assembly for 'with gear' lantern.

Control gear

Gear sets required for 'less gear' lantern and supplied in 'with gear' lanterns.

Lamp

90W SOX

90W SOX (less gear only)

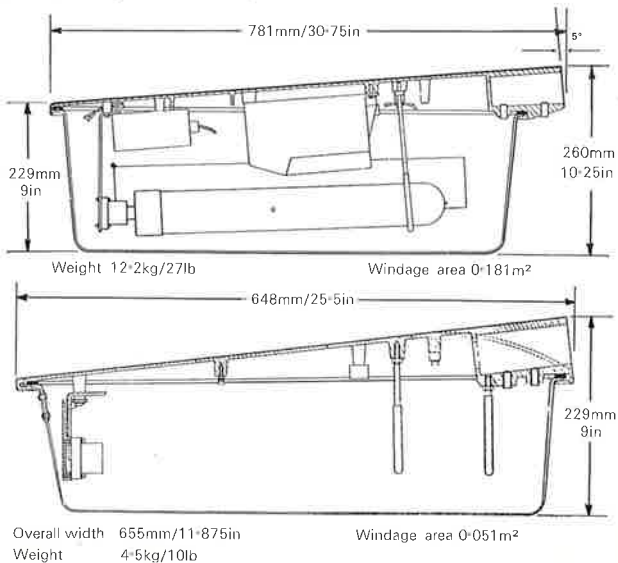
Control gear

G53178, H

GC2236

G53232, 4

GC2236



Beta Four top entry GLS/mercury



QB4 V/1200/B22-3

Lamps

- a) One 60, 100, 150 or 200W GLS tungsten filament lamp.
 b) One 80W or 125W MBF lamp.

Specification

To BS.1788.

The canopy is LM6-M aluminium alloy and the refractor bowl is either UV stabilised acrylic or polycarbonate. The refractor for open lanterns is glass. Control gear for MBF lamps is mounted remote.

Mounting

Top entry for 19mm/3/8in BSP threaded nipple.

Recommended mounting height : 5m.

Average spacing/height ratio : 6 : 1.

Catalogue no.

Complete lanterns (open)

QB4 U/Y/1200/B22 for 60/150W GLS

QB4 U/Y/1200/E27 for 150/200W GLS or 80/125W MBF

QB4 U/Y/1200/B22-3 for 80/125W MBF

Complete lanterns (enclosed)

QB4 D/1200/B22 Lantern with acrylic bowl for 60/150 GLS.

QB4 D/1200/E27 Lantern with acrylic bowl for 80/125W MBF.

QB4 D/1200/B22-3 Lantern with acrylic bowl for 80/125W MBF

QB4 V/1200/B22 Lantern with anti-vandal bowl for 60/150W GLS.

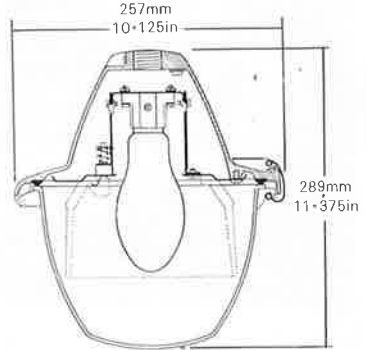
QB4 V/1200/E27 Lantern with anti-vandal bowl for 150W GLS or 80/125W MBF

QB4 V/1200/B22-3 Lantern with anti-vandal bowl for 80/125W MBF

QB4 V/1200/B22-3 Lantern with anti-vandal bowl for 80/125W MBF

Weight 2.83kg/6.25lb

Windage Area 0.312 ft²
0.029 m²



Packages

- QB4 1200 Canopy assembly (for bowl)—enclosed.
 QB4 U 1200 Canopy assembly (for refractor)—open.
 QB4 D Acrylic refractor bowl.
 QB4 V Polycarbonate refractor bowl.
 QB4 Y Glass refractor dome.
 GL 1085 Lampholder (2BC-B22).
 GL 1086 Lampholder (3BC-B22-3).
 GL 1087 Lampholder (ES-E27).

Control gear

Gear sets required for discharge lamps in lanterns.

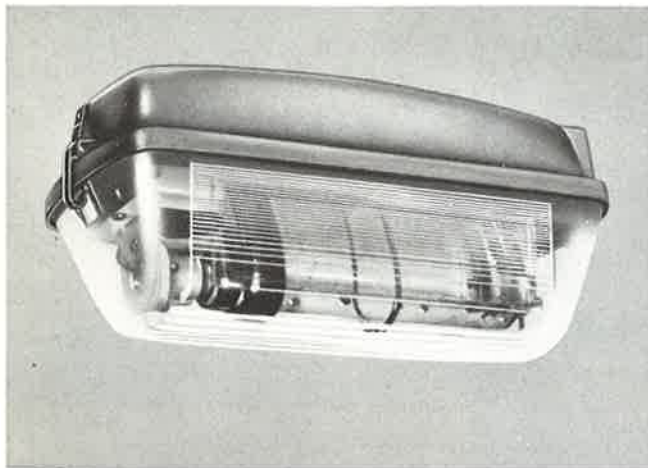
Lamp

- 80W MBF
 125W MBF

Control gear

- G 53162.4
 G C2234
 G 53159.4
 G C2234.

Beta Five sodium lantern



QB5D/1"1035

Lamp

One 35W SOX sodium discharge lamp.

Specification

To BS.1788

The canopy/gear housing and bowl ring are LM6-M aluminium alloy. Bowls are either acrylic or vandal-resistant plastic with bonded internal refractor plates. Gear can be mounted remote with 'less gear' lanterns.

Mounting

Side entry for 34×80mm or 27×80mm spigot.

Top entry for $\frac{3}{4}$ " or 1" BSP threaded.

Recommended mounting height:

5m/16ft.

Average spacing/height ratio: 6:1.

Catalogue no.

Complete lanterns less gear

Lanterns comprise canopy assembly and bowl assembly.

QB5D/1"1035—1" BSP (34mm \varnothing) side entry with acrylic bowl for 35W SOX

QB5T,D/ $\frac{3}{4}$ "1035— $\frac{3}{4}$ " BSP threaded top entry with acrylic bowl for 35W SOX

For lanterns requiring anti-vandal bowl replace 'D' with 'V'.

Complete lanterns with gear

Lanterns comprise canopy/gear assembly and bowl assembly.

QB5D/1" B.1035,4—1" BSP (34mm \varnothing) side entry with acrylic bowl for 35W SOX

QB5D/ $\frac{3}{4}$ " B.1035,4— $\frac{3}{4}$ " BSP (27mm \varnothing) side entry with acrylic bowl for 35W SOX

QB5TD/ $\frac{3}{4}$ " B.1035,4— $\frac{3}{4}$ " BSP threaded top entry with acrylic bowl for 35W SOX

QB5TD/1" B.1035,4—1" BSP threaded top entry with acrylic bowl for 35W SOX

For lanterns requiring anti-vandal bowl replace 'D' with 'V'.

Packages

QB5,1"1035—1" BSP (34mm \varnothing) side entry canopy (less gear)

QB5, $\frac{3}{4}$ "1035— $\frac{3}{4}$ " BSP (27mm \varnothing) side entry canopy (less gear)

QB5,T, $\frac{3}{4}$ "1035— $\frac{3}{4}$ " BSP threaded top entry canopy (less gear)

QB5,T,1"1035—1" BSP threaded top entry canopy (less gear)

QB5,1" B.1035,4—1" BSP (34mm \varnothing) side entry canopy (with gear)

QB5, $\frac{3}{4}$ " B.1035,4— $\frac{3}{4}$ " BSP (27mm \varnothing) side entry canopy (with gear)

QB5,T, $\frac{3}{4}$ " B.1035,4— $\frac{3}{4}$ " BSP threaded top entry canopy (with gear)

QB5,T,1" B.1035,4—1" BSP threaded top entry canopy (with gear)

QB5,D—Acrylic bowl assembly

QB5,V—Anti-vandal bowl assembly

Control gear

Gear sets required for 'less gear' lanterns and supplied for 'with gear' lanterns.

Lamp

35W SOX (less gear)

35W SOX (with gear)

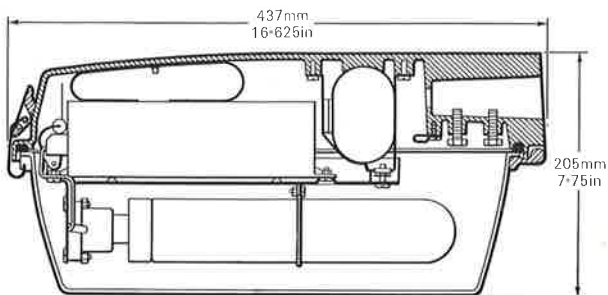
Control gear

G 53131.H

G C2280

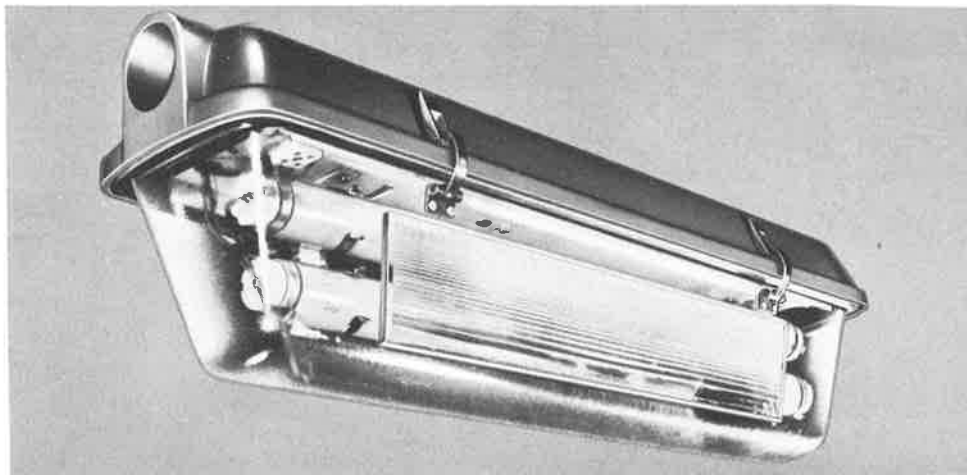
G 53181.4

G C2280



Overall width: 160mm/6.25in
 Weight: 7.25kg/16lb
 Windage area: 0.81m²/0.875 ft²

Beta Six side entry fluorescent



QB6 D/B2240,4

Lamps

Two 40W 600mm/2ft MCFA/U tubes 240V 50Hz.

Specification

To BS.1788.
The canopy of LM6-M aluminium alloy houses the control gear on a sheet steel tray (enamelled white). The bowl is Darvic or acrylic with internal bonded refractor plates.

Mounting

Side entry for 42 x 100mm spigot.

Recommended mounting height:

5m

Average spacing/height ratio :6 :1.

Catalogue no.

Complete lanterns with gear

Lanterns comprise canopy assembly and bowl assembly.

QB6 D/B2240,4 Lantern with acrylic bowl for 2 600mm/2ft 40W MCFE/U

QB6 V/B2240,4 Lantern with anti-vandal bowl for 2 600mm/2ft 40W MCFE/U or

Packages

QB6 B2240,4 Canopy with gear and gear tray.

QB6 D Bowl assembly (acrylic).

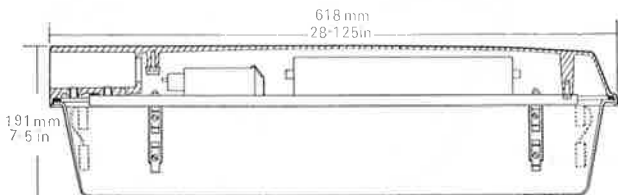
QB6 V Bowl assembly (Darvic anti-vandal).

Control gear

Gear set supplied with lantern.

Lamp
40W MCFA/U

Control gear
G 69082,4
GC2222

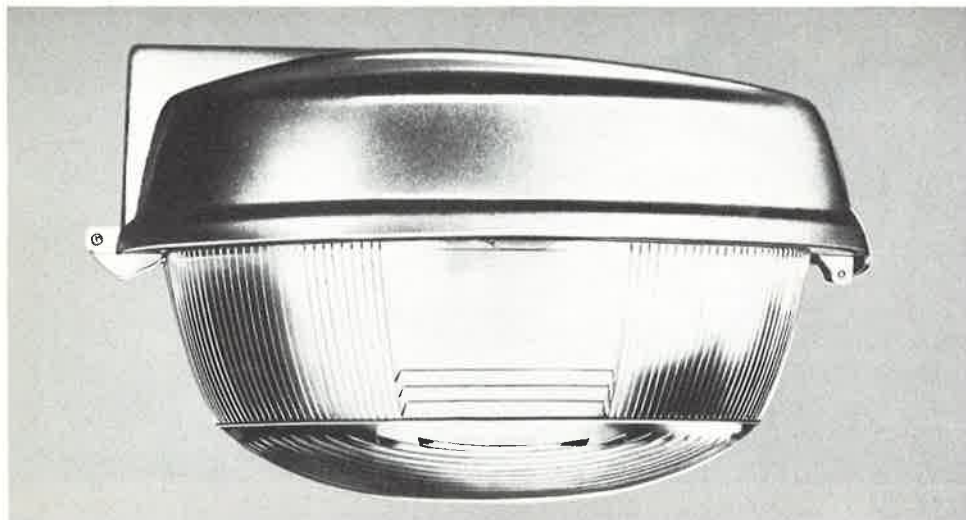


Overall width: 171 mm (6.75in)

Weight: 7.0kg (15.5 lb)

Windage area: 0.13 sq m (1.4 sq ft)

Beta Seven side entry mercury



QB7 G/1125 E27

Lamps

One 80W or 125W MBF lamp.

Specification

To BS.1788.

The canopy/body is LM6-M aluminium alloy and the bowl can be either glass or CAB anti-vandal plastic. Control gear for MBF lamps is mounted remote.

Mounting

Side entry for 34 x 80mm/
1-337 x 3-15in spigot.

Recommended mounting height:
5m/16-4ft.

Average spacing/height ratio: 6:1.

Catalogue no.

Complete lanterns

Lanterns comprise a body assembly and a bowl assembly.

QB7 G/1125 B22-3 Lantern with glass bowl for 80/125W MBF

QB7 G/1125 E27 Lantern with glass bowl for 80/125W MBF

QB7 V/1125 B22-3 Lantern with vandal bowl for 80/125W MBF

QB7 V/1125 E27 Lantern with vandal bowl for 80/125W MBF

Packages

QB7 1125 B22-3 Body assembly (3BC lampholder).

QB7 1125 E27 Body assembly (ES lampholder).

QB7 G Bowl assembly (glass).

QB7 V Bowl assembly (CAB anti-vandal).

Control gear

Gear sets required for discharge lamps in lanterns.

Lamp

80W MBF

125W MBF

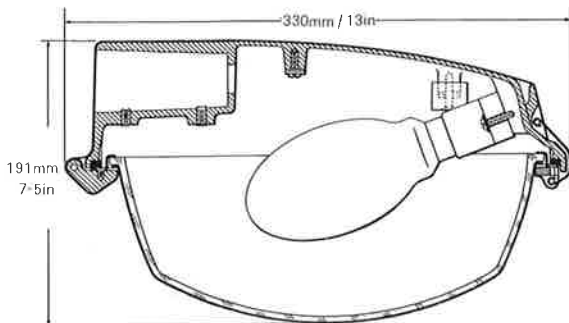
Control

G 53162.4

G C2234

G 53159.4

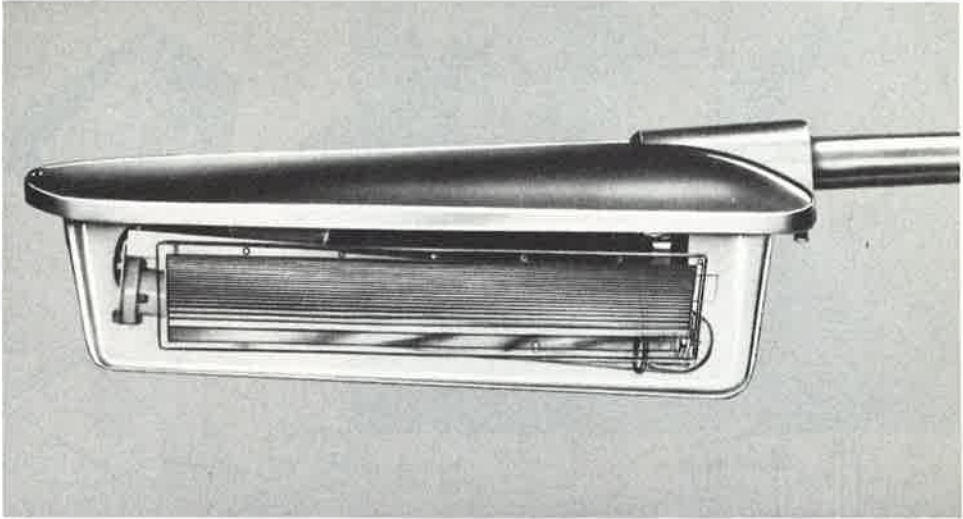
G C2234



Overall width: 270mm/10-625in
Weight: 3-74 kg/8-25 lb.

Windage Area: 0-460 ft²
0-043 m²

Beta Eight side entry sodium



QB8 V/B1055.4

Lamp

One 55W SOX sodium discharge lamp.

Specification

To BS.1788.

The canopy is of LM6-M aluminium alloy with a porcelain lampholder. The bowl can be either UV stabilized acrylic or CAB plastic. Both bowls have bonded internal refractor plates. The control gear for 'with gear' lanterns is mounted on a gear tray in the canopy. Control gear for 'less gear' lanterns is mounted remote.

Mounting

Side entry for 34 x 80mm/1.337 x 3.15in spigot. Recommended mounting height: 5m/16.4ft.

Average spacing/height ratio: 6:1.

Catalogue no.

Complete lanterns less gear

Lanterns comprise a canopy assembly and a bowl assembly.

QB8 D/1055 Lantern with acrylic bowl for 55W SOX.

QB8 V/1055 Lantern with vandal bowl for 55W SOX.

Complete lanterns with gear

Lanterns comprise a canopy assembly (with control gear) and a bowl assembly.

QB8 D/B1055.4 Lantern with acrylic bowl for 55W SOX.

QB8 V/B1055.4 Lantern with vandal bowl for 55W SOX.

Packages

QB8 1055 Canopy assembly (less gear).

QB8 B1055.4 Canopy assembly (with gear).

QB8 D Bowl assembly (acrylic).

QB8 V Bowl assembly (CAB anti-vandal).

Control gear

Gear sets required for 'less gear' lantern and supplied for 'with gear' lantern.

Lamp

55W SOX (less gear)

55W SOX (with gear)

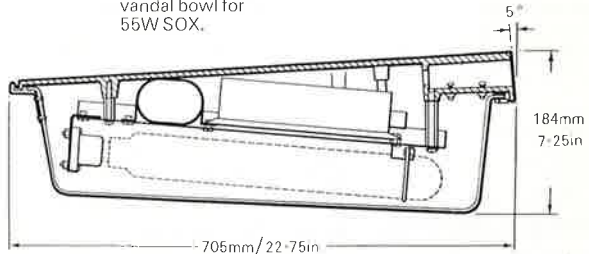
Control gear

G 53131.H

G C2280

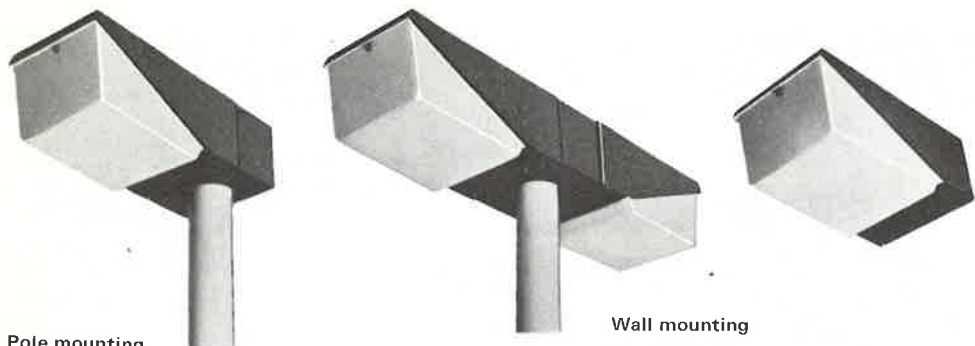
G 53181.4

G C2280

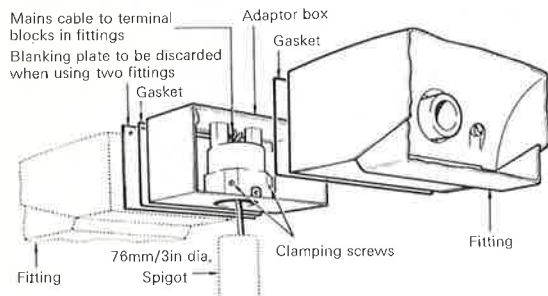


Width: 242mm/9.5in
Weight: 8.63kg/19.25lb
Windage area: 0.107m²/1.15ft²

Precinct 80 and 125W MBF



Pole mounting



Application

Town centres and densely populated areas are gradually being converted to one-way systems and pedestrian walkways in an attempt to separate the car from the daily and week-end shopper.

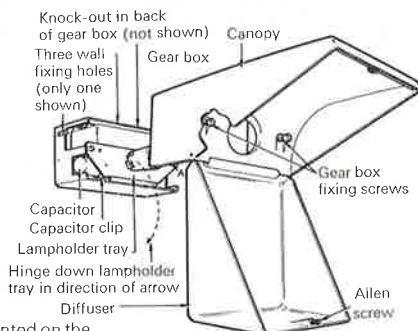
A demand for a low cost, well designed fitting to light these areas is evident. The need also exists for good design for town and country planning. The Precinct fitting is manufactured with integral control gear for 80W and 125W MBF and can be pole mounted singly or twin back-to-back.

This compact fitting can also be wall mounted directly, either separately or to complete a matching installation.

Construction

A pressure die-cast LM6-M aluminium canopy with integral cast reflector houses a separate gear tray with appropriate 240V integral gear.

Wall mounting



The ES lampholder is mounted on the gear tray and projects through the back of the reflector.

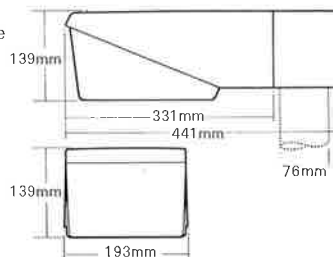
Three shrouded fixing holes are provided in the gear tray, and 19mm/ $\frac{3}{4}$ in conduit clearance knock-outs are provided in the sides and bottom. The diffuser is opal Polycarbonate.

Pole mounting adaptor

One pole mounting adaptor provides facility for one or two fittings as shown in the post top version diagram. The assembly shows that a blanking off plate is used only when one fitting is installed.

Recommended mounting height 3-6m/10-20ft

Dimensions



Spares

Provisions are made for spare anti-vandal bowls for the rare occasions when a replacement may be required.

Range

Catalogue no.	Description	Weight		Lamp	Cap
		kg	lb		
OC 1080.4	80W Precinct c/w gear	4.1	9.039	MBF	ES
OC 1125.4	125W Precinct c/w gear	4.3	9.48	MBF	ES

Accessories and spares

Catalogue no.	Description	Weight	
		kg	lb
OCA 1/2	Adaptor mounting	1.59	3.505
OCV	Spare anti-vandal bowl	0.23	0.507
GL 1113	Spare lampholder	0.11	0.242

Gamma Three mercury/fluorescent



OG3 1400

Lamps

- a) One 250W or 400W MBF lamp.
- b) One 250W or 400W SON lamp.
- c) One 400W MBI/F lamp.

Specification

COID approved.

Base is LM6-M aluminium alloy and the canopy is an acrylic enamelled aluminium spinning. The bowl is acrylic plastic and the toggle catches are stainless steel. All control gear is mounted remote.

Mounting

Post top mounting for 76 x 76mm spigot.

Recommended mounting height : 6-8m

Average spacing/height ratio : 3:1

Catalogue no.

Complete lanterns

Lantern comprises base assembly, bowl and canopy.

OG3 1400 for 250/400 MBF
250/400W SON and 400W MBI/F.

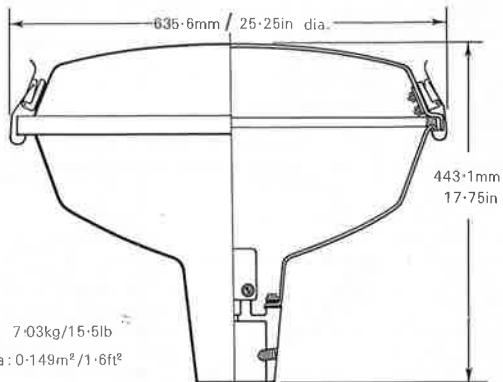
Replacement packages

QG3 O Opal bowl.
QG3 F Canopy assembly.
QG3 E Support assembly.

Control gear

Gear sets required for lantern.

Lamp	Control Gear
250W MBF	G 53198.4 G C2214 G 53193.4 G C2218
400W MBF	G 53195.T G C2278 (2 per lamp) G 53193.T G 53262 G C2218
400W MBI/F	G 53251.T G 53262 G C2235
400W MBI/F (alternative)	G 53230.T G 53262 G C2218
250W SON	(2 per lamp)
400W SON	



Weight : 7.03kg/15.5lb

Windage area : 0.149m²/1.6ft²

Gamma Five GLS/mercury

Lamps

- a) One 100W or 200W GLS tungsten filament lamp.
- b) One 80W or 125W MBF lamp.

Distribution

- a) Asymmetrical.
- b) Symmetrical.

Specification

COID approved.

The canopy is an acrylic enamelled aluminium spinning with stainless steel toggle catches. The bowl is either acrylic or CAB and the refractor is glass. Control gear for discharge lamps is mounted remote.

Mounting

- a) Direct to QLC 1500/G5 steel column.
 - b) Post top mounting for 76 x 76mm/2-996 x 2-996in spigot with a QG5 E 3 x 3 adaptor.
 - c) Post top mounting for a triangular spigot with a QG5 E K adaptor for the leader column.
- Recommended mounting height : 3-964m/13ft or 4-574m/15ft.
Average spacing/height ratio : 3:1.

Catalogue no.

Complete lanterns

Lanterns comprise bowl, body, lampholder and support and refractor (except opal bowl version)

- QG5 JD/Y1200.B22 with asymmetric refractor for 100/150W GLS.
 - QG5 JD/Y1200.E27 with asymmetric refractor for 80/125W MBF
 - QG5 JD/Y1200.B22-3 with asymmetric refractor for 80/125W MBF
 - QG5 JD/X/1200.B22 with symmetric refractor for 100/150 GLS.
 - QG5 JD/X/1200.E27 with symmetric refractor for 80/125W MBF
 - QG5 JD/X/1200.B22-3 with symmetric refractor for 80/125 MBF
- n.b.* FOR CLEAR ANTI-VANDAL BOWL INSERT V FOR D IN COMPLETE CATALOGUE NUMBER.



QG5 O/1200.B22-3 with QG5.E3X3

- QG5 O/1200.B22 for 100/150 GLS
- QG5 O/1200.E27 for 150/200 GLS
- QG5 O/1200.B22-3 for 80/125W MBF

Packages

- QG5 JD 1200 Body, lampholder support, and clear acrylic bowl.
- QG5 JV1200 Body, lampholder support, and clear vandal bowl.
- QG5 O1200 Body, lampholder support, and opal acrylic bowl.
- QG5 J1200 Canopy with lugs for refractor.
- QX Symmetric refractors.
- QY Asymmetric refractor.
- QG5 E3 x 3 Support casting for 3 x 3 spigot.
- QG5 EK Support casting for leader column.
- GL 1086 Lampholder 3BC (B22-3).

- GL 1085 Lampholder 2BC (B22).
- GL 1087 Lampholder ES (E27).

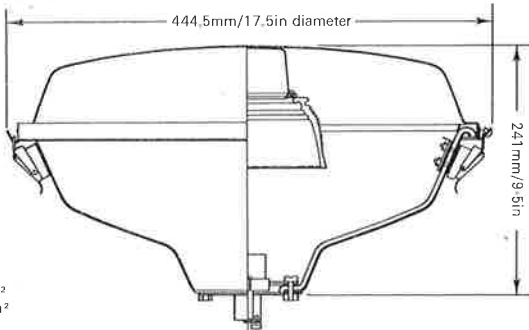
Replacements

- QG5 D Clear acrylic bowl.
- QG5 O Opal acrylic bowl.
- QG5 V Clear anti-vandal bowl.

Control gear

Gear sets required for MBF lamps.

Lamp	Control gear
80W MBF	G53162.4
	G2234
125W MBF	G53159.4
	G2234.



Weight 3-63kg/8lb
Windage area 0.75ft²
0.07m²

Gamma Six GLS/sodium/mercury



OG6 V/F/B1125.4



OG6 O/F/B1035.H



OG6 V/W/B1080.4/B22-3



OG6 W/O/1200/E27

Lamps

- One 100W, 150W or 200W tungsten filament lamp.
- One 160W MBTF lamp.
- One 80W or 125W MBF lamp
- One 35W SOX lamp.

Specification

Base castings are LM6-M aluminium alloy and the canopies spun aluminium alloy. Bowls are either injection moulded opal acrylic or opal polycarbonate. In the 'with gear' lanterns, the control gear is mounted in the base casting on a removable gear-tray. Control gear for 'less gear' lanterns is mounted remote.

Mounting

Post top mounting for 76 x 76mm spigot.

Recommended mounting height : 5m.

Average spacing/height ratio : 3 : 1.

Catalogue no.

Space will not allow the listing of the many alternative assemblies possible. Complete catalogue numbers are made up by a combination of letters and numbers of the components listed. For ease of recognition the components are shown pictorially on the following page and examples given for complete lanterns.

Packages and spares

OG6 1200 Base casting assembly (less gear).

OG6 B1035.H Base casting assembly with 240V 30W SOX gear and 2BC lampholder.

OG6 B1080.4 Base casting assembly with 240V 80W MBF gear and ES lampholder.

OG6 B1125.4 Base casting assembly with 240V 125W MBF gear and ES lampholder.

OG6 O Opal bowl (acrylic).

OG6 V Opal bowl (polycarbonate).

OG6 W Large canopy.

OG6 F Small canopy

QP1 Photo cell socket.

GL 1085 Lampholder

(2BC-B22).

GL 1086 Lampholder

(3BC-B22-3).

GL 1087 Lampholder (ES-E27).

NB: Each lantern requires:

- 1) A base casting assembly
- 2) A bowl
- 3) A canopy

4) A lampholder (for 'less gear' lanterns or 3BC 'with gear')

For lanterns requiring a photocell socket add letter P to base casting.

Examples of complete lantern

- 1) OG6 O/W/1200/E27 'Less gear' base casting, acrylic bowl, large canopy, and ES lampholder.



OG6 W/O/1200/E27 on QLC3 aluminium column

- 2) OG6 V/F/B1080.4/B22-3 240V gear base casting, polycarbonate bowl, small canopy, and 3 BC lampholder.
- 3) OG6 V/W/PB1125.4 240V gear base casting, polycarbonate bowl, large canopy, ES lampholder, and photocell socket.

Control gear

Gear sets required for 'less gear' lanterns.

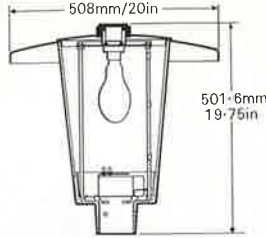
Lamp	Control gear
80W MBF	G 53162.4
	G C2234
125W MBF	G 53159.T
	G C2234
35W SOX	G 53131.H
	G C2280

Gear sets supplied for 'with gear' lanterns

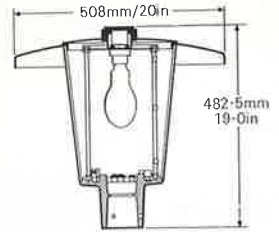
80W MBF	G 53272.4
	G C2223
125W MBF	G 53271.4
	G C2222
35W SOX	G 53131.H
	G C2232

Gamma Six GLS/sodium/mercury

Dimensions of selected lanterns illustrated on previous page.



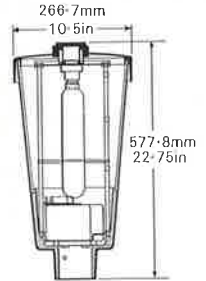
Weight: 6.69kg/14.75lb



Weight: 4.42kg/9.75lb











Weight: 6.23kg/13.75lb

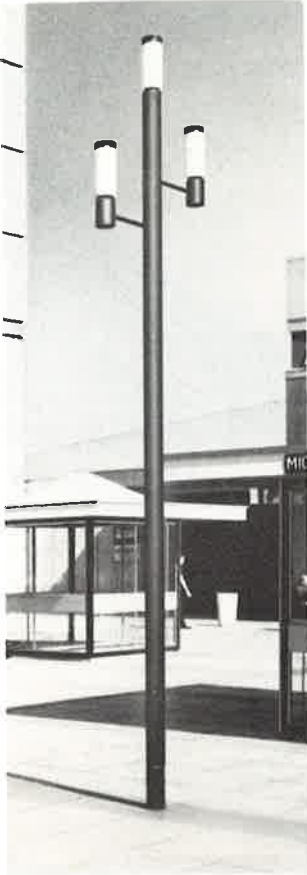


Weight: 11.34kg/25lb

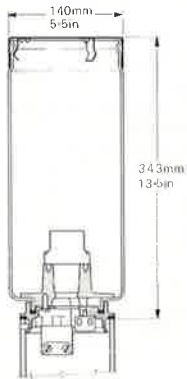
Catalogue number combinations for complete lanterns

BASE CASTING ASSEMBLY	CANOPIES, BOWLS	ACCESSORIES
 <p>BASIC CATALOGUE NUMBERS QG6. B1200 Post-top base casting assembly Less gear</p>	 <p>QG6.W 20in dia canopy</p>	<p>INSERT LETTER</p> <p>W</p>
		<p>ADD SUFFIX</p> <p>B22</p> <p>GL 1085 2BC lampholder</p>
 <p>QG6. B1080-4 Post-top base casting assembly BOW geared</p>	 <p>QG6.F 10.5in dia canopy</p>	<p>F</p>
		<p>B22-3</p> <p>GL 1086 3BC lampholder</p>
 <p>QG6. B1125-4 Post-top base casting assembly 125W geared</p>	 <p>QG6.O Acrylic bowl</p>	<p>O</p>
		<p>E27</p> <p>GL 1087 ES lampholder</p>
 <p>QG6. B1035-4 Post-top base casting assembly 35W geared</p>	 <p>QG6.V Anti-vandal bowl</p>	<p>V</p>
		<p>P</p> <p>QP1 Twist & lock type socket</p>

Gamma Seven GLS/mercury



QG7 EFO1080.E27 lantern on QLC 1340/G7 column



Weight:
1.2kg/2.75lb



QG7 EFO1080.E27 lantern on QLC 1540/G7 column and QPRK/1100 wall bracket

Lamps

- a. One 100W GLS tungsten filament lamp.
- b. One 80W MBF lamp.

Specification

COID approved.
The base casting is LM6 - M aluminium alloy. The bowl is acrylic plastic with a spun aluminium top cap. Control gear for discharge lamp is mounted remote.

Mounting

- a) Pole top on QLC 1340/G7 or QLC 1540/G7 columns.
 - b) Wall bracket QPRK 1100.
 - c) Corner wall bracket QPRM 1100.
- Recommended mounting height:
3.964m/13ft or 5m/16.404ft.
Average spacing/height ratio:
3:1 max.

Catalogue no.

Complete lanterns

Lanterns comprise a base casting assembly, bowl and top cap.
QG7 EFO1100.B22 for GLS lamp.
QG7 EFO1080.E27 for GLS or MBF lamp.
QG7 EFO1080.B22-3 for MBF lamp.

Replacements

- QG7 O Spare bowl.
 - QG7 F Spare top cap.
- Control gear**
Gear set required for discharge lamp.

Lamp	Control gear
80W MBF	G 53162.4
	G C2234

Gamma Eight GLS/sodium/mercury



QG8,K O/L 1200-E27

Lamps

- a) One 100W, 150W or 200W tungsten filament lamp
- b) One 80W or 125W MBF/U lamp.

Specification

The canopy is spun aluminium alloy and internally sprayed white. The bowl can be either acrylic or anti-vandal, and the spigot caps are LM6-M aluminium alloy. Control gear for discharge lamps is mounted remote.

Mounting

- a) Post top on a 76 x 76mm/spigot.
- b) post top on a triangular spigot of an LC 1 Leader column.

Recommended mounting height : 5m

Average spacing/height ratio : 3:1.

Catalogue no.

Complete lanterns

Lanterns comprise spigot cap, bowl and lampholder assembly.

QG8 3 x 3 O/L 1200.B22 for GLS.
QG8 3 x 3 O/L 1200.E.27 for GLS and MBF/U lamp.

QG8 3 x 3O/L 1200.B22-3 for MBF/U lamp.

QG8 K O/L.1200.B22 for GLS and MBF/U lamp.

QG8 K O/L 1200.E27 for GLS and MBF/U lamp.

QG8 K O/L 1200.B22/3 for MBF/U lamp.

Packages

QG8 K O Spigot cap (triangular) and bowl assembly.

QG8 3 x 3 O Spigot cap (76 x 76mm) and bowl assembly.

QG8 L.B22 Lampholder assembly (2BC).

QG8 L.E27 Lampholder assembly (ES).

QG8 L.B22-3 Lampholder assembly (3BC).

Replacements

QG8 O Opal acrylic bowl.

QG8 V Vandal bowl.

Control gear

Gear sets required for discharge lamp.

Lamp

80W MBF/U

125W MBF/U

Control gear

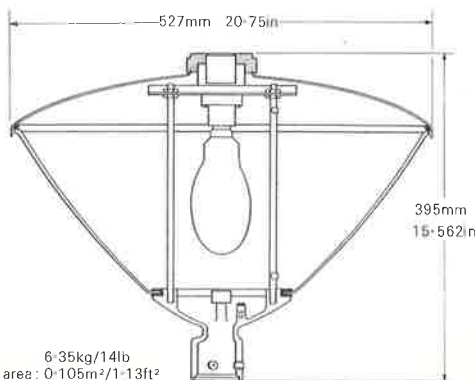
G 53162.4

G C2234

G 53159.4

G C2234

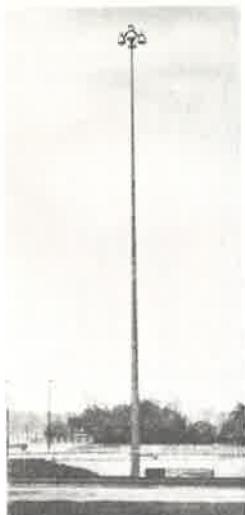
Fitting with vandal bowl can be ordered as a special lantern.



Weight: 6.35kg/14lb
Windage area: 0.105m²/1.13ft²

For vandal bowl replace O with V

High tower lantern



HT 1000 on 30.48m/100ft high mast column

Lamp

One 1000W MBF lamp.

Dimensions

Height 825.5mm/32.5in

Overall diameter 654mm/25.75in

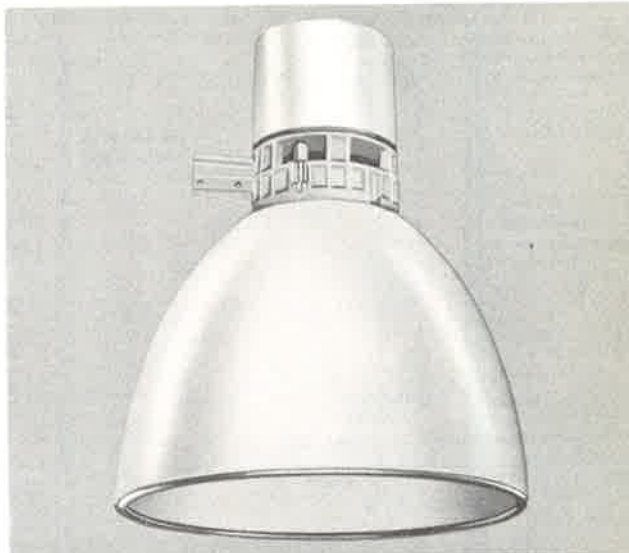
Weight* 25.86kg/57lb.

Windage area 0.236m²/2.45ft²

*With lamp and control gear

Distribution

Cut off with peak at 45° LOR 66%.



Specification

The lamp housing reflector is of spun aluminium with a heat resisting glass, and secured to main body by three quick release swing-down bolts. The main body is of LM6-M aluminium alloy, and provides the side-entry spigot location and gear housing. An aluminium can, secured by a small finial, encloses the gear. The lampholder incorporates a lamp-steady to prevent lamp unscrewing itself due to vibration. Lanterns supplied complete with control gear.

Mounting

Side entry for a 42x152mm spigot. Recommended mounting height: 24m and over.

Catalogue no.

HT 1000.A for 1000W MBF lamp.

Control gear

Control gear supplied with fittings.

Lamp

1000W MBF

Control gear

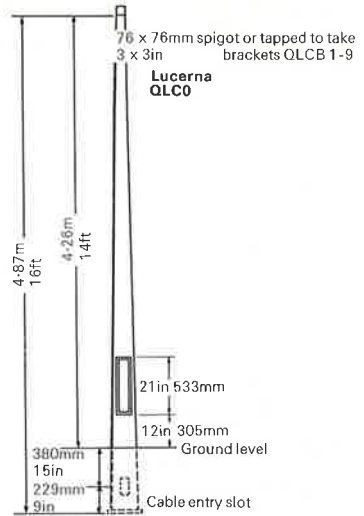
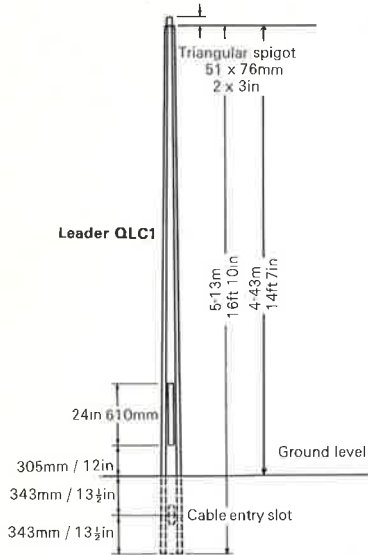
G 53243.4

(2 per lamp)

GC2236

(2 per lamp)

Leader and Lucerna columns



Cable entry slot for each column
152 x 76mm/6 x 3 in

LEADER QLC1

Material
HE9-P aluminium alloy.

Spigot castings
LM6-M aluminium alloy.

Baseboard
Timber
624 x 114mm
24.5 x 4.5in.

Base compartment
610 x 86mm
24 x 3.375in.

Weight
13.6kg/30lb

Section
Triangular.

LUCERNA QLC0

Material
Aluminium alloy NS4.

Spigot casting
Either 3in dia. casting for post-top mounting or tapped casting for QLCB1-9 bracket arms.

Baseboard
Timber
624 x 114mm
24.5 x 4.5in.

Base compartment
610 x 103 x 89mm deep
24 x 4.375 x 3.625in deep

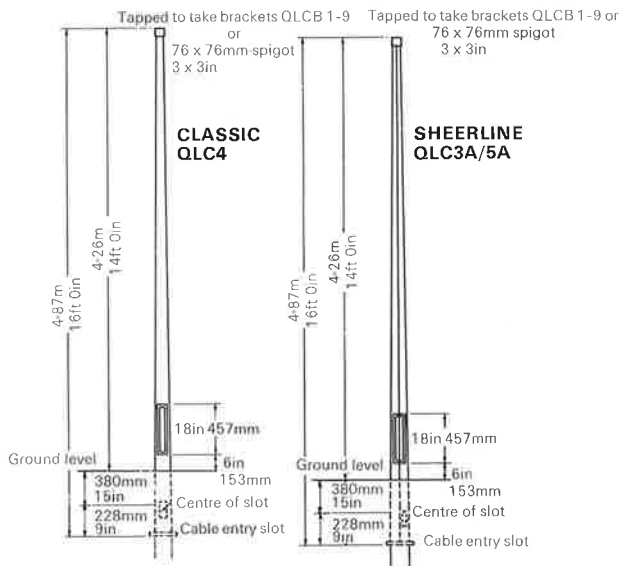
Weight
14.9kg/33lb.

Section
Polygon

Note: WHEN ORDERING COLUMNS PLEASE STATE THE NUMBER OF KEYS REQUIRED AND ALSO THE TYPES OF COLUMN TOP REQUIRED FOR QLC0.

Design Council Approved
Designed to BS.3989

Classic and Sheerline columns



Cable entry slot for each column
152 x 76mm/6 x 3in

SHEERLINE QLC3A



Material
Aluminium alloy NS4.

Spigot casting
Either 3in dia. casting for post-top mounting or tapped casting for QLCB1-9 bracket arms.

Baseboard
Timber
623 x 89mm
24.5 x 3.5in

Base compartment
457 x 99 x 73mm
18 x 3.875 x 2.875in deep.

Weight
13.2kg/29lb.

Section
Hexagonal.

CLASSIC QLC4

Material
Aluminium alloy NS4.

Spigot casting
Either 3in dia. casting for post-top mounting or tapped casting for QLCB1-9 bracket arms.

Baseboard
Timber
623 x 89mm
24.5 x 3.5in

Base compartment
457 x 95 x 102mm
18 x 3.75 x 4in deep.

Weight
14.5kg/32lb.

Section
Square.

SHEERLINE QLC5A



Material
Galvanised (hot-dip) steel.

Spigot casting
Either 3in dia. casting for post-top mounting or tapped casting for QLCB1-9 bracket arms.

Baseboard
Timber
623 x 89mm
24.5 x 3.5in

Base compartment
457 x 99 x 73mm
18 x 3.875 x 2.875in deep.

Weight
34kg/75lb.

Section
Hexagonal.

Note: WHEN ORDERING COLUMNS PLEASE STATE THE NUMBER OF KEYS REQUIRED AND ALSO THE TYPE OF COLUMN TOP ON QLC 3A, 4 & 5A.

Design Council Approved
Designed to BS 3989

8 metre Group A Aluminium Columns

Featuring low weight for transport and erection,
low maintenance cost – no painting required,
increased safety in the event of vehicle impact.

- Material** – Aluminium Alloy NS4
- Top Casting** – LM6M Silicon Aluminium Alloy
- Backboard** – Timber 914mm x 162mm to 143mm
(36in x 6.4in to 5.6in) tapered
- Door Opening** – 610mm x 130mm (24in x 5.125in)
- Earth Connection** – Stainless Steel
- Section** – Octagonal, Tapered
- Catalogue Number** – QLC.8
- Brackets** – Straight Single Arm only 5° uplift
QCB.1075 Single Arm 0.75 Metre outreach
QCB.1125 Single Arm 1.25 Metre outreach
QCB.1200 Single Arm 2.00 Metre outreach

Standard Spigot
42mm x 100mm
(1½in BSP x 3.94in)

Spare Door Cat. No. QLD.8

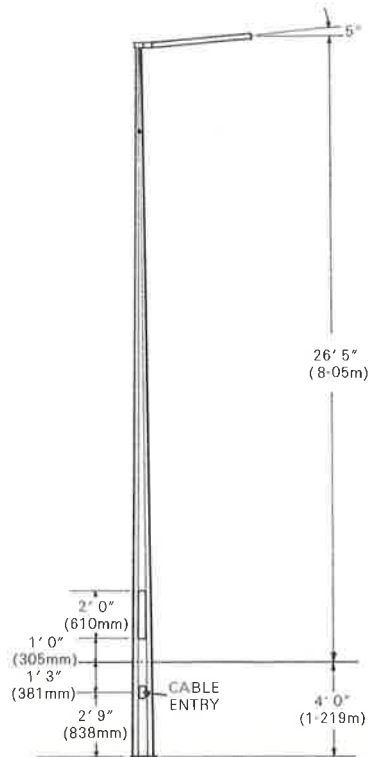
Dzus Key Cat. No. QLK.D

Approved by the Department of the Environment
Approved by the Design Council
Designed to BS. 3989.

TIMBER BACKBOARD



A/F AT CL OF DOORWAY

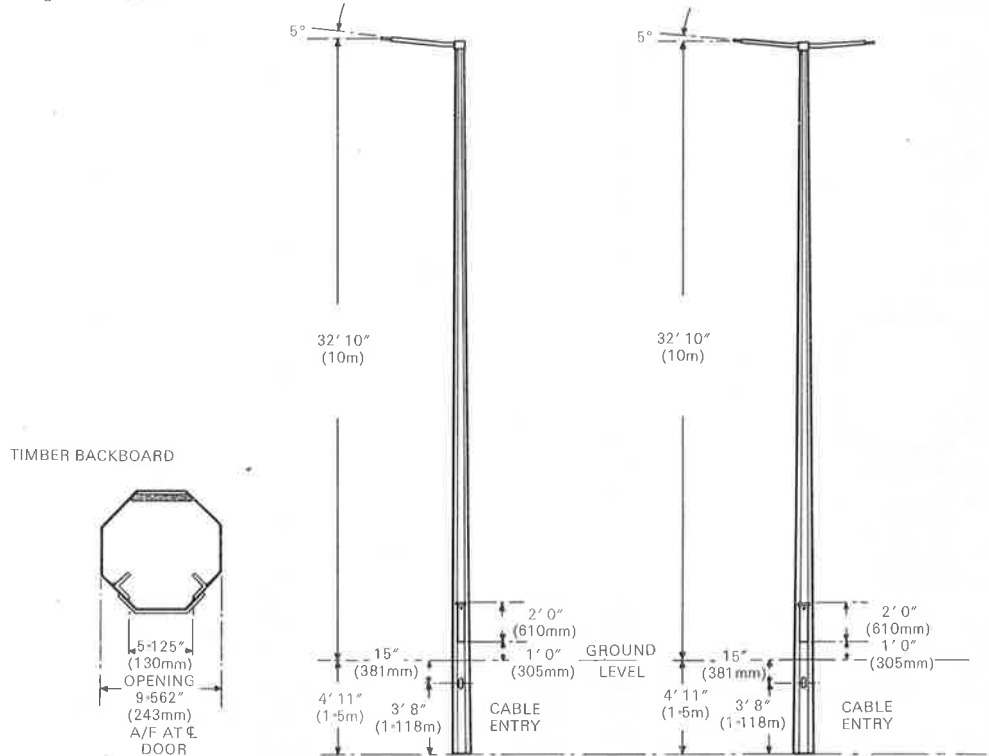


10 metre Group A Aluminium Columns

Featuring low weight for transport and erection, low maintenance cost – no painting required, increased safety in the event of vehicle impact.

- Material** – Aluminium Alloy NS4
- Top Casting** – LM6M Silicon Aluminium Alloy
- Backboard** – Timber 914mm x 162mm to 143mm (36in x 6.4in to 5.6in) tapered
- Door Opening** – 610mm x 130mm (24in x 5.125in)
- Earth Connection** – Stainless Steel
- Section** – Octagonal, tapered
- Catalogue Numbers** – For single arm brackets OLC,10S
– For double arm brackets OLC,10D
- Brackets** – Straight, single and double arm 5° uplift
QCB,1075 Single Arm 0.75 Metre outreach
QCB,1125 Single Arm 1.25 Metre outreach
QCB,1200 Single Arm 2.00 Metre outreach
QCB,1300 Single Arm 3.00 Metre outreach
QCB,2150 Double Arm 1.50 Metre span
QCB,2250 Double Arm 2.50 Metre span
- Standard Spigot** – 42mm x 100mm (1.5in BSP x 3.94in)
- Spare Door** – Cat. No., OLD,10
- Dzus Key** – Cat. No., QLK,D

Approved by the Department of the Environment
Approved by the Design Council
Designed to BS.3989

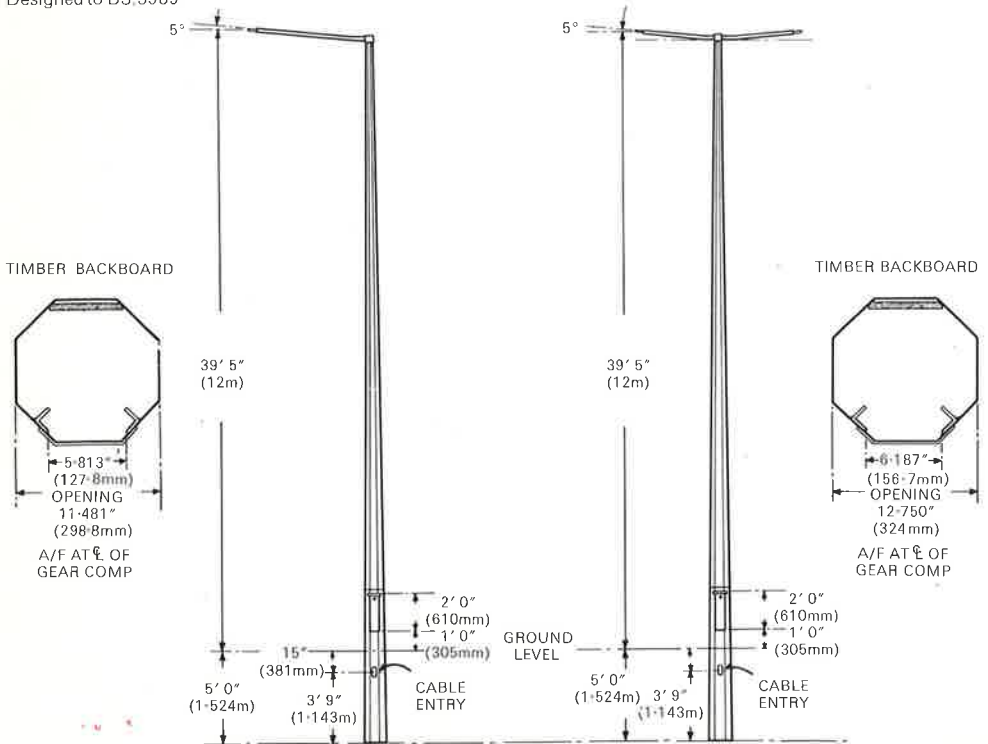


12 metre Group A Aluminium Columns

Featuring low weight for transport and erection,
low maintenance cost – no painting required,
increased safety in the event of vehicle impact.

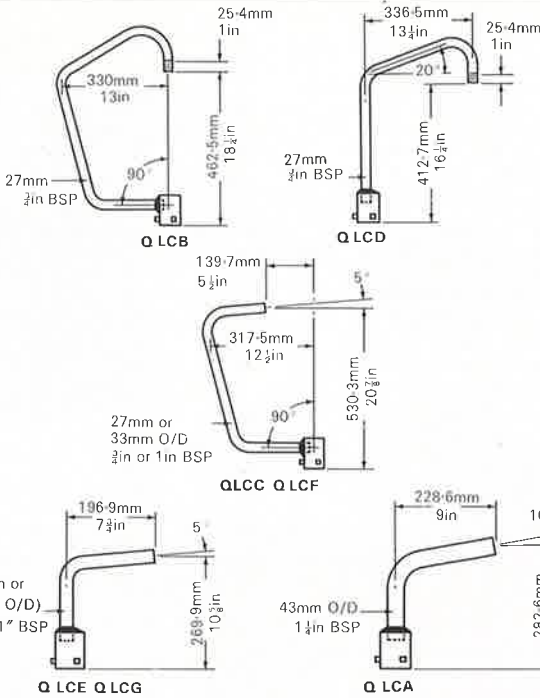
- Material** – Aluminium Alloy NS4
- Top Casting** – LM6M Silicon Aluminium Alloy
- Backboard** – Timber 914mm x 162mm to 143mm (36in x 6.4in to 5.6in) tapered.
- Door Opening** – QLC.12S 610mm x 148mm (24in x 5.8in)
QLC.12D 610mm x 157mm (24in x 6.2in)
- Earth Connection** – Stainless Steel
- Section** – Octagonal, tapered
- Catalogue Numbers** – For single arm bracket QLC.12S
– For double arm bracket QLC.12D
- Brackets** – Straight, Single and Double Arm 5° uplift
OCB.1075 Single Arm 0.75 Metre Outreach
OCB.1125 Single Arm 1.25 Metre Outreach
OCB.1200 Single Arm 2.00 Metre Outreach
OCB.1300 Single Arm 3.00 Metre Outreach
OCB.2150 Double Arm 1.50 Metre Span
OCB.2250 Double Arm 2.50 Metre Span
OCB.2400 Double Arm 4.00 Metre Span
- Standard Spigot** – 42mm x 100mm (1½in BSP x 3.94in)
- Spare Door** – Cat. No. OLD.12
- Dzus Key** – Cat. No. QLK.D

Approved by the Department of the Environment
Approved by the Design Council
Designed to BS.3989

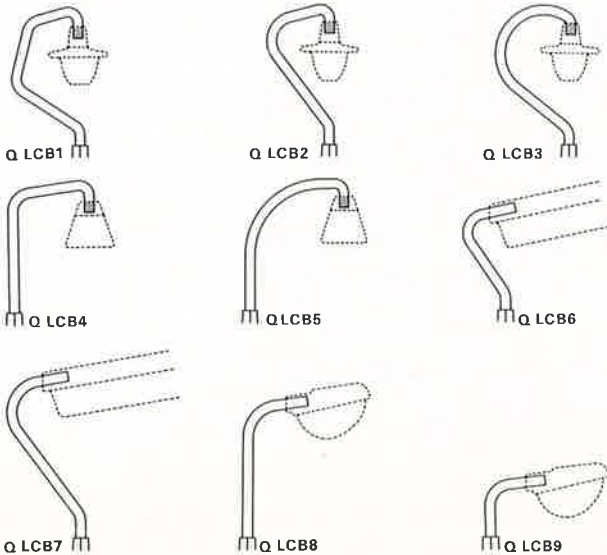


Brackets and Spares

BRACKETS FOR USE WITH QLC.1 COLUMN



BRACKETS FOR USE WITH QLC3/5, QLC4, QLC0 COLUMNS



Materials—Galvanised steel pipe and LM6-M spigot castings.

Catalogue no.

QLCA	1 1/2in BSP S/E	43mm
QLCB	1 1/2in BSP T/E	27mm
QLCC	1 1/2in BSP S/E	27mm
QLCD	1 1/2in BSP T/E	27mm
QLCE	1 1/2in BSP S/E	27mm
QLCF	1in BSP S/E	33mm
QLCG	1in BSP S/E	33mm
QLCS	3 x 3in dia. Spigot adaptor.	76 x 76mm dia.
QLCT	3 x 2in dia. Spigot adaptor	76 x 51mm dia.

QLKY Yale key for QLC 0/3/4/5.
QLKD Dzus key for QLC 2/3A/5A/8/10/12.

Spare doors

QLD 0	Door for	QLC 0	column
QLD 1	Door for	QLC 1	column
QLD 3	Door for	QLC 3	column
QLD 3A	Door for	QLC 3A	column
QLD 4	Door for	QLC 4	column
QLD 5	Door for	QLC 5	column
QLD 5A	Door for	QLC 5A	column
QLD 8	Door for	QLC 8	column
QLD 10	Door for	QLC 10	column
QLD 12	Door for	QLC 12	column

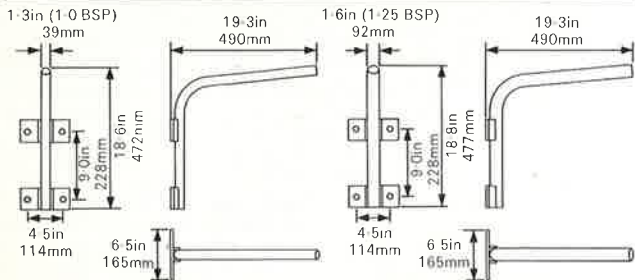
Catalogue no.

QLCB1	T/entry
QLCB2	T/entry
QLCB3	T/entry
QLCB4	T/entry
QLCB5	T/entry
QLCB6	S/entry
QLCB7	S/entry
QLCB8	S/entry
QLCB9	S/entry

Supplied as standard to suit lanterns with 1in BSP entry (33mm).

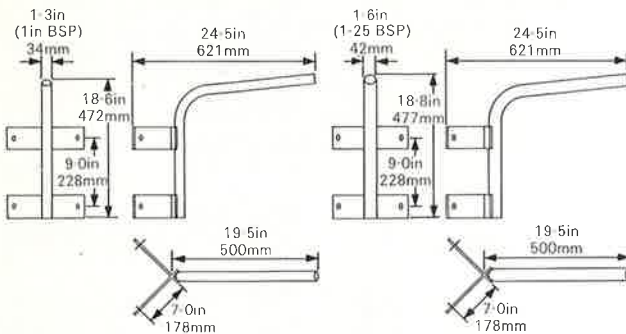
These brackets can be supplied with adaptors to suit lanterns requiring 3/4in or 1 1/4in entry. When ordering please quote appropriate suffix (e.g. QLCB3/3/4 or QLCB9/1 1/4). They can also be supplied with a spigot cap to convert columns fitted with 3 x 3in spigots into bracket arm types. When ordering please quote suffix SC (e.g. QLCB3/SC or QLCB9/1 1/4/SC).

Aluminium wall Brackets and Boxes



FLAT WALL BRACKET QWB 34

FLAT WALL BRACKET QWB 42



CORNER WALL BRACKET QWBC34

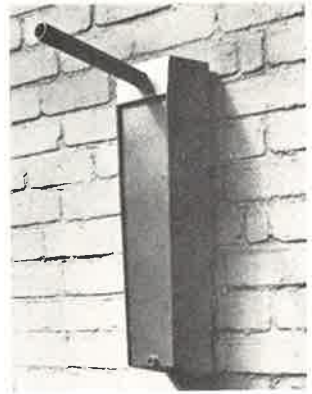
CORNER WALL BRACKET QWBC 42

Wall Brackets

Wall brackets are formed in HT9 aluminium alloy tube and are available for either flat wall or corner wall mounting, for use with either 34mm or 42mm (1in or 1 1/4in BSP) side entry lanterns.

Catalogue Nos.	Description
QWB 34	Flat wall mounting for 34mm S/E.
QWB 42	Flat wall mounting for 42mm S/E.
QWBC 34	Corner wall mounting for 34mm S/E.
QWBC 42	Corner wall mounting for 42mm S/E.

OUTSIDE LIGHTING BOX



Material Aluminium alloy NS4

Bracket casting

LM6-M aluminium alloy

12in outreach (304mm)

Brackets HE9-P extruded tube

Backboard Hardwood

24 x 3 1/2in/610 x 89mm

Lock Dzus type

Base compartment

28 x 6 1/2 x 5 3/8in deep

(external)

660 x 156 x 137mm deep

Weight 11lb/5kg

Catalogue No.

OLB 26 OLB 33 OLB 44

3/4in BSP 1in BSP 1 1/2in BSP

34mm ø 42mm ø

T/entry S/entry S/entry

Incandescent and Discharge fittings

Introduction

The fittings illustrated in this section fall into four main categories.

Part One

Industrial Fittings (pages 3:2–3:13)

A range of heavy-duty fittings to take incandescent or discharge lamps, most of which are designed for high-bay mounting.

Part Two

Commercial, Display and Decorative Fittings

(a) Display Fittings (pages 3:14–3:38)

This section covers a range of swivel-mounted fittings designed to make full use of the new light sources now available and the established range of recessed and surface-mounted fixed display-type fittings.

(b) Hospital Lighting Fittings (page 3:39)

(c) Decorative Fittings (pages 3:40–3:60)

Glass and plastic ceiling-mounted and pendant fittings and wall brackets to suit almost any commercial interior, including the well-known Modern, Link-lite and Chelsea ranges.

A detailed index of Part One is on page 3:2 and of Part Two on page 3:14.

Industrial fittings

Hipak/HB Range

Two "families" of fittings combined to offer a comprehensive range of industrial area lighting using Kolorlux, Kolorarc and KolorSON sources, particularly suitable for areas where mounting heights of between 4.5 and 15m are available. Briefly the range comprises:

DFL Hipak

Kolorlux (MBF)—DFLB/S/X

Standard DFLB may be ordered in 250 or 400 watt sizes. The mercury reflector lamp (MBFR) used with the 'S' skirt reflector where the self cleaning action of the air flow around the lamp reduces lamp maintenance or the Kolorlux (MBF) lamp with the spun aluminium 'X' parabolic reflector for high output and control may be used. Mounting heights of between 3.5-9m are recommended.

KolorSON (SON)—DFLC/X

Fittings for either 250 or 400 watt sources are available for use in conjunction with the parabolic 'X' reflector. The high efficiency of this source can be maximised in installations where mounting heights of between 6-9m exist.

Kolorarc (MBI)—DFLD/X

400 watt Kolorarc lamps with their high lumen efficiency and excellent colour rendering are available with the parabolic 'X' reflector. Maximum advantage is obtained in areas having mounting heights of between 6-15m.

HB Highbay

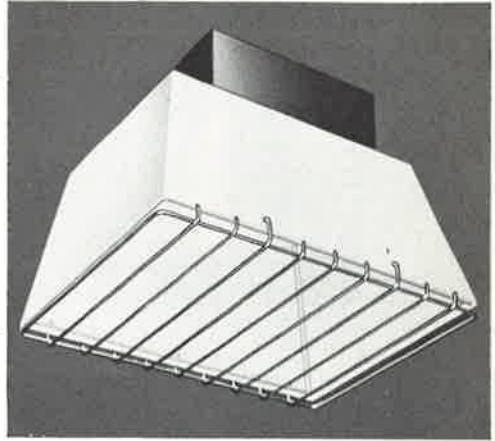
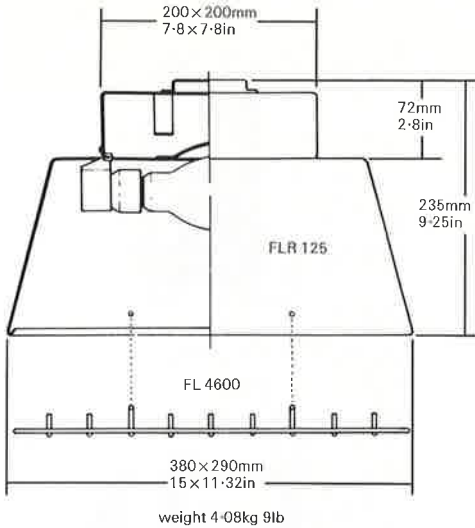
HBG

700 and 1000 watt Kolorlux fittings for use in areas with mounting heights of between 9-18m using either Kolorlux (MBF) lamps with the spun aluminium parabolic 'X' reflector or mercury reflector lamps (MBFR) with the 'R' glare shield may be used.

HBT

A wiring box and GES lampholder assembly for use in areas where remotely mounted control gear is required. Units are available for 700 and 1000 watt lamps. Units are also available for 250 and 400 watt lamps to special order.

FLR 125 Fitting



The FLR 125 fitting is for industrial areas with normal or low ceilings such as machine shops, garages, warehouses, storerooms and enclosed loading bays.

The fitting comprises a square black box containing control gear for one 125W MBF Kolorlux lamp (not included in pack), and a closed end trough reflector, finished white and attached to the underside. The lamp is mounted horizontally to reduce overall depth of the fitting.

Flicker is occasionally noticeable with lower wattage discharge sources. This is eliminated by the incorporation of a rectifier in the 125W circuit.

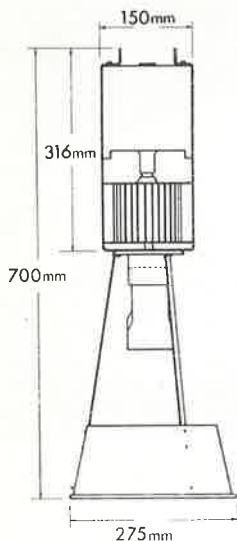
Reflector and gear box are in one pack and an optional wire guard is available.

Fixing: The fitting is secured to a BS conduit box by means of piercings clustered round a central 20mm dia. clearance hole located in the top boss at the centre of the fitting.

Catalogue no.	Description:
FLR 125	Metal reflector fitting for 125W MBF lamp
FL 4600	Wire guard

Note: Change of catalogue no. with introduction of circuit rectification.

DFLB 250/S and 400/S



DFLB 250/S
DFLB 400/S



These fittings are suitable for lighting many Industrial areas having mounting heights of between 4.5-9 m where high illumination levels coupled with reduced maintenance may be achieved. The potted ballast is housed in an aluminium extrusion. The large polycarbonate wiring box, which has through wiring as well as top and side entry facilities, contains the capacitor and 30 amp terminal block. The fitting is easily installed via a 25mm clearance hole in the top of the wiring box for conduit entry. Additional support lugs are located on the stove enamelled zinc plated steel frame. Stainless steel screws are used throughout.

The 250 or 400W MBFR mercury vapour reflector lamps are operated by switchless start control gear for 240V 50Hz supplies (other supplies on application).

Maximum light output is achieved since the position of the lamp, relative to the skirt reflector, is fixed at source of manufacture by means of a lamp spacer. A wire guard is supplied with the skirt reflector to afford lamp protection.

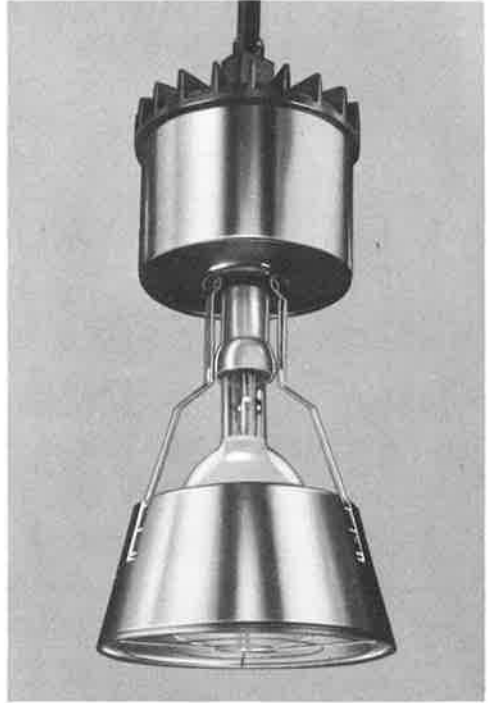
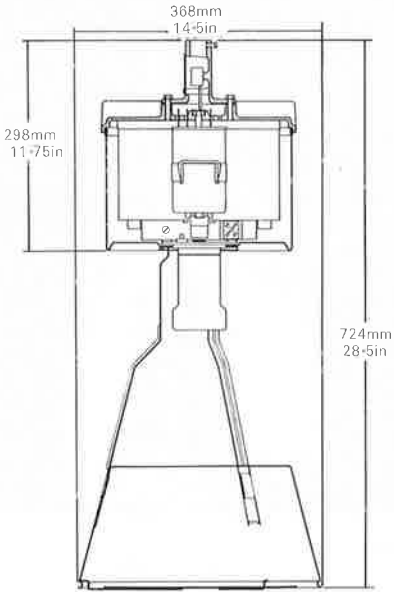
These fittings are designed to run continuously in an ambient temperature of 45°C and are drip proof.

Made to BS 4533-2.2, 1P22.

Complete fitting			Components			
Rating	Lamp type	Catalogue no.	Control gear housing including gear Catalogue no.	Reflector Catalogue no.	Spare wire guard Catalogue no.	Weight including lamp
						Kg lb
250W	MBFR	DFLB 250/S	DFLB 250	DFLS	Included	6.3 13.8
400W	MBFR	DFLB 400/S	DFLB 400	DFLS	Included	7.2 15.8

Note: DFLS skirt reflector may be replaced by a DFLX parabolic reflector for use with MBFU lamps

HBR/G700 and G1000 fittings



HBR/G1000

These fittings are for installations where mounting heights of between 9-18m/30-60ft are available and are suitable for use in practically all types of industry.

The fitting is particularly recommended for new installations or for replacing existing tungsten fittings where higher illumination values with reduced maintenance are required.

The fittings incorporate switchless start control gear for operating either a 700W or 1000W MBFR high-pressure mercury vapour reflector lamp on 240V 50Hz supplies

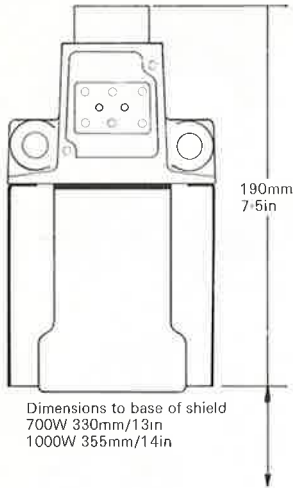
(other supplies on application). The fitting is easily installed via a 25mm diameter conduit entry on the top of the fitting into a separate wiring box to facilitate wiring to the mains without dismantling the fitting. A reflector shield is provided as standard to ensure the maximum downward light output and at the same time afford protection to the lamp. A protective wire guard is provided for fitting into the base of the reflector. A version for use with remotely mounted control gear is also available (see HBT page 3:6).

Range

Complete fitting		Components		Weight incl. lamp	
Rating	Catalogue no.	Control gear housing including gear Catalogue no.	Reflector 700/1000W Catalogue no.	kg	lb
700W	HBR/G700	HBG 700	HBR 1000	17.1	37.75
1000W	HBR/G1000	HBG 1000	HBR 1000	18.2	40.25

Note: The HBR 1000 reflector shield can be replaced by an HBX 1000 reflector (see page 3:8) for use with 700W and 1000W MBF lamps.

HBT fittings



HBT/R1000

These fittings are for installations where mounting heights of between 9-18m/30-60ft are available, and are particularly recommended for installations where a high illumination value with low maintenance is required. This fitting will accept either a 700W or 1000W* MBFR high pressure mercury vapour reflector lamp for use with remotely mounted control gear. The fitting is easily installed via a 25mm/1 in diameter conduit entry on top of the fitting.

A reflector shield is provided as standard to ensure the maximum downward light output and at the same time afford protection to the lamp. A protective wire guard is provided for fixing to the base of the reflector.

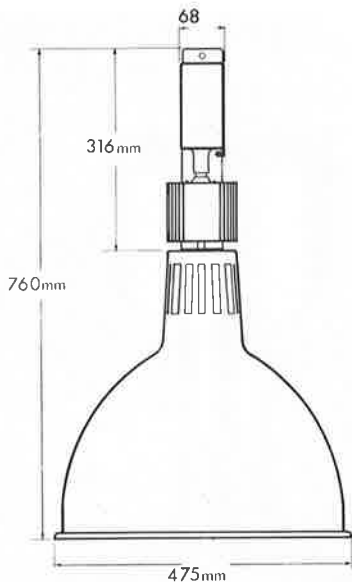
**Note*
Fittings for use with 250 and 400W lamps are available. Details on application.

Range

Complete fitting			Components		Dimensions		Weight (ex lamp)	
Rating	Lamp type	Catalogue no.	Top Catalogue no.	Reflector including guard Catalogue no.	Max. diameter mm	in	kg	lb
700W, 1000W	MBFR	HBT/R1000	HBT	HBR 1000	368	14.5	0.79	1.75

Note. The HBR reflector shield can be replaced by HBX reflector (see page 3.8)

New Hipak DFLB 250/X and 400/X



DFLB 250/X
DFLB 400/X



These fittings are suitable for lighting many industrial areas having mounting heights of between 4.5-9m where high illumination levels

coupled with reduced maintenance may be achieved. The potted ballast is housed in an aluminium extrusion. The large polycarbonate wiring box, which has through wiring as well as top and side entry facilities, contains the capacitor and 30 amp terminal block. The fitting is easily installed via a 25mm clearance hole in the top of the wiring box for conduit entry.

Additional support lugs are located on the stove enamelled zinc plated steel frame. Stainless steel screws are used throughout.

The 250 or 400W MBF high pressure mercury vapour lamps are operated by switchless start control gear for

240V 50Hz supplies (other supplies on application). Maximum light output to give a BZ1 distribution is achieved since the position of the lamp, relative to the parabolic reflector is fixed at source of manufacture by means of a lamp spacer. Slots in the top of the reflector provide a small proportion of upward light and allow a flow of air to pass over the lamp and reflecting surfaces. A protective wire guard is available and may be fitted to the base of the reflector.

These fittings are designed to run continuously in an ambient temperature of 45°C and are drip proof.

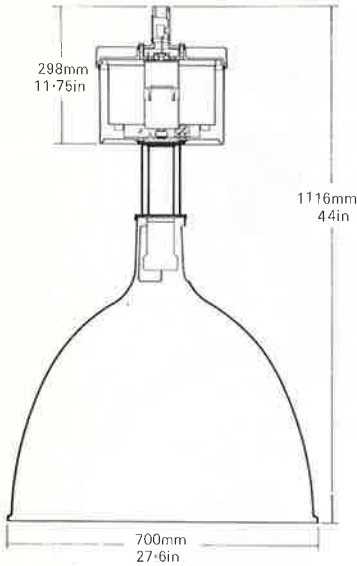
Made to BS 4533-2.2, 1P22.

Range

Complete fitting		Components			Weight including lamp	
Rating	Lamp type	Control gear housing including gear Catalogue no.	Reflector Catalogue no.	Optional wire guard Catalogue no.	kg	lb
250W	MBF	DFLB 250/X	DFLX	DFLG	7.25	15.9
400W	MBF	DFLB 400/X	DFLX	DFLG	8.15	17.9

Note: The DFLX parabolic reflector may be replaced by a DFLS skirt reflector for use with the MBFIR lamps

HBX/G700 and G1000 fittings



HBX/G1000

These fittings are for installations where mounting heights of between 9-18m/30-60ft are available and are suitable for use in practically all types of industry.

These fittings are particularly recommended for new installations or for replacing existing tungsten fittings where higher illumination values with reduced maintenance are required.

The fittings incorporate switchless start control gear for operating either a 700W or 1000W MBF high pressure mercury vapour reflector lamp on 240V 50Hz supplies (other supplies on application). The fitting is easily installed via a 25mm diameter conduit entry on the top of the fitting into a separate wiring box to facilitate wiring to the mains without dismantling the fitting. A reflector is

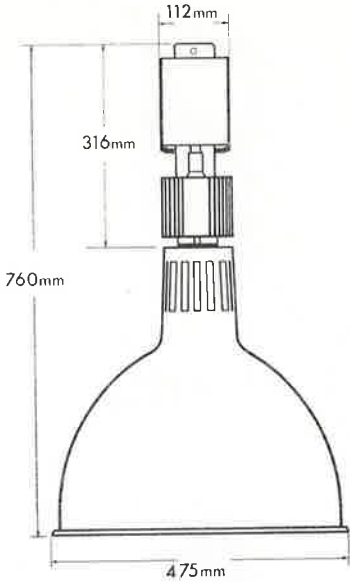
provided as standard to ensure the maximum downward light output and at the same time afford protection to the lamp. A protective wire guard is available for fitting into the base of the reflector. A version for use with remotely mounted control gear is also available (see HBT page 3:11).

Range

Complete fitting		Components		Optional		Weight incl. lamp kg lb
Rating	Lamp type	Catalogue no.	Control gear housing incl. gear Catalogue no.	Reflector Catalogue no.	Wire guard Catalogue no.	
700W	MBF	HBX/G700	HBG 700	HBX 1000	HB 4602	19.2 42.4
1000W	MBF	HBX/G1000	HBG 1000	HBX 1000	HB 4602	20.9 46

Note: The HBX/G1000 reflector can be replaced by an HBR 1000 reflector shield (see page 3:5) for use with 700W and 1000W MBFR lamps.

New Hipak DFLD 400/X



DFLD 400/X



These fittings are suitable for lighting many Industrial areas having mounting heights of between 6 - 15m where high illumination levels coupled with reduced maintenance may be achieved. The potted ballast is housed in an aluminium extrusion. The large polycarbonate wiring box, which has through wiring as well as top and side entry facilities, contains the capacitor, ignitor and 30 amp terminal block. The fitting is easily installed via a 25mm clearance hole in the top of the wiring box for conduit entry. Additional support lugs are located on the stove enamelled zinc plated steel frame. Stainless steel screws are used throughout. The 400W MBIF Kolorarc lamp is operated by switchless start control

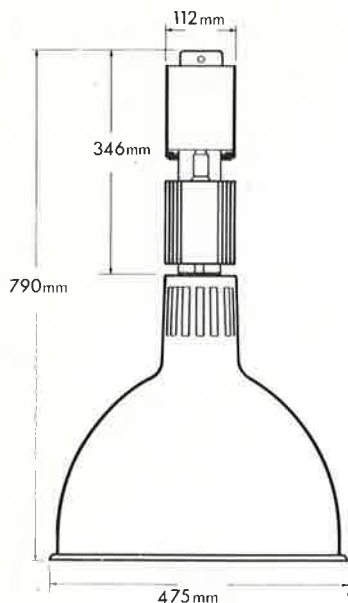
gear for 240V 50Hz supplies (220V 50Hz on application). Maximum light output to give a BZI distribution is achieved since the position of the lamp, relative to the parabolic reflector is fixed at source of manufacture by means of a lamp spacer. Slots in the top of the reflector provide a small proportion of upward light and allow a flow of air to pass over the lamp and reflecting surfaces. A protective wire guard is available and may be fitted to the base of the reflector. These fittings are designed to run continuously in an ambient temperature of 45°C and are drip proof.

Made to BS 4533-2.2, 1P22.

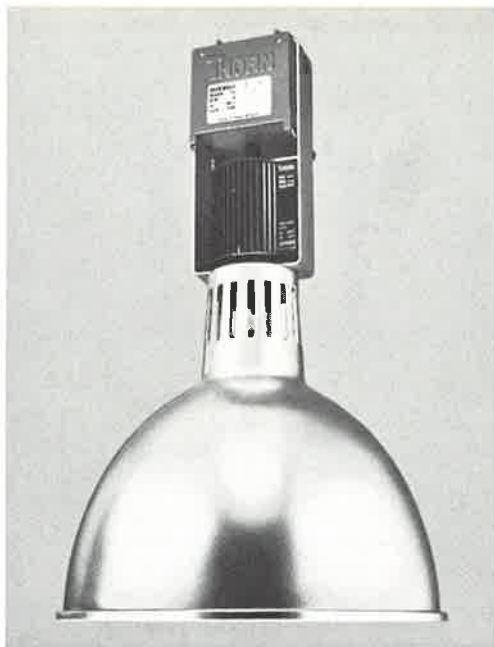
Range

Complete fitting			Components		Optional	Weight incl. lamp	
Rating	Lamp type	Catalogue no.	Control gear housing incl. gear Catalogue no.	Reflector Catalogue no.	Wire guard Catalogue no.	kg	lb
400W	MBI	DFLD 400/X	DFLD 400	DFLX	DFLG	8.55	18.8

New Hipak DFLC 250/X and 400/X



DFLC 250/X
DFLC 400/X



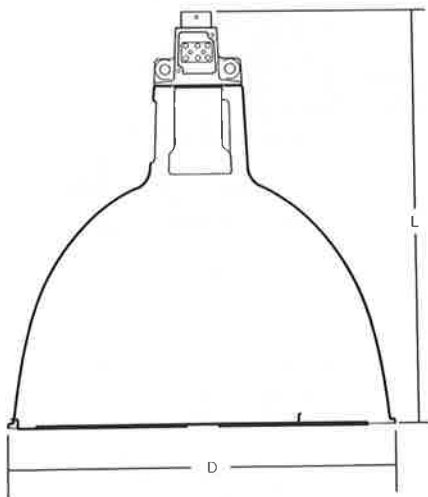
These fittings are suitable for lighting many Industrial areas having mounting heights of between 6 - 15m where high illumination levels coupled with reduced maintenance may be achieved. The potted ballast is housed in an aluminium extrusion. The large polycarbonate wiring box, which has through wiring as well as top and side entry facilities, contains the capacitor, ignitor and 30 amp terminal block. The fitting is easily installed via a 25mm clearance hole in the top of the wiring box for conduit entry. Additional support lugs are located on the stove enamelled zinc plated steel frame. Stainless steel screws are used throughout. The 250 or 400W SON high pressure sodium lamps are operated by

switchless start control gear for 240V 50Hz supplies (220V 50Hz on application). Maximum light output to give a BZI distribution is achieved since the position of the lamp, relative to the parabolic reflector is fixed at source of manufacture by means of a lamp spacer. Slots in the top of the reflector provide a small proportion of upward light and allow a flow of air to pass over the lamp and reflecting surfaces. A protective wire guard is available and may be fitted to the base of the reflector. These fittings are designed to run continuously in an ambient temperature of 45°C and are drip proof. Made to BS 4533-2.2, 1P22.

Range

Complete fitting			Components			
Rating	Lamp type	Catalogue no.	Control gear housing incl. gear	Reflector	Optional Wire guard	Approx. Weight incl. lamp
			Catalogue no.	Catalogue no.	Catalogue no.	kg lb.
250W	SON	DFLC 250/X	DFLC 250	DFLX	DFLG	9.15 20.1
400W	SON	DFLC 400/X	DFLC 400	DFLX	DFLG	10.25 22.5

HBT/X 1000 fittings



HBT/X1000

These fittings are for installations where mounting heights of 9-18m are available. They are suitable for use in practically all types of industry and are particularly recommended for new installations or for replacing existing tungsten fittings where higher illumination values with reduced maintenance are required. The fitting will accept either 1000W MBI or 700 and 1000W MBF* lamps and is easily installed by means of a 25mm/1 in diameter conduit entry on top.

A reflector in anodized aluminium is provided to give a BZ1 high efficiency downward light output. Slots are provided at the top of the reflector to allow a flow of air over the lamp and reflecting surfaces which helps reduce maintenance. A protecting wire guard (Catalogue no. HB4602) is available for use with the reflector. Remotely mounted gear is required for this fitting.

**Note*

Fittings for use with 250 and 400W lamps are available. Details on application.

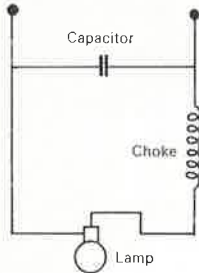
Range

Complete fitting

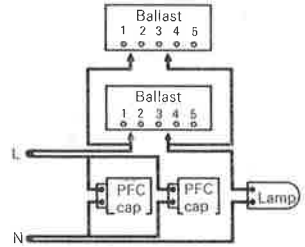
Rating	Lamp type	Catalogue no.	Dimensions		Dimensions		Weight incl. lamp	
			D		L		kg	lb
			mm	in	mm	in		
700W	MBF	HBT/X1000†	700	27.6	756	29.75	3.7	8.15
1000W	MBF or MBI	HBT/X1000†	700	27.6	756	29.75	4.2	9.25

†This fitting may also be used with 600, 750, 1000, 1500W GLS lamps

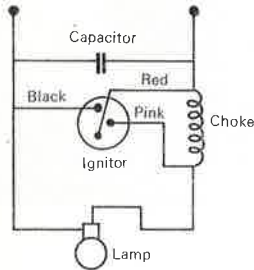
Replacements for High-Bay fittings



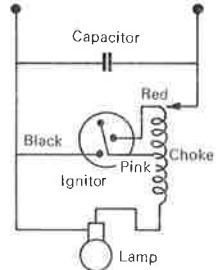
DFLB 250
DFLB 400



700, 1000W
MBF/MBFR



DFLD 400



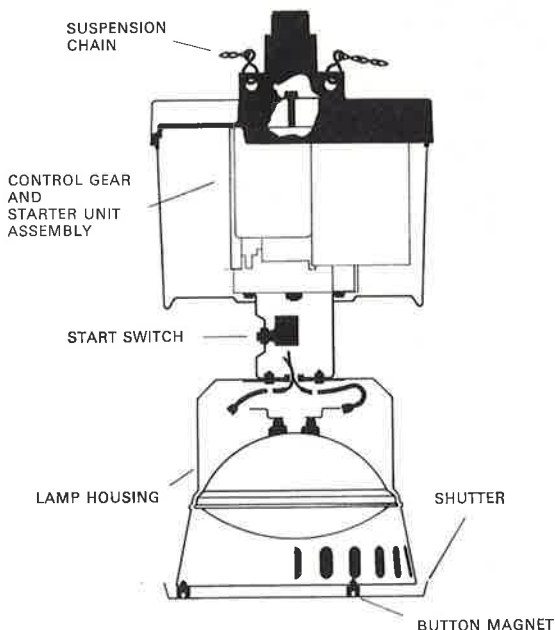
DFCL 250
DFCL 400

The items listed below are replacements for the industrial discharge lamp fittings with integral gear described on earlier pages. Full details of each item are shown in Section 10 of this catalogue.

Replacement Items for Industrial Discharge Fittings with Integral Gear

Description	125W MBF	250W MBF/MBFR	400W MBF/MBFR	700W MBF/MBFR	1000W MBF/MBFR	400W MBIF	250W SON	400W SON
Skirted lampholder	GL 1113	GL 1094	GL 1094	GL 1094	GL 1094	GL 1094	GL 1094	GL 1094
3-way terminal block	GT 1281/3	—	—	GT 1306	GT 1306	—	—	—
2-way terminal block	—	GT 1362	GT 1362	—	—	GT 1362	GT 1362	GT 1362
Ballast	G 53186.4	G 53285.4	G 53284.4	G 53157.T G 53158.T	2xG 53164.4	G 53288.4	G 53287.T	G 53286.T
Capacitor	GC 2222	GC 2370	—	GC 2214 GC 2218	2xG C2236	GC 2331	GC 2345 GC 2370	GC 2331
Ignitor	—	—	GC 2331	—	—	G 53283	G 53282	G 53282

Graph-X 400W Metal Halide Sealed Beam lamp unit for photoprinting



DHIP/S400 GRAPH-X FITTING

This fitting is designed for use in the Graphic Arts Industry to accommodate a 400W MBI Sealed Beam Photoprinting lamp (ref: 91-9826), for exposing of platemaking, colour proofing, photo-resist and diazo material. The fitting incorporates control gear consisting of a choke, capacitors and starter unit in a cylindrical can to which is attached a reflector in anodised aluminium which houses the lamp. A magnetically held shutter is provided to cover the reflector front. A push button is included in the neck of the fitting for starting the lamp.

RANGE

Rating	400W
Lamp Type	400W MBI Sealed Beam
Cat. No.	DHIP/S400
Weight including Lamp	23lb (10.5kg)

COMPONENTS

Control Gear Housing including Gear	DHIP/400
Reflector/Shutter	DHS

Commercial, Display and Decorative fittings

Introduction

The fittings shown in this section can be divided into three main categories. The first contains the new Hi-Spot range of swivel-mounted and adjustable spotlights and floodlights designed for use in shopwindows or for lighting interior displays. These fittings make use of the complete range of specialised lamps such as pressed and blown-glass reflector-lamps and low voltage reflector and tungsten-halogen lamps. Most of them are designed so that they can be mounted on Trakline. The second part contains surface mounted and recessed ceiling fittings using standard lamps or reflected lamps, and a variety of decorative diffusers and louvers, and in the third is the wide range of glass, plastic and metal decorative fittings both for ceiling mounting and for use as pendants and wall brackets for which the company is justly famous.

Index

- 3:14** **Hi-Spot** Introduction to Display Range
- 3:15** **Mains Voltage fittings**
- 3:16** DTR 100BC spotlight holder for 100W I.S. lamp
- 3:17** DTG 100BC spotlight holder for 100W GLS lamp
- 3:18** DTU 200 swivel housing for 200W I.S. lamp
- 3:19** DTU 200 swivel housing for 200W I.S. lamp
- 3:20** DTC 100 reflector fitting for 100W crown silvered lamp
- 3:21** DTP 200 swivel housing for 200W PAR lamp
- 3:22** DTP 300 swivel housing for 300W PAR lamp
- 3:22** DTLIN 300/500 swivel reflector for 300W or 500W linear T.H. lamp

- 3:23** **Low Voltage fittings** (all with built-in transformers)
- 3:24** DTLV20 Swivel housing for 6V 20W T.H. lamps
- 3:25** DTLV50 Swivel housing for 12V 50W T.H. lamp
- 3:26** DTLV100 Swivel housing for 12V 100W T.H. lamp
- 3:26** DTPRO50 Profile spot for 12V 50W T.H. lamp

- 3:27** **Mains Voltage Spotlights**
- 3:28** VE 150 adjustable Eyeball fitting
- 3:28** VG 100 VG 150 Swivel mounting for PAR lamps
- 3:28** VA 100, VA150 Auxiliary reflectors for GLS lamps
- 3:28** PAR 38 Show-off fitting

- 3:29** **Low Voltage Spotlights**
- 3:29** DAS 150 Swivel housing for 12V 50W reflector lamps
- 3:29** DCS 150 Swivel housing for 12V 50W reflector lamps
- 3:29** TRF 2338F Transformer for use with above.

- 3:30** **Display Lighting** surface-mounted and recessed ceiling fittings
- 3:31** General information
- 3:31** VSL, VSX, VSZ 100W Surface mounted fittings and attachments
- 3:32** VSL, VSZ, 200W Surface mounted fittings and attachments
- 3:33** VCB, VCM, VU Cylinder Range (recessed and surface-mounted)
- 3:34** VC Cylinder range, and attachments (VL, VX, VZ)
- 3:35** VR 100, 100W Recessed fittings and attachments (VLYP, VS, XX, VY, VZ)
- 3:36** VR200, 200W Recessed fittings and attachments (VL, VO, VX, VY, VZ)
- 3:37** DNM Surface mounted fitting
- 3:37** DP recessed ceiling fitting
- 3:37** JCA recessed ceiling fitting
- 3:37** VJ Junior recessed fitting
- 3:38** EU750 Tungsten-halogen interior floodlight

- 3:39** **Hospital and School lighting fittings**
- 3:40** OEO, OGI, Low Brightness Bedhead fitting
- 3:40** MN series, Opalite pendant fittings

- 3:41-42** **Glass, metal and Plastic Decorative fittings**
- 3:41-42** Nova Range, glass pendants and ceiling fittings NC, ND, NCA, NDA, NFA, NLA
- 3:43** Kolorlux Package deal PKC 80 & 125 PKA 80 and 125 PKM 80 & 125,
- 3:44** Kolorlux PKO 80 & PKO 125, PKB 80 & 125
- 3:45-48** Kolorlume DKA 125, 250, 400

- 3:49** **Modern Range**
- 3:50** XAT, XBC, XDC, XDO, XFL Modern glasses and suspensions
- 3:50** XDS, XYO, XZO, XUO Modern glasses and suspensions
- 3:51** Modern Suspensions
- 3:52** Modern Suspensions
- 3:53** XT Swedish Pendant
- 3:54** WLP, WLC Link-lite fittings
- 3:55** WEP, WEC, WQP Link-lite 2 and 3 fittings
- 3:56** WM Cube light
- 3:57** SCC, SCA, SCR Scatter light
- 3:58** JZ, JY, JF Chelsea Glasses
- 3:59** JCP, JCB, JCG, Chelsea suspension systems
- 3:60** Oyster

Hi-Spot 100W reflector spotlight fitting

This fitting accepts a number of 75W and 100W interior display reflector lamps, ES only. Cowl, louvre and coloured filters are available.

Fittings

Catalogue no.	Cap	Watts	Fixing	Finish
DMR 100	ES	100	Multitrak	Matt black, chrome trim
DTR 100	ES	100	Trakline	Matt black, chrome trim
DSR 100	ES	100	Ceiling	Matt black, chrome trim

Optional attachments

Catalogue no.	Description	Finish
DVH 100	Cowl	Brushed and lacquered aluminium
DVL 100	Louvre	Matt black
DVF 100R	Red glass filters*	
DVF 100A	Amber glass filters*	
DVF 100G	Green glass filters*	
DVF 100B	Blue glass filters*	

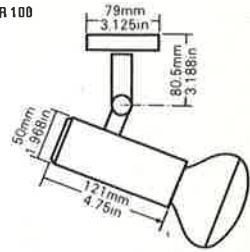
*Complete with clips; packed 2 per carton

Lamps

Watts	Description	Voltages
75, 100	Interior display reflector lamp ES and BC	220/230, 240, 250
75 only	As above in colours red, yellow green and blue	240/250

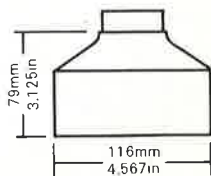


DSR 100



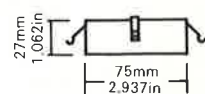
Weight DTR 100 0.57kg/1.25lb
DSR 100 0.68kg/1.5lb
DMR 100 0.57kg/1.25lb

Cowl DVH 100



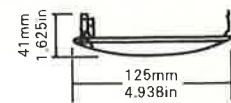
Weight 0.06kg/0.125lb

Louvre DVL 100



Weight 0.06kg/0.125lb

Filter DVF 100

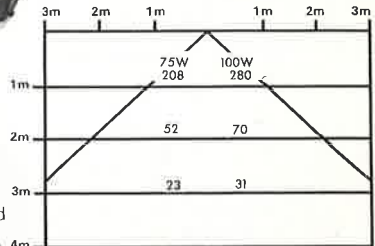


Weight 0.11kg/0.25lb

Photometric Data

Average illumination value in lux.

The photometry shown refers to clear lamps. Lux values for coloured lamps vary according to colour but approximate values are:
Yellow less 10%; Blue less 60%; Red less 55%; Green less 50%.



DTR 100 using 75W and 100W interior display reflector lamps

Hi-Spot 100W GLS spotlight fitting

This fitting uses standard 100W GLS lamps in either ES or BC form to produce a well defined beam. To do this it uses a reflector enclosed in a brushed and lacquered aluminium cowl. A louvre and coloured filters are available as optional extras.

Fittings

Catalogue no.	Cap	Watts	Fixing	Finish
DTG 100BC	BC	100	Trakline	Matt black, chrome trim
DSG 100BC	BC	100	Ceiling	Matt black, chrome trim
DTG 100	ES	100	Trakline	Matt black, chrome trim
DSG 100	ES	100	Ceiling	Matt black, chrome trim
DMG 100	ES	100	Multitrak	Matt black, chrome trim

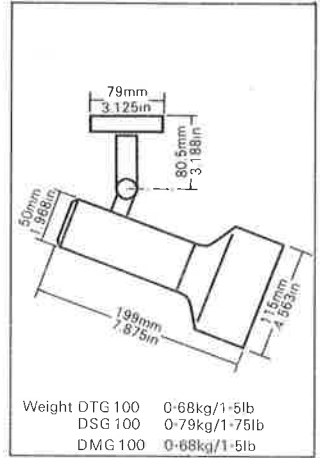
Optional attachments

Catalogue no.	Description	Finish
DVL 100	Louvre	Matt black
DVF 100R	Red glass filters*	
DVF 100A	Amber glass filters*	
DVF 100G	Green glass filters*	
DVF 100B	Blue glass filters*	

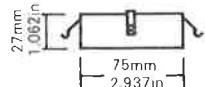
*Complete with clips; packed 2 per carton

Lamps

Watts	Description	Voltages
100	GLS, ES and BC	110, 240 and 250

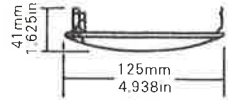


Louvre DVL 100



Weight 0.06kg/0.125lb

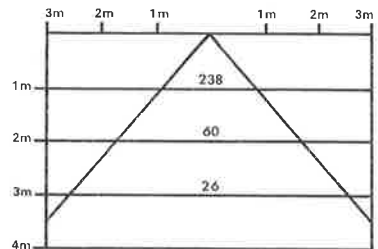
Filter DVF 100



Weight 0.11kg/0.25lb

Photometric Data

Average illumination value in lux.



DTG 100 using 100W GLS pearl lamp

Hi-Spot 200W universal spotlight fitting

This range of spotlights uses as its basis a standard 150W or 200W PAR46 fitting with an adjustable lampholder. This, together with a range of reflectors, enables an immense variation of functions to be performed.

Fittings

Catalogue no.	Cap	Watts	Fixing	Finish
DTU 200	ES	150	Trakline	Matt black, chrome trim
DSU 200	ES	150	Ceiling	Matt black, chrome trim
DMU 150	ES	150	Multitrak	Matt black, chrome trim

Optional attachments

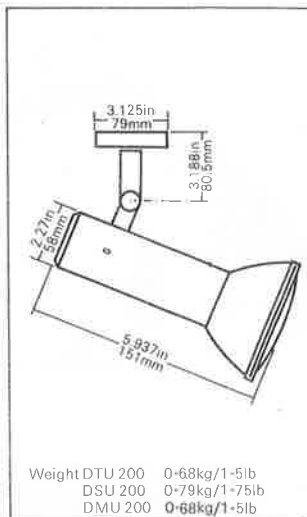
Catalogue no.	Description	Finish
DVH 150	Cowl. See lamp information for uses	Brushed and lacquered aluminium
DVHR 150	Cowl and reflector for 150W GLS lamp	Brushed and lacquered aluminium
DVAL 200	Reflector and louvre for 200W GLS lamp	Natural aluminium
DVL 150	Louvre for use on DVH 150 and DVHR 150	Matt black
DVF 150R	Red glass filter*	
DVF 150A	Amber glass filter*	
DVF 150G	Green glass filter*	
DVF 150B	Blue glass filter*	

*Complete with clips; packed 2 per carton

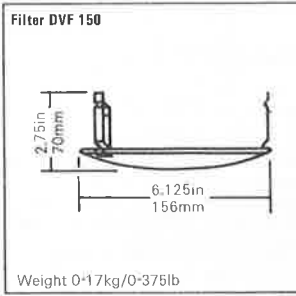
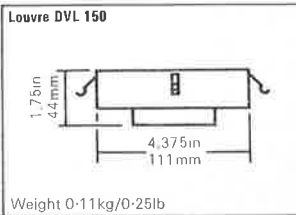
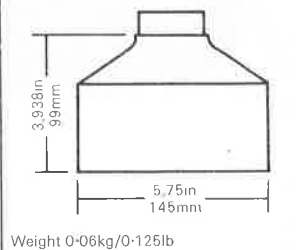
Lamps

Watts	Description	Voltages
75, 100, 150	Interior display reflector lamps ES only *DVH 150 can be used	200/230 240, 250
75 only	As above in lacquered colours red, yellow, green and blue *DVH 150 can be used	240/250
100, 150	GLS lamp (pearl) ES only *DVHR 150 must be used	100, 220/230 240, 250
200	GLS lamp (pearl) ES only *DVAL 200 must be used	220/230 240, 250
100, 150	PAR38 spot and flood *DVH 150 can be used	200/230 240/250
100	As above in lacquered colours red, yellow, green and blue *DVH 150 can be used	240/250
150	PAR38 Cool-ray and Color-ray red, yellow, green and blue *DVH 150 can be used	240/250
200	PAR46 spot or flood	240/250

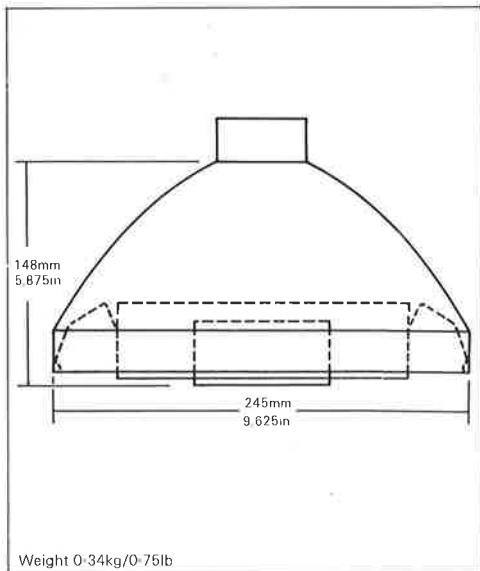
*See details in Optional attachments table.



Cowl DVH 150 and Cowl/Reflector DVHR 150



Hi-Spot 200W universal spotlight fitting



Lamps

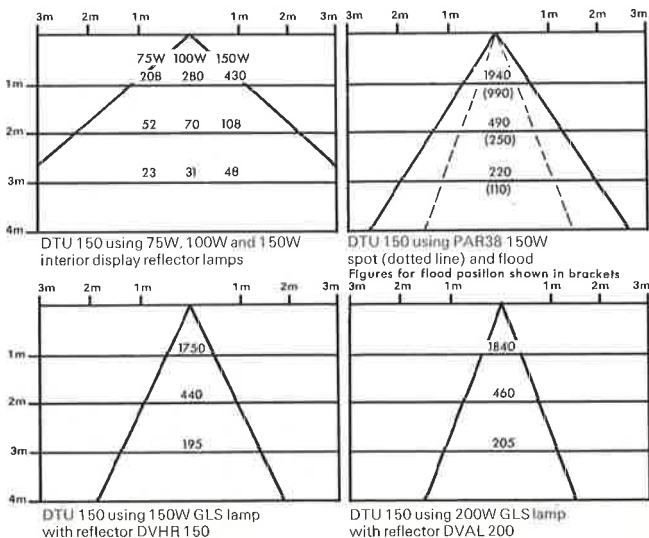
Watts	Description	Voltages
75, 100, 150	Interior display reflector lamps ES only *DVH150 can be used	200/230 240, 250
75 only	As above in lacquered colours red, yellow, green and blue *DVH150 can be used	240/250
100, 150	GLS lamp (Pearl) ES only *DVHR150 must be used	100, 220/230 240, 250
200	GLS lamp (Pearl) ES only *DVAL200 must be used	220/230 240, 250
100, 150	PAR38 spot and flood *DVH150 can be used	200/230 240/250
100	As above in lacquered colours red, yellow, green and blue *DVH150 can be used	240/250
150	PAR38 Cool-ray and Color-ray in red, yellow, green and blue *DVH150 can be used	240/250
200	PAR46 spot and flood	240/250

*See details in 'Optional attachments' table

The photometry shown refers to clear lamps. Lux values for coloured lamps vary according to colour but approximate values are:
Yellow less 10% ; Blue less 60% ;
Red less 55% ; Green less 50%.

Photometric Data

Average illumination value in lux



Hi-Spot 100W crown silvered spotlight fitting

This fitting, for use with 100W crown silvered display lamp, has the distinction of alternative coloured reflectors to increase its versatility. Fitted with natural anodized aluminium reflector. Available in ES only.

Fittings

Catalogue no.	Cap	Watts	Fixing	Finish
DTC 100	ES	100	Trakline	Matt black, chrome trim
DSC 100	ES	100	Ceiling	Matt black, chrome trim
DMC 100	ES	100	Multitrak	Matt black, chrome trim

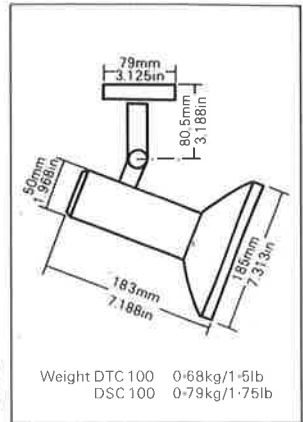
Optional attachments

Catalogue no.	Description
DVA 100R	Red reflector
DVA 100A	Amber reflector
DVA 100G	Green reflector
DVA 100B	Blue reflector

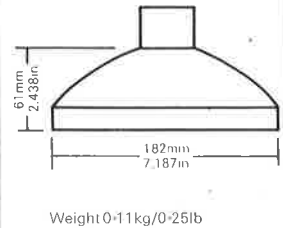
Packed with lamp

Lamps

Watts	Description	Voltages
100	Crown silvered display lamp ES cap	240/250

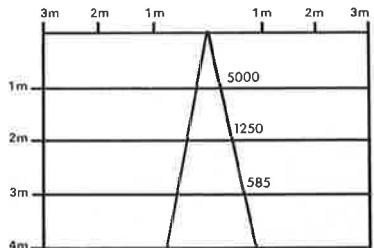


Reflector DVA 100



Photometric Data

Average illumination value in lux



DTC 100 using 100W GLS crown silvered lamp with natural anodized aluminium reflector

Hi-Spot 200W die-cast PAR38 or PAR46 spotlight fitting

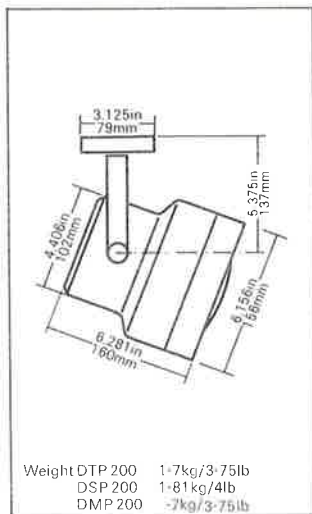
This group of fittings accepts a range of PAR38 or PAR46 lamps up to 200W. It features die-cast bodies finished in black or white with brushed and lacquered aluminium cowl and contrasting chrome trim.

Fittings

Catalogue no.	Cap	Watts	Fixing	Finish
DTP200W	ES	150/200	Trakline	White
DTP200B	ES	150/200	Trakline	Black
DSP200W	ES	150/200	Ceiling	White
DSP200B	ES	150/200	Ceiling	Black
DMP200W	ES	150/200	Multitrak	White
DMP200B	ES	150/200	Multitrak	Black

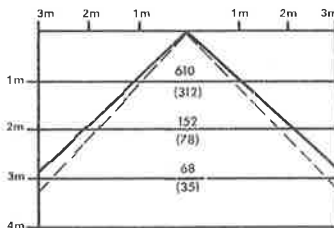
Lamps

Watts	Description	Voltages
100	150 PAR38 spot and flood	200/230 240/250
150	PAR38 Cool-ray	240/250
150	PAR38 Color-ray red, yellow, green and blue	240/250
100	PAR38 flood only red, yellow, green and blue	240/250
200	PAR46 spot and flood	240/250

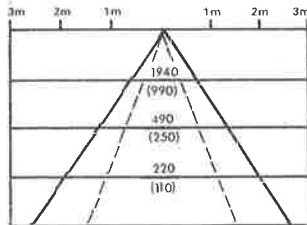


Photometric Data:

Average illumination value in lux:



DTP 200 using PAR38 150W spot (dotted line) and flood
 Figures for flood position shown in brackets



DTP 200 using PAR38 100W spot (dotted line) and flood
 Figures for flood position shown in brackets

The photometry shown refers to clear lamps. Lux values for coloured lamps vary according to colour but approximate values are: Yellow less 10%; Blue less 60%; Red less 55%; Green less 50%.

Hi-Spot 300W die-cast PAR56 spotlight fitting

This fitting is designed to accept the PAR56 300W lamp. It has a die-cast body, finished in gloss white or matt black with chrome trim.

Fittings

Catalogue no.	Cap	Watts	Fixing	Finish
DTP 300W GX16d	300	Trakline	White	
DTP 300B GX16d	300	Trakline	Black	
DSP 300W GX16d	300	Ceiling	White	
DSP 300B GX16d	300	Ceiling	Black	
DMP 300W GX16d	300	Multitrak	White	
DMP 300B GX16d	300	Multitrak	Black	

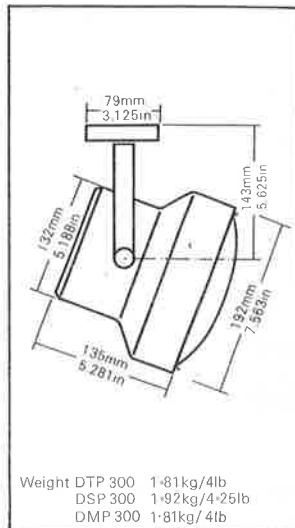
Optional attachments

Catalogue no.	Description
DVF 300R	Red glass filter
DVF 300A	Amber glass filter
DVF 300G	Green glass filter
DVF 300B	Blue glass filter

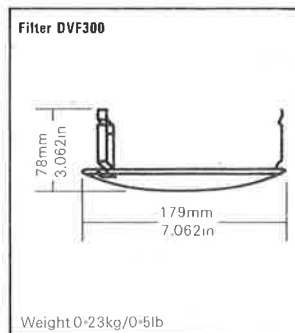
Complete with clips; packed 2 per carton

Lamps

Watts	Description	Voltages
300	PAR56, sealed beam, wide, medium and narrow beam angles	200/230, 240/250



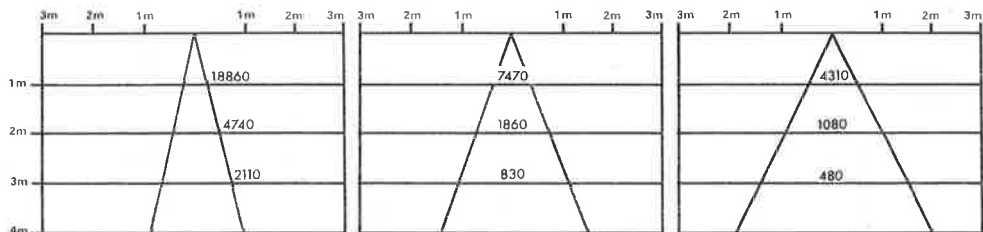
Filter DVF 300



Photometric Data

Average illumination value in lux

PAR56 lamps produce an elliptical beam form. Beams shown below are for the minor axis.



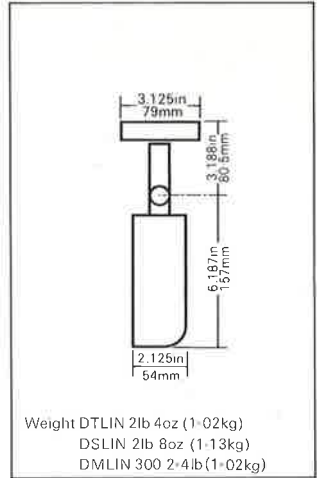
DTP 300 using PAR56 narrow beam

DTP 300 using PAR56 medium beam

DTP 300 using PAR56 wide beam

Hi-Spot 'wallwasher' using 300/500W TH linear lamp

This unique fitting uses a 300W or 500W Tungsten Halogen linear lamp to illuminate large vertical or horizontal areas. When used in this way the surface gives the appearance of uniformly high brightness. There is very little spill of light onto ceiling or floor. Two versions are available; 300 watts maximum for Trakline or Multitrak use, the 500 watt version for ceiling plate mounting.



Fittings

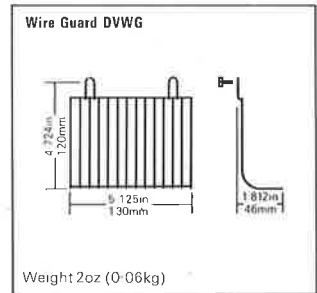
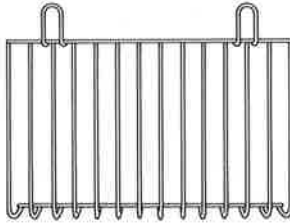
Cat. No.	Lamp Cap	Watts (max)	Fixing	Finish
DTLIN300	R7s	300	Trakline	Black, chrome and matt finish aluminium
DSLIN500	R7s	500	Ceiling	Black, chrome and matt finish aluminium
DMLIN300	R7s	300	Multitrak	Black, chrome and matt finish aluminium

Optional attachments

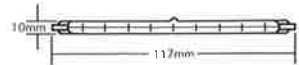
Cat. No.	Description	Finish
DVWG	Wire guard, complete with fixing screws	Stainless steel

Lamps (these lamps should be 'frosted' finish)

Watts	Description	Voltages
300	Tungsten Halogen linear lamp frosted	220/230, 240/250
500	Tungsten Halogen linear lamp	200/230, 240/250

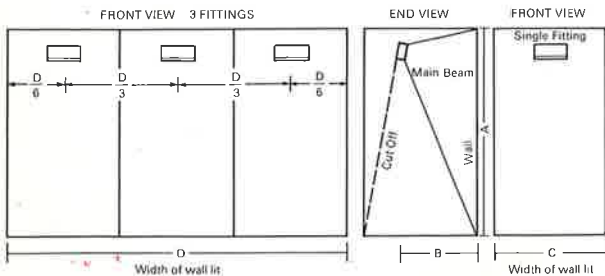


300W



500W

Photometric Data



		Single Fitting		3 Fittings	
A	B	C	LV.*	D	LV.*
7ft 2.13m	2ft 0.61m	7ft 2.13m	280 <i>530</i>	21ft 6.40m	360 <i>680</i>
8ft 2.44m	2.25ft 0.69m	8ft 2.44m	200 <i>380</i>	24ft 7.32m	260 <i>490</i>
9ft 2.74m	2.5ft 0.76m	9ft 2.74m	150 <i>280</i>	27ft 8.23m	190 <i>360</i>

* Lux Values shown are average but achieve a visually even intensity. 500w values in italics

Hi-Spot spotlight fitting using 6V 20W TH lamp

This fitting uses a 6V 20W tungsten-halogen lamp mains operated by an integral transformer. It is finished in matt black with chrome trim. Fitted with natural anodized aluminium reflector.

Fittings

Catalogue no.	Cap	Watts	Volts	Fixing	Finish
DTLV 20-2	Single ended bi-pin	20	220/230	Trakline	Black
DTLV 20-1	Single ended bi-pin	20	240/250	Trakline	Black
DSL 20-2	Single ended bi-pin	20	220/230	Ceiling	Black
DSL 20-1	Single ended bi-pin	20	240/250	Ceiling	Black
DMLV 20	Single ended bi-pin	20	240/250	Multi-Trak	Black

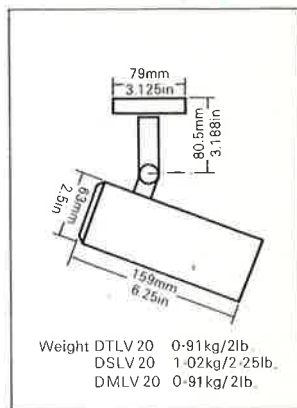
†Lamp packed with fitting
220V versions to special order only

Optional attachments

Catalogue no.	Description
DVA 20R	Red reflector
DVA 20A	Amber reflector
DVA 20G	Green reflector
DVA 20B	Blue reflector

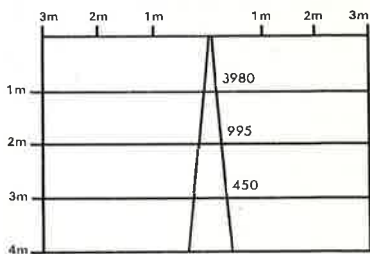
Lamps

Watts	Description	Voltage
20	Tungsten-halogen display 8 lamp Catalogue no. M34	



Photometric Data

Average illumination value in lux



DTLV 20 using 6V 20W tungsten-halogen lamp with natural anodized aluminium reflector

Hi-Spot spotlight fitting using 12V 50W TH lamp

This fitting uses a 12V 50W Tungsten Halogen lamp which is mains operated by an integral transformer.

Fittings

Cat. No.	Lamp Cap	Watts	Voltages	Fixing	Finish
DTLV 50W†	Single ended Bi-Pin	50	240/250	Trackline*	White
DTLV 50B†	Single ended Bi-Pin	50	240/250	Trackline*	Black
DSLVL 50W†	Single ended Bi-Pin	50	240/250	Ceiling	White
DSLVL 50B†	Single ended Bi-Pin	50	240/250	Ceiling	Black
DMLVL 50W	Single ended Bi-Pin	50	240/250	Multitrak	White
DMLVL 50B	Single ended Bi-Pin	50	240/250	Multitrak	Black

*These fittings can only be installed on aluminium Trackline (TKN).
†Lamp packed with fitting.
220v versions to special order only.

Optional attachments

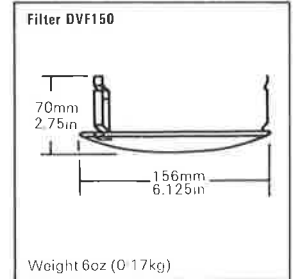
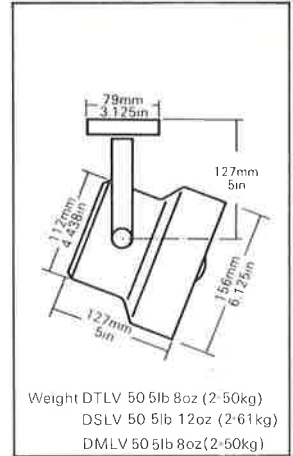
Cat. No.	Description
DVF150R	Red glass filters*
DVF150A	Amber glass filters*
DVF150G	Green glass filters*
DVF150B	Blue glass filters*

*Complete with clips. Packed 2 per carton

Lamp

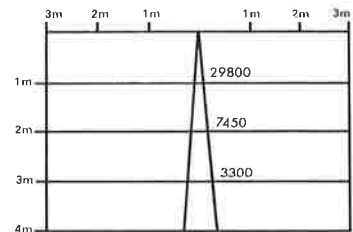
Watts	Description	Voltage
50	Tungsten Halogen Display Lamp	12

Catalogue number M32



Photometric Data

(Average illumination value in lux)



DTLV50 using 12v 50w Tungsten Halogen lamp

Hi-Spot spotlight fitting using 12V 100W TH lamp

This fitting uses a 12V 100W tungsten-halogen lamp mains operated by an integral transformer. Finished in gloss white or matt black with chrome trim.

Fittings

Catalogue no.	Cap	Watts	Volts	Fixing	Finish
DTLV 100W†	Single ended bi-pin	100	240/250	Trakline	White
DTLV 100B†	Single ended bi-pin	100	240/250	Trakline	Black
DSLVL 100W†	Single ended bi-pin	100	240/250	Ceiling	White
DSLVL 100B†	Single ended bi-pin	100	240/250	Ceiling	Black
DMLVL 100W	Single ended Bi-Pin	100	240/250	Multitrak	White
DMLVL 100B	Single ended Bi-Pin	100	240/250	Multitrak	Black

†Lamp packed with fitting
220V versions to special order only

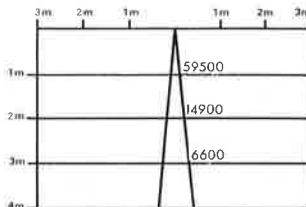
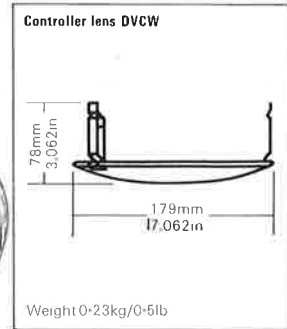
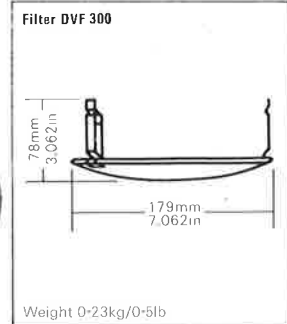
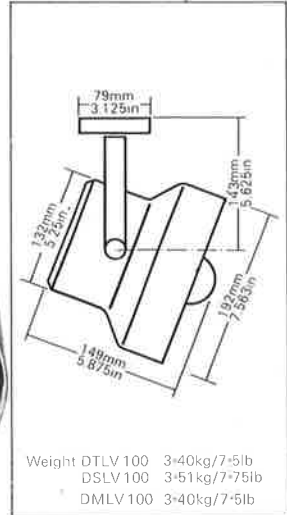
Optional attachments

Catalogue no.	Description
DVF 300R	Red glass filters*
DVF 300A	Amber glass filters*
DVF 300G	Green glass filters*
DVF 300B	Blue glass filters*
DVCW	Controller lens, wide angle*

*Complete with clips, packed 2 per carton

Lamp

Watts	Description	Voltage
100	Tungsten-halogen display lamp Catalogue no. M28	12



Photometric Data
Average illumination value in Lux.

Hi-Spot profile spotlight fitting using 12V 50W TH lamp

Permits the 'shaping' of a spot to frame a rectangular area with little or no spill outside the required illuminated area. To achieve this, four small knobs on the front of the fitting adjust the shape of the gate. A 12V 50W Tungsten Halogen lamp is incorporated together with an integral transformer. Finished black with a chrome trim.

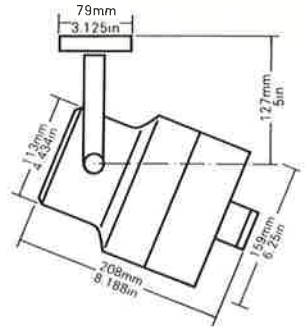
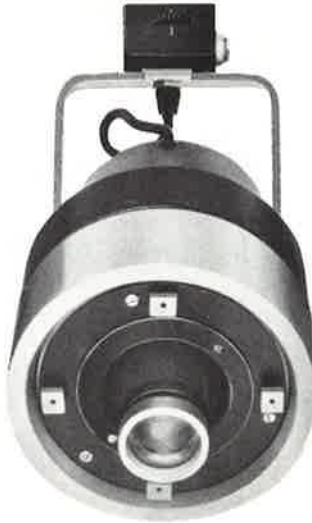
Fittings

Cat. No.	Lamp Cap	Watts	Volts	Fixing	Finish
DTPRO 50†	Single ended Bi-Pin	50	240/250	Trakline*	Black
DSPRO 50†	Single ended Bi-Pin	50	240/250	Ceiling	Black
DMPRO 50	Single ended Bi-Pin	50	240/250	Multitrak	Black

*These fittings can only be installed on aluminum Trakline (TKN)
 †Lamp packed with fitting
 220v versions to special order only.

Lamp

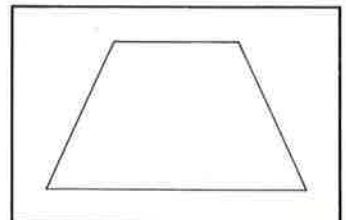
Watts	Description	Voltage
20	Tungsten Halogen Display Lamp Catalogue number M32	12



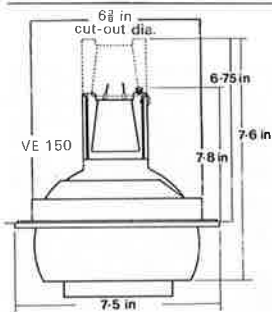
Weight DTPRO 50 6lb (2.72kg)
 DSPRO 50 6lb 4oz (2.83kg)
 DMPRO 50 6lb (2.72kg)

The light intensity of this fitting varies according to the distance of the object from the fitting and on the spot profile size. However, approximate readings at 2 metres (6ft 6in) are:—
 0.5 metre (2ft) sq spot – 1100 Lux
 1 metre (3ft 3in) sq spot – 780 Lux
 1.5 metre (5ft) sq spot – 680 Lux
 It is emphasized that these readings are average readings of the surface illumination of the spot.

Photometric Data



Mains Voltage Spotlights



150W 1/8 SPOT
and VEL 150



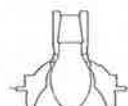
150W 1/8 SPOT
or FLOOD



100W 1/8 SPOT



150W GLS
and VA 150



80W KOLORLUX
and VA 150



125W KOLORLUX
and VA 150



150W PAR 38 SPOT



100W GLS
and VA 100

VE 150 adjustable eyeball spotlight

Semi recessed eyeball spotlight fitting fully adjustable in all directions providing emphasis lighting from an inconspicuous source. An adjustable lampholder support permits the use of a wide range of lamps whilst still maintaining the correct light centre.

Supplied complete with Porcelain E.S. lampholder wired with glass braided flying leads. For use with lamps as shown in line drawings above. If Kolorlux lamps are used, control gear must be remotely mounted.

Three hole fixing is provided to the ceiling ring which is concealed by polished anodised aluminium trim when in position. Body is stove enamelled black or white. Black painted clip-on louvre Catalogue no. VEL 150

	Catalogue no.	Colour	Weight kg	lb oz
Eye ball fitting	VE 150/B	Black	0.45	1.0
	VE 150/W	White		
Louvre attachment	VEL 150		.05	.2

A similar fitting to accept a 12V 50W M32 tungsten-halogen lamp is also available. These fittings require a remotely mounted transformer TRF 2338F. For details see following page.

Fitting Catalogue no.	Colour	Weight kg	lb	Cut-out in (dia.)
VE LV50/B	Black	0.45	1	6.375
VE LV50/W	White	0.45	1	6.375

VG 100 adjustable spotlight holder 100W

An adjustable spotlight holder for use with 100W reflector spotlight or general service lamp with auxiliary reflector Catalogue no. VA 100. Giving a wide degree of adjustment. Finished matt black it is suitable for all or base mountings and fits unobtrusively into any display. Supplied wired complete with BC lampholder.

VG 150 adjustable spotlight holder 150W

A matching unit to the VG 100 for use with 150W reflector spotlight or general service lamp with auxiliary reflector Catalogue no. VA 150. A cool running fitting ideal for use with COOL-RAY Par 38 lamp (indoors) supplied wired complete with ES lampholder.

Cat. no.	Cap	Lamp watts	Length mm	in	Diameter mm	in	Weight (ex. lamp) kg	oz
VG 100	BC	100	82	3.25	57	2.25	0.22	8
VG 150	ES	150	82	3.25	57	2.25	0.22	8
VGTK 100*	BC	100	82	3.25	57	2.25	0.22	8
VGTK 150*	ES	150	82	3.25	57	2.25	0.22	8

*For mounting on Trakline

Accessories

Auxiliary reflectors

Cat. no.	Cap	Lamp watts	Length mm	in	Diameter mm	in	Weight (ex. lamp) kg	oz
VA 100	ES	100	63	2.5	108	4.25	0.028	1
VA 150	ES	150	95	3.75	127	5.0	0.056	2



British Pat.
1,199,890

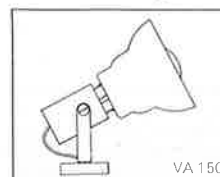
VE 150



VE LV 50/W



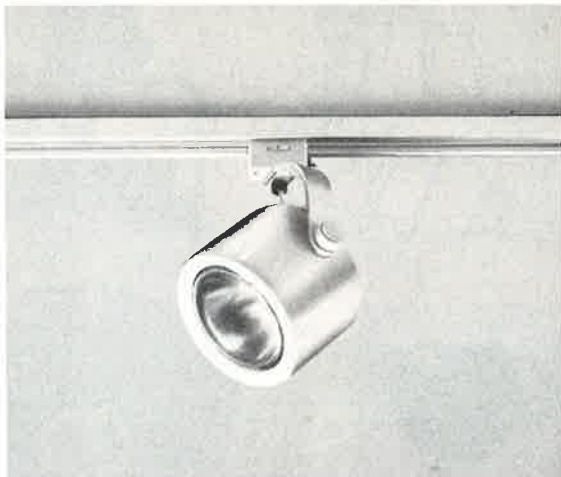
VG 150



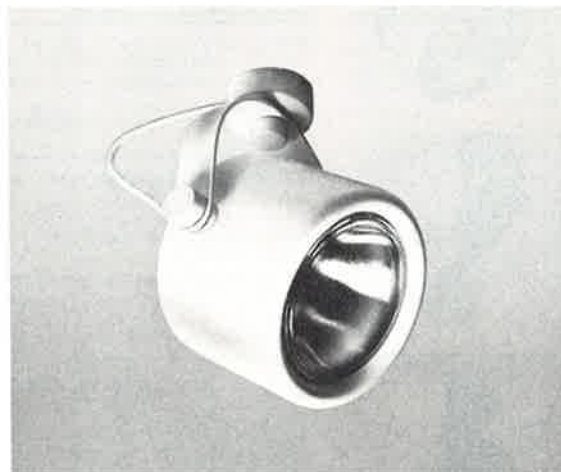
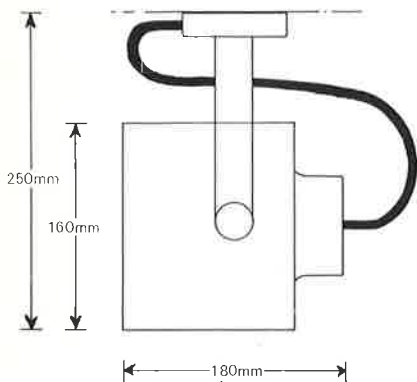
VA 150

Par 38 Show-off fitting

In a similar style to the award-winning Show-off fitting, this new addition will accept the whole range of PAR 38 lamps that will 'show-off' areas and items of special interest in the home. Designed for wall, ceiling and track mounting, available in white or orange gloss stove enamel.



PTP 150W



PSP 150W

RANGE

Catalogue no.	Description	
PSP 150W	White	Wall/Ceiling mounting
PSP 150Y	Yellow	Wall/Ceiling mounting
PTP 150W	White	Track mounting
PTP 150Y	Yellow	Track mounting

Low voltage spotlights



DAS 1050

This fitting consists of a neat lampholder housing mounted on a 102mm/4in pillar providing complete universal adjustment. The housing is locked into position by a simple clamping screw. A 12V 50W

internally silvered, parabolic shaped lamp, with ES cap, is used which gives a narrow beam of light of high intensity. The small size of the fitting enables it to be concealed easily, either within a display or behind features in a window or room.

Catalogue no.	Diameter (lamp dia.)		Overall length (inc. lamp)		Pillar height		Weight (ex lamp)	
	mm	in	mm	in	mm	in	kg	lb
DAS 1050	64	2.5	114	4.5	102	4	0.17	0.375

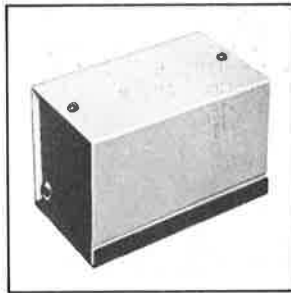


DCS 1050

In order to provide a compact and adjustable light source, the unit has a cylindrical mask, with the result that both the lamp and lampholder are completely enclosed. A 12V 50W internally silvered, parabolic shaped

lamp, with ES cap, is used giving a narrow beam of light of high intensity. As with other items in this series of display fittings, the clamp and pillar assembly provide universal adjustment.

Catalogue no.	Diameter		Overall length		Pillar height		Weight (ex lamp)	
	mm	in	mm	in	mm	in	kg	lb
DCS 1050	76	3	146	5.75	102	4	0.3	0.5



Transformer

It is necessary with all low voltage fittings to use a specially designed transformer to provide the correct working voltage to the lamp. Details

of this transformer are given below together with the catalogue number of the fitting for which it has been designed.

Catalogue no.	Primary tapping	Sec. out-put	Length		Width		Height		Weight		For use with
			mm	in	mm	in	mm	in	kg	lb	
TRF 2338F	240V	12V	108	4.25	76	3	92	3.63	1.9	4.25	1 DAS 1050 1 DB 1050 1 DCS 1050 1 DS 1050L 1 VELV50W 1 VELV50B

Fixing holes for TRF 2338F: four holes 5mm/0.1875in diameter on 70 x 57mm/2.75 x 2.25in centres.

Each of the low voltage fittings illustrated in this catalogue is wired complete with 1829mm/6ft of high temperature cable. Any variation in this length will result in loss of efficiency and premature lamp failure.

Display lighting



Scatterlight diffuser
VSA 100, VSC 100, VSR 100



Pin-hole VP 100



O' lighter VO 200



Crystal glass dish
VX 100, VX 200



Large satin opal
glass dish VY 100, VY 200



Louvre
VL 100, VL 200, VL 2100



Small opal glass dish
VZ 100, VZ 200, VZ 2100

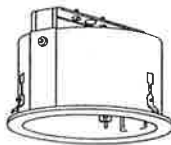
In these fittings a series of seven attachments can be applied to a range of surface-mounted or recessed fittings and, in some instances, a cylindrical fitting. Many of these fittings will accept Kolorlux as well as tungsten filament lamps. The gear may be mounted remote from the fittings. A gear box is available.



Surface or
semi-recessed cylinder
VC 100A, VC 100B, 100W
VC 100AES, VC 100BES Kolorlux



Recessed fittings
VR 100 100W
VR 100ES 80W Kolorlux
VR 200 200W
125W Kolorlux



Ceiling ring assembly
VCM 100



Surface mounted fittings
VS 2060B, VS2060A 2 x 60W
VS 2100B, VS 2100A 2 x 100W
VS 2100BES, VS 2100AES 2 x 80W Kolorlux

Basic surface-mounted recessed and semi-recessed fittings

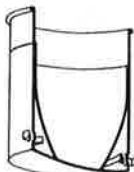


Recessed
fitting
VU 150
150W

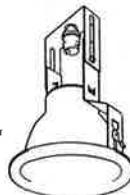


Surface or
semi-recessed
cylinder
VCB 100 100W
VCB 150 150W

A range of recessed and semi-recessed fittings, to take internal reflector spotlight, GLS lamp with auxiliary reflector, or Kolorlux lamp. The recessed version (VU 150) can also be fitted with a wall washer attachment.



Wall washer
attachment
VW 150



Junior
recessed fitting
VJ 200 100, 150 and 200W
VJ 200ES 80/125W Kolorlux

The Junior recessed fitting gives maximum reflector illumination from a clear lamp. Adjustable lampholder mounting permits the use of 100, 150 and 200W lamp from the one fitting.

Surface-mounted fittings



Plastic louvre

Small satin etched opal glass bowl

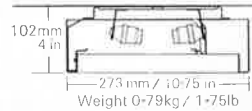
Clear crystal glass dish

Basic Units VS 2060

Surface mounting spun aluminium ceiling fittings in natural anodized and black painted finishes. Cable

entry and fixing holes suitable for 51 mm/2in Besa box centres are provided. All fittings are supplied complete with BC lampholders.

Catalogue no.	Watts	Finish
VS 2060A	2 x 60	Natural anodized
VS 2060B	2 x 60	Black painted



Attachments are fitted to the basic unit by three bayonet slots.

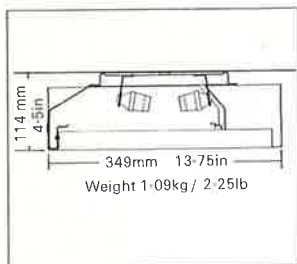
Dimensions of complete fitting

	Catalogue no.	Height		Diameter		Weight (ex lamps)	
		mm	in	mm	in	kg	lb
Plastic louvre	VSL 2060A	120	4.75	273	10.75	0.91	2
	VSL 2060B	120	4.75	273	10.75	0.91	2
Clear crystal glass dish	VSX 2060A	139	5.5	273	10.75	2.49	5.5
	VSX 2060B	139	5.5	273	10.75	2.49	5.5
Small satin etched opal glass bowl	VSZ 2060A	120	4.75	273	10.75	1.47	3.25
	VSZ 2060B	120	4.75	273	10.75	1.47	3.25

Attachments

	Catalogue no.	Watts
Plastic louvre	VL 200	2 x 60
Clear crystal glass dish	VX 200	2 x 60
Small satin etched opal glass bowl	VZ 200	2 x 60

Surface-mounted fittings



Basic Units VS 2100 and VS 2100ES
2 x 100W and 2 x 80W Kolorlux surface mounting spun aluminium ceiling fittings, in natural anodized

and black painted finishes. Cable entry and fixing holes suitable for 51 mm/2 in Besa box centres. All fittings are supplied complete with lampholder.

Basic Unit

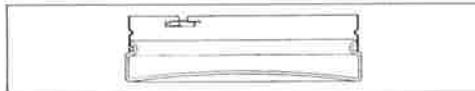
Catalogue no.	Watts.	Finish
VS 2100A	2 x 100	Natural anodized
VS 2100B	2 x 100	Black painted
VS 2100AES	2 x 80 Kolorlux	Natural anodized
VS 2100BES	2 x 80 Kolorlux	Black painted

Attachments are fitted to the basic unit via three bayonet slots.

Kolorlux lamps can be used on a.c. circuits only, and each lamp must be controlled by a ballast circuit.



Plastic louvre



Small satin etched opal glass bowl

Dimensions of complete fitting

	Catalogue no.	Cap	Height		Diameter		Weight (ex lamps)	
			mm	in	mm	in	kg	lb
Plastic louvre	VSL 2100A	BC	133	5.25	349	13.75	1.13	2.5
	VSL 2100B	BC	133	5.25	349	13.75	1.13	2.5
Small satin etched opal glass bowl	VSZ 2100A	BC	139	5.5	349	13.75	1.7	3.75
	VSZ 2100B	BC	139	5.5	349	13.75	1.7	3.75
	VSZ 2100AES	ES	139	5.5	349	13.75	1.7	3.75
	VSZ 2100BES	ES	139	5.5	349	13.75	1.7	3.75

Attachments

	Catalogue no.	Watts
Plastic louvre f	VL 2100	2 x 100
Small satin etched opal glass bowl	VZ 2100	2 x 100/2 x 80 Kolorlux

†Not available for use with Kolorlux lamps.

Cylinder range



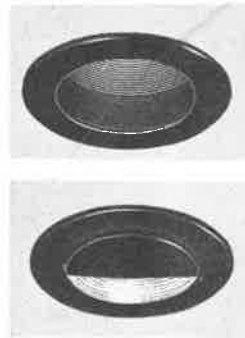
VCB 100 and VCB 150



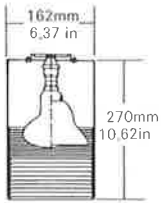
Semi-recessed



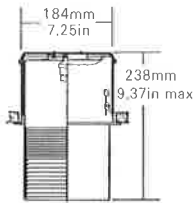
Suspended using AME M6113/18 suspension



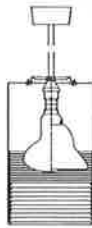
Top VU,150
Bottom VU,150 with VW,150



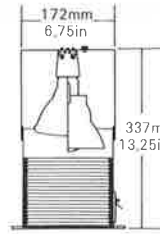
VCB 100 and VCB 150
Ceiling mounted



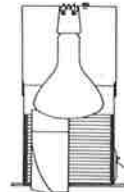
VCR 100 and VCR 150
Semi-recessed



VCB 100 and VCB 150
Suspended



VU 150



VW 150

VCB 100 and VCB 150

A cylindrical unit with low brightness baffles brushed silver finish. For use with 100W internally silvered lamp or 100W GSL lamp with clip-on auxiliary reflector (Catalogue no. VA 100). The VCB 150 is for use with 150W internally silvered lamp, PAR38 sealed beam or 150W GSL lamp with auxiliary reflector VA 150. This fitting will also accept the 80W and 125W Kolorlux lamp with auxiliary reflector VA 150.

Three mountings are available.

Semi-recessed

Basic unit (Catalogue no. VCR 100 and VCR 150) enables projection from 32mm/1.25in to 140mm/5.5in below ceiling level. Adjustable support brackets are provided for quick fixing and are attached from inside the fitting, out of sight. Anodized aluminium finish with polished rim.

Suspended

By using suspension rod (Catalogue no. AME M6113/18) basic unit can be suspended 18in/457mm from ceiling on white rod and ceiling plate. Basic unit and suspension rod ordered separately.

VU 150 recessed baffle fitting

For use with 150W internally silvered lamp or 150W GSL lamp with clip-on auxiliary reflector (Catalogue no. VA 150) and for 80 or 125W Kolorlux lamps. Suitable also for use with the PAR38 Cool-ray lamp. Black painted finish with low brightness baffles. Adjustable brackets enabling quick fixing to all types of suspended ceiling. These are out of sight and eliminate the need for any other fixings. Fitted ES lampholder.

VW 150 wall washer

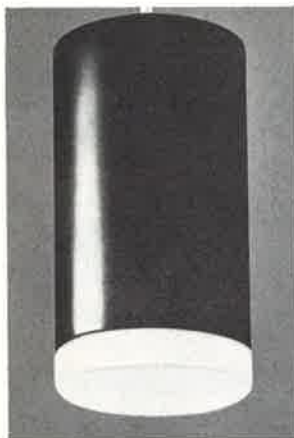
A specular reflector directs spilled light from the lamp to the upper part of the wall. The complete assembly fits into the base of the fitting by spring clips and can be rotated.

Dimensions

Catalogue no.	Cap	Height		Diameter		Weight (ex lamp)		Ceiling hole size	
		mm	in	mm	in	kg	lb	mm	in
VCB 100	BC	270	10.62	162	6.37	0.68	1.5	—	—
VCB 150	ES	270	10.62	162	6.37	0.68	1.5	—	—
VCR 100	BC	238 (max.)	9.37 (max.)	203	8	1.25	2.75	184	7.25
VCR 150	ES	136 (min.)	5.37 (min.)	—	—	—	—	—	—
VU 150	ES	337	13.25	210	8.25	1.81	4	171	6.75

Basic unit and ceiling ring assembly ordered separately.

Cylinder range attachments



Suspended



Satin etched opal bowl

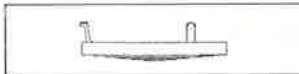
VC 100

A range of units in spun aluminium is available. natural anodized or painted black, to accommodate a 100W internally silvered lamp, 100W GLS lamp with VA 100 auxiliary reflector or 80W Kolorlux lamp using VA 150 auxiliary reflector. Three separate mountings can be achieved from the one basic unit:

(a) Suspended, by using



Semi-recessed



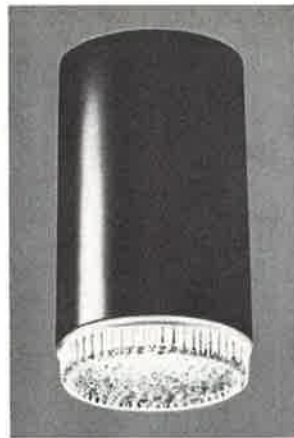
Plastic louvre

AME M6113/18 suspension rod.

(b) Semi-recessed, when used in conjunction with ceiling ring assembly (Catalogue no. VCM 100).

(c) Surface mounted, by fixing direct to the ceiling.

Three attachments are available, a satin etched opal bowl, a plastic louvre and a clear crystal glass dish.



Surface mounted



Clear crystal glass dish

Basic unit

Catalogue no.	Watts	Finish
VC 100A	100	Natural anodized
VC 100B	100	Black painted
VC 100AES	80 Kolorlux	Natural anodized*
VC 100BES	80 Kolorlux	Black painted*

Suspension

By using white suspension rod and ceiling plate (Catalogue no. AME M6113/18) the basic unit can be suspended 18in/457mm from ceiling.

Basic unit and suspension rod ordered separately.

Dimensions of complete fitting

	Catalogue no.	Cap	Finish	Height		Diameter		Weight (ex lamp)	
				mm	in	mm	in	kg	lb
Satin etched opal bowl	VCZ 100A	BC	Anodized	301	11-87	162	6-37	1-1	2-5
	VCZ 100B	BC	Black	301	11-87	162	6-37	1-1	2-5
	VCZ 100AES*	ES	Anodized	301	11-87	162	6-37	1-1	2-5
	VCZ 100BES*	ES	Black	301	11-87	162	6-37	1-1	2-5
Plastic louvre†	VCL 100A	BC	Anodized	289	11-37	162	6-37	0-8	1-75
	VCL 100B	BC	Black	289	11-37	162	6-37	0-8	1-75
Clear crystal glass dish	VCX 100A	BC	Anodized	311	12-25	162	6-37	2-1	4-75
	VCX 100B	BC	Black	311	12-25	162	6-37	2-1	4-75
	VCX 100AES*	ES	Anodized	311	12-25	162	6-37	2-1	4-75
	VCX 100BES*	ES	Black	311	12-25	162	6-37	2-1	4-75

†Not available for use with Kolorlux lamp. *Available to customer's orders only.

Recessed fittings



Plastic louvre



Clear crystal glass dish



Large satin etched opal glass bowl



Small satin etched opal glass bowl



Scatterlight disc
Discs of polyester resin in amber, clear and red with internal crazing and polished edges.



Pin-hole attachment
Combination of two reflectors concentrates light from upper reflector through lower reflector past a very small aperture (only 70mm/2.75in) to produce a wide angle beam.
Spun aluminium construction, finished eggshell white to match ceiling.



Basic units VR 100 and VR 100ES

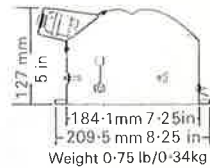
1 x 100W and 1 x 80W Kolorlux recessed units in spun anodized aluminium with a polished rim. Adjustable support brackets are provided enabling quick fixing. These are attached from within the fitting, out of sight.

Basic unit

Catalogue no.	Watts
VR 100	100
VR 100ES	80 Kolorlux

Six attachments are available, each fitted with its own support ring, and are fitted to the basic unit via three bayonet slots.

ceiling hole size: 184.1mm 7.25in



Dimensions of complete fitting

	Catalogue no.	Watts	Height		Diameter		Weight (ex lamp)		
			mm	in	mm	in	kg	lb	
Plastic louvre	VRL 100	100	146	5.75	209	8.25	0.45	1	
Pin-hole attachment	VRP 100	100	127	5	209	8.25	0.79	1.75	
Scatterlight disc, amber	VRSA 100	60	165	6.5	209	8.25	1.47	3.25	
	clear	VRSC 100	60	165	6.5	209	8.25	1.47	3.25
	red	VRSR 100	60	165	6.5	209	8.25	1.47	3.25
Clear crystal glass dish	VRX 100	100	159	6.25	209	8.25	1.7	3.75	
	VRX 100ES	80 Kolorlux*	159	6.25	209	8.25	1.7	3.75	
Large satin etched opal glass bowl	VRY 100	100	175	6.87	209	8.25	1.02	2.25	
	VRY 100ES	80 Kolorlux*	175	6.87	209	8.25	1.02	2.25	
Small satin etched opal glass bowl	VRZ 100	100	149	5.87	209	8.25	0.68	1.5	
	VRZ 100ES	80 Kolorlux*	149	5.87	209	8.25	0.68	1.5	

Attachments

	Catalogue no.	
Plastic louvre	VL 100	
Pin-hole attachment	VP 100	
Scatterlight disc, amber	VSA 100	
	clear	VSC 100
	red	VSR 100
Clear crystal glass dish	VX 100	
Large satin etched opal glass bowl	VY 100	
Small satin etched opal glass bowl	VZ 100	

*Available to customer's orders only.

Recessed fittings

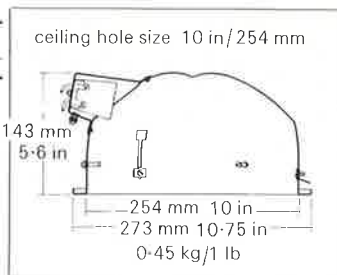
Basic Unit VR 200

1 x 200W and 1 x 125W Kolorlux recessed units of spun anodized aluminium construction with a polished rim. Adjustable support brackets are provided enabling quick fixing to all types of suspended ceiling to be achieved. These are attached from within the fitting, are out of sight and eliminate the need for any other fixings.

Basic Unit

Catalogue no.	Cap	Watts	
VR 200	ES	200/125	Kolorlux

Five attachments are available, each fitted with its own support ring, and are fitted to the basic unit via three bayonet slots.



Plastic louvre



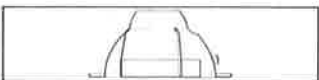
Small satin etched opal glass bowl



Clear crystal glass dish



'O' lighter attachment



Large satin etched opal glass bowl



'O' lighter attachment

An annular slot with a centre disc results in a glare free light of narrow distribution. Spun aluminium construction, finished eggshell white to match ceiling. An auxiliary attachment for use with VR 200.

Dimensions of complete fitting

	Catalogue no.	Watts	Height		Diameter		Weight (ex lamp)	
			mm	in	mm	in	kg	lb
Plastic louvre †	VRL 200	200	162	6.37	273	10.75	0.57	1.25
'O' lighter attachment †	VRO 200	200	143	5.6	273	10.75	1.02	2.25
Clear crystal glass dish	VRX 200	200/125 Kolorlux	178	7	273	10.75	2.15	4.75
Large satin etched opal glass bowl	VRY 200	200/125 Kolorlux	190	7.5	273	10.75	1.43	3.15
Small satin etched opal glass bowl	VRZ 200	200/125 Kolorlux	162	6.4	273	10.75	1.13	2.5

Attachments

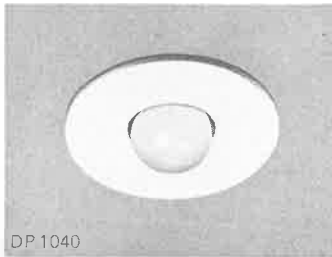
	Catalogue no.
Plastic louvre †	VL 200
'O' lighter attachment †	VO 200
Clear crystal glass dish	VX 200
Large satin etched opal glass bowl	VY 200
Small satin etched opal glass bowl	VZ 200

†Not available for use with Kolorlux lamp.

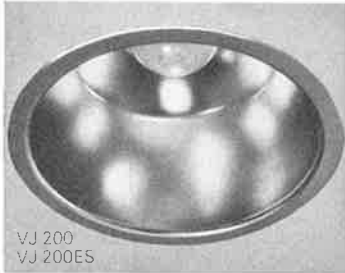
Recessed fittings



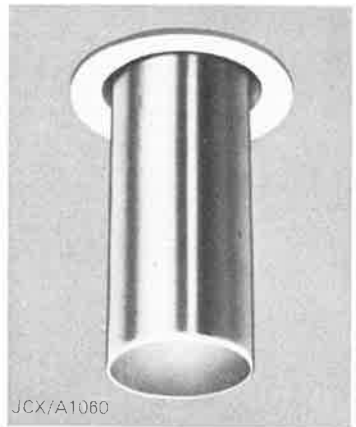
DNM 1040



DP 1040



VJ 200
VJ 200ES



JCX/A1060

DNM 1040

This very attractive and compact unit is designed for mounting on the ceiling surface. It provides sparkle wherever needed and is also useful as a police light. Finished in white enamel, the fitting is fixed by a brass BC batten lampholder to a block which should be recessed into the ceiling. For Besa box fitting use adaptor plate (Catalogue no. DNM 4600).

DP 1040

These compact units can be recessed into the ceiling surface, to provide an inconspicuous source extremely useful for police lights and can also be used to provide sparkle wherever needed.

The range uses a 40W round bulb and can be provided with fixings for a Besa box recessed behind the ceiling or fixed to the ceiling surface by means of an additional bracket AC.

JCX/A1060 small recessed unit

Attachments comprise a metal cylinder (copper anodized finish) and a glass supporting cylinder enabling all Chelsea range wrought glassware and Scatterlight diffusers to be fitted. Both the above attachments convert this unit to a semi-recessed one.

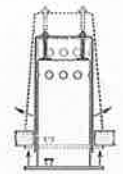
Supplied complete with bracket for clamping direct to ceiling board. Adjustment is provided for variations in ceiling thickness.

VJ 200 Junior recessed vertical lamp fitting for 100/200W lamp

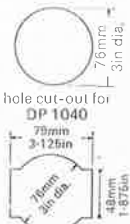
Spun anodized aluminium unit for GLS lamp giving maximum reflector illumination from clear lamp. Adjustable lampholder mounting permits the use of 100, 150 and 200W BC lamps from the same fitting. Adjustable support brackets are provided for quick fixing.

VJ 200ES Junior recessed vertical lamp fitting for 80/125W Kolorlux.*

A matching unit to the VJ 200 fitted with ES lampholder for use with Kolorlux lamp.

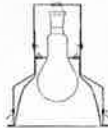


JCX 1060
Showing method
of fixing to
ceiling board



hole cut-out for
DP 1040

hole cut-out for
DP 1040 using AC



Dimensions of complete fitting

Catalogue no.	Lamp watts	Cap	Mounting	Diameter		Height		Hole size		Weight (ex. lamp)	
				mm	in	mm	in	mm	in	kg	lb
DNM 1040	40 mushroom	BC	—	63	2.5	102	4	—	—	0.22	0.5
DP 1040	40 round bulb	BC	Above ceiling	117	4.62	76	3†	—	—	0.22	0.5
JCX 1060	60	BC	—	108	4.25	165	6.5	82	3.25	0.22	0.5
JCX/A1060	60	BC	—	108	4.25	292	11.5	82	3.25	0.28	0.625
VJ 200	100-200	BC	—	203	8	304	12	187	7.37	0.45	1
VJ 200ES*	80/125W Kolorlux	ES	—	203	8	304	12	187	7.37	0.45	1

†70mm/2.75in projection behind surface. *Available to customer's orders only.

Tungsten halogen interior floodlight

The beam spread is 60° x 130° the former being normal to the axis of the lamp. When mounted horizontally the rear cut-off is near vertical. Maximum spacing of fittings should not exceed the height of mounting, and depths of 6ft can comfortably be catered for by one row of fittings. The distribution characteristics lend themselves ideally to shop window lighting. The sharp forward cut-off of the fitting may make supplementary fluorescent lighting necessary at the window back.

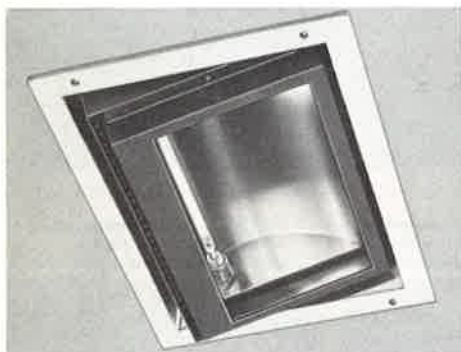
When installed to illuminate a 6ft cube an average illumination of 60 lumens per sq ft will be achieved.

At the same distance fittings on about 8ft centres provide an average illumination of 90 lumens per sq ft.

Description	Beam spread	Rated lamp life
750w	60° x 130°	2,000 hours

When the fitting is surface mounted a stirrup, enabling up to a 15° adjustment, is available – Cat. no. EUB.

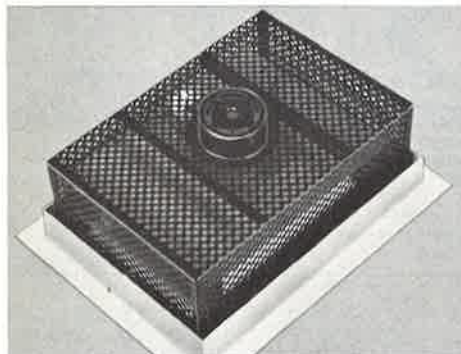
The EU.750 can also be recessed by means of a frame trim assembly – Cat. no. EUT – with provisions for a 15° adjustment. When recessing the fitting care should be taken to ensure that a void of 7.5in high, 24in long and 18in wide is left round the fitting.



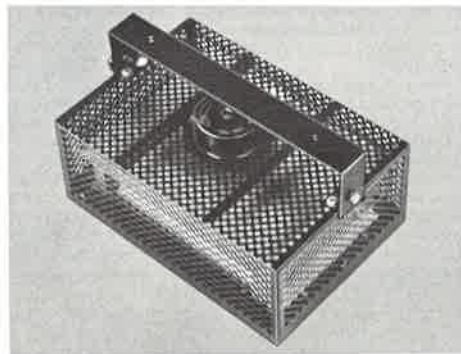
EU.750 fitted with EUT trim assembly, front view



EU.750 floodlight fitting



EU.750 fitted with EUT trim assembly, rear view



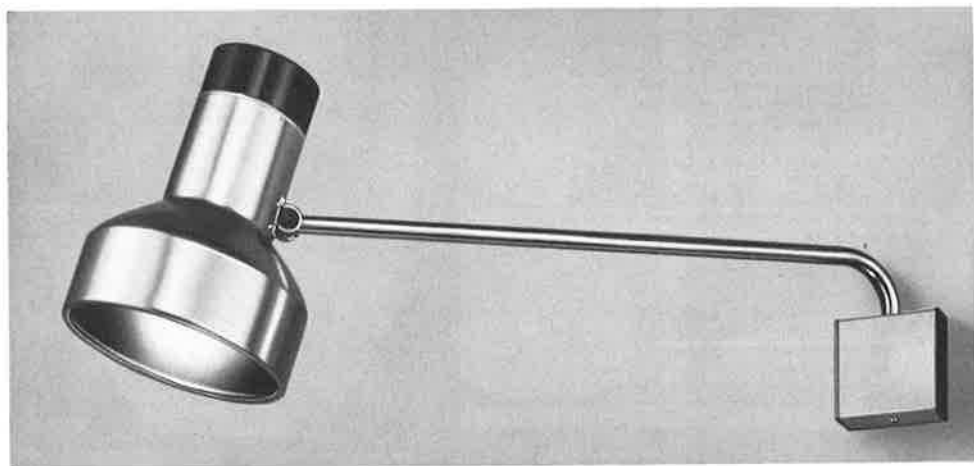
EU.750 fitted with EUB swivel bracket assembly

Prices and dimensions

Cat. no.	Lamp watts	Length		Height		Width		Weight (ex. lamp)	
		in	mm	in	mm	in	mm	lb	kg
EU.750	750	12.25	311	7.125	181	8.5	216	8	3.6
EUT trim assembly†		14.75	375	2.00	51	11.25	286		
EUB swivel bracket		12.5	318	2.5 above fitting 62mm					
TDH/750/240 lamp 750									

†Hole size: length 13.25in, width 9.5in.

Hospital low brightness fittings



OE_0_1060 adjustable wall fitting

OE 0 1060 adjustable wall fitting

Wall fitting for local lighting where function and appearance are important. The efficient design – about 300 lux 1,2m/4ft away using a 60W lamp – permits bed head lighting wall mounted between 1,5m/5ft and 1,8m/6ft from floor. Carefully controlled reflector brightness provides comfortable conditions for opposite and adjacent patients.

The reflector is of spun aluminium satin etched and anodized, supported by an anodized duraluminium rod mounted on a cast aluminium back plate stove enamelled BS_0_098.

Horizontal adjustment is obtained through an angle of approximately 160° and vertical through an angle of 20° either side. Wired complete with BC lampholder to accommodate one 60W lamp. Arranged for Besa mounting.

OE 1 0075 adjustable wall fitting

Matches OE 0 1060 but fitted with watch light with push switch control.

Made to order only.

OG 1150 low brightness glass fitting

Centre ward lighting fitting for mounting on 457mm/18in suspension rod (Catalogue no. AME M6113/18) or ceiling mounted using ceiling cap extension (Catalogue no. OHS). With cut-off angle of 40° from the horizontal, mounting heights are arranged so that cut-off occurs between a third and half-way up length of bed. Mounting height ratios down centre of ward should not exceed 1½:1. The diameter of the cylinder has been chosen to provide acceptable brightness characteristics for a diffusing fitting, and the acid etching of the glass overcomes the problem of lamp reflection on the inside of the glass cylinder, creating an area of high brightness. Arranged to accommodate 1 x 150W lamp.

OG 1165 low brightness glass fitting

A matching unit to the OG 1150 but fitted with watch light for 15W Pygmy lamp.

OG 1150



Dimensions of complete fitting

Catalogue no.	Diameter		Height		Weight (ex lamp)		Projection to centre of reflector	
	mm	in	mm	in	kg	lb	mm	in
OE 0 1060 OE 1 0075	161*	6.3°	216†	8.5†	0.8	1.75	470	19.5
OG 1150 OG 1165	241	9.5	352	13.87	1.4	3.25	—	—

*Reflector diameter. †Reflector height.

Opalite range

This compact range of fittings has been designed to comply with Department of Education standards for brightness limits and cut-off angles.

Care has been taken to create an efficiently balanced distribution of light between the upper and lower hemispheres to ensure that the overall efficiency of an installation will be high.

The polystyrene shade has been so designed that any specular reflections which could possibly cause irritation have been eliminated.

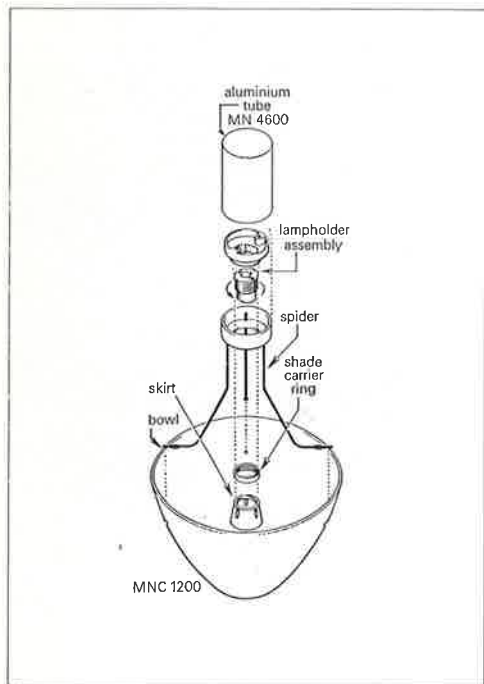
Either a 150W or 200W lamp can be accommodated in this shade which is mounted on to a metal gallery by a three-way spider.

Fittings are supplied complete with BC lampholder and are available for close ceiling mounting as well as cable suspension.

Cable suspension is by means of a black plastic ceiling plate and a 762mm/30in length of smooth black flex. A black aluminium cylinder (Catalogue no. MN 4600) is also available; this fits over the lamp gallery and provides a cover to the lamp cap and holder.



MNC 1200



MNS 1200

Dimensions of complete fitting

Catalogue no.	Type	Bowl diameter		Bowl depth		Height overall		Weight (ex lamp)	
		mm	in	mm	in	mm	in	kg	lb
MNC 1200	Close ceiling	305	12	178	7	280	11	0.45	1
MNS 1200	Cable suspension	305	12	178	7	762	30	0.57	1.25
MN 4600	Cylinder	73	2.87			95	3.75	0.06	0.125

Nova range

This versatile range of satin-etched Nova glassware has been specially designed to meet the demand for new and interesting shapes to cater for a wide variety of applications in modern interiors.

Flanged cap gallery

For suspending the glass just off the ceiling or on a 13mm/0.5in suspension rod (standard length 457mm/18in) the flanged cap gallery is available in 100W BC, 100W ES or 200W ES versions. The 100W BC version will accept two glasses, the ND 100 and the NF 100. The 100W ES versions, ND 100ES* and NF 100ES* will accept the 80W Kolorlux lamp. The 200W ES versions will accept two 200W size glasses, the ND 200ES and the NF 200ES, both suitable for GLS or 125W Kolorlux lamps.

Lever release gallery

For mounting directly on to walls or ceiling a lever release gallery will accept three Satin etched glasses in 100W Size NC100, NL100 and a Square glass NS100 and three glasses in the 200W size NC200, NL200 and NS200 respectively. Also included is a polished opal glass in the 100W and 200W lamp sizes MR1100 and MR2100.

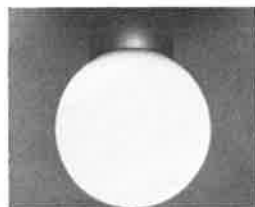
Screw neck spheres

Also available are screw neck white opal glass spheres with heat resistant white plastic galleries in 60W (MTC 1060), 100W (MTC 1100) and 150W (MTC 1150) sizes. The 100W version fitted with an ES lampholder (MTC 1100 ES*) will accept the 80W Kolorlux lamp and the 150W version with an ES lampholder (MTC 1150 ES*) will accept the 125W Kolorlux lamp. Suitable for ceiling or wall mounting.

Decorative trims

A decorative black painted metal trim (Catalogue no. NT 100 and NT 200) may be added to the NF and NL series of fittings. There is also available a metal trim for the NC and ND series, this being finished in a lacquered gun-metal colour (Catalogue no. NA 100 and NA 200). A further white opal glass is available in two sizes, 100W and 200W, using again the lever release gallery (Catalogue no. MR 1100 and MR 2100). Suitable for ceiling or wall mounting. Kolorlux lamps require to be operated through control gear: see Section 10

*Made to customer's special order.



MTC1100 Screw-necked globe on white plastic gallery



MR2100 Unit with concealed metal work



NC200



NCA200



NL200



NLT200



ND200



NDA200



NF200



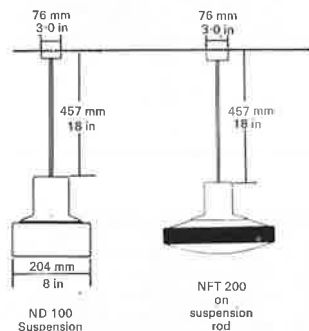
NFT200



NS 200



NS 100



Nova range



MR series



MTC series



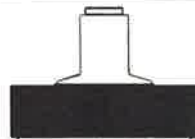
NC 100



NCA 200



ND 100



NDA 200



NF 100



NFT 200



NL 100



NLT 200

Dimensions of complete fitting

Catalogue no.	Watts	Cap	Overall diameter		Overall depth		Weight (ex lamp)		COMPONENTS	
			mm	in	mm	in	kg	lb	Glassware Catalogue no.	Gallery Catalogue no.
NC 100	100	BC	203	8	102	4	0.79	1.75	NCG 100	NCB 100
NC 200	2 x 100	BC	356	14	127	5	1.02	2.25	NCG 200	NCB 200
ND 100	100	BC	203	8	210	8.25	0.91	2	NCG 100	NFB 100
ND 100ES	80 Kolorlux	ES	203	8	210	8.25	0.91	2	NCG 100	NFB 100ES
ND 200ES	200/125 Kolorlux	ES	356	14	257	10.12	1.59	3.5	NCG 200	NFB 200ES
NF 100	100	BC	279	11	216	8.5	1.02	2.25	NFG 100	NFB 100
NF 100ES	80 Kolorlux	ES	279	11	216	8.5	1.02	2.25	NFG 100	NFB 100ES
NF 200ES	200/125 Kolorlux	ES	390	15.39	254	10	1.81	4	NFG 200	NFB 200ES
NL 100	100	BC	279	11	98	3.87	1.13	2.5	NFG 100	NCB 100
NL 200	2 x 100	BC	387	15.25	124	4.87	1.81	4	NFG 200	NLB 200
MR 1100	100	BC	244	9.62	120	4.75	1.02	2.25	MRG 1100	NCB 100
MR 2100	2 x 100	BC	343	13.5	140	5.5	1.81	4	MRG 2100	NCB 200
MTC 1060	60	BC	152	6	190	7.5	0.68	1.5	MTCG 1060	MTCB 1060
MTC 1100	100	BC	203	8	241	9.5	0.79	1.75	MTCG 1100	MTCB 1100
MTC 1100ES	80 Kolorlux	ES	203	8	241	9.5	0.79	1.75	MTCG 1100	MTCB 1100ES
MTC 1150	150	BC	254	10	292	11.5	0.91	2	MTCG 1150	MTCB 1100
MTC 1150ES	125 Kolorlux	ES	254	10	292	11.5	0.91	2	MTCG 1150	MTCB 1100ES
NS 100	100	BC	218 sq.	8.5 sq.	94	3.75	1.00	2.2	NSG 100	NCB 100
NS 200	2 x 100	BC	274 sq.	10.85 sq.	100	3.9	1.47	3.25	NSG 200	NCB 200

Suspension: ordered separately:
 AME M6113/18 Rod suspension
 18in/457mm. For other suspension
 lengths alter suffix accordingly, i.e.
 18 = 18in.

Trims: to be ordered separately.

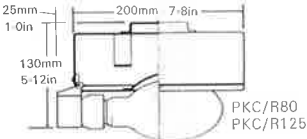
Catalogue no.	For use on	Overall diameter		Overall depth		Weight (ex lamp)	
		mm	in	mm	in	kg	lb
NA 100	NC 100, ND 100, ND 100ES	225	8.87	85	3.37	0.11	0.25
NA 200	NC 200, ND 200ES	381	15.0	105	4.12	0.45	1
NT 100	NF 100, NF 100ES, NL 100	282	11.12	48	1.87	0.11	0.25
NT 200	NF 200ES, NL 200	390	15.37	54	2.12	0.17	0.375

Kolorlux package deal

The basic rack consists of a sheet metal box, finished black, containing control gear for a 80W or 125W Kolorlux lamp. When ES holder is mounted vertically as shown an anodised aluminium reflector is fixed to the box by keyhole slots. No reflector is used if the lamp is mounted vertically.



Fixing is by slots on 51 mm/2in centres grouped round a centrally placed 19mm/0.75in dia hole.

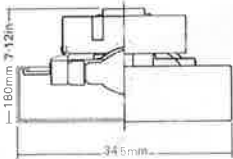


Dimensions of complete fitting

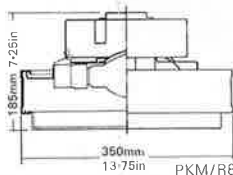
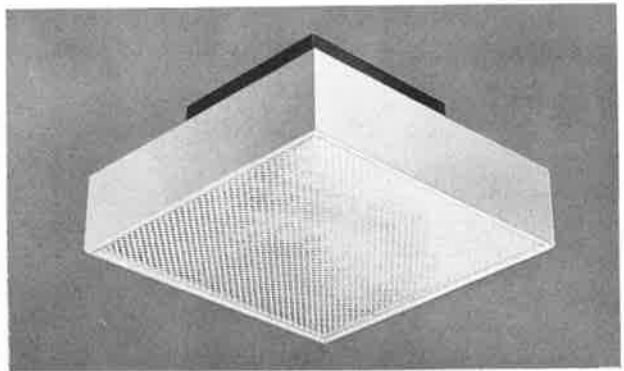
Rating	Catalogue no.		Spine pack (ex lamp) Catalogue no.		Width/Length		Height		Weight	
					mm	in	mm	in	kg	lb
80W	PKC/R80	PKC 18	PKR 80		200	7.87	130	5.12	3.17	7
125W	PKC/R125	PKC 18	PKR 125		200	7.87	130	5.12	3.17	7

Fixing - Besa box grouping 19mm/0.75in centre hole centres.

Diffusers with opal plastic or extruded metal sides and prismatic bases can be hooked on to a special reflector with the lamp in the horizontal position.



PKA/R80
PKA/R125



PKM/R80
PKM/R125



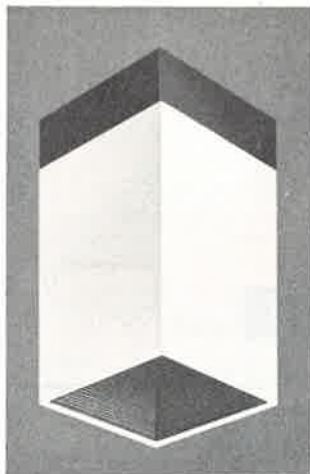
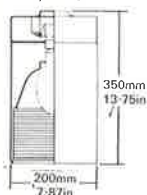
For ordering details see following page

Kolorlux package deal

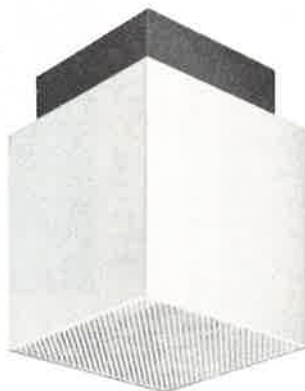
Kolorlux packs for display purposes

A white rectangular unit with black painted internal baffles and a polished anodized aluminium reflector and a similar unit with opal acrylic sides and prismatic base. Can be attached to the basic spine when the lamp is mounted vertically.

PKB/R80
PKB/R125



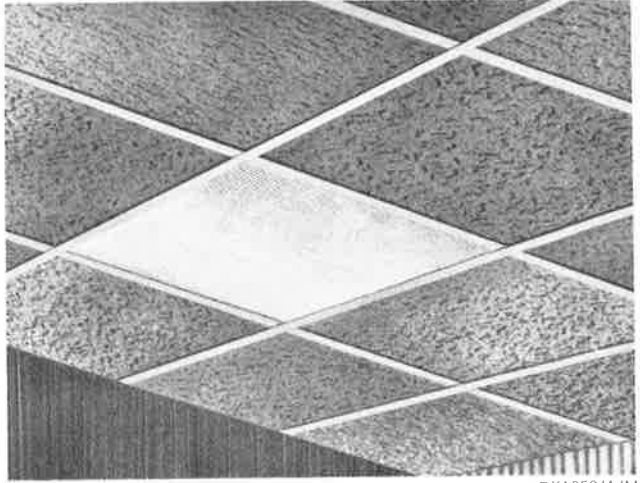
PKO/R80
PKO/R125



COMPLETE FITTING		COMPONENTS		Catalogue no.	Spine pack Catalogue no.	Width/Length		Height		Weight	
Rating	Catalogue no.	Diffuser	Catalogue no.			mm	in	mm	in	kg	lb
80W	PKO/R80	Opal acrylic sided prismatic base	PKO 18	PKR 80	250	9.87	325	12.25	4.08	9	
125W	PKO/R125	Opal acrylic sided prismatic base	PKO 18	PKR 125	250	9.87	325	12.25	4.08	9	
80W	PKB/R80	Baffle unit with reflector	PKB 18	PKR 80	200	7.87	350	13.75	4.98	11	
125W	PKB/R125	Baffle unit with reflector	PKB 18	PKR 125	200	7.87	350	13.75	4.98	11	
80W	PKA/R80	Opal acrylic sided prismatic base	PKA 18	PKR80	345	13.62	180	7.12	3.62	8	
125W	PKA/R125	Opal acrylic sided prismatic base	PKA 18	PKR125	345	13.62	180	7.12	3.62	8	
80W	PKM/R80	Metal sided prismatic base	PKM 18	PKR80	350	13.75	185	7.25	4.53	10	
125W	PKM/R125	Metal sided prismatic base	PKM 18	PKR125	350	13.75	185	7.25	4.53	10	

Fixing: Besa box grouping 19mm/0.75 in conduit hole centred.

LAMPS Either 80W or 125W Kolorlux lamp packed with relevant spine and charged separately.



DKA250/A/M

The Kolorlume range of fittings comprises a nominal 2ft x 2ft sheet steel housing designed to replace a standard ceiling tile in an exposed Tee grid ceiling system. The housing is stove enamelled with high reflectivity white gloss paint. After installing the lightweight housing by simply laying it into the ceiling grid, the gear box/lampholder bracket is attached from beneath the fitting by inserting the gear compartment through a slot in the side of the housing. Gear box/lampholder bracket assemblies are interchangeable for 125, 250 and 400W MBF Kolorlux lamps.

Light control is by a Mercurulume* optical system comprising a heat resistant prismatic glass refractor and injection moulded prismatic acrylic control lens. These, combined with the housing reflector, ensure excellent brightness control, coupled with uniform lens luminosity and perfect lamp obscuration with freedom from glare.

The elegant style of the Kolorlume module avoids a cluttered ceiling appearance and can eliminate up to 75% of the luminous ceiling area previously required, while providing full visual comfort.

Manufactured in accordance with U.K. Patent Application no. 12268/70 of Holophane Co. Inc. Since it occupies only 4ft² of void space it allows more room for other

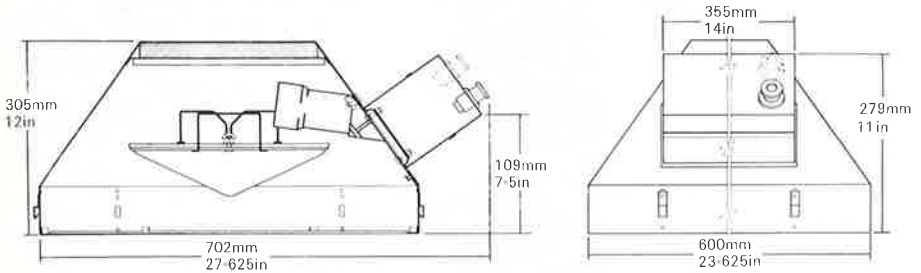
services, e.g. air conditioning, fire protection, etc. Also because of the high fitting LOR, up to 63% fewer fittings are required which means reduced installation costs and lower maintenance bills.

Flicker is occasionally noticeable on lower wattage HID lamps. This is eliminated by the rectified circuit used on 125W and 250W circuits as standard.

Kolorlume fittings can also be supplied with alternative optics comprising:
Texture cel $\frac{1}{2}$ in square mesh louvre finished matt white to provide an alternative light distribution with freedom from glare.

*Mercurulume is the trade mark of Holophane Co. Inc.

Kolorlume



The standard fittings illustrated may be modified to special order to incorporate either (a) Maintained lighting circuit and/or (b) Emergency lighting circuit (requires separate supply). Variations can also be supplied for (c) Surface mounting or (d) Regressing ceiling trim arrangements. In addition, fittings for (e) 400W MBIF Kolorarc (metal halide) and (f) 250W or 400W KolorSon (high pressure sodium) lamps can be made available. These modifications are subject to price and delivery variations which will be quoted on request.

- † Nomenclature
 DKAM attachment comprises:
 DKAMP—Prismatic lens
 DKAMR—Glass refractor
 DKAMW—Refractor cradle
 DKAL—Louvre attachment

Range

Kolorlux lamp	Lighting design lumens	Catalogue no.	Housing Catalogue no.	Gear Catalogue no.	Attachment † Catalogue no.	Approx. weight incl. lamp kg lb
125W MBF	5500	DKA125/A/M	DKAA	DKA125	DKAM	12.76 28.16
250W MBF	12000	DKA250/A/M	DKAA	DKA250	DKAM	12.5 27.56
400W MBF	21500	DKA400/A/M	DKAA	DKA400	DKAM	13.89 30.66
125W MBF	5500	DKA125/A/L	DKAA	DKA125	DKAL	12.09 26.66
250W MBF	12000	DKA250/A/L	DKAA	DKA250	DKAL	11.82 26.06
400W MBF	21500	DKA400/A/L	DKAA	DKA400	DKAL	13.23 29.16

Kolorformat has been introduced for use with the 250W Kolorarc lamp and is particularly suitable for lighting office, store and shop interiors. The overall performance of the package (i.e. Kolorarc lamp + Kolorformat fitting) enables the criteria of colour quality and light control with a suitable level and uniformity of illumination to be achieved, even with the relatively low ceiling heights of many modern buildings. To key in with the ceiling module the fitting can be used in either a 600 × 600mm or 2ft × 2ft opening.

Kolorformat has been designed with one standard housing which is supplied complete with control gear for operating a 250W MBIF Kolorarc lamp. This fitting can also be adapted to house control gear for the 250W MBF Kolorlux lamp or 125W Kolorlux lamp.

Attachments can be selected to suit either metric or imperial ceiling modules of 600 × 600mm or 2ft × 2ft respectively, but the standard housing (DKB1 250) is suitable for both. Diffuser panels or louvres are contained in a frame which is then attached by means of wishbone springs to the fitting.

The following attachments are available in an aluminium surround frame to both metric and imperial modular dimensions:

- prismatic (acrylic) controller
- Texture-cel aluminium louvre with a $\frac{1}{2}$ " cell and having a white finish
- Specular louvre (approx. $\frac{3}{4}$ " cell).

Additionally, this range of attachments is interchangeable with the Recessed Troffer Range for use with 600 × 600mm, 3 tube, 4 tube or U-tube fittings. The following types of attachment from this range are also suitable for use with Kolorformat: 600 × 600mm (2ft × 2ft) attachments complete with frame with either a prismatic (K19, acrylic) controller or polrized (acrylic) panels.

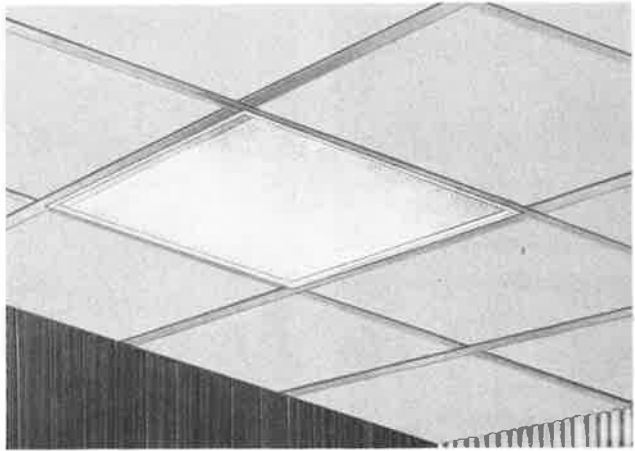
Suspension

A choice of three types of suspension is available:

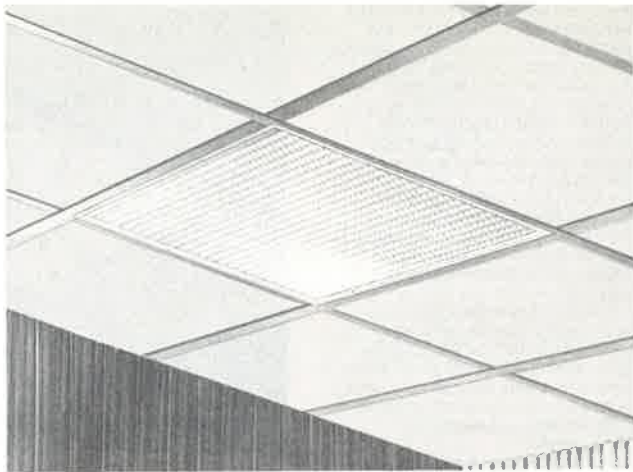
1. Using 20mm conduit.
2. Using rod hangers (KL 4601)
3. Using side suspension arms (FTR 1001).

Air-handling fittings

The fitting bodies and attachment frames (for the full range of diffusers) suitable for air-extraction can also be supplied. Full details are available on request.



DKB 250/A/M



DKB 250/A/C

RANGE

Catalogue no.	Description
	Housing c/w control gear
DKBI 250	Housing with control gear for 250W MBIF Kolorarc lamp
DKB 250	Housing with control gear for 250W MBF lamp
DKB 125	Housing with control gear for 125W MBF lamp
	Attachments with aluminium (new SM type) frame
DKBFP 66	Aluminium frame, K19 acrylic panel—600 × 600mm
DKBFP 22	Aluminium frame, K19 acrylic panel—2ft × 2ft
DKBFL 66	Aluminium frame, Texture-cel louvre (white 1/2" cell)—600 × 600mm
DKBFL 22	Aluminium frame, Texture-cel louvre (white 1/2" cell)—2ft × 2ft
DKBFS 66	Aluminium frame, specular plastic louvre—600 × 600mm
DKBFS 22	Aluminium frame, specular plastic louvre—2ft × 2ft
	Compatible attachments for Recessed Troffer Range
FTRP 62	K19, acrylic, prismatic panel c/w frame—600 × 600mm
FTRP 22	K19, acrylic, prismatic panel c/w frame—2ft × 2ft
FTRZ 62	Polirized panel (acrylic) c/w frame—600 × 600mm
FTRZ 22	Polirized panel (acrylic) c/w frame—2ft × 2ft

Modern glasses



XJ 2040



XK 2040



XC3 with three XUO glasses



XS5 with five XUO glasses



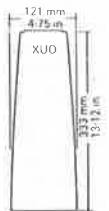
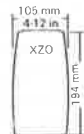
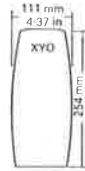
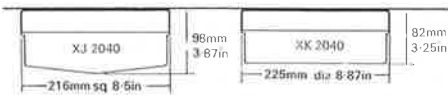
XL1 bracket with XDS glass



XL2 bracket with XZO glass



XW1 bracket with XDS glass



Glasses and Suspensions to be ordered separately

GLASSES SINGLE	Description	Catalogue no.	Watts	Weight	
				kg	lb
	Short crystal	XDS	100	0.57	1.25
	Short barrel	XZO	100	0.23	0.5
	Long barrel	XYO	150	0.34	0.75
	Long U shaped	XUO	150	0.45	1

CEILING FITTING (COMPLETE FITTING)					
	Square	XJ 2040	2 x 40	7	3-15
	Round	XK 2040	2 x 40	5	2-25

Modern adjustable suspensions



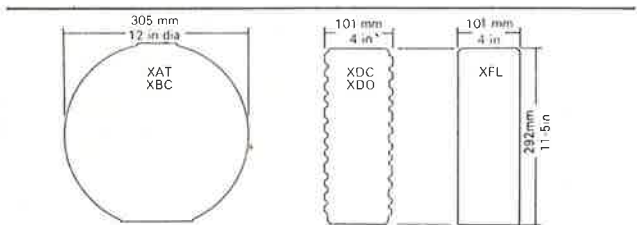
The Modern range, an exciting series of tungsten lighting fittings, offers an interesting variety of glass diffusers. Both satin opal and clear crystal pattern glass have been used to fine effect, with surface treatment and texture giving qualities valuable for use in present-day interiors.

The link through this great variety is the suspension design with its distinctive black cap. Pendants – one, three and five-way – are arranged for straight drops, radiating arms or spreader assemblies. Close ceiling mounting and wall brackets cover all applications. Nine glasses provide a wide scope of choice for the interior designer. Two superb spherical glasses may be used in combination with certain cylindrical inners to create a richness of texture and colour. Sparkle from the bubbled sphere shows the crystal pattern at its best; while the twilight blue adds that subtle touch of colour.

Two ceiling fittings of crystal pattern glass supported in black finished metal framing complement the Modern range which is capable of varied and extensive use.

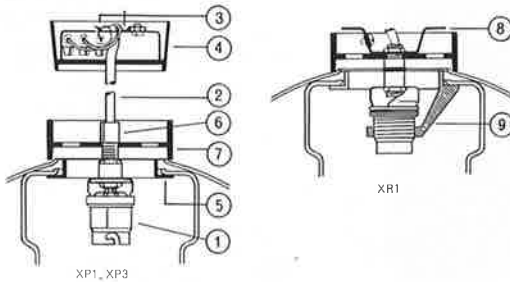


XBC with XDC using XR1

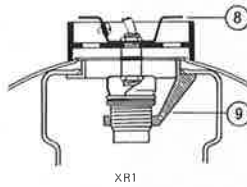


	Description	Catalogue no.	Watts (max.)	Weight of fitting (ex lamp)	
				kg	lb
GLASSES OUTER	Bubbled sphere	XBC	150	1.59	3.5
	Twilight sphere	XAT	150	1.59	3.5
	Long crystal	XDC	150	0.68	1.5
GLASSES INNER OR SINGLE	Dimpled opal	XDO	150	0.68	1.5
	Plain cylinder	XFL	150	0.34	0.75

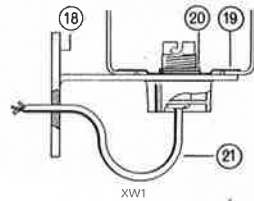
Glasses and suspensions to be ordered separately.



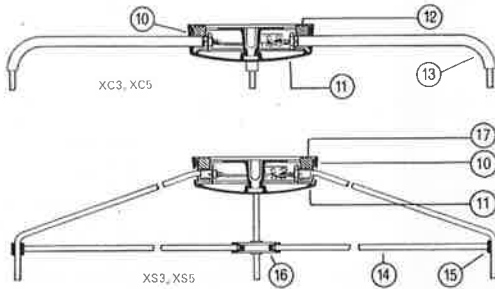
XP1, XP3



XR1

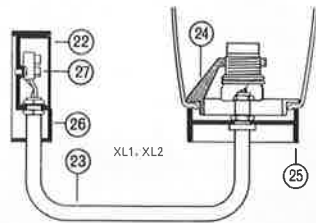


XW1



XC3, XC5

XS3, XS5



XL1, XL2

Straight drop pendants single and three-way XP1 and XP3

The basic lampholder and gallery assembly (1) can be used with every glass. It is suspended on a black cable (2) normally 762mm/2'5ft long for the single pendant, in which are incorporated two copper straining wires (3) securely anchored at lampholder and ceiling plate (4). The weight of the single suspension without glass is 0.3kg./0.75lb. The illustration shows a cross-section of a typical pendant set. The glass is mounted on to a metal spider (5) and can easily be removed for cleaning. Unscrewing the black knurled bush (6) permits the cast cap (7) to be raised and allows for the glass to be lifted by a sideways movement over the spider. For single pendants with cable drops longer than standard there is a 2438mm/8ft suspension in kit form. (Catalogue no. XP1 8 kit). This pendant is supplied with ceiling plate unassembled enabling the cable to be cut to the desired length. Following instructions provided, the ceiling plate is easily connected to the cable. Also available is a three-way multi-pendant XP3, the standard length of each cable being 1829mm/6ft. With the addition of the AC 4895 looping block, the three-way suspension can easily be converted into a looped, free ranged pendant.

Close ceiling unit XR1

Suitable for all types of glasses, bracket (8) permits mounting direct to ceiling or Besa box. To remove glass for cleaning, it is only necessary in this instance to unscrew the specially designed glass retaining ring (9).

Arm type pendants three and five-way XC3 and XC5

These multi-pendants have a central cast ceiling plate (10) with a white plastic cover (11) screwed on to the central boss. This cover retains the slider (12) in position on the back casting. The sliders which carry polished brass arms (13) are suitably attached to the back casting through keyhole slots. The cable length is 1829mm/6ft for each pendant terminating in the standard Modern range lampholder assembly.

Spreader type pendants three and five-way XS3 and XS5

This suspension has, in common with the XC series, a matching plate (10) and cover (11), but incorporates a three or five-way black anodized spreader (14). The cable suspensions pass through polished brass collars (15) and the black anodized rods (14) meet centrally at the polished cast brass ring (16). The spreader can be adjusted *in situ* to any forward position on a cable length of 1829mm/6ft. The cable is anchored into a slider (17) which is suitably attached to the ceiling plate casting through keyhole slots.

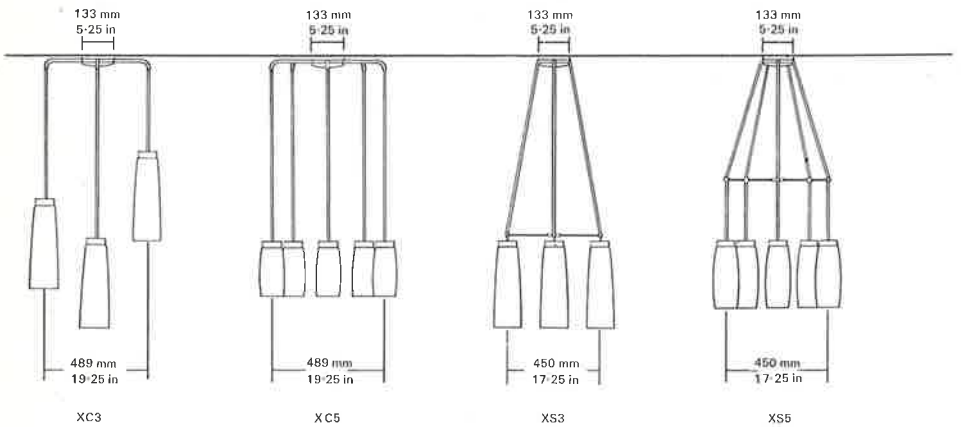
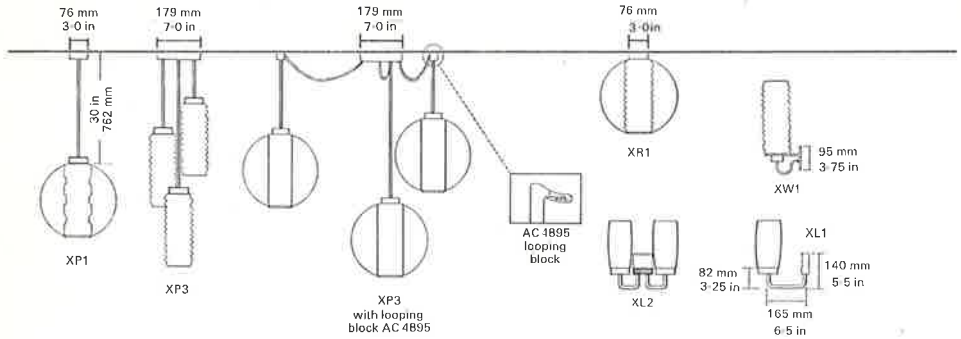
Wall bracket XW1

A wall mounting unit is available for use with any of the glasses up to 102mm/4in maximum diameter. The wall fixing plate casting (18) also carries a glass support cap (19) from a slender connecting arm. The glass is retained by a clamping piece (19) secured by the shade ring (20). The black cable connection (21) is looped over the lampholder and passes back through the wall plate. It is finished black in keeping with the Modern range.

Wall brackets XL1 and XL2

Single and twin wall brackets have been designed with a polished brass back plate cover (22) and slender tubular brass arms (23). Any of the glasses in the range can be used. The retaining ring (24) clamps the glass against the black cast cap (25). Removal of the brass cover (22) from the black finished casting (26) exposes the fixing points and terminal block (27) which makes mounting an easy and fast operation. The arms can be swivelled to any desired angle and can be used reversed (glass open downwards) if required. All fittings comply with BS.3820.

Modern suspensions



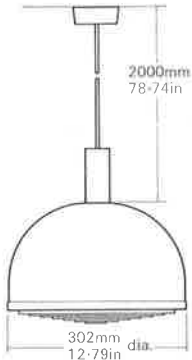
ORDERING DETAILS OF SUSPENSIONS:

Glasses indicated are typical examples only. Glasses and suspensions to be ordered separately.

	Description	Catalogue no.	Weight (ex lamps)	
			kg	lb
STRAIGHT DROP	Single	XP1	0-34	0-75
	Single	XP1 & KIT	0-34	0-75
	3-way	XP3	1-36	3
LOOPING BLOCK		AC 4895		
CLOSE CEILING	Unit	XR1		
ARM PENDANT	3-way	XC3	1-59	3-5
	5-way	XC5	2-49	5-5
SPREADER PENDANT	3-way	XS3	1-36	3
	5-way	XS5	1-81	4
WALL BRACKET	Single	XW1	0-34	0-75
	Single	XL1	0-57	1-25
	Twin	XL2	0-90	2

Swedish pendant fitting

A large dome-shaped aluminium spinning finished orange or white outside and white inside, with a white plastic concentric louvre. The lamp-cap housing and edge trim are silver finish, and the fitting is suspended by white flex from a white plastic ceiling plate.



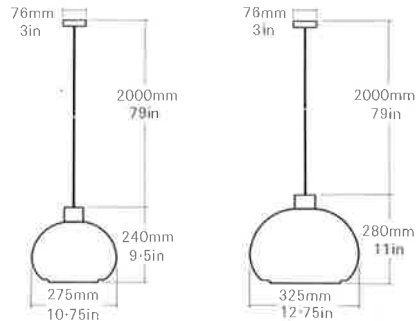
Catalogue no.	Rating (watts)	Description
XT 1100R	100	Orange spinning
XT 1100W	100	White spinning

Modern glass pendant

A new shape glass in two lamp sizes, 100W and 150W, and two colours, orange or white flashed opal. Suspended on single white cable from white ceiling plate; lampholder shrouded by contrasting silver finish trim. White plastic concentric louvre for fitting in base of glass available as optional extra.

XU GLASS

LARGE AND SMALL



Range

Catalogue no.	Rating (watts)	Description
XU 100R	100	Orange glass
XU 100W	100	White glass
XL 100	100	White louvre
XU 150R	150	Orange glass
XU 150W	150	White glass
XL 150	150	White louvre



Link-lite

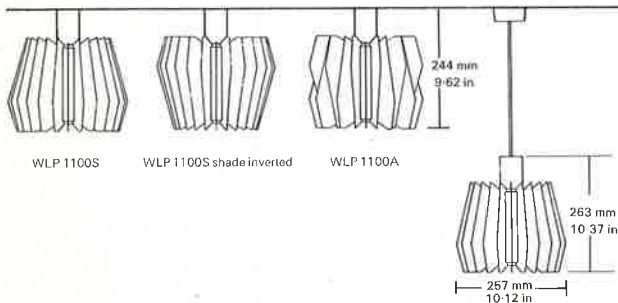
By the careful use of a variety of finned crystal styrene diffusers, this fitting achieves an effect that combines sparkling attractiveness with functional efficiency. As the light shines through the diffuser, the edges of the fins are strongly highlighted, forming a decorative pattern that completely surrounds the fitting. This pattern is varied by inverting some or all of the fins, so that many different regular or irregular patterns are achieved (see diagrams). For suspensions the range is fitted with a contrasting silver finish cylinder with a black cable assembly, and is available either as a single pendant, or, if required, as a close-ceiling mounted unit. Registered design nos. 925530 and 925531.



WLC 1060S close ceiling version



WLP 1100S single suspension

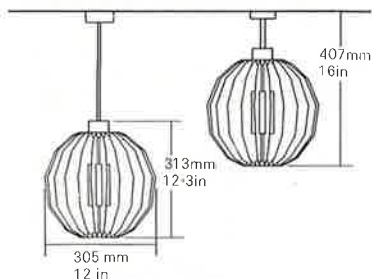


Single suspension	Fin arrangement	Catalogue no.	Lamp watts	Weight (ex lamp)	
				kg	lb
	Asymmetrical	WLP 1100A	100	1.6	3.625
	Symmetrical	WLP 1100S	100	1.6	3.625
Close ceiling					
	Asymmetrical	WLC 1060A	60	1.6	3.625
	Symmetrical	WLC 1060S	60	1.6	3.625

Packed complete with clear lamp in decorative box.

Link-lite 2 and 3

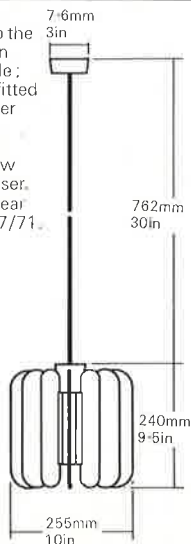
Link-lite 2 uses a 150W clear lamp to provide higher illumination without loss of form or sparkle. Available in two versions: a single pendant on a 762mm/30in length of black cable giving an overall drop of 1041mm/41in; and a close ceiling version with an overall drop of 406mm/16in. Fitted with a unique reversible lampholder support which permits the use of a 100W lamp while maintaining the same light centre as the 150W lamp. Registered design no. 939,946. Winner of ELFA award for good design.



Range Link-lite 2

Catalogue no.	Description	Lamp watts	Weight	
			kg	lb
WEP 1150	Single suspension	100/150	1.8	4
WEC 1150	Close ceiling including 150W clear single coiled lamp	100/150	1.8	4

Link-lite 3 is the latest addition to the popular Link-lite range. Packed in decorative carton with black cable; suspension fully assembled and fitted in contrasting brushed and lacquer aluminium cylinder. In a separate compartment are 14 fins and two mounting rings with easy to follow instructions for assembly of diffuser. Supplied complete with 100W clear lamp. Patent applied for no. 29027/71.

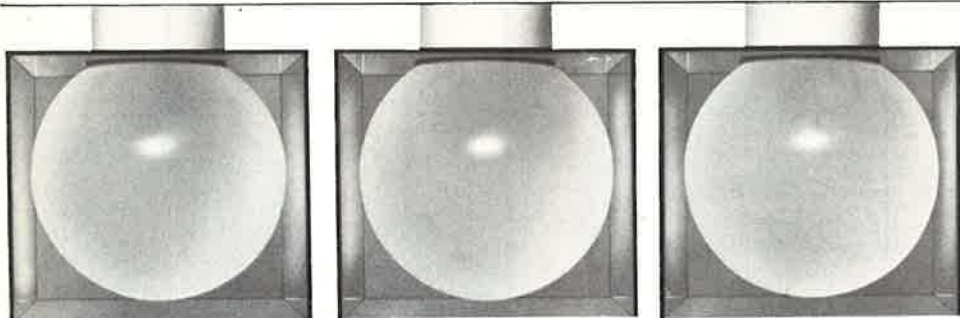


Link-lite 3

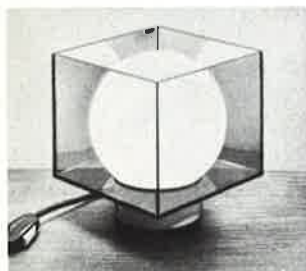
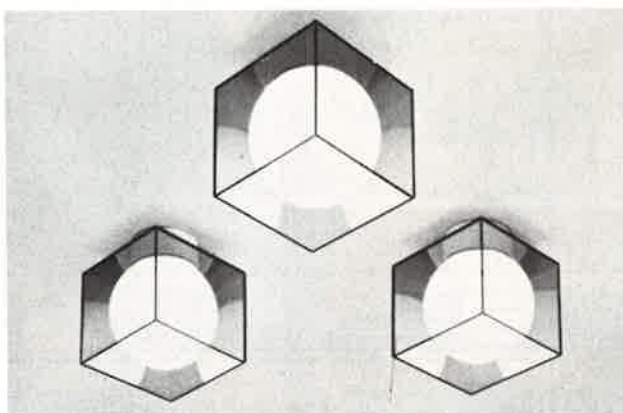
WQP 100	Single suspension unit	100	0.92	2.0625
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Cube light

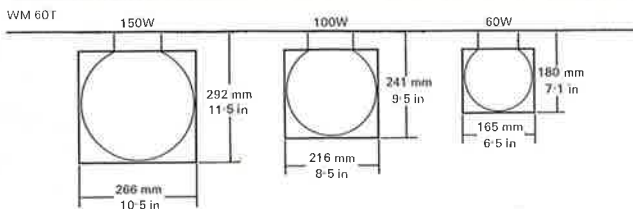
WM60A



An attractive range of decorative lighting fittings of classic simplicity. The Cube light range is built round a satin etched white opal screw neck sphere to which is added an Acrylic cube outer in twilight or amber colour. Direct mounting to wall or ceiling is by a white plastic heat resistant gallery and gasket. This colourful range of decorative units is available in 60W, 100W and 150W lamp sizes as single units but equally attractive arrangements can be created by having regular or abstract patterns of cubes scattered on the ceiling. These inexpensive units have a wide range of applications in the home, hotel or restaurant. Also available is a table stand adaptor complete with cable and switch which can simply be added to any size of cube when a table lamp is required.



WMT



Catalogue no.	Watts	Colour	Weight (ex lamp)	
			kg	lb
WM 60A	60	Amber	0.9	2
WM 60T	60	Twilight	0.9	2
WM 100A	100	Amber	1.59	3.5
WM 100T	100	Twilight	1.59	3.5
WM 150A	150	Amber	2.49	5.5
WM 150T	150	Twilight	2.49	5.5
WMT	Table stand adaptor		0.23	0.5

Scatter light

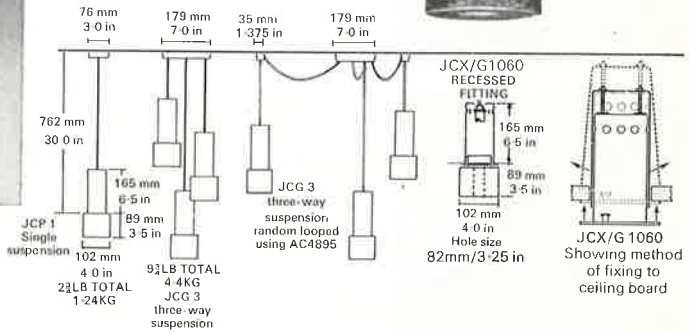
Triple pendant with SCR diffusers

2 Single Pendants with SCA diffusers

Well proportioned pieces of polyester resin crazed to give a sparkling effect are available in clear, amber or red. The lamp, which is concealed in a contrasting chrome cylinder, allows the light to be directed through the resin, dramatically highlighting its form. For suspension the range is available with a black cable assembly with contrasting silver finish cylinder either in a single or three-way pendant which can be converted into the looped free hanging type of suspension with the addition of AC 4895 cable suspension holder. Fitting and removal of the diffuser is achieved by raising the cylinder which permits the claws gripping the metal ring to spread and release the diffuser. A compact unit is also available for recessing into the ceiling surface to provide an inconspicuous source. A matching range of Scatter light discs are available in the form of attachments to the VR 100 fitting. The Chelsea 40W reflector lamp **MUST** be used in these fittings.



JCX/G1060 with SCA diffuser



	Catalogue no.	Description		
CYLINDER DIFFUSER	SCC	Clear		
	SCA	Amber		
	SCR	Red		
	JCP 1	Single pendant		
SUSPENSIONS	JCG 3	Three pendant group		
	JCX/G1060	Recessed fitting		
	AC 4895	Cable suspension holder		
LAMP	Watts	Description	Cap	Volts
	40	Chelsea	BC	240/250

Diffuser and suspensions to be ordered separately.

Chelsea handwrought glass

The sparkling handwrought glass is available in clear, ruby and amber in shapes that permit complete changes of lighting effect. Light is directed through the thick glass section from within a silver finish sleeve. Available for single or three-way suspension and a matching wall bracket as well as recessing into the ceiling.

GLASSES

JZ glass. Available in clear, amber and in cased ruby. In the latter glass the bubbles are in a clear glass overlay.

JY glass. The subtle colours are enhanced by the transmission of light through the glass itself, the lower end glowing with striking hues where the light is released.

In clear or amber,

JF glass. Available in clear or amber and

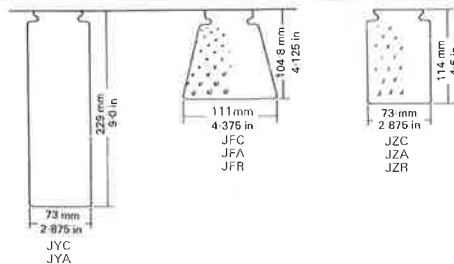
in cased ruby.



JCB1



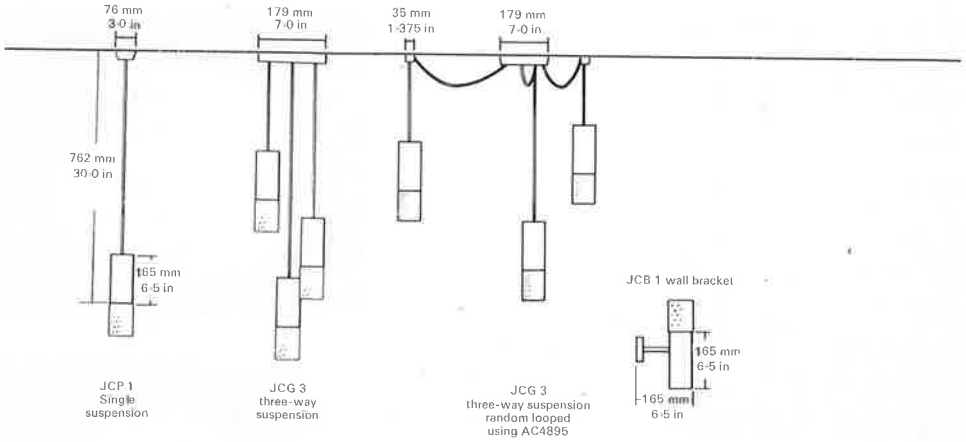
JCX/G1060



Glasses and suspensions to be ordered separately.

GLASSES	Catalogue no.	Colour	Weight (ex lamp)	
			kg	lb
	JZC	Clear	0.68	1.5
	JZA	Amber	0.68	1.5
	JZR	Ruby	0.68	1.5
	JYC	Clear	0.79	1.75
	JYA	Amber	0.79	1.75
	JFC	Clear	0.57	1.25
	JFA	Amber	0.57	1.25
	JFR	Ruby	0.57	1.25

Chelsea suspensions



SUSPENSIONS

Single suspension JCP 1. This includes a black ceiling plate and cable with silver finish outer cylinder. The cable (standard length 762mm/2.5ft) incorporates two straining wires securely anchored at lampholder and ceiling plate.

Three-way suspension JCG 3. Using a finely proportioned 179mm/7in diameter ceiling plate, this multiple pendant can be hung directly in a closely grouped arrangement or, with the addition of the AC 4895 cable suspension holder, can be converted into the looped free hanging type of suspension. Supplied with 1828mm/6ft of cable per drop.

Wall bracket JCB 1. Single wall bracket with black tubular arm and wall plate with silver finish cylinder.

Recessed Unit JCX/G1060

A compact unit for recessing into the ceiling surface to provide an inconspicuous source. Fitting with glass supporting cylinder enables all Chelsea range glassware to be used. Also available fitted with metal cylinder, copper anodized finish Catalogue no. A 1060

Fitting and removal

When the sleeve is raised the claws spread and the glass is placed in position. The sleeve is then lowered causing the claws to grip the neck of the glass positively and safely. The black flex, itself an integral part of the design, incorporates two straining wires securely anchored at lampholder and ceiling plate. The Chelsea 40W reflector lamp MUST be used in these fittings.

Lamp
240/250V only,
All fittings comply with BS.3820.

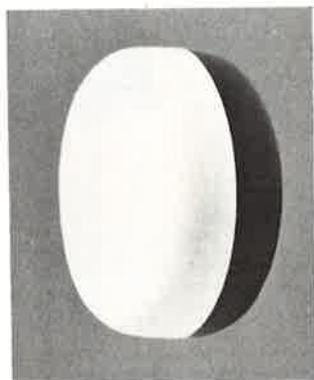
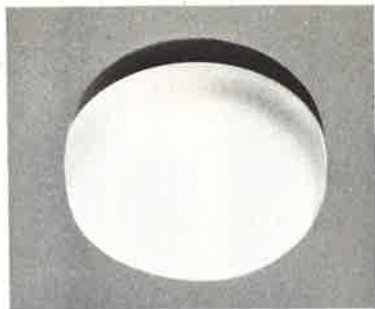
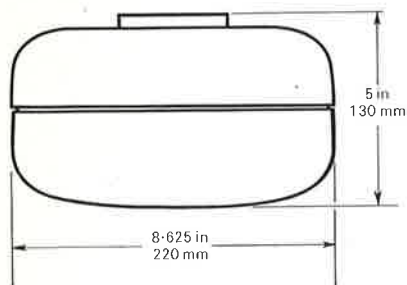
Weights are less glass and lamp, Glasses and suspension to be ordered separately.

SUSPENSIONS	Catalogue no.	Suspension	Weight	
			kg	lb
	JCP 1	Single pendant	0.23	0.5
	JCB 1	Wall bracket	0.23	0.5
	JCG 3	Three pendant group	1.36	3
	JCX/G1060	Recessed fitting	0.34	0.75
	AC 4895	Cable suspension holder	—	—

Oyster

An all purpose totally enclosed unit for wall or ceiling mounting. Manufactured in two tone polycarbonate. Grey body, white front diffuser – it is virtually unbreakable, corrosion resistant and vandal proof. A fitting that will be equally at home in the bathroom, kitchen or corridor as it would under a porch, in a garage or a walkway. By means of a "Snap Together" action the front diffuser is removed with the aid of a coin simplifying the relamping and cleaning operation. An internal metal reflector of robust construction, on to which is mounted a porcelain BC lamp holder, is fitted to the body of the fitting.

The porcelain lamp holder is pre-wired with high temperature flying leads for ease of installation. For outdoor use a silicon rubber gasket is available for fixing at rear of fitting at the point of contact with wall or ceiling and is applied by a simple push on action. Designed for use with 100W Pearl lamp it is packed in decorative carton complete with lamp.



Catalogue no.	Description	Lamp watts	Weight	
			kg	lb
O.0Y100	Wall/Ceiling Mounting Unit	100	0.68	1.5
O.0Y4600	Gasket			

Domestic Lighting Fittings

Introduction

A range of decorative fittings primarily intended for use in the home, but equally suitable for many commercial interiors. Glass, plastic and metal are used to produce a versatile collection to provide sparkle and gaiety. A range of conventional and circular fluorescent fittings is also included.

Index

- 4:2 Junior Star range
- 4:3 Junior Modern range
- 4:4 Droplette
- 4:5 Dolly
- 4:6-4:7 Modern adjustable pendants
- 4:8 Show-off range
- 4:9-4:10 } Spot - on
- 4:11 } Pin-up
- 4:12 Pan floor and table stands
- 4:13 Pumpkin
- 4:15 Occasional and ceramic base
- 4:16 Modern domestic cylinders and Novelle
- 4:17 Homelite
- 4:18 Viewpoint
- 4:19 Netaline and Au Pair
- 4:20-4:22 Circline

Junior Star range



WJB 1040

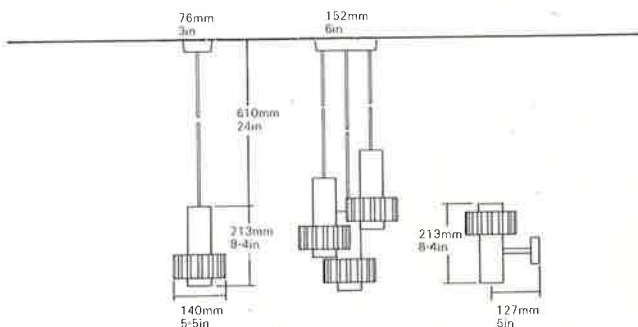


WJP 3040

WJP 1040

This range has been designed to create a sparkle in home lighting – at little cost to the customer. Junior Star produces its unique sparkle effect through a diffuser in the form of an externally ribbed tube made in clear acrylic. The light from a 40W candle lamp is transmitted by the diffuser over its fifteen ribs. Result: an edge-lit or sparkle effect that makes lighting a part of home decoration.

There are three different fittings in the Junior Star range, all inexpensively priced: single or triple way suspensions (WJP) and a wall bracket (WJB). The suspension fittings include black ceiling plates, flex and sateened and lacquered tubes. The wall bracket fittings are finished in matching shades. All three fittings come complete with a 40W candle lamp.



	Catalogue no.	Weight	
		kg	lb
Single suspension	WJP 1040	0.58	1.25
Triple suspension	WJP 3040	1.58	3.5
Wall bracket	WJB 1040	0.58	1.25
Spare diffuser	WJD 1040	0.22	0.5

Junior Modern range

The Junior Modern range offers a low priced means of enjoying the charm of crystal style glass and giving your decor that extra touch of luxury. Colours available include amber and clear in a crystal pattern and opal, orange and yellow flashed opal in the simple alternative style.

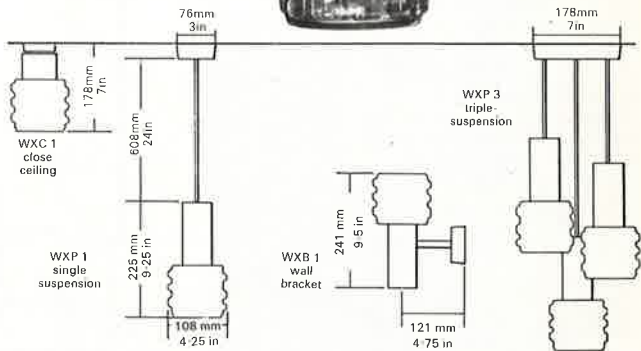
These fittings can be used singly or in clusters over a dining table or high on the ceiling in hallways, etc. A matching wall bracket is included in the range. Suspended on a black cable, the lampholder is shrouded in a chromium plated shield. Glass packed complete with 60W lamp.



WXB 1 with WXGY



WXC 1 with WXGA



Glasses and Suspensions to be ordered separately

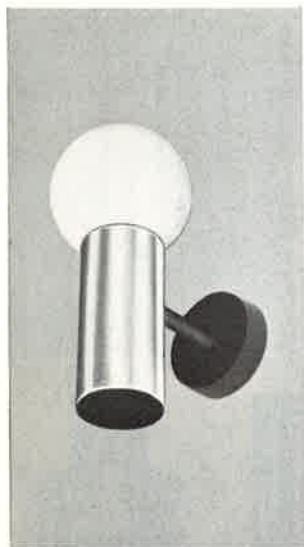
Glasses

Catalogue no.	Colour	Weight (ex. lamp) kg	Weight (ex. lamp) lb
WXGA	Amber	0.4	0.875
WXGC	Clear	0.4	0.875
WXGY	Yellow flashed opal	0.4	0.875
WXGO	White opal satin etched	0.4	0.875
WXGR	Orange flashed opal	0.4	0.875
WXYO	Ribbed white satin opal	0.44	0.937
WXYR	Ribbed orange opal	0.44	0.937
WXZO	Plain white satin opal	0.44	0.937
WXZR	Plain orange opal	0.44	0.937

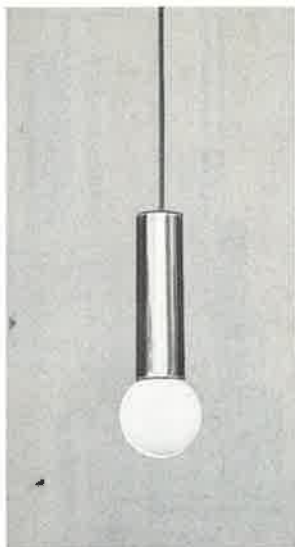
Suspensions

Catalogue no.	Weight kg	Weight lb
WXP 1 Single	0.45	1
WXP 3 Triple	1.2	2.5
WXB 1 Wall bracket	0.45	1
WXC 1 Close ceiling	0.22	0.5

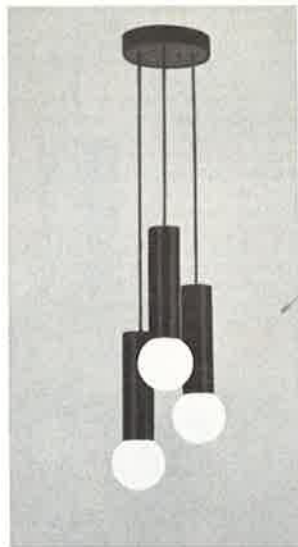
Droplette pendants



WDB 1CP



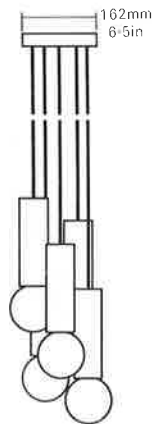
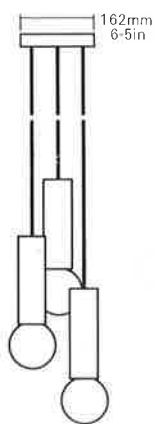
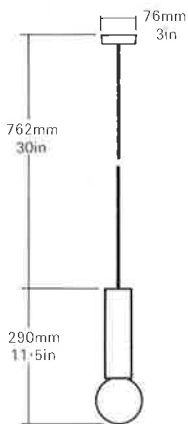
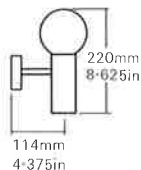
WDP 1CP



WDP 3B

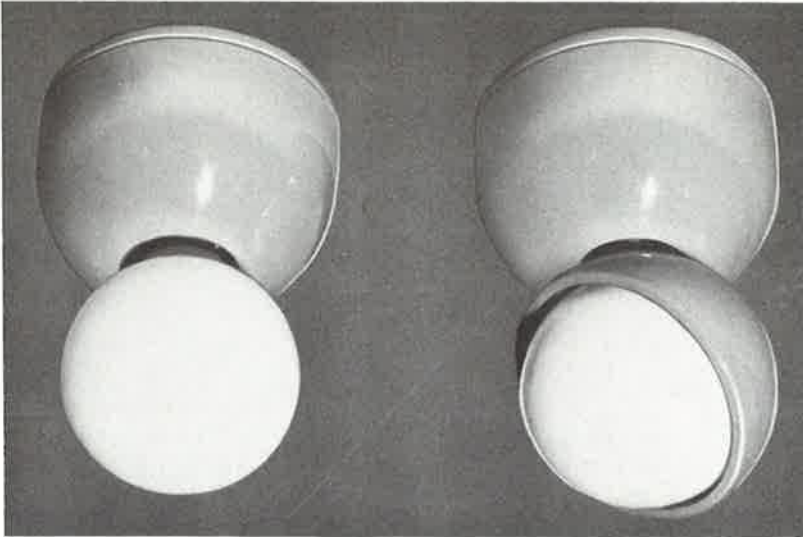
Droplette pendants

A comprehensive range of pendants with matching wall bracket for use with 60W and 40W Decor, 100mm round lamps. Suspended on black cable from black ceiling plate fitted with cylindrical trim to lampholder in silver finish or alternatively matt black. Available in a single, three and five way pendants with matching wall bracket.



Range

Catalogue no.	Description
WDP 1CP	Single pendant with silver finish tube
WDP 1B	Single pendant with black tube
WDP 3CP	Triple pendant with silver finish tube
WDP 3B	Triple pendant with black tube
WDP 5CP	Five way pendant with silver finish tube
WDP 5B	Five way pendant with black tube
WDB 1CP	Single wall bracket with silver finish tube
WDB 1B	Single wall bracket with black tube



DRB 40R

DRB 40R and DRC 40R

Dolly light

A versatile plastic moulded base for use with the 40W Decor 100mm round lamp.

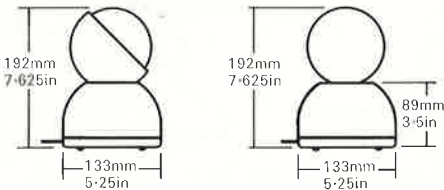
Moulded in polycarbonate and practically unbreakable. Available in two colours—red or white. A matching cowl partly to shroud lamp is available as an optional extra and is included in complete pack.

Suitable for wall or ceiling mounting as well as a table lamp. Wired switched lead also included in complete pack.

Packed in decorative carton.



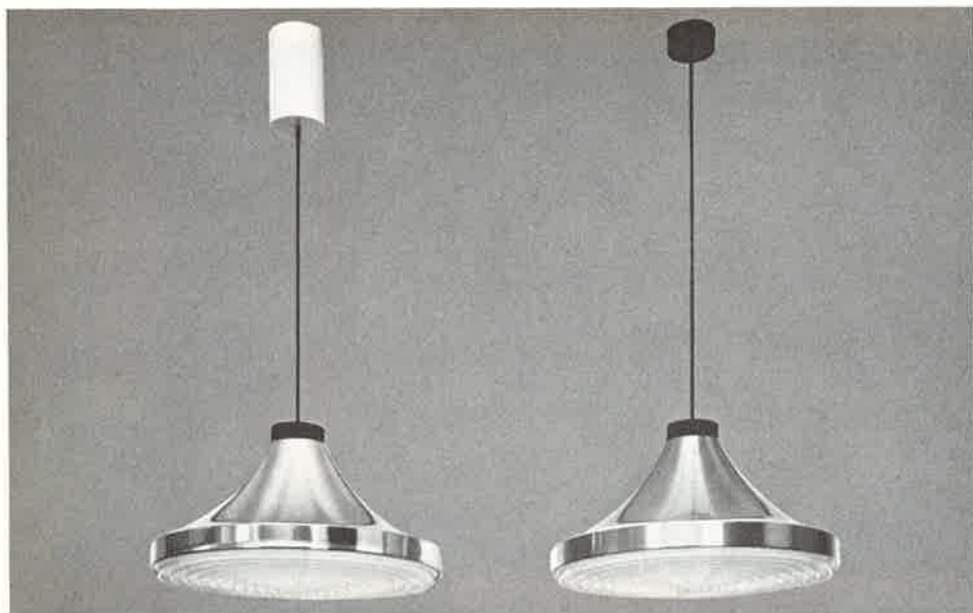
DRP 40W



Range

Catalogue no.	Description	Weight	
		kg	lb
DRP 40R	Basic pack comprising red moulded base and cowl wired with switched lead complete with 40W silverlight lamp.	0.567	1.25
DRP 40W	Basic pack comprising white moulded base and cowl wired with switched lead complete with 40W silverlight lamp.	0.567	1.25
DRB 40R	Red base only complete with 40W silverlight lamp	0.288	0.625
DRB 40W	White base only (lamp not included)	0.227	0.5
DRC 40R	Red cowl	0.113	0.25
DRC 40W	White cowl	0.113	0.25
DRS 40	Switched lead assembly	—	—

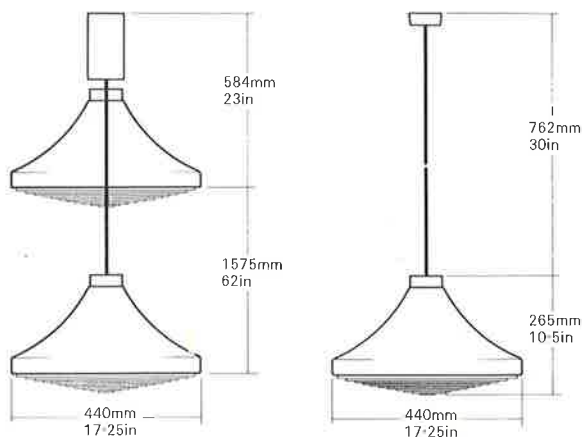
Modern adjustable pendants



WZA Rise and fall, also cable suspension

Modern adjustable pendants

A superior quality adjustable pendant in three reflector finishes: spun copper polished and laquered; spun brass, polished and laquered; and spun aluminium, brushed and laquered. Complete with white plastic concentric louvre suspended on black cable from ceiling mounted rise and fall unit having white cover. Also available as fixed suspension on black cable from matching ceiling plate. Suitable for use with 100W lamp.



Range

Catalogue no.	Description
WZA 100C	Adjustable pendant with copper reflector and white louvre
WZA 100B	Adjustable pendant with brass reflector and white louvre
WZA 100S	Adjustable pendant with brushed silver reflector and white louvre
WZC 100C	Fixed suspension with copper reflector
WZC 100B	Fixed suspension with brass reflector
WZC 100S	Fixed suspension with brushed silver reflector

Modern adjustable pendants

WAM 1100S

WAM 1100P

WAM 1100LB

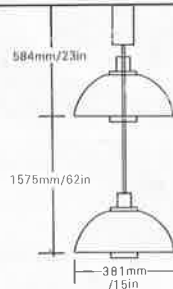
WAM 1100A

A multi-purpose pendant fitting instantly adjustable to any convenient height by means of a ceiling mounted rise and fall unit. The reflector of spun aluminium is available finished in a variety of colours including brushed and lacquered amber, purple, silver and brass. A stove enamelled white reflector is also available. All fittings are suspended on contrasting black cable carried from a white ceiling cover. An opal cylindrical inner ensures well diffused light. The lampholder has a contrasting silver finish surround.

The purpose of a rise and fall suspension is to enable one to have high level lighting for general use while with no effort at all one can gently pull down the reflector to create, for instance, an intimate lighting effect over a dining room table. Then with equally little effort one can push it back to its original high level—so easy.



WAM 1100W



Catalogue no.	Colour	Lamp watts	Weight (ex. lamp)	
			kg	lb
WAM 1100S	Brushed silver	100	1.6	3.625
WAM 1100A	Amber	100	1.6	3.625
WAM 1100P	Purple	100	1.6	3.625
WAM 1100LB	Brushed and lacquered brass	100	1.6	3.625
WAM 1100W	White	100	1.6	3.625

Show-off range

WV 1060Y

WN 1060BN

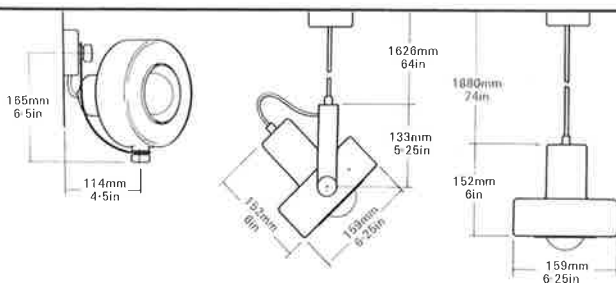
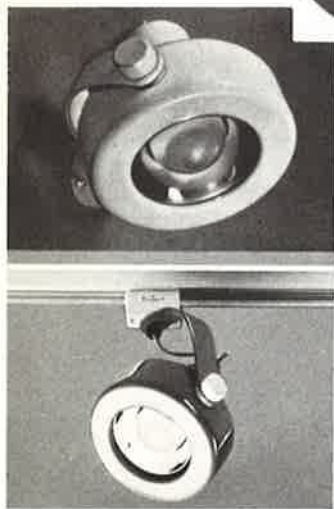
WV 1060BN

WN 1060Y

Here, in handsome modern styling, is a range of fittings designed to give special light emphasis whenever and wherever it is wanted - on pictures, for example, or on treasured antiques, on precious pieces of porcelain or any corner where attention wants to be focussed. The range has been created with maximum versatility in mind. In fact, the Show-offs are available in four different styles. The first is a simple pendant spotlight (WN) which produces a controlled pool of light when used at low level, and is ideal for putting a fresh accent of light on coffee tables and bars. The second is an adjustable pendant (WV) which can easily be moved vertically and horizontally by using the two side knobs and the cable clamp. The third is another adjustable spotlight (vertical or horizontal) for wall or surface mounting. This type (WW) includes a pushbutton switch on the wall plate. Finally there is a track mounted version. All four types come complete with a 60W BC lamp and auxiliary reflector, and are available in an attractive colour choice of white, yellow, or brown gloss stove enamel.



WW 1060W



Catalogue no.	Colour	Type	Weight (incl. lamp)	
			kg	lb
WN 1060W	White	Pendant	0.45	1
WN 1060Y	Yellow	Pendant	0.45	1
WN 1060BN	Brown	Pendant	0.45	1
WV 1060W	White	Pendant (adj)	0.85	1.75
WV 1060Y	Yellow	Pendant (adj)	0.85	1.75
WV 1060BN	Brown	Pendant (adj)	0.85	1.75
WW 1060W	White	Wall-mounted	0.6	1.375
WW 1060Y	Yellow	Wall-mounted	0.6	1.375
WW 1060BN	Brown	Wall-mounted	0.6	1.375

Spot-on domestic spotlights

A new and comprehensive range of spotlights using the 60W Decor spotlamp and the 100W interior reflector lamp. Ample adjustment is provided by a unique friction action which permits swivel movement through 350° and horizontal of 180°.



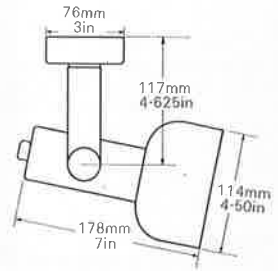
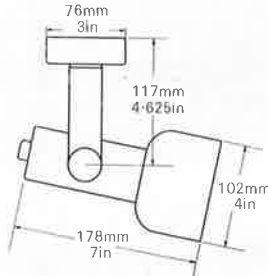
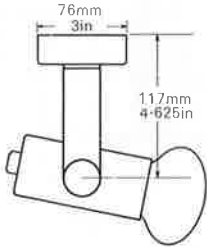
TSR 60



TSRC 60



TSRC 100



Wall, Ceiling and Track Mounting
Spotlight incorporating push switch in base and wired terminal block available in three body finishes comprising dark brown, yellow and white with mounting plate and stirrup in white. To this is added a well proportioned brushed and lacquered silver front cowl to shroud lamp for both the 60W and 100W size. For situations where it is necessary only to use a bare spotlamp the 60W size is included in the range without the front cowl.
Track mounting version is wired complete with track adaptor box.

Spot-on domestic spotlights

Floor Standard

Standard with two 60W spotlights in the brown and white colour body finish and silver lacquered front cowl mounted on chromium stem with white painted weighted base wired complete with foot operated floor switch.



TFRC 60

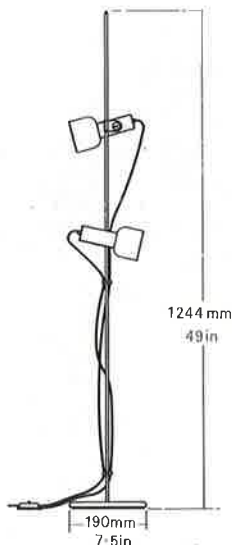
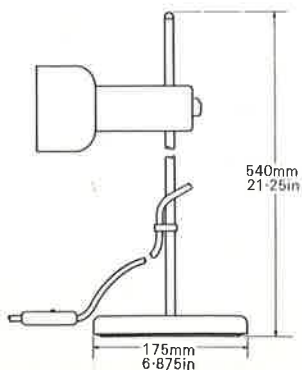


Table Stand

A matching unit to the floor standard but with one spotlight in the brown and white body finishes and front cowl wired complete with rocker switch.



TDRC 60



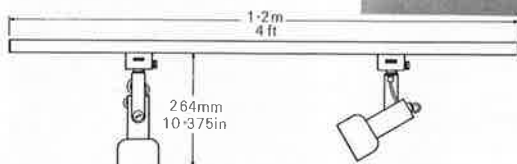
Spot-on domestic spotlights

Trak-Pack

Two 60W spotlights in white painted finish with brushed and silver lacquer front cowl (TTRC 60W) mounted on 1.2m/48in length of track (TKS 1200) complete with mains connector.

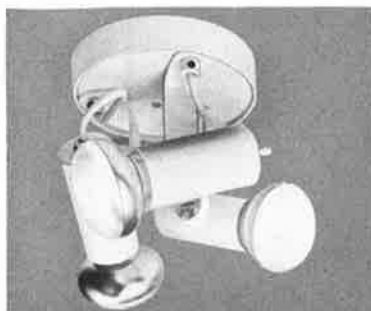


TTRC 60



Ceiling Unit

Three way ceiling mounting unit with three 60W spotlights in white without front cowl mounted on white ceiling plate.



TCR 60

All fittings packed complete with lamps.

Range

Catalogue no.	Description	Lamp watts	Weight	
			kg	lb
TSRC 100W	Surface Spot White with brushed and lacquered silver cowl	100	0.445	0.953
TSRC 100Y	Surface Spot Yellow with brushed and lacquered silver cowl	100	..	..
TSRC 100BN	Surface Spot Brown with brushed and lacquered silver cowl	100	..	..
TTRC 100W	Track Mounted Spot White brushed and lacquered silver cowl	100	0.45	1
TTRC 100Y	Track Mounted Spot Yellow with brushed and lacquered silver cowl	100	..	..
TTRC 100BN	Track Mounted Spot Brown with brushed and lacquered silver cowl	100	..	..
TSRC 60W	Surface Spot White with brushed and lacquered silver cowl	60	0.425	0.937
TSRC 60Y	Surface Spot Yellow with brushed and lacquered silver cowl	60	..	..
TSRC 60BN	Surface Spot Brown with brushed and lacquered silver cowl	60	..	..
TTRC 60W	Track Mounted Spot White with brushed and lacquered silver cowl	60	0.45	1
TTRC 60Y	Track Mounted Spot Yellow with brushed and lacquered silver cowl	60	..	..
TTRC 60BN	Track Mounted Spot Brown with brushed and lacquered silver cowl	60	..	..
TSR 60W	Surface Spot White without front cowl	60	0.35	0.775
TSR 60Y	Surface Spot Yellow without front cowl	60	..	..
TSR 60BN	Surface Spot Brown without front cowl	60	..	..
TTR 60W	Track Mounted Spot White without front cowl	60	0.34	0.75
TTR 60Y	Track Mounted Spot Yellow without front cowl	60	..	..
TTR 60BN	Track Mounted Spot Brown without front cowl	60	..	..
TFRC 60W	Floor Stand Spot White with brushed and lacquered silver cowl	2x60	4.65	10.25
TFRC 60BN	Floor Stand Spot Brown with brushed and lacquered silver cowl	2x60	..	..
TDRC 60W	Table Stand Spot White with brushed and lacquered silver cowl	60	3.63	8
TDRC 60BN	Table Stand Spot Brown with brushed and lacquered silver cowl	60	..	..
TCR 60	Ceiling Spot White without front cowl	3x60	0.91	2
TTRC 60	Trak-Pack with two white spotlights fitted front cowl	..	2.27	5

Pin-up



VK 40W

Pin-up

A lightweight moulded plastic housing encloses a polished metal reflector and a black plastic spill ring. It is mounted on a black plastic gimbal swivelling on a plastic base. Reflectors are fully adjustable by unique friction device. The range comprises a wall mounted spotlight, a floor standard and a table lamp, supplied complete with 40W 45mm round SES lamp.

Wall mounted

Housing and back plate in matching colours, brown, orange or white. Wired complete with 3m/9-8ft of white twin cable and torpedo switch.

Floor standard

Two reflectors in matching colours—orange or white—are mounted on a two part chromium stem for convenience of packing and storage. Contrasting black weighted base wired with black flex to a foot operated floor switch controlling individual or both reflectors.

Table stand

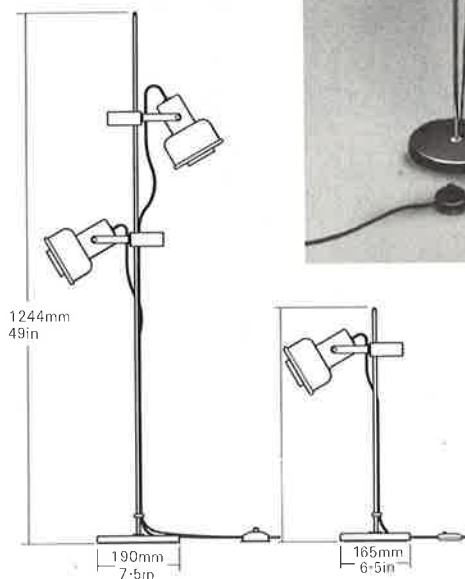
A matching unit to the floor standard having single reflector in matching colours and wired with torpedo switch.



VKT 40W



VKF 40R



Range

Catalogue no.	Description
VK 40BN	Wall mounted spotlight—brown
VK 40R	Wall mounted spotlight—orange
VK 40W	Wall mounted spotlight—white
VKF 40R	Floor standard with two orange reflectors
VKF 40W	Floor standard with two white reflectors
VKT 40R	Table stand with single orange reflector
VKT 40W	Table stand with single white reflector

Pan floor and table stand



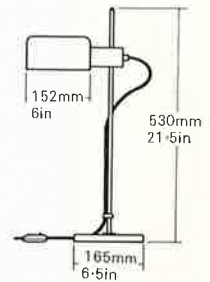
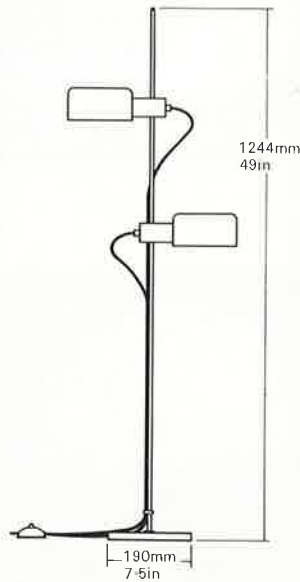
VNF 60RD

Pan floor and table stand

The floor and table stands of this range are the same as those of the Pin-up range. The aluminium reflector is "pan" shape in red or white. The same friction device is used for reflector adjustment with the same switching arrangement. Packed complete with two 60W pearl lamps.



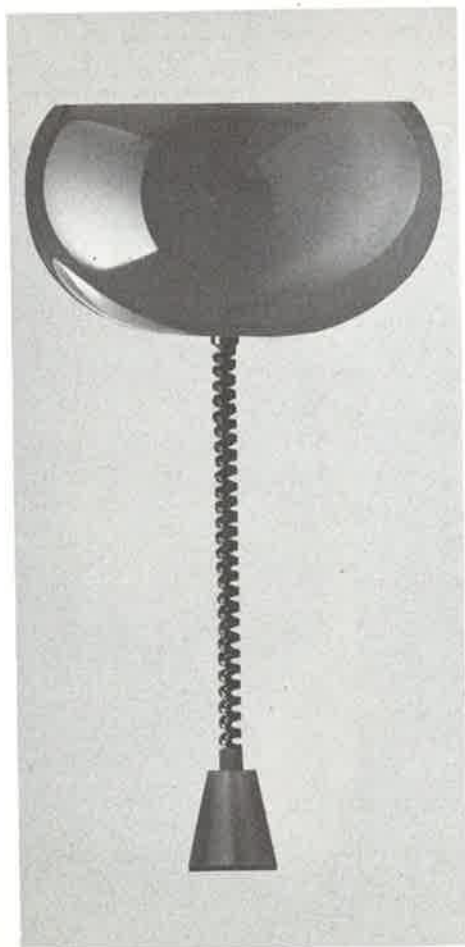
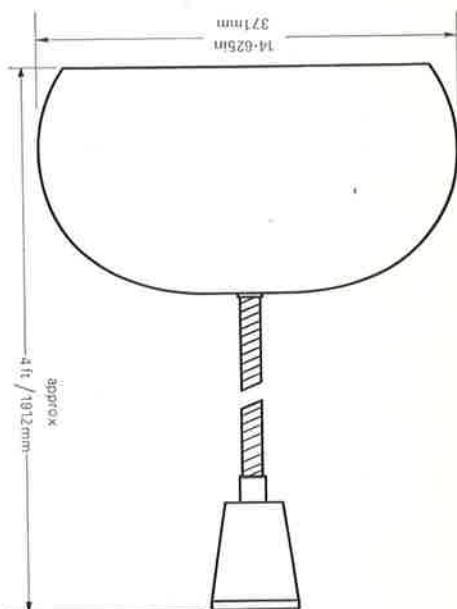
VNT 60W



Range

Catalogue no.	Description
VNF 60RD	Floor standard with two red reflectors
VNF 60W	Floor standard with two white reflectors
VNT 60RD	Table stand with single red reflector
VNT 60W	Table stand with single white reflector

Modern in appearance the new pumpkin shape reflector is moulded in a unique double skin acrylic. Two colour finishes are available: one is a richly toned red all white. Suspended on contrasting black "curly" cable carried from a ceiling mounted rise and fall unit with black cover providing ample height adjustment for hanging low over a table or high for general illumination. Designed for use with a 100W pearl lamp but when used with a 40W crown silvered Decor round lamp the silvered front adds to the decor of the fitting.

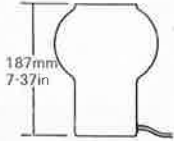


Catalogue no.	Colour	Lamp watts	Weight
TWAP 100BD	Red outside White inside	100	kg 1.5 lb 0.68
TWAP 100W	All White	100	kg 1.5 lb 0.68

Occasional and ceramic based lamps

Occasional lamp

The orange or white flashed opal glass completely encloses a BC lampholder. The fitting is packed complete with a white flexible torpedo switch and a 60W lamp.

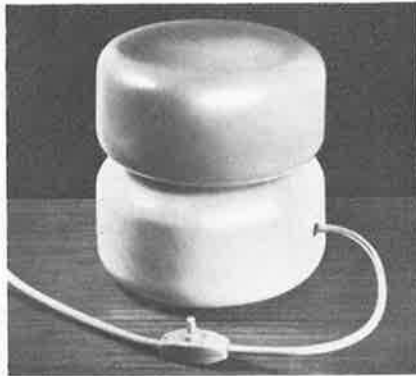
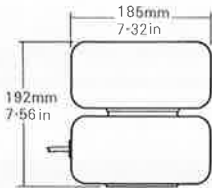


Range

Catalogue no.	Colour
WG 1060R	Orange opal
WG 1060W	White opal

Ceramic based lamp

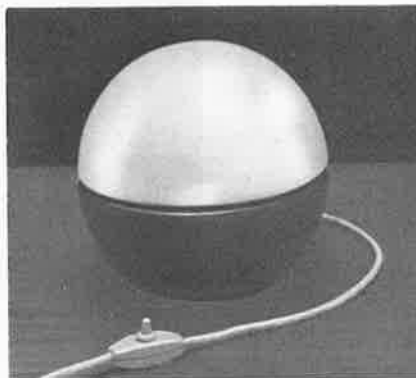
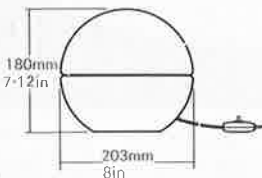
The orange or white flashed opal glass completely encloses the lamp and is mounted on a white ceramic base. This fitting is packed complete with a white flexible torpedo switch and a 60W lamp.



Catalogue no.	Colour
WG 1060W	White opal
WG 1060R	Orange

Yo-Yo lamp

A two part glass table lamp in white flashed opal with alternative base in red colour glass. Wired complete with ample length of white cable and torpedo switch. Packed with 60W pearl lamp.



Catalogue no.	Colour
WY 1060RD	White top, red base
WY 1060W	All white

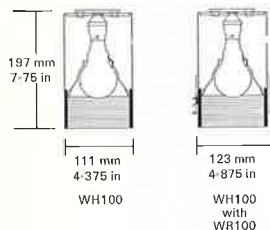
Modern domestic cylinders and Novelle

WH 100 A high quality surface mounted cylinder in a brushed silver finish with low brightness baffles to eliminate glare. Provides the basic functional lighting to modern standards with visual comfort, the very solution to many lighting problems. Packed complete with 100W GLS lamp with clip-on auxiliary reflector.

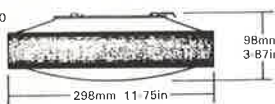
If the fitting is required to be recessed into the ceiling a redesigned bezel WR 100 can be used. This bezel is fitted with spring clips which hold the cylinder firmly yet permit projection to be adjusted with no effort. The WR 100 can be fitted from below using simple "quick fix" clips.



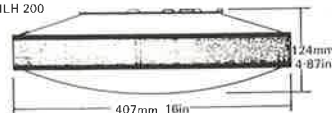
	Catalogue no.	Weight kg	lb
Ceiling cylinder	WH 100	0.57	1.25
Adjustable bezel ring	WR 100	0.11	0.25



NLH 100



NLH 200



The Novelle fitting consists of a very shallow satin opal glass (NL 100 and NL 200) and gallery to which has been added a decorative gold fabric trim. Also available are lacquered silver and lacquered brass metal trims. It is designed to take one or two 100W lamps. The glass shade and gallery are for direct ceiling mounting by means of screws on standard 51 mm/2in centres.



Catalogue no.	Colour	Lamp watts	Glassware	Gallery	Trim
NLH 100G	Gold	100	NFG 100	NCB 100	NLHT 100G
NLH 200G	Gold	2 x 100	NFG 200	NLB 200	NLHT 200G
NLH 100S	Lacquered Silver	100	NFG 100	NCB 100	NLHT 100S
NLH 200S	Lacquered Silver	2 x 100	NFG 200	NLB 200	NLHT 200S
NLH 100 LB	Lacquered Brass	100	NFG 100	NCB 100	NLHT 100 LB
NLH 200 LB	Lacquered Brass	2 x 100	NFG 200	NLB 200	NLHT 200 LB

A range of domestic fluorescent LPF fittings, using standard Popular Pack components. Two sizes, supplied with or without opal diffuser, c/w Home-lite tube. Optional stick-on copper coloured trims supplied with diffuser versions. Batters fitted with radio interference suppressors.

1. a) Single tube 4ft 40W batten c/w Home-lite tube. (F.HL40)
- b) Single tube 4ft 40W c/w diffuser and Home-lite tube. (F.HL.D40)
2. a) Single tube 5ft 65W batten c/w Home-lite tube. (F.HL65)
- b) Single tube 5ft 65W c/w diffuser and Home-lite tube. (F.HL.D.65)

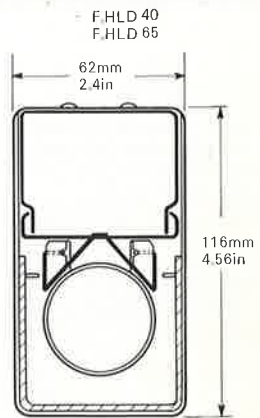
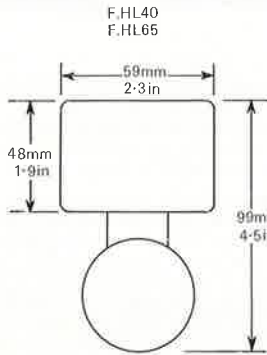
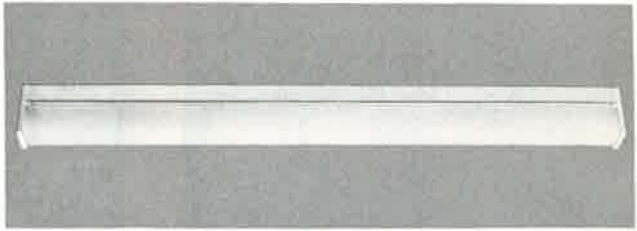
All cartons supplied with fixing screws (1 1/8 in no. 8 roundhead - black finish) and pattress block cover (PP4619).

CONSTRUCTION

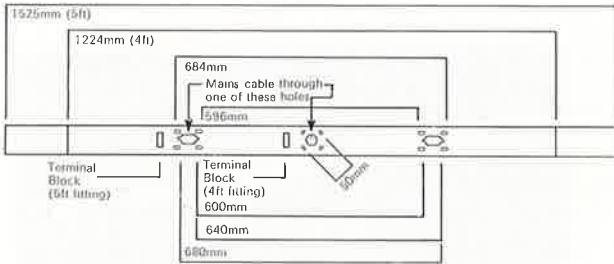
Spine and channel cover: roll formed sheet steel, bonderized, and finished in stark white stoved enamel.
Lampholders: grip-pin type, moulded in white urea plastic.
Diffusers: extruded white opal reeded styrene.
Diffuser end caps: moulded white ABS plastic.

OPERATING CONDITIONS

Suitable for use in ordinary, indoor, normal atmospheres, maximum ambient 25°C.



FIXING CENTRES



Range

Catalogue no.	Description	Length		Weight		Lamp Nominal mm	Length ft	Rating	Colour
		mm	in	kg	lb				
F.HL 40	4ft Batten only	1224	48.2	2.6	5.75	1200	4	40W	Home-lite
F.HL 65	5ft Batten only	1525	60.0	3.4	7.6	1500	5	65W	Home-lite
F.HLD40	4ft Batten c/w diffuser	1228	48.3	3	6.75	1200	4	40W	Home-lite
F.HLD65	5ft Batten c/w diffuser	1529	60.1	4	8.75	1500	5	65W	Home-lite

Spares

Catalogue no.	Description
F.HLD 4	4ft Opal reeded diffuser extrusion
F.HLD 5	5ft Opal reeded diffuser extrusion

Viewpoint combined light and shaver point



LS 15



LST 15

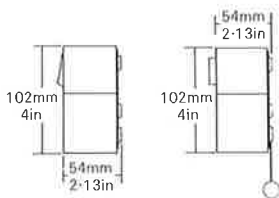
These fluorescent fittings are designed for use in hotels, hostels and homes. There is one model for bedroom and general purpose use and another for use in the bathroom. The fittings employ the 15W 450mm/18in (26mm/1in dia.) Warm White tube, the most efficient tube in the shorter sizes. Both models have a body of slate grey plastic fixed to a substantial steel backplate. The front panel has a trim with a brushed silver appearance.

The LS 15 is the general purpose type incorporating a shuttered mains voltage shaver socket and is suitable for use in all rooms *excluding the bathroom*.

The LST 15 is the bathroom model and this has a dual voltage output (115/230V) from the shaver socket from a double wound transformer to BS.3052 and a pull-switch. This fitting complies with IEE Regulations for bathroom equipment.

Supply voltage

Supply fitting 230/240V 50Hz. Details of fittings for other supplies are available on application.



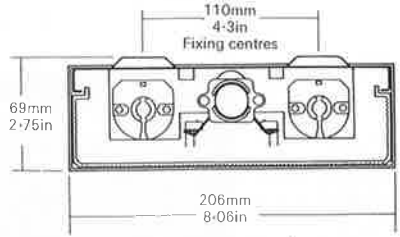
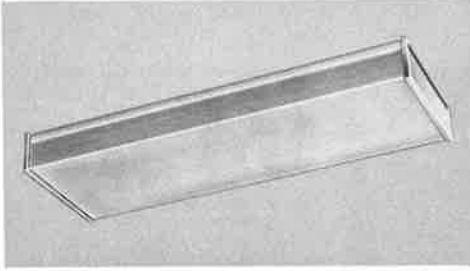
RANGE: Packed complete with 15W Warm White tube

Complete fitting

	Circuit	Catalogue no.	Length		Weight		Fixing centres	
			mm	in	kg	lb	mm	in
General purpose (bedroom) type	Switchstart	LS 15	470	18.5	2	4.5	279	11
Bathroom type	Quickstart	LST 15	470	18.5	3.23	7.13	279	11

Diffuser (Catalogue no. LS 4600) is available as a replacement item

Netaline and Au Pair fittings



The shallow construction of the Au Pair Homelight is designed to meet the requirements of kitchens and similar locations but it has many other uses in the home. The enclosed structure excludes dust and flies and the prismatic controller reduces glare.

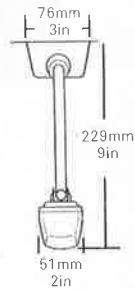
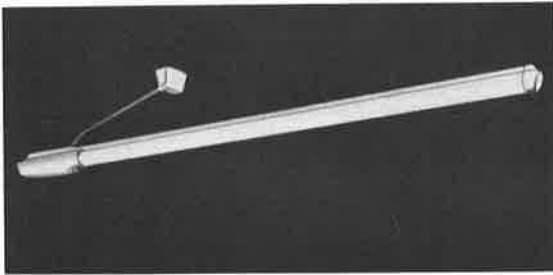
The body of the fitting is made of sheet steel, stove enamelled white. Suitable for ordinary, indoor, normal atmospheres. Registered design no. 943062.

RANGE: Packed complete with Warm White tubes

Complete fitting

Nominal length	Rating	Circuit	Catalogue no.	Length		Weight		Fixing centres	
				mm	in	kg	lb	mm	in
600mm/2ft	20W Twin	Switchstart	SK 220	630	24.8	2.76	6.25	400	15.75

Voltagcs: These fittings are suitable for 230/240V 50Hz. Details of fittings suitable for other supplies are available on application. End plate (Catalogue no. SK 4600) and prismatic controller (Catalogue no. SK 4610) are available as replacement items.



The Netaline fitting is designed for easy installation on an existing ceiling point. It is of sheet steel finished in white gloss enamel, except for the plated support arm, and is packed complete with tube and instruction leaflet. Suitable for ordinary, indoor, normal atmospheres.

RANGE: Packed complete with Warm White tube

Size	Circuit	Catalogue no.	Length		Weight	
			mm	in	kg	lb
1200mm/4ft Single	Switchstart	4 NLIW	1440	56.75	1.13	2.5

standard voltage 230/240V 50Hz

Circline fluorescent fittings

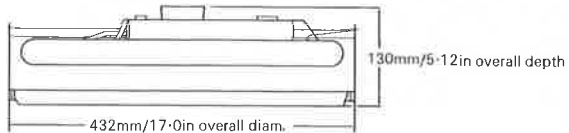
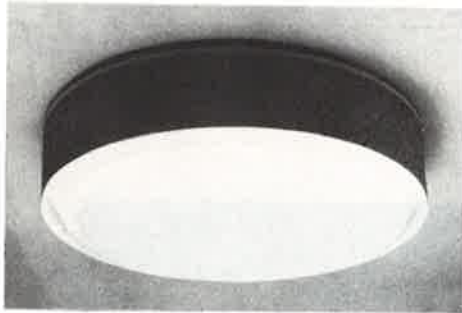
The range of 'Circline' fittings has been designed for use in both domestic and commercial applications.

A triangular shaped gear tray containing 60W switchstart control gear is completely hidden from view by the wide range of attractive diffusers. These fittings blend with all decors and colour schemes.

The fitting shown on this page is for ordinary, indoor normal atmospheres.

CF/OW.60/0

The new Circline fitting has an orange woven Raffia style shade attachment with an opal polystyrene dish diffuser which completely conceals the fluorescent tube. The attachment is easily removed by means of spring clips which locate over the fluorescent tube.



RANGE: Packed complete with Warm White tube

Rating	Circuit	Catalogue no.	Description
60W Single	Switchstart	CF/OW.60/0	Orange weave fitting

Voltages : These fittings are suitable for 230/240V 50Hz.

Details of fittings suitable for other supplies are available on application.

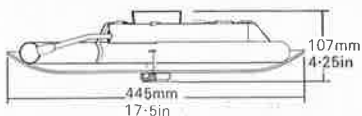
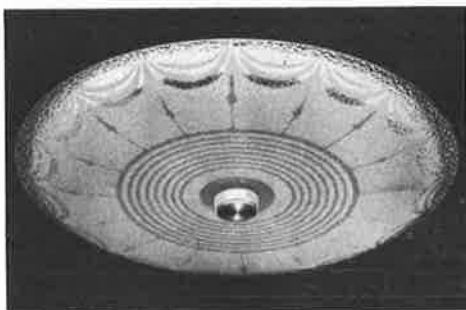
Opal diffuser dish
(Catalogue no. CF 4603) is
available as a replacement item.

Circline fluorescent fittings

The fittings shown on this page are for ordinary, indoor, normal atmospheres.

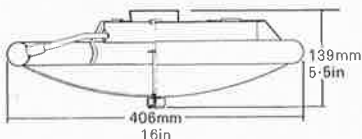
CF/LSG60 Large Sparkle Glass diffuser fitting

This bowl diffuser is moulded in clear glass with a smooth upper surface for easy cleaning and a random embossed, patterned lower surface which sparkles even when the fitting is unlit. A radial pattern is silk screened in white on the upper surface of the glass which is attached to the fitting by a white plastic knob with an aluminium insert. The glass completely obscures the fluorescent tube from view.



CF/SPG60 Sparkle Glass fitting

The diffuser is moulded in clear glass with a smooth upper surface for easy cleaning. A pattern is silk screened in white on the upper surface of the glass which is held to the fitting by a white plastic knob with aluminium insert which holds the glass flush to the tube.



Supply voltage

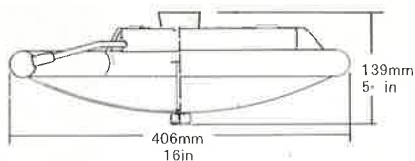
Standard fitting 230/240V Hz.
Details of fittings for other supplies are available on application.

RANGE: Packed complete with Warm White tube

Rating	Circuit	Catalogue no.	Description
60W Single	Switchstart	CF/LSG-60	Large Sparkle Glass fitting
60W Single	Switchstart	CF/SPG-60	Small Sparkle Glass fitting

Large sparkle glass retaining knob (Catalogue no. CF 4607) and sparkle glass retaining knob (Catalogue no. CF 4606) are available as replacement items.

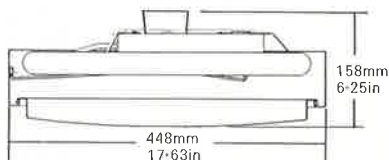
'Circline' fluorescent fittings



The fittings shown on this page are for ordinary, indoor, normal atmospheres.

CF/WHG.60 White Glass fitting

This fitting with its diffuser moulded in smooth glass for ease of cleaning is suitable where a relatively plain diffuser bowl is required. The diffuser bowl is held flush to the fluorescent tube by a white knob with an aluminium insert.



CFA 60 Fitting

The anodized aluminium attachment is simply assembled by locating over the centre screw on the gear tray and securing in position. A white opal dish is then inserted.

This fitting is packed in one carton complete with gear tray, aluminium attachment and tube.

RANGE: Packed complete with Warm White tube

Rating	Circuit	Catalogue no.	Description
60W Single	Switchstart	CF/WHG.60	White glass fitting
60W Single	Switchstart	CFA.60	Aluminium frame fitting

Voltages: These fittings are suitable for 230/240V 50Hz.
Details of fittings suitable for other supplies are available on application.

Aluminium frame (Catalogue no. CF 4601), opal diffuser dish (Catalogue no. CF 4603) are available as replacement items.

Standard Incandescent Lamps

Index

- 5:2 General lighting service lamps
- 5:3 Home lighting lamps
- 5:4 Decorative and coloured lamps
- 5:5 Decorative and coloured lamps
- 5:6 Tubular lamps
- 5:7 5:8 **Special service lamps**
- 5:9 Reflector lamps
- 5:10 Sealed beam reflector lamps
- 5:11 Low-voltage display lamps
- 5:12 Low-voltage tungsten-halogen display lamps
- 5:13 Tungsten-halogen floodlighting lamps
- 5:14 Photocopying lamp
- 5:15 Floodlighting lamps
- 5:16 Decoration spares
- 5:17 Lamp cap code

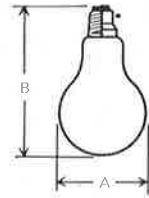
Note

Where lamps are catalogued with a dual voltage rating, the electrical characteristics shown are those applicable at the filament design point, details of which are available on application.

General lighting service lamps

SINGLE COIL High and low voltage

Watts	Voltages		Cap	Finish	Standard Pack	
15	110/120		240 250 BC	Pearl	25	
15	110/120		240 ES	Pearl	25	
25	110		220/230 240 250 BC	Pearl	25	
25			240 ES	Pearl	25	
40			240 BC	Clear	25	
40	110 120		220/230 240 250 BC	Pearl	25	
40		120		ES	Clear	25
40	110 120		240 250 ES	Pearl	25	
40			240 SBC	Pearl	25	
60	110		220/230 240 250 BC	Clear	25	
60	110 120	200/210	220/230 240 250 BC	Pearl	25	
60	110		240 250 ES	Clear	25	
60	110 120		220/230 240 250 ES	Pearl	25	
60			240 SBC	Pearl	25	
75			240/250 BC	Pearl	25	
100	110 120		240 250 BC	Clear	25	
100	110 120		220/230 240 250 BC	Pearl	25	
100	110		240 250 ES	Clear	25	
100	110 120		220/230 240 250 ES	Pearl	25	
100			240 SBC	Pearl	25	
150			220/230 240 250 BC	Clear	25	
150	110 120	200/210	220/230 240 250 BC	Pearl	25	
150	110 120		220/230 240 250 ES	Clear	25	
150	110 120		220/230 240 250 ES	Pearl	25	
200			240 250 BC	Clear	25	
200	110		220/230 240 250 BC	Pearl	25	
200	110 120		220/230 240 250 ES	Clear	25	
300	110 115 120		220/230 240 250 GES	Clear	10	
300	110		240 250 ES	Clear	10	
500	110 120		220/230 240 250 GES	Clear	10	
750	110		240 250 GES	Clear	10	
1000	110		240 250 GES	Clear	10	
1500			240 250 GES	Clear	6	



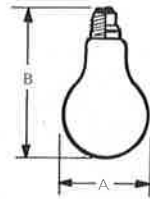
SINGLE COIL—h, & l, volt.

	A	B
15- 100W BC	60	105
150- 200W BC	80	160
300- 500W GES	110	233
750-1000W GES	130	300
1500W GES	170	335

(For ES Caps add 1.5mm to length of BC equivalent)

SINGLE COIL Extra low voltage

Watts	Voltages		Cap	Finish	Standard Pack
15	25	50	BC	Pearl	25
15		50	ES	Pearl	25
25	25	50	BC	Pearl	25
25		50 ES	ES	Pearl	25
40	12	25 50	BC	Pearl	25
40		25 50	3pin BC	Pearl	25
40		25 50	ES	Pearl	25
60	12	25 50	BC	Pearl	25
60		25 50	3pin BC	Pearl	25
60		25 50	ES	Pearl	25
100		25 50	BC	Pearl	25
100		25 50	ES	Pearl	25
300		50	GES	Clear	10



SINGLE COIL—e. l. volt.

	A	B
15-100W BC	60	105
300W GES	110	233

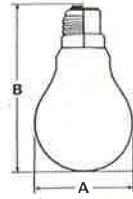
(For ES Caps add 1.5mm to length of BC equivalents)

All dimensions in mm

Home lighting lamps

PLUS LAMPS—COILED COIL

Watts	Voltages		Cap	Finish	Standard Pack
40		240 250	BC	Clear	25
40	200/210	240 250	BC	Pearl	25
60		240 250	BC	Clear	25
60	200/210	220/230 240 250	BC	Pearl	25
100		240 250	BC	Clear	25
100	200/210	220/230 240 250	BC	Pearl	25
100		240 250	ES	Pearl	25
150		240 250	BC	Clear	25
150		240 250	BC	Pearl	25
150		240 250	ES	Pearl	25



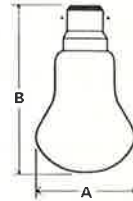
PLUS LAMP

	A	B
40-100W BC	60	105
150W BC	68	125

(For ES Caps add 1.5mm to lamps of equivalent BC)

NETABULB

Watts	Voltages		Cap	Finish	Standard Pack
40		240/250	BC	Silverlight	25
60		240/250	BC	Silverlight	25
100		240/250	BC	Silverlight	25
150		240/250	BC	Silverlight	25
150		240/250	BC	Pearl	25

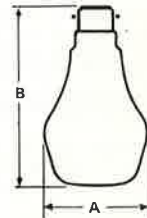


NETABULB

	A	B
40W	60	100
60W	60	100
100W	60	100
150W	75	120

PURLUX

Watts	Voltages		Cap	Finish	Standard Pack
60		240	BC	Pearl	25
100		240	BC	Pearl	25

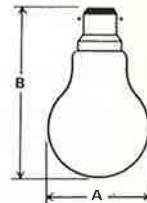


PURLUX

	A	B
60 & 100W	65	112

PINK PEARL

Watts	Voltages		Cap	Finish	Standard Pack
40		240/250	BC	Pink	10
60		240/250	BC	Pink	10
100		240/250	BC	Pink	25
150		240/250	BC	Pink	25



NIGHTLIGHT & PINK PEARL

	A	B
5-8W	60	105
40 and 60W	60	105
100W	68	125
150W	80	160

All dimensions in mm

Decorative and coloured lamps

PLAIN CANDLE

Watts	Voltages	Cap	Finish	Standard Pack
25	240/250	BC, SBC	Clear	50*
25	240/250	BC, SBC	Pearl	50*
25	240/250	BC, SBC, SES	Silverlight	50*
40	240/250	BC, SBC, SES	Clear	50*
40	240/250	BC, SBC	Pearl	50*
40	240/250	BC, SBC, SES	Silverlight	50*
60	240/250	BC, SBC	Clear	50*
60	240/250	BC, SBC	Pearl	50*
60	240/250	BC, SBC	Silverlight	50*

PLAIN CANDLE - COLOURED

Watts	Voltages	Cap	Finish	Standard pack
25	240/250	BC	Amber	50*
40	240/250	BC	Amber	50*

PLAIN CANDLE - PINK PEARL

Watts	Voltages	Cap	Finish	Standard pack
40	240/250	BC, SBC	Pearl bulbs with internal light pink diffuse coating	50*
60	240/250	BC, SBC	Pearl bulbs with internal light pink diffuse coating	50*

TWISTED CANDLE

Watts	Voltages	Cap	Finish	Standard Pack
25	240/250	BC, SBC	Clear	50*
25	240/250	BC, SBC	Pearl	50*
40	240/250	BC, SBC	Clear	50*
40	240/250	BC, SBC	Pearl	50*
60	240/250	BC, SBC	Clear	50*
60	240/250	BC, SBC	Pearl	50*

TWISTED CANDLE - TIPPED

Watts	Voltages	Cap	Finish	Standard Pack
40	240/250	BC	Amber tip, Pink tip	50*
60	240/250	BC	Amber tip, Pink tip	50*

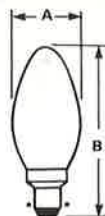
ROUND BULB

Watts	Voltages	Cap	Finish	Standard Pack
25	240/250	BC, SBC, SES	Silverlight	50*
40	240/250	BC, SBC, ES, SES	Silverlight	50*

ROUND BULB FESTIVE

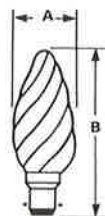
Watts	Voltages	Cap	Finish	Standard Pack
15	200/250	BC, ES	Amber, blue, green, red, white, yellow	50*
25	200/250	BC, ES	Amber, blue, green, red, white, yellow	50*

*Standard-pack consists of 5 x 10-way packs per container



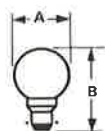
PLAIN CANDLE

	A	B
25W-40W BC	35	92
SBC	35	98
SES	35	99
60W BC	45	123
SBC	45	128



TWISTED CANDLE

	A	B
25W BC	35	95
SBC	35	99
40W-60W BC	46	123
SBC	46	128



ROUND BULB

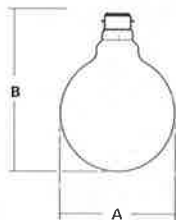
	A	B
BC	45	65
SBC	45	70
SES	45	74

All dimensions in mm

Decorative and coloured lamps

DECOR ROUND LAMPS

Watts	Voltages	Cap	Finish	Standard Pack
40	240/250	BC, ES	Clear	10
40	240/250	BC, ES	Silverlight	10
40	240/250	BC, ES	Amber, red, green, purple	10
40	240/250	BC, ES	Crown Silvered	10
60	240/250	BC	Silverlight	10

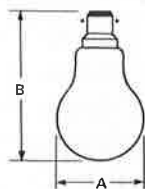


DECOR ROUND LAMP

A	B
100	139

COLOURED GLS

Watts	Voltages	Cap	Finish	Standard Pack
15	200/250	BC, ES	Amber, blue, green, pink, white, yellow, red	100*
25	200/250	BC, ES	Amber, blue, green, pink, white, yellow, red	100*
40†	200/250	BC, ES	Amber, blue, green, pink, yellow, red	100*
60†	200/250	BC	Amber, blue, green, pink, yellow, red	100*
60†	200/250	ES	Amber, blue, green, red, yellow	100*
100†	200/250	BC	Amber, blue, green, pink, yellow, red	100*
150†	200/250	BC	Amber, pink, red, yellow	100*
150†	200/250	ES	Amber	100*



COLOURED GLS

	A	B
15W-60W	60	105
100W	68	125
150W	80	160

GALA LIGHTING SET — LAMPS

Watts	Voltages	Cap	Finish	Standard Pack
25	200/250	BC	Amber, blue, green, pink, red, yellow	12 i.e. 2 of each colour

GALA-LIGHTING SET — STRING

A string of 12 BC waterproof lampholders for gala lamps.

*10 x 10-way packs per container.

†Not suitable for outdoor use unless enclosed for protection against rain

All dimensions in mm

Tubular lamps

ARCHITECTURAL CURVED – $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$ circle

Watts	Voltages	Cap	Finish	Standard Pack
60	240/250	Peg	Opal	1

ARCHITECTURAL STRAIGHT – Striplites

Watts	Voltages	Cap	Finish	Standard Pack
35	240/250	Peg	Opal	1
53	240/250	Peg	Opal	1
60	240/250	Peg	Opal	1
60	240/250	Double centre contact S14d	Opal	1
75	240/250	Peg	Opal	1
110	240/250	Peg	Opal	1
150	240/250	Peg	Opal	1

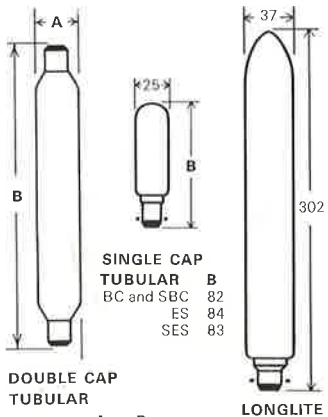
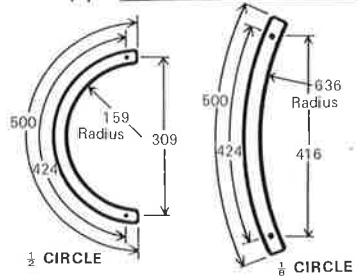
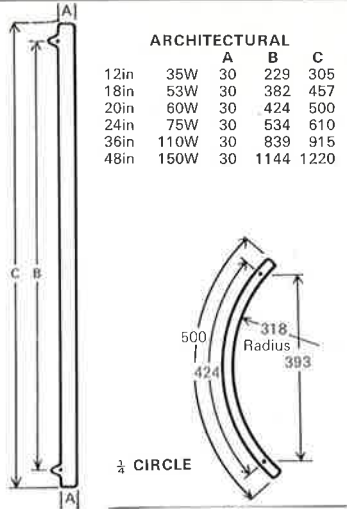
DOUBLE CAP TUBULAR – Striplites

Watts	Voltages	Cap	Finish	Standard Pack
30 or 60	240/250	S15s	Clear	25
30 or 60	240/250	S15s	Opal	25
60	240/250	S15s	Amber† (284 mm only)	25

† Amber in 60W 284mm only

SINGLE CAP TUBULAR

Watts	Voltages	Cap	Finish	Standard Pack
25	200/230	BC	Clear	50
25	240/250	BC, SBC, SES	Clear	50
40	240/250	BC, SBC	Clear	50
40 or 60	240/250	BC	Opal (Longlite)	25



All dimensions in mm

Special service lamps

FIREGLOW

Watts	Voltages	Cap	Finish	Standard Pack
60	200/250	BC	Lacquered	50*
60	200/250	3-pin BC	Lacquered	50*
60	200/250	2-prong	Lacquered	50*

PYGMY SIGN

Watts	Voltages	Cap	Finish	Standard Pack
15	25	BC, SBC	Clear	50*
15	50	BC, SBC, ES	Clear	50*
15	60	BC	Clear	50*
15	100/110	BC, SBC, ES, SES	Clear	50*
15	120/130	BC, SBC, ES, SES	Clear	50*
15	150	BC	Clear	50*
15	200/250	BC, SBC, ES, SES	Clear	50*
15	200/250	BC	Pearl	50*
15	200/250	BC, SBC	Amber, Blue, Green, Pink Red, White, Yellow	50*
25	200/250	BC, SBC, ES, SES	Clear	50*

PYGMY SIGN — ROUGH SERVICE

Watts	Voltages	Cap	Finish	Standard Pack
15	200/250	BC, SBC, SES	Clear	50*
25	200/250	BC, ES, SBC	Clear	50*

SWITCHBOARD INDICATOR

Watts	Voltages	Cap	Finish	Standard Pack
	100/130	BC	Clear	50
	200/260	BC	Clear	50

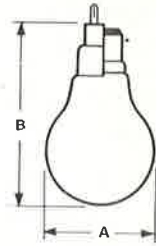
PILOT INDICATOR

Watts	Voltages	Cap	Finish	Standard Pack
6	50	SBC	Clear	25
6	50	CAND	Clear	25
6	100/130	SBC, SES, CAND	Clear	25
10	50	SBC	Clear	25
10	100/130	SBC, SES, CAND	Clear	25
10	200/250	SBC, SES, CAND	Clear	25

OVEN LAMPS

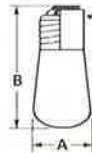
Watts	Voltages	Cap	Finish	Standard Pack
60	240/250	BC, ES	Clear	50

*Standard Pack consists of 5 × 10-way per container



FIREGLOW

	A	B
BC	60	105
3-pin BC	60	103
2-prong	60	113



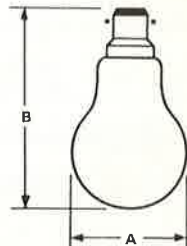
PYGMY AND SWITCHBOARD INDICATOR

	A	B
BC	28	56
ES	28	58
SBC	28	62
SES	28	63



PILOT INDICATOR

	A	B
SBC	18	41
CAND	18	46
SES	18	47



OVEN LAMP

A	B
60	105

All dimensions in mm

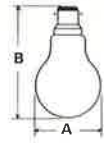
Special service lamps and Heating lamps

ROUGH SERVICE These lamps have additional filament supports and are for use in portable handlamps and similar locations

Watts	Voltages		Cap	Finish	Standard pack
25	200/250		BC	Pearl	25
40	200/250		BC	Clear	25
40	110/120	200/250	BC, ES	Pearl	25
60	200/250		BC	Clear	25
60	110/120	200/250	BC, ES	Pearl	25
100	200/250		BC	Clear	25
100	110/120	200/250	BC, ES	Pearl	25

SAFELITE – ROUGH SERVICE This lamp has a special coating to contain the glass fragments in the event of breakage

Watts	Voltages		Cap	Finish	Standard pack
100	200/250		BC, ES	Pearl-Lacquered	25

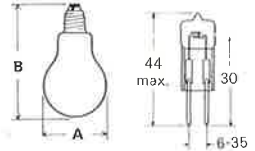


ROUGH SERVICE & SAFELITE

	A	B
25-60W	60	105
100W	68	125

TRAFFIC SIGNAL

Watts	Voltages		Cap	Finish	Standard Pack
65	240/250		ES	Clear	25
65	250		BC	Clear	25
50	12 (Tungsten-halogen M32)		Bi-pin	Clear	1



65W ES 50W Bi-pin

TRAFFIC SIGNAL

	A	B
65W	60	107

HEATING LAMPS

INFRA-RED REFLECTOR Standard bulb

Watts	Voltages		Cap	Finish	Standard Pack
150	200/250		ES	Satin	12
275	200/250		BC	Satin	12
275	100/130	200/250	ES	Satin	12
275	200/250		BC, ES	Clear	12

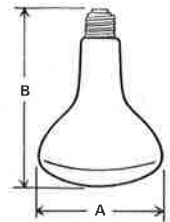
INFRA-RED REFLECTOR Hard glass bulb

Watts	Voltages		Cap	Finish	Standard pack
275	200/250		BC, ES	Clear Front	10
275	200/250		BC, ES	Red Front	10

INFRA-RED ROUND BULB

Watts	Voltages		Cap	Finish	Standard pack
250	100/130	200/250	ES	Pearl	24

A range of linear quartz infra-red lamps is also available. Details on request.



INFRA-RED REFLECTOR

	A	B
150W	126	178
275W	126	178

INFRA-RED ROUND BULB

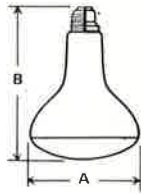
	A	B
250W	88	180

All dimensions in mm

Reflector lamps

INTERIOR DISPLAY REFLECTOR

Watts	Voltages	Cap.	Finish	Standard Pack
75	240/250	BC, ES	Clear Front	10
75	240/250	BC, ES	Lacquered Blue, Green, Red, Yellow	10
100	240/250	BC, ES	Clear Front	10
150	240/250	BC, ES	Clear Front	10
250	240	ES	Clear Front, (Spotlight Beam)	10



REFLECTOR DISPLAY

	A	B
75W and 100W	95	135
150W	126	178
250W Spot	126	178

DECOR SPOT

Watts	Voltages	Cap.	Finish	Standard Pack
40	240/250	BC	Clear Front, Blue, Green, Red, Yellow	10
60	240/250	BC	Clear Front	10

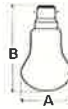


DECOR SPOT

	A	B
40 & 60W	80	109

CHELSEA For use with Chelsea Glass

Watts	Voltages	Cap.	Finish	Standard Pack
40	240/250	BC	Clear Front	25

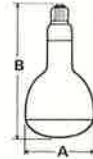


CHELSEA

	A	B
40W	60	10

REFLECTOR FLOODLIGHT

Watts	Voltages	Cap.	Finish	Standard Pack
500	240, 250	GES	Clear Front	6

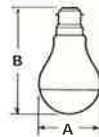


REFLECTOR FLOODLIGHT

	A	B
500W	165	312

CROWN SILVERED DISPLAY High volt

Watts	Voltages	Cap.	Finish	Standard Pack
60	240/250	BC, 3PBC, ES	Crown Silvered	25
100	240/250	3PBC, ES	Crown Silvered	25
60	240/250	BC: 3Pin BC: ES	Crown Silvered - Lacquered Red, Blue, Green, Yellow, Purple	25



MAINS VOLTAGE DISPLAY

	A	B
100W	68	125

All dimensions in mm.

Sealed beam reflector lamps

Par sealed beam spotlights and floodlights

These lamps, with the exception of the PAR 38 Cool-ray and PAR 46, are for indoor and outdoor applications. The Color-ray spotlights have internal thin film dichroic lenses which have a high transmission factor and maintain constant colour through life.

The Cool-ray lamp has a dichroic reflector, allowing much of the heat to pass through the back of the lamp without loss of light. This lamp is for use in special fittings only, indoors. Its cool ray and colour temperature of 4000°K make it an ideal source for display and exhibition applications.

The rated life of all types is 2000 hrs.

PAR 38 SEALED BEAM SPOT & FLOOD applications

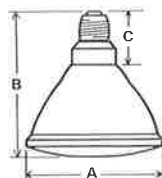
Watts	Voltages	Cap	Finish	Standard Pack
100	240/250	ES	Clear Front, Spot	10
100	240/250	ES	Clear Front, Flood	10
100	240/250	ES	Lacquered Blue, Green, Red, Yellow	10
150	24 110/115 240/250	ES	Clear Front, Spot	10
150	110/115 240/250	ES	Clear Front, Flood	10
150	240/250	ES	Color-Ray, Blue, Green, Red, Yellow	10
150	240/250	ES	Cool-Ray, Spot	10

PAR 46 SEALED BEAM applications for indoor use only

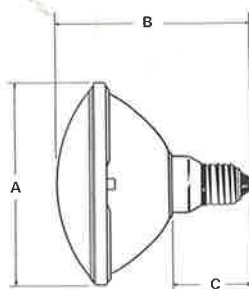
Watts	Voltages	Cap	Finish	Standard Pack
200	240/250	ES	Clear Front, Narrow Spotlight	10
200	240/250	ES	Clear Front, Wide Beam	10

PAR 56 SEALED BEAM applications for outdoor and indoor applications

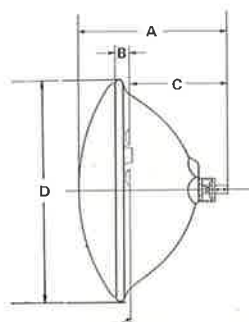
Watts	Voltages	Cap	Finish	Standard Pack
300	240/250	2 lug	Clear Front, Wide Beam	10
300	240/250	2 lug	Clear Front, Med-Beam	10
300	240/250	2 lug	Clear Front, Narrow Beam	10



PAR 38
SEALED BEAM REFLECTOR
FLOODLIGHT AND SPOTLIGHT
A B C
100W and 150W 121.5 135 51



PAR 46
A B C
145 165 51



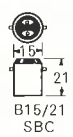
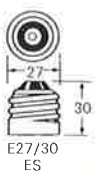
Seating plane

PAR 56
A B C D
133.4 11.7-13.7 85 178

All dimensions in mm

Low voltage display lamps

Illus.	Volts	Watts	Lamp Ref. no.	Standard pack	Type	Cap
1	12	50	11-7015	25	The 38mm lamp is spherical in shape. It has an internal crown reflector and gives a non-spill narrow beam of light.	Bosch
2	12	50	11-8012	25	The mushroom-shaped 64mm sealed beam lamp with Bosch cap has an internal reflector with a diffusing front face and gives a soft edge beam of high intensity.	Bosch
3	12	50	11-7014	25	The 12V 50W lamp has a clear front and an internal reflector aluminized to the parabolic bulb. This gives a narrow beam of light.	ES
4	12	24	11-7005	25	The 12V 24W lamp gives a high intensity soft edged beam. Internal reflector diffusing front.	SBC
5	24	150	11-7040	25	Crown reflector clear back.	Bosch



The 12V lamps have a nominal life of 1000 hours. The 24V 150W lamp has been designed to give a life of 500 hours.

A transformer is normally required for the operation of these lamps

All dimensions in mm

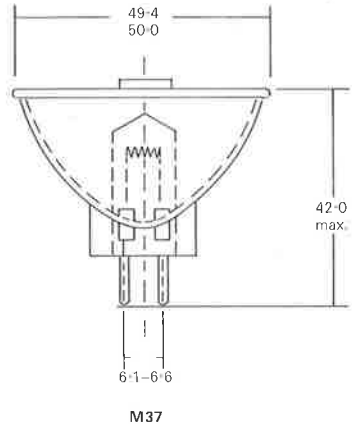
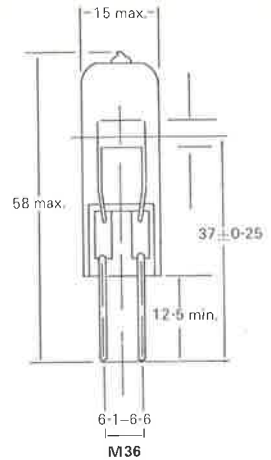
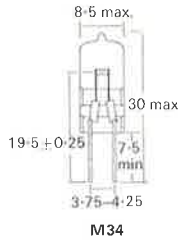
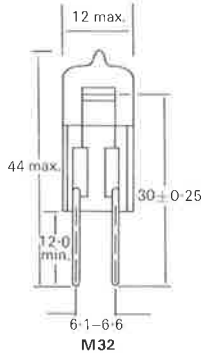
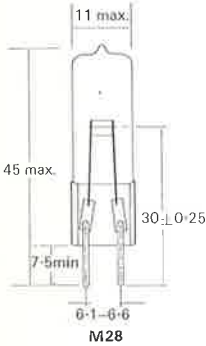
Low voltage tungsten-halogen display lamps

Principle of operation and Advantages of use are as indicated in the section referring to **tungsten-halogen floodlighting lamps.**

Lampholders for these lamps are listed in Section 10.

Fusing: It is an advantage to have a fuse in the fitting or external circuit.

Operating temperatures: During operation, the temperature of the lamp pinch seal should not exceed 350°C, whilst the bulb wall temperature must not drop below 250°C in order to maintain the tungsten-halogen cycle.



Watts	Volts	Caps	Overall Length Max	Light Centre Length	Min Protruding Pin Length	Pin Dia	Pin Centres	Max Bulb Dia	Rated Life (Hrs)	Nom Lumens	Colour Temp K	Operating Position	Lamp Type
20	6	2 Pin G4	30.0	19.25-19.75	7.5	0.7	3.75-4.25	8.5	2000	350	2900	Any	M34
50	12	2 Pin G6.35	44.0	29.75-30.25	12.0	1.25	6.1-6.6	12.0	2000	900	2900	Any	M32
100	12	2 Pin G6.35	45.0	29.75-30.25	7.5	1.25	6.1-6.6	11.0	2000	2150	3000	*Base down to base horizontal	M28
250	24	2 Pin G6.35	58.0	36.75-37.25	12.5	1.0	6.1-6.6	15.0	2000	5750	3000	Base down to base horizontal	M36
55	12	2 Pin G6.35	42.0		7.5	1.0	6.1-6.6	50.0	750			Any	M37

*Can be operated in any position if heat sinks are used.

All dimensions in millimetres

Tungsten-halogen floodlighting lamps

Principle: The tungsten filament is enclosed in a gas-filled quartz tube, together with a carefully controlled quantity of a halogen. When the tungsten filament is heated by the electric current the halogen vaporises and controls the evaporation of the filament, the tungsten vapour being carried to the contrastingly comparative cool wall of the bulb where it combines with the halogen to form a tungsten halide. This compound then returns to the filament where it is chemically converted back to tungsten and the halogen. The action continues to repeat itself while the lamp is in operation.

The regenerative cycle performs a 'self-cleaning' action on the inner surface of the bulb resulting in nearly 100% lumen maintenance.

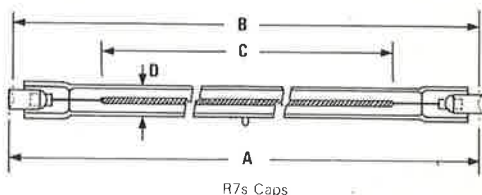
Advantages:

- 1 Up to 20% more light output compared to corresponding GLS lamp.
- 2 Double life—2000 hours.
- 3 Constant light output through life.
- 4 Compact easily controllable light source.

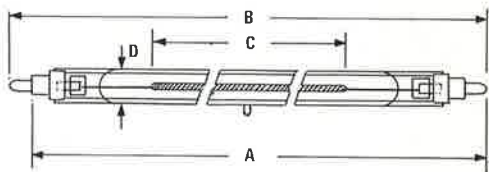
Fusing:

It is an advantage to have a fuse in the fitting or external circuit.

Operating temperatures: During operation, the temperature of the lamp pinch seal should not exceed 350 °C, whilst the bulb wall temperature must not drop below 250 °C in order to maintain the tungsten-halogen cycle.



R7s Caps



Fa4 Caps

Watts	Volts	Caps	Contact to Ceramic Max (A)	Contact to Contact (B)	Nom Light Length (C)	Max Bulb Dia (D)	Rated Life (Hrs)	Nom Lumens	Colour Temp °K	Operating Position	Lamp Type
300	110/115	R7s	117.6	114.2 ± 1.6	62.0	9.0	2000	5250	2900	Horizontal ± 15°	K9
300	200/230	R7s	117.6	114.2 ± 1.6	66.0	9.0	2000	5000	2900	Horizontal ± 15°	K9
300	240/250	R7s	117.6	114.2 ± 1.6	66.0	9.0	2000	5000	2900	Horizontal ± 15°	K9
300†	240/250	R7s	117.6	114.2 ± 1.6	66.0	9.0	2000	5000	2900	Horizontal ± 15°	K9
500	110	R7s	117.6	114.2 ± 1.6	57.0	11.0	2000	10500	2900	Horizontal ± 15°	K1
500	120	R7s	117.6	114.2 ± 1.6	57.0	11.0	2000	10500	2900	Horizontal ± 15°	K1
500	200/230	R7s	117.6	114.2 ± 1.6	66.0	11.0	2000	9500	2900	Horizontal ± 15°	K1
500	240/250	R7s	117.6	114.2 ± 1.6	66.0	11.0	2000	9500	2900	Horizontal ± 15°	K1
750	200/230	R7s	189.1 ± 1	185.7 ± 1.6	117.0	11.0	2000	15000	3000	Horizontal ± 15°	K3
750	240/250	R7s	189.1 ± 1	185.7 ± 1.6	117.0	11.0	2000	15000	3000	Horizontal ± 15°	K3
1000	110	R7s	189.1	185.7 ± 1.6	107.0	11.0	2000	22000	3000	Horizontal ± 15°	K4
1000	130	R7s	189.1	185.7 ± 1.6	107.0	11.0	2000	22000	3000	Horizontal ± 15°	K4
1000	200/230	R7s	189.1	185.7 ± 1.6	112.0	11.0	2000	21000	3000	Horizontal ± 15°	K4
1000	240/230	R7s	189.1	185.7 ± 1.6	112.0	11.0	2000	21000	3000	Horizontal ± 15°	K4
1500	200/230	R7s	254.1	250.7 ± 1.6	175.0	11.0	2000	33000	3000	Horizontal ± 15°	K5
1500	240/250	R7s	254.1	250.7 ± 1.6	175.0	11.0	2000	33000	3000	Horizontal ± 15°	K5
2000	200/230	R7s	331.0	327.4 ± 1.6	249.0	11.0	2000	44000	3000	Horizontal ± 15°	K8
2000	240/250	R7s	331.0	327.4 ± 1.6	249.0	11.0	2000	44000	3000	Horizontal ± 15°	K8
2000	200/230	Fa4	324.1	334.4 max	229.0	12.0	2000	44000	3000	Horizontal ± 15°	K6
2000	240/250	Fa4	324.1	334.4 max	229.0	12.0	2000	44000	3000	Horizontal ± 15°	K6

†Frosted for use with Wall Washer fitting
 †The standard length of the 750w lamp is 189.1mm
 Lamps with a length of 178mm are also available.
 Please specify length when ordering.

All dimensions in millimetres

Tungsten-halogen photoprinting lamps

A number of office copying machines require a linear light source of relatively high colour temperature, and for these applications linear tungsten-halogen lamps are the ideal sources. The advantage of tungsten-halogen lamps is that the

light output remains constant throughout life, and so the speeds of copying remain unchanged throughout the lamp life. For the larger sizes of lamps it is desirable to obtain even illumination across the length of the lamps, and

this is achieved by the use of "segmented filaments" where the filaments are wound with differential gaps to avoid fall off of light at the ends of the lamp.

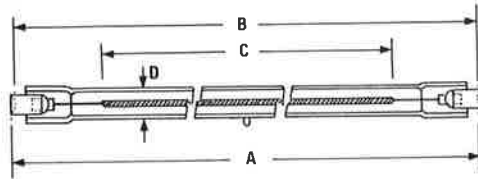
Fusing

It is an advantage to have a fuse in the fitting or external circuit.

Operating temperatures: During operation, the temperature of the lamp pinch seal should not exceed 350 °C, while the bulb wall temperature must not drop below 250 °C in order to maintain the tungsten-halogen cycle.

Principle of operation and Advantages of use are as indicated in the section referring to tungsten halogen floodlighting lamps.

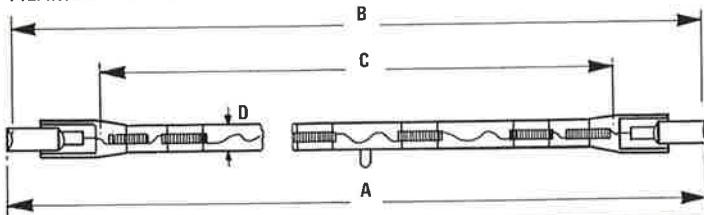
NON-SEGMENTED FILAMENT TYPES



Watts	Volts	Caps	Contact to Ceramic Max (A)	Contact to Contact (B)	Nom Light Length (C)	Max Bulb Dia (D)	Nom Lumens	Colour Temp	Operating Position	Lamp Type
500	110	R7s	117.6	114.2 ± 1.6	60	11 max	10500	3000 K	Horizontal	K1
500	120	R7s	117.6	114.2 ± 1.6	60	11 max	10500	3000 K	Horizontal	K1
500	120	R7s	117.6	114.2 ± 1.6	60	8.5 max	13000	3200 K	Horizontal	—
800	220	R7s	117.6	114.2 ± 1.6	67	12 max	20600	3200 K	Horizontal	P2/18
800	240	R7s	117.6	114.2 ± 1.6	67	12 max	20600	3200 K	Horizontal	P2/18

Min. life of above lamps 50,000 switchings at 6 seconds on 6 seconds off.

SEGMENTED FILAMENT TYPES



Watts	Volts	Caps	Contact to Ceramic (A)	Contact to Contact (B)	Nom Light Length (C)	Max Bulb Dia (D)	Nom Lumens	Colour Temp	Operating Position	Lamp Type
650	220/230	R7s	318 max	315 ± 1.6	276	8.5 max	14300	3200 K	Horizontal	—
650	240/250	R7s	318 max	315 ± 1.6	276	8.5 max	14300	3200 K	Horizontal	—
1000	220/230	R7s	267 max	264 ± 1.6	220	8.5 max	23000	3200 K	Horizontal	—
1000	240/250	R7s	267 max	264 ± 1.6	220	8.5 max	23000	3200 K	Horizontal	—
1000	220/230	R7s	318 max	315 ± 1.6	270	8.5 max	23000	3200 K	Horizontal	—
1000	240/250	R7s	318 max	315 ± 1.6	270	8.5 max	23000	3200 K	Horizontal	—
1500	220/230	R7s	368 max	365 ± 1.6	320	8.5 max	32250	3200 K	Horizontal	—
1500	240/250	R7s	368 max	365 ± 1.6	320	8.5 max	32250	3200 K	Horizontal	—

Min. life of above lamps 50,000 switchings at 6 seconds on 6 seconds off.

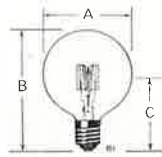
All dimensions in millimetres

Floodlighting lamps

Class B1 Spherical bulbs

For floodlighting of buildings and for studio and theatre spots and floodlights.

The objective average life in well-ventilated fittings is 800 hours. The burning position is within 135° from cap down.



	A max.	B max.	C nominal
B1/1	132	190	115
B1/2			
B1/3			
B1/4			

RANGE

Class B1

Reference no.	Watts	Finish	Cap	Lumens at 100/110/115V	Lumens at 200/250V*	Standard pack
B1/1	100	Clear	ES	1100	900	12
B1/2	250	Clear	ES	3600	3100	12
B1/3	500	Clear	GES	8000	7250	12
B1/4	1000	Clear	GES	18000	16500	12

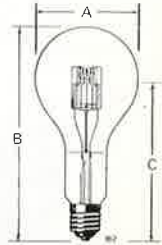
*Lamps available in 10V steps

Class B2 GLS bulbs

Applications are similar to Class B1, especially floodlighting from high towers for football grounds, stadiums, tattoos and similar.

The average objective life for lamps B2/1-3 is 800 hours in well ventilated fittings.

For B2/4 it is 200 hours which is very adequate for a full season of evening matches.



	A max.	B max.	C nominal
B2/1	152	309	225
B2/2			
B2/3			
B2/4	172	334	207

Class B2

Reference no.	Watts	Finish	Cap	Lumens at 100/110/115V	Lumens at 200-250V*	Standard pack
B2/1	500	Clear	GES	8000	7250	9
B2/2	1000	Clear	GES	18000	16500	6
B2/3	1500	Clear	GES	—	26000	6
B2/4	2000	Clear	LPF-P40/41	—	42000	6

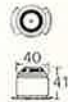
*Lamps available in 10V steps



E27/30
ES



E40/45
GES



Large pre-focus
P40/41

All dimensions in mm

Decoration spare lamps



Fairy-lites

Three 20V 3W lamps in various colours in a bubble pack.
For use in twelve lamp sets.



Satin-lites

Three 20V 3W lamps with a crystal finish.
Packed in a bubble pack in various colours.
For use in twelve lamp sets.



Festival-lites

Three 20V 3W lamps in various satin finished colours, packed in a bubble pack.
For use in twelve lamp sets.



Firefly

Five various coloured lamps packed in a bubble pack.
6V lamps for forty light sets.
12V lamps for twenty light sets.



Party Time Gala Sets

A string of twelve weatherproof BC lampholders, wired complete with adaptors.
Total length of cable 6m for use on 200/250 volt supplies. Lamps supplied separately in boxes of a dozen with six different colours.

Party Time Firefly dispenser

This self-selling pack contains:
20 6V 5 lamp Firefly bubble packs.
20 12V 5 lamp Firefly bubble packs.



Party Time lamp dispenser

For an attractive display and easy selling the multi-colour dispenser contains:
10 3 lamp Fairy-lite bubble packs
10 3 lamp Festive-lite bubble packs
10 3 lamp Satin-lite bubble packs.

Lamp cap code

LAMP CAP CODE

BC Bayonet

SBC Small Bayonet

SCC Small Centre Contact

ES Edison Screw

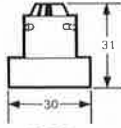
SES Small Edison Screw

MES Miniature Edison Screw

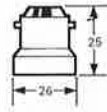
GES Goliath Edison Screw

The dimension code indicates, first, by letter, the type of cap. The first two figures indicate the nominal outer diameter of the cap barrel or screw thread in millimetres. The next two figures indicate the overall length and the last two the diameter of the flange.

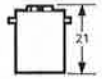
All dimensions in mm



3-pin BC
B223/31 x 30



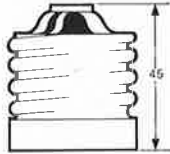
BC
B22/25 x 26



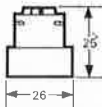
SCC
BC15s/21



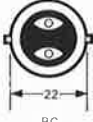
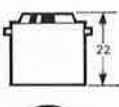
SCC
S15s/15



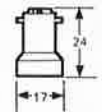
GES
E40/45



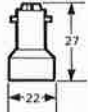
3-pin BC
B22-3/25 x 26



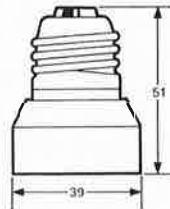
BC
B22/22



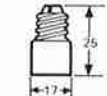
SBC
B15/24 x 17



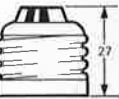
SBC
B15/27 x 22



ES
E27/51 x 39



SES
E14/25 x 17



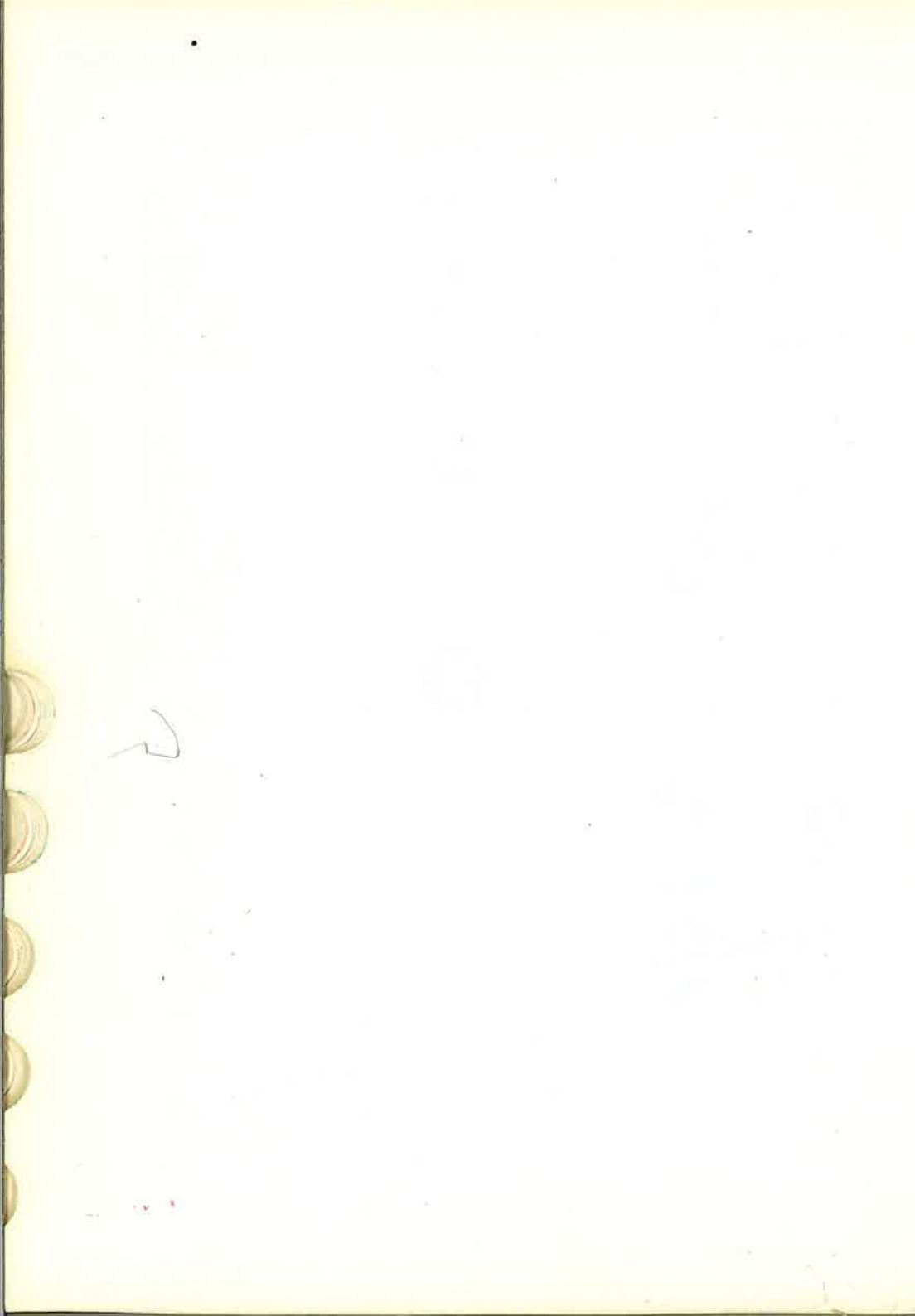
ES
E27/27



Candelabra
E12/21 x 13



SES
E14/23 x 15



Fluorescent tubes Introduction and Index

Thorn Lighting has the finest fluorescent tube works in Western Europe making the extensive range of tubes described in this section of the catalogue, including the de luxe colours which are receiving increasing acknowledgment for interior lighting installations where good colour rendering and colour appearance are important.

Index

6:2, 6:3	General information
6:4	Tube range
6:5	Colours and application
6:6	Spectral distribution
6:7	Colour data
6:8, 6:9	Light output
6:10, 6:11	Electrical data
6:12	Dimensions

Fluorescent tubes general information

Braided Cathode

The braided cathode filament—British Patent 131059—is now being used in 1500mm/5ft 65/80W and 80W BC, 1800mm/6ft 85W and 2400mm/8ft 85W and 125W tubes.

These exclusive braided cathodes give more efficient operation, fewer early failures and longer life than the conventional coiled coil cathode.

The braided cathode consists of a hollow mesh cylinder which is formed by braiding eight very thin strands of tungsten wire together. This means that the emitter is held within the hollow cylinder thus forming a solid core. The release of electrons is better controlled than with a coiled coil filament and this results in the braided cathode having approximately 70% greater electron emission.

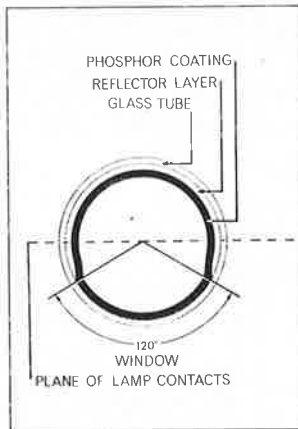


Cathode Shields

Cathode shields are incorporated on the high loading tube range (600mm/2ft 40W, 1500mm/5ft 65/80W, 1800mm/6ft 85W, 2400mm/8ft 85W and 125W).

This shield traps evaporation from the cathode during life, preventing black marks from forming at the end of the tube. In addition, cathode shields reduce flicker which may sometimes be noticeable from commercial fittings.

Reflector Tubes



The reflector fluorescent tubes have an additional highly reflecting coating added between the fluorescent powder and the inside of the glass tube. In this way the majority of light is radiated through an aperture of 120° from the lamp centre in the preferred direction. This lamp is particularly useful in the following applications:

Lighting in dusty atmospheres

Dust collection on an ordinary tube and fitting rapidly reduces light output. With a reflector tube, light re-direction is independent of dust, and light output is better maintained.

Display lighting

This lamp is useful where space is restricted as in showcases where it is difficult to put an external reflector.

High intensity lighting

Reflector lamps enable tubes to be mounted in banks where an external reflector may not be convenient or effective. Replacement lamps can be used in old fittings which have deteriorated, so as to give an increase in useful light output.

Replacement

Lamps can be used in old fittings which have deteriorated so as to give an increase in useful light output.

Amalgam Tubes

Many modern enclosed commercial fittings cause standard fluorescent tubes to operate above their optimum temperature thus giving significant reductions in light output.

Amalgam control of the mercury vapour pressure in a tube allows efficient operation at higher temperatures. The quoted lumen output of a standard tube is measured at an ambient temperature of 25°C, corresponding to a surface temperature of 40–45°C. As the temperature rises, lumen output falls. The same rating of amalgam lamp gives a similar lumen output at an ambient temperature of 50°C, corresponding to a surface temperature of 65°C. Gains in light output of up to 20% over standard tubes can be achieved in multi-lamp enclosed commercial fittings.

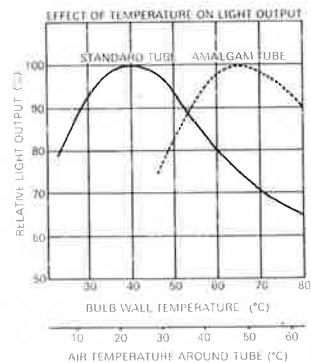
Amalgam tubes are directly interchangeable with standard tubes.

Note: Amalgam tubes only give advantages at air temperatures above 40°C. Standard tubes give better performance below this temperature.

Ratings available

1800 mm/6ft 85W White, Warm White, Natural.

For further information, see note on page 6:8.



Fluorescent tubes general information

Rated Life and Group Replacement

The rated life of all 1200mm/4ft, 1500mm/5ft, 1800mm/6ft and 2400mm/8ft, 38mm/1½in diameter tubes is 7500 hours. The rated life of all other ratings is 5000 hours. In many situations it is advantageous to replace tubes in bulk (Group Replacement) rather than as individual lamps fail. Among the benefits of Group Replacement are:

- A saving in initial cost.
 - A higher average level of lighting
 - More uniform lighting
 - Less interruption of work
 - A saving in running costs.
- Further information on Group Replacement is available from Regional Offices.

Guarantee

Any fluorescent tube failing within 12 months from the date of purchase by the user (or prior to 3000 hours burning whichever is the shorter), except through misuse, will be replaced free of charge.

British Standards

Fluorescent tubes described in this catalogue conform to British Standard 1853:1967 and International Standard IEC81 where applicable.

Thorn Lighting holds Licence no. 5247 for the manufacture of fluorescent tubes to BS.1853.

Fluorescent Tube Packing Quantities

Circles: 12
2400mm/8ft 20
Blacklight Blue: 24
All others: 25

Miniature Fluorescent Tubes

Miniature fluorescent tubes give high lumen output with low power consumption (equivalent to a filament lamp five times the wattage).

Their long life, low temperature and slim shape make them particularly suitable for signs, bollards, displays, bulkheads and appliances.

Colours for General Use

To encourage rationalisation of the range of fluorescent tube colours available, two colours have been chosen by Thorn as being suitable for the majority of installations:

White—The highest efficacy tube available for general lighting purposes.

Natural—Good colour rendering tube for commercial and display purposes.

These colours are identified in **bold type** in this catalogue and it is recommended that they be used for general lighting purposes.

Marking of Rated Wattage on Tubes

The wattage dissipated by any discharge lamp, including a fluorescent tube, depends mainly on the characteristics of the ballast with which the particular lamp is operated and on the mains supply voltage at any given time.

Because of this the marking of a rated wattage on any given fluorescent tube does not necessarily indicate the wattage which the tube is intended to dissipate in any given circuit arrangement.

The appropriate fluorescent tube and associated ballast specifications list the rated or nominal wattage of any given tube type and also the "objective wattage" which is the actual target wattage the tube should dissipate when operated under prescribed conditions in association with a mid-point reference ballast.

Metrication

Fluorescent lamps are now designated in nominal lengths in millimetres. The table below shows how these relate to their former designations.

8ft lamps are now designated	2400mm
6ft lamps are now designated	1800mm
5ft lamps are now designated	1500mm
4ft lamps are now designated	1200mm
3ft lamps are now designated	900mm
2ft lamps are now designated	600mm
21in lamps are now designated	525mm
18in lamps are now designated	450mm
12in lamps are now designated	300mm
9in lamps are now designated	225mm
6in lamps are now designated	150mm

Bi-pin/BC Adaptor

G. B1515 Adaptor converting bi-pin lamp cap to BC. The overall length of a 1500mm/5ft bi-pin tube with these adaptors does not exceed the length of a BC tube.



Carton Colour Coding

Thorn were the first to operate carton label colour coding on the labels at the ends of tube cartons to assist identification. The coding is as follows:—

- White—Buff
- Warmwhite—Pink
- Daylight—Magenta
- Natural—Green
- Northlight/Colour matching—Blue
- De Luxe Natural—Red

All other colours are coded white.

Fluorescent tube range

	175W 2400mm 8 1/2in	85W 2400mm 8 1/2in	85W 1800mm 8in	80W 1500mm 5 1/2in	65/80W 1500mm 5 1/2in	50W 1500mm 5 1/2in	40W 1200mm 4ft	30W 900mm 3ft	40W 600mm 2ft	20W 600mm 2ft	15W 450mm 1 1/2ft	12W 300mm 21in	8W 300mm 12in	6W 235mm 9in	4W 150mm 6in
White	AM	AM	AM	A	AM	AM	AM	AM†	AM	AM	AM	AM	AM	AM	AM
Warm White	AM	AM	AM	A	AM	AM	AM	AM†	AM	AM	AM	AM	AM	AM	AM
Daylight	AM	AM	AM	A	AM	A	AM	A	AM	AM	A	AM	AM	AM	AM
Natural	AM	AM	AM	A	AM	A	AM	A	AM	AM	A	—	A	A	A
Home-lite					M		M								
Northlight/Colour Matching	A	A	A	A	A	—	A	—	A	A	A	—	—	—	—
De Luxe Warm White	A	A	—	A	A	—	A	A	A	A	—	—	—	—	—
*Kolor-rite	A	A	A	A	A	A	A	A	A	A	—	—	—	—	—
De Luxe Natural	A	A	A	A	A	A	A	A	A	A	A	—	—	—	—
Artificial Daylight	A	A	A	—	A	—	A	—	—	A	A	—	—	—	—
Reflector Tubes															
White	A	A	A	A	A	—	A	—	—	A	—	—	—	—	—
Warm White	A	A	A	A	A	—	A	—	—	—	—	—	—	—	—
Daylight	—	—	A	A	A	—	A	—	—	—	—	—	—	—	—
Natural	—	—	—	—	A	—	—	—	—	—	—	—	—	—	—
Amalgam Tubes															
White	—	—	A	—	—	—	—	—	—	—	—	—	—	—	—
Warm White	—	—	A	—	—	—	—	—	—	—	—	—	—	—	—
Natural	—	—	A	—	—	—	—	—	—	—	—	—	—	—	—
Colours															
Pink, Green, Blue, Red, Gold,	—	—	A*	—	A	—	A	A*	A*	A	—	—	—	—	—
Radar Red	—	—	—	—	A	—	A	—	—	—	—	—	—	—	—
Ultra-Violet (non-filter)	—	—	—	—	A	—	A	—	—	A	A	—	A	—	—
Blacklight blue u-v	—	—	—	—	—	—	A	—	—	—	A	—	A	A	A
Gro-lux	—	—	—	—	A	—	A	A‡	—	A	A‡	A	A	—	—
Circular tubes															
(Warm White only)	400mm/16in dia. 60W	M													
	400mm/16in dia. 40W	M													
	300mm/12in dia. 32W	M													
	200mm/8-25in dia. 22W	M													

*Pink only

†Mazda 1in only

‡1in dia. only

Note: Letter A denotes lamps branded atlas letter M those branded mazda

Tube Grades

There are different grades of tube to suit various types of control gear and the correct type must be used to obtain satisfactory starting performance.

GP (General Purpose Quickstart) grade tubes (MCFE/U)

The GP Quickstart tube is manufactured to give satisfactory starting with all switch or switchless start control gear and is now supplied as the standard tube for use in all fittings. For switchless start circuits the metal chassis must extend the full length of the tube and be bonded to earth. The metalwork must not be more than 20mm from the tube. Quickstart, resonant-start and other switchless start circuits must be used only on 200–250V 50 Hz supplies where the neutral conductor is at earth potential.

MS (Metal Strip) grade tubes (MCFA/U)

This tube is necessary only for special conditions, e.g. where earthed metalwork is not adjacent to the tube. It has a metallic conducting strip cemented to the outside of the tube, connected to both caps, which must be earthed.

A limited range of the more popular tubes in 600–1500mm/2–5ft lengths can be supplied with metal strip, to special order.

NOTE: Red and Gold tubes are standard grade only i.e. for use on starter switch circuits and not switchless-start circuits.

Fluorescent tubes Colours & applications

Colours for General Use

In order to encourage rationalisation of the range of fluorescent tube colours available, two colours have been chosen by Thorn as being suitable for the majority of installations.

White - The highest efficacy tube available for general lighting purposes.

Natural - Good colour rendering tube for commercial and display purposes.

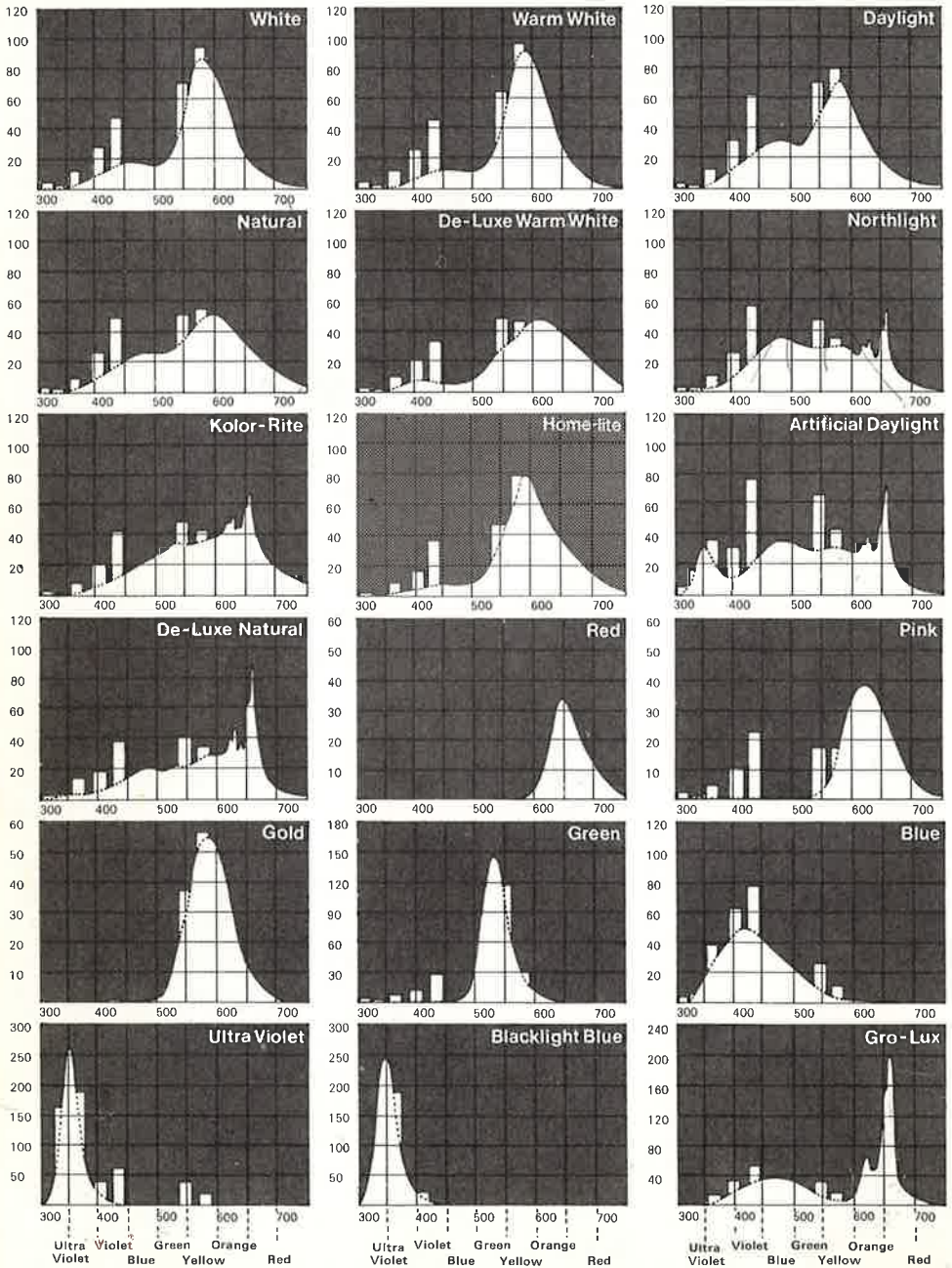
These colours have been identified in bold type in this catalogue and it is recommended that they be used for general lighting purposes.

Tube colour	Percentage of White Tube lumens	Colour rendering quality	Colour appearance	Application and remarks
Industrial lighting				
White and Warm White Daylight	100/98 94	Fair Fair	Intermediate Cool	General illumination at maximum efficacy. Buildings requiring artificial illumination to blend with natural daylight. Minimum of 300 lux must be provided to avoid an excessively cold appearance.
Artificial Daylight	41	Very Good	Cool	Areas where accurate colour matching is carried out. A minimum of 900 lux must be provided. Conforms to BS950: Part One (6500K) For special areas requiring low ultra-violet and violet output.
Gold	55	Poor	Warm	
Commercial lighting				
White and Warm White Natural	100/98 70	Fair Good	Intermediate Intermediate	General and drawing offices requiring maximum lighting efficiency. General office lighting particularly where required to blend with natural daylight. Minimum of 300 lux necessary.
*Kolor-rite	65	Very Good	Intermediate	Offices, showrooms, studios, colleges, hospitals.
De Luxe Warm White	66	Good	Warm	Office buildings requiring a warm effect, flattering to the complexion.
Home-lite	80	Good	Warm	Interiors requiring a warmer appearance than filament lamps.
Display lighting				
Northlight/ Colour Matching	59	Good	Cool	Tailors (Colour matching areas), furriers and for wintry effects. Minimum of 600 lux necessary to avoid an excessively cold appearance.
Natural	70	Good	Intermediate	Jewellery, glassware, china, hardware, tailors (main shop areas), summer frocks and department stores. Minimum of 300 lux necessary.
De Luxe Natural	49	Very Good	Intermediate	Florists, fishmongers, butchers, grocers, supermarkets and brightly coloured merchandise.
*Kolor-rite	65	Very Good	Intermediate	The first choice where true reproduction of colour is required, gives the effect of a sunny day.
De Luxe Warm White	66	Good	Warm	Furniture, restaurants, lounges requiring filament lamp effect.
Home-lite	80	Good	Warm	Interiors requiring a warmer appearance than filament lamps.
White	100	Fair	Intermediate	General display lighting requiring maximum light output, but without the need for good colour quality.
Colours	—	Poor	Poor	Green, gold, blue, red, pink, for special effects.
Domestic lighting				
White or Warm White	100/98	Fair	Warm	Rooms requiring maximum light output.
De Luxe Warm White	66	Good	Warm	Rooms requiring a warmer colour light blending with filament lamps.
Home-lite	80	Good	Warm	Interiors requiring a warmer appearance than filament lamps.
Pink	25	Poor	Warm	Decorative lighting giving a very warm effect.
Special applications				
Green	95	} Poor	} Poor	Saturated colours for display, floodlighting, stage lighting. Note: Red and Gold tubes should only be used in switchstart circuits.
Gold	55			
Pink	25			
Blue	20			
Red	5			
Gro-lux	30	—	—	This special tube colour has been developed for plant growth purposes, and for aquarium lighting where it stimulates aquatic plant growth. Gro-lux tubes have a lavender colour appearance with a strong red and blue rendering effect. Colouring of tropical fish, plants and flowers looks especially vivid under Gro-lux tubes. The Ultra-violet tube emits a large proportion of its energy as invisible ultra-violet radiation between 300 and 400 nanometres. The tube also emits a small amount of visible light at the blue end of the spectrum. Available 65/80W, 40W, 20W, 15W and 8W. Special clear glass 1in diameter 3ft 30 watt tubes are available which give short wave ultra-violet (protection of eyes essential with this lamp). Ultra-violet tubes as above (but with black glass bulb) which transmit ultra-violet only filtering out the visible light. Available 40W (1200mm), 15W, 8W, 6W and 4W. A bright magenta red colour with a higher light output than Red - originally used for radar rooms but also gives a strong red effect to meat and bacon displays. Available 65/80W and 40W.
Ultra violet (Non-filter)	—	—	—	
Germicidal U.V.	—	—	—	
Blacklight Blue	—	—	—	
Radar Red	—	—	—	

Fluorescent tubes spectral distribution

Horizontal scales are wavelengths in nanometres (10^{-9} metres)

Vertical scales are power in milliwatts per nanometre band width for a 1500mm (5ft) tube at 65W, the Blacklight Blue is for a 40W tube.



Fluorescent tubes colour data

Colour Data

The colour rendering and colour appearance data below is on the same basis as the values specified in BS1953, but there is a trend towards other methods of colour specification, e.g. 6 band values for colour rendering and the CIE uniform chromaticity scale for colour appearance in which the co-ordinates are expressed in u and v values. With this in mind the additional data is provided in table 2.

Colour Temperatures for Fluorescent Tubes

The term 'colour temperature' should strictly be applied only to spectral distributions close to the black body distributions. Thus in fluorescent tube colours the 'colour temperature' is merely an indication of the location of the chromaticity co-ordinates on a colour chart.

The 'colour temperatures' should not be used as a guide for photographic purposes.

Artificial Daylight	6500K
Northlight/Colour Matching	6500K
Tropical Daylight	6500K
Daylight	4300K
*Kolor-rite	4000K
Natural	4000K
De Luxe Natural	3600K
White	3400K
Warm White	3000K
De Luxe Warm White	3000K
Home-lite	2600K

Nominal percentage light output for 1500mm (5ft) tubes at 65W

Table 1-8 Bands

CIE Bands	nm	Artificial Daylight	Northlight/Colour Matching	Daylight	Natural	Kolor-rite	De Luxe Natural	White	Warm White	De Luxe Warm White	Home-lite
1. Far Violet	380-420		0.017	0.014	0.014	0.017	0.011	0.010	0.007	0.017	0.008
2. Violet	420-440	1.06	0.42	0.31	0.33	0.13	0.37	0.26	0.25	0.30	0.24
3. Blue	440-460		0.65	0.38	0.37	0.48	0.39	0.22	0.17	0.10	0.120
4. Blue-Green	460-510	9.6	9.7	5.3	5.6	7.9	6.1	3.1	2.5	2.4	1.800
5. Green	510-560	44.9	44.5	37.2	38.0	38.0	38.7	32.3	29.5	35.8	29.50
6. Yellow	560-610	33.8	34.1	48.9	44.1	39.5	37.5	54.9	67.3	45.8	54.70
7. Light Red	610-660	9.9	10.0	7.8	11.2	13.0	15.8	9.1	10.2	14.9	13.10
8. Dark Red	660-760	0.63	0.63	0.17	0.69	1.06	1.2	0.19	0.21	0.81	0.52

Ultra-violet (watts per 65W tube, between 300 and 400 nanometres)

	1.30	0.47	0.53	0.41	0.32	0.42	0.44	0.40	0.40	0.36
--	------	------	------	------	------	------	------	------	------	------

Colour appearance

'X' and 'Y' colour co-ordinates

X	0.313	0.317	0.373	0.378	0.3804	0.390	0.414	0.435	0.437	0.454
Y	0.329	0.324	0.380	0.365	0.3767	0.356	0.397	0.401	0.400	0.400

Table 2-6 Bands

1. Violet-Blue	400-455	0.79	0.83	0.57	0.58	0.435	0.62	0.41	0.34	0.36	0.33
2. Blue-Green	455-510	11.2	11.0	5.3	6.3	8.03	6.3	3.3	2.7	2.6	1.8
3. Green	510-540	23.1	19.9	12.6	15.0	19.8	14.8	9.3	8.3	13.5	7.7
4. Green-Yellow	540-590	43.7	48.0	59.9	52.7	44.7	50.0	61.3	60.7	53.2	58.7
5. Orange	590-620	14.4	13.1	17.5	18.1	17.7	16.5	20.7	22.4	20.6	23.3
6. Red	620-760	6.8	7.2	4.1	7.3	9.4	11.8	4.9	5.6	9.8	8.1

Colour appearance -

Nominal u and v colour co-ordinates

CIE uniform chromaticity scale

u	0.1978	0.203	0.219	0.228	0.2251	0.240	0.239	0.251	0.252	0.268
v	0.3122	0.311	0.335	0.031	0.3344	0.329	0.343	0.347	0.347	0.348

Fluorescent tubes light output

Lumen outputs

The lumen outputs quoted in this catalogue are measured at 25°C in accordance with BS, 1853.

Initial lumens

Initial lumens are measured after 100 hours operation.

Lighting design lumens

Lighting design lumens are the lamp outputs at 2000 hours and are recommended as a guide to lighting engineers planning scheme layouts.

Lumen output beyond 2000 hours decreases by 2% to 3% per 1000 hours use according to the colour and loading

Colours for general use

The colours identified in bold type are recommended for general lighting purposes.

MINIATURE FLUORESCENT TUBES

Initial lumens	525mm		300mm		225mm		150mm	
	21in	12in	12in	9in	9in	6in	6in	4W
	13W	8W	8W	6W	6W	4W		
White	830	425	290	150				
Warm White	830	425	290	150				
Daylight	780	400	275	140				
Natural	—	325	230	110				

All these tubes are 16mm/0.625in diameter.

Lighting design lumens

Lighting design lumens			
525mm	300mm	225mm	150mm
21in	12in	9in	6in
13W	8W	6W	4W
730	360	240	120
730	360	240	120
680	340	230	110
—	280	190	85

FLUORESCENT TUBES

Initial lumens (100 hours)

	2400	2400	1800	1500	1500	1500†	1200	900	900†	600	600	450	450†
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
	8ft	Super 8	Super 6	Super 5	Super 5	5ft	4ft	3ft	3ft	2ft	2ft	18in	18in
	125W	85W	85W	80W*	65W*	50W	40W	30W	30W	40W	20W	15W	15W
White	9400	7300	6600	5700	5050	3700	3000	2100	2400	2000	1200	900	950
Warm White	9300	7200	6500	5600	4950	3650	2950	2100	2400	2000	1200	900	950
Daylight	9000	7000	6250	5450	4800	3600	2900	2000	2300	1900	1150	850	900
Home-lite	—	—	—	4400	4000	—	2450	—	—	—	—	—	—
Natural	7150	5500	4800	4300	3700	2800	2300	1600	1800	1500	900	650	700
De Luxe Warm White	6800	5300	—	4100	3600	—	2150	1500	1700	1400	850	600	—
°Kolor-rite	6300	4800	4300	3800	3350	2550	2000	—	1550	1300	850	—	—
Northlight/Colour Matching	5800	4500	4000	3400	3000	—	1900	1300	1500	1250	800	550	600
De Luxe Natural	5500	4300	3700	3200	2900	2250	1750	1200	1400	1150	700	500	550
Artificial Daylight	4800	3600	3300	2900	2600	—	1500	—	—	—	650	—	500

Lighting design lumens (2000 hours)

	8700	6800	6300	5200	4700	3300	2750	1850	2150	1700	1100	750	800
White	8700	6800	6300	5200	4700	3300	2750	1850	2150	1700	1100	750	800
Warm White	8600	6700	6100	5100	4600	3250	2700	1850	2150	1700	1100	750	800
Daylight	8400	6500	5750	4950	4450	3200	2650	1750	2050	1600	1050	700	750
Home-lite	—	—	—	3900	3600	—	2200	—	—	—	—	—	—
Natural	6500	5000	4350	3900	3400	2400	2100	1400	1600	1300	800	550	600
De Luxe Warm White	6200	4700	—	3500	3100	—	1950	1250	1450	1200	750	500	—
°Kolor-rite	5700	4400	3850	3400	3000	2200	1800	—	1300	1100	750	—	—
Northlight/Colour Matching	5300	4100	3600	3100	2700	—	1700	1050	1250	1050	700	450	500
De Luxe Natural	4800	3800	3200	2700	2500	1850	1500	900	1100	900	600	400	450
Artificial Daylight	3800	3000	2600	2300	2100	—	1200	—	—	—	500	—	400

†These tubes are 26mm/1in diameter. All others are 38mm/1.5in diameter.

*The Super 5 tube is a dual purpose 65/80W tube suitable for use in all 65W or 80W bi-pin fittings

1500mm/5ft 80W BC tubes are still available in a limited range of standard colours

Note: Amalgam tube lumen outputs as for 6ft 85W ratings above but subject to special ambient temperature factor, as detailed on page 6:2

Fluorescent tubes light output

REFLECTOR TUBES

Initial lumens (100 hours)

	2400mm	2400mm	1800mm	1500mm	1500mm	1200mm	600mm
	8ft	8ft	6ft	5ft at	5ft at	4ft	2ft
	125W	85W	85W	80W	65W	40W	20W
White	8400	6500	5800	5100	4500	2700	1100
Warm White	8300	6400	5600	4900	4400	2650	—
Daylight	—	—	5500	4700	4200	2600	—
Natural	—	—	—	3800	3300	—	—

Lighting design lumens (2000 hours)

White	7700	6000	5200	4600	4200	2450	1000
Warm White	7600	5900	5000	4400	4000	2400	—
Daylight	—	—	4900	4200	3800	2350	—
Natural	—	—	—	3300	2900	—	—

COLOURED TUBES

Six standard colours – Red, Blue, Green, Gold, Peach and Pink – are available. These are primarily designed for decorative and effect lighting purposes.

Lighting design lumens (2000 hours)

	1800mm	1500mm	1500mm	1200mm	900mm	600mm	600mm
	6ft	5ft at	5ft at	4ft	3ft	2ft	2ft
	85W	80W	65W	40W	30W	40W	20W
Pink	1600	1400	1250	750	550	500	290
Red*	—	250	230	140	—	—	50
Gold*	—	2700	2400	1450	—	—	550
Green	—	5200	4600	2800	—	—	1100
Blue	—	1300	1150	700	—	—	270

*Red and Gold tubes should be used only in switchstart circuits.

GRO-LUX

Lighting design lumens (2000 hours)

1500mm	1500mm	1200mm	900mm*	600mm	450mm*	525mm	300mm
5ft at	5ft at	4ft	3ft	2ft	18in	21in	12in
80W	65W	40W	30W	20W	15W	13W	8W
1450	1300	810	530	340	200	180	100

*26mm/1in diameter.

TROPICAL DAYLIGHT

Lighting design lumens (2000 hours)

450mm/18in 15W: 550

CIRCULAR TUBES AND "U" TUBE

Lighting design lumens (2000 hours)

Circular=Warm White only

"U"=White only

	400mm	400mm	300mm	200mm	600mm x 150mm (diameter)
Tube size (diameter)	16in	16in	12in	8-25in	
	60W	40W	32W	22W	40W
	3400	2300	1600	850	2700

Fluorescent tubes electrical data

Electrical data for standard 240V 50Hz tube circuits. Average performance tested at 25 °C to BS.2818
The figures on this page are for control gear used in Atlantic and similar fittings. (Intermediate section gear).

Tube size	2400mm 8ft	2400mm 8ft	1800mm 6ft	1500mm 5ft	1500mm 5ft	1200mm 4ft	600mm 2ft	600mm 2ft
Diameter	38mm 1.5in	38mm 1.5in	38mm 1.5in	38mm 1.5in	38mm 1.5in	38mm 1.5in	38mm 1.5in	38mm 1.5in
Nominal tube watts	125W	85W	85W	80W	65W	40W	40W	20W
Lamp cap	BP	BP Super 8	BP Super 6	BC or BP	BP Super 5	BP	BP	BP
Actual lamp watts	123	85	84	76	64	39.5	37	19.5
Average tube volts	150	184	120	100	110	102	47	58
Average tube amps	0.94	0.65	0.80	0.87	0.67	0.44	0.88	0.37
Rated life (hours)	7500	7500	7500	7500	7500	7500	5000	5000

SINGLE TUBE SWITCHSTART

Total circuit watts	144	—	95	94	80	50	58	30
Lagging power factor	0.64 †	—	0.87	0.85	0.85	0.85	0.85	0.34 *
Total volt/amps	226	—	108	110	91	60	69	90
Mains current at 240V	0.94	—	0.45	0.46	0.38	0.25	0.29	0.37
Min. starting temperature	0 °C	—	+5 °C	0 °C	0 °C	0 °C	0 °C	0 °C
% Harmonics per phase	15%	—	17%	17%	17%	17%	—	—

SINGLE TUBE SWITCHLESS START

Total circuit watts	154	100	96	99	79	54	100	54
Lagging power factor	0.98	0.99	0.86	0.85	0.91	0.93	0.85	0.85
Total volt/amps	158	100	110	116	87	58	118	63
Mains current at 240V	0.66	0.42	0.46	0.48	0.36	0.24	0.49	0.26
Min. starting temperature	+5 °C	+5 °C	-5 °C	+5 °C	-5 °C	-5 °C	+5 °C	+5 °C
% Harmonics per phase	8%	7%	25%	17%	25%	25%	—	—

TWIN TUBE SERIES PAIR SWITCHLESS START

Total circuit watts	—	207	—	—	—	—	94	50
Lagging power factor	—	0.95	—	—	—	—	0.85	0.85
Total volt/amps	—	218	—	—	—	—	110	59
Mains current at 240V	—	0.91	—	—	—	—	0.46	0.25
Min. starting temperature	—	+5 °C	—	—	—	—	0 °C	0 °C
% Harmonics per phase	—	17%	—	—	—	—	—	—

†2400mm/8ft 125W operates with a series type capacitor at a leading power factor.

*Uncorrected value. Allow 0.85 if power factor capacitor is fitted

The above circuit watts for control gear tested in accordance with BS.2818 may be reduced by up to 5% when operating in some fittings as the circuit watts reduce as the lamp operating temperature rises.

Fluorescent tubes electrical data

Electrical data for 240V 50Hz tube circuits. Average performance tested at 25°C to BS.2818.

The figures below are for control gear used in Popular Pack fittings (slim section gear).

Tube size	8ft	6ft	6ft	6ft	5ft	5ft	4ft	4ft	2ft
Diameter	1½ in	1½ in	1½ in	1½ in	1½ in	1½ in	1½ in	1½ in	1½ in
Nominal tube watts	125	75/85	75	75	65	65	40	40	20
Circuit type	SS	SRS	SS	SS Twin	SS	SRS	SS	SRS	SS
Actual lamp watts	121	82	74	148	64	63	39.6	39	19.5
Average tube volts	153	123	131	131	112	113	103	104	58
Average tube amps	0.92	0.77	0.66	2 × 0.66	0.67	0.63	0.44	0.42	0.37
Rated life (hours)	7500	7500	7500	7500	7500	7500	7500	7500	5000
Total circuit watts	145*	103*	88*	174*	78*	83*	51*	55*	30*
Mains current amps	0.92	0.50	0.66	0.74	0.39	0.37	0.25	0.24	0.37
Total volt amps	220	120	158	178	93	89	60	58	90
Lagging power factor	0.66 †	0.86	0.56 †	0.98	0.85	0.93	0.85	0.95	0.34**
Min. starting temperature	0°C	-5°C	0°C	+5°C	0°C	-5°C	0°C	-5°C	0°C
% 3rd Harmonics per phase	14%	25%	14%	21%	17%	25%	17%	25%	17%

*The above circuit watts for control gear tested in accordance with BS.2818 may be reduced by up to 3% when operating in some fittings, i.e., the circuit watts reduce as the lamp operating temperature increases.

**Uncorrected value, for single tube operation. †Leading power factor.

Electrical data for standard 240V 50Hz tube circuits. Average performance tested at 25°C to BS.2818.

The figures below are for control gear used in Arrow-slim and Minipack fittings (slim section gear).

Tube size	1500mm 5ft	900mm 3ft	450mm 18in	525mm 21in	300mm 12in	225mm 9in	150mm 6in
Diameter	26mm 1in	26mm 1in	26mm 1in	16mm 0.625in	16mm 0.625in	16mm 0.625in	16mm 0.625in
Nominal tube watts	50W	30W	15W	13W	8W	6W	4W
Lamp cap	BP	BP	BP	Min. BP	Min. BP	Min. BP	Min. BP
Actual lamp watts	50	30	15	13	8	6	4
Average tube volts	165	98	57	92	55	43	30
Average tube amps	0.38	0.36	0.34	0.17	0.17	0.16	0.15
Rated life (hours)	5000	5000	5000	5000	5000	5000	5000

SINGLE TUBE SWITCHSTART

Total circuit watts	—	39	25	19	14	12	10
Lagging power factor	—	0.85	0.31*	0.46*	0.34*	0.31*	0.28*
Total volt/amps	—	46	81	41	41	39	36
Mains current at 240V	—	0.19	0.34	0.17	0.17	0.16	0.15
Min. starting temperature	—	0°C	0°C	0°C	0°C	0°C	0°C
% Harmonics per phase	—	17%	—	—	—	—	—

SERIES PAIR SWITCHSTART

Total circuit watts	—	—	40	—	22	18	14
Lagging power factor	—	—	0.85	—	0.52*	0.46*	0.39*
Total volt/amps	—	—	47	—	41	39	36
Mains current at 240V	—	—	0.20	—	0.17	0.16	0.15
Min. starting temperature	—	—	0°C	—	0°C	0°C	0°C

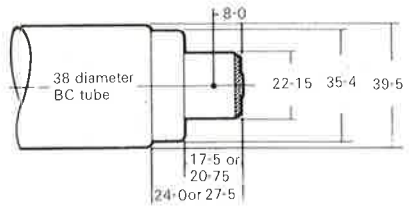
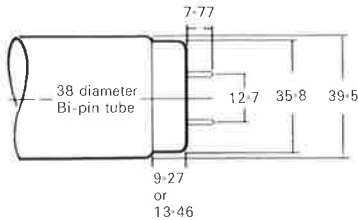
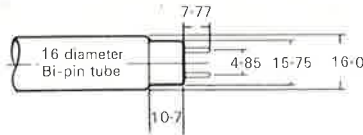
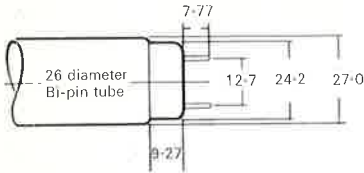
SINGLE TUBE SWITCHLESS START

Total circuit watts	66	54
Lagging power factor	0.88	0.93
Total volt/amps	91	58
Mains current at 240V	0.38	0.24
Min. starting temperature	+5°C	-5°C
% Harmonics per phase	25%	25%

*Uncorrected value. Allow 0.85 if power factor capacitor is fitted

The above circuit watts for control gear tested in accordance with BS.2818 may be reduced by up to 5% when operating in some fittings as the circuit watts reduce as the lamp operating temperature rises.

Fluorescent tubes dimensions



Maximum dimensions (mm)

STRAIGHT TUBES

Rated wattage	Nominal dimensions		cap	Length, base face to base face (mm) max.	Length, base face to end of opposite cap pins mm		Length overall mm	
	mm*	in			max.	min.	max.	min.
125	2400 × 38	96 × 1½	Bi-pin	2374.9	2382.0	2378.4	2389.1	—
85	2400 × 38	96 × 1½	Bi-pin	2374.9	2382.0	2378.4	2389.1	—
85	1800 × 38	72 × 1½	Bi-pin	1763.8	1770.9	1768.4	1778.0	—
65/80	1500 × 38	60 × 1½	Bi-pin	1500.0	1507.1	1504.8	1514.3	—
80	1500 × 38	60 × 1½	BC	—	—	—	1530.4	1517.6
50	1500 × 26	60 × 1	Bi-pin	1500.0	1507.1	1504.8	1514.3	—
40	1200 × 38	48 × 1½	Bi-pin	1119.4	1206.5	1204.1	1213.6	—
40	600 × 38	24 × 1½	Bi-pin	589.8	596.9	594.5	604.0	—
30	900 × 38	36 × 1½	Bi-pin	894.6	901.7	899.3	908.8	—
30	900 × 26	36 × 1	Bi-pin	894.6	901.7	899.3	908.8	—
20	600 × 38	24 × 1½	Bi-pin	589.8	596.9	594.5	604.0	—
15	450 × 38	18 × 1½	Bi-pin	437.4	444.5	442.1	451.6	—
15	450 × 26	18 × 1	Bi-pin	437.4	444.5	442.1	451.6	—
13	525 × 16	21 × ⅝	Small bi-pin	516.8	523.9	521.5	531.0	—
8	300 × 16	12 × ⅝	Small bi-pin	288.2	295.3	292.9	302.4	—
6	225 × 16	9 × ⅝	Small bi-pin	212.0	219.1	216.7	226.2	—
4	150 × 16	6 × ⅝	Small bi-pin	135.8	142.9	140.5	150.0	—

CIRCULAR TUBES

Lamp watts	Nominal diameter		Inside lamp diameter/ glass mm		Inside lamp diameter/ base mm		Outside lamp diameter*		Bulb diameter mm	
	mm	in	max.	min.	max.	min.	max.	min.	max.	min.
22	200	8¼	160.4	151.1	155.6	150.8	215.9	203.2	30.9	26.2
32	300	12	245.6	237.3	246.1	239.7	311.2	298.5	34.1	29.4
40	400	16	346.9	338.9	347.7	341.3	412.8	400.0	34.1	29.4
60	400	16	346.9	338.9	347.7	341.3	412.8	400.0	34.1	29.4

*Base and glass dimensions the same

Note: New 40 watt "U" tube=575mm Overall length x 190mm Overall width

Contents

Introduction	7:1
Mercury lamp information	7:2
Sodium lamp information	7:3
Kolorarc MBF and MBT metal halide lamps	7:4
Kolorlux MBF mercury fluorescent lamps	7:5
Kolorlux MBFR mercury reflector lamps	7:6
Kolor-Plus MBTF and 'Black Light' MBTW mercury tungsten lamps	7:7
MB mercury lamps	7:8
KolorSON high pressure sodium lamps	7:9
Linear SE/H sodium lamps	7:10
SOX sodium lamps	7:11

Introduction Thorn Lighting offers the widest choice of discharge lamps in the country. This range enables you to select lamps with the best combination of light output and colour to satisfy your particular requirements. And so, because you get the right lamp for the job, you enjoy maximum operating efficiency and minimum maintenance costs.

Kolorarc lamps, with their special metallic additives, have no challengers for really accurate colour rendering, so accurate that they have been proved suitable light sources for use with colour television. In any commercial or industrial situation where high light output combined with accurate colour rendering is demanded, Kolorarc lamps are ideal.

Kolorlux lamps combine good colour with a wide range, stretching from 50W to 1000W, giving exceptional flexibility. The MBFR version, with its internal coating, gives improved lumen maintenance in industrial situations and lowers operating costs.

Atlas Kolor-Plus MBTF lamps take this flexibility even further by requiring no control gear and make excellent long-life replacements for ordinary tungsten filament lamps – especially where maintenance is difficult and costly.

The KolorSON high pressure sodium lamp is the most efficient in the Kolor range, producing a brilliant golden light. It is becoming increasingly popular for exterior lighting where improved colour is needed, and also for interior use where warm colour is acceptable and high efficacy vital.

The Linear Sodium and SOX lamps are for outdoor and streetlighting applications and achieve the highest possible light output for the lowest cost.

All these discharge lamps have been developed by Thorn's incomparable research and design facilities and backed by Britain's largest distribution network.

Mercury lamp information

Lighting Design Lumens

The Lighting Design Lumens quoted are the lamp outputs at 2000 hours and are recommended as a guide to lighting engineers planning scheme lay-outs. Lumen output beyond 2000 hours decreases by 2–3% per 1000 hours use according to type.

Striking Voltage

Mercury lamps are provided with an auxiliary electrode to initiate starting. Diagram 1 shows that the lamp will start readily under all normal operating temperatures. The striking voltage of MBI and MBIF lamps is not affected by ambient temperature down to -30°C .

Mains Voltage Variation

Diagram 2 shows the effect of mains voltage variation on light output, lumens per watt and lamp watts.

Run-up Characteristics

These are shown in diagram 3. The time taken will vary slightly depending on the location and the type of fitting housing the lamp. Curves for metal halide lamps are shown in diagram 4.

Standards

Lamps conform to the following standards where applicable:

British

BS.3677 : High Pressure Mercury Vapour Lamps
BS.98 : 1962 Screw Caps and Holders

International

IEC publication 188 High Pressure Mercury Vapour Lamps

GENERAL

Dimensions

The dimensions shown are maximum

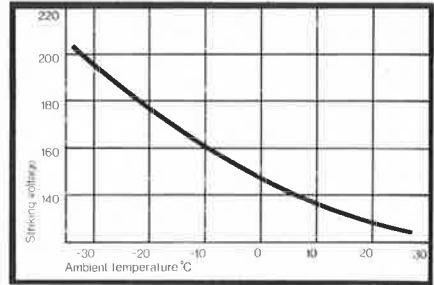
Cap Designations

ES — E27
GES — E40
BC — B22
3 pin BC — B22-3
BIPIN — G13

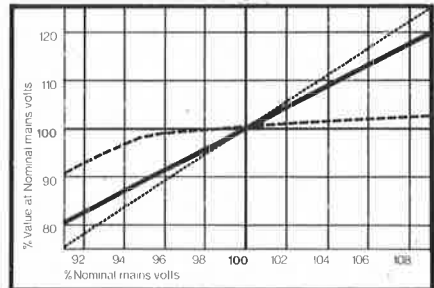
Supply Voltage

All lamps are suitable for use on 220V and 240V supplies in conjunction with control gear shown in Section 10.

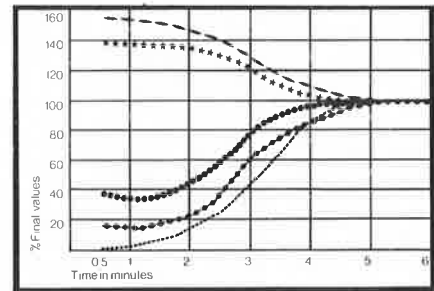
1 Variation of striking voltage with ambient temperature for mercury lamps



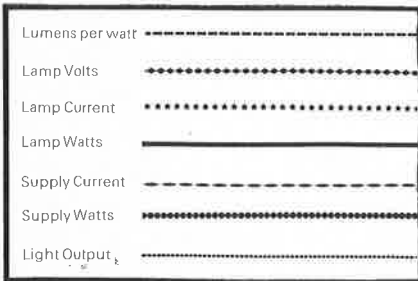
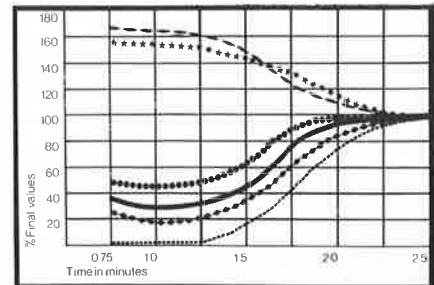
2 Effect of variation of mains voltage on the lamp characteristics of mercury discharge lamps



3 Typical mercury run-up curves



4 Typical metal halide run-up curves



Sodium lamp information

Lighting Design Lumens

The Lighting Design Lumens quoted are the lamp outputs at 3000 hours (2000 hours for SON) and represent an average over the first 6000 hours life.

Striking Voltage

The starting of low and high pressure sodium lamps is not affected by ambient temperature down to -30°C .

Mains Voltage Variation

Diagrams 1 and 2 show the effect of the variation of mains voltage on light output, lumens per watt, supply watts and supply current.

Run-up Characteristics

For low pressure lamps these vary between 10 and 20 minutes according to type but there is no delay in starting if the lamp is switched on while hot.

Typical run-up curves for linear lamps are shown in diagram 3.

Run up characteristics of SON lamps are shown in diagram 4.

Run-up characteristics of SOX lamps are shown in diagram 5.

Standards

Lamps described in this catalogue conform to the following standards where applicable:

British

BS.3767 : Low Pressure Sodium Vapour Lamps

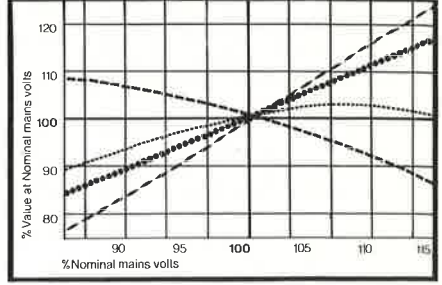
International

IEC publication 192:Low Pressure Sodium Vapour Lamps

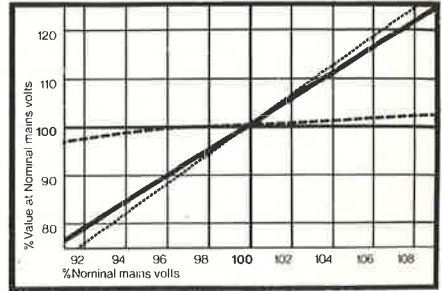
Guarantee

Any sodium lamp failing prior to 4000 hours burning, except through misuse, will be replaced free of charge

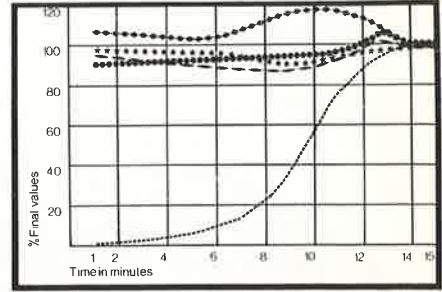
1 Mains voltage variation: sodium



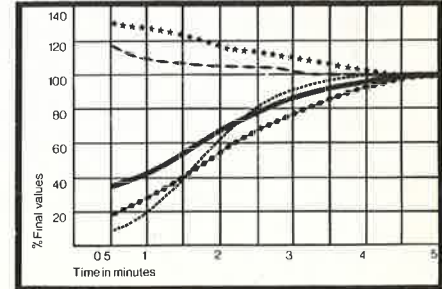
2 Mains voltage variation: high pressure sodium



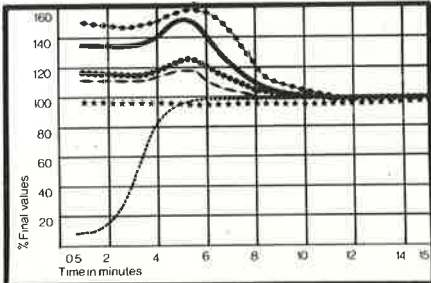
3 Typical Linear Sodium run-up curves



4 Typical SON run-up curves



5 Typical SOX run-up curves



Kolorarc MBIF and MBI metal halide lamps

Description High pressure discharge in mercury with metallic additives operating in a quartz arc tube. Kolorarc (MBIF) lamps have hard glass elliptical bulbs coated on the interior surface with fluorescent phosphor increasing the light output, improving the colour and diffusing the arc. MBI lamps have clear hard glass elliptical bulbs. The special additives in the arc help provide a more continuous spectral power distribution throughout the visible spectrum. At the same time the mercury resonance lines are reduced in comparison with ordinary mercury lamps, giving a light source with excellent colour rendering properties comparable to a Natural fluorescent tube.

Application In any situation where high light output must be combined with good colour rendering, Kolorarc lamps are ideal. They can be used indoors for offices, shops, supermarkets and stores, where colour is of primary importance, and are finding increasing application for illuminating interior sports halls, gymnasias and swimming pools.

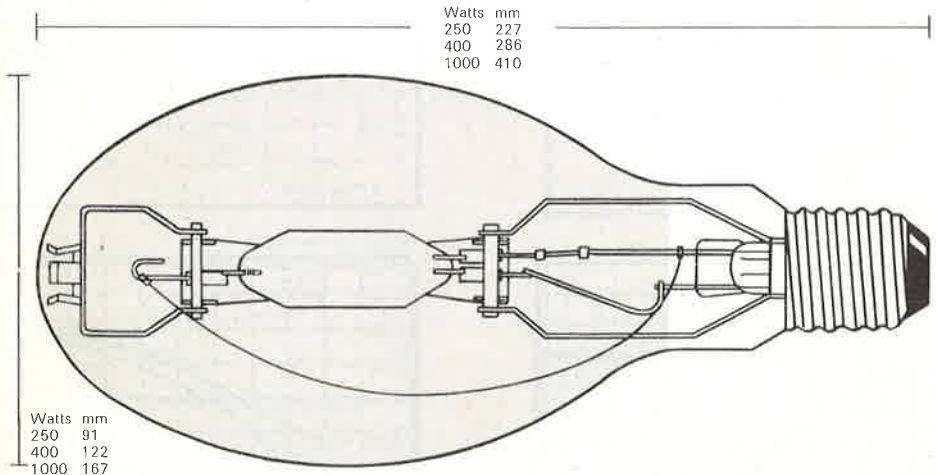
The excellent colour rendering of Kolorarc makes it suitable for museums and exhibitions where skilled lighting design can enhance the beauty of the exhibits. Industrially, Kolorarc lamps can be used in area and high-bay lighting where good colour qualities, coupled with high output efficiency, are required. Kolorarc lamps are 30% more efficient than MBF colour corrected mercury lamps. The high lumen output is of primary importance where the weight of fittings on the ceiling is a serious consideration. MBI lamps, with clear outer bulbs, are suitable where precise optical control is required, such as floodlighting. Kolorarc and MBI lamps have proved suitable light sources for use with colour television cameras. Other varieties of metal halide lamps are being increasingly used for stadia floodlighting, especially that of football grounds.

Burning Position BU : Base up lamps must **not** be operated with cap more than 15° below horizontal. BD : Base down lamps must **not** be operated with cap more than 15° above horizontal.

RANGE

	Watts	Burning Position	Nominal Lamp Voltage	Lamp Current Amps	Cap	Initial	Lumens Lighting Design	Standard Pack
MBIF Kolorarc	250	BU	90	3.1	GES	19000	16000	9
	400	BU†	135	3.3	GES	32000*	27000*	9
	1000	BU†	250	4.2	GES	92000*	85000*	1
MBI	400	BU†	135	3.3	GES	29000*	24000*	9
	1000	BU†	250	4.2	GES	85000*	78000*	1

*Applies to vertical position, when operated horizontally reduce by 10%
 †BD available to order



Kolorlux MBF mercury fluorescent lamps

Description High pressure mercury vapour discharge operating in a quartz arc tube. The interior surface of the elliptical bulb is coated with a fluorescent phosphor which converts ultra-violet radiation from the discharge into visible light. Kolorlux lamps employ a new phosphor giving up to 10% higher light output than standard MBF lamps together with improved colour at the red end of the spectrum.

colour of Kolorlux has extended the applications to commercial and display lighting, shopping centre and concourse lighting, and area floodlighting. In comparison with fluorescent tubes, higher output Kolorlux lamps need fewer fittings for an equivalent illumination level: giving a tidier ceiling and reduced maintenance costs

Applications MBF lamps are widely used in industrial lighting and streetlighting. The improved

Burning Position

Universal: lamps may be operated in any position.

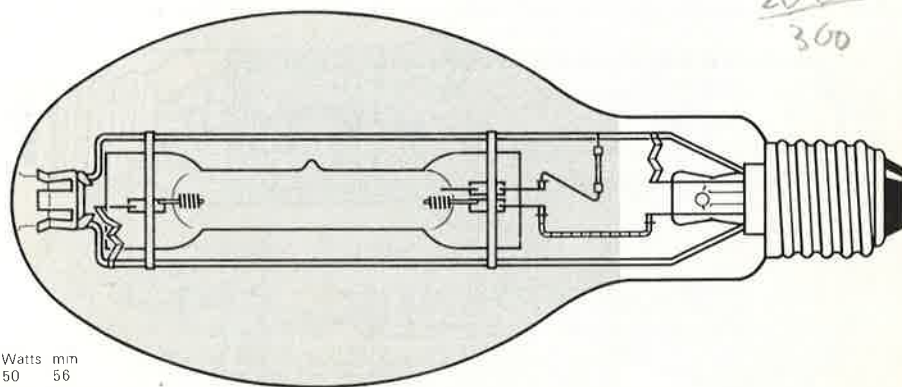
RANGE

Watts	Nominal Lamp Voltage	Lamp Current Amps	Cap	Lumens		
				Initial	Lighting Design	Standard Pack
50	95	0.61	ES	1900	1800	50
80	115	0.80	ES*	3600	3350	24
125	125	1.15	ES*	6250	5550	24
250	130	2.15	GES	13500	12000	9
400	135	3.20	GES	23000	21500	9
700	140	5.60	GES	40000	38000	1
1000	145	7.50	GES	56000	54000	1

13 pin BC cap also available

Watts	mm	Watts	mm
50	129	400	286
80	154	700	328
125	175	1000	410
250	227		

Handwritten notes: 54, 400/2300, 200, 300



Watts	mm
50	56
80	71
125	76
250	91
400	122
700	143
1000	167

Kolorlux MBFR mercury reflector lamps

Description High pressure mercury vapour discharge operating in a quartz arc tube. A shaped outer bulb forms an integral reflector. The upper portion of the bulb is coated with a reflecting layer which directs most of the light downward but allows some upward light. This internal reflector is unaffected by atmospheric corrosion and dirt collection so that the lamp requires the minimum maintenance. The introduction of Kolorlux phosphor into the range of reflector lamps gives a greatly improved colour and up to 10% higher output than

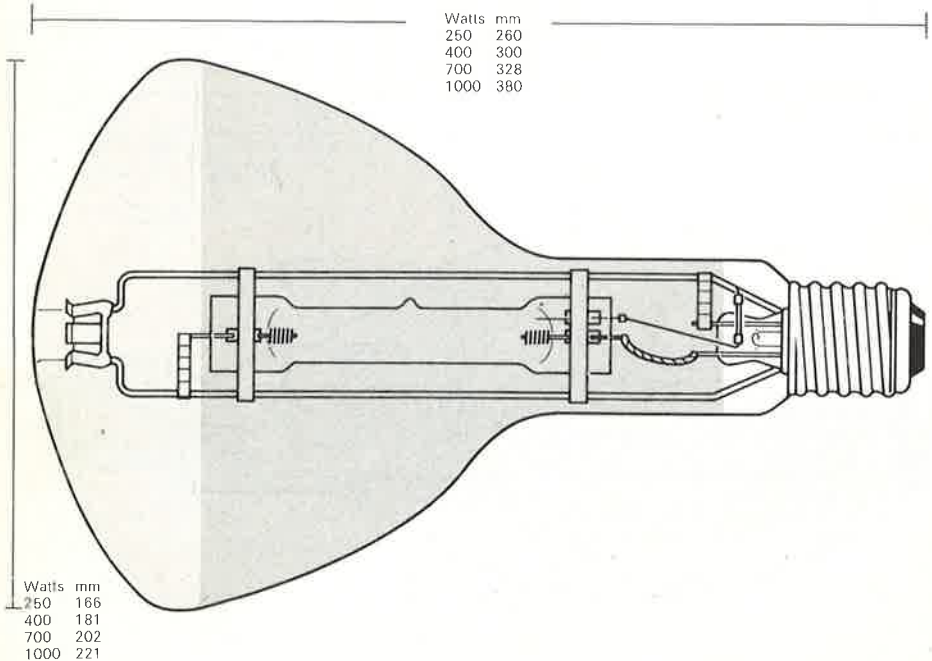
previously available with standard MBFR lamps.

Application Kolorlux reflector lamps are particularly suitable for medium and high bay lighting. The hard glass outer bulb allows the lamps to be used in exposed conditions for area lighting. The improved colour of Kolorlux has widened the use of reflector lamps into commercial applications such as display lighting.

Burning Position Universal : lamps can be operated in any position.

RANGE

Watts	Nominal Lamp Voltage	Lamp Current Amps	Cap	Lumens		
				Initial	Lighting Design	Standard Pack
250	130	2.15	GES	11500	10500	1
400	135	3.20	GES	20500	20500	1
700	140	5.60	GES	35000	32500	1
1000	145	7.50	GES	52000	48000	1



Kolor-Plus MBTF and 'Black Light' MBTW mercury tungsten lamps

Description Mercury tungsten lamps consist of a high pressure mercury discharge in a quartz arc tube. Mounted coaxially with the arc tube and connected in series with it is a coiled tungsten filament which provides light and colour correction to the output of the mercury discharge and acts as a ballast to the arc.

No control gear is needed. Mercury tungsten lamps operate direct from the supply. All ratings have elliptical outer bulbs.

Kolor-Plus MBTF lamps (illustrated below) have an outer bulb coated with a new phosphor giving higher light output and improved colour.

The MBTW lamp has a pear shaped 'Black Light' outer bulb (length 184mm diameter 91mm) which effectively obscures all visible radiation, and emits long wave Ultra Violet.

Application Kolor-Plus MBTF lamps can be used as direct replacements for tungsten filament lamps giving higher light output and longer life. They are particularly suitable where labour costs are high and access is difficult. Applications include shop windows, garages, warehouses, streetlighting and in wellglass and flameproof fittings.

The MBTW lamp is a very convenient way of providing Ultra Violet lighting ('Black Light') for fluorescent effects in dance halls, clubs, discotheques, parties etc.

Advantages Kolor-Plus MBTF lamps
 —offer eight times the life of GLS lamps
 —plug directly into the mains: no need for control gear
 —give a large proportion of their light output immediately after switch-on
 —give greater lumen output than equivalent GLS lamps
 —save labour costs on replacement.

Supply Voltage Kolor-Plus MBTF is available in two voltage ratings, 220/230V and 240/250V, and the MBTW in 240/250V only. The lamps must be operated on the correct supply. Sudden reductions in voltage may cause them to extinguish.

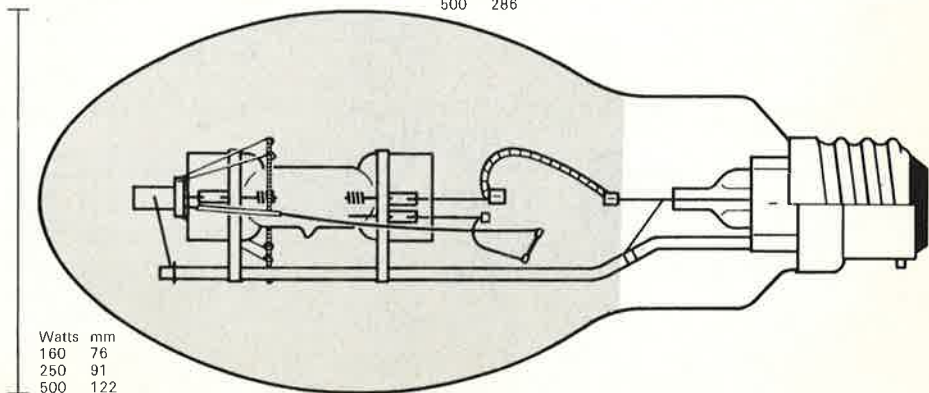
Rated Life MBTF—8000 hours
 MBTW—1500 hours

Burning Position Kolor-Plus and MBTW lamps are designed for operation in the cap up position; 250 and 500W ratings may be operated in other positions provided there is negligible fluctuation in the supply voltage.

RANGE

	Watts	Supply Voltage	Lamp Current Amps	Cap	Lumens		Standard Pack
					Initial	Lighting Design	
MBTF	160	220/230	0.70	BC or ES	2900	2560	24
	160	240/250	0.65	BC or ES	2900	2560	24
	250	220/230	1.10	GES	5500	4840	9
	250	240/250	1.05	GES	5500	4840	9
	500	220/230	2.20	GES	12500	11500	9
	500	240/250	2.10	GES	12500	11500	9
MBTW	175	240/250	0.67	BC	—	—	12

Watts mm
 160 175
 250 227
 500 286



Watts mm
 160 76
 250 91
 500 122

MB mercury lamps

Description High pressure mercury vapour discharge operating in a quartz arc tube. The 80 and 125W have elliptical pearl bulbs, the 250 and 400W ratings have clear tubular hard glass bulbs.

Application MB lamps have been largely superseded for industrial and streetlighting by MBF Kolorlux with its higher light output and improved colour. MB lamps are still

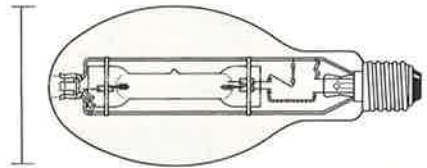
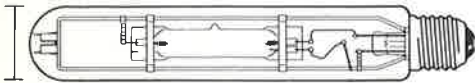
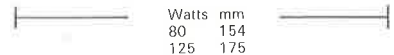
used, however, for general illumination where colour is not important and also where the typical characteristics of mercury spectral power distribution are advantageous, e.g. for graphic arts, laboratory and scientific purposes, plant growth, floodlighting.

Burning Position Universal: lamps can be operated in any position.

RANGE

Watts	Nominal Lamp Voltage	Lamp Current Amps	Cap	Lumens		
				Initial	Lighting Design	Standard Pack
80	115	0.80	ES*	3400	3200	24
125	125	1.15	ES*	5900	5900	24
250	130	2.15	GES	12900	11500	12
400	135	3.20	GES	21000	19600	12

1.3 pin BC cap also available



Watts mm
250 52
400 52

Watts mm
80 71
125 76

Handwritten notes: (400) 52 4w, 21000, 200, 100

KolorSON high pressure sodium lamps

Construction The high-pressure sodium lamp differs from other discharge lamps in that it employs an arc tube made of sintered aluminium oxide. This material is necessary to withstand the intense chemical activity of sodium vapour at high temperature and pressure. Metal caps are sealed to its ends and support the electrodes, and the tube is mounted in a robust frame which locates on a depression in the crown of the bulb to give great strength and optical control. The elliptical hard glass outer tube has a diffusing coating and the GES cap is locked on to the moulded neck to eliminate any possibility of the lamp becoming detached from the cap during life. The lamp has the same dimensions and luminance ratio as an MBF mercury lamp so that it can be used in the same fittings (different control gear is required). Tubular 250 and 400W SON/T versions are also available with a clear bulb for floodlighting purposes.

Starting and Operation The lamp is started by a high-voltage pulse applied by an ignitor which ceases to function once the arc has struck. The ignitor may be mounted up to 45 metres from a 250W lamp and 30 metres from a 400W lamp. External starting simplifies lamp construction, ensures immediate striking and is very reliable. The lamp takes four or five minutes to run up to full brightness. KolorSON lamps will normally restrike within one minute of

extinction and rapidly regain full light output. This is a most important feature for interior use and a considerable improvement on the restriking times of mercury lamps.

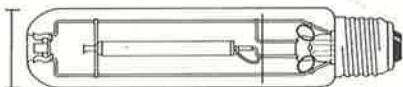
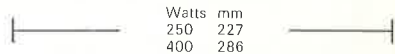
Colour The colour appearance of the lamp resembles that of a black body at 2100K, a pleasant golden white. When the arc is run up the monochromatic yellow characteristic of low-pressure sodium lamps disappears and is replaced by a broader distribution across the visible spectrum. This gives acceptable colour rendering with a warm appearance and, although blues and greens are somewhat subdued, reds and yellows are enhanced and all colours are easily distinguishable.

Applications Public lighting: traffic routes, city centres, shopping areas.
Area lighting: airports, dockyards, car parks, forecourts.
Floodlighting: stadiums, buildings, marshalling yards, sports grounds. Interior lighting: high-bay lighting for factories, warehouses, hangars, halls.
The Department of the Environment have recommended that high pressure sodium lamps be used for street lighting in conservation areas, both in the country and the town.

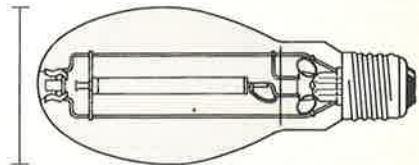
Burning Position Universal: lamps may be operated in any position.

RANGE

Watts/Type	Nominal Lamp Voltage	Lamp Current Amps	Cap	Initial	Lumens Lighting Design	Standard Pack
250 Tubular SON/T	100	3.0	GES	25000	22500	12
250 Elliptical SON	100	3.0	GES	23500	21000	9
400 Tubular SON/T	105	4.4	GES	47000	42000	12
400 Elliptical SON	105	4.4	GES	44000	40000	9



Watts mm
250 53
400 53



Watts mm
250 91
400 122

Linear SLI/H sodium lamps

Quality and Reliability

Since the introduction of the 140W linear sodium lamp by Thorn in 1966, it has achieved an unrivalled record of reliability. Installations throughout the country (including the first motorway lighting on the M4) have given fewer failures before relamping than any other type of sodium lamps to date. Statistical records show lamp survival to be more than 95% at the end of the rated life of 6000 hours. Thorn's improved 200W HO linear sodium lamp offers higher lumen output for 200W installations. Light output is increased by 10% to 27 500 lumens. This is achieved by the incorporation of a redesigned arc tube and a new improved reflected coating based on indium. Braided cathodes as used in the 140W lamp are embodied to give reliable life and freedom from earlier failures. The 200W HO lamp can be used in all existing 200W installations except early switch-start circuits for which the standard 200W is still available.

Research and Development

The shape of the inner tube contributes materially to the success of this lamp. In order to minimise energy losses due to atomic collisions and absorption of light by the sodium atoms themselves, the tube volume must be kept as small as possible, but its surface must be large in order to achieve a high light output. By careful design of the discharge tube cross section these apparently diametrically opposed conditions are satisfied and in addition there is direct linear path between the electrodes of the lamp which helps to achieve a low starting voltage. The lamp requires a sodium reservoir temperature of approximately 250°C to give optimum vapour pressure for efficient light radiation and a portion of the power to the tube is used to achieve this. The use of an infra-red reflecting film on the inside of the outer bulb, composed of the oxides of metals such as tin and indium, conserves the thermal energy of the arc, thus increasing the proportion of energy

available to produce light. The thickness of this film is strictly controlled to give optimum transmission of the visible D-line sodium radiation ensuring maximum light output. Its electrical resistance is such that by connecting it on to one cathode, it acts as a secondary starting electrode.

Special Advantages

The electrical characteristics and low starting voltage of the 140W lamp are designed for use on standard control gear used for 90W SOX and obsolete 140W integral ratings, giving completely reliable operation under normal and adverse conditions. The small source size and uniform distribution of both the 140W and 200W ratings conform to the design requirements of modern streetlighting lanterns. Light is emitted uniformly from an arc 780mm long and only 29mm wide. The compact and lightweight construction makes it easy to handle during relamping. The lamp is 908.8mm/3ft long and 39.5mm/1.5in in diameter and weighs less than 0.45kg/1lb. Transport and installation are further simplified by a 25-way pack which can easily be stored in a service truck or tower wagon.

Spectral Distribution

The discharge has a characteristic yellow colour, almost all the visible energy being concentrated at 589/589.6 nm.

Application

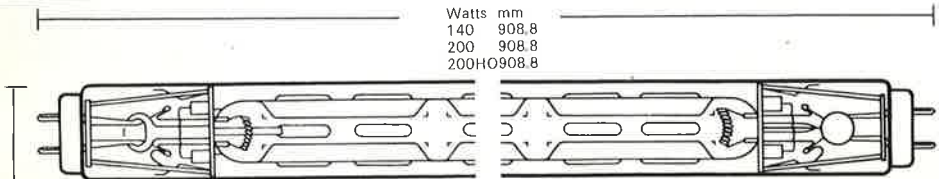
The primary application for linear sodium lamps is for streetlighting where their outputs are suitable for the DoE requirements for principal and trunk roads, and motorways. The construction of the lamp materially assists in the optical design and shape of lanterns to meet illuminance distribution and environmental criteria.

Burning Position

The lamps must operate in a horizontal position $\pm 20^\circ$

RANGE

Watts	Nominal Lamp Voltage	Lamp Current Amps	Cap	Lighting Design Lumens	Standard Pack
140	175	0.9	BIPIN	20000	25
200	145	1.6	BIPIN	25000	25
200 (HO)	145	1.6	BIPIN	27500	25



Watts mm
140 39.5,
200 39.5
200HO 39.5

Watts mm
140 908.8
200 908.8
200HO 908.8

SOX sodium lamps

Description Low pressure sodium discharge operating in a U-shaped arc tube. The U-tube is enclosed in a tubular outer bulb which has a reflector coating on the inside surface to provide thermal insulation. This construction provides a lamp of considerable higher efficacy than the Integral type which is now obsolete.

Application The primary application for SOX lamps is for streetlighting where their higher efficacy has superseded earlier types as follows:
 1/ The 90W SOX lamp replaces the 140W SOI/H integral lamp. Both lamps have the same dimensions and can be operated from the same control gear.

2/ The 55W SOX lamp replaces the 85W SOI/H integral lamp. Both lamps have the same dimensions and can be operated from the same control gear.

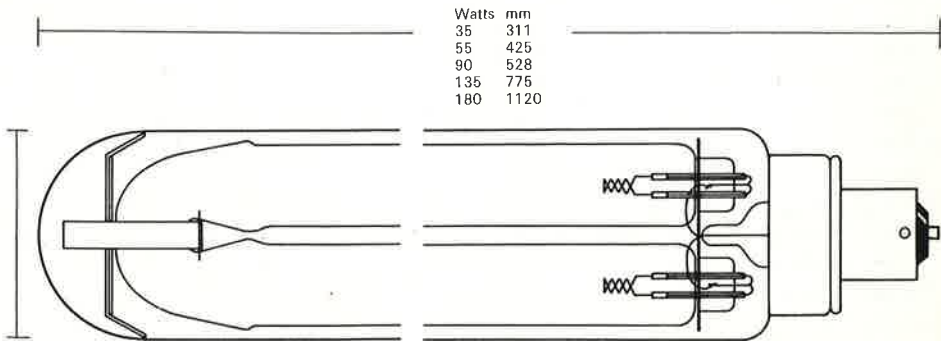
3/ The 35W SOX lamp replaces the 60W SOI/H integral lamp. Both lamps have the same dimensions and can be operated from the same control gear.

4/ The 35W SOX lamp is also electrically interchangeable with the 45W SOI/H integral lamp. Although the 35W SOX is longer than the 45W SOI/H it can be used as a replacement in lanterns originally designed for 45/60W SOI/H.

Burning Position Horizontal $\pm 20^\circ$.
 The 35W and 55W ratings may also be operated in the vertical cap up position.

RANGE

Watts	Nominal Lamp Voltage	Lamp Current Amps	Cap	Lighting Design Lumens	Standard Pack
35	70	0.6	BC	4300	9
55	109	0.59	BC	7500	9
90	112	0.94	BC	12500	9
135	164	0.95	BC	21500	9
180	240	0.91	BC	31500	9



Watts	mm
35	53
55	53
90	67
135	67
180	67

Hytek Introduction and Index

Hytek lamps are specialised discharge lamps manufactured to meet the needs of research and industry for advanced compact and high brightness light sources.

There is also a variety of ultra-violet sources.

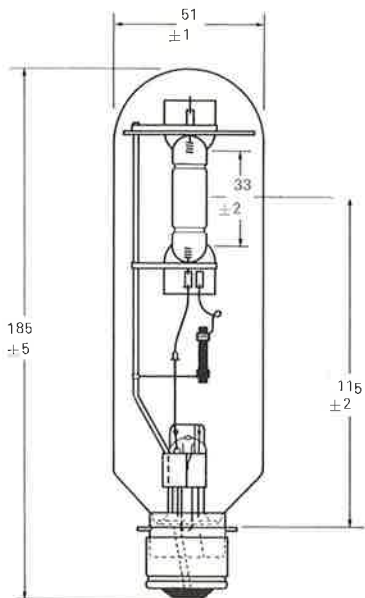
These proven ranges of discharge lamps are used for inspection and development projects in many locations and they undoubtedly have done much to maintain the superior quality and advanced design of much British industrial and engineering equipment.

The lamps are manufactured to exacting specification with advanced or high techniques – hence the name Hytek.

Index

- 7:13 Mercury lamps for projector purposes – Type MB/D
- 7:14, 7:15 Mercury lamps for projector purposes – Type ME/D
- 7:16 Mercury lamp for long wave u-v – Type MBW (blacklight)
- 7:17 Mercury lamps for long wave u-v – Types M1 and M2
- 7:18 Mercury lamp for short wave u-v – Type MBL/D
- 7:19 Short and long wave u-v and germicidal lamps
- 7:20 Compact source metal halide lamp for projector purposes 400W CSI
- 7:21 Compact source metal halide lamp for projector purposes 1000W CSI
- 7:22 Compact source sealed beam metal halide lamp 1000W
- 7:23 Metal halide lamp – Type MBIL/H 750W
- 7:24 Metal halide lamp – Type MBIL/H 1600W
- 7:25 Metal halide lamp – Type MBIL/H 1200W for photoprinting
- 7:26 Metal halide lamp – Type MBI sealed beam 400W for photoprinting
- 7:27, 7:28 Pulsed xenon arc lamps tubular and helical
- 7:29 Linear source xenon lamp – Type XB
- 7:30, 7:31 Compact source xenon lamps – Type XE/D
- 7:32 Compact source xenon flash-tube type FA5
- 7:33 Standard xenon lamp '4 in 1' housings
- 7:34 Neon high intensity obstruction light

Mercury lamps for projector purposes-Type MB/D



Supply voltage 200/250 a.c.

DESCRIPTION

Mercury vapour discharge lamps with quartz arc tubes loaded below 100W/cm of arc length and operating at pressures of 8/10 atmospheres.

The arc tubes are mounted in tubular outer bulbs, and the lamps are designed for vertical burning cap down. Restrictions in the arc tube ensure a stabilized and accurately focused linear light source for projection purposes.

The lamps require control gear consisting of a choke and power factor correction capacitor.



All dimensions in mm

TYPICAL APPLICATION

Optical instruments requiring accurate optical control, e.g. spectrosopes, comparators and other 'slit' instruments.

CONTROL GEAR See Section 10.

LAMPS

Reference no.	Watts	Arc length	Cap	Lamp operating		Starting current	Design average	
				Volts	Amps		Lumens	Life Hours
91-1159	125	33 ± 2	P28/25	110/140	1.15	1.5/2	4000	1500

Mercury lamps for projector purposes-Type ME/D

Supply voltage 200/250.

DESCRIPTION

Mercury vapour discharge lamps with quartz arc tubes loaded above 100W/cm of arc length and operating at a pressure of about 30 atmospheres.

The arc operates between solid tungsten electrodes providing a compact stable light source of high brightness. The radiations have much photochemical value and little heating effect. In the 250W ratings the same basic lamp has various casings and bases, the three main types being shown in the table and illustrations. Windows are of quartz where short-wave u.v. radiation is required, or of glass where it must be excluded. The lamp with P28/25 prefocus cap is interchangeable with certain class A1 tungsten filament projector lamps.

The 1000W rating is a bare quartz arc tube. Lamps may be operated on d.c. or a.c. supplies in conjunction with appropriate control gear. For a.c. supplies this consists of a choke and power factor correction capacitor. In addition, the 1000W lamp utilises a starting capacitor in series with a pushbutton switch. For d.c. operation of 250W lamps a choke and series resistance are required, the choke being retained for starting purposes. The 1000W lamp on d.c. operation requires a series resistance, the lamp being started by means of a Tesla coil.

All lamps must be operated vertically, cap downwards. A tilt of more than 10° will cause damage to the arc tube.

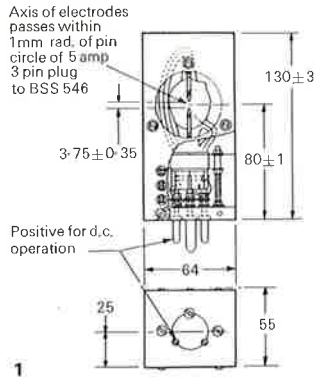
TYPICAL APPLICATIONS

Monochrome slide and film projectors, film printing, projection microscopes, profile projectors and industrial inspection purposes.

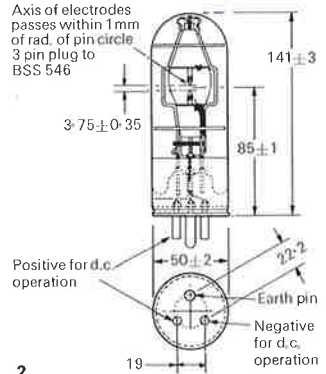
CONTROL GEAR See Section 10

All dimensions in mm unless otherwise indicated

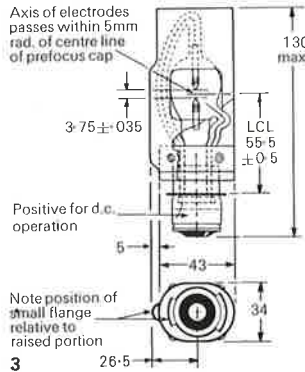
3-PIN BOX TYPE LAMP 250W



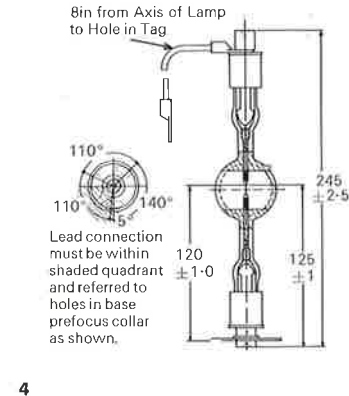
LAMP WITH TUBULAR GLASS ENVELOPE 250W



PREFOCUS LAMP 250W



LAMP WITH TAG/LEAD CONNECTION 1000W

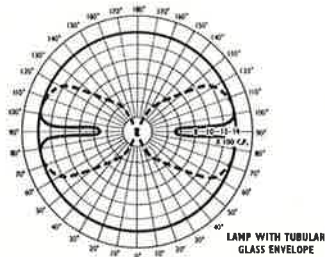
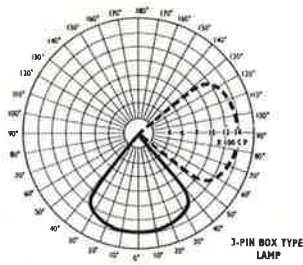
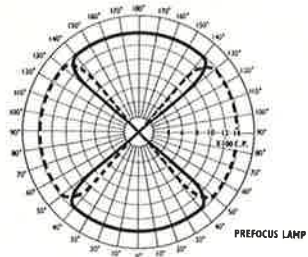


LAMPS

Reference no.	Watts	Arc length mm	Cap	Outer Casing	Illus.	Lamp operating		Starting current Amps	Maximum brightness Stilbs	Mean HCP	Life Hours.
						Volts	Amps				
94-0001	250	3.75	3-pin	Metal Box Glass Window	1	60/75	3.7/4.6	4/5	20000	1300	500
94-0006	250	3.75	3-pin	Metal Box Quartz Window	1	60/75	3.7/4.6	4/5	20000	1300	500
94-0051	250	3.75	3-pin	Tubular Glass Bulb	2	60/75	3.7/4.6	4/5	20000	1300	500
94-0101	250	3.75	P28/25	Oval Metal Case	3	60/75	3.7/4.6	4/5	20000	1300	500
94-0151	1000	6.5	Cylindrical with disc	—	4	60/75	16/18	20/22	40000	7000	500

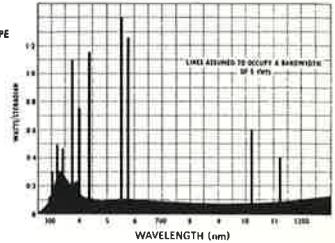
Mercury lamps for projector purposes—Type ME/D

POLAR CURVES OF LIGHT DISTRIBUTION



— DISTRIBUTION IN HORIZONTAL PLANE THROUGH CENTRE OF LAMP
 - - - DISTRIBUTION IN VERTICAL PLANE 90°-180° THROUGH AXIS OF LAMP

SPECTRAL DISTRIBUTION



LIGHT DISTRIBUTION

The light distribution of each of the three main variations of the 250W lamp is shown in the polar diagrams above.

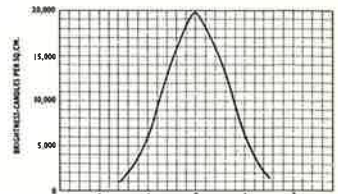
SPECTRAL DISTRIBUTION

The diagram shows an appreciable level of continuous radiation with a number of lines the strongest of which lie in the U.V. area at 365nm and in the blue (at 405 and 436nm) the green (546 nm) and yellow (579nm) regions of the visible spectrum. It should be noted that this diagram shows the spectral distribution of a bare quartz tube. In lamps with glass envelopes or glass windows wavelengths shorter than 350nm are progressively filtered out until there is virtually no emission at wavelengths of 300nm and below.

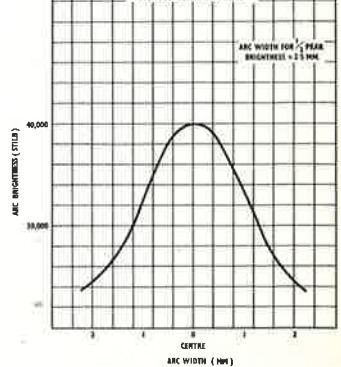
WARNING

Short-wave u.v. radiations are harmful to the human eye and skin. Since they are readily transmitted through quartz, though absorbed by most kinds of glass, precautions must be taken to shield observers from direct or reflected radiation when operating a rectangular box lamp with a quartz window or an oval metal cased lamp with an unglazed aperture. Radiations from ME lamps with glass envelopes or glass windows are quite harmless.

BRIGHTNESS DISTRIBUTION ACROSS CENTRE OF ARC



BRIGHTNESS DISTRIBUTION ACROSS CENTRE OF ARC



The curve showing the brightness distribution is measured *across* the arc at the centre of the arc length. The brightness distribution *along* the arc length is almost constant except in the regions adjacent to the electrodes.

Mercury lamp for long wave u-v— Type MBW (blacklight)

Supply voltage 200/250 a.c.

DESCRIPTION

Mercury vapour discharge lamps with quartz arc tubes loaded below 100W/cm of arc length and operating at pressures of 8/10 atmospheres. The quartz arc tube is enclosed in a pear shaped outer bulb of Woods glass which absorbs virtually all radiation from the arc tube other than that in the long wave u-v of predominantly 365 nanometres; little visible light is emitted.

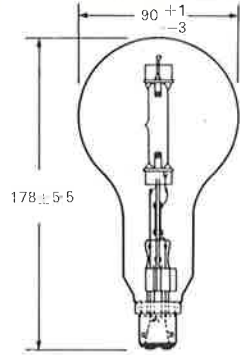
The lamp is thus eminently suitable as a source of long wave u-v radiation to excite fluorescence in susceptible substances.

The lamp is designed for operation on 200/250W a.c. supplies with suitable control gear in the form of a series choke and power factor correction capacitor. It will operate in any position.

TYPICAL APPLICATIONS

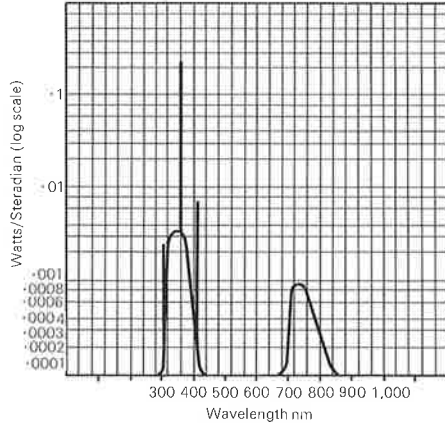
As a source of long wave u-v for bacteriological, mineralogical and forensic investigations; in connection with fluorescent pigments for various detection methods; and for special effects in entertainments and shop window lighting.

CONTROL GEAR See Section 10

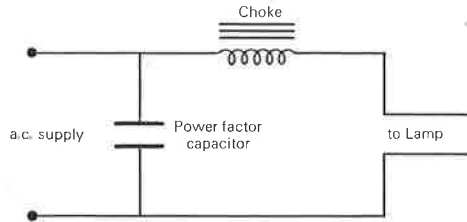


All dimensions in mm

SPECTRAL DISTRIBUTION lines assumed to occupy a bandwidth of 5 nm



CIRCUIT DIAGRAM



LAMPS

Reference no.	Watts	Cap	Lamp operating Volts Amps	Starting current Amps	Life Hours
91-6217	125	B22/31 x 30 3-pin	110/140 1-15	1-5/2	1500

Mercury lamps for long wave u-v—Types M1 and M2

DESCRIPTION

Low pressure discharge in mercury vapour between electrodes in a tubular glass envelope. These lamps provide both u-v and visible radiation especially useful in providing excitation of fluorescent materials at low illumination levels. The M1 lamp is designed for operation on 24V d.c. supplies with suitable series resistances, and the M2 type for 200/250V a.c. supplies with suitable control gear either in the form of a choke or series resistance.

The lamps operate in any position.

TYPICAL APPLICATION

These lamps were originally developed to meet the demand for a small source of both u-v and visible light for such applications as exciting fluorescence on instrument panels.

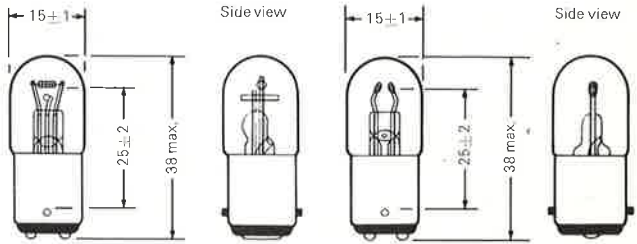
They are now used as time markers in recording camera equipment, as a source of the mercury green line in laboratory instruments, for exciting a wide range of fluorescent materials and for various biological and entomological purposes, as, for example, the light-source in an insect trap.

CONTROL GEAR

M1 LAMPS See Section 10

MERCURY DISCHARGE TUBE M1

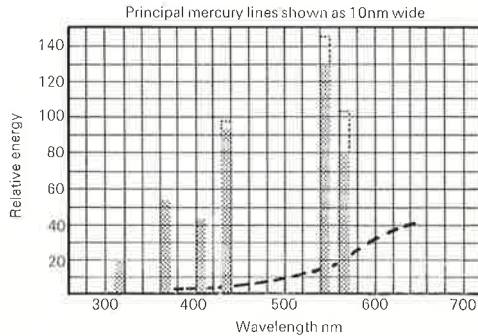
MERCURY DISCHARGE TUBE M2



All dimensions in mm

APPROXIMATE SPECTRAL ENERGY DISTRIBUTION

for M1 and M2 mercury discharge tubes



LAMP CHARACTERISTICS

Type	Reference no.	Rating*	Supply Volts	Cap	Filament current Amps	Arc current Amps	Life Hours
M1	98-9001	4.5W	22 d.c. min.	SBC	0.8 (0.95 max)	0.75 max.	200
M2	98-9002	4.5W	200/250 a.c.	SBC	—	0.5/1.5	200

*At 0.75 Amp

Mercury lamp for short wave u-v—Type MBL/D

Supply voltage 200/250

DESCRIPTION

Mercury discharge lamps with bare quartz arc tubes loaded below 100W/cm of arc length and operating at a pressure of 8/10 atmospheres. The lamp transmits both long wave and short wave u-v as well as visible light. Perforated diaphragms mounted above the electrodes ensure a stabilized and accurately focused linear light source for optical purposes.

The lamp is designed to operate in free air but should be shielded from draughts. Before it is put into service, the quartz envelope should be thoroughly cleaned with a grease solvent, such as ordinary methylated spirits. This avoids any contamination from handling causing devitrification of the quartz in operation.

When a lamp is operated direct from the supply mains and a high degree of stability of light-output is required, a current stabilization device, such as a constant current arrangement, is to be preferred to voltage stabilization.

TYPICAL APPLICATION

The lamp provides a stable linear source for optical purposes. As the light source is narrow and of uniform brightness along its length, it is very suitable for film printing or as a source of u-v radiation.

CONTROL GEAR See section 10

Note

D.C. Operation. The A.C. circuit is conventional, but for D.C. circuits a quick-break switch across the lamp, an ohmic resistor and a choke are required, as shown in the diagram. The choke provides an inductive surge across the lamp when the quick-break switch is opened.

The value of resistors for various supply voltages are shown below:

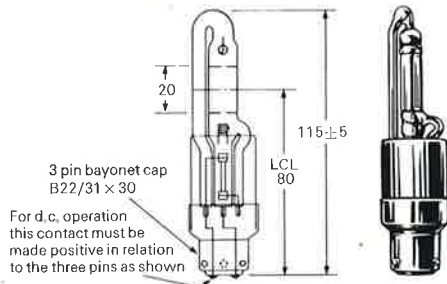
Supply Volts	Resistance Value (ohms)	Current Rating (amps)
200	79	
210	87	2.3
220	95	
230	105	
240	112	
250	123	

WARNING

This lamp emits short-wave u-v which is harmful to the human eyes and skin. Precautions must be taken to shield observers from direct and reflected radiation, as, for example by means of a clear glass screen which will filter out the radiation below 300 nm.

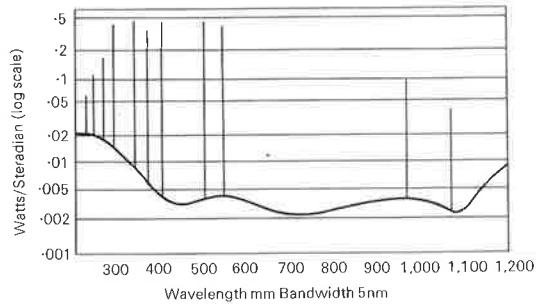
LAMPS

Reference no.	Watts	Arc length mm	Arc width mm	Cap	Light centre length mm	Lamp operating Volts	Amps	Starting current Amps	Max. brightness Stilbs	Life Hours
91-9006	125	20	1.5	B22/31 x 30 3-pin	80 ± 1	110	1.25	3	800	1000



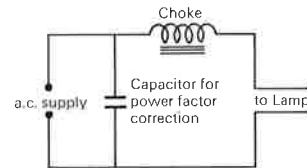
All dimensions in mm

SPECTRAL DISTRIBUTION

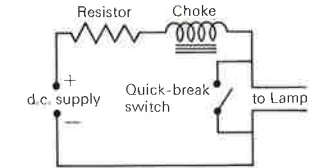


CIRCUIT DIAGRAMS

a.c. operation



d.c. operation



Short and long wave u-v and germicidal lamps

FLUORESCENT TYPE GERMICIDAL TUBES

These lamps are in standard fluorescent lamp sizes. The lamps are made without phosphors, and the tube is a special glass which transmits short wave u-v.

Approximately 95% of the radiated energy is in the 253.7 nanometres band which is near the maximum for germicidal effectiveness. The lamps are useful for the irradiation of airborne bacteria or moulds, and for the irradiation of surfaces on which bacteria and/or mould spores have collected.

A publication, Germicidal Radiation and its Application, is available on request.

TYPICAL APPLICATION

For hospitals, etc., for sterilising purposes.

TUBES

Rating	Lamp Reference no.	Nominal Dimensions mm	Standard pack
15W	92-2013	457 x 25	18 x 1 25
30W	92-4540	914 x 25	36 x 1 25
8W	92-1213	300 x 16	12 x $\frac{5}{8}$ 25

LONG WAVE ULTRA-VIOLET FLUORESCENT TYPE TUBES

The germicidal tubes described above are short wave ultra-violet sources. Long wave ultra-violet fluorescent type tubes are also available as below.

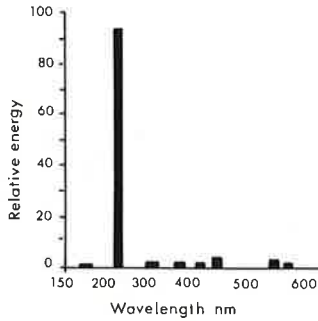
Type	Rating
Ultra-violet (non-filter)	1500mm/5ft 65/80W; 1200mm/4ft 40W; 600mm/2ft 20W; 450mm/18in 15W; 300mm/12in 8W
Blacklight blue u-v	1200mm/4ft 40W; 450mm/18in 15W; 300mm/12in 8W; 225mm/9in 6W; 150mm/6in 4W

FITTINGS AND CONTROL GEAR

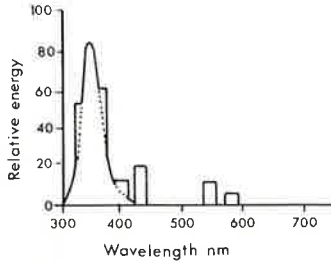
All tubes listed on this page go into standard fittings and operate on standard fluorescent control gear.

The 30W tube operates on 200/250V a.c., and the 15W on 100/250V a.c. Alternatively, two 15W tubes may be run as a series pair on 200/250V a.c.

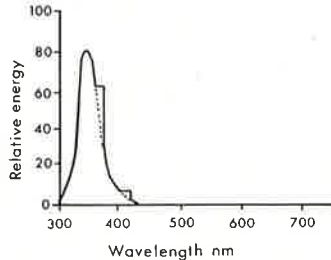
SPECTRAL ENERGY DISTRIBUTION GERMICIDAL TUBES



SPECTRAL ENERGY DISTRIBUTION ULTRA VIOLET TUBES



SPECTRAL ENERGY DISTRIBUTION BLACKLIGHT BLUE TUBES



Compact source metal halide lamp for projector purposes 400W CSI

DESCRIPTION

The 400 watt compact source iodide lamp is a new design of projector lamp giving white light of good colour rendering properties at an efficiency of 80 l/W for 100 hours. The source size is approximately 9 x 5 mm and the brightness is about 8000 candelas per square cm.

The high efficiency is obtained by the use of an arc discharge. The iodide technique has been used to introduce additional elements into the arc and to keep the bulb wall clean throughout life.

The lamp is somewhat unconventional in appearance. It is extremely rugged. The small total physical size and the ability to operate it in any position ensure that the lamp can be readily fitted into existing equipment and simplifies the design of new equipment. The single ended construction and the degree of pre-focusing provided means that lamp replacement is straightforward.

APPLICATIONS

The major advantage of this lamp is its high efficiency, combined with its robustness, simplicity, small size and relatively low power consumption.

In general, considerations of source size, lamp size, lamp rating and efficiency indicate that it can be used in applications which at present use 100V-240V hard glass filament projector lamps of 250W-1000W rating to give a substantial advantage in terms of either increased light output or a reduction in input power and heat. It is useful in high-powered slide projectors and theatre spotlights (especially follow-spots), in overhead projectors projection microscopes enlargers and cine projectors. It is suitable for colour photography using daylight colour-film stock.

CONTROL GEAR See Section 10

LAMPHOLDER

A lampholder, Catalogue no. L1101, is available for use with this lamp.

DIMENSIONS

(in millimetres)

Arc length	9 ± 1
Arc size	9 × 5
Overall length (max)	55
LCL	34 ± 1
Diameter (max)	30
Pin length (min)	8.5
Pin spacing	9.0 ± 0.5
Pin diameter	7.6

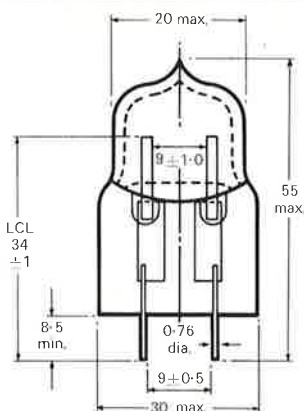
LIFE

Nominal objective : 500 hrs

OPERATING POSITION

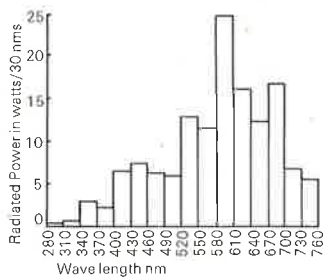
Universal

LAMP REFERENCE NUMBER 99-0201



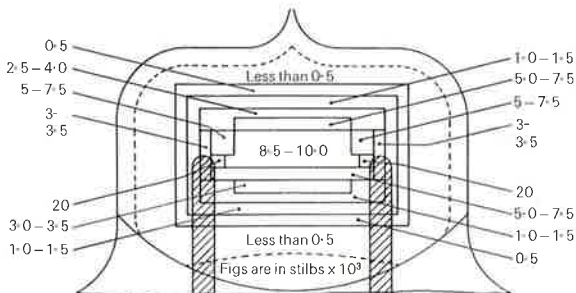
TYPICAL SPECTRAL POWER HISTOGRAM

for the 400W compact source iodide lamp



All dimensions in mm

TYPICAL BRIGHTNESS DISTRIBUTION DIAGRAM



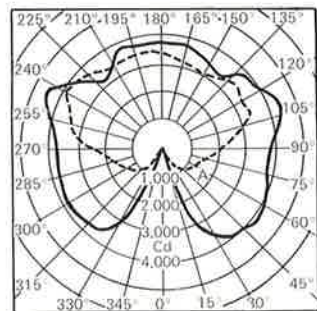
ELECTRICAL CHARACTERISTICS

Supply volts a.c.	240
Arc watts	400
Arc volts	100
Arc current (amps)	5
Run up time (secs)	30
Re-starting time (mins)	3/5

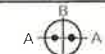
LUMINOUS CHARACTERISTICS

Initial lum. eff. (min)	80 lumens/watt
Lumen maintenance	85%
Colour rendering	Good
Chromaticity co-ordinates	X = .433 Y = .382

TYPICAL CANDLEPOWER DISTRIBUTION IN VERTICAL PLANES



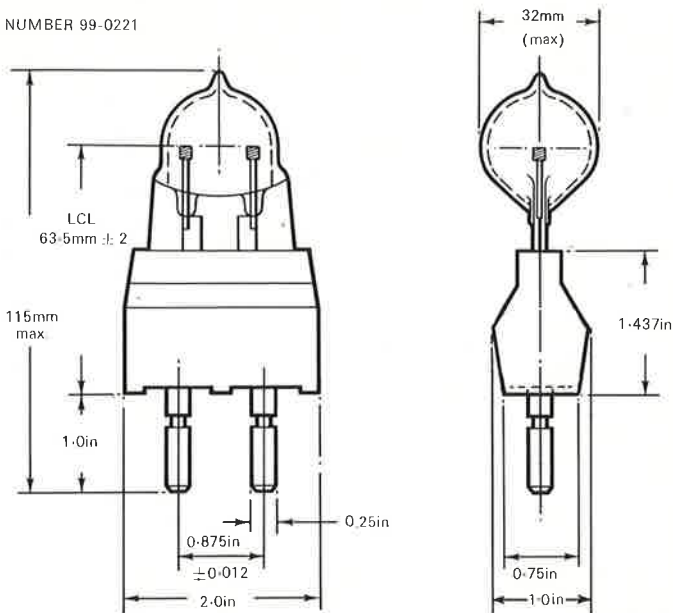
A - through electrodes
B - normal to electrodes



Plan view of lamp

Compact source metal halide lamp for projector purposes 1000W CSI

LAMP REFERENCE NUMBER 99-0221



DESCRIPTION

The 1000W compact source iodide lamp gives white light of good colour rendering at an efficiency of 93 l/w for 200 hours.

APPLICATIONS

The high efficiency, robustness and small size of this lamp make it eminently suitable for projector purposes such as for follow spotlights.

ELECTRICAL CHARACTERISTICS

Supply volts	240
Arc watts	1000
Arc volts	70-85
Arc current (amps)	15
Run-up time (secs)	30
Re-start time (mins)	2/5

LIFE

Nominal objective 200 hours

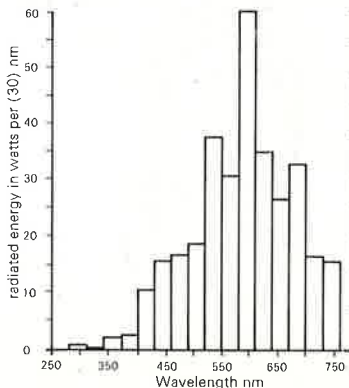
OPERATING POSITION

Universal

CONTROL GEAR

See Section 10.

TYPICAL SPECTRAL POWER HISTOGRAM



DIMENSIONS

(in millimetres)

Arc length	14 ± 1
Overall length (max)	115
Light centre length	63.5 ± 2
Diameter (max)	32
Cap	Medium Bipost—G22

LUMINOUS CHARACTERISTICS

Initial efficiency	93 lumens/watt
Lumen maintenance	80%
Colour rendering	Good
Chromaticity coordinates	X=0.424 Y=0.402

Compact source sealed beam metal halide lamp 1000W

DESCRIPTION

The 1kW sealed beam compact source iodide lamp consists of the standard 1kW CSI lamp 99-0221 (see previous page) enclosed in a 205mm/8in diameter sealed beam reflector envelope. This results in a beam intensity of 1.5 million candelas with a beam spread of 18° (to 0.1 peak intensity).

APPLICATIONS

Floodlighting, especially for filming TV outside broadcasts; also as a general replacement for carbon arcs.

ELECTRICAL CHARACTERISTICS

Supply voltage	220, 240 a.c.
Arc watts	1000
Arc volts	70/85
Arc current (amps)	15 approx.
Run-up time (secs)	50
Restart time (mins)	5

DIMENSIONS

(in millimetres)

Diameter	205
Overall length (max)	175
Cap	Bi-post G38

LUMINOUS CHARACTERISTICS

Initial beam candlepower (peak)

1.5 million candelas

Beam spread $\frac{1}{2}$ peak $\frac{1}{3}$ peak $\frac{1}{5}$ peak $\frac{1}{10}$ peak

$\pm 3^\circ$ $\pm 4^\circ$ $\pm 6^\circ$ $\pm 9^\circ$

Colour rendering Good

Chromaticity co-ordinates X=0.424
Y=0.402

LIFE

Nominal objective 1000 hours

OPERATING POSITION

Universal

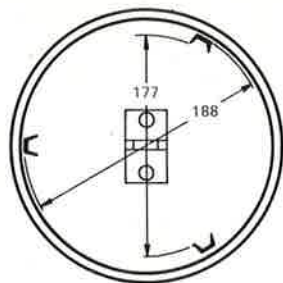
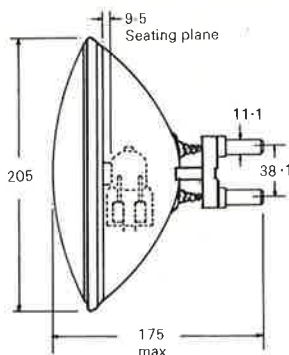
CONTROL GEAR

See also Section 10
Control gear and box, G53255, consisting of series ballast circuit and high voltage pulse starter unit. The starter unit is mounted on a detachable chassis and may be removed and fixed separately. This enables the starter unit to be mounted on the lamp housing ensuring a short, totally enclosed HT lead.

LAMP FITTINGS

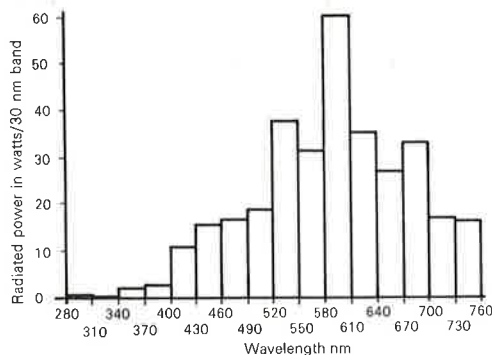
Suitable fittings, COM 1000 series, are available for use with this lamp, giving a variety of light distributions and incorporating the starter unit in the fitting housing.

LAMP REFERENCE NUMBER 99-1222



All dimensions in mm

SPECTRAL ENERGY HISTOGRAM



WARNING

The unit generates high voltage pulses for lamp starting. Suitable safety precautions should be taken during installation and operation of the unit.
The control unit and associated lamp house must be earthed. The HV cable should be protected from accidental damage.
The supply must be disconnected before servicing. For outdoor use the lamp must be protected from rain.

Metal halide lamp—Type MBIL/H 750W

Supply voltage 200/250 a.c.

Lamp Reference no. 91-7476

DESCRIPTION

The lamp consists of a quartz tube in which an electrical discharge takes place between tungsten electrodes in an atmosphere of mercury-vapour to which has been added certain metal halides. The halides are chosen to give a high efficacy with good colour appearance and colour rendering approximating to daylight.

The lamp is designed to be used with the Compact Atlas projector ON1600 with which it forms an integral unit.

The arc-tube should not be touched with the bare hand, if this is unavoidable, it should be cleaned with methylated spirit before operation, to avoid crazing of the surface.

CONTROL GEAR (see Section 10)

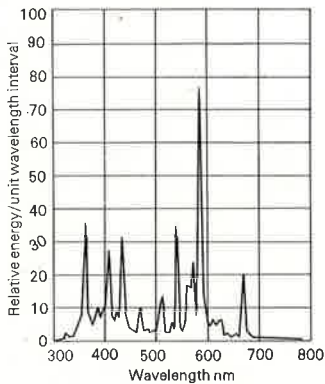
LAMP CHARACTERISTICS

Rating	750W
Arc volts	500
Operating current	1.75 amp
Run-up time	2½ mins
Light output: initial,	67000 lumens
throughout life	58500 lum
Nominal life	5000 hours
Bulb finish	frosted
Operating position	horizontal

APPLICATIONS

Outdoor Floodlighting.

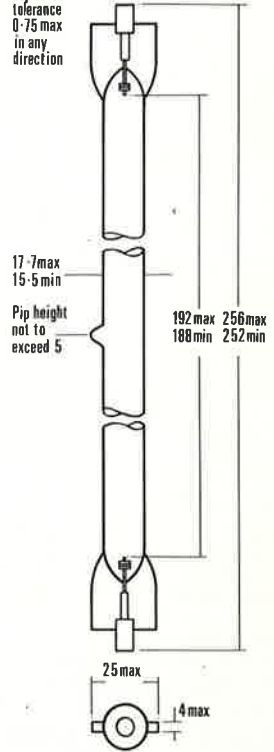
SPECTRAL DISTRIBUTION



WARNING

The light emitted by the bare lamp should not be observed with the naked eye as it emits short wave uv radiation. This radiation is filtered out by the cover glass of the projector ON1600.

Cap offset tolerance 0.75 max in any direction



All dimensions in mm

Metal halide lamp—Type MBIL/H 1600W

DESCRIPTION

A mercury iodide lamp with quartz arc tube loaded below 100W/cm at a pressure of 8/10 atmospheres. The lamp is for use in ON 1600 floodlighting fitting. See page 2.20

APPLICATIONS

The fitting was originally designed and used for the floodlighting of football stadia, in which it has proved unusually successful.

It can also be used for general floodlighting. Its colour-rendering properties are good and allow its use in Colour television.

CONTROL GEAR See Section 10.

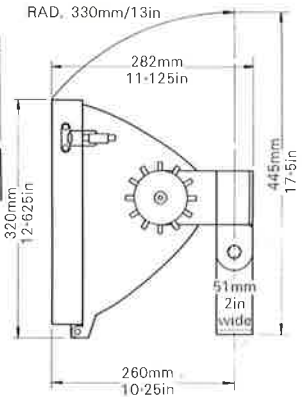
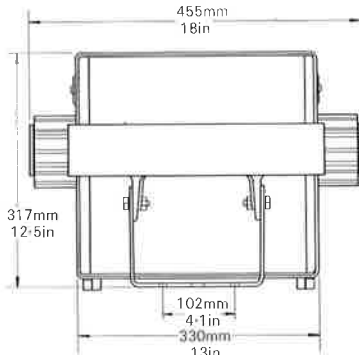
LAMP CHARACTERISTICS

Rating	1600W
Caps	Ceramic
Bulb finish	Frosted
Operating volts	450
Operating amps	3.75
Nominal lumens (initial)	135000
Nominal lumens (throughout life)	115000
Life	3000 hours
Run-up time	2½ mins
Operating position	Horizontal

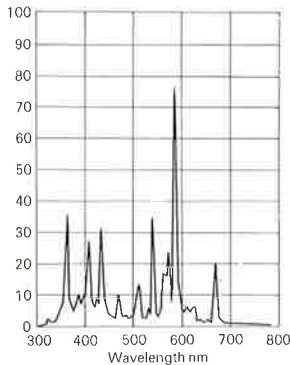
SAFETY PRECAUTIONS

The light emitted by the lamp should not be observed with the naked eye for it has a u-v content normally filtered out by the projector. The lamp (arc tube) should not be touched with the bare hand but, if this is unavoidable, it should be cleaned with a methylated spirit damped cloth before operation.

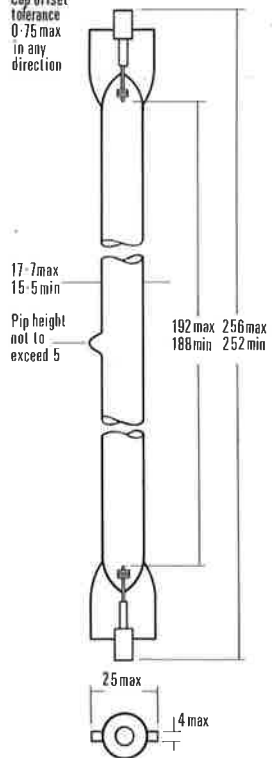
LAMP REFERENCE NUMBER 91-7475
ON 1600 750/1600W FLOODLIGHT



TYPICAL SPECTRAL DISTRIBUTION CURVE



Cap offset tolerance 0.75 max in any direction



All dimensions in mm

Metal halide lamp—Type MBIL/H 1200W

GENERAL DESCRIPTION

This 1200W MBIL lamp consists essentially of an arc burning between tungsten electrodes in an atmosphere of mercury vapour and additional metallic halides enclosed in a tubular quartz bulb. The halides are chosen to ensure maximum radiation in the 360 to 450 nanometre region. It is designed to operate in an enclosure in still air. The lamp will only remain stable in operation providing the quartz wall temperature operates between 600°C and 750°C.

GENERAL APPLICATION

For photoprinting purposes in the graphic arts industry: this encompasses diazo printing, photo-resists, etc. The u-v output enables faster printing speeds than those obtained from conventional carbon arc lamps. It is particularly recommended by Agfa-Gevaert as an exposure source for use with their colour proofing system "Gevaproof".

CONTROL GEAR See Section 10

Supply volts	240V 50Hz
Rating	1200W
Chokes	2 × G 53254.4
Capacitors	8 × G C2236

LAMP CHARACTERISTICS

Rating	1200W
Cap	Ceramic
Operating volts	350 ± 30
Operating amps	4

LIFE

500 hours

BURNING POSITION

Horizontal

SAFETY PRECAUTIONS

The light emitted from the lamp or the reflector should not be observed with the naked eye.

If the tube has been handled, it must be cleaned with methylated spirits before operation.

Owing to the high open-circuit voltage of the reactance transformer, the lamp enclosure must be provided with a lock which automatically switches off the supply when the enclosure is opened.

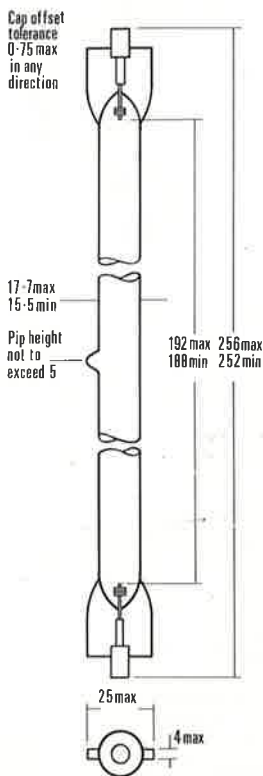
LAMPHOLDER ASSEMBLY

A lampholder assembly GL 1153 has been designed for use with these lamps.

SIMMERING CONDITIONS

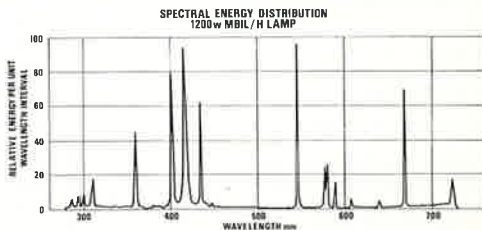
The lamp may be operated under simmering conditions at approx. half power. Current details on application.

LAMP REFERENCE NUMBER 91-7470

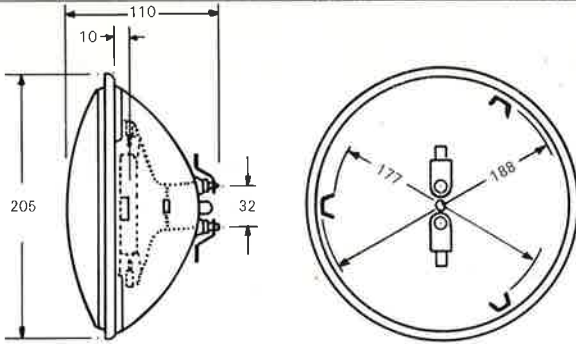


All dimensions in mm

TYPICAL SPECTRAL DISTRIBUTION CURVE



400W metal halide sealed beam photoprinting lamp MBI PAR 64



All dimensions in mm

Description

A 400W high pressure metal halide quartz arc lamp enclosed in a sealed beam envelope with internal reflector, providing radiation primarily in the 360–450 nanometer wave bands. The unit is fitted with a spreader lens to give an elliptical light distribution capable of giving reasonably uniform radiation over a 36in x 24in area at a distance of 2–3ft.

Application

In the photoprinting field, especially for diazo and photo resist printing as replacement for carbon arcs. By using this unit printing times can be reduced by factors of 4 to 1 or more with a reduction in electrical power.

Electrical characteristics

Arc Watts	400
Arc Volts	105 ± 15
Arc Current	4.4 amps
Run-Up time	2 minutes
Restrike time	7/10 minutes

Dimensions

Overall width	205mm
Caps	Two lug flat

Life

1000 hours nominal.

Operating Position

Universal
Lamp reference no. 91-9826

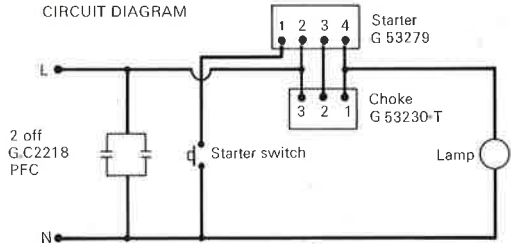
Control Gear (See also section 10)

Choke G.53230T. with starter unit G53279, and two capacitors G.C2218. See circuit diagram.

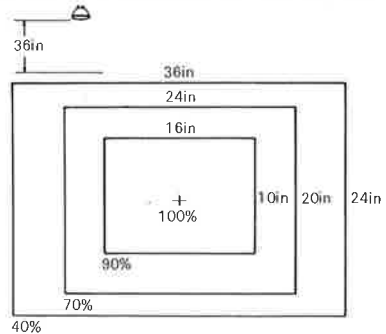
Lamp Fitting

A special fitting has been designed for use with this lamp. Full details on application.

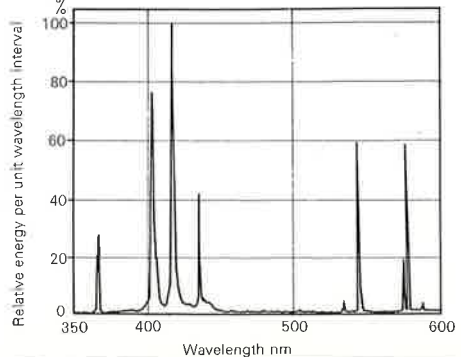
CIRCUIT DIAGRAM



TYPICAL LIGHT DISTRIBUTION AT 36in FROM UNIT FACE



SPECTRAL ENERGY DISTRIBUTION CURVE



Pulsed xenon arc lamps - linear types

DESCRIPTION

These pulsed xenon arc lamps consist of an arc between tungsten electrodes operating in an atmosphere of pure xenon contained in a tubular quartz bulb.

The spectrum of the radiation is virtually continuous extending from the ultra-violet through the visible into the infra-red. The colour of the visible radiation is very similar to noon sunlight having a colour temperature of 5600°K. Light output is controlled by the gear which pulses the lamp for a specific period.

APPLICATION

Photo reproduction
Until recently the standard light source for copy board illumination has been the open carbon arc. Over the last two or three years special discharge lamps have been used, particularly pulsed xenon lamps.

CONTROL GEAR

Light output is controlled by the gear which pulses the lamp for a specific period. The lamps are designed to operate at a 100 cycle per second pulse rate for pulse width of 1 millisecond at half peak.

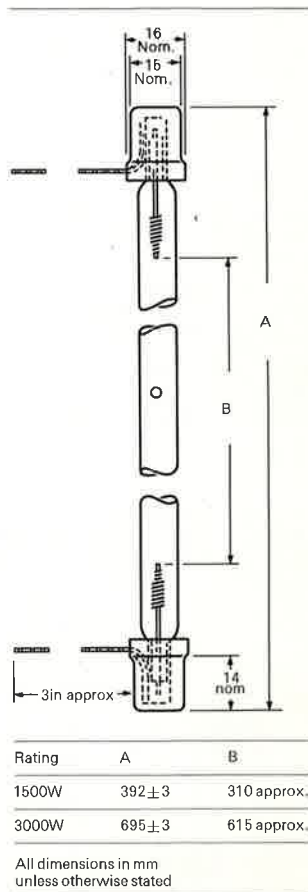
Suitable gear for operating the lamp is manufactured by Theimer Ascorlux and Littlejohn. Other companies have gear under development.

LAMP SPECIFICATION

Type	Pulsed Xenon Arc
Cap	Ceramic with flexible leads.
Operating Position	Universal. Forced cooling essential
Arc Voltage	110 ± 5
Supply Voltage	200/250V 50Hz
Pulsed Frequency	100Hz
Design Wattage	1500 and 3000
Efficacy	25 lumens per watt
Life	500 hours

LAMPS

Rating	Lamp Reference no.
1500W	98-2015
3000W	98-2030



Pulsed xenon arc lamps—helical

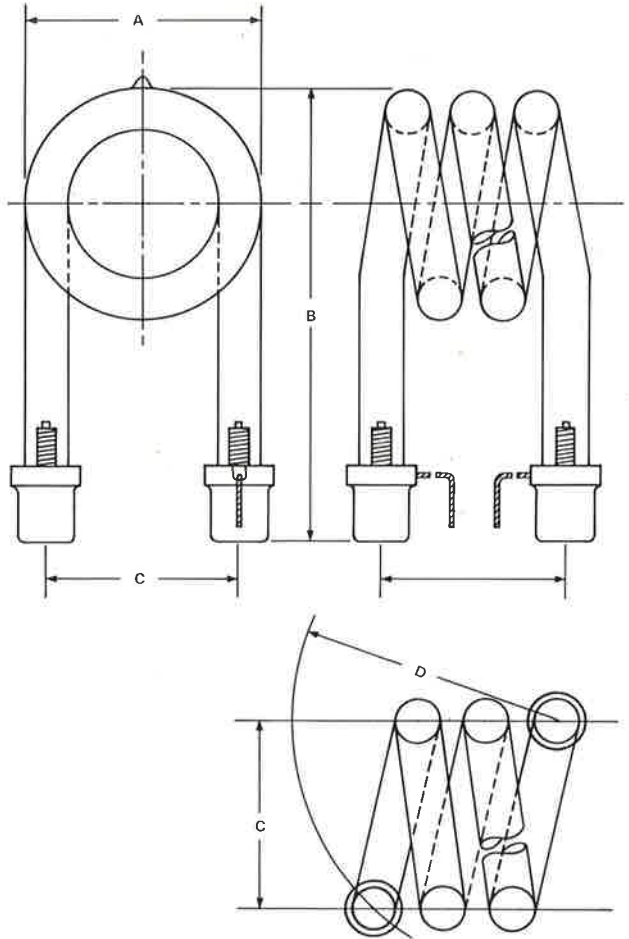
LAMP SPECIFICATION

Caps	Ceramic with flexible leads
Supply volts	200/250V 50Hz
Pulse frequency	100Hz
Design wattage	4kW, 8kW
Efficacy	30 lumens/watt
Life	200 hours
Lamp references	98-2050; 98-2070

DESCRIPTION

These pulsed xenon lamps are higher wattage versions of the linear type (shown on the previous page). They are designed to operate on control gear providing 100 cps pulses. In order to provide a more concentrated source the quartz tube is formed into a helix.

For some equipment it is necessary to include a striker starting device on the 4kW lamp. Lamps can be supplied with this addition as lamp ref. no. 98-2049.



	4kW	8kW
A	60 max	60 max
B	118 max	118 max
C	48	48
D	64.5	102

All dimensions in mm

Linear source xenon lamps—Type XB

DESCRIPTION

Linear source xenon lamps consist of an arc burning between tungsten electrodes operating in an atmosphere of pure xenon contained in a tubular quartz bulb.

The spectrum of the radiation is virtually continuous extending from the ultra-violet through the visible into the infra-red. The colour of the visible radiation is very similar to noon sunlight with a colour temperature of approximately 5600°K. Light output may be modified over a wide range, without appreciably altering the colour of the light, by adjusting the power input.

On starting these lamps full output is given almost immediately.

The lamps require a starter unit to initiate the arc, and a series inductance and power factor connection capacitor are also required. For further details see Section 10.

APPLICATION

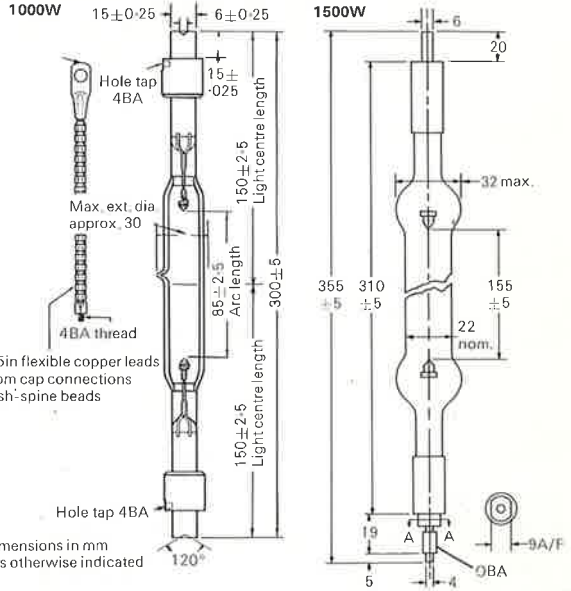
High speed photography and cinematography
Colour matching
Fadeometer testing
Graphic arts
Optical instruments
Laboratory and general scientific purposes

BURNING POSITION

Vertical $\pm 15^\circ$

CAPS

Special cylindrical



Two 140mm/5.5in flexible copper leads for top and bottom cap connections insulated with fish-spine beads

All dimensions in mm unless otherwise indicated

TYPICAL SPECTRAL POWER DATA FOR 1kW AND 1.5kW AC XENON DISCHARGE LAMP

Spectral band	Spectral Power (Watts)			Spectral Power (Watts)	
	1 kw	1.5 kW		1 kw	1.5 kW
250-280	2.20	3.3	640-670	9.10	13.6
280-310	2.20	3.3	670-700	10.0	15.0
310-340	3.08	4.6	700-730	9.8	14.8
340-370	4.50	6.6	730-760	10.62	16.2
370-400	7.0	10.5	760-790	9.83	14.8
400-430	7.7	11.6	790-820	12.75	19.1
430-460	8.55	12.8	820-850	21.5	32.5
460-490	11.0	16.5	850-880	13.2	19.8
490-520	8.75	13.1	880-910	26.4	39.5
520-550	8.75	13.1	910-940	17.6	26.5
550-580	8.97	13.33	940-970	14.9	22.3
580-610	9.10	13.6	970-1000	16.3	24.5
610-640	9.30	13.9			

LAMPS

Rating	Reference no.	Supply Volts	Arc Length (mm)	Lamp operating		Lumens	Life Hours
				Volts	Amps		
1000W	98-0125	200/250V 50Hz	85 ± 2.5	42	25	22000	500
1500W	98-0150	200/250V 50Hz	155	65/80	20/25	33000	1500

CONTROL GEAR

Rating	Starter Reference no.	Chokes Reference no.	Capacitors MFD	Reference no.		Mains Current Amps
1000W	G.53239	6 × G.53235	240 or 300	3 ×	G. C2276	7.5
				3 ×	G. C2276	
1500W	G.53239	3 × G.53230 T + 2 × G.53251 T	200	+	G. C2275	9.3
				2 ×	G. C2275	
				+	G. C2276	

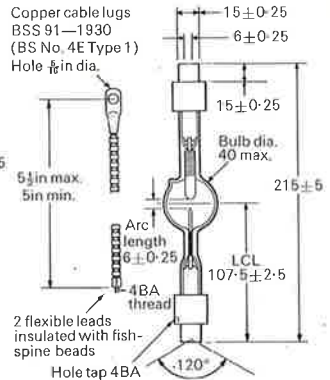
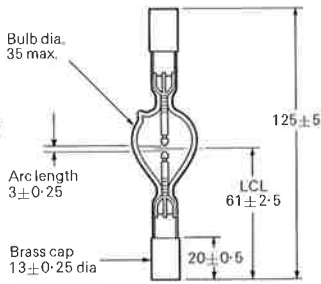
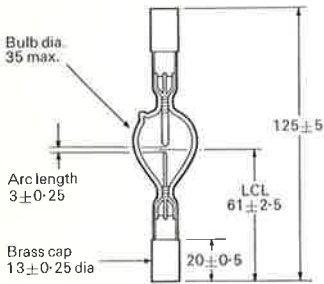
Compact source xenon lamps—Type XE/D

250W/DC

250W/AC

500W/DC

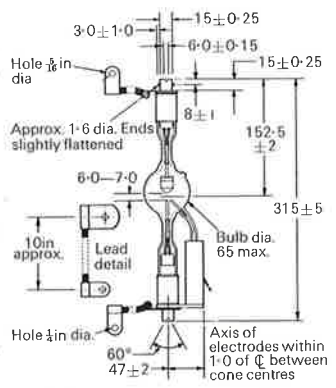
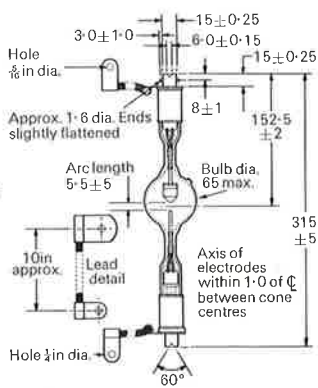
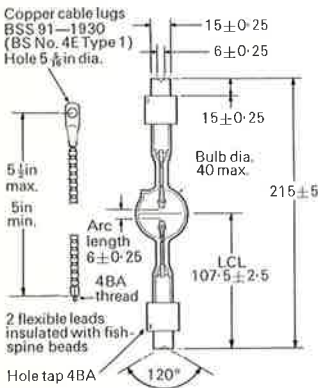
All dimensions in mm unless otherwise stated.



500W/AC

2kW 2 Electrode

2kW DC 3 electrodes



Description

The quartz bulb of a xenon compact-source discharge lamp encloses two electrodes between which the arc is struck in a high pressure atmosphere of pure xenon. Two types of lamps are available, operating from an AC or a DC supply respectively.

The very compact high-brightness light-source emits radiation in a virtually continuous spectrum extending from the ultra violet region through the visible into the infra red. There is a pronounced peak in the latter at about 900nm. The lamp is thus a powerful U.V. and I.R. radiator as well as a light-source.

The colour temperature of the source is approximately 5600K, similar to noon sunlight. Colour rendering is excellent; dimming can be effected

without appreciable change in the colour of the light. The lamp has almost entirely superseded the carbon arc in cinema projectors, having a much longer life and being cleaner to run.

The arc of the AC form of the xenon discharge lamp has a more uniform brightness distribution than the DC forms. The power supply is also simpler, but in general these advantages are outweighed by the more stable arc and longer life of the DC lamp, and it is recommended that the latter be used wherever possible.

On starting, the lamp gives full light output almost immediately. All lamps require a starter unit to strike the arc. In addition AC lamps require control gear in the form of a series inductance and a power factor correction capacitor, while

DC lamps require series resistances. Alternatively the DC lamps may be run off AC supplies using a rectifier ballast unit.

All starters require a 200/250V 50c/s 2 amp supply.

Application

High speed photography and cinematography. Colour matching. Fadedometer testing. Graphic arts. Optical instruments. Laboratory and general scientific purposes.

Position of Burning

Vertical $\pm 15^\circ$ except for 2KW 3 electrode lamp which burns vertically or horizontally $\pm 15^\circ$.

Caps

All lamps are fitted with special cylindrical caps. Lamps of 500W and 2kW have a cone centre for mounting, and a flexible lead.

Compact source xenon lamps—Type XE/D

LAMPS

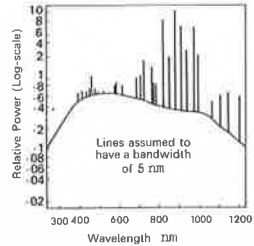
Rating Watts	Reference no.	Supply Volts	Arc size mm	Lamp operating Volts	Amps	Lumens	Luminance*	Life Hours
250	98-0352	65 min. d.c.	3 × 2	16.5	15	5000	11000	1500
250	98-0351	200/250 a.c.	3 × 2	16	17	5000	10000	500
500	98-1002	65 min. d.c.	5 × 3	22	23	12000	20000	1000
500	98-1001	200/250 a.c.	5.5 × 3	20	27	11000	11000	500
2kW	98-1506	65 min. d.c.	4.5 × 4	25	80	70000	120000	1000
2 Electrodes								
2kW	98-1503	35 min. d.c.	6 × 4	23	87	64000	80000	1000
3 Electrodes								

*Luminance=Average luminance of brightest circle of 2mm dia. in candelas/cm²

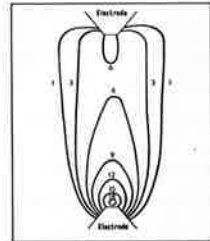
TYPICAL POWER DISTRIBUTION DATA FOR XENON LAMPS SPECTRAL POWER

Spectral Band nm	250W AC & DC	500W DC	500W AC	2kW 2 Electrode	2kW DC 3 Electrode Watts
250-280	0.50	1.52	1.40	8.4	7.7
280-310	0.80	2.04	1.87	9.3	8.5
310-340	1.10	2.76	2.63	12.5	11.4
340-370	1.38	3.24	2.97	17.8	16.3
370-400	1.65	4.07	3.74	22.5	20.6
400-430	1.75	4.45	4.07	26.0	23.7
430-460	1.95	4.67	4.29	28.1	25.7
460-490	2.30	5.75	5.28	33.9	31.0
490-520	2.00	4.95	4.55	28.5	26.0
520-550	2.00	4.80	4.40	27.4	25.2
550-580	2.05	4.90	4.50	29.2	26.7
580-610	2.10	4.90	4.50	29.0	26.5
610-640	2.15	4.80	4.40	28.7	26.2
640-670	2.10	4.55	4.18	26.3	24.0
670-700	2.30	5.00	4.60	27.6	25.0
700-730	2.20	4.95	4.55	27.9	25.5
730-760	2.40	5.40	4.95	30.8	28.2
760-790	2.25	5.15	4.73	27.9	25.5
790-820	2.90	6.37	5.85	35.0	32.0
820-850	4.90	11.20	10.30	68.3	62.5
850-880	3.05	7.20	6.60	35.5	32.5
880-910	6.00	13.10	12.00	77.0	70.5
910-940	4.00	9.70	8.90	56.9	52.0
940-970	3.40	7.70	7.05	47.0	42.9
970-1000	3.70	9.10	8.36	52.5	48.0

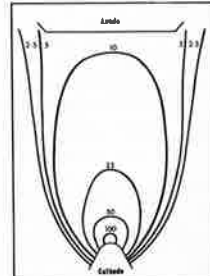
TYPICAL SPECTRAL POWER DISTRIBUTION OF COMPACT SOURCE XENON LAMP



BRIGHTNESS DISTRIBUTION DIAGRAM OF 500W A.C. XE/D LAMP

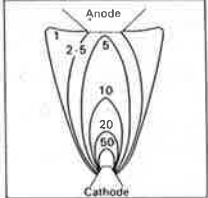


ARC BRIGHTNESS DISTRIBUTION OF A 2KW XE/D LAMP. (2 ELECTRODE)

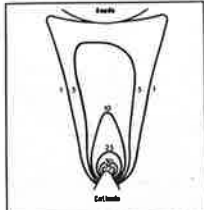


These figures are accurate to 10% in the visible and IR regions but may be up to 25% in error in the ultra violet

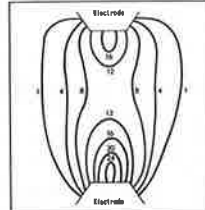
BRIGHTNESS DISTRIBUTION DIAGRAM 250W D.C. XE/D LAMP



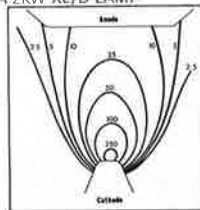
BRIGHTNESS DISTRIBUTION DIAGRAM OF 500W D.C. XE/D LAMP



BRIGHTNESS DISTRIBUTION DIAGRAM OF 250W A.C. XE/D



TYPICAL ARC BRIGHTNESS DISTRIBUTION DIAGRAM OF A 2KW XE/D LAMP



Figures are in 10³ Candela/sq. cm.

Compact source xenon flash-tube type FA5

DESCRIPTION

The arc of the 230W type FA5 flash-tube operates between tungsten electrodes in an atmosphere of pure Xenon contained in a tubular glass envelope. It is designed to be operated continuously from mains with an inductive ballast, or as a powerful electronic flash-tube on a 1000-2000V supply.

Under continuous operating conditions its spectral characteristics are those of a normal Xenon arc but under high-intensity flash conditions there is a slight shift towards the blue end of the spectrum, so that the colour approximates to that of North-sky daylight. Colour-rendering is excellent.

Full light output is reached almost immediately and dimming can be affected with negligible variation in the colour of the light.

APPLICATIONS

1. FLASH TUBE

The unusually small size and high power of the light-source make it especially suitable for use with optical systems. Setting-up and focussing can be facilitated by continuous operation of the tube. It is used in high-speed photography and for stroboscopy.

2. CONTINUOUS BURNING

Is mainly useful where low initial cost of lamp and circuitry are of prime importance. Where the highest arc brightness or efficacy are needed one of the range of compact source Quartz Xenon lamps should be used.

Lamps are used in optical instruments, for the graphic arts, for colour-matching and laboratory and general scientific work.

SINGLE FLASH OPERATION

Electrical characteristics

Operating voltage: 1000-2000V

Maximum loading: 150 Joules

Maximum repetition frequency: 1 every 10 seconds.

Trigger voltage: 12kV.

Approximate luminous characteristics

Total light-output: 1500 lm/s.

Peak lumen output: 2.0×10^6 lm.

Approx. flash duration to $\frac{1}{3}$ peak: 1.0 millisecond.

Average objective life: 5000 flashes.

NOTES

The trigger ring round the tube consists of a single turn of wire at a point approximately half-way up to the top electrode.

The spark-gap is an air-gap with approximately 5kV breakdown (4mm gap; needle points).

The basic circuit has been found satisfactory under single flash conditions, and data given above only applies to it. The tube may be operated at other loading and repetition rates if the maximum mean power (230W) is not exceeded. At higher frequencies and mean powers special pulse forming circuits will be needed.

WARNING

The design and construction of these high tension circuits should only be attempted by persons familiar with the problems involved as they can be dangerous and even lethal.

CONTINUOUS OPERATION

Electrical Characteristics

Lamp rating 230W

Minimum supply voltage 200V

Lamp operating voltage 13.5V

Lamp operating current 18.5A

Approximate luminous characteristics

Light output 2750 lm

Efficacy 12 lm/watt

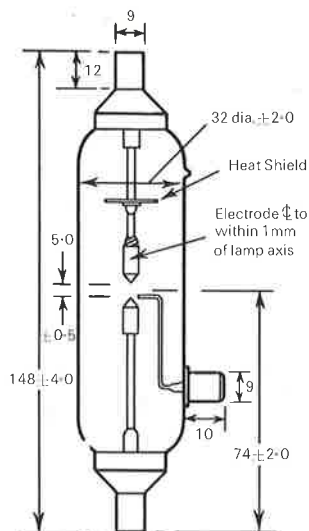
Mean horizontal c.p. 300 cds

Centre arc luminance 2000 stilbs

Average objective life 500 hours

NOTE

Four or five type G 53235 chokes each passing approximately 4 amps may be wired in parallel to form the inductance. Tappings must be adjusted to give 18.5 amps. Other constant current (or power) circuits and alternative starting circuits may be used if more convenient.



All dimensions in mm.

FIG. 1 BASIC CIRCUIT FOR SINGLE FLASH OPERATION

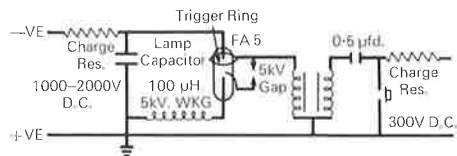
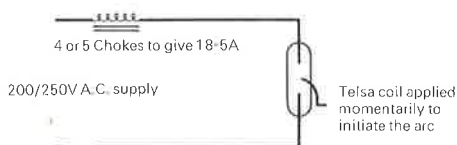


FIG. 2 BASIC CIRCUIT FOR CONTINUOUS OPERATION



Standard xenon lamp '4 in 1' housings

GENERAL SPECIFICATION

The '4 in 1' system Four optical systems each 90° apart, can be illuminated by a single xenon lamp. The '4 in 1' range of two standard lamphouses has been designed to accommodate 250W or 500W-2KW xenon lamps.

Construction and finish Both lamp-houses are in 16 SWG mild steel welded construction and finished in grey synthetic stoving enamel.

Lamp mounts and shields The mount is a unit assembly, is fully adjustable and retains the xenon lamp between spring loaded retention cups. The lamp is surrounded by a metal box type heat shield which also provides mechanical protection. The lamphouses are supplied with four plastic feet for free standing operation.

Mechanical adjustments All mechanical adjustments are carried out by varying the position of the lamp mount assembly.

Electrical connections Provision for three cable inlets has been made, in addition to an earth connection.

250W HOUSING CATALOGUE No. AME 6078

Dimensions

Base	6in x 6in
Overall height	10½in
Optical centre line height from table surface	5in
Weight	10lb

Optical features Provision is made for mounting a standard 2in x 2in heat filter to the lamp shield.

Cooling Under normal operating conditions, convection cooling only is necessary. For continuous operation or for operation in confined spaces, forced air cooling may be necessary.

Safety The front panel is retained by four screws and cannot be accidentally opened. The housing must be effectively earthed before switching on. Unauthorised persons should not have access to the housing interior once electrical connection has been made.

500W/2KW HOUSING CATALOGUE No. AME 6077

Dimensions

Base	12in x 12in
Overall height	26in
Optical centre line height from table surface	9.5in
Weight	50lb

Optical features Provision is made for the attachment of a rear aluminised spherical mirror by means of an adjustable mount



AME 6078



AME 6077

attached to the lamp shield. On the opposite face provision is made for mounting a standard 2in x 2in heat filter. The aluminised reflector is supplied as part of the standard unit, but heat filters are not included.

SAFETY REQUIREMENTS

Ventilation Xenon lamps when in operation, generate ozone. Adequate room ventilation or the use of a ducted system where necessary, must be provided.

U.V radiation The radiation from a xenon lamp is rich in ultra-violet, and when the eyes and skin are exposed directly to the radiation, harmful effects such as conjunctivitis and skin irritation may be experienced. A completely sealed lamphouse system will ensure maximum safety.

ADDITIONAL FACILITIES

The standard housings are designed for free standing use. However, to ensure precise registration of the housing in one or more

optical systems, provision has been made for Kinematic mounting. A special Kinematic base plate suitable for either housing, providing location for PT1 standard optical benches is available.

Other available accessories include –
Heat filters.

Special lens mounts to accept a range of standard lenses, condensers and other proprietary optical systems,
Fan cooling units for 250W housing ducts.

Enquiries for these additional features should be made to –

Goulding & Partners (Consultant Engineers) Ltd, 1a Essex Road, Acton, London W.3
Telephone 01-992 6022.

Linear neon high intensity obstruction lights

DESCRIPTION

The 160W linear neon high intensity obstruction light is designed to give red light at high efficiency, with long life and low power consumption. The main spectral energy line is at 640 nanometres, and the lamp is designed to operate either as a static burning source or, by means of an electronic switching unit, to operate as an occulting beacon which flashes up to 180 per minute.

APPLICATIONS

For use on masts, chimneys or buildings which constitute a hazard or obstruction to military and civil aviation.

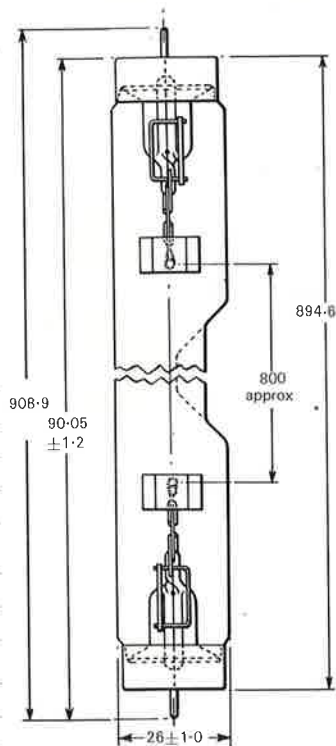
FITTINGS AND CONTROL GEAR

Details of a specially designed fitting unit including control gear, are available on request. Details of a separate flashing control unit are also available.

LAMP DATA

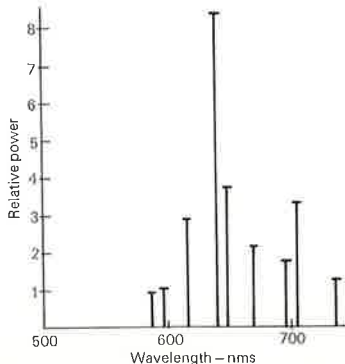
Watts 160
Nominal arc current 1.33 amps
Nominal arc voltage 157
Initial light output 2000 lumens
Minimum light output at 4000 hours 1850 lumens
Rated life continuous burning 4000 hours
Rated life flashing 30 million flashes
DIMENSIONS
Diameter 26mm \pm 1mm
Overall length 909 mm maximum
Caps G 13/10 \times 24 - bi-pin

LAMP REFERENCE NUMBER 98-4501



dimensions in mm

160W LINEAR NEON LAMP
Spectral energy diagram



Vehicle and Miniature lamps

Introduction

Thorn Lighting are leading suppliers of automobile and miniature lamps to major U.K. and European users.

Important innovations have been wedge-base lamps, developed and patented by Thorn Lighting, now in use all over the world, and the first twin-filament tungsten-halogen auto headlamp (26-0457), now just one example of an extensive range.

Two recent Thorn developments were cited in the Queen's Award to Industry 1972 for Technological Innovation: the molybdenum "frame mount" used in the H4 (26-0472 12V 60/55W) and "Bromophosphonitrile" the patented halogen compound used in many Thorn tungsten-halogen auto lamps.

The lamps listed are representative of the main range of lamps made by Thorn Lighting.

8:1	Contents
8:2-3	Lamp number index
8:4	Sealed beam headlamps
8:5	Tungsten-halogen lamps
8:6	Tungsten-halogen conversion kits
8:7	Prefocus and ordinary headlamps
8:8	Flasher, stop and stop/tail lamps, side and tail lamps
8:9	Panel and indicator lamps, Festoon, other wedge base lamps
8:10	Cycle lamps, bus, coach and yacht lamps
8:11	Marker lights
8:12	Flashlamps, miners lamps
8:13	Radio and subminiature panel lamps, telephone visual and telewriter lamps
8:14	Semiconductor lamps
8:15	Lamp cap dimensions

Lamp number index

The full vehicle or miniature lamp reference number consists of six figures – the first two denoting the group and the last four the serial number in the group. Colloquially, these lamps are known in the U.K. by their last significant digits only and in many cases these last digits are also

the U.K. trade reference numbers. Some of these lamps are types included in the European Regulation currently being prepared and where this is so the category is shown, e.g. P25-1, R19/5, T8/4, W10, etc. European usage will supersede U.K. references where appropriate: for

instance a 382 will be known as a 12V P25-1.

The following abbreviations are used:

S.B. Sealed Beam
T.H. Tungsten Halogen
W.B. Wedge Base

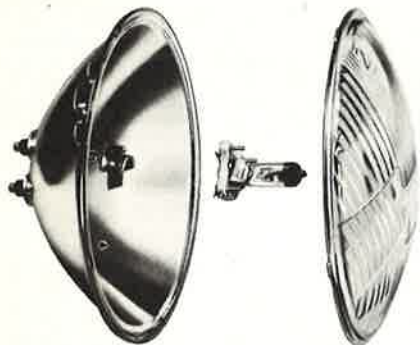
Lamp Reference No.	European Ref.	Volts	Watts	Description	Standard Pack	Page No.	Lamp Reference No.	European Ref.	Volts	Watts	Description	Standard Pack	Page No.
25-0001		12	24	Head	10	8:7	26-0414		12	50/40	Prefocus head	10	8:7
25-0002		12	36	Head	10	8:7	26-0423		6	45/40	Prefocus head	10	8:7
25-0004		12	24	Head	10	8:7	26-0429		24	55/50	Prefocus head	10	8:7
25-0005		12	36	Head	10	8:7	26-0437		24	54/44	Prefocus head	10	8:7
25-0123		24	36	Head	10	8:7	26-0448	H1	12	55	T.H. head/aux	10	8:5
20-0149	R19/5	24	5	Side, tail	10	8:8	26-0450		12	55	T.H. auxiliary	10	8:5
20-0150	R19/5	24	5	Side, tail	10	8:8	26-0453	H3	12	55	T.H. auxiliary	10	8:5
26-0185		12	48	Prefocus head	10	8:7	26-0454		6	55	T.H. auxiliary	10	8:5
20-0205	R19/5	6	5	Side, tail	10	8:8	26-0455	H3	6	55	T.H. auxiliary	10	8:5
20-0206	R19/5	6	5	Side, tail	10	8:8	26-0457		12	55/43	T.H. head	10	8:5
20-0207	R19/5	12	5	Side, tail	10	8:8	26-0458		24	70	T.H. auxiliary	10	8:5
20-0209		12	5	Side, tail	10	8:8	26-0459		24	70	T.H. auxiliary	10	8:5
20-0222		12	4	Side, tail	10	8:8	26-0460	H3	24	70	T.H. auxiliary	10	8:5
20-0227		24	6	Side, tail	10	8:8	26-0463		12	60/55	T.H. head	10	8:5
20-0228		28	6	Side, tail	10	8:8	26-0465	H1	6	55	T.H. auxiliary	10	8:5
20-0233	T8/4	12	4	Side, tail	10	8:8	26-0466	H1	24	70	T.H. auxiliary	10	8:5
25-0241	P25-1	24	21	Stop, flasher	10	8:8	26-0469		12	55/43	T.H. head	10	8:5
20-0247	R19/5	24	6	Side, tail	10	8:8	26-0471		12	75/60	Prefocus head	10	8:7
20-0248	R19/5	24	6	Side, tail	10	8:8	26-0472	H4	12	60/55	T.H. head	10	8:5
23-0253		6	6	Festoon	10	8:9	20-0501	W10	12	5	W.B. side, tail	10	8:8
23-0254		12	6	Festoon	10	8:9	20-0503		12	5	W.B. reversing	10	8:9
23-0255		6	3	Festoon	10	8:9	21-0504		12	3	W.B. instr. panel	10	8:9
23-0256		12	3	Festoon	10	8:9	21-0505		24	3	W.B. instr. panel	10	8:9
23-0260		24	6	Festoon	10	8:9	21-0506		12	1-5	W.B. instr. panel	10	8:9
23-0270		12	18	Festoon	10	8:9	20-0507	W10	24	5	W.B. side, tail	10	8:8
23-0272		12	10	Festoon	10	8:9	21-0641		6	3	Instrument panel	10	8:9
23-0273	C15	12	21	Festoon	10	8:9	21-0643		12	2-2	Instrument panel	10	8:9
23-0274		24	10	Festoon	10	8:9	21-0650		24	2-8	Instrument panel	10	8:9
21-0280		12	1-5	Instrument panel	10	8:9	21-0651		24	2-8	Instrument panel	10	8:9
21-0281		12	2	Instrument panel	10	8:9	23-0653		24	6	Festoon	10	8:9
21-0286		12	1-2	Instrument panel	10	8:9	21-0695		24	2-8	Instrument panel	10	8:9
25-0290	P25-1	24	21	Stop, flasher	10	8:8	21-0950		6	6	Instrument panel	10	8:9
25-0291	P25-1	24	21	Stop, flasher	10	8:8	20-0951		6	6	Side, tail	10	8:8
26-0312		6	30/24	Prefocus head	10	8:7	22-0970		2-5	0-2A	Flashlamp	10	8:12
25-0317	P25-1	6	21	Stop, flasher	10	8:8	22-0972		2-5	0-3A	Flashlamp	10	8:12
25-0319	P25-1	6	21	Stop, flasher	10	8:8	22-0974		3-5	0-15A	Flashlamp	10	8:12
26-0323		12	48	Prefocus head	10	8:7	22-0977		3-5	0-3A	Flashlamp	10	8:12
26-0330		24	44	Prefocus head	10	8:7	21-0984		12	3-6	Instrument panel	10	8:9
26-0331		24	44	Prefocus head	10	8:7	21-0985		16	3	Instrument panel	10	8:9
25-0334		24	21/5	Stop/tail	10	8:8	21-0987		12	2-2	Instrument panel	10	8:9
25-0335	P25-1	12	21	Stop, flasher	10	8:8	20-0989		12	5	Side, tail	10	8:8
25-0343		12	21	Stop, flasher	10	8:8	21-0990		6	3	Instrument panel	10	8:9
25-0346	P25-1	24	21	Stop, flasher	10	8:8	24-0991		6	0-04A	Cycle dynamo	10	8:10
25-0380	P25-2	12	21/5	Stop/tail	10	8:8	21-0993		24	2-8	Instrument panel	10	8:9
25-0381		12	21/5	Stop/tail	10	8:8	24-0997		6	0-5A	Cycle dynamo	10	8:10
25-0382	P25-1	12	21	Stop, flasher	10	8:8	24-0998		6	0-1A	Cycle dynamo	10	8:10
25-0384	P25-2	6	21/5	Stop/tail	10	8:8							
22-0390		1-5	0-2A	Flashlamp	10	8:12							
26-0392		6	25/25	Prefocus head	10	8:7							
26-0410		12	45/40	Prefocus head	10	8:7							
26-0411		12	45/40	Prefocus head	10	8:7							

Lamp number index

Lamp Reference No.	Volts	Watts	Description	Standard Pack	Page No.
22-2003	4.5	0-15A	Flashlamp	10	8:12
22-2004	4.5	0-3A	Flashlamp	10	8:12
24-2012	6	0-25A	Cycle dynamo	10	8:10
21-2020	24	2-8	Instrument panel	10	8:9
22-2031	2-2	0-25A	Flashlamp	10	8:12
22-2046	2-5	0-3A	Flashlamp	10	8:12
24-2048	6	0-1A	W.B. cycle dynamo	10	8:10
24-2049	6	0-25A	W.B. cycle dynamo	10	8:10
22-2061	3-5	0-3A	Flashlamp	10	8:12
22-2076	5-5	0-3A	Flashlamp	10	8:12
22-2077	5-5	0-3A	Flashlamp	10	8:12
21-2097	12	1-2	Instrument panel	10	8-9
21-2104	12	1CP	Instrument panel	10	8-9
24-2162	6	0-2A	Cycle dynamo	10	8:10
24-3001	12	0-117A	Telephone visual	50	8:13
21-3025	6-2	0-3A	Radio panel	10	8:13
21-3027	6-5	0-3A	Radio panel	10	8:13
21-3028	6-5	0-3A	Radio panel	10	8:13
21-3029	6-5	0-35A	Radio panel	10	8:13
21-3030	6-5	0-3A	Radio panel	10	8:13
24-3035	50	0-107A	Telephone visual	50	8:13
21-3043	6-3	0-25A	Radio panel	10	8:13
21-3051	6-3	0-15A	Radio panel	10	8:13
21-3074	6-3	0-15A	Radio panel	10	8:13
21-3094	6-3	0-11A	Radio panel	10	8:13
27-3123	12	12	Bus interior	100	8:10
27-3124	12	12	Bus interior	100	8:10
24-3125	6	0-041A	Telephone visual	50	8:13
27-3128	24	12	Bus interior	100	8:10
27-3129	24	12	Bus interior	100	8:10
27-3131	24	12	Bus interior	100	8:10
27-3132	24	12	Bus interior	100	8:10
24-3141	12	0-1A	Telephone visual	50	8:13
24-3171	24	0-1A	Telephone visual	50	8:13
27-3182	24	20	Bus interior	100	8:10
27-3184	24	20	Bus interior	100	8:10
27-3185	24	20	Bus interior	100	8:10
27-3204	12	24	Bus interior	100	8:10
27-3205	12	24	Bus interior	100	8:10
27-3230	24	12	Bus interior	100	8:10
27-3250	24	15	Bus interior	100	8:10
27-3264	24	20	Bus interior	100	8:10
24-3626	50	2-5	Teletewriter	50	8:13
24-3627	50	2-5	Teletewriter	50	8:13
24-3702	60	3-6	Teletewriter	50	8:13
24-5106	4	0-46A	Miners	25	8:12
24-5657	3-6	1A	Miners	25	8:12

Lamp Reference No.	Volts	Watts	Description	Standard Pack	Page No.	
60-5702	12	50/37.5	S.B. head	10	8:4	
60-5712	12	50	S.B. head	10	8:4	
60-5718	12	50/37.5	S.B. head	10	8:4	
24-5721	4	0-8A	Miners	25	8:12	
60-5724	12	75	S.B. head	10	8:4	
60-5725	12	55	Halogen S.B. aux	10	8:4	
60-5726	12	55	Halogen S.B. aux	10	8:4	
24-5726	4	0-9A	Miners	25	8:12	
60-5728	24	70	Halogen S.B. aux	10	8:4	
60-5729	24	70	Halogen S.B. aux	10	8:4	
24-5730	4	1A	Miners	25	8:12	
60-5733	12	75	Halogen S.B. head	2	8:4	
60-5734	12	55	Halogen S.B. head	2	8:4	
28-6201	6	0-1A	Subminiature panel	50	8:13	
28-6202	6	0-2A	Subminiature panel	50	8:13	
28-6301	12	0-1A	Subminiature panel	50	8:13	
28-6595	28	0-04A	Subminiature panel	50	8:13	
28-6601	28	0-04A	Subminiature panel	50	8:13	
28-6615	28	0-08A	Subminiature panel	50	8:13	
28-6624	(A400)	28	2-8	W.B. aircraft	10	8:9
28-6680	(A401)	28	11	W.B. aircraft	10	8:9
60-7002	12	60/45	S.B. head	10	8:4	
60-7010	12	75/50	S.B. head	10	8:4	
60-7011	12	60/45	S.B. head	10	8:4	
60-7012	12	75	S.B. head	10	8:4	
60-7014	12	60/45	S.B. head	10	8:4	
85-7018	12	20	T.H. M 35	1	8:5	
60-7020	12	75/50	S.B. head	10	8:4	
60-7021	12	75/50	S.B. head	10	8:4	
60-7023	12	60/55	Halogen S.B. head	2	8:4	
60-7025	12	60/45	S.B. head	10	8:4	
60-7503	12	60/50	Rect. S.B. head	10	8:4	
60-7505	12	75/60	Rect. S.B. head	10	8:4	
60-7511	12	75/60	Rect. S.B. head	10	8:4	
23-9901	12	3	Markerlight L.H.	50	8:11	
23-9902	12	3	Markerlight R.H.	50	8:11	
23-9903	12	3	Markerlight rear	50	8:11	
23-9911	24	3	Markerlight L.H.	50	8:11	
23-9912	24	3	Markerlight R.H.	50	8:11	
23-9913	24	3	Markerlight rear	50	8:11	
49-1001	60mA		Solid state lamp	1, 50	8:14	
49-1002	60mA		Solid state lamp	1, 50	8:14	
49-1003	60mA		Solid state lamp	1, 50	8:14	
49-1101	20mA		Solid state lamp	1, 50	8:14	
49-1121	20mA		Solid state lamp	1, 50	8:14	
49-1141	20mA		Solid state lamp	1, 50	8:14	

Sealed beam headlamps



Exploded view tungsten-halogen unit 60-7023



60-7023

HEADLAMPS - with 7in diameter lens

Lamp Reference no.	Volts	Watts	Drive	Dip	Standard pack
60-7002	12	60/45	RH	Left	10
60-7010	12	75/50	RH	Left	10
60-7011*	12	60/45	LH	Right †	10
60-7012	12	75	RH	—	10
60-7014*	12	60/45	RH	Left	10
60-7020	12	75/50	RH	Left	Super Intensity 10
60-7021*	12	75/50	RH	Left	Super Intensity 10
60-7025	12	60/45	RH	Left	Pilot Reflector 10

HEADLAMPS - with 5½in diameter lens

60-5702	12	50/37.5	RH	Left	10
60-5712	12	50	RH	—	10
60-5718*	12	50/37.5	RH	Left	10
60-5724	12	75	RH	—	Super Intensity 10

HEADLAMPS - RECTANGULAR

60-7505*	12	75/60	RH	Left	10
60-7503*	12	60/50	LH	Right †	10
60-7511*	12	75/60	RH	Left	Uplight shield 10

TUNGSTEN-HALOGEN AUXILIARY LAMPS - with 5½in diameter lens

60-5725	12	55	Fog		10
60-5726	12	55	Long Range		10
60-5728	24	70	Fog		10
60-5729	24	70	Long Range		10

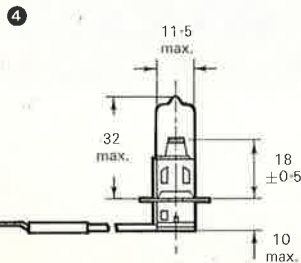
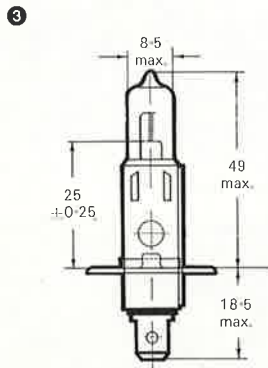
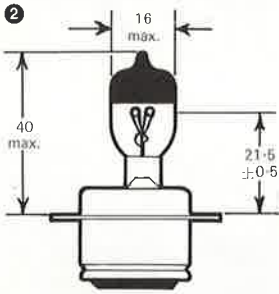
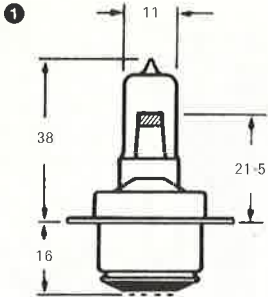
TUNGSTEN-HALOGEN HEADLAMPS

7in circular	60-7023*	12	60/55	RH	Left †	Halogen	2
5½in circular	60-5733	12	75	RH	—	Halogen	2
5½in circular	60-5734*	12	55	RH	Left	Halogen	2

*With pilot aperture

†Asymmetric beam

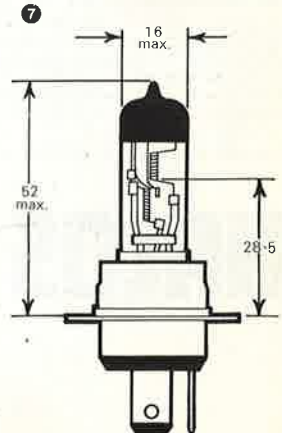
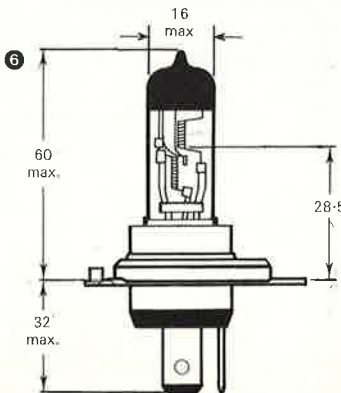
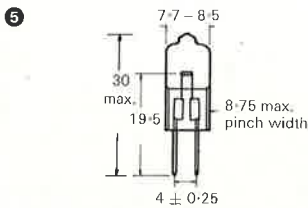
Tungsten-halogen lamps



Lamp Reference	European Ref (or type)	Volts	Watts	Cap	Illustration	Standard pack
85-7018	(M35)	12	20	G4 Bi-pin	5	1
26-0454		6	55	P36s	1	10
26-0465	H1	6	55	P14-5s	3	10
26-0455	H3	6	55	PK22s	4	10
26-0450		12	55	P36s	1	10
26-0448	H1	12	55	P14-5s	3	10
26-0453	H3	12	55	PK22s	4	10
26-0458		24	70	P36d	1	10
26-0459		24	70	P36s	1	10
26-0466	H1	24	70	P14-5s	3	10
26-0460	H3	24	70	PK22s	4	10
26-0457	RH Drive	12	55/43	P36d	2	10
26-0469	LH Drive	12	55/43	P36d	2	10
26-0472	H4	12	60/55	P43t-38	6	10
26-0463		12	60/55	P36t	7	10

*International reference

All dimensions in mm



Tungsten Halogen Headlamp Conversion Kits

7" CONVERSION KIT 12V 60/55W R.H. DRIVE

7023 Kit comprises two 12V 60/55W sealed beam headlamps R.H. Drive, main and dip beam, ref. 60-7023.
Tungsten Halogen conversion for all 7" dia sealed beam units except 60-7012 and 60-7025. Headlamp contains a T.H. capsule similar to H4 giving far reaching main beam plus asymmetric dip beam with sharp cut-off and high intensities on near side.



5 3/4" CONVERSION KITS 12V 75W & 12V 55W R.H. DRIVE

5733 Kit comprises two 12V 75W sealed beam headlamps R.H. Drive, main beam (inner), ref. 60-5733.

5734 Kit comprises two 12V 55W sealed beam headlamps R.H. Drive, dip beam (outer) ref. 60-5734.

Tungsten Halogen conversion for all 5 3/4" sealed beam units.
Part conversion with 5733 kit improves main beams markedly but for greater benefit use full system 5733 & 5734 and obtain nearly double intensities on dip beam of British pattern. Simple replacement results in 2 main 2 dip beams— for full 4-lamp main beam fit suitable relay.



463 CONVERSION KIT 12V 60/55W

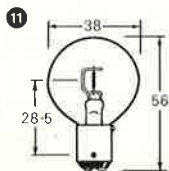
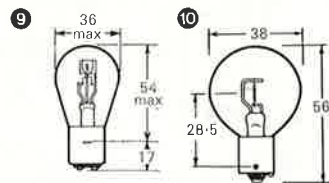
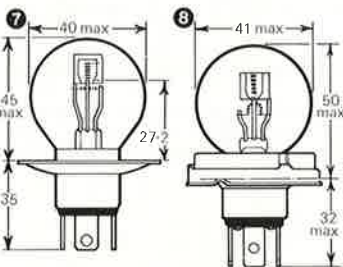
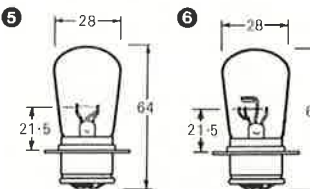
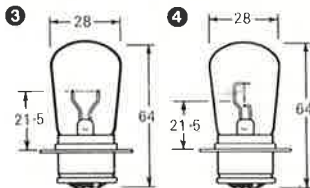
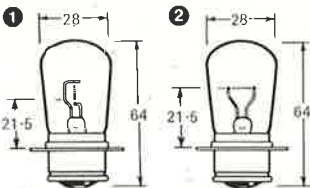
463 Kit comprises two 12V 60/55W headlamp bulbs plus adaptor plates and two types of retention springs.
Tungsten Halogen conversion for many metal reflector headlights.
Converts from conventional European bulb ref. 410. Considerable increase in intensities of main and dip beams.



HALOS

Prefocus and ordinary headlamps

All dimensions in mm



PREFOCUS: BRITISH TYPES SINGLE FILAMENT

Lamp Reference no.	Volts	Watts	Filament	Cap	Illustration	Standard pack
26-0185	12	48	Axial	P36s	1	10
26-0323	12	48	Transverse	P36s	2	10
26-0331	24	44	Axial	P36d	4	10
26-0330	24	44	Transverse	P36d	3	10

DOUBLE FILAMENT

Lamp Reference no.	Volts	Watts	Drive	Dip	Cap	Illustration	Standard pack
26-0312	6	30/24	Either	Vertical	P36d	5	10
26-0414*	12	50/40	RH	Left	P36d	6	10
26-0437*	24	54/44	RH	Left	P36d	6	10
26-0471	12	75/60	RH	Left	P50t	7	10

*These lamps have transverse shielded filaments

PREFOCUS: EUROPEAN TYPES

Lamp Reference no.	Volts	Watts	Drive	Dip	Cap	Illustration	Standard Pack
26-0392	6	25/25	Either	Vertical	BA20d	9	10
26-0423†	6	45/40	Either	Vertical	P45t	8	10
26-0410†	12	45/40	Either	Vertical	P45t	8	10
26-0411†	12	45/40 Yellow	Either	Vertical	P45t	8	10
26-0429†	24	55/50	Either	Vertical	P45t	8	10

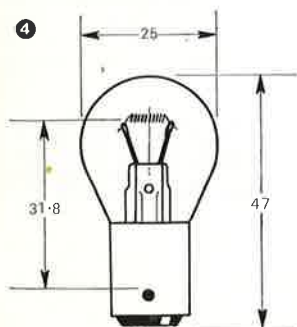
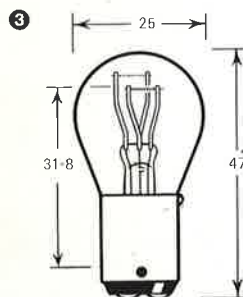
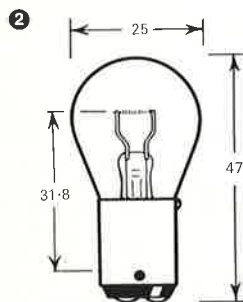
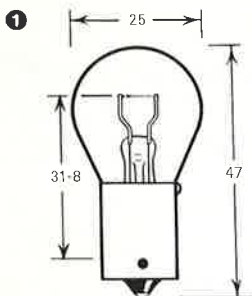
†UEC - Unified European Cap

ORDINARY TYPES

Lamp Reference no.	Volts	Watts	Filament	Cap	Illustration	Standard pack
25-0001	12	24	Axial	BA15s	10	10
25-0004	12	24	Axial	BA15d	11	10
25-0002	12	36	Axial	BA15s	10	10
25-0005	12	36	Axial	BA15d	11	10
25-0123	24	36	Axial	BA15d	11	10

Flasher stop and stop/tail lamps

Side and tail lamps



FLASHER, STOP AND STOP/TAIL

Lamp Reference no.	European Reference no.	Volts	Watts	Cap	Illustration	Standard pack
25-0317	P25-1	6	21	BA15s	1	10
25-0319	P25-1	6	21	BA15d	2	10
25-0384	P25-2	6	21/5	BAY15d	3	10
25-0382	P25-1	12	21	BA15s	1	10
25-0335	P25-1	12	21	BA15d	2	10
25-0343 Amber bulb		12	21	BA15s	1	10
25-0381		12	21/5	BA15d	3	10
25-0380	P25-2	12	21/5	BAY15d	3	10
25-0334		24	24/6	BAY15d	3	10
25-0241	P25-1	24	21	BA15s	2	10
25-0346	P25-1	24	21	BA15d	2	10

Heavy Duty Lamps

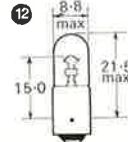
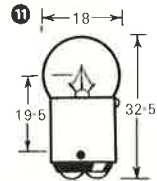
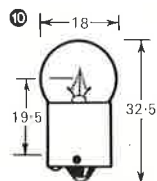
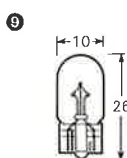
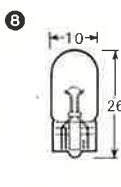
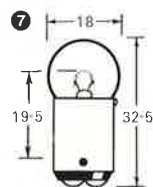
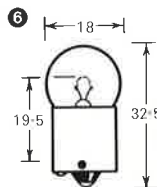
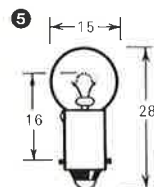
25-0290	P25-1	24	21	BA15s	4	10
25-0291	P25-1	24	21	BA15d	4	10

SIDE AND TAIL

Lamp Reference no.	European Reference no.	Volts	Watts	Cap	Illustration	Standard pack
20-0951		6	6	BA9s	5	10
20-0205	R19/5	6	5	BA15s	6	10
20-0206	R19/5	6	5	BA15d	7	10
20-0233	T8/4	12	4	BA9s	12	10
20-0222		12	4	BA9s	5	10
20-0501	W10	12	5	W2.1 x 9.5d	8	10
20-0989		12	5	BA9s	5	10
20-0207	R19/5	12	5	BA15s	6	10
20-0209		12	5	BA15d	7	10
20-0507	W10	24	5	W2.1 x 9.5d	9	10
20-0149	R19/5	24	5	BA15s	10	10
20-0150	R19/5	24	5	BA15d	11	10
20-0227		24	6	BA9s	5	10
20-0228		28	6	BA15d	11	10

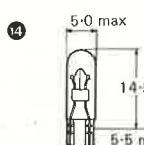
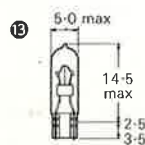
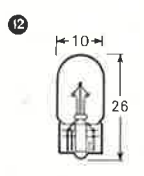
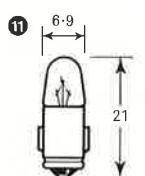
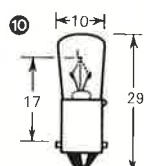
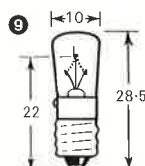
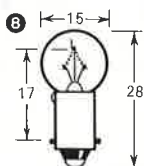
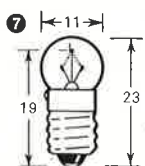
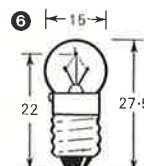
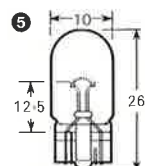
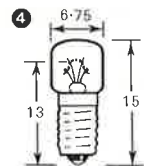
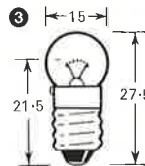
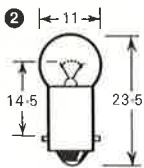
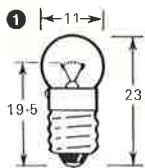
Heavy Duty Lamps

20-0247	R19/5	24	6	BA15d	11	10
20-0248	R19/5	24	6	BA15s	10	10



All dimensions in mm

Panel and indicator lamps Festoon, other Wedge Base lamps



INDICATOR, PANEL AND INSTRUMENT WARNING

Lamp Reference no.	Volts	Watts	Cap	Illustration	Standard pack
21-0990	6	3	E10/13	1	10
21-0641	6	3	BA9s	2	10
21-0950	6	6	E10/13	3	10
21-0286	12	1.2	W2 x 4.6d	14	10
21-2097	12	1.2	W2 x 4.6d	13	10
21-0280	12	1.5	E5/8	4	10
21-0506	12	1.5	W2.1 x 9.5d	5	10
21-2104	12	1CP	W2.1 x 9.5d	5	10
21-0281	12	2	BA7s/11	11	10
21-0987	12	2.2	E10/13	1	10
21-0643	12	2.2	BA9s	2	10
21-0504	12	3	W2.1 x 9.5d	5	10
21-0984	12	3.6	E10/13	1	10
21-0985	16	3	E10/13	6	10
21-0650	24	2.8	E10/13	7	10
21-0651	24	2.8	BA9s	8	10
21-0695	24	2.8	E10/13	9	10
21-0993	24	2.8	E10/13	6	10
21-2020	24	2.8	BA9s	10	10
21-0505	24	3	W2.1 x 9.5d	12	10

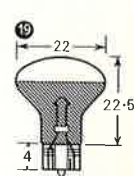
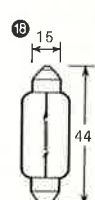
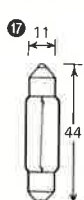
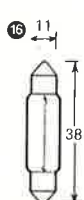
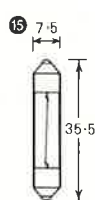
FESTOON

Lamp Reference no.	European Reference no.	Volts	Watts	Cap	Illustration	Standard pack
23-0255		6	3	S7/8	15	10
23-0253		6	6	S8.5/8	16	10
23-0256		12	3	S7/8	15	10
23-0254		12	6	S8.5/8	16	10
23-0272		12	10	S8.5/8	16	10
23-0270		12	18	S8.5/8	18	10
23-0273	C15	12	21	S8.5/8	18	10
23-0653		24	6	S8.5/8	16	10
23-0260		24	6	S8.5/8	17	10
23-0274		24	10	S8.5/8	16	10

OTHER WEDGE BASE

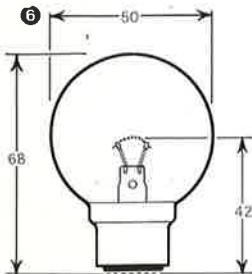
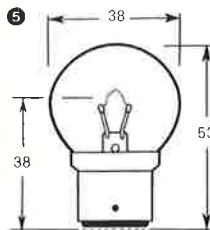
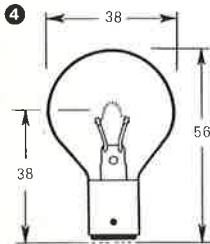
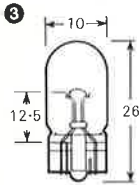
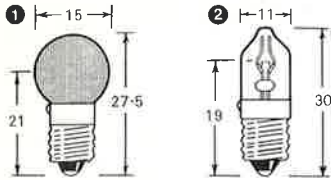
Lamp Reference no.	Volts	Watts	Cap	Illustration	Standard pack
20-05031	12	5	W2.1 x 9.5d	19	10
28-6624 (A400)	28	2.8	W2.1 x 9.5d	12	10
28-6680 (A401)	28	11	W2.1 x 9.5d	20	10

*t*Externally silvered



All dimensions in mm

Cycle dynamo lamps Bus, Coach and Yacht lamps



CYCLE DYNAMO LAMPS

Headlamps

Lamp Reference no.	Volts	Amps	Cap	Finish	Illustration	Standard pack
24-2162	6	0.2	MES	Granulated	1	10
24-2012	6	0.25	MES	Granulated	1	10
24-2049	6	0.25	Wedge base	Clear	3	10
24-0997	6	0.5	MES	Granulated	1	10

Tail and battery operated lamps

24-0991	6	0.04	MES	Clear	2	10
24-0998	6	0.1	MES	Clear	2	10
24-2048	6	0.1	Wedge base	Clear	3	10

BUS, COACH & YACHT

For interior lighting

Lamp Reference no.	Volts	Watts	Cap	Finish	Illustration	Standard pack
27-3123	12	12	BC	Pearl	5	100
27-3124	12	12	SBC	Pearl	4	100
27-3204	12	24	BC	Pearl	5	100
27-3205	12	24	SBC	Pearl	4	100
27-3128	24	12	BC	Clear	5	100
27-3129	24	12	SBC	Clear	4	100
27-3131	24	12	BC	Pearl	5	100
27-3132	24	12	SBC	Pearl	4	100
27-3230	24	12	BC	Pearl	6	100
27-3250	24	15	BC	Pearl	6	100
27-3264	24	20	BC	Pearl	6	100
27-3184	24	20	BC	Pearl	5	100
27-3182	24	20	SBC	Clear	4	100
27-3185	24	20	SBC	Pearl	4	100

All dimensions in mm

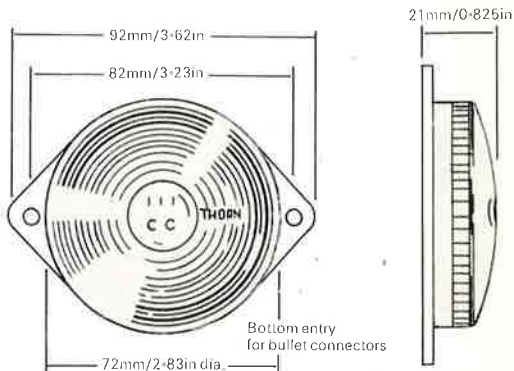
Marker lights

Designed for long vehicles—trucks, trailers, artics, etc.—to comply with the requirements of the Road Vehicle Lighting Regulations 1971 Part VIII and the Road Transport Lighting Act 1957.

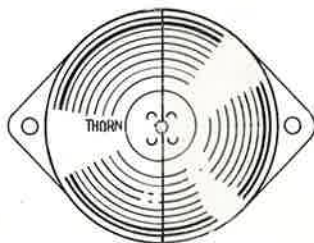
Markerlights are of three forms, each available in either 12v or 24v:
 Red/White—for side marker lamps
 Red—for rear marker* lamps,
 White—for front marker* lamps.
 Markerlights are shallow mounting and the carefully designed Fresnel lens ensures optimum light distribution. Base and lens are petrol and oil resistant and the markerlight accepts standard auto bullet connectors.

The slim design and appearance of markerlights make them equally appropriate for additional lighting on smaller trailers—caravans, camping and boat trailers, etc.

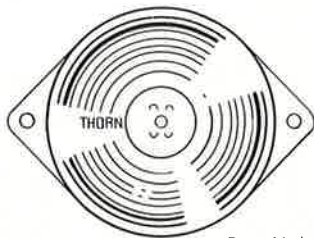
*N. B. Front and Rear Markerlights are additional to and not used in place of the obligatory vehicle side or tail lamps. Use for wide loads or high vehicles etc.



Rear Markerlight



Side Markerlight



Front Markerlight

Side Markerlights

			Reference no.
Left hand side	White/Red	12v 3w	23-9901
		24v 3w	23-9911
Right hand side	Red/White	12v 3w	23-9902
		24v 3w	23-9912

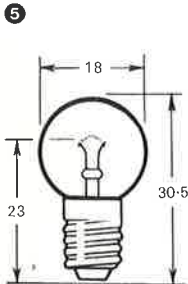
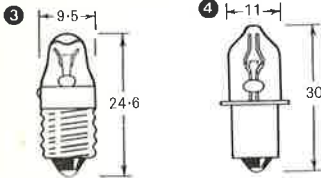
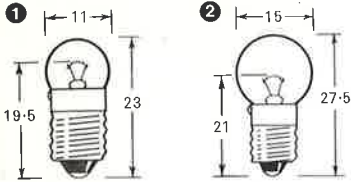
Rear Markerlights

Rear	Red	12v 3w	23-9903
		24v 3w	23-9913

Front Markerlights

Front	White	12v 3w	23-9904
		24v 3w	23-9914

Flashlamps Miners lamps



FLASHLAMPS Ordinary type

Lamp Reference	Volts	Amps	Cap	Illustration	Standard pack
22-0390	1.5	0.2	MES	1	10
22-0970	2.5	0.2	MES	1	10
22-0972	2.5	0.3	MES	1	10
22-0974	3.5	0.15	MES	1	10
22-0977	3.5	0.3	MES	1	10
22-2003	5	0.15	MES	2	10
22-2004	4.5	0.3	MES	2	10
22-2076	5.5	0.3	MES	2	10

Lens end type

22-2031	2.2	0.25	MES	3	10
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Prefocus flashlights

22-2046	2.5	0.3	P13-5s	4	10
22-2061	3.5	0.3	P13-5s	4	10
22-2077	5.5	0.3	P13-5s	4	10

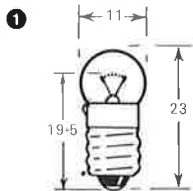
MINERS LAMPS

Lamp Reference	Volts	Amps	Cap	Illustration	Type	Standard pack
24-5106	4	0.46	MES	1	Vacuum	25
24-5657	3.6	1	MES	5	Krypton	25
24-5721	4	0.8	MES	5	Krypton	25
24-5726	4	0.9	MES	5	Krypton	25
24-5730	4	1	MES	5	Krypton	25

All dimensions in mm

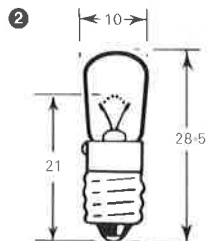
Radio and subminiature lamps

Telephone Visual and Telewriter lamps



RADIO PANEL LAMPS

Lamp Reference	Volts	Amps	Cap	Illustration	Standard pack
21-3025	6.2	0.3	MES	2	10
21-3094	6.3	0.11	MES	1	10
21-3074	6.3	0.15	MCC	3	10
21-3051	6.3	0.15	MES	2	10
21-3043	6.3	0.25	MCC	3	10
21-3029	6.5	0.35	MES	1	10
21-3030	6.5	0.3	MCC	4	10
21-3028	6.5	0.3	MES	2	10
21-3027	6.5	0.3	MCC	3	10



SUBMINIATURE PANEL LAMPS

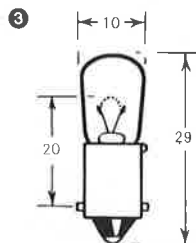
Lamp Reference	Volts	Amps	Cap	Illustration	Standard pack
28-6201	6	0.1	S6s/8	5	50
28-6202	6	0.2	S6s/8	5	50
28-6301	12	0.1	S6s/8	6	50
28-6595*	28	0.04	S6s/8	7	50
28-6601	28	0.04	S6s/8	7	50
28-6615	28	0.08	S6s/8	7	50

*Long life lamp

TELEPHONE VISUAL LAMPS

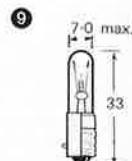
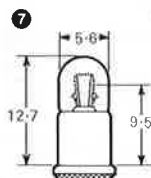
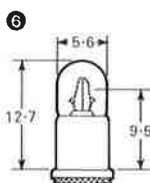
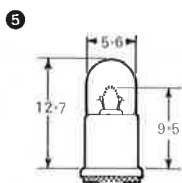
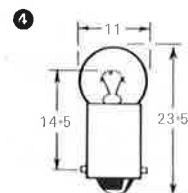
Side contact plates and coloured endpieces

Lamp Reference no.	Volts	Amps	Filament	Endpiece colour	Illustration	Standard pack
24-3125	6	0.041	No. 2 Metal	Grey	8	50
24-3141	12	0.10	No. 2 Metal	Red	8	50
24-3171	24	0.10	No. 2 Metal	Yellow	8	50
24-3001	12	0.117	No. 2 Carbon	Red	8	50
24-3035	50	0.107	No. 2 Carbon	White	8	50



TELEWRITER LAMPS

Lamp Reference no.	Volts	Watts	Cap	Illustration	Standard pack
24-3626	50	2.5	MCC	9	50
24-3627	50	2.5	MES	9	50
24-3702	60	3.6	MES	9	50



All dimensions in mm

Semiconductor lamps

Gallium Arsenide Phosphide lamps are a new type of semiconductor junction electroluminescent device. They have electrical characteristics similar to a normal diode but with the distinguishing feature that visible radiation is generated at the junction when biased in the forward direction.

The Thorn lamps offer high visibility for low power consumption. The encapsulation ensures stable, ultra-long life expectancy and high resistance to vibration or shock and offers typical solid state reliability.

Types

The range of THORN semiconductor lamps has been extended to include a diffuse lensed red 60mA lamp and Red, Yellow and Green 20mA lamps. The principal features are shown below. All lamps are of the TO18 form.



Actual size

Characteristics

GENERAL:

Reference no.	49-1001	49-1002	49-1003	49-1101	49-1121	49-1141
Colour	Red	Red	Red	Red	Yellow	Green
Normal current	60mA	60mA	60mA	20mA	20mA	20mA
Lens	clear	clear	diffused	clear	clear	clear
Features	High performance, - High luminance over wide viewing angle	Semi-directional - for narrower viewing angle	- for large area of illumination	High contrast isolated leads	High contrast, isolated leads	High contrast, isolated leads

OPERATING: (Typical values)

Total flux	5.0mL	2.0mL	4.0mL	1.5mL	1.5mL	1.5mL
Peak wavelengths	670nm	670nm	670nm	670nm	590nm	565nm
Max. forward voltage for rated current	1.85V	1.85V	1.85V	1.8V	2.5V	3.0V
Max. leakage current for 5V reverse	10µA	10µA	10µA	10µA	10µA	10µA
Absolute maximum ratings:						
Max. forward current at 20 °C	100mA	100mA	100mA	40mA	40mA	40mA
Max. reverse voltage	6V	6V	6V	6V	6V	6V
Operating temperature at rated current	-40 °C to +50 °C	-40 °C to +50 °C	-40 °C to +50 °C	-40 °C to +70 °C	-40 °C to +70 °C	-40 °C to +70 °C
Storage temperature range	all types -40 °C to 100 °C					

Lamp cap dimensions

Dimensions and details of the caps used on the range of vehicle and miniature lamps are given below. All dimensions in mm.

MCC
BA9s/14



SCC
BA15s/17



SBC
BA15d/19



SBC Index
BAY 15d/19



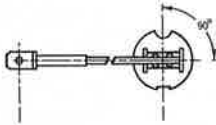
SBC Index
BAY 15d/21



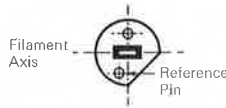
MES
E10/13



PK22s



P14 5s



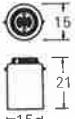
LES E5/8



SBC
BA15d/17



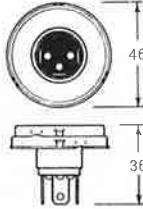
SBC
BA15d/21



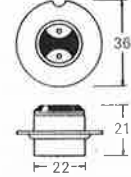
BC
B22/22



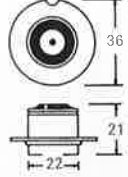
UEC
P45t/41



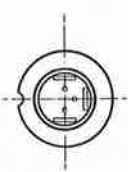
British Prefocus
P36d/21



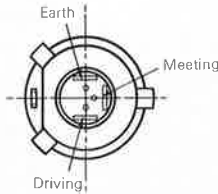
British Prefocus
P36s/21



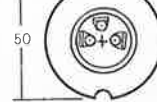
P36t



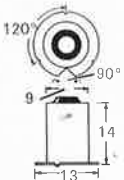
P43t-38



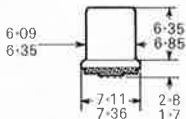
Prefocus
P50t



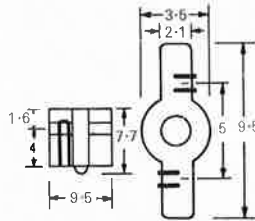
Prefocus
P13-5s



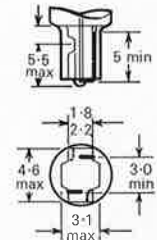
Midget flange
S6s/8



Wedge Base
W2-1 x 9-5d



Wedge base
W2 x 4-6d





Photographic lamps

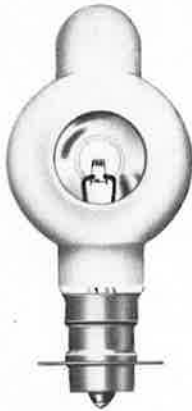
Introduction

Lamps described in the following pages will meet every photographic need. Constant research has resulted in a number of spectacular advances, especially in the tungsten-halogen field. This remarkable technique has resulted in incredibly compact lamps which give more light for twice the life of comparable conventional sources, and this without any diminution of light output or change of colour temperature throughout life.

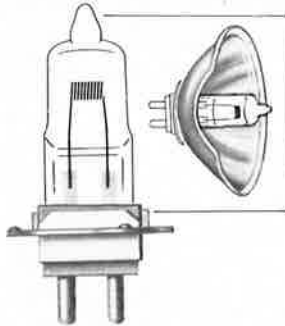
Index

9:2	Projector lamps, Class A1 50-100W
9:3	Projector lamps, Class A1 150W
9:4	Projector lamps, Class A1 200-300W
9:5	Projector lamps, Class A1 420 and 500W
9:6	Projector lamps, Class A1 600-750W
9:7	Projector lamps, Class A1 800-1200 W
9:8	Projector lamps, Class F
9:9	Projector lamps, Class G
9:10	Projector lamps, Class M
9:11	Photographic lamps, Class P1
9:12	Photographic lamps, Class P2, Class P3
9:13	Photographic lamps, Class CP, Class T
9:14	Photo-flashbulbs
9:15	Flashcubes
9:16	Magicube X

Projector lamps, Class A1—50, 75 and 100W



A1/17 8V 50W Projector Lamp
This 8V 50W lamp has been designed for use with both Super 8 and Standard 8 cine projectors. It is a direct replacement for the 8V 50W A1/185.



A1/45 Tungsten-Halogen Lamp
The first halogen lamp to utilise a special pre-focus base. The A1/45 can be burned in either the horizontal or vertical position, used in conjunction with dichroic coated mirrors without condensers or with conventional condenser systems and is suitable for Super 8 cine and slide projectors.



A1/231 12V 100W Tungsten-Halogen Projector Lamp

The A1/231 has been designed particularly for Super 8 cine projectors. It is a complete optical system comprising a tungsten-halogen lamp integral with a dichroic ellipsoidal mirror reflector. Equipment utilising this light source is able to dispense with the conventional condenser optical system, and this results in an appreciable gain in the level of screen illumination. The design permits extremely accurate alignment of the lamp within the projector.

CLASS A1 50, 75 & 100 WATT (50 and 75 watt not colour coded)

Lamp Ref.	Volts	Watt	Dimensions mm			Nominal Lumens	Base	Filament Formation	Average Life Hours	Special Features
			Maximum Bulb Diameter	Maximum Overall Length	Light Centre Length					
A1/17	8	50	33 x 44	96	47 ± 0.5	—	Small Pre-Focus P30s	J	25	A B H I
A1/202	8	50	31	96	47 ± 0.1	—	Small Pre-Focus P30s	J	25	A B F I
A1/220	12	50	11.5	44	30 ± 0.25	1400	2 Pin G6.35	D	50	E J
A1/225	240/250	50	26	67	35 ± 1	675	S.C.C. BA15s	F4	100	A K
A1/229	8	50	50	42	—	—	2 Pin G6.35	D	50	E I J L
A1/250	8	50	50	50	—	—	Special 2 Tab	D	50	E I J L
A1/230	12	75	50	42	—	—	2 Pin G6.35	D	50	E I J M
A1/4	12	100	26	135	55 ± 0.5	2700	Med Pre-Focus P28s	H3	25	A
A1/4	115	100	26	135	55 ± 0.5	1850	Med Pre-Focus P28s	F3	25	A
A1/4	240, 250	100	26	135	55 ± 0.5	1650	Med Pre-Focus P28s	F4	25	A C
A1/21	115	100	26	78	35 ± 1	1850	S.C.C. BA15s	F3	25	A
A1/21	240, 250	100	26	78	35 ± 1	1650	S.C.C. BA15s	F4	25	A C
A1/45	12	100	11.5	45	18 ± 0.2	3000	2 Pin Pre-Focus PG22	J	50	E J
A1/186	12	100	26	78	35 ± 1	2800	S.C.C. BA15s	J	25	A
A1/193	12	100	26	78	29.5 ± 0.5	2800	BA21s 4 Pin	J	25	—
A1/209	12	100	11	45	24 ± 0.5	3000	2 pin Ceramic G6.35	J	50	E J
A1/215	12	100	11	44	30 ± 0.25	3000	2 Pin G6.35	J	50	E J
A1/231	12	100	50	42	—	—	2 Pin G6.35	D	50	E I J M

- A Obscured top
- B Forced cooling necessary. Maximum bulb wall temperature 500°C
- C Voltage range in 10 volt steps
- D Offset filament
- E Operates on tungsten-halogen principle
- F Internal aluminised mirror
- G Internal dichroic mirror
- H Silvered bulb
- I Due to integral mirror nominal lumens not shown

- J Minimum bulb wall temperature 350°C
- K Dual Voltage
- L External integral aluminised mirror
- M External integral dichroic mirror
- N Internal proximity reflector
- O Due to internal reflector nominal lumens not shown
- P Linear overhead projector lamp

- Q 3 or 4 amp H.B.C. fuse necessary
 - R 5 or 6 amp H.B.C. fuse necessary
 - S 6 or 7 amp H.B.C. fuse necessary
- Operating position base down with the following exceptions:
- A1/220 – base down to horizontal A1/229 – horizontal
 - A1/45 – base down to horizontal A1/230 – horizontal
 - A1/209 – base down to horizontal A1/231 – horizontal
 - A1/215 – base down to horizontal A1/250 – horizontal
 - A1/17 } Focal Distance 33.5mm
 - A1/202 } Focal Distance 32mm
 - A1/229 } Focal Distance 32mm
 - A1/231 } Focal Distance 32mm
 - A1/230 }

Projector lamps, Class A1—150W

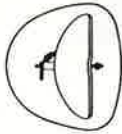


Diagram of A1/24 showing flattened front face of bulb.



L1042 Lampholder
Ordering reference for Lampholder: For voltages up to and including 21.5V specify L1042 LV—for voltages above 21.5v specify L1042 HT.



A1/216 Tungsten Halogen Lamp
The A1/216 which operates on the Tungsten Halogen principle, has been designed primarily as a light source for 35 mm slide projectors. Although of only 150W rating, machines utilizing this lamp may achieve a screen illumination equal to that given by many projectors using a conventional mains voltage 500W Lamp.

A1/24 125V 150W Tru-Flector Lamp

The A1/24 Tru-Flector Lamp is primarily designed for horizontal burning in Super 8 cine projectors. When used in this type of equipment an extremely high level of screen illumination is achieved. This lamp may be used as a direct replacement for the A1/222, the DFN and DFC.

CLASS A1 150 WATT

Lamp Ref.	Volts	Watt	Dimensions mm			Nominal Lumens	Base	Filament Formation	Average Life (Hours)	Special Features
			Maximum Bulb Diameter	Maximum Overall Length	Light Centre Lengths					
A1/118	21.5	150	39	81	39.7±0.1	—	Tru-Focus G17q	G	25	B.F.I.
A1/24	125	150	39±.42	81	39.7±0.1	—	Tru-Focus G17q	G	25	B.D.F.I.
A1/167	240, 250	150	26	90	35±.1	2700	S.C.C. BA15s	F4	25	A.C.
A1/175	240, 250	150	26	135	55.5±0.5	2700	Med Pre-Focus P28s	F4	25	A.C.
A1/182	240, 250	150	30	76	33.5±.1	2700	Tru-Focus G17q	F4	25	A.C.
A1/184	21.5	150	39	91	39.7±0.1	—	Tru-Focus G17q	G	25	A.B.F.I.
A1/194	21.5	150	48	86	39.7±0.1	—	Tru-Focus G17q	G	25	B.F.I.
A1/210	21.5	150	39	91	39.7±0.1	—	Tru-Focus G17q	G	25	B.D.F.I.
A1/211	21.5	150	39	91	39.7±0.1	—	Tru-Focus G17q	G	25	A.B.G.I.
A1/212	24	150	33	103	39.7±0.1 -1.5	4100	Tru-Focus G17q	J	25	A.B.D.
A1/216	24	150	13.5	47	32±0 -0.25	5000	2 Pin G6.35	J	50	E.J.
A1/232	15	150	50	42	—	—	2 Pin G6.35	D	50	E.J.J.M.N.
A1/234	15	150	11.5	45	30±0.25	5000	2 Pin G6.35	J	50	E.J.
A1/243	240	150	15	76	33.5±.1	3000	Tru-Focus G17t	F4	50	A.E.R.J.

- A Obscured top
- B Forced cooling necessary. Maximum bulb wall temperature 500°C
- C Voltage range in 10 volt steps
- D Offset filament
- E Operates on Tungsten Halogen principle
- F Internal integral aluminised mirror
- G Internal integral dichroic mirror
- H Silvered bulb
- I Due to integral mirror nominal lumens not shown

- J Minimum bulb wall temperature 350°C
- K Dual Voltage
- L External integral aluminised mirror
- M External integral dichroic mirror
- N Light centre length not specified
- O Mirror rim to film gate 32 mm
- P Internal proximity reflector
- Q Due to internal reflector nominal lumens not shown

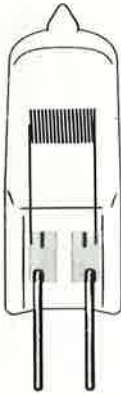
- R 3 or 4 amp H.B.C. fuse necessary
- S 5 or 6 amp H.B.C. fuse necessary
- T 6 or 7 amp H.B.C. fuse necessary

Operating position base down with the following exceptions:

- A1/211 – base down to horizontal A1/118 – horizontal
- A1/216 – base down to horizontal A1/24 – horizontal
- A1/234 – base down to horizontal A1/194 – horizontal
- A1/232 – horizontal

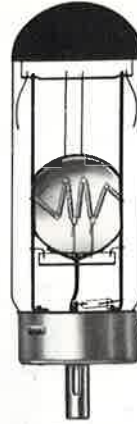
- A1/18
- A1/184
- A1/194 } Focal Distance 43.5 mm
- A1/211 }
- A1/24 – Focal Distance 57.2 mm
- A1/210 – Focal Distance 56.0 mm

Projector lamps Class A1—200, 250 and 300W



A1/223 Tungsten-Halogen Lamp

The A1/223 is intended for use in 35mm slide projectors. Like all tungsten-halogen projector lamps it is more robust and compact than the normal tungsten filament equivalent. Screen illumination, when used with a suitable optical system, can be greater than that attained with a conventional 1000W projector lamp.



A1/201 Proximity Reflector Tru-Focus Projector Lamp

This is a modification of the basic Tru-Focus lamp and features a highly efficient reflector situated immediately behind the filament; its purpose being to gather light directly from the filament and redirect it through the optical system of the projector. The advantages are: Gain in screen brightness. The reflector stays bright because it is hermetically sealed against dust and oxidation. Each replacement lamp means a new reflector for the projector AT NO EXTRA COST, as the price is the same for the equivalent Tru-Focus lamp.

CLASS A1 200, 250 & 300 WATT (200 watt not colour coded)

Lamp Ref.	Volts	Watts	Dimensions mm			Nominal Lumens	Base	Filament Formation	Average Life (Hours)	Special Features
			Maximum Bulb Diameter	Maximum Overall Length	Light Centre Length					
A1/252	24	200	50	45	—	—	G5-6	M	25	E I J L M
A1/5	115	250	33	135	55.5 ± 0.5	5500	Med Pre-Focus P28s	F3	50	A
A1/5	240, 250	250	33	135	55.5 ± 0.5	5200	Med Pre-Focus P28s	F5	50	A C
A1/223	24	250	13.5	55	33 ± 0.25	8500	2 Pin G6.35	J	50	E J
A1/235	24	250	13.5	56	23 ± 0.2	8500	2 Pin Pre-Focus PG22	D	50	E J
A1/246	24	250	50	50	—	—	2 Pin G6.35	J	25	E I J M N
A1/6	115	300	33	135	55.5 ± 0.5	7400	Med Pre-Focus P28s	F3	25	A B
A1/6	240, 250	300	33	135	55.5 ± 0.5	6900	Med Pre-Focus P28s	F5	25	A B C
A1/37	115	300	28	105	35 ± 1	7400	S.C.C. BA15s	F3	25	A B
A1/37	240, 250	300	28	105	35 ± 1	6900	S.C.C. BA15s	F5	25	A B C
A1/178	240, 250	300	33	103	39.7 ± 1	6900	Tru-Focus G17q	F5	25	A B C
A1/183	240, 250	300	31	81	35 ± 1	6900	S.C.C. BA15s	F5	25	A B C
A1/201	240, 250	300	33	103	39.7 ± 1	—	Tru-Focus G17q	F5	25	A B N O
A1/240	240	300	23 15	81	39.7 ± 1	7200	Tru-Focus G17t	F4	50	A E J Q
A1/249	240	300	15	62	40 ± 0.5	7200	G6-35	F4	50	A E J Q

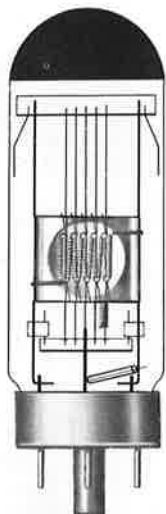
- A Obscured top
- B Forced cooling necessary. Maximum bulb wall temperature 500°C
- C Voltage range in 10 volt steps
- D Offset filament
- E Operates on tungsten-halogen principle
- F Internal aluminised mirror
- G Internal dichroic mirror
- H Silvered bulb
- I Due to integral mirror nominal lumens not shown

- J Minimum bulb wall temperature 350°C
- K Dual Voltage
- L External integral aluminised mirror
- M External integral dichroic mirror
- N Internal proximity reflector
- O Due to internal reflector nominal lumens not shown
- P Linear overhead projector lamp

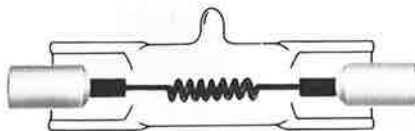
- Q 3 or 4 amp H.B.C. fuse necessary
- R 5 or 6 amp H.B.C. fuse necessary
- S 6 or 7 amp H.B.C. fuse necessary

Operating position base down with the following exceptions:
 A1/223 - Base down to horizontal
 A1/235 - Base down to horizontal
 A1/252 - Horizontal
 A1/252 - Focal Distance 32mm

Projector lamps, Class A1—420 and 500W



A1/205 500W Proximity Reflector Tru-Focus Lamp
This is a further development in the proximity reflector Tru-Focus range in 500W rating.



A1/227 120V 420W Tungsten-Halogen Overhead Projector Lamp
This lamp employs the tungsten-halogen principle. It has an extended life compared with normal tungsten filament lamps and possesses the additional advantages of higher light output and almost 100 per cent lumen maintenance.

Class A1 420 and 500 Watts

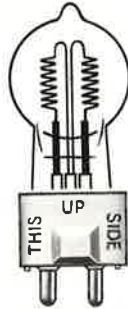
Lamp Reference	Volts	Watts	Dimensions mm			Nominal lumens	Base	Filament formation	Average life hours	Special features
			Maximum Bulb diameter	Maximum overall length	Light centre length					
A1/227	120	420	13.5	65.5	—	11000	Double ended R7s	D	75	E J O
A1/7	115	500	33	135	55.5 ± 0.5	12500	Med Pre-Focus P28s	F8	25	A B
A1/7	240, 250	500	33	135	55.5 ± 0.5	11400	Med Pre-Focus P28s	F11	25	A B C
A1/8	115	500	66	135	55.5 ± 0.5	11500	Med Pre-Focus P28s	A6	50	—
A1/8	240, 250	500	66	135	55.5 ± 0.5	11000	Med Pre-Focus P28s	A8	50	C
A1/47	240, 250	500	33	130	59 ± 0.5	11400	BH P38s	F11	25	A B C
A1/180	240, 250	500	33	103	39.7 ± 1	11400	Tru-Focus G17q	F11	25	A B C
A1/205	240, 250	500	33	103	39.7 ± 1	—	Tru-Focus G17q	F11	25	A B C O P
A1/241	240	500	23	94	39.7 ± 0.1	—	Tru-Focus G17t	C10	50	A E J O P R

- A Obscured top
- B Forced cooling necessary. Maximum bulb wall temperature 500°C
- C Voltage range in 10 volt steps
- E Operates on tungsten-halogen principle

- J Minimum bulb wall temperature 350°C
- O Internal proximity reflector
- P Due to internal reflector nominal lumens not shown
- O Linear overhead projector lamp

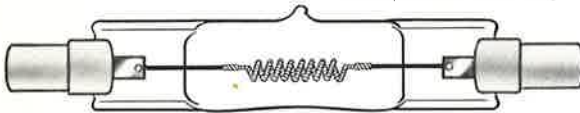
- R 3 or 4 amp HBC fuse necessary
 - S 5 or 6 amp HBC fuse necessary
- Operating position base down

Projector lamps, Class A1— 600, 650 and 750W



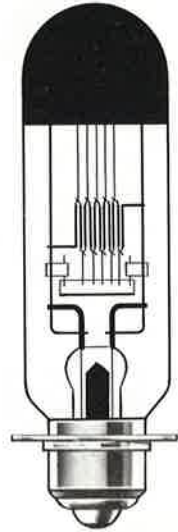
A1/233 240V 650W Tungsten-Halogen Overhead Projector Lamp

The A1/233 is the latest development in the field of overhead projector lamps. Operating on the tungsten-halogen principle it offers all the advantages of a compact source for overhead projectors. The A1/233 is a direct replacement for the DYR.



A1/228 240V 600W Tungsten-Halogen Overhead Projector Lamp

A mains version of the low voltage lamp which has been a popular light source for overhead projectors. Operating on the tungsten-halogen principle it offers all the well-known advantages of this type of lamp. Also available in low voltage 120V rating.



A1/53

CLASS A1 600, 650 & 750 WATT (600 and 650 watt not colour coded)

Dimensions mm

Lamp Ref.	Volts	Watt	Maximum Bulb Diameter	Maximum Overall Length	Light Centre Length	Nominal Lumens	Base	Filament Formation	Average Life (Hours)	Special Features
A1/228	120	600	13.5	93.5	—	17000	Double Ended R7s	F G	75	E J P
A1/228	240/250	600	13.5	93.5	—	16250	Double Ended R7s	F G	75	E J K P Q
A1/233	240/250	650	22.5	65	36.5 ± 1	16500	GY9.5	E2	75	E J K Q
A1/247	240/250	650	22.5	75	36.5 ± 0.5	17750	GY9.5	A8	75	E J Q
A1/9	115 ^a	750	39	140	55.5 ± 0.5	19500	Med Pre-Focus P28s	C8	25	A B
A1/9	240, 250	750	39	140	55.5 ± 0.5	18000	Med Pre-Focus P28s	C10	25	A B C
A1/52	115	750	37	153	81 ± 0.5	19500	3 Fin Ring P39s	C8	25	B D
A1/53	115	750	39	135	59 ± 0.5	19500	Large B.H. P46s	C8	25	A B
A1/53	240, 250	750	39	135	59 ± 0.5	18000	Large B.H. P46s	C10	25	A B C
A1/206	115	750	39	118	39.7 ± 1	—	Tru-Focus G17q	C8	25	A B N O
A1/206	240, 250	750	39	118	39.7 ± 1	—	Tru-Focus G17q	C10	25	A B C N O

- A Obscured top
- B Forced cooling necessary. Maximum bulb wall temperature 500°C
- C Voltage range in 10 volt steps
- D Offset filament
- E Operates on tungsten halogen principle
- F Internal integral aluminised mirror
- G Internal integral dichroic mirror
- H Silvered bulb
- I Due to integral mirror nominal lumens not shown

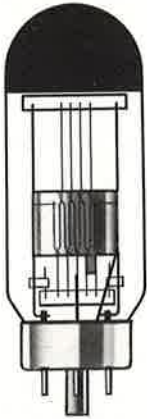
- J Minimum bulb wall temperature 350°C
- K Dual Voltage
- L External integral aluminised mirror
- M External integral dichroic mirror
- N Internal proximity reflector
- O Due to internal reflector nominal lumens not shown
- P Linear overhead projector lamp

- Q 3 or 4 amp H.B.C. fuse necessary
- R 5 or 6 amp H.B.C. fuse necessary
- S 6 or 7 amp H.B.C. fuse necessary

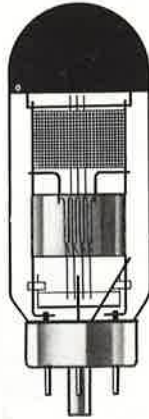
Operating position base down with the following exceptions:

- A1/228 - Horizontal
- A1/52 - Base up
- A1/233 - Base down to horizontal
- A1/247 Base down to horizontal

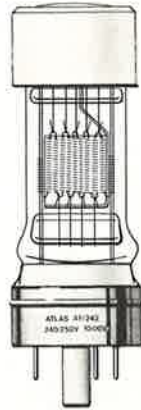
Projector lamps, Class A1—800, 1000 and 1200W



A1/207 1000W Proximity Reflector Tru-Focus Lamp



A1/208 1200W Proximity Reflector Tru-Focus Lamp



A1/242 1000W Tungsten-Halogen Proximity Reflector Tru-Focus Lamp

Class A1 800, 1000 and 1200 Watts

Lamp Reference	Volts	Watts	Dimensions mm			Nominal lumens	Base	Filament formation	Average life hours	Special features
			Maximum Bulb Diameter	Maximum overall length	Light centre length					
A1/245	240/250	800	23	84	44.5 ± 0.5	21500	GY9.5	C8	75	E J R
A1/57	115	1000	66	240	120 ± 5	25000	GES E40s	A6	100	—
A1/57	240, 250	1000	66	240	120 ± 5	23000	GES E40s	A8	100	—
A1/58	240, 250	1000	66	140	55.5 ± 0.5	25000	Med Pre-Focus P28s	C10	25	A C
A1/59	115	1000	39	140	55.5 ± 0.5	27000	Med Pre-Focus P28s	C8	25	A B
A1/59	240, 250	1000	39	140	55.5 ± 0.5	25000	Med Pre-Focus P28s	C10	25	A B C
A1/91	115	1000	39	135	59 ± 0.5	27000	Large BH P46s	C8	25	A B
A1/91	240, 250	1000	39	135	59 ± 0.5	25000	Large BH P46s	C10	25	A B C
A1/188	240	1000	66	245	87 ± 0.5	23000	Large Pre-Focus P40s	A8	100	C
A1/207	115	1000	39	118	39.7 ± 1	—	Tru-Focus G17q	C8	25	A B O P
A1/207	240, 250	1000	39	118	39.7 ± 1	—	Tru-Focus G17q	C10	25	A B C O P
A1/242	240, 250	1000	23	94	39.7 ± 0.1	—	Tru-Focus G17t	C10	50	A E P O R
A1/208	115	1200	39	118	39.7 ± 1	—	Tru-Focus G17q	C10	10	A B O P

A Obscured top

B Forced cooling necessary. Maximum bulb wall temperature 500°C

C Voltage range in 10 volt steps

E Operates on tungsten-halogen principle

J Minimum bulb wall temperature 350°C

O Internal proximity reflector

P Due to internal reflector nominal lumens not shown

R 5 or 6 amp IIBC necessary

Operating position base down

Projector lamps



BH P30s



P 28s



P40s



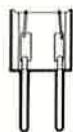
G 17q



B 15s
S.C.C.



PG 22



G 6-35



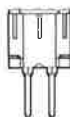
GY 9-53



GY 16



G 22



GX 38q



G 38



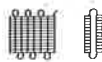
GX 9-5



A



B



C



D



E



F



G



H



J

CLASS F MICRO-PROJECTOR LAMPS

Lamp Ref.	Volts	Watt	Maximum Diameter	Dimensions mm			Nominal Lumens	Base	Crown of bulb to Filament	Average Life Hours	Special Features
				Maximum Overall Length	Light Centre Length	Light Centre Length					
F/30	4	8	37	67	—	100	S.E.S. E14s	10±2	100	B	
F/8	12	12	37	62	40±3	190	S.B.C. BA15d	—	100	B	
F/10	6	24	39	65	—	410	S.E.S. E14s	10±2	100	B	
F/10	12	24	39	65	—	440	S.E.S. E14s	10±2	100	B	
F/3	12	24	39	65	—	440	S.B.S. BA15d	10±2	100	B	
F/23	6	30	39	69	—	450	E.S. E27s	10±2	200	B	
F/25	6	30	39	69	—	600	E.S. E27s	10±2	25	B	
F/80	6	30	39	58	—	420	B.C. B22d	7±2	200	D G	
F/58	6	48	40	65	—	675	S.E.S. E14s	7±2	200	B G	
F/59	6	48	40	70	—	675	E.S. E27s	7±2	200	B G	
F/81	6	48	39	63	41±0.5	675	Small Pre-Focus P30s	—	200	B G	
F/4	12	48	52	81	40±3	950	S.E.S. E14s	—	100	D	
F/38	12	48	40	65	40±3	850	S.B.C. BA15d	—	100	D	
F/76	12	50	40	72	33±0.5	950	Bosch BA20s	—	50	D	
F/77	12	50	40	70	48±3	950	S.E.S. E14s	—	50	D	
F/14	12	100	62	91	55±5	2250	E.S. E27s	—	100	D	
F/63	12	100	62	98	37±0.5	2250	Med Pre-Focus P28s	—	100	D	

B Operating position – vertical base down ±135°

C Solid source filament

D Vertical base down ±135°

G Solid source filament

Projector lamps, Class G



Class G Exciter Lamps
A range of high efficiency lamps for
the sound heads of cinema
projectors.

Class G Exciter lamps

Lamp Reference	Volts	Watts	Dimensions mm			Nominal lumens	Base	Filament formation	Average life hours	Operating positions
			Maximum diameter	Maximum overall length	Light centre length					
G/19	4	0.75	16.5	50	31.8±0.8	30	SCC BA15s	G	50	A
G/27	4	0.75	16.5	50	28.5±0.5	30	Small Pre-Focus P30s	L	50	A
G/29	4	0.75	16.5	50	28.5±0.5	30	Small Pre-Focus P30s	G	50	A
G/31	4	0.75	25.5	51	28.5±0.5	30	Small Pre-Focus P30d	G	50	F
G/4	6	1	16.5	42	21.5±0.5	80	SCC BA15s	L	100	A
G/5	6	1	16.5	50	28.5±0.5	80	Small Pre-Focus P30s	L	100	C
G/40	6	1	16.5	57	28.5±0.5	80	Small Pre-Focus P30s	G	100	B
G/30	6	5	18.5	54	28±1	525	SCC BA15s	G	100	B
G/45	6	5	19	54	23±0.5	450	Small Pre-Focus P30s	G	100	B
G/48	7	0.2	16.5	50	28.6+0.25	13.10	Small Pre-Focus P30s	L	50	A

- A Universal
- B Vertical base down $\pm 30^\circ$
- C Vertical base down $\pm 45^\circ$
- D Vertical base down $\pm 135^\circ$
- E Horizontal
- F Horizontal $\pm 120^\circ$

Projector lamps, Class M



M29 Cine Film Editor Lamp

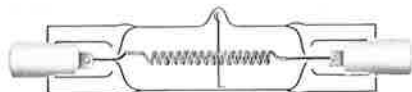
Tungsten halogen lamps give greater light output than conventional incandescent lamps of similar ratings. They operate at a high colour temperature so the light is whiter. The small dimensions allow the production of equipment of compact design. The quartz bulb gives a high degree of resistance to thermal and mechanical shock.

CLASS M CINE FILM EDITOR LAMPS

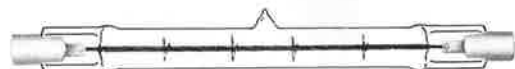
Lamp Ref.	Volts	Watts	Dimensions mm			Nominal Lumens	Base	Filament Formation	Average Life (Hours)	Special Features
			Maximum Bulb Diameter	Maximum Overall Length	Light Centre Length					
M29	6	10	8.5	30	19.5 ± 0.25	200	Special 2 Pin	D	100	A B
M30	6	20	8.5	30	19.5 ± 0.25	450	Special 2 Pin	D	100	A B

- A Operates on tungsten-halogen principle
- B Operating position vertical base down to horizontal

Photographic lamps, Class P1



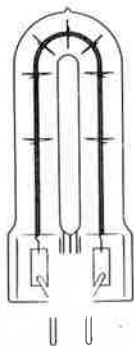
P1/11 240V 800W Tungsten-Halogen Photographic Lamp



P1/12 240V 1000W Tungsten-Halogen Photographic Lamp



P1/1
The P1/1 is specially suitable for indoor photography, and will enable approximately 60m/200ft of cine film or about 300 still photographs to be taken, representing about three hours' total life. Safety fuses are incorporated in the cap. Suitable for use with monochrome film and colour stock balanced for 3400°K.



P1/15 240V 1000W Single Ended Sun Gun Lamp
A new concept in tungsten-halogen lighting, compact and robust, particularly suitable for use with lighting units designed for the Super 8 format. Operates directly from the mains with an average life of 12 hours.



P1/6 Reflector Photoflood
This unit incorporates its own reflector, thus giving a much greater beam candle power.

Class P1 Photographic lamps for monochrome and colour film balanced for 3400°K

Lamp reference	Volts	Watts	Dimensions mm					Nominal lumens	Base	Average life hours	Special features
			Max. dia.	Max. pip protuberance from bulb axis	Nominal contact length	Max. clearance length	Max. overall length				
P1/8	30	250	12	10.2	74.9 ± 1.6	78.3	80	8000	Double ended R7s	12	A
P1/1	240/250	275	61	—	—	—	108.5	8300	BC B22d	3	B C
P1/1	240/250	275	61	—	—	—	110	8300	ES E27s	3	B C
P1/6	240/250	375	97	—	—	—	133.5	13000	BC B22d	4	B E F H
P1/6	240/250	375	97	—	—	—	135	13000	ES E27s	4	B E F H
P1/2	240/250	500	82	—	—	—	164.5	15000	BC B22d	6	B C
P1/2	240/250	500	82	—	—	—	166	15000	ES 27s	6	B C
P1/9	120	650	15	11.4	74.9 ± 1.6	78.3	80	21000	Double ended R7s	12	A
P1/13	240/250	650	28	—	—	—	0.75	20000	2 Pin Ceramic G6.35	15	A B I
P1/11	240/250	800	15	11.4	74.9 ± 1.6	78.3	80	24500	Double ended R7s	12	A B K
P1/12	240/250	1000	12	10.2	121.7 ± 1.6	125.1	127	33000	Double ended R7s	15	A B K
P1/15	240/250	1000	28	—	—	—	0.75	32000	2 Pin Ceramic G6.35	12	A B K
P1/17	240/250	1250	28	—	—	—	85	40000	GX 9-53	15	A B L
P1/19	240/250	1250	28	—	—	—	75	40000	2 Pin Ceramic G6.35	15	A B L
P1/18	240/250	1250	12	10.2	121.7 ± 1.6	125.1	127	39000	Double ended R7s	15	A B L

- A Operates on tungsten-halogen principle
- B Dual voltage
- C Voltage range in 10 volt steps
- E Sain etched bulb
- F Reflector photoflood
- H Light output measured in centre beam candles
- I 3 or 4 amp HBC fuse necessary
- K 5 or 6 amp HBC fuse necessary
- L 6 or 7 amp HBC fuse necessary

In the interest of safety tungsten-halogen lamps above 130V rating should have a separate high breaking capacity fuse in the circuit. See special features column for individual lamp requirements.

Operating position: Universal, with the exception of: P1/13, P1/15 and P1/17 which are Base down to horizontal ±4°.

Photographic lamps, Class P2, Class P3



P3/3 High Intensity Enlarger Lamp (Opalised)
These lamps have opalised bulbs and give a brilliant white light evenly diffused.



P2/4 Reflector Photoflood
The P2/4 is specially designed to meet the exacting requirements of film and TV studios. The silvered bulb permits the use of the lamp in fittings without separate external reflectors.

CLASS P2 PHOTOGRAPHIC LAMPS FOR USE WITH COLOUR FILM BALANCED FOR 3200°K AND FOR ALL MONOCHROME FILM STOCK

Lamp Ref.	Volts	Watt	Dimensions mm				Maximum Overall Length	Nominal Lumens	Base	Average Life Hours	Special Features
			Maximum Bulb Diameter	Max. pip protuberance from bulb axis.	Nominal Contact Length	Maximum Clearance Length					
P2/1	115	500	89	—	—	—	183.5	12500	E.S. E27s	100	D
P2/1	240, 250	500	89	—	—	—	183.5	11000	E.S. E27s	100	C D
P2/4	115	500	127.5	—	—	—	182	7200	E.S. E27s	20	E F H
P2/4	240, 250	500	127.5	—	—	—	182	7200	E.S. E27s	12	C E F H
P2/5	115	500	127.5	—	—	—	182	12000	E.S. E27s	20	E G H
P2/5	240, 250	500	127.5	—	—	—	182	12000	E.S. E27s	12	C E G H
P2/10	240/250	625	12	10.2	185.7±1.6	189.1	190	15500	Double ended R7s	200	A B I
P2/15	240	625	12	10.2	114.2±1.6	117.6	119.5	16250	Double ended R7s	75	A I
P2/6	120	650	15	11.4	74.9±1.6	78.3	80	17000	Double ended R7s	100	A
P2/16	240/250	650	28	—	—	—	75	17500	G6.35	50	A B I
P2/13	240	800	15.0	11.4	74.9±1.6	78.3	80	20000	Double ended R7s	50	A B K
P2/14	240	800	13.5	12	88.4	91.8	93.5	20000	Double ended R7s spcl	50	A K
P2/18	240	800	12	10.2	115	117	119	20600	Double ended R7s	150	A K
P2/25	115	850	28	—	—	—	75	23000	2 Pin Ceramic G6.35	50	A
P2/7	240/250	1000	12	10.2	185.7±1.6	189.1	190	26000	Double ended R7s	200	A B K
P2/17	240/250	1000	28	—	—	—	75	28000	G6.35	50	A B K
P2/12	240/250	1250	12	10.2	185.7±1.6	189.1	190	33500	Double ended R7s	200	A B L
P2/26	240/250	1250	28	—	—	—	75	23000	2 Pin Ceramic G6.35	50	A B L

- A Operates on tungsten halogen principle
- B Dual Voltage
- C Voltage range in 10 volt steps
- D Pearl bulb
- E Satin etched bulb
- F Reflector Photoflood
- G Reflector Photo Spot
- H Light output measured in Centre Beam Candles
- I 3 or 4 amp H.B.C. fuse necessary
- K 5 or 6 amp H.B.C. fuse necessary
- L 6 or 7 amp H.B.C. fuse necessary

Class P2 Operating Position:— Universal with the following exceptions:
 P2/7 Horizontal ±4°
 P2/10 Horizontal ±4°
 P2/12 Horizontal ±4°
 P2/15 Horizontal ±4°

In the interest of safety tungsten-halogen lamps above 130V rating should have a separate high breaking capacity fuse in the circuit. See special features column for individual lamp requirements.

CLASS P3 PHOTOGRAPHIC ENLARGER LAMPS HIGH INTENSITY

Lamp Ref.	Volts	Watt	Dimensions mm			Average Life (Hours)	Special Features
			Maximum Overall Length	Maximum Diameter	Base		
P3/3	240, 250	75	108.5	61	B.C. B22d	100	A, B.
P3/3	240, 250	75	110	61	E.S. E27s	100	A, B.
P3/4	240, 250	150	108.5	61	B.C. B22d	100	A, B.
P3/4	240, 250	150	110	61	E.S. E27s	100	A, B.

- A Internally opalised bulb
- B Voltage range in 10 volt steps

Class P3 Operating Position:—Universal

Photographic lamps, Class CP, Class T



CP/41 2kW Studio Tungsten-Halogen Lamp
With monoplane filament.
For use in conventional Fresnel spot-flood fittings.

T10 Tungsten-Halogen Theatre Spotlight Lamp
For use in cinemas, theatres and other applications, where a suitable housing and reflector can make good use of the compact, intense light source.



Class CP Conventional and tungsten-halogen lamps for use with colour film balanced for light of 3200°K and all monochrome film stock

Lamp reference	Volts	Watts	Dimensions (mm)			Nominal lumens	Average life hours	Cap	Special features
			Maximum diameter	Maximum overall length	Light centre length				
CP/1	115, 240	275	81	110	—	7500	8	BC or ES	I
		275	61	110	—				
CP/2	115, 240	500	82	166	—	14000/13750	20	BC or ES	B I
		500	82	166	—				
CP/39	115/120, 220, 240	650	35	140	63.5 ± 0.5	17000/16800	100	Med Bi-post G22	A B D G
CP/47	115/120, 220, 240	650	35	110	55 ± 2	17000/16800	100	2 pin GX9-5	A B D G
CP/51	115/120, 220, 240	650	35	130	55.5 ± 0.5	17000/16800	100	Med Pre-Focus P28s	A B D G
CP/3	115, 240	1000	153	309	—	30000/28000	30	GES E40	B I
		1000	153	309	—				
CP/19	240	1000	78	166	63.5 ± 2	23000	100	Med Bi-post G22	E
CP/40	115/120, 220, 240	1000	35	140	63.5 ± 0.5	27000/26000	200	Med Bi-post G22	A B D G
CP/48	115/120, 220, 240	1000	35	110	55 ± 2	27000/26000	200	2 pin GX9-5	A B D G
CP/52	115/120, 220, 240	1000	35	130	55.5 ± 0.5	27000/26000	200	Med Pre-Focus P28s	A B D G
CP/30	115, 120, 220, 240	1250/1250	60	220	143 ± 2	28000/59000	250	4 pin GX38q	B C D E
		2500/53000							
CP/41	115/120, 220, 240	2000	40	210	127 ± 2	54000/52000	200	Bi-post G38	A B D G
CP/43	115/120, 220, 240	2000	40	145	70 ± 2	54000/52000	400	2 pin GY16	A B D G
CP/53	115/120, 220, 240	2000	40	200	87.0 ± 0.5	54000/52000	400	Lar Pre-Focus P40s	A B D G
CP/32	220, 240	2500/2500	70	220	143 ± 2	55000/117000	250	4 pin GX38q	C D E
CP/54	220, 240	10000	70	380	254.0 ± 2.0	2800000	400	Bi-post G38	D E
CP/29	115/120, 220, 240	5000	75	265	165 ± 2	145000/135000	400	Bi-post G38	A B D G

Class T Theatre spotlight lamps

Lamp reference	Volts	Watts	Dimensions mm			Base	Average life hours	Special features
			Maximum diameter	Maximum overall length	Light centre length			
T/3	240, 250	250	78	124	55.5 ± 0.5	Med Pre-Focus P28s	200	G
T/1	240, 250	500	100	140	55.5 ± 0.5	Med Pre-Focus P28s	200	G
T/17	220, 240	500	27	122	55.5 ± 0.5	Med Pre-Focus P28s	750	A D G
T/10	115/120, 220, 240	650	35	110	55 ± 2	2 pin GX9-5	400	D G
T/13	115/120, 220, 240	650	35	130	55.5 ± 0.5	Med Pre-Focus P28s	750	A D G
T/2	240, 250	1000	132	200	87 ± 0.5	Large Pre-Focus P40s	200	G
T/4	240, 250	1000	39	155	89 ± 0.5	Med Pre-Focus P28s	200	H
T/6	240, 250	1000	102	140	55.5 ± 0.5	Med Pre-Focus P28s	200	F
T/9	115/120, 220, 240	1000	35	110	55 ± 2	2 pin GX9-5	400	D G
T/14	115/120, 220, 240	1000	35	130	55.5 ± 0.5	Med Pre-Focus P28s	750	A D G
T/15	115/120, 220, 240	1000	35	160	89 ± 0.5	Med Pre-Focus P28s	750	A D H
T/16	115/120, 220, 240	1000	35	200	87 ± 0.5	Large Pre-Focus P40s	750	A D G

- A Dual voltage for low volt lamps
 B Higher lumen/life figures apply to low voltage lamps
 C Twin filament lamp, Higher lumen figures apply to twin filament operation
 D Operates on tungsten-halogen principle

Operating Positions

- E VBD ± 45°
 F VBD ± 75°
 G VBD ± 90°
 H VBU ± 15°
 I Universal

Photo-flashbulbs

Outstanding features of these photo-flashbulbs are:

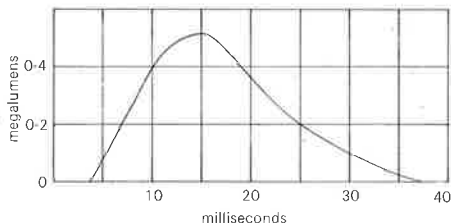
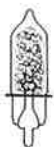
- Blue dot:** The blue dot is a sensitive chemical on the inside of each flashbulb to indicate that it is in perfect condition. Any defect turns the dot pink.
- Zirconium filling:** The use of zirconium foil enables more light to be packed into less space, thus giving greater economy, greater efficiency and flexibility.
- Precision manufacture:** Dependability is of prime importance in flash photography. These bulbs are of consistent high quality, thanks to precision manufacture and rigorous test standards.
- Super AG3B flashbulbs** will work to perfection with a reflector only 50mm/2in in diameter. Many cartons can easily be carried in the pocket.

Full exposure data is printed on every flash carton

Tru-Flash Type 1B

Specification

Class	MF
Colour of bulb	Blue
Total light output (lumen secs)	7500
Peak light output (megalumens)	0.45
Time to peak (milliseconds)	13
Duration above half peak (milliseconds)	15
Voltage range	3-45
Maximum bulb diameter (mm)	11.9
Maximum overall length (mm)	40.5
Bulbs per pack	5
Bulbs per outer container	200
Colour code	Blue



Mini-Flash Super AG3B

Specification

Class	MF
Colour of bulb	Blue
Total light output (lumen secs)	7500
Peak light output (megalumens)	0.45
Time to peak (milliseconds)	13
Duration above half peak (milliseconds)	15
Voltage range	3-45
Maximum bulb diameter (mm)	11.9
Maximum overall length (mm)	33.3
Bulbs per pack	5
Bulbs per outer container	200
Colour code	Blue

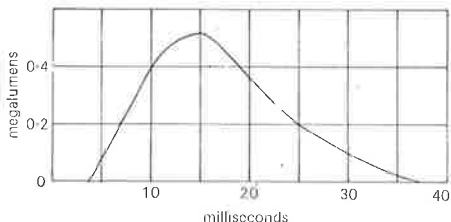
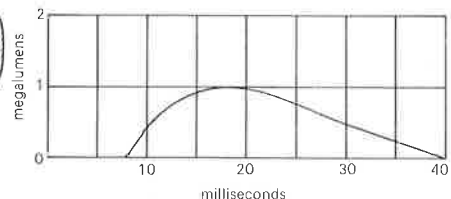


Photo-Flash M3

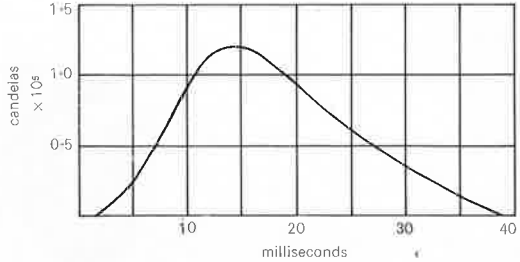
Specification

Class	M
Colour of bulb	Clear
Total light output (lumen secs)	16000
Peak light output (megalumens)	1
Time to peak (milliseconds)	17
Duration above half peak (milliseconds)	15
Voltage range	3-45
Maximum bulb diameter (mm)	22
Maximum overall length (mm)	45
Bulbs per pack	6
Bulbs per outer container	180
Colour code	Red



Flashcubes

Four miniature blue bulbs, smaller in size than an AG3B, are enclosed in a plastic cube complete with a precision reflector for each individual bulb. Flashcubes are simple to fit on the camera and simple to remove, either manually or by automatic ejection. They are only just warm to the touch after four bulbs have been fired. The plastic cube itself acts as a protective shield for each bulb. The blue safety dot is visible through the side of the Flashcube and provides a check against the accidental use of a bulb which may be faulty. The precision-made base ensures correct location on the camera, enabling positive contact and automatic rotation of the Flashcube. Flashcubes may be used with suitably designed cameras and adaptors, with X synchronization at shutter speeds up to 1/60 second and at all shutter speeds with M synchronization.



Exposure Data

	10	25	40	100	160	320
ASA	to	to	to	to	to	to
	12	32	64	125	200	500
Film Speed						
	12	15	17	21	23	26
DIN	to	to	to	to	to	to
	13	16	19	22	24	28

Shutter Sync	Shutter Speed	Guide nos.					
X	1/25-1/30	32	55	75	100	130	200
X or M	1/50-1/60	22	36	50	70	90	130
M	1/100-1/125	18	30	42	60	75	110
M	1/200-1/300	15	24	34	48	60	90

Specification

Class	MF
Colour of bulb	Blue
Total light output (beam candle power sec)	2000
Peak light output (beam candle power)	130000
Time to peak (milliseconds)	13
Duration above half peak (milliseconds)	15
Voltage range	3-45
Width (mm)	28.5
Overall length (mm)	35.5
Cubes per pack	3
Cubes per outer pack	60



Magicube X



Magicube X is a major advance towards 100% photoflash reliability. It is mechanically activated, thus eliminating the need for batteries and consequent failures due to poor electrical contact or corrosion. Magicube X can be used only with cameras designed with the special Magicube firing system.

Exposure Data Guide nos./X Synchronisation

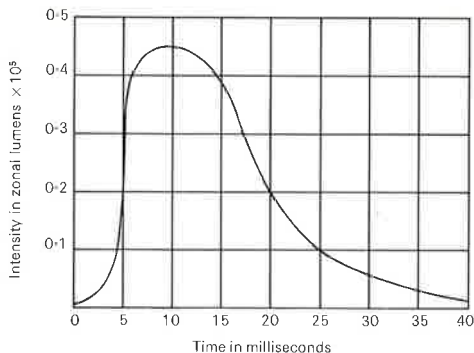
Film	ASA	25-32	40-50	64-80	100-125	160-200
Speed	DIN	15-16	17-18	19-20	21-22	23-24
1/30 sec		45	56	72	90	125
1/60 sec		40	50	64	80	100

Flash to subject distance for single speed cameras

Monochrome film stock	1.2m/4ft-4.5m/15ft
Colour film stock	1.2m/4ft-2.7m/9ft

Specification

Colour of bulb	Blue
Total light output (zonal lumens/sec)	460
Peak intensity (zonal lumens)	44000
Time to peak (milliseconds)	7
Duration above half peak (milliseconds)	13
Maximum width (mm)	30.5
Maximum overall height (mm)	41
Cubes per pack	3
Cubes per outer	30



Introduction

Thorn Lighting control gear and accessories have achieved a reputation for consistently high quality at economical prices by a policy of close co-operation between research and engineering departments and the factory where the equipment is made. The factory has been granted a British Standard Licence (No. 5567) for the manufacture of mercury and low pressure sodium ballasts to BS.4782 and most discharge lamp ballasts within this range bear the Kitemark emblem. This emphasises the high standard of quality and inspection at the factory and ensures maximum performance with long life. Manufacture is carried out at Spennymoor, Co. Durham, in what is probably the largest control gear factory in Europe. A high proportion of its output is exported.

Index

- 10:2-10:6** Theatre lighting
- 10:7** Installation notes
- 10:8, 10:9** 2400mm 125W Fluorescent tube control gear
- 10:10, 10:11** 2400mm 85W Fluorescent tube control gear
- 10:12, 10:13** 1800mm 85W Fluorescent tube control gear
- 10:14, 10:15** 1500mm 80W Fluorescent tube control gear
- 10:16, 10:17** 1500mm 65W Fluorescent tube control gear
- 10:18, 10:19** 1500mm 50W Fluorescent tube control gear
- 10:20, 10:21** 1200mm 40W Fluorescent tube control gear
- 10:22, 10:23** 32W Circular and 900mm 30W Fluorescent tube control gear
- 10:24, 10:25** 600mm 40W Fluorescent tube control gear
- 10:26, 10:27** Twin 600mm 20W Fluorescent tube control gear
- 10:28, 10:29** Twin 450mm 15W Fluorescent tube control gear
- 10:30, 10:31** Single 22W Circular, 600mm 20W and 450mm 15W Fluorescent tube control gear
- 10:32, 10:33** 525mm 13W, 300mm 8W, 225mm 6W and 150mm 4W Fluorescent tube control gear
- 10:34** Circuit components for 50W, 80W, 125W and 250W MBF, MBFR and MBF Kolorlux mercury discharge lamps
- 10:35** Circuit components for 400W, 700W and 1000W MBF, MBFR and MBF Kolorlux mercury discharge lamps
- 10:36** Circuit components for 250W 400W and 1000W metal halide discharge lamps
- 10:37** Circuit components for M1 and M2 miniature mercury discharge lamps
- 10:38, 10:39** Circuit components for MB/D, MBL/D, MBW/U and ME/D mercury discharge lamps
- 10:40, 10:41** Circuit components for CSI compact source and MBI/L linear metal halide discharge lamps
- 10:42, 10:43** Circuit components for XB and XE/D compact source xenon discharge lamps
- 10:44** Circuit components for SOX and SLI sodium discharge lamps
- 10:45** Circuit components for 250W and 400W SON high-pressure sodium discharge lamps
- 10:46** Capacitors for fluorescent tube circuits
- 10:47** Capacitors for mercury and sodium discharge lamp circuits
- 10:48** Voltage transformers and emergency lighting
- 10:49** Combined ballast units for fluorescent tubes
- 10:50, 10:51** Control gear boxes
- 10:52** Mini dimmer
- 10:53** Starter switches
- 10:54** Terminal blocks, fuse holders and starter switch sockets
- 10:55, 10:56** Lampholders for fluorescent tubes
- 10:57** Miscellaneous lampholders

Theatre Lighting

Dimmer Control for All Application

The Thorn range of dimmer systems embraces almost every conceivable lighting control requirement, and extends from the simplest industrial application to the largest theatre or television studio.

Series H Industrial Range

A choice of four dimmer sizes will control filament lamp loads of up to 1, 2.5, 5 or 10 kilowatts respectively. Fluorescent lamp installations are served by a choice of three dimmers controlling for example, 6, 12 or 32 five foot 65 watt tubes.

All the above dimmers are available with control units offering:—

- (a) A hand operated intensity control.
- (b) Automatic fade to Off or Full with single push button control.
- (c) Automatic fade to Off, Intermediate or Full with three push button control.
- (d) Automatic continuous crossfading between two or three dimmers—particularly suitable for colour change effects.

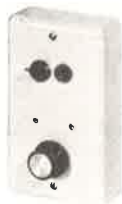
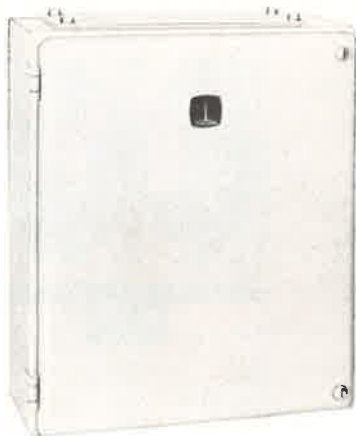
Multiway Control System

Provides simple theatre type lighting control at a price which commends its use in clubs, schools, public halls, photographic studios, etc.

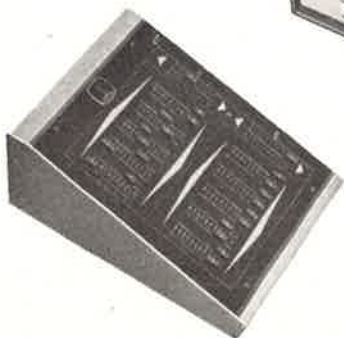
Special Lighting Control Systems

In addition to the standard equipments described, the Theatre Lighting Division is prepared to consider custom-built lighting control systems of any complexity. Examples of these are auditorium and ballroom lighting, restaurants, hospitals, window displays and picture galleries.

Technical sophistication includes such features as automatic brightness control including compensation for varying daylight.



Type TH 40 Dimmer 2500W.



Club Series Multiway Control Systems

These are based on a compact and portable equipment which provides simple theatre type lighting control.

Clubmaster Complete Stage Lighting

This comprises a Club 10/2 or 5/2 two preset control system together with spotlights and all the other items necessary to equip a small stage.

Clubdisco Systems

Based on the Club 10 equipments, these systems combine manual lighting control with a three-channel sound/light modulation facility. They thus provide an ideal means of controlling lighting in discotheques or other applications where light and music can be combined in a psychedelic effect.

Type SM and PM Systems for Stage Lighting Control

The SM systems utilise the well known manually operated arrangement involving 1, 2, 3 or 4 control levers for each lighting circuit. Simultaneous operation of two or more master faders allows control to be transferred from one row of individual levers to another and thus permits progressive changes between different combinations of lighting circuits or different intensity levels for the same circuits.

The PM version combines the function of the SM system with the ability to place any required selection of lighting control levers under the group control of any one of ten group master faders. Thus, ten different combinations of lighting circuits can be prepared in advance with a choice of up to four different intensity levels for each circuit.



PM System at the Malakoff Theatre Paris.

Q-Master

Q-MASTER

A New and Economic Wide Range System for Smaller Stage Lighting Control Applications

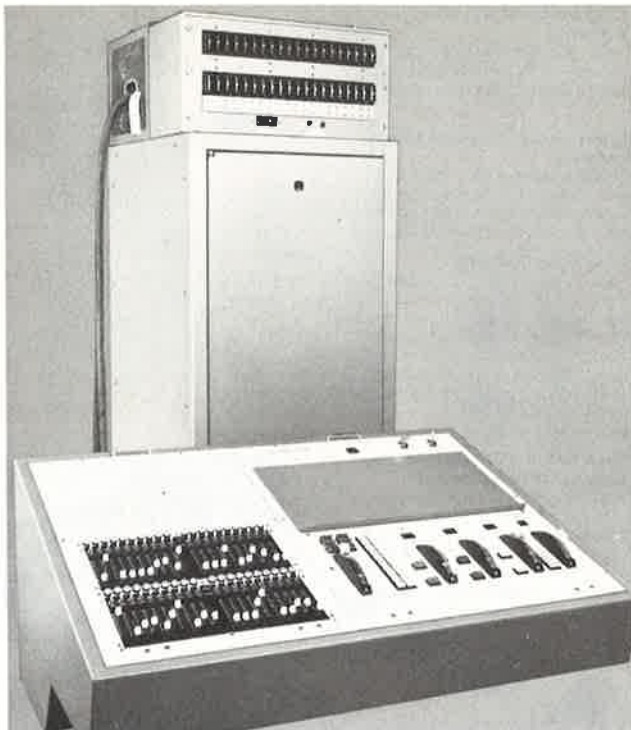
This is the very latest and most important addition to the Thorn range of theatre and television lighting control systems. By exploiting fully the vast potential of modern semiconductor devices our design team have produced an extremely flexible full facility control system which includes memorised brightness levels for all lighting circuits and can be produced at a price which commends its use in even the smaller theatre or TV studio. It thus goes a very long way towards closing the gap between simple conventional control systems and the lighting man's dream of Q-File which is ideal for larger installations but is frequently too expensive for the average small scale user. It is therefore little wonder that the arrival of Q-Master is an exciting event in the history of the Theatre Lighting Division and we trust that this system will enjoy the sort of success which enabled Q-File to place Thorn in the forefront of manufacturers of equipment of this type.

Summary of Facilities

- Up to 160 Lighting Circuits.
- Dimmer Level Memories.
- Independent Group Master Controls.
- Automatic and/or Manual Fades.
- Fade within Fade Facilities.
- Independent Manual Control of all Lighting Circuits.
- Simple to Install — Just a Desk and the Dimmer Cabinets.
- Transportable — May be taken on tour.
- Rapid First Line Servicing by Electrical Staff — No Special Electronic Knowledge is Required.

The last feature is of particular importance to theatre users where the absence of specially trained maintenance personnel can present difficulties in the event of a breakdown.

In common with other Thorn control systems, Q-Master is used in conjunction with a choice of thyristor or triac dimmer units having load capabilities of 2.5, 5 or 10kW. These are housed in cabinets each containing up to 40 dimmers and the individual units can be supplied as plug-in modules or as cheaper wired-in versions.



40 circuit Q Master console with dimmer cabinet housing 40 x 2.5 kW dimmers

Q-FILE

Full Facility System for Theatre and Television Lighting Control

Q-FILE is the best established equipment of its type in the world with more than 40 systems in use or on order for television studios and theatres in Europe, the Middle East and North America.

A full description of all the facilities is not practical in the space available but briefly, the Q-FILE system enables the brightness level of any number of lighting circuits to be memorised instantly in 100 (optionally 200) electronic memory files which may be selected sequentially or in random order.

Thus, the subsequent use of these memories will provide the choice of 100 or more independent lighting plots, each of which can utilise some or all of hundreds of lighting circuits. Each plot includes a predetermined free choice of brightness level for every circuit used and any number of memories can be combined by addition or subtraction to form composite plots which may then be separately memorised if required.

The recall of memorised lighting can take place either with instant effect or in sequence of up to four simultaneously available automatic and independent fade processes. Each fade process may involve the use of any single memory or any combination of memories. Both instant and fade cues may take place concurrently and once a fade action has been initiated, it proceeds automatically, leaving the operator free to introduce shorter term lighting effects.

All these actions can be easily achieved by a single operator seated at a small panel with all the controls at his finger tips.

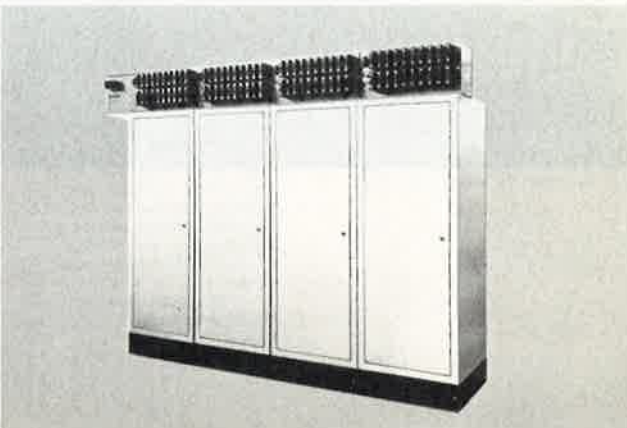
Optional Q-File facilities include a portable control unit which enables lighting to be set up and memorised from any convenient location, and a tape memory system for the long term storage of lighting information. The latter system enables the entire contents of the Q-File memory bank to be copied into a cassette of magnetic tape. On any later occasion, this cassette may be used to restore the memorised data and thus enable the original lighting programme to be repeated.

Footnote

The latest version, Q-File 2000, offers even more user facilities and takes full advantage of modern integrated circuit techniques. This has resulted in a reduction in size of the control equipment with consequent space saving benefits.



Q-File at Grand Theatre Leeds.



Group of LAO Type Dimmer Cabinets.

Theatre Lighting

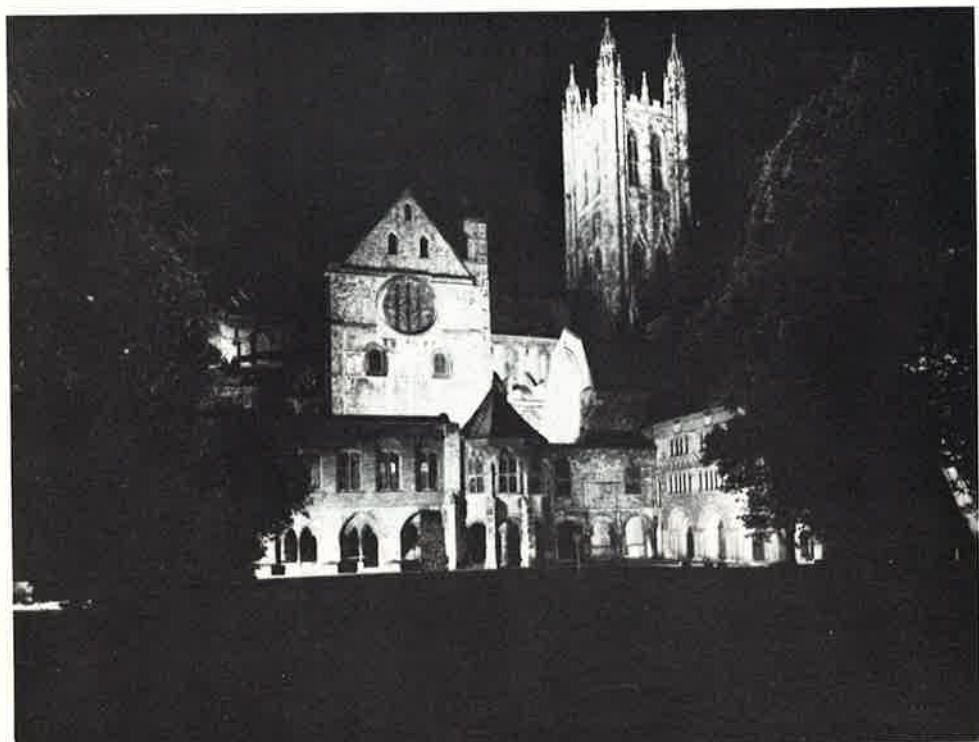
Son et Lumière

For many years, nationally important buildings have featured in Thorn Son et Lumière displays in which a wide range of light sources and control equipment are employed to produce a grand spectacle of colour and sound.

All enquiries should be routed to your Regional Office or to:
Theatre Lighting Division,
Great Cambridge Road,
Enfield, Middlesex.

Technical Note

Thorn Son et Lumière employs a wide range of modern light sources which are controlled by the specially designed Aurama electronic memory system. This allows very complex lighting changes to take place automatically in response to signals from the tape recorder which also provides the commentary and sound effects.



Son-et-Lumière Canterbury Cathedral.

Installation

Certain factors must be considered when installing fluorescent lighting equipment which do not apply to the installation of non-reactive loads such as tungsten filament lamps.

- 1 Cable ratings:** A factor of 1.25 is normally applied to the rating of distribution cables, i.e. not more than a 4 amp load on a 5 amp circuit.
- 2 Fuse ratings:** When HRC fuses or quick reaction protective devices are used to control a circuit it may be necessary to halve the normal rating to allow for switching surges, i.e. a 5 amp HRC fuse may be limited to a maximum of 2.5 amps.
- 3 Wall switches:** Because of the high voltage surges that occur when switching fluorescent tubes on or off, a 'quick-make and slow-break' switch action is preferable. Certain quick break actions and switches with an earthed metal plate or mechanism may be unsuitable for fluorescent lighting.
- 4 Harmonics and neutral current:** All fluorescent tube circuits produce a certain amount of harmonic distortion which increases the neutral current in a 3-phase 4-wire system. Where the fluorescent lighting forms a large part of the electrical load, a full-size neutral must be used and the main 4-core distribution cables should have their current rating reduced by a factor of 1.7 per cent.

- 5 Gear noise:** All control gear having a laminated iron core will produce noise due to the magnetisation of the laminations. The noise level varies according to the type of circuit and the wattage rating. Although all the control gear listed here is suitable for use in offices and factories having a normal background noise level, this control gear could become audible when the ambient noise becomes reduced, e.g. in an office outside normal working hours. Advice should be sought regarding suitable gear for use in exceptionally quiet locations.

The method of mounting the fitting and the surface on which it is fixed play a very important part in securing satisfactory operation in difficult conditions.

- 6 Radio and television interference:** Fluorescent tubes emit a certain amount of high frequency radiation particularly near end of life which can be picked up by radio and television sets. If the tube is more than 2.4–3m/8–10ft from a set which has a good outdoor aerial with a screened lead, interference is not normally experienced. Care should be taken, however, when using portable radios or television sets with indoor aerials close to the fluorescent tube.

- 7** When control gear is not enclosed within a lighting fitting, it is recommended that it should be mounted on a non-combustible material in accordance with the IEE Regulations for the Electrical Equipment of Buildings.

For more detailed information on installation and maintenance of fluorescent lighting equipment see the Thorn Technical Pocket-book.

2400mm 125W Fluorescent tube control gear

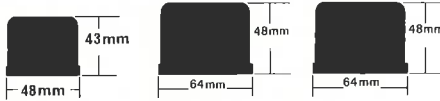
SWITCHSTART CONTROL GEAR FOR 240V 50Hz SUPPLY

Tube	1 x 2400mm 125W	1 x 2400mm 125W	1 x 2400mm 125W
Circuit	Switchstart	Switchstart	Switchstart
Type of control gear	LPF choke	LPF choke	Leading p.f. ballast
Circuit diagram	228	2	13

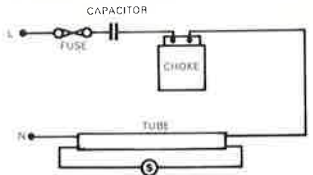
CHOKO OR BALLAST

Catalogue no.	2 x G.CUH/125	G.CI/125	G.CBS/125
Weight	1.8kg	2kg	2.6kg
Filling	Polyester resin	Polyester resin	Polyester resin
Can colour	White	White	White
Terminals	Screw	Screw	Screw

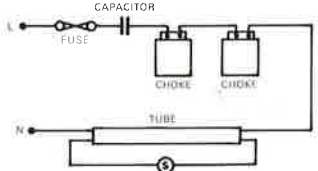
Cross section



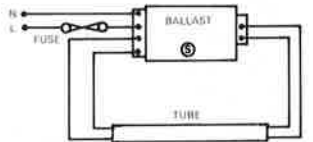
CIRCUIT DIAGRAMS



2 Leading power factor starter switch circuit with essential series capacitor

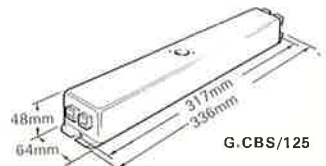
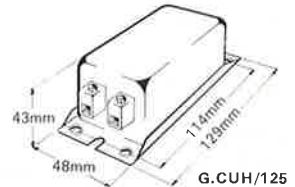


228 Leading power factor starter switch circuit with essential series capacitor



13 Starter switch circuit for leading p.f. ballast

CONTROL GEAR TYPES



CAPACITOR

Catalogue no.	G.C2344	G.C2344	Included in ballast
Capacitance (μ F)	7.2 \pm 5%	7.2 \pm 5%	—
Volts rating	440V	440V	—
Length incl. terminals	130mm	130mm	—
Diameter	40mm	40mm	—
Terminals	Push wire	Push wire	—
Fixing clips	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245	—

STARTER SWITCH

Catalogue no.	155/800	155/800	155/800†
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FUSE

1 tube – rating	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299
2 tube – rating	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299
3 tube – rating	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299
4 tube – rating	5A	5A	5A
Catalogue no.	G.T1268	G.T1268	G.T1268

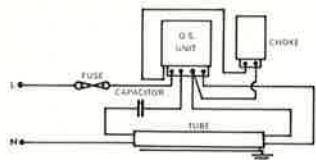
Other choke or ballast ratings

200/210V 50Hz	Not available	G.42355 step-up transformer with G.CI/125	Not available
220V 50Hz	G.42343 step-up transformer with G.CU/125	G.42350 step-up transformer with G.CI/125	Not available
250V 50Hz	Not available	Not available	Not available

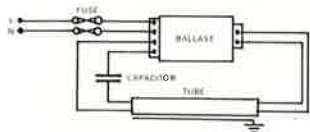
†Order starter switch separately

2400mm 125W Fluorescent tube control gear

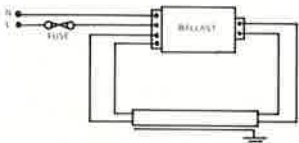
CIRCUIT DIAGRAMS



245 Quickstart circuit with separate choke and essential circuit capacitor

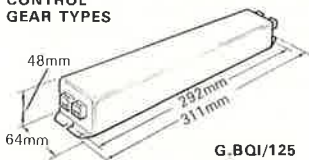


174 Quickstart circuit for LPF ballast with essential circuit capacitor

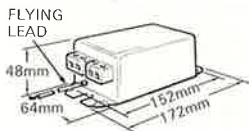


16 Quickstart circuit for HPF ballast

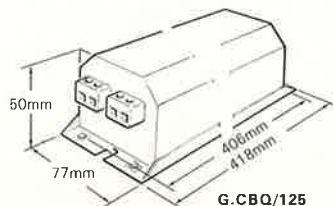
CONTROL GEAR TYPES



G.BQI/125



G.QS/125



G.CBQ/125

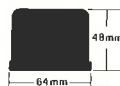
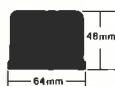
SWITCHLESS START CONTROL GEAR FOR 240V 50Hz SUPPLY

Tube	1 × 2400mm 125W	1 × 2400mm 125W	1 × 2400mm 125W
Circuit	Quickstart	Quickstart	Quickstart
Type of control gear	LPF choke	LPF ballast	HPF ballast
Circuit diagram	245	174	16

CHOKE OR BALLAST

Catalogue no.	G.CQI/125	G.BQI/125	G.CBQ/125
Weight	1.9kg	3.4kg	4.65kg
Filling	Polyester resin	Polyester resin	Polyester resin
Can colour	White	White	White
Terminals	Screw	Screw	Screw

Cross section



CAPACITOR

Catalogue no.	G.C2228	G.C2228	Included in ballast
Capacitance (µF)	7.8 ± 5%	7.8 ± 5%	—
Volts rating	440V	440V	—
Length incl. terminals	228mm	228mm	—
Diameter	38mm	38mm	—
Terminals	Pin	Pin	—
Fixing clips	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245	—

QUICKSTART UNIT

Catalogue no.	G.QS/125	Included in ballast	Included in ballast
Weight	1.9kg	—	—
Filling	Polyester resin	—	—
Can colour	White	—	—
Terminals	Screw	—	—

Cross section



FUSE

1 tube - rating	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299
2 tube - rating	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299
3 tube - rating	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299
4 tube - rating	5A	5A	5A
Catalogue no.	G.T1268	G.T1268	G.T1268

Other choke or ballast ratings

200/210 50Hz	G.42355 step-up transformer with G.CQI/125	G.42355 step-up transformer with G.BQI/125	Not available
220V 50Hz	G.42350 step-up transformer with G.CQI/125	G.42350 step-up transformer with G.BQI/125	Not available
250V 50Hz	Not available	G.63217.5	Not available

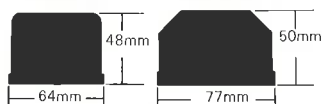
2400mm 85W Fluorescent tube control gear

CONTROL GEAR FOR 240V 50Hz SUPPLY

Tube	1 × 2400mm 85W	2 × 2400mm 85W
Circuit	Quickstart	Twinstart
Type of control gear	LPF ballast	HPF ballast †
Circuit diagram	183	6

CHOKE OR BALLAST

Catalogue no.	G.BQI/85	G.BV/285
Weight	2.2kg	5.2kg
Filling	Polyester resin	Polyester resin
Can colour	White	White
Terminals	Screw	Screw
Cross section		



CAPACITOR

Catalogue no.	G.C2226	Included in ballast
Capacitance (µF)	5 ± 5%	—
Volts rating	440V	—
Length incl. terminals	184mm	—
Diameter	38mm	—
Terminals	Pin	—
Fused or unfused	Unfused	—
Fixing clip	G.Y5244 and G.Y5245	—

FUSE

1 tube – rating	3A	—
Catalogue no.	G.T1299	—
2 tube – rating	3A	3A
Catalogue no.	G.T1299	G.T1299
3 tube – rating	3A	—
Catalogue no.	G.T1299	—
4 tube – rating	3A	3A
Catalogue no.	G.T1299	G.T1299

Other choke or ballast ratings (Details as 240V units above)

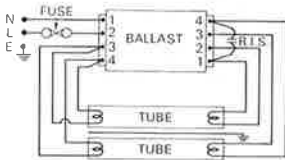
200/210V 50Hz	G.42355 step-up transformer with G.BQI/85	Not available
220V 50Hz	G.42350 step-up transformer with G.BQI/85	G.69222-2 †
250V 50Hz	Not available	Not available

†No R.I.S. fitted internally — G.C2139 to be ordered separately

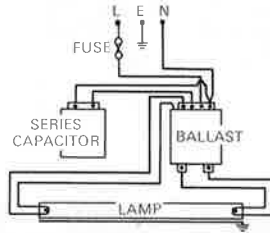
2400mm 85W Fluorescent tube control gear

CIRCUIT DIAGRAMS

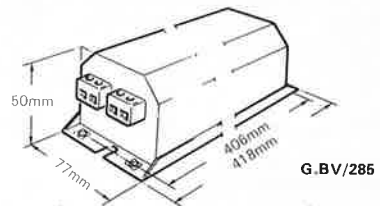
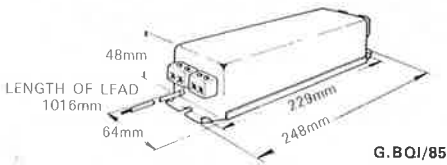
6 2400mm 85W Twinstart circuit



183 Quickstart circuit for combined choke and transformer with essential series capacitor



CONTROL GEAR TYPES



1800mm 85W Fluorescent tube control gear

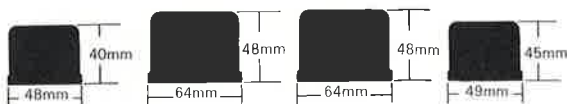
CONTROL GEAR FOR 240V 50Hz SUPPLY

Tube	1 × 1800mm 85W	1 × 1800mm 85W	1 × 1800mm 85W	1 × 1800mm 85W
Circuit	Switchstart	Switchstart	Semi-resonant start	Semi-resonant start
Type of control gear	LPF choke	HPF ballast	LPF ballast	LPF ballast
Circuit diagram	1	13	7	7

CHOKES OR BALLASTS

Catalogue no.	G.CU/685	G.CBS/685	G.BI/685	G.BU/685
Weight	1.8kg	2.4kg	1.8kg	1.8kg
Filling	Polyester resin	Polyester resin	Polyester resin	Polyester resin
Can colour	White	White	White	White
Terminals	Screw	Screw	Screw	Screw

Cross section



CAPACITOR

Catalogue no.	G.C2223	Included in ballast	G.C2220	G.C2220
Capacitance (μF)	6 ± 10%	—	8.4 ± 5%	8.4 ± 5%
Volts rating	250V	—	250V	250V
Length incl. terminals	128mm	—	128mm	128mm
Diameter	38mm	—	38mm	38mm
Terminals	Pin	—	Pin	Pin
Fused or unfused	Unfused	—	Unfused	Unfused
Fixing clips	G.Y5244 and G.Y5245	—	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245

STARTER SWITCH

Catalogue no.	155/800	155/800 †	—	—
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FUSE

1 tube – rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299
2 tube – rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299
3 tube – rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299
4 tube – rating	5A	5A	3A	3A
Catalogue no.	G.T1268	G.T1268	G.T1299	G.T1299

Other choke or ballast ratings (Details as 240V units above unless otherwise stated)

200/210V 50Hz	Not available	Not available	Not available	Not available
220V 50Hz	G.42343 step-up transformer with G.CU/685	Not available	G.69271.2	G.69294.2 †
250V 50Hz	AME 69249.5	Not available	Not available	G.69255.5

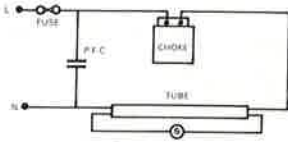
†This unit must be used with capacitor G.C2289 (10μF ± 5%)

‡Order starter switch separately

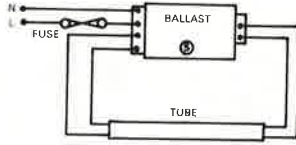
1800mm 85W Fluorescent tube control gear

CIRCUIT DIAGRAMS

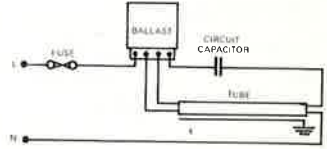
1 Standard starter switch circuit with optional PFC capacitor



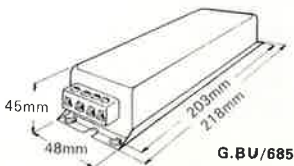
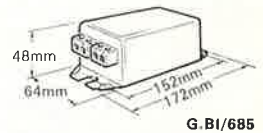
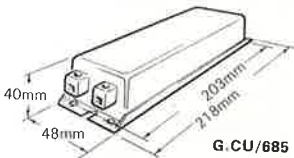
13 Starter switch circuit for HPF ballast



7 Semi-resonant start circuit with essential circuit capacitor



CONTROL GEAR TYPES



1500mm 80W Fluorescent tube control gear

CONTROL GEAR FOR 240V 50Hz SUPPLY

Tube	1 × 1500mm 80W	1 × 1500mm 80W	1 × 1500mm 80W	1 × 1500mm 80W	1 × 1500mm 80W
Circuit	Switchstart	Switchstart	Quickstart	Switchstart	Semi-resonant start
Type of control gear	LPF choke	LPF choke	LPF choke	HPF ballast	HPF ballast
Circuit diagram	1	1	8	13	16

CHOKES OR BALLAST

Catalogue no.	G.CU/685	G.CI/80	G.CI/80	G.CBS/685	G.CBR/80
Weight	1.8kg	1.9kg	1.9kg	2.4kg	3kg
Filling	Polyester resin	Polyester resin	Polyester resin	Polyester resin	Polyester resin
Can colour	White	White	White	White	White
Terminals	Screw	Screw	Screw	Screw	Screw

Cross section



CAPACITOR

Catalogue no.	G.C2222	G.C2222	G.C2222	Included in ballast	Included in ballast
Capacitance (µF)	8 ± 10%	8 ± 10%	8 ± 10%	—	—
Volts rating	250V	250V	250V	—	—
Length incl. terminals	128mm	128mm	128mm	—	—
Diameter	38mm	38mm	38mm	—	—
Terminals	Pin	Pin	Pin	—	—
Fused or unfused	Unfused	Unfused	Unfused	—	—
Fixing clips	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245	—	—

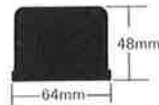
STARTER SWITCH

Catalogue no.	155/500	155/500	—	155/500 †	—
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QUICKSTART UNIT

Catalogue no.	—	—	QS/80	—	—
Weight	—	—	1kg	—	—
Filling	—	—	Polyester resin	—	—
Can colour	—	—	White	—	—
Terminals	—	—	Screw	—	—

Cross section



FUSE

1 tube - rating	3A	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299	G.T1299
2 tube - rating	3A	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299	G.T1299
3 tube - rating	3A	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299	G.T1299
4 tube - rating	5A	5A	5A	5A	3A
Catalogue no.	G.T1268	G.T1268	G.T1268	G.T1268	G.T1299

Other choke or ballast ratings (Details as 240V 50Hz units above unless otherwise stated)

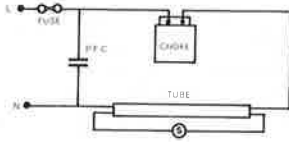
200/210V 50Hz	G.69249.1	G.CI/80	G.CI/80	Not available	Not available
220/230V 50Hz	G.69249.M	G.CI/80	G.CI/80	Not available	Not available
240/250V 50Hz	G.69249.5 (250V)	G.CI/80	G.CI/80	Not available	Not available
200/210V 60Hz	Not available	G.62845.T	G.62845.T	Not available	Not available
220/230V 60Hz	Not available	G.62845.T	G.62845.T	Not available	Not available
240/250V 60Hz	Not available	G.62845.T	G.62845.T	Not available	Not available

†Order starter switch separately.

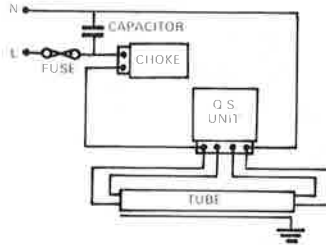
1500mm 80W Fluorescent tube control gear

CIRCUIT DIAGRAMS

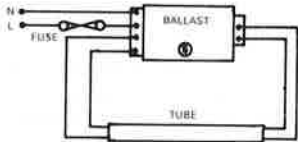
1 Standard starter switch circuit with optional PFC capacitor



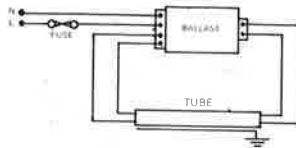
8 Tapped quickstart transformer circuit with optional PFC capacitor



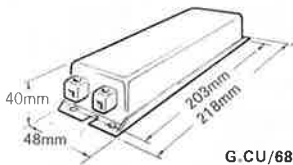
13 Starter switch circuit for HPF ballast



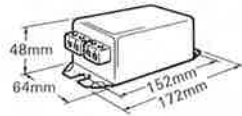
16 HPF ballast (SRS circuit)



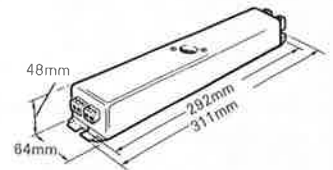
CONTROL GEAR TYPES



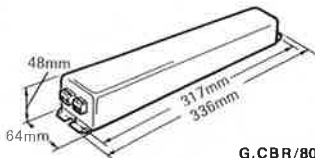
G.CU/685



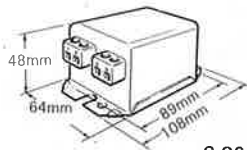
G.CI/80



G.CBS/685



G.CBR/80



G.QS/80

1500mm 65W Fluorescent tube control gear

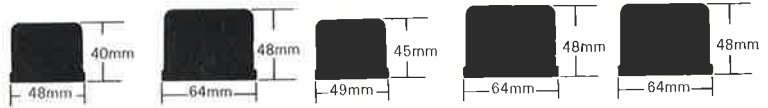
CONTROL GEAR FOR 240V 50Hz SUPPLY

Tube	1 × 1500mm 65W	1 × 1500mm 65W	1 × 1500mm 65W	1 × 1500mm 65W	1 × 1500mm 65W
Circuit	Switchstart	Switchstart	Semi-resonant start	Semi-resonant start	Semi-resonant start
Type of control gear	LPF choke	HPF ballast	LPF ballast	LPF ballast	HPF ballast
Circuit diagram	1	13	7	7	16

CHOKES OR BALLAST

Catalogue no.	G.CU/65	G.CBS/65	G.BU/65	G.BI/65	G.CBR/65
Weight	1.2kg	1.8kg	1.72kg	1.9kg	2.95kg
Filling	Polyester resin	Polyester resin	Polyester resin	Polyester resin	Polyester resin
Can Colour	White	White	White	White	White
Terminals	Screw	Screw	Screw	Screw	Screw

Cross section



CAPACITOR

Catalogue no.	G.C2245	Included in ballast	G.C2220	G.C2220	Included in ballast
Capacitance (µF)	5 ± 10%	—	8.4 ± 5%	8.4 ± 5%	—
Volts rating	250V	—	250V	250V	—
Length incl. terminals	128mm	—	128mm	128mm	—
Diameter	38mm	—	38mm	38mm	—
Terminals	Pin	—	Pin	Pin	—
Fused or unfused	Unfused	—	Unfused	Unfused	—
Fixing clips	G.Y5244 and G.Y5245	—	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245	—

STARTER SWITCH

Catalogue no.	155/500	155/500†	—	—	—
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FUSE

1 tube — rating	3A	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299	G.T1299
2 tube — rating	3A	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299	G.T1299
3 tube — rating	3A	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299	G.T1299
4 tube — rating	3A	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299	G.T1299

Other choke or ballast voltage ratings (Details as 240V 50Hz units above unless otherwise stated)

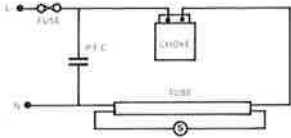
200/210V 50Hz	G.69334.1†	Not available	G.69350.1	G.68063.1	Not available
220V 50Hz	G.69028.2	Not available	G.BU/685	G.BI/685	Not available
250V 50Hz	G.69028.5	Not available	G.69350.5	G.68063.5	Not available
240V 60Hz	G.69156.4	Not available	Not available	Not available	Not available

†Order starter switch separately
 †This unit has Push wire terminals

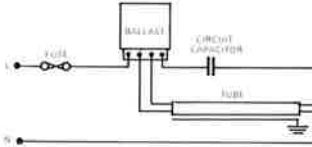
1500mm 65W Fluorescent tube control gear

CIRCUIT DIAGRAMS

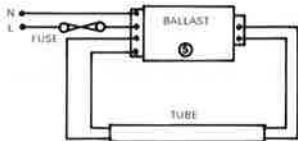
1 Standard starter switch circuit with optional PFC capacitor



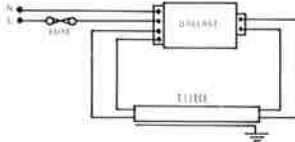
7 Semi-resonant start circuit with essential circuit capacitor



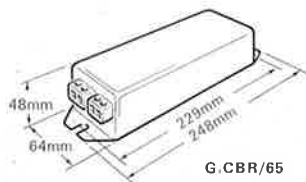
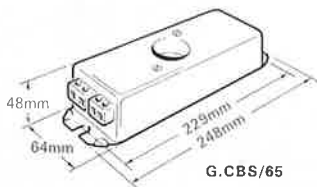
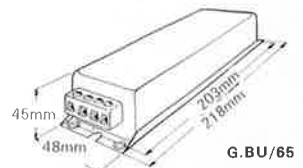
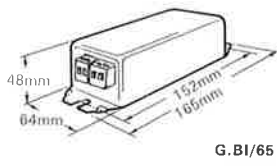
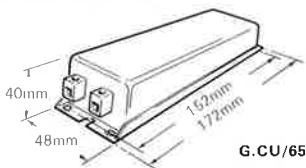
13 Starter switch circuit for HPF ballast



16 HPF ballast (SRS circuit)



CONTROL GEAR TYPES



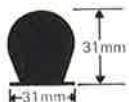
1500mm 50W Fluorescent tube control gear

CONTROL GEAR FOR 240V 50Hz SUPPLY

Tube	1 × 1500mm 50W
Circuit	Semi-resonant start
Type of control gear	LPF ballast
Circuit diagram	18

CHOKE OR BALLAST

Catalogue no.	G BJ/50
Weight	1 kg
Filling	Varnish
Can colour	White
Terminals	Screw
Cross section	



CAPACITOR

Catalogue no.	G C2368
Capacitance μF	5.7 ± 5%
Volts rating	250V
Length incl. terminals	76mm
Diameter	32mm
Terminals	Pin
Fixing clip	G Y5259 ‡

STARTER SWITCH

Catalogue no. —

FUSE

1 tube – rating	3A
Catalogue no.	G 1299
2 tube – rating	3A
Catalogue no.	G 1299
3 tube – rating	3A
Catalogue no.	GT 1299
4 tube – rating	3A
Catalogue no.	GT 1299

Other choke or ballast voltage ratings

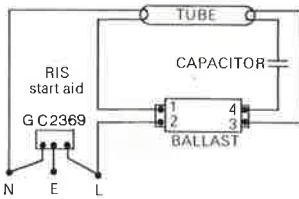
200/210V 50Hz	Not available
220V 50Hz	Not available
250V 50Hz	Not available

‡For use on Arrowslim fittings only

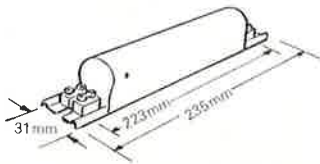
1500mm 50W Fluorescent tube control gear

CIRCUIT DIAGRAMS

18 LPF ballast (SRS circuit)



CONTROL GEAR TYPES



G.B.J/50

1200mm 40W Fluorescent tube control gear

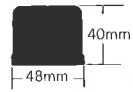
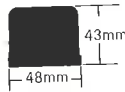
CONTROL GEAR FOR 240V 50Hz SUPPLY

Tube	1 × 1200mm 40W	1 × 1200mm 40W	1 × 1200mm 40W	1 × 1200mm 40W
Circuit	Switchstart	Switchstart	Semi-resonant start	Semi-resonant start
Type of control gear	LPF choke	HPF ballast	HPF ballast	LPF ballast
Circuit diagram	1	13	16	7

CHOKES OR BALLAST

Catalogue no.	G.CU/40	G.CBS/40	G.CBR/40	G.BU/40
Weight	0.9kg	1.1kg	1.8kg	1.3kg
Filling	Polyester resin	Polyester resin	Polyester resin	Polyester resin
Can colour	White	White	White	White
Terminals	Screw	Screw	Screw	Screw

Cross section



CAPACITOR

Catalogue no.	G.C2224	Included in ballast	Included in ballast	G.C2273
Capacitance (µF)	3.5 ± 10%	—	—	5.5 ± 10%
Volts rating	250V	—	—	250V
Length incl. terminals	92mm	—	—	128mm
Diameter	38mm	—	—	38mm
Terminals	Pin	—	—	Pin
Fused or unfused	Unfused	—	—	Unfused
Fixing clips	G.Y5244 and G.Y5245	—	—	G.Y5244 and G.Y5245

STARTER SWITCH

Catalogue no.	155/400	155/400*	—	—
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FUSE

1 tube - rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299
2 tube - rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299
3 tube - rating	3A	3A	3A	3A
Catalogue no.	GT.1299	G.T1299	G.T1299	G.T1299
4 tube - rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299

Other choke or ballast voltage ratings (Details as 240V 50Hz units above unless otherwise stated)

200/210V 50 Hz	G.69354.1	Not available	Not available	Not available
220V 50Hz	G.69354.2	Not available	Not available	G.69004.2†
250V 50Hz	G.69354.5	Not available	Not available	Not available
220V 60Hz	G.69374.2	Not available	Not available	Not available
240V 60Hz	G.69374.4	Not available	Not available	Not available

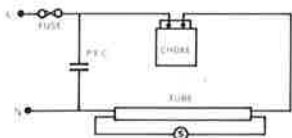
*Order starter switch separately.

†This unit must be used with capacitor G.C2298 (4µF ± 5% 380V)

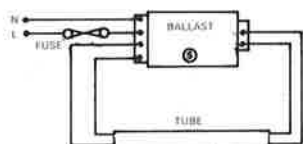
1200mm40W Fluorescent tube control gear

CIRCUIT DIAGRAMS

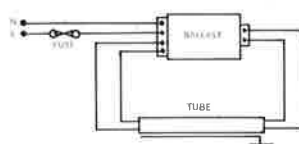
- 1 Standard starter switch circuit with optional PFC capacitor



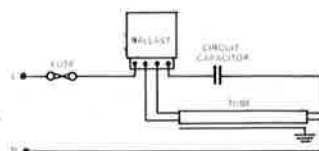
- 13 Starter switch circuit for HPF ballast



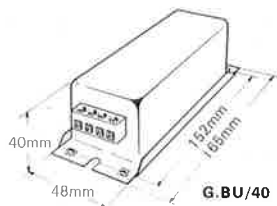
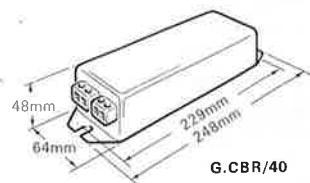
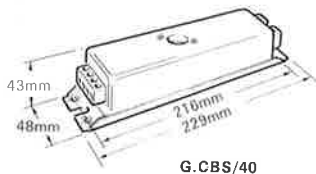
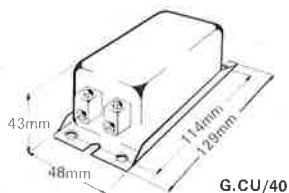
- 16 Semi-resonant circuit for HPF ballast



- 7 Semi-resonant start circuit with essential circuit capacitor



CONTROL GEAR TYPES



32W Circular and 900mm 30W Fluorescent tube control gear

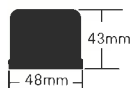
CONTROL GEAR FOR 240V 50Hz SUPPLY

Tube	1 × 32W Circular or 1 × 900mm 30W 26mm and 38mm dia.	1 × 900mm 30W 26mm and 38mm dia.	1 × 900mm 30W 26mm and 38mm dia.	1 × 900mm 30W 26mm and 38mm dia.
Circuit	Switchstart	Switchstart	Quickstart	Switchstart
Type of control gear	LPF choke	LPF choke	LPF ballast	LPF ballast
Circuit diagram	1	1	219	17

CHOKES OR BALLAST

Catalogue no.	G.CU/30	G.CJ/30	G.CBO/30	G.CBS/30
Weight	0.9kg	0.8kg	1.6kg	1.1kg
Filling	Polyester resin	Varnish	Polyester resin	Polyester resin
Can colour	White	Natural varnish	White	White
Terminals	Screw	Screw	Screw	Screw

Cross section



CAPACITOR

Catalogue no.	G.C2224	G.C2227	G.C2224	G.C2224
Capacitance (µF)	3.5 ± 10%	3 ± 10%	3.5 ± 10%	3.5 ± 10%
Volts rating	250V	250V	250V	250V
Length incl. terminals	92mm	87mm	92mm	92mm
Diameter	38mm	32mm	38mm	38mm
Terminals	Pin	Pin	Pin	Pin
Fused or unfused	Unfused	Fused	Unfused	Unfused
Fixing clips	G.Y5244 and G.Y5245	G.Y5259*	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245

STARTER SWITCH

Catalogue no.	155/400	155/400	—	155/400
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FUSE

1 tube – rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299
2 tube – rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299
3 tube – rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299
4 tube – rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299

Other choke or ballast voltage ratings (Details as 240V units above)

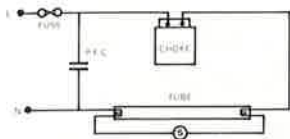
200/210V 50Hz	G.69353.1	Not available	Not available	Not available
220V 50Hz	G.69353.2	G.66051.2	Not available	Not available

* For use in Arrow-slim fitting only

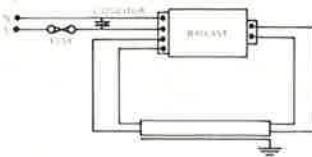
32W Circular and 900mm 30W Fluorescent tube control gear

CIRCUIT DIAGRAMS

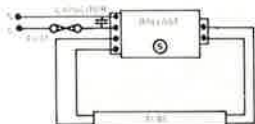
1 Standard starter switch circuit with optional PFC capacitor



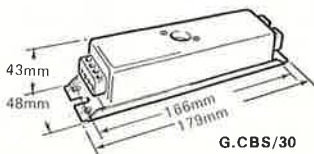
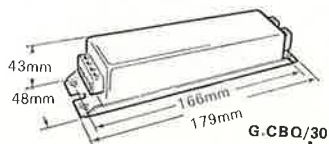
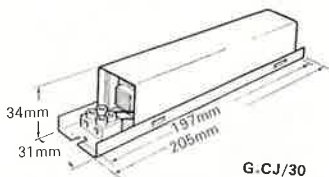
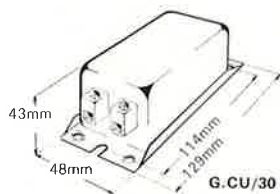
219 Quickstart circuit for LPF ballast with optional PFC capacitor



17 Starter switch circuit for LPF ballast with optional PFC capacitor



CONTROL GEAR TYPES



600mm 40W Fluorescent tube control gear

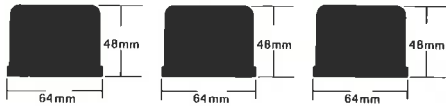
SWITCHSTART CONTROL GEAR FOR 240V 50Hz SUPPLY

Tube(s)	1 × 600mm 40W	2 × 600mm 40W	2 × 600mm 40W
Circuit	Switchstart	Switchstart	Switchstart
Type of control gear	LPF choke	LPF choke	HPF ballast
Circuit diagram	1	10	15

CHOKES OR BALLAST

Catalogue no.	G.CI/240	G.CI/2240	G.CBS/685
Weight	1.9kg	1.9kg	2.1kg
Filling	Polyester resin	Polyester resin	Polyester resin
Can colour	White	White	White
Terminals	Screw	Screw	Screw

Cross section



CAPACITOR

Catalogue no.	G.C2222	G.C2222	Included in ballast
Capacitance (µF)	8 ± 10%	8 ± 10%	—
Working volts	250V	250V	—
Length incl. terminals	128mm	128mm	—
Diameter	38mm	38mm	—
Terminals	Pin	Pin	—
Fused or unfused	Unfused	Unfused	—
Fixing clips	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245	—

STARTER SWITCH

Catalogue no.	155/200	2 × 155/200	2 × 155/200+
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FUSE

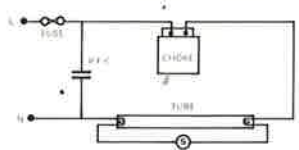
1 tube – rating	3A	—	—
Catalogue no.	G.T1299	—	—
2 tube – rating	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299
3 tube – rating	3A	—	—
Catalogue no.	G.T1299	—	—
4 tube – rating	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299

Other choke or ballast voltage ratings

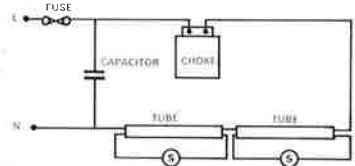
200/210V 50Hz	G.CI/240	G.CI/2240	Not available
220/230V 50Hz	G.CI/240	G.CI/2240	Not available
240/250V 50Hz	G.CI/240	G.CI/2240	Not available

Order starter switches separately, one starter switch socket will also be required

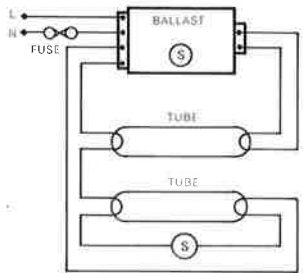
CIRCUIT DIAGRAMS



1 Standard starter switch circuit with optional PFC capacitor

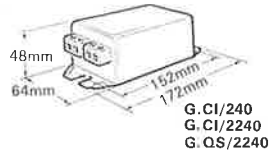


10 Starter switch circuit for series pair tube operation with optional PFC capacitor

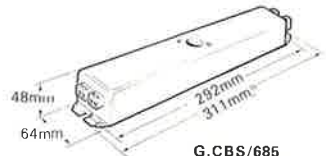


15 Twin tube starter switch circuit for HPF ballast

CONTROL GEAR TYPES



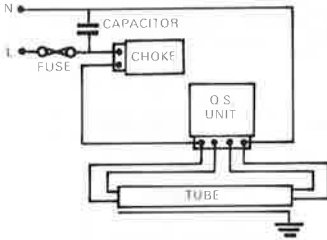
G.CI/240
G.CI/2240
G.QS/2240



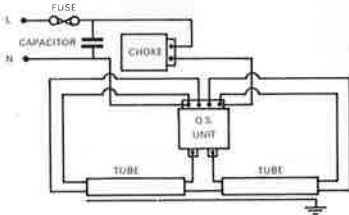
G.CBS/685

600mm 40W Fluorescent tube control gear

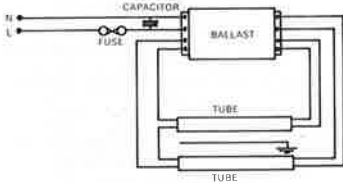
CIRCUIT DIAGRAMS



8 Tapped quickstart transformer circuit with optional PFC capacitor

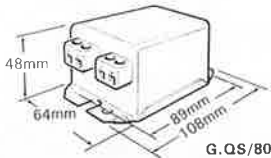
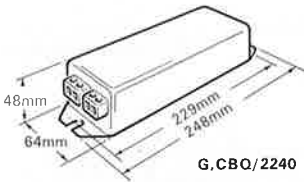


11 Twin tube quickstart circuit with optional PFC capacitor



12 Twin tube quickstart circuit for LPF ballast with optional PFC capacitor

CONTROL GEAR TYPES



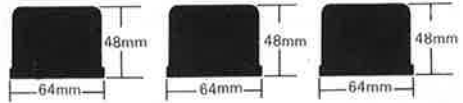
SWITCHLESS START CONTROL GEAR FOR 240V 50Hz SUPPLY

Tube(s)	1 × 600mm 40W	2 × 600mm 40W	2 × 600mm 40W
Circuit	Quickstart	Quickstart	Quickstart
Type of control gear	LPF choke	LPF choke	LPF ballast
Circuit diagram	8	11	12

CHOKE OR BALLAST

Catalogue no.	G.CI/240	G.CI/2240	G.CBO/2240
Weight	1.9kg	1.9kg	2.7kg
Filling	Polyester resin	Polyester resin	Polyester resin
Can colour	White	White	White
Terminals	Screw	Screw	Screw

Cross section



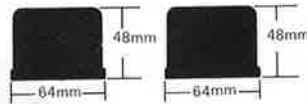
CAPACITOR

Catalogue no.	G.C2222	G.C2222	G.C2222
Capacitance (µF)	8 ± 10%	8 ± 10%	8 ± 10%
Working volts	250V	250V	250V
Length incl. terminals	128mm	128mm	128mm
Diameter	38mm	38mm	38mm
Terminals	Pin	Pin	Pin
Fused or unfused	Unfused	Unfused	Unfused
Fixing clips	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245

QUICKSTART UNIT

Catalogue no.	G.QS/80	G.QS/2240	Included in ballast
Weight	1kg	1.4kg	—
Filling	Polyester resin	Polyester resin	—
Can colour	White	White	—
Terminals	Screw	Screw	—

Cross section



FUSE

1 tube – rating	3A	—	—
Catalogue no.	G.T1299	—	—
2 tube – rating	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299
3 tube – rating	3A	—	—
Catalogue no.	G.T1299	—	—
4 tube – rating	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299

Other choke or ballast voltage ratings

200/210V 50Hz	G.CI/240	G.CI/2240	Not available
220/230V 50Hz	G.CI/240	G.CI/2240	Not available
240/250V 50Hz	G.CI/240	G.CI/2240	Not available

Twin 600mm20W Fluorescent tube control gear

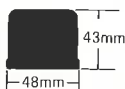
CONTROL GEAR FOR 240V 50Hz SUPPLY

Tubes	2×600mm 20W	2×600mm 20W	2×600mm 20W	2×600mm 20W
Circuit	Switchstart	Quickstart	Switchstart	Quickstart
Type of control gear	LPF choke	LPF choke	HPF ballast	LPF ballast
Circuit diagram	10	11	15	12

CHOKES OR BALLASTS

Catalogue no.	G.CU/40	G.CU/40	G.CBS/40	G.CBQ/220
Weight	0.9kg	0.9kg	1.1kg	1.2kg
Filling	Polyester resin	Polyester resin	Polyester resin	Polyester resin
Can colour	White	White	White	White
Terminals	Screw	Screw	Screw	Screw

Cross section



CAPACITORS

Catalogue no.	G.C2224	G.C2224	Included in ballast	G.C2224
Capacitance (µF)	3.5±10%	3.5±10%	—	3.5±10%
Volts rating	250V	250V	—	250V
Length incl. terminals	92mm	92mm	—	92mm
Diameter	38mm	38mm	—	38mm
Terminals	Pin	Pin	—	Pin
Fused or unfused	Unfused	Unfused	—	Unfused
Fixing clips	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245	—	G.Y5244 and G.Y5245

STARTER SWITCH

Catalogue no.	2×155/200	—	2×155/200†	—
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QUICKSTART UNIT

Catalogue no.	—	G.QS/220	—	Included in ballast
Weight	—	0.9kg	—	—
Filling	—	Polyester resin	—	—
Can colour	—	White	—	—
Terminals	—	Screw	—	—

Cross section



FUSE

2 tube – rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299
4 tube – rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299

Other choke or ballast voltage ratings (Details as 240V 50Hz units above)

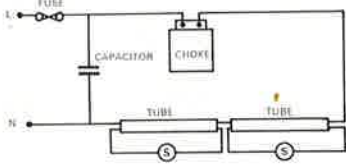
200/210V 50Hz	G.69354.1	G.69354.1	Not available	Not available
220V 50Hz	G.69354.2	G.69354.2	Not available	Not available
250V 50Hz	G.69354.5	G.69354.5	Not available	Not available
220V 60Hz	G.69374.2	G.69374.2	Not available	Not available
240V 60Hz	G.69374.4	G.69374.4	Not available	Not available

†Order starter switches separately; one starter switch socket will also be required

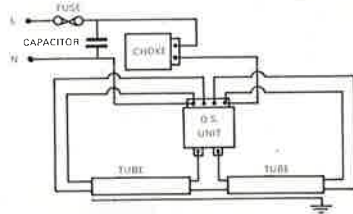
Twin 600mm 20W Fluorescent tube control gear

CIRCUIT DIAGRAMS

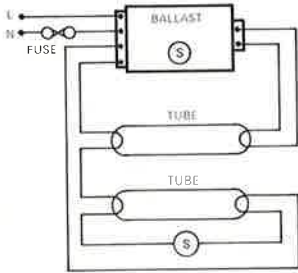
10 Starter switch circuit for series pair tube operation with optional PFC capacitor



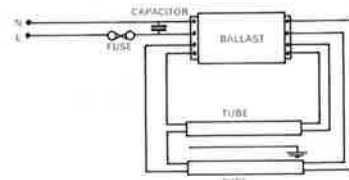
11 Twin tube quickstart circuit with optional PFC capacitor



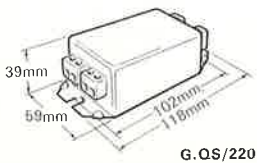
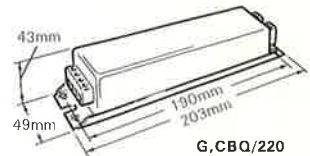
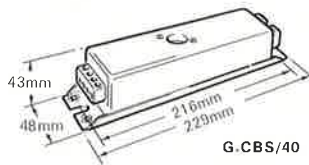
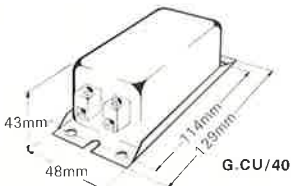
15 Twin tube starter switch circuit for H/PF ballast



12 Twin tube quickstart circuit for L/PF ballast with optional PFC capacitor



CONTROL GEAR TYPES



Twin 450mm 15W Fluorescent tube control gear

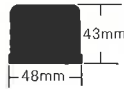
CONTROL GEAR FOR 240V 50Hz SUPPLY

Tubes	2 × 450mm 15W 26mm and 38mm dia.	2 × 450mm 15W 26mm and 38mm dia.	2 × 450mm 15W 26mm and 38mm dia.
Circuit	Switchstart	Quickstart	Switchstart
Type of control gear	LPF choke	LPF choke	LPF ballast
Circuit diagram	10	11	218

CHOKE OR BALLAST

Catalogue no.	G.CU/30	G.CU/30	G.CBS/30
Weight	0.9kg	0.9kg	1.1kg
Filling	Polyester resin	Polyester resin	Polyester resin
Can colour	White	White	White
Terminals	Screw	Screw	Screw

Cross section



CAPACITOR

Catalogue no.	G.C2224	G.C2224	—
Capacitance (µF)	3.5 ± 10%	3.5 ± 10%	—
Volts rating	250V	250V	—
Length incl. terminals	92mm	92mm	—
Diameter	38mm	38mm	—
Terminals	Pin	Pin	—
Fused or unfused	Unfused	Unfused	—
Fixing clips	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245	—

STARTER SWITCH

Catalogue no.	2 × 155/200	—	2 × 155/200†
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QUICKSTART UNIT

Catalogue no.	—	G.QS/220	—
Weight	—	0.9kg	—
Filling	—	Polyester resin	—
Can colour	—	White	—
Terminals	—	Screw	—

Cross section



FUSE

2 tube – rating	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299
4 tube – rating	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299

Other choke or ballast voltage ratings (Details as 240V units above)

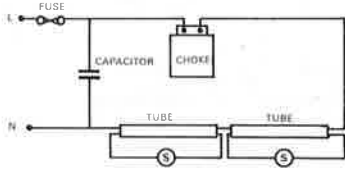
200/210V 50Hz	G.69353.1	G.69353.1	Not available
220V 50Hz	G.69353.2	G.69353.2	Not available
250V 50Hz	Not available	Not available	Not available

†Order starter switches separately: one starter switch socket will also be required

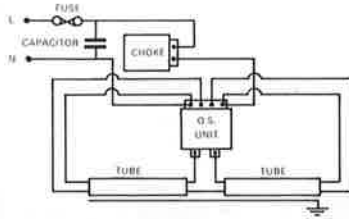
Twin 450mm 15W Fluorescent tube control gear

CIRCUIT DIAGRAMS

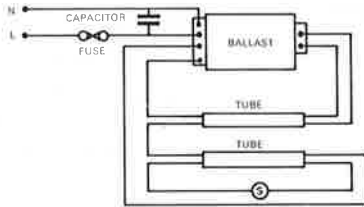
10 Starter switch circuit for series pair tube operation with optional PFC capacitor



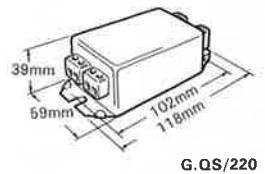
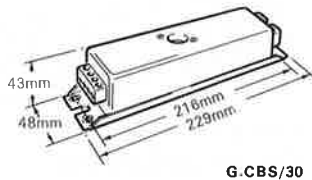
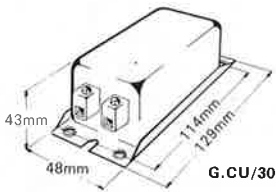
11 Twin tube quickstart circuit with optional PFC capacitor



218 Twin tube starter switch circuit for LPF ballast



CONTROL GEAR TYPES



Single 22W Circular, 600mm 20W and 450mm 15W Fluorescent tube control gear

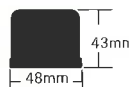
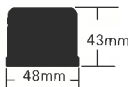
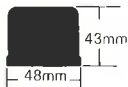
CONTROL GEAR FOR 240V 50Hz SUPPLY

Tube	1 × 600mm 20W or 1 × 450mm 15W	1 × 22W Circular or 1 × 600mm 20W or 1 × 450mm 15W	1 × 600mm 20W or 1 × 450mm 15W	1 × 22W Circular or 1 × 600mm 20W or 1 × 450mm 15W
Circuit	Quickstart	Switchstart	Quickstart	Switchstart
Type of control gear	LPF choke	LPF choke	LPF ballast	LPF ballast
Circuit diagram	8	1	219	17

CHOKE OR BALLAST

Catalogue no.	G.CU/20	G.CU/20	G.CBQ/20	G.CBS/20
Weight	0.9kg	0.9kg	1.13kg/	1.02kg/
Filling	Polyester resin	Polyester resin	Polyester resin	Polyester resin
Can colour	White	White	White	White
Terminals	Screw	Screw	Screw	Screw

Cross section



CAPACITOR

Catalogue no.	G.C2224	G.C2224	G.C2224	G.C2224
Capacitance (µF)	3.5 ± 10%	3.5 ± 10%	3.5 ± 10%	3.5 ± 10%
Working volts	250V	250V	250V	250V
Length incl. terminals	92mm	92mm	92mm	92mm
Diameter	38mm	38mm	38mm	38mm
Terminals	Pin	Pin	Pin	Pin
Fused or unfused	Unfused	Unfused	Unfused	Unfused
Fixing clips	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245	G.Y5244 and G.Y5245

STARTER SWITCH

Catalogue no.	—	155/200	—	155/200†
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QUICKSTART UNIT

Catalogue no.	G.QS/40	—	Included in ballast	—
Weight	0.9kg	—	—	—
Filling	Polyester resin	—	—	—
Can colour	White	—	—	—
Terminals	Screw	—	—	—

Cross section



FUSE

1 tube - rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299
2 tube - rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299
3 tube - rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299
4 tube - rating	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299

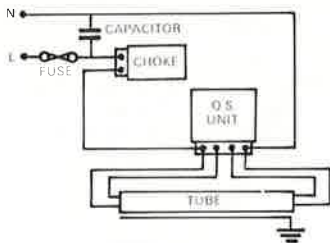
Other choke or ballast voltage ratings (Details as 240V 50Hz units above)

200/210V 50Hz	G.69352.1	G.69352.1	Not available	Not available
220V 50Hz	G.69352.2	G.69352.2	Not available	Not available
250V 50Hz	G.69352.5	G.69352.5	Not available	Not available
220V 60Hz	G.69378.2	G.69378.2	Not available	Not available
240V 60Hz	G.69378.4	G.69378.4	Not available	Not available

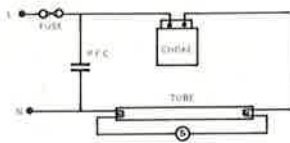
†Order starter switches separately.

Single 22W Circular, 600mm 20W and 450mm 15W Fluorescent tube control gear

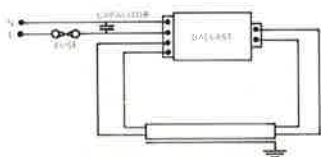
8 Tapped quickstart transformer circuit with optional PFC capacitor



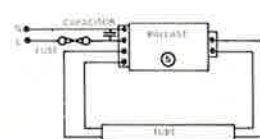
1 Standard starter switch circuit with optional PFC capacitor



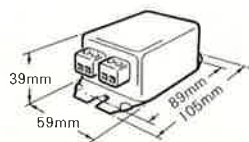
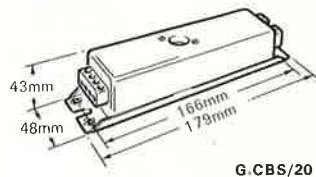
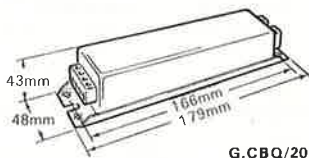
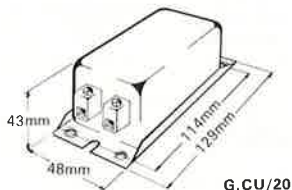
219 Quickstart circuit for LPF ballast with optional PFC capacitor



17 Starter switch circuit for LPF ballast with optional PFC capacitor



CONTROL GEAR TYPES



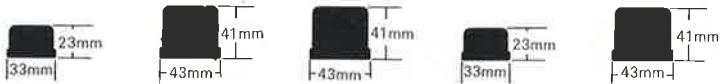
525mm 13W, 300mm 8W, 225mm 6W and 150mm 4W control gear

CONTROL GEAR FOR 230/250V 50Hz SUPPLY

Tube(s)	1 × 525mm 13W	1 × 525mm 13W or 2 × 300mm 8W	2 × 150mm 4W or 225mm 6W	1 × 300mm 8W	1 × 4/6/8W
Circuit	Switchstart	Switchstart	Switchstart	Switchstart	Switchstart
Type of control gear	LPF choke	LPF choke	LPF choke	LPF choke	LPF choke
Circuit diagram	1	1 or 10	10	1	1

CHOKO OR BALLAST

Catalogue no.	G.CD/13	G.CPX/28	G.CPX/8	G.CD/8	G.CPX/8
Weight	0.6kg	0.6kg	0.6kg	0.6kg	0.6kg
Filling	Polyester resin	Polyester resin	Polyester resin	Polyester resin	Polyester resin
Can colour	White	White	White	White	White
Terminals	Screw	Screw	Screw	Screw	Screw
Cross section					



CAPACITOR

Catalogue no.	G.C2286	G.C2286	G.C2286	G.C2286	G.C2286
Capacitance (µF)	2 ± 10%	2 ± 10%	2 ± 10%	2 ± 10%	2 ± 10%
Working volts	250V	250V	250V	250V	250V
Length incl. terminals	52mm	52mm	52mm	52mm	52mm
Diameter	26mm	26mm	26mm	26mm	26mm
Terminals	Solder tags	Solder tags	Solder tags	Solder tags	Solder tags
Fused or unfused	Fused	Fused	Fused	Fused	Fused
Fixing clip	G.Y5200	G.Y5200	G.Y5200	G.Y5200	G.Y5200

STARTER SWITCH

Catalogue no.	155/500	155/500 (13W) or 2 × 155/100 †	2 × 155/100 †	155/500	155/500
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FUSE

1 tube - rating	3A	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299	G.T1299
2 tube - rating	3A	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299	G.T1299
3 tube - rating	3A	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299	G.T1299
4 tube - rating	3A	3A	3A	3A	3A
Catalogue no.	G.T1299	G.T1299	G.T1299	G.T1299	G.T1299

Other choke or ballast voltage ratings (Details as 230/250V 50Hz units above unless otherwise stated)

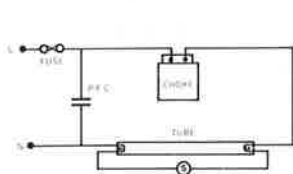
200/220V 50Hz	G.69160.L	Not available	G.CPX/28	G.69159.L	G.CPX/28
110/115V 50Hz	Not available	Not available	Not available	Not available	G.69346
110/115V 60Hz	Not available	Not available	Not available	Not available	G.69347

†Due to the asymmetrical construction of these switches, they must be placed in the starter switch sockets correctly orientated (i.e. if the switches refuse to operate, one must be removed and rotated through 180°)

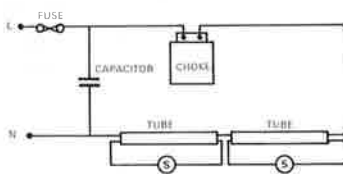
525mm 13W, 300mm 8W, 225mm 6W and 150mm 4W control gear

CIRCUIT DIAGRAMS

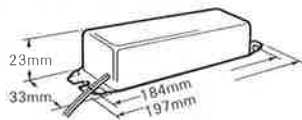
1 Standard starter switch circuit with optional PFC capacitor



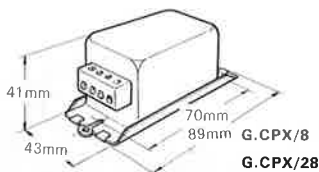
10 Starter switch circuit for series pair tube operation with optional PFC capacitor



CONTROL GEAR TYPES



G.CD/13
G.CD/8



G.CPX/8
G.CPX/28

10:34 50W, 80W, 125W and 250 W MBF, MBFR and MBF Kolorlux mercury discharge lamps



CONTROL GEAR FOR 240V 50Hz SUPPLY

Lamp wattage	50W	80W	125W	250W
Circuit diagram	301	301	301	301

Ballast

Catalogue no.	G 53184.4†	G 53162.4*	G 53159.4*	G 53198.4*†
Weight	1.2kg	1.8kg	2.72kg	2.54kg
Filling	Polyester resin	Polyester resin	Polyester resin	Polyester resin
Illustrated type	K	DV	DT	DT
Can colour	White	White	White	White
Terminals	Screw	Screw	Screw	Screw

Capacitor

Catalogue no.	G C2203†	G C2383	G C2383	G C2370
Capacitance μF	$6 \pm 10\%$	$8 \pm 10\%$	$8 \pm 10\%$	$13 \pm 10\%$
Working volts	250V	250V	250V	250V
Terminals	Solder tags	Flying leads	Flying leads	Flying leads

Other ballast voltage ratings

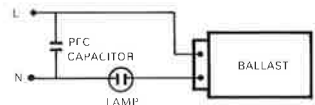
220V 50Hz Catalogue no.	G 53188.2†	G 53176.2†	G 53142.2†	G 53198.2†
Illustrated type	K	R1	R2	DT
Can colour	White	White	White	Black
Weight	1.2kg	1.36kg	1.87kg	2.54kg
200/250V 50Hz Catalogue no.	Not available	G 53162.T	G 53159.T	G 53158.T
Illustrated type	—	DV	DT	DS
Can colour	—	White	White	White
Weight	—	1.8kg	2.72kg	3.86kg
Voltage tappings	—	200/210; 220/230; 240/250V	200/210; 220/230; 240/250V	200; 210; 220; 230; 240; 250V

*Units marked with British Standard Kitemark to BS.4782

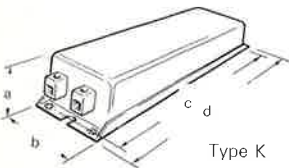
†The heat dissipation from these ballasts is extremely efficient and it is therefore necessary to ensure that cables in close proximity to the ballast surface are high temperature grade or suitably protected by high temperature sleeving
†For use in fittings only

CIRCUIT DIAGRAM

301 Circuit for MBF and MBFR mercury discharge lamps

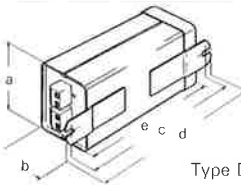


CONTROL GEAR



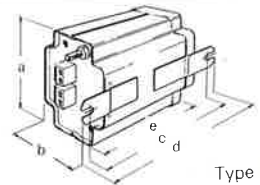
Type K

	a	b	c	d
mm	40	48	152	165
in	1.56	1.875	6.0	6.5



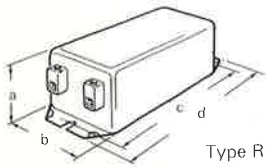
Type DV

	a	b	c	d	e
mm	70	57	158	171	127
in	2.75	2.25	6.25	6.75	5.0



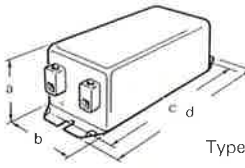
Type DT

	a	b	c	d	e
mm	83	76	127	140	108
in	3.25	3.0	5.0	5.5	4.25



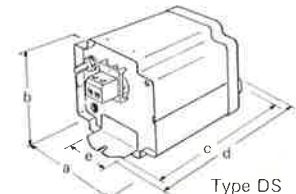
Type R1

	a	b	c	d
mm	48	64	127	146
in	1.875	2.5	5.0	5.75



Type R2

	a	b	c	d
mm	48	64	152	172
in	1.875	2.5	6.0	6.75



Type DS

	a	b	c	d	e
mm	98	89	146	158	45
in	3.875	3.5	5.75	6.25	1.75

Circuit components for 400W, 700W and 1000W MBF, MBFR and MBF Kolorlux mercury discharge lamps



CONTROL GEAR FOR 240V 50Hz SUPPLY

Lamp wattage	400W	700W	1000W
Circuit diagram	301	306	306

Ballast

Catalogue no.	G 53193.4*†	G 53157.T +	G 53198.4*††	2 × G 53243.4*††
Weight	3.86kg	5.5kg	2.54kg	3.86kg (each)
Filling	Polyester resin	Polyester resin	Polyester resin	Polyester resin
Illustrated type	DS	DU	DT	DS
Can colour	White	White	White	White
Terminals	Screw	Screw	Screw	Screw

Capacitor

Catalogue no.	G C2331	G C2331 +	G C2370†	2 × G C2346†
Capacitance μF	20 \pm 10%	20 \pm 10%	13 \pm 10%	25 \pm 10% (each)
Working volts	250V	250V	250V	250V
Terminals	Flying leads	Flying leads	Flying leads	Flying leads

Other ballast voltage ratings

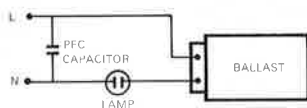
220V 50Hz Catalogue no.	G 53193.2†	Not available		2 × G 53243.2††
Illustrated type	DS	—		DS
Can colour	White	—		White
Weight	3.86kg	—		3.86kg
200/250V 50Hz Catalogue no.	G 53157.T	G 53157.T +	G 53158.T†	2 × G 53164.T†
Illustrated type	DU	DU	DS	DU
Can colour	White	White	White	White
Weight	5.5kg	5.5kg	3.86kg	5.5kg (each)
Voltage tappings	200; 210; 220; 230; 240; 250V	210; 220; 230; 240; 250V		190; 200; 210; 220; 230; 240V

*Units marked with British Standard Kitemark to BS.4782

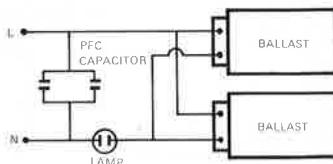
†The heat dissipation from these ballasts is extremely efficient and it is therefore necessary to ensure that cables in close proximity to the ballast surface are high temperature grade or suitably protected by high temperature sleeving
†2 connected in parallel are used for one lamp.

CIRCUIT DIAGRAMS

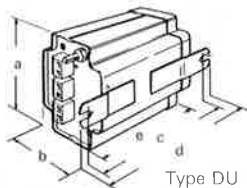
301 Circuit for MBF and MBFR mercury discharge lamps



306 Circuit for 700W and 1000W MBF and MBFR mercury discharge lamps

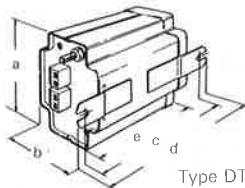


CONTROL GEAR TYPES



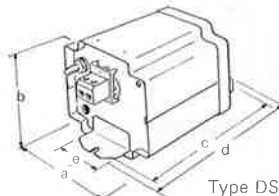
Type DU

	a	b	c	d	e
mm	105	102	158	171	140
in	4.125	4.0	6.25	6.75	5.5



Type DT

	a	b	c	d	e
mm	83	76	127	140	108
in	3.25	3.0	5.0	5.5	4.25



Type DS

	a	b	c	d	e
mm	98	89	146	158	45
in	3.875	3.5	5.75	6.25	1.75

Circuit components for 250W, 400W and 1000W Kolorarc metal halide discharge lamps

CONTROL GEAR FOR 240V 50Hz SUPPLY

Lamp wattage	250W	400W	1000W
Circuit diagram (see below)	324	324	311

Ballast

Catalogue No. (s)	G 53251.T	G 53193.4	G 53247.4
Weight	3.8kg	3.86kg	24kg
Filling	Polyester resin	Polyester resin	Polyester resin
Illustrated type (see below)	Type DS	Type DS	Type DP
Can colour	White	White	Black
Terminals	Screw	Screw	Flying leads

Ballast Fixing Bracket

Catalogue No.	—	—	G M6181
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Capacitor

Catalogue No. (s)	G C2386	G C2331	4 × G C3246*
Capacitance μ F	30 \pm 10%	20.0 \pm 10%	25 \pm 10% (each)
Terminals	250V	250V	250V
Working volts	Flying leads	Flying leads	Flying leads

Ignitor

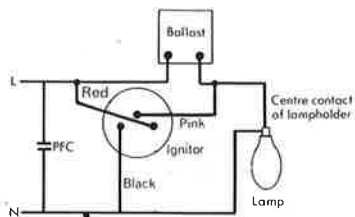
Catalogue No.	G 53283	G 53283	—
Weight	0.15kg	0.15kg	—
Illustrated type (see below)	Type DZ	Type DZ	—
Can finish	Aluminium	Aluminium	—
Terminals	Leads	Leads	—

Other ballast voltage ratings available

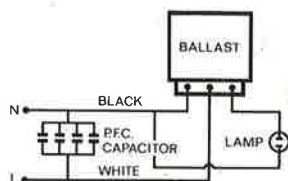
220V 50Hz	G 53251.T	G 53193.2	G 53247.2
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*Connected in parallel

324 Circuit for 250/400W metal halide discharge lamp

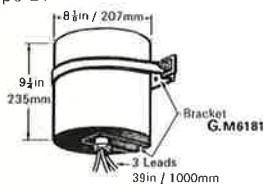


311 Circuit for 1000W metal halide discharge lamp

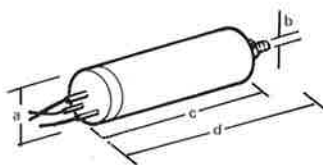


CONTROL GEAR

Type DP

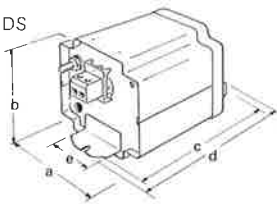


Type DZ



	a	b	c	d
mm	53	8.0	102	115
in	2.0	0.31	4.0	4.5

Type DS



	a	b	c	d	e
mm	98	89	146	158	45
in	3.875	3.5	5.75	6.25	1.75

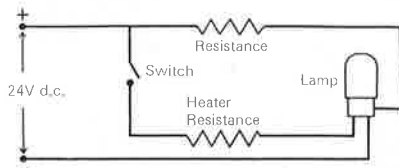
Circuit components for M1 and M2 miniature mercury discharge lamps

LAMP TYPE M1

CONTROL GEAR FOR 24V d.c. OPERATION

Rating	4.5W
Supply volts	24 d.c.
Series resistance†	24 ohms
Heater resistance†	30 ohms

†Supplied by installer



LAMP TYPE M2

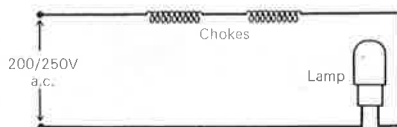
CONTROL GEAR FOR 200/250V 50Hz. a.c. OPERATION

CHOKES (two required)

Catalogue no.	GC1/80	G 62825
Weight	1.9kg/4.25lb	0.57kg/1.25lb
Filling	Polyester resin	Polyester resin
Illustrated type	A2	G
Can colour	White	White
Terminals	Screw	Leads

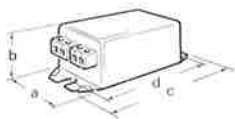
Alternatively, series resistors of values between 480 and 160 ohms may be used in place of the two series chokes to give operating currents in the range 0.5 to 1.5 amps.

CIRCUIT DIAGRAM

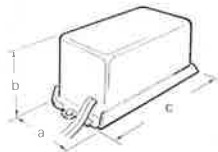


CONTROL GEAR TYPES

A2



G



	a	b	c	d
mm	64	48	172	152
in	2.5	1.875	6.75	6.0

	a	b	c
mm	42	41	89
in	1.656	1.5625	3.5

Circuit components for MB/D, MBL/D, MBW/U and ME/D mercury discharge lamps

CONTROL GEAR FOR 200/250V 50Hz SUPPLY

Lamp	125W MB/D or 125W MBL/D or 125W MBW/U	250W ME/D	1000W ME/D
Circuit diagram	301	301	316

CHOKES

Catalogue no.	G 53159.T	G 53235	4 × G 53235
Weight	2.72kg/6lb	10.43kg/23lb (each)	10.43kg/23lb (each)
Filling	Polyester resin		
Illustrated type	DT	DC	DC
Can colour	White		
Terminals	Screw	Screw	Screw

CAPACITORS

Catalogue no.	G C2234	G C2275	3 × G C2276
Capacitance μ F	8 \pm 10%	60 \pm 10%	80 \pm 10% (each)
Working volts	250V	250V	250V
Terminals	Flying leads	Screw	Screw
Illustrated type		CA	CB

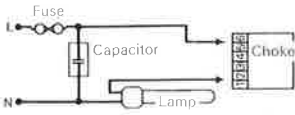
STARTING CAPACITOR

Capacitance μ F	—	—	0.5
Working volts	—	—	1000V
Manufacturer and ref. no.	—	—	TCC type CP142W or equivalent

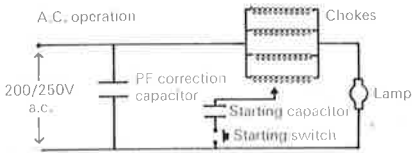
Circuit components for MB/D, MBL/D, MBW/U and ME/D mercury discharge lamps

CIRCUIT DIAGRAMS

301 Circuit for ME/D and MB/D mercury discharge lamps

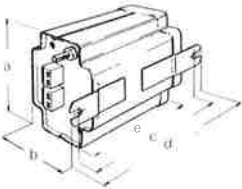


316 Circuit for 1000W ME/D lamp



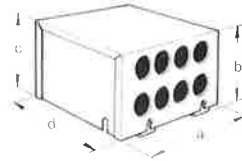
CONTROL GEAR TYPES

DT



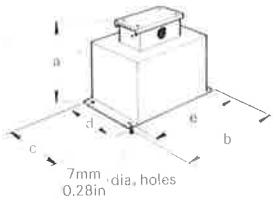
	a	b	c	d	e
mm	83	76	127	140	108
in.	3.25	3.0	5.0	5.5	4.25

DC



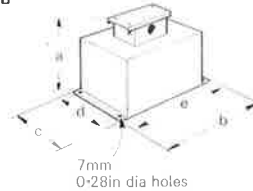
	a	b	c	d
mm	208	150	140	203
in.	8.187	5.875	5.5	8.0

CA



	a	b	c	d	e
mm	178	197	114	89	178
in.	7.0	7.75	4.5	3.5	7.0

CB



	a	b	c	d	e
mm	178	229	133	108	210
in.	7.0	9.0	5.25	4.25	8.25

Circuit components for CSI compact source and MBI L linear metal halide discharge lamps

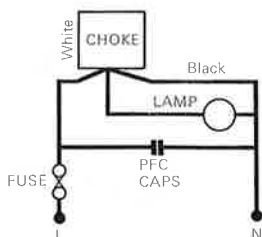
CONTROL GEAR FOR 240V 50Hz SUPPLY

Lamp	750W MBI L	1200W or 1600W MBI L	400W CSI	1000W CSI
Circuit diagram	311	312	318	317
Ballast				
Catalogue no.	G 53254.4	2 × G 53254.4	G 53196.4	G 53255.T
Weight	23.2kg/51.5lb	23.2kg/51.5lb (each)	11.8kg/26lb	27.2kg/60lb
Filling	Polyester resin	Polyester resin	—	—
Illustrated type	DP	DP	DD	DE
Can colour	Black	Black	Light grey	Black/White
Terminals	Leads	Leads	Screw	Screw
Ballast Fixing Bracket				
Catalogue no.	G M6181	2 × G M6181	—	—
Capacitor				
Catalogue no.	4 × G C2346	8 × G C2346	—	8 × G C2346
Capacitance μ F	25 \pm 10% (each)	25 \pm 10% (each)	—	25 \pm 10% (each)
Working volts	250V	250V	—	250V
Terminals	Flying leads	Flying leads	—	Flying leads
Fused or unfused	Unfused	Unfused	—	Unfused
Other ballast voltage ratings				
220V 50Hz	G 53254.2	2 × G 53254.2	G 53196.2	G 53255.T.

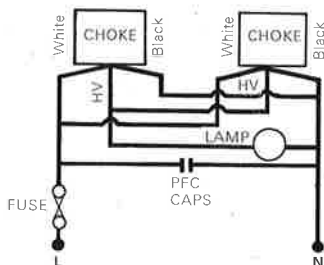
Circuit components for CSI compact source and MBI L linear metal halide discharge lamps

CIRCUIT DIAGRAMS

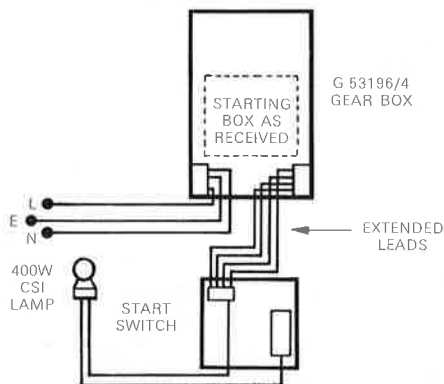
311 Circuit for 750W MBI L lamp



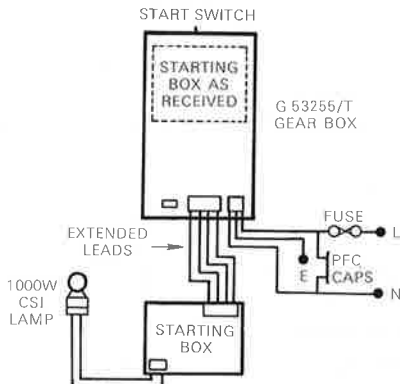
317 Circuit for 1200W or 1600W MBI L lamp



312 Circuit for 400W CSI lamp



318 Circuit for 1000W CSI lamp



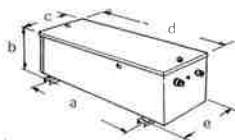
CONTROL GEAR TYPES

DP



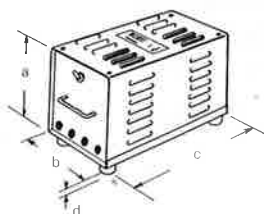
	a	b
mm	235	207
in	9.25	8.125

DD



	a	b	c	d	e
mm	279	159	159	416	178
in	11.0	6.25	6.25	16.375	7.0

DE



	a	b	c	d
mm	220	194	413	26
in	8.625	7.625	16.625	1.0

Circuit components for XB and XE/D compact source xenon discharge lamps

A.C. LAMPS 200/250V 50Hz

Lamp	250W XE/D	500W XE/D	1000W XB
Circuit diagram	320	320	320
Ballasts			
Catalogue no.	4 × G 53235	6 × G 53235	6 × G 53235
Weight	10.4kg/23lb (each)	10.4kg/23lb (each)	10.4kg/23lb (each)
Illustrated type	DC	DC	DC
Terminals	Screw	Screw	Screw
Starter			
Catalogue no.	G 53239	G 53239	G 53239
Weight	5.9kg/13lb	5.9kg/13lb	5.9kg/13lb
Illustrated type	DF	DF	DF
Capacitors			
Catalogue no.	2 × G C2276 (160 μF) or 2 × G C2275 + G C2276 (200 μF)	3 × G C2276 (240 μF) or 3 × G C2276 + G C2275 (300 μF)	3 × G C2276 (240 μF) or 3 × G C2276 + G C2275 (300 μF)
Mains current	5A (160 μF)	8.5A (240 μF)	7.5A (240 μF)
Working volts	2A (200 μF) 250V	4.5A (300 μF) 250V	5A (300 μF) 250V
Terminals	Screw	Screw	Screw
Illustrated type	CA (G C2275) CB (G C2276)	CA (G C2275) CB (G C2276)	CA (G C2275) CB (G C2276)

D.C. LAMPS ON 200/250V 50Hz SUPPLY

Lamp	250W XE/D	500W XE/D	2000W XE/D 2 electrode	2000W XE/D 3 electrode
Circuit diagram	323	323	321	322
Starter				
Catalogue no.	G 53239	G 53239	G 53233	G 53234
Weight	5.9kg/13lb	5.9kg/13lb	12.7kg/28lb	4.1kg/9lb
Illustrated type	DF	DF	DG	DH
Rectifier ballast				
Catalogue no.	G 53236	G 53236	G 53237	G 53238
Weight	37kg/85lb	37kg/85lb	180kg/400lb	180kg/400lb
Illustrated type	DI	DI	DK	DK

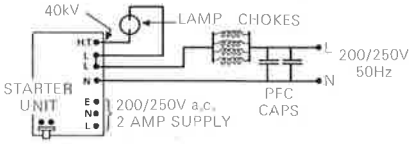
D.C. LAMPS ON 35/65V D.C. SUPPLY

Lamp	250W XE/D	500W XE/D	2000W XE/D 2 electrode	2000W XE/D 3 electrode
Circuit diagram	323	323	321	322
Starter				
Catalogue no.	G 53239	G 53239	G 53233	G 53234
Weight	5.9kg/13lb	5.9kg/13lb	12.7kg/28lb	4.1kg/9lb
Illustrated type	DF	DF	DG	DH
Series resistance				
Resistance value (ohms)	V—16.5 15	V—25 23	V—25 80	V—27 74
Current (amps)	15A	23A	80A	74A

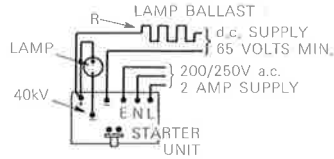
Circuit components for XB and XE/D compact source xenon discharge lamps

CIRCUIT DIAGRAMS

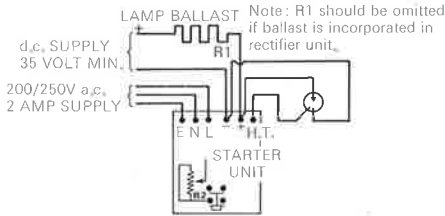
320 Circuit for a.c. lamps on 200/250V 50Hz supply



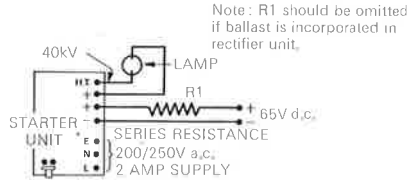
321 Circuit for 2000W 2-electrode lamp



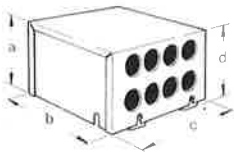
322 Circuit for 2000W 3-electrode lamp



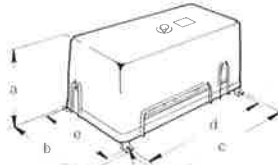
323 Circuit for 250/500W d.c. lamps



CONTROL GEAR TYPES

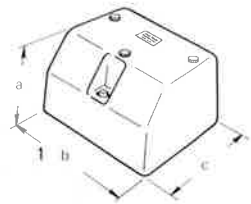


DC



0.25 in dia, holes
6mm

DF

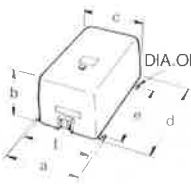


DG

	a	b	c	d
mm	140	203	208	150
in	5.5	8	8.187	5.875

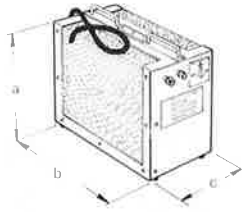
	a	b	c	d	e
mm	165	191	318	289	175
in	6.5	7.5	12.5	11.375	6.875

	a	b	c
mm	203	314	267
in	8.0	12.375	10.5

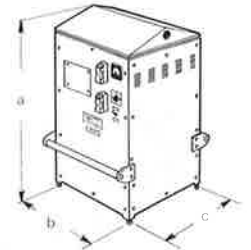


DIA. OF HOLES $\frac{3}{16}$ in
6mm

DH



DI



DK

	a	b	c	d	e	f
mm	222	156	187	292	232	203
in	8.75	6.125	7.375	11.5	9.125	8.0

	a	b	c
mm	356	432	216
in	14.0	17.0	8.5

	a	b	c
mm	1035	464	565
in	40.75	18.25	22.25

Circuit components for SOX and SLI sodium discharge lamps



CONTROL GEAR FOR 240V 50Hz SUPPLY

Lamp	35, 55W SOX	140W SLI/H or 90W SOX	135W SOX or 180W SOX	200W SLI/H
Circuit diagram	307	307	304	302

Ballast

Catalogue no.	G 53182.4 †	G 53232.4 †	G 53260.T †	G 53261.T †
Weight	3.4kg/7.5lb	5.82kg/12.6lb	6.55kg/14.5lb	6.55kg/14.5lb
Filling		Polyester resin	Polyester resin	Polyester resin
Illustrated type	DR	DY	DY	DY
Can colour	White	White	White	White
Terminals	Screw	Screw	Screw	Screw

Capacitor

Catalogue no.	G C2284	G C2231 (for 140W) G C2346 (for 90W)	G C2281	G C2382
Capacitance μ F	15 \pm 10%	20 \pm 10% (for 140W) 25 \pm 10% (for 90W)	13 \pm 5%	35 \pm 10%
Working volts	250V	250V	440V	250V
Terminals	Flying leads	Flying leads	Flying leads	Flying leads

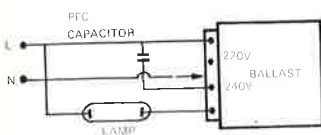
Other ballast voltage ratings

220V 50Hz	G 53182.T	G 53232.2	G 53260.T	G 53261.T
250V 50Hz	G 53182.T	Not available	Not available	Not available

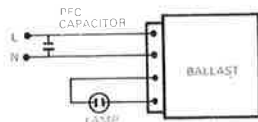
† Units marked with British Standard Kitemark to BS,4782

CIRCUIT DIAGRAMS

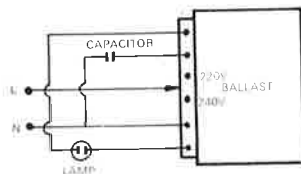
302 Circuit for 200W SLI/H sodium discharge lamp



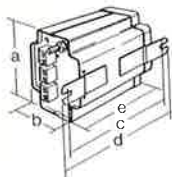
307 Circuit for 140W SLI/H and 35W/55W/90W SOX



304 Circuit for 135W or 180W SOX sodium discharge lamp

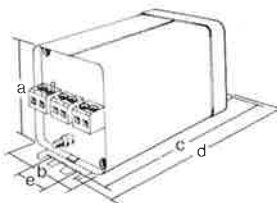


DU



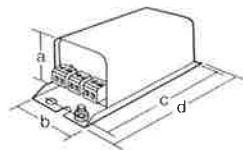
	a	b	c	d	e
mm	105	102	158	171	140
in	4.125	4.0	6.25	6.75	5.5

DY



	a	b	c	d	e
mm	114	93	165	178	67
in	4.5	3.656	6.5	7.0	2.625

DR



	a	b	c	d
mm	59	81	216	232
in	2.312	3.187	8.7	9.125

Circuit components for 250W and 400W SON high-pressure sodium discharge lamps

CONTROL GEAR FOR 240V 50Hz SUPPLY

Lamp wattage	250W	400W
Circuit diagram	315	315

Ballast

Catalogue no.	G. 53251.T	G. 53230.T
Weight	3.8kg/8.5lb	5.7kg/12.55lb
Filling	Polyester resin	Polyester resin
Illustrated type	DS	DU
Can colour	White	White
Terminals	Screw	Screw

Capacitor

Catalogue no.	G. C2235	2 x G. C2218
Capacitance μ F	30 \pm 10%	20 \pm 10% (each)
Working volts	300V	250V
Terminals	Flying leads	Flying leads

Ignitor

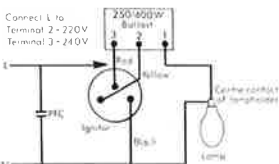
Catalogue no.	G. 53282	G. 53282
Weight	0.065kg/2.3oz	0.065kg/2.3oz
Illustrated type	DB	DB
Can finish	Aluminium	Aluminium
Terminals	Flying leads	Flying leads

Other ballast voltage ratings

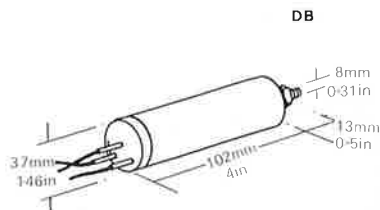
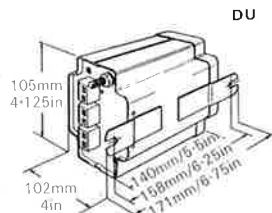
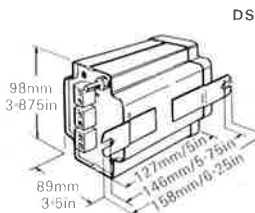
220V 50Hz	G. 53251.T	G. 53230.T
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315

Circuit for 250 400W SON SONT Lamps

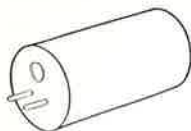


CONTROL GEAR TYPES

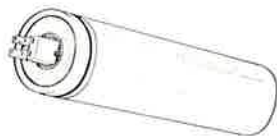


Capacitors for fluorescent tube circuits

STANDARD PFC AND SERIES CAPACITORS



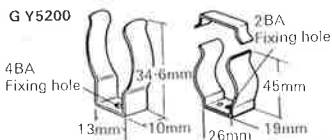
R
with pin terminals



Q with push wire terminals

CAPACITOR SUPPORT CLIPS

GY5244 For 38mm dia. capacitors
GY5245 Clip for GY5244
GY5200 For 25mm dia. capacitors



GY5244

Catalogue no.	Capacitance (µF)	Fused or unfused	Rated voltage	Type	Dia. mm	Length* mm	Weight g	Use
G C2220	8.4 ± 5%	Unfused	250V	R	38	100	142	6ft 85W/5ft 65W SRS
G C2222	8 ± 10%	Unfused	250V	R	38	100	199	5ft 80W/2ft 40W SS/OS
G C2274	10 ± 10%	Fused	250V	R	38	104	199	Twin 5ft 65W SS
G C2368	5.7 ± 5%	Fused	250V	R	32	77	90	5ft 50W SRS Arrowslim fitting
G C2228	7.8 ± 5%	Unfused	440V	R	38	200	353	8ft 125W QS
G C2344**	7.2 ± 5%	Unfused	440V	Q	40	107	199	8ft 125W SS
G C2223	6 ± 10%	Unfused	250V	R	38	100	142	6ft 85W SS
G C2273	5.5 ± 10%	Unfused	250V	R	38	100	180	40W SRS
G C2226	5 ± 5%	Unfused	440V	R	38	156	227	8ft 85W QS
G C2245	5 ± 10%	Unfused	250V	R	38	100	170	5ft 65W SS
G C224	3.5 ± 10%	Unfused	250V	R	38	54	113	20/30/40W SS/OS
G C2225	3.5 ± 10%	Fused	250V	R	38	57	113	20/30/40W SS/OS
G C2227	3 ± 10%	Fused	250V	R	32	78	99	3ft 30W Arrowslim fitting
G C2286†	2 ± 10%	Unfused	250V	R	26	44	56	13/8/6/4W SS

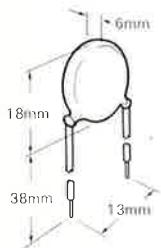
All 250V types are metallised polypropylene (dry) film construction ** Metallised paper construction

*Length is can length only. Pin terminals project 3mm
Push wire terminals project 23mm
†Tag terminals project 8mm

RADIO INTERFERENCE SUPPRESSION

S

For switches and starting transformers like those in this catalogue incorporate a 0.005µF radio interference suppressor. For additional suppression the following capacitors are available

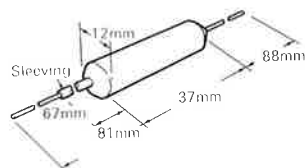


G C2139
A ceramic base 0.005µF 800V a.c. capacitor to BS.4017 with high temperature PVC sleeved 38mm leads.



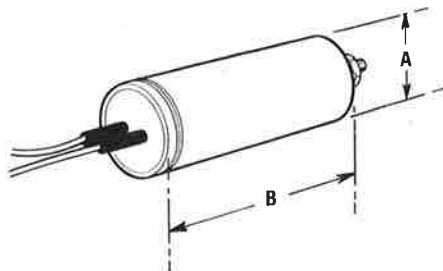
G C2051
A radio interference suppression filter network comprising two 0.005µF and one 0.1µF delta connected for additional suppression where the GC2139 fails to suppress the interference.

ARTIFICIAL EARTH



G C2050
An artificial earth unit for connection between the tube earth strip, or a metal chassis in close proximity to the tube, and neutral when no earth is available.

Capacitors for mercury and sodium discharge lamp circuits



Catalogue no.	Capacitance $\mu\text{f} \pm 10\%$	Diameter A*		Height B*	
		mm	in	mm	in
G C2383	8	38	1.5	74	2.91
G C2370	13	45	1.77	104	4.10
G C2284	15	45	1.77	104	4.10
G C2345	16	45	1.77	104	4.10
G C2385	18	45	1.77	107	4.21
G C2331	20	45	1.77	107	4.21
G C2346	25	45	1.77	107	4.21
G C2386	30	45	1.77	105	4.14
G C2382	35	45	1.77	105	4.14

*Maximum dimensions

Notes: (1) Capacitors in above table are suitable for continuous operation in the temperature range -40°C to 85°C and have a working voltage rating of 250V.

(2) All types are of metallised film construction and have an earth stud at one end of the canister.

(3) Fixing is by means of a clip supplied with the capacitor.

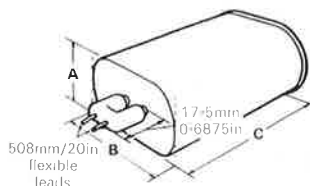
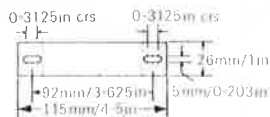
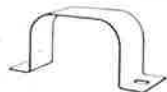
Catalogue no.	Capacitance $\mu\text{f} \pm 5\%$	Working voltage	Depth A		Width B		Height C	
			mm	in	mm	in	mm	in
G C2281	13	440	51	2	76	3	105	4.125
G C2278	15	350	51	2	76	3	121	4.75
G C2288	17.5	350	51	2	76	3	137	5.375

Capacitors are suitable for continuous operation in the temperature range of -40°C to 70°C .

CAPACITOR CLIP

G.V5279

For 76mm/3in \times 51mm/2in capacitors

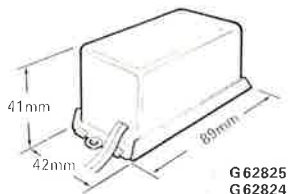
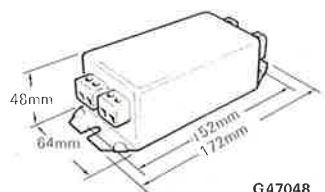
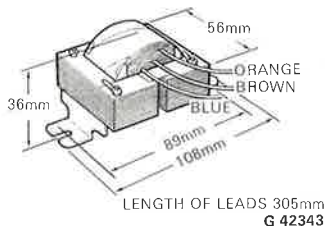
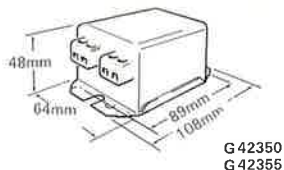


Voltage transformers and emergency lighting

SUPPLY VOLTAGE STEP-UP TRANSFORMERS

Used in conjunction with 240V circuits

Catalogue no.	G42343	G42350	G42355	G47048
Voltage input	220V	220V	200/210V	110V
Max. tube length wattage and circuit	8ft 125W SS — —	8ft 125W SS 8ft 125W QS 8ft 85W QS	8ft 125W QS 8ft 85W QS 6ft 85W SRS	5ft 80W SS 5ft 65W SS/SRS 4ft 40W SS/QS
Weight	0.45kg	0.9kg	0.9kg	1.86kg
Insulation	Varnish	Polyester resin	Polyester resin	Polyester resin
Can colour	Natural	White	White	White
Terminals	Leads	Screw	Screw	Screw



CONVERSION CHOKES (50Hz supply) Used in series with 200/210V choke on 240/250V supply

Catalogue no.	Tube	Weight kg	Insulation	Can colour	Terminals
G 62825	5ft 80W	0.57	Polyester resin	White	Leads
G 62824	4ft 40W	0.57	Polyester resin	White	Leads

EMERGENCY LIGHTING SYSTEM FOR USE WITH TRANSISTORISED FLUORESCENT FITTINGS

Automatic emergency lighting prevents hazards and panic should the mains supply fail. Transistorised miniature fittings with an efficiency three to four times greater than the corresponding tungsten lamps make the maximum use of standby batteries.

Catalogue no. G R2463

A fully automatic 12V battery charger complete with mains hold-off relay.

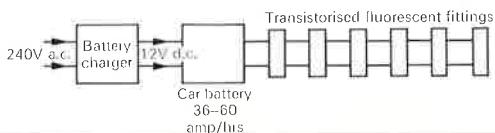
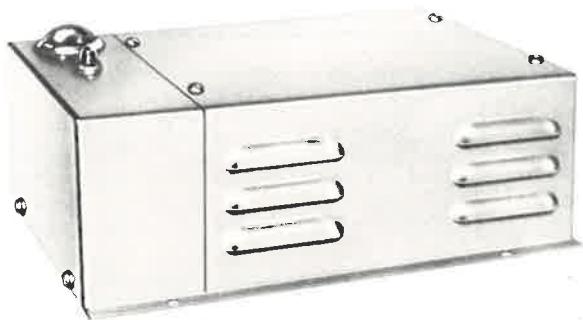
Suitable for use with

6 - 13W 525mm/21in Transistorised miniature fittings or

8 - 8W 300mm/12in Transistorised miniature fittings

Dimensions - Length 289mm
Height 197mm
Depth 124mm

See Section 1 for details of miniature fluorescent fittings.



Combined ballast units for fluorescent tubes

A range of 240V 50Hz HPF and LPF ballasts incorporating all necessary circuit components in one can.

These ballasts provide completely self-contained units ideal for mounting at some distance away from the tube or, alternatively, for use adjacent to the tube when shortage of space prevents the use of a complete fluorescent fitting.

These units are ideal for mounting within interior signs, or within suitably designed exterior signs, and are also used for some showcase lighting and in certain architectural features such as alcoves, pelmets, etc.

All ballasts have screw terminal connections.

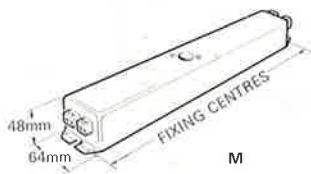
When required, starter switches must be ordered separately.

Catalogue no.	Use	Can colour	Illustrated type	Fixing centres mm	Weight kg
G CBS/125	2400mm 125W LPF SS	White	M	317	2.6
G CBQ/125	2400mm 125W HPF QS	White	P	406	4.5
G CBS/685	1800mm 85W, 1500mm 80W, 2 x 600mm 40W* HPF SS	White	M	292	2.4
G CBR/80	1500mm 80W HPF SRS	White	K	229	3.0
G CBS/65	1500mm 65W HPF SS	White	M	229	1.8
G CBR/65	1500mm 65W HPF SRS	White	K	229	2.9
G CBS/40	1200mm 40W, 2 x 600mm 20W* HPF SS	White	D	216	1.1
G CBR/40	1200mm 40W HPF SRS	White	K	229	1.8
G CBS/30	900mm 30W, 2 x 450mm 15W* LPF SS †	White	D	166	1.1
G CBQ/30	900mm 30W LPF QS †	White	H	166	1.6
G CBQ/2240	2 x 600mm 40W LPF QS †	White	K	229	2.7
G CBQ/220	2 x 600mm 20W LPF QS †	White	H	190	1.4
G CBS/20	600mm 20W, 450mm 15W LPF SS †	White	D	166	1.0
G CBQ/20	600mm 20W, 450mm 15W LPF QS †	White	H	166	1.1

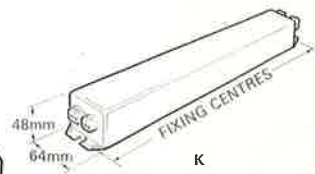
SS=Switchstart QS=Quickstart SRS=Series-resonant start

*An additional starter switch socket will be required when these units are used for series pair operation.

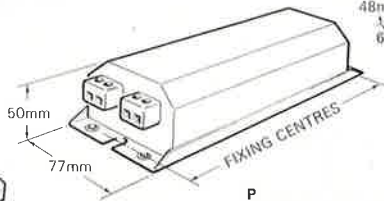
†Low power factor; use separate capacitor for HPF correction



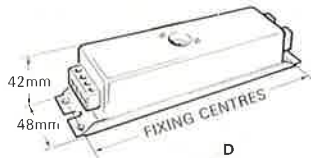
M



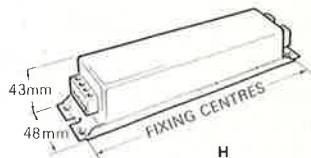
K



P



D



H

Control gear boxes

WEATHERPROOF BOXES FOR EXTERIOR USE

These boxes are made of zinc coated sheet steel finished stove enamel acrylic grey to BS 4800 18B 25. A weatherproof seal is effected between lid and box by means of a closed cell neoprene sponge gasket. Two 20mm/0.78in diameter holes are provided in one end of each box for supply and lamp connections. A wooden baseboard is fitted for control gear mounting and an earth terminal is available on one end. These boxes are not supplied complete with control gear or terminal blocks.

G M6174

1000W HPMV or 400W MBI

Internal dimensions

Length 425mm/16.75in

Width 244mm/9.625in

Height 130mm/5.125in

External dimensions

Length 437mm/17.25in

Width 247mm/9.75in

Height 155mm/6.125in

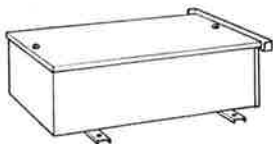
Fixing centres

279 x 279 - 7.92mm diameter/

11 x 11 - 0.31in

Weight

5.84kg/12.875lb



G M6172

80 - 400W HPMV or 35 - 200W SLI/II or SOX

Internal dimensions

Length 406mm/16in

Width 141mm/5.68in

Height 130mm/5.125in

External dimensions

Length 420mm/16.55in

Width 168mm/6.625in

Height 163mm/6.438in

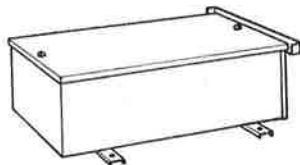
Fixing centres

279 x 178 - 7.92mm diameter/

11 x 7 - 0.31in

Weight

3.74kg/8.25lb



G M6169

This box is made of high quality aluminium designed to accommodate a larger range of control gear for exterior use.

It can accommodate either:

1. 80W or 125W MBE type control gear with time switch and fuses;
2. 35W SOX, 55W SOX type control gear with time switch and fuses;
3. 250W or 400W MBE type control gear with time switch and fuses only; or
4. 140/200V SLI control gear only. No time switch.

Internal dimensions

Length 387mm/15.25in

Width 127mm/5in

Height 121mm/4.75in

External dimensions

Length 425mm/16.75in

Width 203mm/8in

Height 152mm/6in

Weight

Weight 3.6kg/8lb

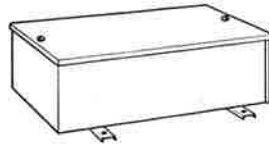


Control gear boxes

REMOTE BOXES FOR INTERIOR USE

These boxes are made of sheet steel finished stove enamel acrylic light grey to BS 4800. Two 20mm/0.78in diameter holes are provided in one end of each box for supply and lamp connections to two-way 10A porcelain terminal blocks. A separate earth terminal is close to these blocks. Boxes are wired complete with 240V 50Hz HPF control gear.

RB G1000-4	Gear box complete with 1000W MBF control gear
RB G700-4	Gear box complete with 700W MBF control gear
External dimensions	Weights
Length 425mm/17.06in	RB G1000 17.92kg/32.5lb
Width 247mm/9.75in	RB G700 13.95kg/30.75lb
Height 149mm/5.875in	



Fixing centres

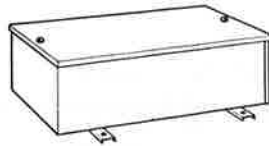
279×279×7.92mm diameter/11×11×0.31in

RB G400-4	Gear box complete with 400W MBF control gear
RB IG400-4	Gear box complete with 400W MBI control gear
* RB SG400-4	Gear box complete with 400W SON control gear
* RB SG250-4	Gear box complete with 250W SON control gear
RB G250-4	Gear box complete with 250W MBF control gear

External dimensions	Weights
Length 416mm/16.375in	RB G400 8.05kg/17.6875lb
Width 157mm/6.18in	RB IG400 8.59kg/18.9375lb
Height 149mm/5.875in	RB SG400 8.17kg/18lb
	RB G250 6.35kg/14.0625lb
	RB SG250 6.8kg/15lb

Fixing centres

279×178×7.92mm/11×7×0.31in diameter



CONTROL GEAR BOXES FOR INTERIOR USE WITH 80 or 125W MBF KOLORLUX LAMPS

Enclosed gear trays fitted with 240V 50Hz HPF control gear wired to a fused terminal block for incoming mains supply and a two-way terminal block for lamp connection. Boxes finished gloss white externally.

RB G125-4	Gear box complete with 125W MBF control gear
RB G80-4	Gear box complete with 80W MBF control gear

External dimensions
Length 337mm/13.25in
Width 92mm/3.625in
Height 83mm/3.25in

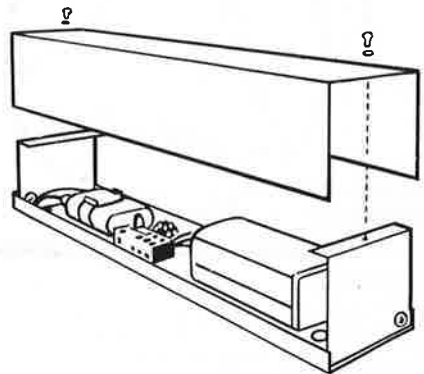
Fixing centres

292×51mm/11.5×2in

Weights

RB G125	3.63kg/8lb
RB G80	3.18kg/7lb

*To special order only

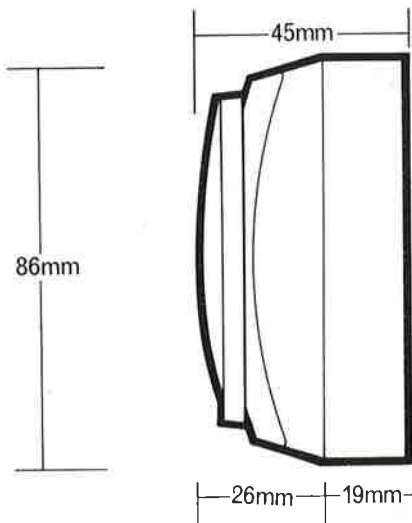
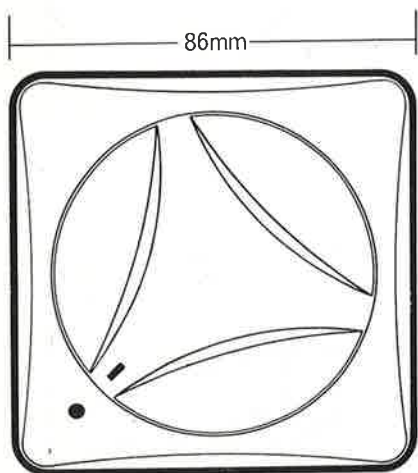


Mini-dimmer for incandescent lamps

The Mini-Dimmer is a solid state device designed to produce smooth, reliable, and economic dimming of incandescent lamps up to 300W total load on 200/250V 50 Hz supplies.

This dimmer may be substituted directly for any single pole on-off switch mounted on a standard $3\frac{1}{2}$ " square switch plate. A special mounting frame is supplied with each dimmer for use with "plaster-depth" or other shallow switch boxes.

Suppression against interference on radio and television is provided within the unit.



Cat. no.
SS300

Rating
300W

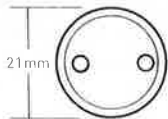
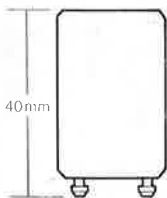
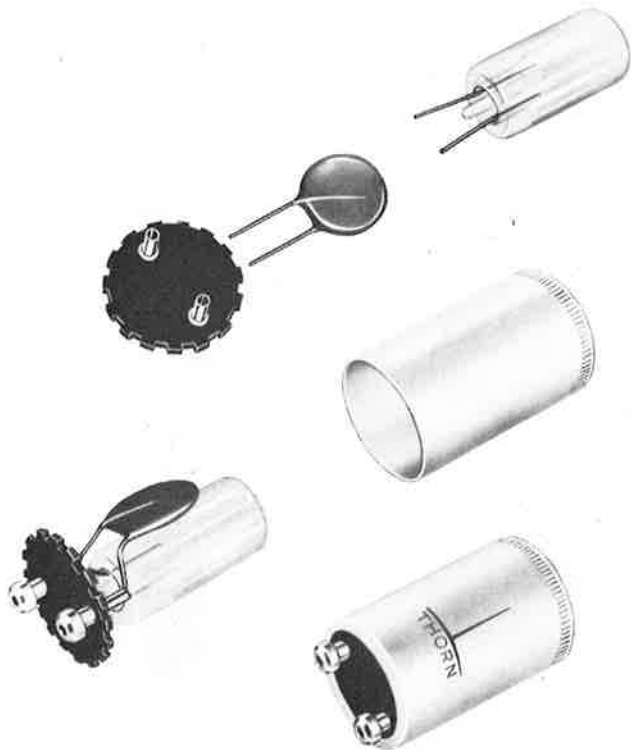
Starter switches

This range of starter switches in plastic canisters incorporates constructional features resulting in switches of high quality, reliability and appearance.

CONSTRUCTIONAL FEATURES

- A** A high temperature grade of matt white plastic is used for the canister with brand detail in distinctive black ink. The canister is inherently electrically safe and non-corrodible. The plastic moulding is tremendously tough, difficult to squash, virtually unbreakable and cannot be dented. Plastic can switches are electrically and mechanically interchangeable with metal can types of equivalent rating.
- B** Solid pins are secured to the insulated base disc and solderless junctions connect these pins to the interior wiring.
- C** A ceramic disc type radio interference suppression capacitor is fitted internally to each canister. This type of RIS capacitor is far superior to the "waxed paper and foil" type, since short circuit faults have been eliminated as a possible cause of failure.

The various stages in the production of standard Glowswitch starter switches are summarised in the illustration. Individual components are welded together to form the bimetal contact assembly. After the completed glow-bottle is sealed off the lead wires of the bottle and ceramic disc suppressor are clamped inside the terminals. The plastic canister is then shrunk on to the insulated base disc. The serrated edge of the base disc combines with the plastic canister to give a strongly bonded seal.



RANGE 2 pin ; small can ; a.c. glow switch

Catalogue no.	Application	Operating voltage
155/800	2400mm 125W leading circuit or 1800mm 75/85W	230/250V
155/501	1500mm 50W leading circuit	240V
155/500	4W, 6W, 8W, 13W, 30W, 32W, 1200mm 40W, 65W or 80W	200/250V
155/400	4W, 6W, 8W, 30W, 32W or 1200mm 40W	200/250V
155/200	Single 15W, 20W, 22W or 600mm 40W	105/250V
	Series pair 15W, 20W or 600mm 40W (two 155/200)	200/250V
155/100	Single 4W, 6W or 8W	110/130V
	Series pair 4W, 6W or 8W (two 155/100) †	230/250V

†Due to the asymmetrical construction of these switches, they must be placed in the starter switch sockets correctly orientated (i.e. if the switches refuse to operate, one must be removed and rotated 180 degrees)

Terminal blocks, fuse holders and starter switch sockets

FUSES

G T1268, G T1299

All fuses comply with BS 1362 dimensions and must be used with T1265, A5079 and T1304 fuseholders.

Catalogue no.	Rating	Colour
G T1299	3A	Blue
G T1268	5A	Black



G T1306

A 10A 250V 3-way white porcelain terminal block. Inserts are of extruded bore brass with 0.125in x 0.118in o.d. round bore barrels and pinch screw terminals. These inserts give facility for loop-in cables. Line, earth and neutral terminals clearly marked on terminal block.



G T1265

A mains circuit terminal block incorporating a fuse in the line circuit. Black phenolic moulded body with clear alkathene fuse carrier and pinch screw terminals. Earth and neutral connections are of the through barrel type and two lines connections are provided for mains input and circuit feed. Back fixing is achieved by means of screw and shakeproof washer provided. For front fixing a 12mm 6BA screw must be used which is not provided. Either method of fixing provides earth connection to chassis. Fuses to be ordered separately.



G T1334

White nylon end entry fuse holder which enables control units to be disconnected before maintenance. Fuse loading cap has bayonet-catch fixing and is finger or coin operated. Push wire terminals for single incoming and double outgoing. Fuses to be ordered separately.



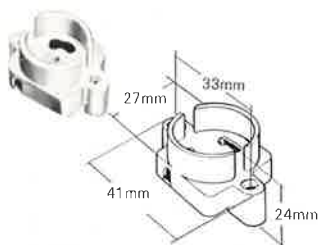
G A5079

Combined fused terminal block with mains plug. Comprises fused block similar to G T1265, above, but with pins in line and neutral barrels, and a black phenolic moulded plug with a pin in the earth barrel. Fuses to be ordered separately. G A5037—replacement mains plug.



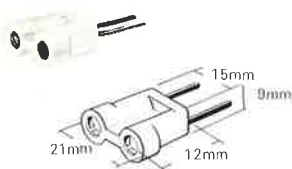
G A5019/X

White urea moulding with paxolin backplate. Side pressure switch contacts. Draw nut terminals giving side and rear cable entries. Optional extra earth clips (Catalogue no. G Y5267) are held by the holder fixing screws and pass through gaps in the holder skirt. When mounted on 22mm distance pieces behind fitting chassis the starter switch projects enough for easy removal.



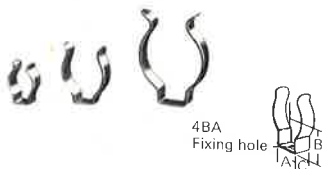
G M6064/12/Loop

White PVC moulding enclosing starter switch contacts crimped to 305mm loop 16/0-2mm white PVC cable which can be cut at a point to suit wiring layout. This holder does not support the starter switch and the G Y5274 black oil dipped spring steel clip can be supplied. The clip latches into a square hole (5.6mm min. to 5.8mm max.) in the fittings chassis.



G Y5204, G Y5200, G5201

A range of bright zinc plated spring steel tube support clips which can be used around the glass of the tube or around the metal cap. When used around the lamp cap to earth the cap to the metalwork of the fitting chassis any paint should be scraped from the chassis to give good continuity.



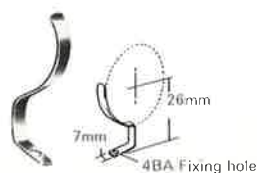
Catalogue no.	Tube dia. mm	A mm	B mm	C mm
G Y5204	16	7.5	10.3	7.9
G Y5200	26	12.7	17.8	9.5
G Y5201	38	16.7	26.2	9

G Y5257

A nickel plated spring steel support clip for circular fluorescent tubes. Three clips are required per tube, mounted inside the tube circumference. Note: Fixing details are approximate and must be adjusted to suit lamp used because of variation in lamp size from different manufacturers.

Fixing details

22W tube: 149mm radius
32W tube: 232mm radius
40W tube: 333mm radius

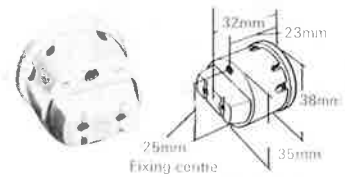


Lampholders for fluorescent tubes

For T12 (38mm diameter) bi-pin fluorescent tubes

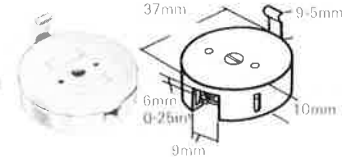
G B1502

White urea moulding with double-sided independently sprung tube pin contacts and pinch screw terminals for incoming cables. 6BA tubular tapped nuts are provided for fixing. Earth contact (Catalogue no. G Y5420) is available as an optional extra. This holder is not suitable for use with 2400mm tubes which have large tolerances in length.



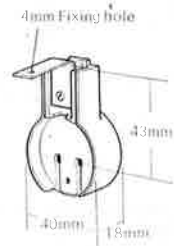
G B1512

A white urea two-piece moulding with earth clip and double-sided lamp pin contacts. Pinch screw cable terminals. A recess allows a neat termination of 2-core or 3-core flexible cable.



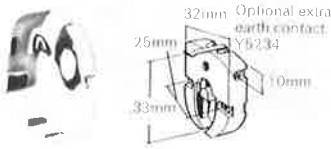
G B1580/A4

White polycarbonate mouldings with shroud, to give tube cap support, and side pressure lamp pin contacts, push-wire terminals for single conductor cables, lampholder is vertical with a nominal length tube.



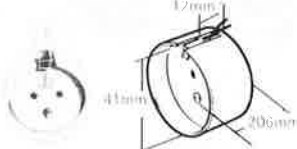
G B1524

White urea moulding with porcelain back plate. Single-sided tube contacts with pinch screw terminal for incoming cables. Earth contact G Y5234 is available as an optional extra. 6BA tubular tapped nuts are provided for fixing. This lampholder is not suitable for use with 2400mm tubes which have large tolerances in length.



G B1573

A white urea two-piece moulding with an earth spring and deep skirt which covers the tube cap giving additional support. Double-sided side pressure contacts are crimped to 305mm loop of high temperature 16/0-2mm white PVC flexible cable. Earth lead crimped to 1 lamp pin terminal.



G B1529

A high temperature white PVC moulding with double-sided brass contacts crimped to 1220mm flat twin 23/0076ie white high-temperature PVC flexible cable. The extra firm contact grips make this holder suitable for vertical tubes subjected to vibration. No earth clips available.



FIXING DETAILS

Dimensions below are distances between backs of lampholders. The dimensions given for G B1512 and G B1573 are for lampholders when fitted to the fluorescent tube.

The dimensions for G B1524 are recommended distances between backs of lampholders when mounted on support brackets. Dimensions for G B1580/A4 are recommended distances between fixing centres.

Dimensions for G B1502 are recommended distances between backs of lampholders when mounted on support brackets.

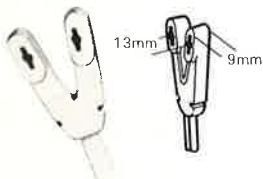
Tube size mm	G B1512 mm	G B1573 mm	G B1524 mm	G B1580/A4 mm	G B1502 mm
2400	2395-5	2398		2329	
1800	1784	1786	1784	1718	1827
1500	1521	1523	1520	1454	1563
1200	1220	1222	1220	1154	1263
900	915	916	915	849	958
600	610	613	610	544	653
450	458	460	458	392	501

Lampholders for fluorescent tubes

For T8 (26mm diameter) bi-pin fluorescent tubes

G B1529

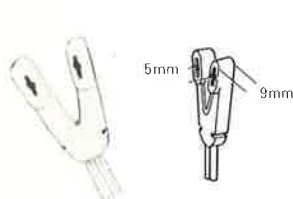
The G B1529 tube holder shown for T12 tubes is also suitable for T8 tubes.



For T5 (15mm diameter) miniature bi-pin fluorescent tubes

G B1529

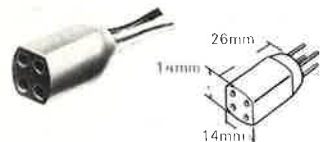
A high-temperature PVC moulding with double-sided brass contacts crimped to 1220mm flat twin 28/0.15mm white high-temperature PVC flexible cable. No earth contact available.



Lampholder for circular fluorescent tubes

G B1535

A single moulding high-temperature white PVC body with 305mm PVC 16/0.2mm leads (one pair, yellow, for starter holder connection, one lead, white, for choke connection and one lead, blue, for connection to neutral supply terminal). Split cylinder grip pin brass contacts crimped to leads.



G B1555/Z

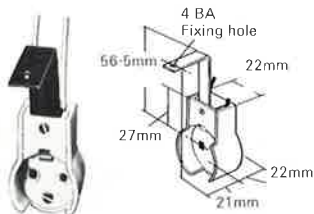
White urea mouldings with shroud to give tube cap support. Side pressure lamp pin contacts with incoming cable crimped to contacts. Cable is high temperature 16/0.2mm white PVC flexible in 305mm loop which can be cut at any point to suit the wiring layout. Other loop lengths available on request. This holder has no current carrying springs or moving parts. The bracket enables the holder to be mounted on a fixed or detachable bridge across the channel.

A locating notch or other means must be provided to stop rotation. Lampholder is vertical with a nominal length tube.

Fixing details

Dimensions below are recommended distances between fixing centres.

Tube size	mm
1500mm	1444.2
900mm	840
450mm	381.8



G B1561

White PVC moulding with paxolin insert. Plated brass contacts with solder tag connections. This holder is assembled by threading the incoming cables through the PVC moulding and soldering them to the solder tags on the paxolin insert. This insert is then pressed into the PVC moulding.

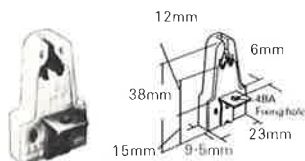
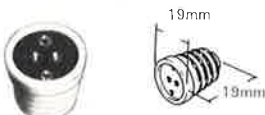
G B1556/2

White urea mouldings with bright steel bracket. Single-sided lamp pin contacts with pinch screw cable entry terminals.

Fixing details

Dimensions below are recommended distances between fixing centres.

Tube size	mm
525mm	504
300mm	275
225mm	199
150mm	123



Bi-pin to BC adaptor

G B1515

Bi-pin/BC adaptor with earth contact. A pair of these adaptors enables modern bi-pin tubes to be used where BC lampholders are fitted in a fitting. Two adaptors required per tube.



Weatherproof sleeve (for T12 38mm diameter) bi-pin fluorescent tubes

G M6028

White neoprene moulding suitable for use with G B2512 lampholder. It is recommended that AC 1981 circular flex be used for connection to lampholder and the cable entry into the cap be made waterproof with silicone grease.

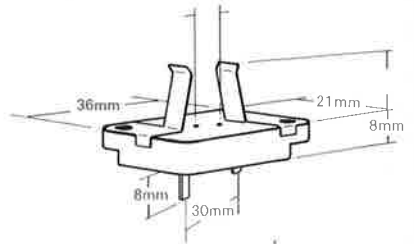


Miscellaneous Lampholders

The L 1079 series are for use with miniature tungsten halogen LV lamps having G6,35 caps, e.g. M28, M32, M36, M37 (see section 5.) Both tab and lead wire versions are available. The basic flat holder is suitable where the lamp is not subject to any vibration and is unlikely to sag. Where extra support for the lamp is necessary the versions with springs which support the lamp pinch are recommended.



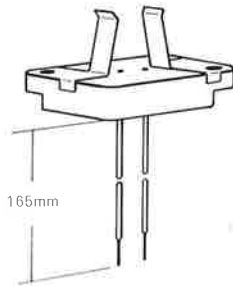
L 1079



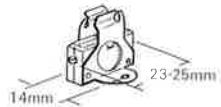
L 1079 S – for bulb dia. 10mm – 12mm
L 1079 L – for bulb dia. 13mm – 15mm
Lampholder suitable for use with 96·35 caps.



L 1079 LW



L 1079 W



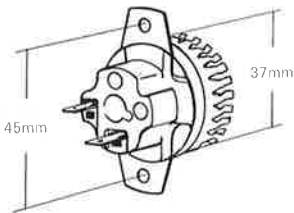
L 1123/A

Suitable for use with low volt miniature tungsten lamps having G,4 caps, eg. M29, M30, M34, M35



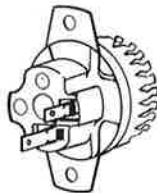
L 1105

Suitable for tungsten halogen lamps having GY9.5 cap, e.g. A1/233 and A1/247



L 1042/LV

for lamp voltages up to and including 21·5V



L 1042/HV

for lamp voltages over 21·5V

Suitable for use with lamps having G,17q caps. For the many projector lamps with this cap see section 5.



Fittings Applications Index

TYPE OF INSTALLATION	LAMP	FITTING	RANGE	PAGE		
Commercial Shops, offices, hotels, banks	Fluorescent	Surface-mounted diffuser	Pop Pack	1:13 - 1:20		
			New Arrow-slim	1:21 - 1:26		
			Minipack	1:27 - 1:28		
			Atlantic 4	1:46 - 1:62		
			London Line	1:63		
			New Format	1:71 - 1:75		
			Pop-in troffer	1:69 - 1:70		
			New Recessed troffer	1:76 - 1:83		
			Coffelight	1:95 - 1:98		
			Incandescent and discharge	Glass (s/m)	Nova		3:41 - 3:42
Isora Ceiling Systems	Aluminium louvers	1:103				
	Architectural	1:106				
	Arena	1:87 - 1:92				
	Cancan	1:102				
	Celestial	1:108				
	Cirelgrid	1:104				
	Isora-grid	1:110				
	Leafite	1:101				
	Light-frame	1:108				
	Metrilux	1:93 - 1:94				
Paragrid	1:104					
Polized panels	1:108					
Spaceliner grid	1:109					
Thermalucant	1:105					
Offices, shops and hotels	Discharge	Kolorlux Pack		3:43 - 3:44		
			Kolorlume	3:45 - 3:48		
Shops and hotels	Incandescent	Pendant	Modern	3:49 - 3:52		
			Swedish	3:53		
			Linklite	3:54 - 3:55		
			Cube light	3:56		
			Scatter light	3:57		
			Chelsea	3:58 - 3:59		
Shops, offices and hotels	Incandescent	Surface-mounted and recessed	Display lighting	3:30 - 3:37		
			Shaver unit	4:18		
Shop windows	Incandescent, discharge and tungsten-halogen	Display	Hi-Spot	3:15 - 3:26		
			Swivelling	3:27		
			EU750	3:38		
Hospitals	Fluorescent	Ward lighting	OF Fitting	1:85		
			Incandescent	Bedhead fitting	OEC 1060	3:39
					Pendant	OS 1150	3:39
Industrial Normal situations	Fluorescent	Reflector fittings	Atlantic A4	1:56 - 1:62		
			Pop Pack	1:12 - 1:14		
Special and Division 2 areas	Fluorescent	Corrosion resistant	Sentinel	1:15		
			Invincible	1:33 - 1:34		
			Corrosion resistant	Invincible	1:35	
				Glendale	1:42	
				Ribble	1:43	
				Invincible	1:36 - 1:37	
				Invincible	1:38	
				Food factory	1:39	
				Angled	1:40	
				Drip-proof	1:41	
High-bay	Incandescent and discharge	High-bay		New Hipak	3:4 - 3:10	
				Graph-X	3:13	
Trunking		Commercial	Trakline	1:112 - 1:114		
			New Lightweight	1:115 - 1:116		
			Liteline	1:117 - 1:118		
			Atlantic	1:119 - 1:120		
Suspension		Commercial and Industrial		1:90		
Domestic	Fluorescent	Surface diffuser	Home-lite	4:17		
			New Arrow-slim	1:21 - 1:26		
			Minipack	1:27 - 1:28		
			Au Pair	4:19		
			Netaline	4:19		
			Cireline	4:20 - 4:22		

Fittings Applications Index

TYPE OF INSTALLATION	LAMP	FITTING	RANGE	PAGE
	Incandescent	Shaver unit Pendant and surface-mounted	Viewpoint Junior Star Junior Modern Droplette Dolly light Modern adjustable Show-off Spot-on Pin-up Pan Ceramic and Yo-Yo Modern cylinders and Novelle Oyster Pumpkin	4:18 4:2 4:3 4:4 4:5 4:6 - 4:7 4:8 4:9 - 4:11 4:12 4:13 4:15 4:16 3:60 4:14
Exterior				
Floodlighting	Tungsten-halogen	Open Enclosed	Sunflood New Halne	2:10 - 2:11 2:12 - 2:13
	Incandescent and discharge	Projector	M25 Junior M25 Senior M28	2:14 2:15 2:17
	Discharge	General	Area flood M30 MBIL flood	2:18 2:19 2:20
	Incandescent	Projector Projector	CSI flood Miniflood	2:21 2:9
General	Incandescent	Bulkhead Domestic	Escort OLG 1100 Patio	2:5 2:8
	Fluorescent	Bulkhead	Escort OB	2:6
	Incandescent and discharge	Bulkhead Wellglass	Kolorlux bulkhead Escort wellglass	2:4 2:7
	Division 2 areas	Incandescent and discharge	Bulkhead Wellglass Projector flood	Dreadnought Kolorlux bulkhead Renown M25 Junior Sentinel	2:3 2:4 2:2 2:14 1:15
	Fluorescent		Invincible LU Invincible LW Invincible DT Glendale Ribble	1:33 1:35 1:38 1:42 1:43
Street lighting				
Group A	Low pressure sodium		Alpha 1 Alpha 5 Alpha 6 Alpha 9	2:23 2:26 2:27 2:28
	Discharge		Alpha 3	2:24 - 2:25
Group B	Low pressure sodium		Beta 5 Beta 8	2:30 2:33
	Incandescent and discharge		Beta 4	2:29
	Fluorescent		Beta 6	2:31
	Group B/G	Incandescent and discharge		Gamma 5 Gamma 6 Gamma 7 Gamma 8	2:36 2:37 - 2:38 2:39 2:40
	Discharge	High tower Columns and brackets	HT1000	2:41 2:42 - 2:47

Index of Catalogue Numbers

Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page
A.30	1:111	A4D.28	1:50	A4P.28	1:55	AME Y5288	1:62
A4.40	1:49	A4D/A/40	1:50	A4P.46	1:55	AS 30	1:21
A4.65	1:49	A4D/A/65	1:50	A4P.48	1:55	AS 4600	1:30
A4.685	1:49	A4D/A/685	1:50	A4P/B265	1:55	AS 4601	1:30
A4.885	1:49	A4D/A/885	1:50	A4P/B2685	1:55	AS 4610	1:23
A4.125	1:49	A4D/A/125	1:50	A4P/B2885	1:55	AS 4611	1:30
A4.2125	1:49	A4D/A/240	1:50	A4P/B/4685	1:55	AS 4612	1:30
A4.240	1:49	A4D/A/265	1:50	A4P/B/Q4885	1:55	ASA/30	1:24
A4.265	1:49	A4D/A/2685	1:50	A4V.28	1:56	ASA 3	1:24
A4.2685	1:49	A4D/A/Q2885	1:50	A4V/885	1:56	ASA 5	1:24
A4.Q2885	1:49	A4D/A/2125	1:50	A4V/125	1:56	ASB 3	1:24
A4.4660	1:47	A4E.24	1:51	A4V/Q2885	1:56	ASB 5	1:24
A4.4661	1:47	A4E.25	1:51	A4V/2125	1:56	ASB/30	1:24
A4.4662	1:47	A4E.26	1:51	A4W.16	1:57	ASC 3	1:22
A4.4663	1:62	A3E.28	1:51	A4W/685	1:57	ASC/30	1:22
A4.4664	1:62	A4E/A/240	1:51	A4X.26	1:58	ASD 3	1:26
A4.4665	1:62	A4E/A/265	1:51	A4X.28	1:58	ASD 5	1:26
A4.4666	1:62	A4E/A/2685	1:51	A4X/685	1:58	ASD/30	1:26
A4.4667	1:62	A4E/A/Q2885	1:51	A4X/885	1:58	ASF 5	1:23
A4.4668	1:62	A4E/A/2125	1:51	A4X/125	1:58	ASG 3	1:22
A4.4669	1:62	A4FAC.26	1:52	A4X/2685	1:58	ASG/30	1:22
A4.4670	1:62	A4FAC.28	1:52	A4X/Q2885	1:58	ASK 3	1:25
A4.4671	1:62	A4FAC.46	1:52	A4X/2125	1:58	ASK/30	1:25
A4.4672	1:62	A4FAC.48	1:52	A4Y.25	1:59	ASO/30	1:22
A4.4673	1:62	A4FAC/B2685	1:52	A4Y.26	1:59	ASO/50	1:21
A4.4674	1:62	A4FAC/B2885	1:52	A4Y.28	1:59	ASQA/50	1:24
A4.4675	1:62	A4FAC/B/4685	1:52	A4Y/65	1:59	ASQB/50	1:24
A4.4676	1:62	A4FAC/B/Q4885	1:52	A4Y/685	1:59	ASDQ/50	1:26
A4.4679	1:62	A4FAD.26	1:52	A4Y/885	1:59	ASOF/50	1:23
A4.4685	1:49	A4FAD.28	1:52	A4Y/125	1:59	ASQR/50	1:24
A4.Q4885	1:49	A4FAD/B2685	1:52	A4Y/265	1:59	ASR 3	1:24
A4.4690	1:62	A4FAD/B2885	1:52	A4Y/2685	1:59	ASR 5	1:24
A4.4691	1:62	A4FAL.26	1:52	A4Y/Q2885	1:59	ASR/30	1:24
A4.4692	1:62	A4FAL.28	1:52	A4Y/2125	1:59	ASU 3	1:23
A4A.24	1:49	A4FAL/B2685	1:52	A4Z.24	1:60	ASU/30	1:23
A4A.25	1:49	A4FAL/B2885	1:52	A4Z.25	1:60		
A4A.26	1:49	A4FHC.26	1:53	A4Z.26	1:60		
A4A.28	1:49	A4FHC.28	1:53	A4Z.28	1:60		
A4A/40	1:49	A4FHC.46	1:53	A4Z/40	1:60	B.30	1:111
A4A/65	1:49	A4FHC.48	1:53	A4Z.46	1:61		
A4A/685	1:49	A4FHC/B2685	1:53	A4Z.48	1:61		
A4A/885	1:49	A4FHC/B2885	1:53	A4Z/65	1:60	CAR series	1:90
A4A/125	1:49	A4FHC/B/4685	1:53	A4Z/685	1:60	CCG series	1:104
A4A/240	1:49	A4FHC/B/Q4885	1:53	A4Z/885	1:60	CDO series	1:99
A4A/265	1:49	A4FHD.26	1:53	A4Z/125	1:60	CEL series	1:87
A4A/2685	1:49	A4FHD.28	1:53	A4Z/240	1:60	CF 60	4:22
A4A/2125	1:49	A4FHD/B2685	1:53	A4Z/265	1:60	CFA/LSG.60	4:21
A4A/B265	1:49	A4FHD/B2885	1:53	A4Z/2685	1:60	CF/OW.60/0	4:20
A4A/B2685	1:49	A4FHL.26	1:53	A4Z/Q2885	1:60	CF/SPG.60	4:21
A4A/B2885	1:49	A4FHL.28	1:53	A4Z/2125	1:60	CF/WHG.60	4:22
A4A/Q2885	1:49	A4FHL/B2685	1:53	A4Z/4685	1:61	CFR series	1:108
A4B.46	1:49	A4FHL/B2885	1:53	A4Z/Q4885	1:61	CGA series	1:110
A4B.48	1:49	A4FTC.26	1:54	A4ZB.25	1:61	CHA series	1:106
A4. B265	1:49	A4FTC.28	1:54	A4ZB.26	1:61	CHD 2000	1:106
A4. B2685	1:49	A4FTC.46	1:54	A4ZB.28	1:61	CHD 2424	1:106
A4. B2885	1:49	A4FTC.48	1:54	A4ZB/B265	1:61	CIS series	1:104
A4B/4685	1:49	A4FTC/B2685	1:54	A4ZB/B2685	1:61	CKP series	1:95-1:98
A4B/Q2885	1:49	A4FTC/B2885	1:54	A4ZB/B2885	1:61	CL series	1:100, 1:101
A4B/Q4885	1:49	A4FTC/B/4685	1:54	AA series	1:119, 1:120	CMT series	1:94
A4C.24	1:50	A4FTC/B/Q4885	1:54	AC.4674	1:62	COA/B/C/D	1:87
A4C.25	1:50	A4FTD.26	1:54	AC.4861	1:62	COT series	1:87
A4C.26	1:50	A4FTD.28	1:54	AC.4895	3:52	CPG 4140	1:104
A4C.28	1:50	A4FTD/B2685	1:54	AC.5656	1:62	CPZ series	1:107
A4C/A/40	1:50	A4FTD/B2885	1:54	AC.5768	1:62	CRW	1:103
A4C/A/65	1:50	A4FTL.26	1:54	AHP/R2685	1:68	CSP series	1:109
A4C/A/685	1:50	A4FTL.28	1:54	AHP/R3685	1:68	CTH series	1:105
A4C/A/885	1:50	A4FTL/B2685	1:54	AHP/R4685	1:68	CVT series	1:105
A4C/A/125	1:50	A4FTL/B2885	1:54	AL series	1:117, 1:118	CVS/X	1:105
A4C/A/240	1:50	A4O.25	1:55	AME 6077	7:33	CWA series	1:103
A4C/A/265	1:50	A4O.26	1:55	AME 6078	7:33	CWC	1:103
A4C/A/2685	1:50	A4O.28	1:55	AME B1580/A4	1:62	CWG	1:103
A4C/A/Q2885	1:50	A4O/B265	1:55	AME B1580/A4T	1:62	CWL series	1:103
A4C/A/2125	1:50	A4O/B2685	1:55	AME C2235	10:45	CWO	1:103
A4D.24	1:50	A4O/B2885	1:55	AME M6116	1:35	CWR	1:103
A4D.25	1:50	A4P.25	1:55	AME T1334	1:62	CWS series	1:103
A4D.26	1:50	A4P.26	1:55	AME T1338	1:62	CWT series	1:103

Index of Catalogue Numbers

Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page
DAS 1050	3:29	DSU 200	3:17	F.HL 65	4:17	G.BJ/50	10:18
DCS 1050	3:29	DT 65	1:38	F.HLD 4	4:17	G.BOI/85	10:10
DDR E50	2:3	DT 265	1:38	F.HLD 5	4:17	G.BOI/125	10:9
DDR E80	2:3	DTB 25	1:38	F.HLD 40	4:17	G.BU/40	10:20
DDR E160	2:3	DTB/65	1:38	F.HLD 65	4:17	G.BU/65	10:16
DDR G	2:3	DTB/265	1:38	FL 4600	3:3	G.BU/685	10:12
DDR W	2:3	DTC 100	3:19	FLR 125	3:3	G.BV/285	10:10
DFG 25	1:40	DTG 100	3:16	1 FM series	1:71	G.C2050	10:46
DFG 65	1:40	DTG 100BC	3:16	2 FM series	1:72, 1:73	G.C2051	10:46
DFG 265	1:40	DTLIN 300	3:22	FP series	1:37	G.C2139	10:46
DFLB 250	3:4	DTLV 20	3:23	FPG series	1:37	G.C2218	10:45
DFLB 250/S	3:4	DTLV 50B	3:24	FPR series	1:37	G.C2220	10:46
DFLB 250/X	-3:7	DTLV 50W	3:24	FRL 20	1:43	G.C2222	10:46
DFLB 400	3:4	DTLV 100B	3:25	FRL 40	1:43	G.C2223	10:12
DFLB 400/S	3:4	DTLV 100W	3:25	FRL 65	1:43	G.C2224	10:46
DFLB 400/X	3:7	DTP 200B	3:20	FRL 220	1:43	G.C2226	10:46
DFLC 250	3:10	DTP 200W	3:20	FRL 240	1:43	G.C2227	10:46
DFLC 250/X	3:10	DTP 300B	3:21	FRL 265	1:43	G.C2228	10:9
DFLC 400	3:10	DTP 300W	3:21	FTR series	1:76-1:83	G.C2231	10:44
DFLC 400/X	3:10	DTPRO 50	3:25	FTRP	3:48	G.C2233	10:46
DFLD 400	3:9	OTR 100	3:15	FTRZ	3:48	G.C2235	10:45
DFLD 400/X	3:9	DTU 200	3:17			G.C2236	10:20
DFLG	3:7	DVA 100A	3:19			G.C2245	10:46
DFLS	3:4	DVA 100B	3:19	G.42343	10:48	G.C2273	10:46
DFLX	3:7	DVA 100G	3:19	G.42350	10:48	G.C2274	10:46
DFO 25	1:40	DVA 100R	3:19	G.42355	10:48	G.C2275	10:42
DFO 65	1:40	DVAL 200	3:17	G.47048	10:48	G.C2276	10:42
DFO 265	1:40	DVCW	3:25	G.53157.T	10:35	G.C2278	10:47
DHIP/S400	3:13	DVF 100A	3:15	G.53159.4	10:34	G.C2281	10:47
DKA series	3:45, 3:46	DVF 100B	3:15	G.53162.4	10:34	G.C2284	10:47
DKB series	3:47, 3:48	DVF 100G	3:15	G.53182.4	10:34	G.C2286	10:46
DMC 100	3:19	DVF 100R	3:15	G.53184.4	10:34	G.C2331	10:47
DMG 100	3:16	DVF 150A	3:17	G.53193.4	10:36	G.C2344	10:46
DMLIN 300	3:22	DVF 150B	3:17	G.53194.4	10:35	G.C2345	10:47
DMLV 20	3:23	DVF 150G	3:17	G.53196.4	10:40	G.C2346	10:47
DMLV 50B	3:24	DVF 150R	3:17	G.53198.4	10:34	G.C2368	10:46
DMLV 50W	3:24	DVF 300A	3:21	G.53230.T	10:45	G.C2370	10:47
DMLV 100B	3:25	DVF 300B	3:21	G.53232.4	10:44	G.C2382	10:47
DMLV 100W	3:25	DVF 300G	3:21	G.53233	10:42	G.C2383	10:47
DMP 200B	3:20	DVF 300R	3:21	G.53234	10:42	G.C2384	10:47
DMP 200W	3:20	DVH 100	3:15	G.53235	10:42	G.C2385	10:47
DMP 300B	3:21	DVH 150	3:17	G.53236	10:42	G.C2386	10:47
DMP 300W	3:21	DVHR 150	3:17	G.53237	10:42	G.CBS/125	10:49
DMPRO 50	3:26	DVL 100	3:15	G.53238	10:42	G.CBO/125	10:49
DMR 100	3:15	DVL 150	3:17	G.53239	10:42	G.CBS/685	10:49
DMU 150	3:17	DVWG	3:22	G.53243.4	10:35	G.CBR/80	10:49
DNM 1040	3:37			G.53247.4	10:36	G.CBS/65	10:49
DP 1040	3:37			G.53251.T	10:36	G.CBR/65	10:49
DRB 40R	4:5	EKB	2:7, 2:9	G.53254.4	10:40	G.CBS/40	10:49
DRB 40W	4:5	EKC	2:7, 2:9	G.53255.T	10:40	G.CBR/40	10:49
DRC 40R	4:5	EKF 1100	2:7	G.53260.T	10:44	G.CBS/30	10:49
DRC 40W	4:5	EKF 1200	2:7	G.53261.T	10:44	G.CBO/30	10:49
DRN T80	2:2	EKG 100	2:7	G.53282	10:45	G.CBO/125	10:9
DRN S80/C	2:2	EKG 200	2:7	G.62824	10:48	G.CBO/2240	10:49
DRN T125	2:2	EKR 100	2:7	G.62825	10:48	G.CBO/220	10:49
DRN S125/C	2:2	EKR 200	2:7	G.A5019/X	1:19, 10:54	G.CBS/20	10:49
DRN T160	2:2	EMF 1100	2:7	G.A5051	1:19	G.CBO/20	10:49
DRN S160/C	2:2	EMF 1200	2:7	G.A5079	10:54	G.CD/8	10:32
DRP 40R	4:5	ER 1150	2:9	G.A5089	1:30	G.CD/13	10:32
DRP 40W	4:5	EU.750	3:38	G.B1502	10:55	G.CI/80	10:14
DRS 40	4:5	EUB	3:38	G.B1512	10:55	G.CI/125	10:8
DSC 100	3:19	EUT	3:38	G.B1515	10:56	G.CI/240	10:24, 10:25
DSG 100	3:16			G.B1524	10:55	G.CI/2240	10:24, 10:25
DSG 100BC	3:16			G.B1526	1:18	G.CJ/30	10:22
DSLIN 500	3:22	FBL 18	1:64	G.B1529	10:55	G.CPX/28	10:32
DSLV 20	3:23	FBS 18	1:64	G.B1535	10:56	G.CPX/8	10:32
DSLV 50B	3:24	FFD 25	1:39	G.B1548/A3	1:18	G.COI/125	10:8, 10:9
DSLV 50W	3:24	FFD 265	1:39	G.B.1555/Z	10:55	G.CU/20	10:30
DSLV 100B	3:25	FGEA 220	1:42	G.B1556	1:30, 10:56	G.CU/30	10:22, 10:28
DSLV 100W	3:25	FGEA 65	1:42	G.B1561	10:56	G.CU/40	10:20, 10:26
DSP 200B	3:20	FGEA 265	1:42	G.B1563	1:18	G.CU/65	10:16
DSP 200W	3:20	FGSB 220	1:42	G.B1573	10:55	G.CUH/125	10:8
DSP 300B	3:21	FGSB 20	1:42	G.B1580/A4	10:55	G.CU/685	10:12, 10:14
DSP 300W	3:21	FGSB 265	1:42	G.B1586	1:30	G.L123/A	10:54
DSPRO 50	3:26	FGSB 65	1:42	G.BI/65	10:16	G.M6028	10:56
DSR 100	3:15	F.HL 40	4:17	G.BI/685	10:12	G.M6064/12	1:18, 10:54

Index of Catalogue Numbers

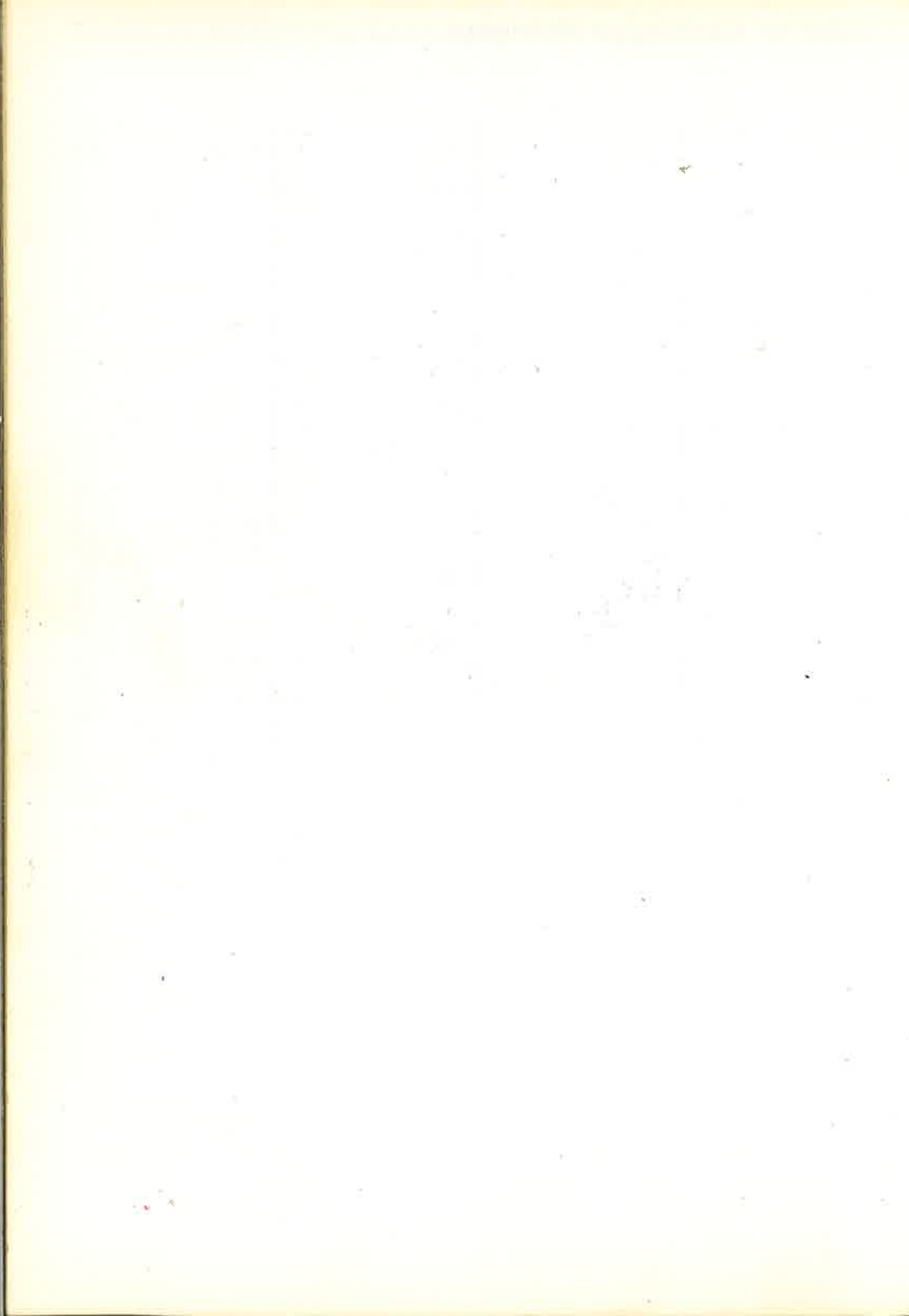
Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page
G.M6169	10:50	LJ S1008.H	1:27	NLHT	4:16	OM 1000S	2:21
G.M6172	10:50	LJ S1013.H	1:27	4 NLI.W	4:19	OM 1000W	2:21
G.M6174	10:50	LJ 4600	1:30	NOM 1008.12	1:29	OMA	2:21
G.M6181	10:40	LJ 4601	1:27	NOM 1008.24	1:29	OMB3C8	2:21
G.QS/40	10:30	LJA 112	1:28	NOM 1013.12	1:29	OMB4	2:21
G.QS/80	10:25	LJA 121	1:28	NOM 1013.24	1:29	OMC	2:21
G.QS125	10:9	LJN 112	1:28	NOM 4600	1:29	OMGB6	2:21
G.QS/220	10:26, 10:28	LJN 121	1:28	NOM 4601	1:29	OMGC16	2:21
G.QS/2240	10:24, 10:25	LS 15	4:18	NOM 4602	1:29	OMP	2:21
G.R2463	10:48	LST 15	4:18	NS series	3:41, 3:42	OMS	2:21
G.T1265	10:54	LTF 4500	1:116	NT series	3:41, 3:42	OMW	2:21
G.T1268	10:54	LTN series	1:115, 1:116			ON 1600	2:20
G.T1281	1:18, 1:30, 10:54	LTR 4500	1:116			ONR	2:20
G.T1299	1:19, 10:54	LUD 12	1:33	OAA 2	2:18	ONS	2:20
G.T1306	10:54	LUD 15	1:33	OAB 36	2:18	O.OY 100	3:60
G.T1332	10:54	LUD 22	1:33	OAB 310	2:18	O.OY 4600	3:60
G.T1334	10:54	LUD 25	1:33	OAC G400	2:18	OSMD 3240	1:70
G.T1324	10:54	LUD Q1020	1:33	OAC V400	2:18		
G.Y5200	10:46	LUD Q2020	1:33	OAE	2:18		
G.Y5244	10:46	LUD R1065	1:33	OAG	2:18	PKA 18	3:44
G.Y5245	10:46	LUD R2065	1:33	OAK G250	2:18	PKA/R80	3:43, 3:44
G.Y5273	1:19	LV R1065	1:34	OAK V250	2:18	PKA/R125	3:43, 3:44
G.Y5279	10:47	LV R2065	1:34	OAK G400	2:18	PKB 18	3:44
G.Y5283	1:19	LVD 15	1:34	OAK V400	2:18	PKB/R80	3:44
G.Y5285	1:19	LVD 25	1:34	OAS G250	2:18	PKB/R125	3:44
		LVD/R1065	1:34	OAS V250	2:18	PKC 18	3:43
		LVD/R2065	1:34	OAS G400	2:18	PKC/R80	3:43
H.30	1:11	LW R1065	1:35	OAS V400	2:18	PKC/R125	3:43
HB 4602	3:8	LW R2065	1:35	OAV	2:18	PKM 18	3:44
HBG,700	3:5	LW S1080	1:35	OBD 2008	2:6	PKM/R80	3:43, 3:44
HBG,1000	3:5	LWC 15	1:35	OBD 3008	2:6	PKM/R125	3:43, 3:44
HBR 1000	3:5	LWC/R1065	1:35	OBB	2:6	PKO 18	3:44
HBR/G700	3:5	LWC/R2065	1:35	OBD	2:6	PKO/R80	3:44
HBR/G1000	3:5	LWC/S1080	1:35	OBK	2:6	PKO/R125	3:44
HBT	3:6	LWD 15	1:35	OBV	2:6	PKR 80	3:43, 3:44
HBT/R1000	3:6	LWD/S1080	1:35	OBV 2008	2:6	PKR 125	3:43, 3:44
HBT/X1000	3:11	LWM/R1065	1:35	OBV 3008	2:6	PP 20	1:4
HBX 1000	3:8	LWM/R2065	1:35	OC 1080.4	2:34	PP 220	1:4
HBX/G700	3:8	LWM/S1080	1:35	OC 1125.4	2:34	PP 40	1:4
HBX/G1000	3:8			OCA 1/2	2:34	PP 40	1:4
HX 1000	3:8			OCV	2:34	PP 240	1:4
HT 1000	2:41	M25 BP	2:15	OE O1060	3:39	PP0 240	1:4
		M25 D500	2:14	OE1 0075	3:39	PP 65	1:4
		M25 S500	2:14	OFL/O2065	1:85	PP0 65	1:4
JCB 1	3:59	M25F D1500	2:15	OG 1150	3:39	PP 265	1:4
JCG 3	3:57, 3:59	M25F S1500	2:15	OG 1165	3:39	PPQ 265	1:4
JCP 1	3:57, 3:59	M28 150	2:17	OGR 250	2:16	PP 675	1:4
JCX 1060	3:37	M28 200	2:17	OGR 400	2:16	PP 2675	1:4
JCX/A1060	3:37	M28 500	2:17	OGRA	1:44	PPQ 685	1:4
JCX/G1060	3:57, 3:59	M30	2:19	OGRB	1:44	PPQ 2685	1:4
JFA	3:58	M30 F	2:19	OGRC	1:44	PP 125	1:4
JFC	3:58	M30 FP	2:19	OGRD	1:44	PP 2125	1:4
JFR	3:58	M.30 GBP	2:19	OHA 4600	2:11, 2:13	PP 4600	1:19
JYA	3:58	M.36 1150	2:9	OHA 4601	2:11, 2:13	PP 4601	1:18
JYC	3:58	4 MLB 1	4:17	OHA 4602	2:11, 2:13	PP 4602	1:18
JZA	3:58	MN 4600	3:40	OHA 4603	2:11, 2:13	PP 4609	1:19
JZC	3:58	MNC 1200	3:40	OHA 4604	2:11, 2:13	PP 4612	1:18
JZR	3:58	MNS 1200	3:40	OHA 4606	2:13	PP 4613	1:18
		MR series	3:41, 3:42	OHA 4607	2:13	PP 4616	1:18
		MTC series	3:41, 3:42	OHA 4608	2:13	PP 4617	1:19
K.30	1:11			OHA 4609	2:13	PP 4619	1:19
KL 4601	1:78			OHA 4612	2:13	PP 4620	1:19
KS Q2085	1:63	NA series	3:41, 3:42	OHA 4613	2:13	PP 4621	1:16
KS R2685	1:63	NCB	4:16	OHA 4614	2:13	PPA 4	1:6
KSP 26	1:63	NC series	3:41, 3:42	OHD	2:13	PPA 24	1:6
KSP 28	1:63	ND series	3:41, 3:42	OHS	2:13	PPA 5	1:6
KSP/Q2085	1:63	NF series	3:41, 3:42	OHS/D500	2:12	PPA 25	1:6
KSP/R2685	1:63	NFG	4:16	OHS/D1000	2:12	PPA 6	1:6
KU5 P	1:17	NL series	3:41, 3:42	OHS/D1500	2:12	PPA 26	1:6
		NLB	4:16	OHS/D2000	2:12	PPA 8	1:6
		NLH 100G	4:16	OLB 26	2:48	PPA 28	1:6
L1042	9:3, 10:57	NLH 200G	4:16	OLB 33	2:48	PPA/40	1:6
L1079	10:57	NLH 100LB	4:16	OLB 34	2:48	PPA/Q40	1:6
L1105	10:57	NLH 200LB	4:16	OLG 1100	2:5	PPA/65	1:6
L1123	10:57	NLH 100S	4:16	OM 1000C	2:21	PPA/Q65	1:6
LBL series	1:67	NLH 200S	4:16	OM 1000P	2:21	PPA/675	1:6

Index of Catalogue Numbers

Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page	
PPA/Q685	1:6	PPL 4	1:8	PSP 150Y	3:28	SCA	3:57	
PPA/125	1:6	PPL 5	1:8	PTP 150W	3:28	SCC	3:57	
PPC 2	1:7	PPL 6	1:8	PTP 150Y	3:28	SCR	3:57	
PPC 22	1:7	PPL 8	1:8			SK 220	4:19	
PPC 4	1:7	PPL/40	1:8			SK 400	4:19	
PPC 24	1:7	PPL/Q40	1:8	QA1 series	2:23	SK 4610	4:19	
PPC 5	1:7	PPL/65	1:8	QA3 series	2:24	1SM series	1:72	
PPC 25	1:7	PPL/Q65	1:8	QA5 series	2:26	2SM series	1:72	
PPC 6	1:7	PPL/675	1:8	QA6 series	2:27	3SM series	1:73	
PPC 26	1:7	PPL/Q685	1:8	QA9 series	2:28	4SM series	1:73	
PPC 8	1:7	PPL/125	1:8	QB4 series	2:29	5SM series	1:74	
PPC 28	1:7	PPM 4	1:10	QB5 series	2:30	QSM series	1:74	
PPC/20	1:7	PPM 5	1:10	QB6 series	2:31			
PPC/220	1:7	PPM 6	1:10	QB7 series	2:32	SS300	10:52	
PPC/40	1:7	PPM 8	1:10	QB8 series	2:33	SUC	2:11	
PPC/Q40	1:7	PPM/40	1:10	OCB,1075	2:44	SUL500	2:11	
PPC/240	1:7	PPM/Q40	1:10	OCB,1125	2:44	SUL1000	2:11	
PPC/Q240	1:7	PPM/65	1:10	OCB,1200	2:44	SUN 500	2:10	
PPC/65	1:7	PPM/Q65	1:10	OCB,1300	2:45	SUN 1000	2:10	
PPC/Q65	1:7	PPM/675	1:10	OCB,2150	2:45	SUR500	2:11	
PPC/265	1:7	PPM/Q685	1:10	OCB,2250	2:45	SUR1000	2:11	
PPC/Q265	1:7	PPM/125	1:10	OCB,2400	2:46	SUW 500	2:11	
PPC/675	1:7	PPO 4	1:12	QG3 series	2:35	SUW 1000	2:11	
PPC/2675	1:7	PPO 5	1:12	QG5 series	2:36			
PPC/Q685	1:7	PPO 6	1:12	QG6 series	2:37	2:38	TCR 60	4:11
PPC/Q2685	1:7	PPO 8	1:12	QG7 series	2:39	TDRC	4:10, 4:11	
PPC/125	1:7	PPO/40	1:12	QG8 series	2:40	TRFC	4:10, 4:11	
PPC/2125	1:7	PPO/Q40	1:12	QLCA	2:47	TCR 4069	2:4	
PPD 2	1:9	PPO/65	1:12	QLCB	2:47	TCR 4075	2:4	
PPD 22	1:9	PPO/Q65	1:12	QLCB1	2:47	TCR 4208	2:4	
PPD 4	1:9	PPO/675	1:12	QLCB2	2:47	TCR 4209	2:4	
PPD 24	1:9	PPO/Q685	1:12	QLCB3	2:47	TCR 4210	2:4	
PPD 5	1:9	PPO/125	1:12	QLCB4	2:47	TK series	1:113, 1:114	
PPD 25	1:9	PPR 4	1:13	QLCB5	2:47	TPRC	4:11	
PPD 6	1:9	PPR 24	1:13	QLCB6	2:47	TRF 2338F	3:29	
PPD 26	1:9	PPR 5	1:13	QLCB7	2:47	TSR	4:9, 4:11	
PPD 8	1:9	PPR 25	1:13	QLCB8	2:47	TSRC series	4:11	
PPD 28	1:9	PPR 6	1:13	QLCB9	2:47	TTR	4:9, 4:11	
PPD/20	1:9	PPR 26	1:13	QLCC	2:47	TTRC series	4:11	
PPD/220	1:9	PPR 8	1:13	QLCD	2:47	TWAP	4:14	
PPD/40	1:9	PPR 28	1:13	QLCE	2:47			
PPD/Q40	1:9	PPR/40	1:13	QLCF	2:47			
PPD/240	1:9	PPR/Q40	1:13	QLCG	2:47			
PPD/Q240	1:9	PPR/240	1:13	QLCS	2:47	UCD 15	1:41	
PPD/65	1:9	PPR/Q240	1:13	QLCT	2:47	UCD 25	1:41	
PPD/Q65	1:9	PPR/65	1:13	QLC0	2:42	UCD 65	1:41	
PPD/265	1:9	PPR/Q65	1:13	QLC1	2:42	UCD 265	1:41	
PPD/Q265	1:9	PPR/265	1:13	QLC3A	2:43	1 UP	4:15	
PPD/675	1:9	PPR/Q265	1:13	QLC4	2:43			
PPD/2675	1:9	PPR/675	1:13	QLC5A	2:43	VA 100	3:27	
PPD/Q685	1:9	PPR/2675	1:13	QLC 8	2:44	VA 150	3:27	
PPD/Q2685	1:9	PPR/Q685	1:13	QLC.10S	2:45	VC 100A	3:30, 3:34	
PPD/125	1:9	PPR/Q2685	1:13	QLC.10D	2:45	VC 100AES	3:30, 3:34	
PPD/2125	1:9	PPR/125	1:13	QLC.12S	2:46	VC 100B	3:30, 3:34	
PPE 4	1:11	PPR/2125	1:13	QLC.12D	2:46	VC 100BES	3:30, 3:34	
PPE 24	1:11	PPT 24	1:14	QLCT	2:47	VCB 100	3:30, 3:33	
PPE 5	1:11	PPT 25	1:14	QLD 0-12	2:47	VCB 150	3:30, 3:33	
PPE 25	1:11	PPT 26	1:14	QLD.10	2:45	VCL 100A	3:34	
PPE 6	1:11	PPT 28	1:14	QLD.12	2:46	VCL 100B	3:34	
PPE 26	1:11	PPT/240	1:14	QLK D	2:47	VCM 100	3:30	
PPE 8	1:11	PPT/Q240	1:14	QLKY	2:47	VCR 100	3:33	
PPE 28	1:11	PPT/265	1:14	QWB 34	2:48	VCR 150	3:33	
PPE/40	1:11	PPT/2675	1:14	QWB 42	2:48	VCX 100A	3:34	
PPE/Q40	1:11	PPT/Q265	1:14	QWBC 34	2:48	VCX 100AES	3:34	
PPE/240	1:11	PPT/Q2685	1:14	QWBC 42	2:48	VCX 100B	3:34	
PPE/Q240	1:11	PPT/2125	1:14			VCX 100BES	3:34	
PPE/65	1:11	PPTA/240	1:16			VUZ 100A	3:30, 3:34	
PPE/Q65	1:11	PPTA/Q240	1:16	RB G80.4	10:51	VUZ 100AES	3:30, 3:34	
PPE/265	1:11	PPTA/265	1:16	RB G125.4	10:51	VUZ 100B	3:30, 3:34	
PPE/Q265	1:11	PPTA/Q265	1:16	RB G400.4	10:51	VUZ 100BES	3:30, 3:34	
PPE/675	1:11	PPTA/2675	1:16	RB G700.4	10:51	VE 150B	3:37	
PPE/2675	1:11	PPTA/Q2685	1:16	RB G1000.4	10:51	VE 150W	3:27	
PPE/Q685	1:11	PPTA/2125	1:16	RB IG400.4	10:51	VE 150V	3:27	
PPE/Q2685	1:11	PPUO 685	1:15	RB SG250.4	10:51	VE LV50B	3:27	
PPE/125	1:11	PPUQ 2685	1:15	RB SG400.4	10:51	VE LV50W	3:27	
PPE/2125	1:11	PSP 150W	3:28					

Index of Catalogue Numbers

Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page	Catalogue no.	Page
VG.100	3:27	VSL 2060A	3:31	WM 80A	3:56	WZC 100B	4:6
VG.150	3:27	VSL 2060B	3:31	WM 60T	3:56	WZC 100S	4:6
VGTK 100	3:27	VSL 2100A	3:32	WM 100A	3:56		
VGTK 150	3:27	VSL 2100B	3:32	WM 100T	3:56		
VJ 200	3:30, 3:37	VSX 2060A	3:31	WM 150A	3:56	XAT	3:50
VJ 200ES	3:30, 3:37	VSX 2060B	3:31	WM 150T	3:56	XBC	3:50
VK 40BN	4:12	VSZ 2060A	3:31	WMT	3:56	XC3	3:51, 3:52
VK 40R	4:12	VSZ 2060B	3:31	WN 1060W	4:8	XC5	3:51, 3:52
VK 40W	4:12	VSZ 2100A	3:32	WN 1060Y	4:8	XDC	3:50
VKF 40R	4:12	VSZ 2100AES	3:32	WN 1060BN	4:8	XDO	3:50
VKF 40W	4:12	VSZ 2100B	3:32	WO 1060R	4:15	XDS	3:49
VKT 40R	4:12	VSZ 2100BES	3:32	WO 1060W	4:15	XFL	3:50
VKT 40W	4:12	VU 150	3:30, 3:33	WPA	2:8	XJ 2040	3:49
VL 100	3:30	VW 150	3:30, 3:33	WPC 1060 BC	2:8	XK 2040	3:49
VL 200	3:30	VX 100	3:30	WPC A 1060 BC	2:8	XLI	3:51, 3:52
VL 2100	3:30	VX 200	3:30, 3:36	WPC R 1060 BC	2:8	XL2	3:51, 3:52
VNF 60RD	4:13	VY 100	3:30	WPC S 1060 BC	2:8	XL100	3:53
VNF 60W	4:13	VY 200	3:30, 3:36	WPR	2:8	XL150	3:53
VNT 60RD	4:13	VZ 100	3:30	WPS	2:8	XP1	3:51, 3:52
VNT 60W	4:13	VZ 200	3:30, 3:36	WPW 1060 BC	2:8	XP1 8 Kit	3:51, 3:52
VO 200	3:30, 3:36	VZ 2100	3:30	WPW A 1060 BC	2:8	XP3	3:51, 3:52
VP 100	3:30			WPW R 1060 BC	2:8	XPP 240	1:5
VR 100	3:30, 3:35			WPW S 1060 BC	2:8	XPPQ 240	1:5
VR 100ES	3:30, 3:35			WQP 100	3:55	XPP 265	1:5
VR 200	3:30, 3:36	WAM 1100A	4:7	WR 100	4:16	XPPQ 265	1:5
VRL 100	3:35	WAM 1100LB	4:7	WV 1060W	4:8	XPP 2675	1:5
VRL 200	3:36	WAM 1100W	4:7	WV 1060Y	4:8	XPPQ 2685	1:5
VRO 200	3:35	WAM 1100P	4:7	WV 1060BN	4:8	XPP 2125	1:5
VRP 100	3:35	WAM 1100S	4:7	WW 1060W	4:8	XR1	3:51, 3:52
VRSA 100	3:35	WDB 1B	4:4	WW 1060Y	4:8	XS3	3:51, 3:52
VRSC 100	3:35	WDB 1CP	4:4	WW 1060BN	4:8	XS5	3:51, 3:52
VRSR 100	3:35	WDP 1CP	4:4	WX B1	4:3	XT 1100R	3:53
VRX 100	3:35	WDP 3CP	4:4	WX C1	4:3	XT 1100W	3:53
VRX 100ES	3:35	WDP 5CP	4:4	WXGA	4:3	XU 100R	3:53
VRX 200	3:35	WDP 1B	4:4	WXGC	4:3	XU 100W	3:53
VRHY 100	3:35	WDP 3B	4:4	WXGY	4:3	XU 150R	3:53
VRHY 100ES	3:35	WDP 5B	4:4	WXGO	4:3	XU 150W	3:53
VRY 200	3:35	WEC 1150	3:55	WXGR	4:3	XUO	3:49
VRZ 100	3:35	WEP 1150	3:55	WXP1	4:3	XW1	3:51, 3:52
VRZ 100ES	3:35	WG 1060R	4:15	WXP3	4:3	XYO	3:49
VRZ 200	3:35	WG 1060W	4:15	WXYO	4:3	XZO	3:49
VS 2100A	3:30	WH 100	4:16	WXYR	4:3		
VS 2100B	3:30	WJB 1040	4:2	WXZO	4:3		
VS 2100AES	3:30	WJD 1040	4:2	WXZR	4:3		
VS 2100BES	3:30	WJP 1040	4:2	WY 1060RD	4:15	155/100	10:53
VS 2060A	3:30, 3:31	WJP 3040	4:2	WY 1060W	4:15	155/200	10:53
VS 2060B	3:30, 3:31	WLC 1060A	3:54	WZA 100C	4:6	155/400	10:53
VSA 100	3:30	WLC 1060S	3:54	WZA 100B	4:6	155/500	10:53
VSC 100	3:30	WLP 1100A	3:54	WZA 100S	4:6	155/501	10:53
VSR 100	3:30	WLP 1100S	3:54	WZC 100C	4:6	155/800	10:53



GENERAL CONDITIONS OF SALE

- 1 GENERAL. All orders are accepted and executed on the understanding that the Purchaser is bound by the following General Conditions of Sale. Where there is any inconsistency between these General Conditions of Sale and any Conditions which the Purchaser seeks to impose these General Conditions of Sale shall prevail.
- 2 VALIDITY OF QUOTATIONS. The Company reserves the right to refuse the Purchaser's acceptance of a quotation unless such quotation is stated to be open for a specific period and is not withdrawn in such period.
- 3 PRICES AND DISCOUNTS. The published prices of and the discounts applicable to the Company's products are those ruling on the date of publication and are subject to alteration without notice.
- 4 PAYMENT. Unless otherwise agreed in writing, payment in full is due in respect of any goods delivered. 2½ per cent settlement discount will be allowed off accounts (excluding the amount of any tax on the supply or purchase of the goods) paid by the end of the month following that in which the invoice is dated. No other settlement terms will be granted.
- 5 NEW ACCOUNTS. Where a credit account is desired, a Bank and two trade references are required.
- 6 CARRIAGE. Unless otherwise specified by the Company, goods are delivered carriage free to any part of Great Britain and Northern Ireland. Special fittings and dimming equipment are offered ex-works carriage extra. When special delivery arrangements are requested, the difference between standard delivery and special rates will be charged.
- 7 PACKING. A charge is made when it is necessary to despatch goods in crates or cases but this amount will be credited in full on the return, within one month, of the crates or cases in good condition carriage paid. No charge is made for any other form of packing and no credit will be allowed for its return.
- 8 LOSS OR DAMAGE IN TRANSIT. Clear receipts should be given only if goods have been examined, as an unqualified signature may react to the disadvantage of the Purchaser if the consignment should become the subject of a claim. In the event of short delivery or damage in transit, it is essential that the Company's despatching depot and the Carriers be advised within three days of receipt of goods. Irrespective of condition of packing, goods and packing should be held for inspection by Carriers before return. After inspection, Carriers should accept goods or return to sending depot, carriage free.
The following details should be sent to the Company:—

Advice note number.	Condition of package.	Date Carrier advised.
Carrier's name.	Date consignment received.	Extent of damage or shortage.

In the event of non-delivery, Carriers and the Company's despatching depot should be advised within ten days of date of advice packing note. The Company will not be responsible for goods lost or damaged in transit unless the above conditions are observed.
- 9 LIABILITY FOR DELAY. Any times quoted for despatch, repair or replacement are to be treated as estimates only and the Company shall not be liable for failure to despatch, repair or replace within such time unless the Purchaser has suffered loss thereby and the amount payable in respect thereof shall have been agreed in writing as liquidated damages, in which case the Company's liability shall be limited to the amount so agreed to be paid. In all cases, whether a time for despatch, repair or replacement be quoted or not, the time for despatch, repair or replacement shall be extended by a reasonable period if delay in despatch, repair or replacement is caused by instructions or lack of instructions from the Purchaser or by industrial dispute or by any cause whatsoever beyond the Company's reasonable control.
- 10 DEFAULT. The Company shall have the right to discontinue delivery and also at its discretion to determine the contract in respect of any undelivered goods if the Purchaser defaults in payment.
- 11 DEFECTS AFTER DELIVERY. The Company will make good, by repair or at the Company's option, by the supply of replacement, defects which, under proper use, appear in the goods within a period of 12 calendar months after the goods have been delivered and arise solely from faulty design (other than a design made, furnished or specified by the Purchaser for which we have disclaimed responsibility in writing), materials or workmanship. Provided further that in respect of parts or components not of the Company's manufacture, the Company will give the Purchaser a guarantee equivalent to the guarantee (if any) which the Company may have received from the supplier of such parts or components in respect thereof but not so as to impose on the Company in respect of such parts or components a liability greater than that imposed on it by the aforesaid period of this clause. Save as aforesaid and as provided in Clauses 8 and 9, the Company shall not be under any liability in respect of defects in goods delivered or for any injury, damage or loss resulting from such defects or from any work done in connection therewith and its liability under this clause shall be in lieu of any warranty or condition implied by law as to the quality or fitness for any particular purpose of such goods.
- 12 SPECIAL ORDERS. All orders for lamps of non-standard voltages or for types not included in catalogues are considered to be "Special Types"—the production of which is undertaken on the understanding that the Purchaser will accept under or over delivery to the extent of 10 per cent at the price quoted per unit.
- 13 RETURN OF GOODS. In no circumstances may goods supplied against a firm order be returned without the customer having first applied for and obtained the written consent of the Company. A handling charge amounting to not more than 10 per cent of the invoice value of the returned goods may be deducted from any credit allowed where it is established that the reason for their return is not subject to the provision of Clause 8 or 11 hereof or through any error on the part of the Company.
- 14 DESCRIPTIVE MATTER AND ILLUSTRATIONS. All descriptive and forwarding specifications, drawings and particulars of weights and dimensions issued by the Company are approximate only, and are intended only to present a general idea of the goods to which they refer and shall not form part of a contract.
- 15 EXPORT. Goods purchased on the Home Market must not without previous consent be offered or sold for Export outside the European Economic Community and any enquiries or orders for such export must be placed directly with the Export Department of the Company with indication of the Country of Destination.
- 16 PATENTS. In the event of any claim being made or action being brought against the Purchaser in respect of infringement of British patents by the use or sale of goods supplied hereunder, the Purchaser is to notify the Company immediately and the Company shall be at liberty with Purchaser's assistance if required, but at the Company's expense, to conduct through the Company's own Lawyers and Experts all negotiations for the settlement of the same or any litigation that may arise therefrom; subject to such notifications and provided that no such goods, or any part thereof, shall be used for any purpose other than that for which the Company supply them, the Company will indemnify the Purchaser in respect of any such claims.
- 17 LEGAL CONSTRUCTION. These General Conditions of Sale shall be construed in accordance with the law of England and if any question, dispute or difference shall arise between the parties in respect of their interpretation or their rights or duties heretofore, the same shall be referred to a single arbitrator in London in case the parties can agree upon one. Otherwise it shall be referred to arbitration in London under the provision of the Arbitration Acts 1889 to 1950 or any statutory modification or re-enactment thereof which provisions shall also apply to the case of a reference to a single arbitrator.

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