"CREATING LIGHT AND DEVELOPING THE FUTURE"

EYE

IWASAKI

Lighting Catalog

IWASAKI LIGHTING CATALOG

TABLE OF CONTENTS

HOW TO USE IWASAKI CATALOG

- If you don't know model No. of Iwasaki products, please refer to index.
- If you know model No., please refer to index of model No. specified in alphabetical order on last page.
- Unit described in this catalog is as follows.
  LENGTH : mm WEIGHT : kg and g
  LUMINOUS FLUX: lm (lumen)
  ILLUMINANCE : LUX (ℓm/m²)
- Description of symbols

LAMPS

1. HIGH PRESSURE SODIUM LAMP

NH 360 F LX

- LX: TYPE LX: Sunlux Ace L.
  DLX: Improved Color Pendering Sunlux Ace L.
  LC: Super Sunlux Ace L.
  DX: Specialux L.
  NIL: Sunlux L.
- F: Fluorescent coating
  NIL: Clear
- 360: WATTAGE 360: 360W
- NH: High pressure sodium lamp
  NHR: Reflector type
  NHT: Tubular type

2. METAL HALIDE LAMP

M (F) 400 LE / BUH•BD

- BUH•BD: Burning Position
  BUH: Base up or horizontal
  BD: Base down
- LE: Multi-Hi-Ace L.
  DL: Clean-Ace L.
  NIL: Multi-Metal L. (Standard type)
- 400: WATTAGE 400: 400W
- F: Fluorescent coating
  NIL: Clear
- T: Tubular bulb
  R: Reflector bulb
- M: Multi-Metal L.

*When ordering, please clarify burning position.

3. HIGH PRESSURE MERCURY LAMP

HF 400 PD

- PD: Power deluxe
  K2: for use in cold atmosphere
  N: spot beam
  W: wide beam
- 400: WATTAGE: 400: 400W
- F: Fluorescent coating
  NIL: Clear
- H: BT & E bulb
  HR: Reflector bulb

4. SELF-BALLASTED MERCURY LAMP

220/230V 160W SB / E24 White E27

- White E27: Base E27, E40, 2pin,
  White: Fluorescent coating
  Frosted: Frosted
  Ref Fluo: Fluorescent coating on inner aluminium reflector
  Flood: Frosted bulb and inner aluminium reflector
  Clear: clear
- Bulb shape & size
  E: Elliptical bulb
  BT: BT bulb
  R: Reflector bulb
- SB: Self-ballasted (soft bulb)
  SB-H: Hard bulb
- 160W: WATTAGE 160: 160W
- 220/230V: Supply voltage
  220/230V: Design voltage 225V
  220V: Design voltage 220V

5. HALOGEN LAMP FOR GENERAL LIGHTING

J D R 120V 100W / N

- N: Light distribution or ANSI code
  N: narrow
  M: Medium
  W: Wide
- 100W: WATTAGE
- 120V: Supply voltage
- R: T: Double envelope
  F: Airfield Halogen L.
  R: Reflector type
  NIL: Linear type
- D: S: Aluminium reflector
  C: Single ended
  D: Double coil
  NIL: Single coil
- J: Halogen lamp

JCD 24V 150W 10H / GI

- GI: Base
  G1: Pin size ϕ1.0
  G2: Pin size ϕ1.25
  G2S: Pin size ϕ1.25 soft
  B: GY 9.5
  PK 30d: pk 30d
  Nil: R7S
- 10H: Life
  10H (H: hundred hours): 1000 HRS
  5H: 500 HRS

6. OTHER LAMPS

RF 220/230 W450W - H/R E40

- Base E 40 or E27
- Color R: Red
  Nil: Frosted or clear
- H: Hard Glass
  Nil: Soft glass
- WATTAGE
- Supply voltage
- Bulb shape
  RF: Reflector flood
  RS: Reflector spot
  GW: Global shape clear
  GC: Global shape clear
  GR: Global shape ref mirror
  IR: Infra-red ray reflector
  PRF: Reflector flood for photographic
  ARF: One piece PAR 38

FL 40 BLB

- BLB: Black light blue
  BL: Black light white
- WATTAGE
- FL: Fluorescent lamp

G 30 T8

- Bulb diameter
  T8: 25 mm Dia.
- WATTAGE
- Germicidal lamp

FIXTURES

H 7 88 B - CH 2.5 CC 22 A(B)

- Frequency A: 50Hz B: 60Hz
- Supply voltage 22: 220V
- High power factor
  Reactor type ballast
  C (choke) C (capacitor)
- Suitable lamp wattage 2.5: 250W
- CH: Ballast for mercury Lamp to be bult in fixture
  CNH: Ballast for sunlux Lamp (standard type H.P. sodium lamp) to be built in fixture
- B: Ballast built-in type
- Design No.
  7: Higway type
  5.6: Post top type
  8: Area light
- H: For H.I.D. lamp

H 3 62 S

- S: Spot type
  D: Flood type
- Design No.
  3: 220 ~ 400W
  4: 220 ~ 400W
  5: 660 ~ 1000W
  1: 1000W
- Suitable lamp
  H: For mercury lamp, sunlux & multi-high ace lamp
  NH: For H.P. sodium lamp
  JF: For double-ended halogen lamp

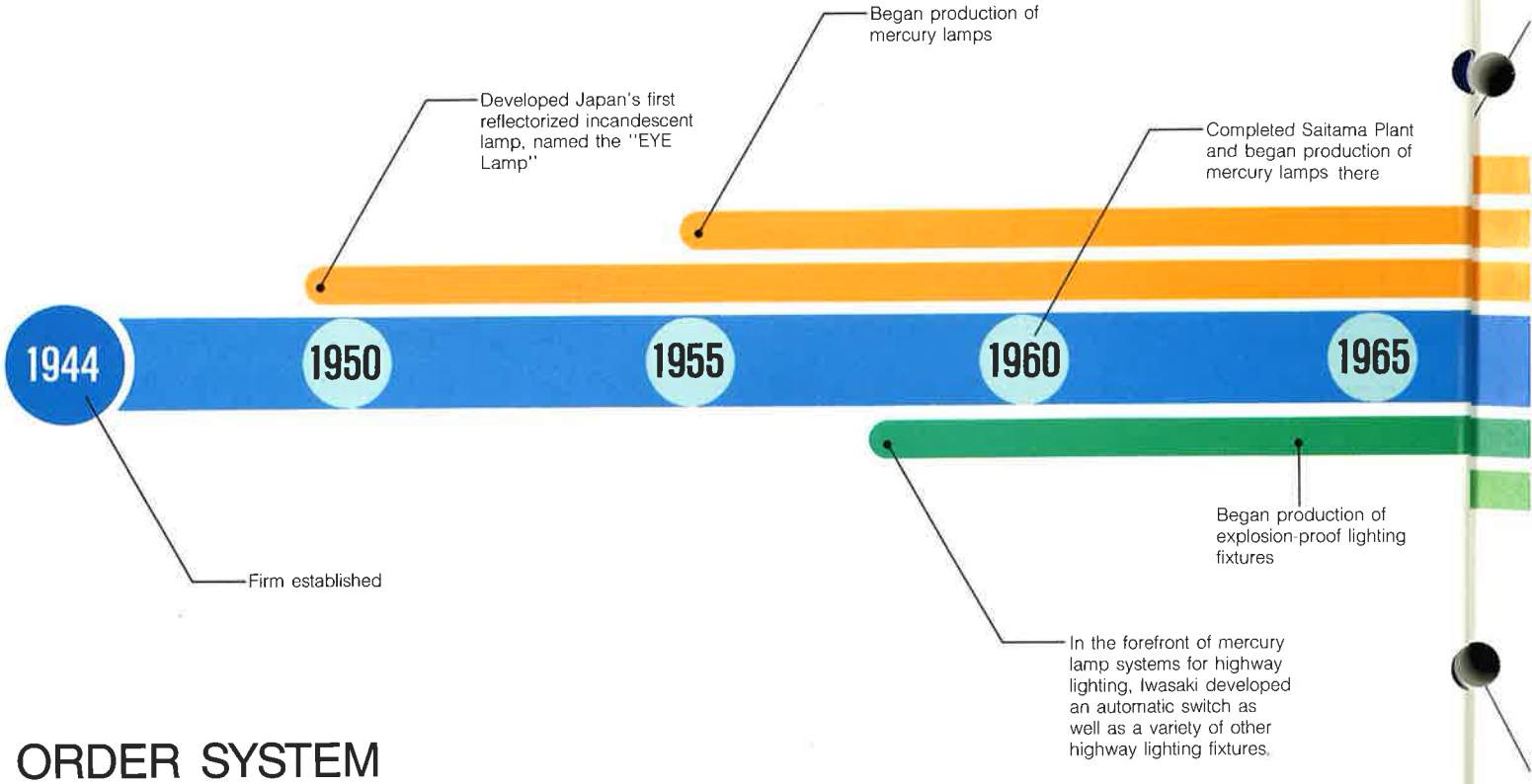
NOTE: 1. Due to continuing improvements in design and availability of materials, specifications—including materials, dimensions and finish are subject to alteration without notice from the manufacture.
2. In addition, there may be some slight difference in the colors of actual products and those colors shown in this catalog, due to conditions encountered in the printing process.
3. Operational values are based on those produced through in-house testing.

COMPANY PROFILE

COMPANY OUTLINE

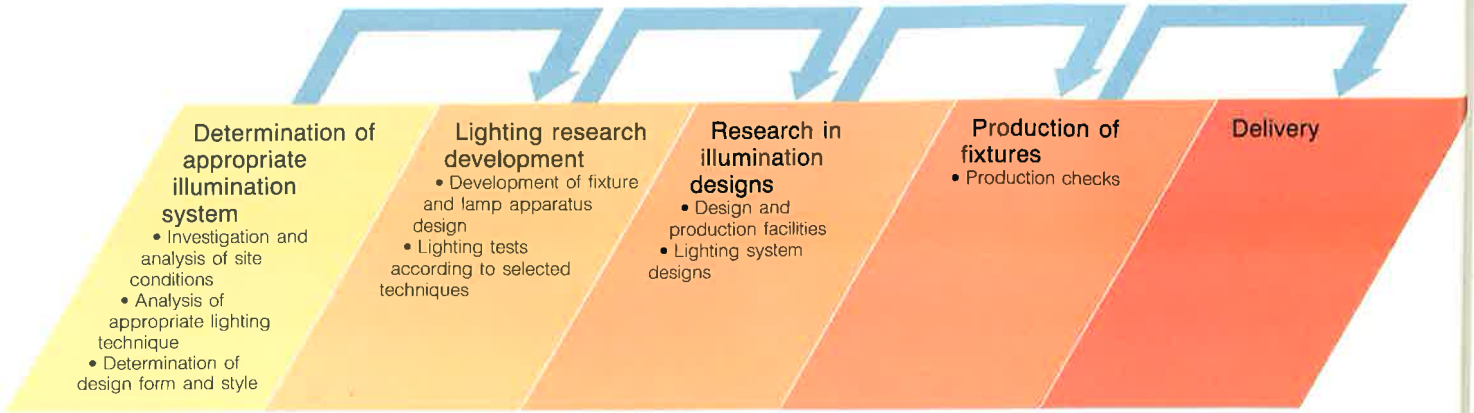
- **Trade Name** : Iwasaki Electric Co., Ltd.
- **Established** : August 18, 1944
- **Paid-up Capital** : ¥3,224,649,195 as of April, 1987
- **Authorized Shares** : 240,000,000
- **Issued Shares** : 63,063,980 (¥50/share)
- **Head Office** : 3-12-4, Shiba, Minato-ku, Tokyo 105, Japan
- **Saitama Plant** : 1-1, Ichiriyama, Gyoda City, Saitama-ken 361, Japan
- **Ibaraki Plant** : 1121-11, Aza-Sakurayama, Ohaza-Takamori, Yamato-mura, Makabe-gun, Ibaraki-ken 309-12, Japan
- **International Business Division** : Seio Building 5th Floor, 2-1-28, Shiba, Minato-ku, Tokyo 105, Japan
  Telephone/(03) 454-1841
  Tel. Fax./(03) 454-1974
  Cable Address/"EYELAMP TOKYO"
  Telex/J28732 (EYELAMP)
- Overseas Office & Plant
  EYE LIGHTING CORPORATION, U.S.A.
  EYE LIGHTING TAIWAN CO., LTD., TAIWAN

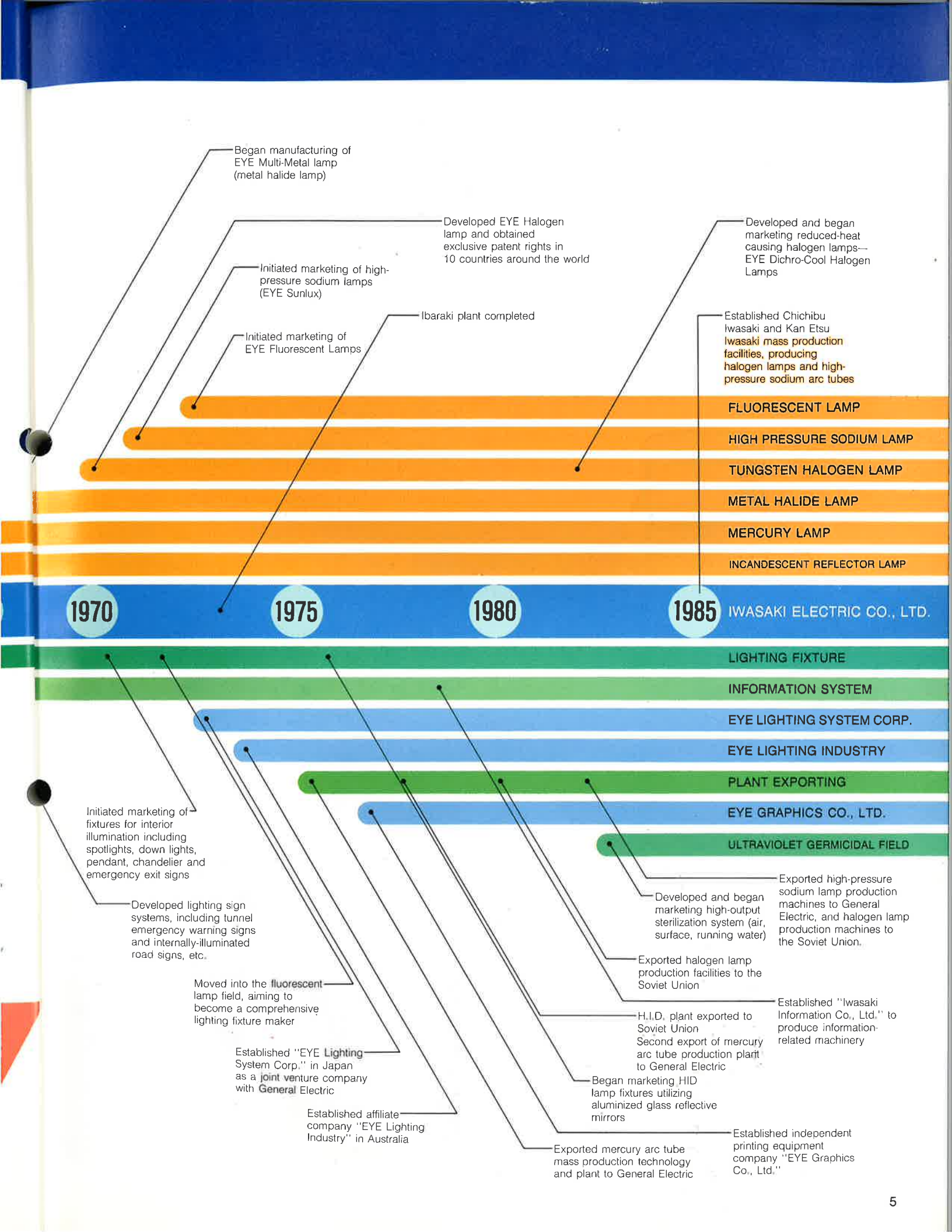
HISTORY



ORDER SYSTEM

Backed by superior light-related technology, creative design, and years of specialized engineering, the IWASAKI staff offers comprehensive assistance in all stages of illumination projects, from planning and design to final installation.




Began manufacturing of EYE Multi-Metal lamp (metal halide lamp)
Developed EYE Halogen lamp and obtained exclusive patent rights in 10 countries around the world
Initiated marketing of high-pressure sodium lamps (EYE Sunlux)
Ibaraki plant completed
Initiated marketing of EYE Fluorescent Lamps
Developed and began marketing reduced-heat causing halogen lamps— EYE Dichro-Cool Halogen Lamps
Established Chichibu Iwasaki and Kan Etsu Iwasaki mass production facilities, producing halogen lamps and high-pressure sodium arc tubes
FLUORESCENT LAMP
HIGH PRESSURE SODIUM LAMP
TUNGSTEN HALOGEN LAMP
METAL HALIDE LAMP
MERCURY LAMP
INCANDESCENT REFLECTOR LAMP
1970
1975
1980
1985
IWASAKI ELECTRIC CO., LTD.
LIGHTING FIXTURE
INFORMATION SYSTEM
EYE LIGHTING SYSTEM CORP.
EYE LIGHTING INDUSTRY
PLANT EXPORTING
EYE GRAPHICS CO., LTD.
ULTRAVIOLET GERMICIDAL FIELD
Initiated marketing of fixtures for interior illumination including spotlights, down lights, pendant, chandelier and emergency exit signs
Developed lighting sign systems, including tunnel emergency warning signs and internally-illuminated road signs, etc.
Moved into the fluorescent lamp field, aiming to become a comprehensive lighting fixture maker
Established "EYE Lighting System Corp." in Japan as a joint venture company with General Electric
Established affiliate company "EYE Lighting Industry" in Australia
Exported mercury arc tube mass production technology and plant to General Electric
Began marketing HID lamp fixtures utilizing aluminized glass reflective mirrors
H.I.D. plant exported to Soviet Union
Second export of mercury arc tube production plant to General Electric
Exported halogen lamp production facilities to the Soviet Union
Developed and began marketing high-output sterilization system (air, surface, running water)
Exported high-pressure sodium lamp production machines to General Electric, and halogen lamp production machines to the Soviet Union.
Established "Iwasaki Information Co., Ltd." to produce information-related machinery
Established independent printing equipment company "EYE Graphics Co., Ltd."

COMPANY PROFILE

Iwasaki at the Forefront of Lighting Technology

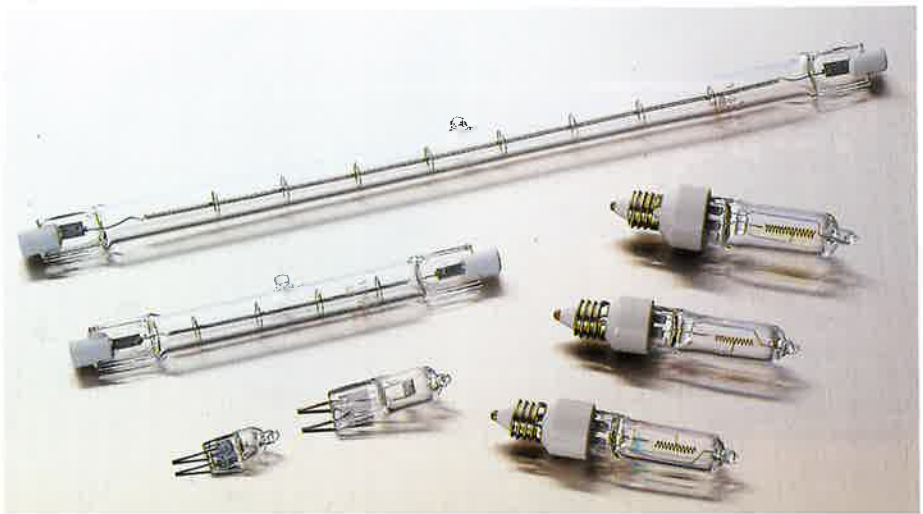
Since developing Japan's first domestically produced incandescent lamp featuring a reflector (named the "EYE Lamp") in 1949, Iwasaki has produced a wide variety of products based upon its own research, technology and advanced manufacturing techniques, including mercury lamps, metal halide lamps, high-pressure sodium lamps, and halogen lamps. Backed by its own independent research technology and special manufacturing techniques, Iwasaki presently produces some 3,000 different lamps. As Japan's leading lamp manufacturer, Iwasaki continues to develop new technology founded upon many years of experience, and produces a great variety of lamps renowned for superior efficiency, color rendering properties, and starting methods. Iwasaki Electric has been responsible for a number of important technological advances in the field of illumination, a few of which are introduced below.

In the Area of H.I.D. Light Sources....

Iwasaki's advanced sealing technology made possible the development of the "EYE Sunlux Super Ace," a revolutionary high-pressure sodium lamp capable of operating with CW/CWA mercury lamp ballasts (constant wattage type).
Conventional high pressure-sodium lamps contain a surplus amount of Na-Hg (sodium amalgam) in the arc tube to compensate for the "Sodium Loss" effect.
The CW/CWA type ballasts used with mercury lamps, however, did not have the capacity to control this excessive amount of Na-Hg, which made it impossible to use them with high-pressure sodium lamps.
Iwasaki, in an intensive effort to find a solution to this problem, researched the materials, design and adhesive methods of sealing, which resulted in a successful technique for minimalizing this effect.
As a result, the need for excessive amounts of Na-Hg was eliminated, making high-pressure sodium lamps compatible with CW/CWA mercury ballasts. The "EYE Sunlux Super Ace" is the fruit of this extraordinary technological breakthrough.

In the Area of Halogen Lamps....

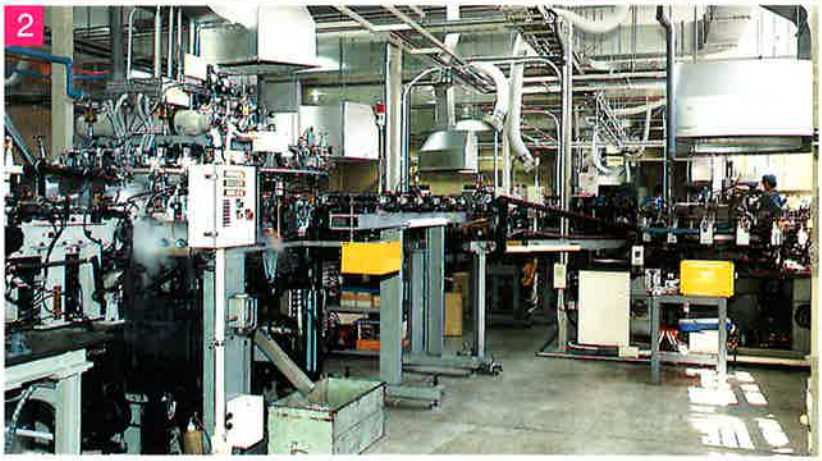
The use of dichroic mirrors, a spectacular step forward in lighting resources, was pioneered by Iwasaki and the technological ingenuity of its engineers.
With the development of the "EYE Halogen Lamp" in 1970, nicknamed the "5cm Sun", which received patent rights in 10 countries around the world, Iwasaki developed its independent technology, marketing halogen lamps for general-purpose applications, as well as for use in photography and other specialized fields.
Among a variety of related technologies, Iwasaki paid particular attention to the dichroic mirror, which reflects visible light while allowing over 80% of inherent heat waves (infrared rays) to escape. The application of thin film technology and specialized manufacturing techniques utilized in the production of this mirror has made possible the EYE DICHRO-COOL Halogen Lamp series, which protects illuminated merchandise from heat damage.
Years of experience in halogen lamp production and development of the dichroic mirror coating have made possible a unique product lineup, featuring a low voltage type (JR) which operates on a low 12V, and a Line Voltage type (JDR) capable of direct connection to 120V power sources, as well as a wide range of other models.
In addition, the new "EYE Cool Halogen Lamp", engineered with this technological breakthrough, is a single ended lamp. It cuts power consumption by 15% and heat waves by 40%.
Utilizing technological ingenuity and superior production techniques, Iwasaki continues to develop more efficient and functional high-quality lighting sources which satisfy the highest standards of precision and craftsmanship.



PRODUCTION FACILITIES

Producing Today's Illumination (Developing Lighting Resources)

1. **Fully Automated H.I.D. Lamp Arc Tube Manufacturing Facilities**
   Iwasaki has developed the world's fastest production line for H.I.D. arc tubes, a development made possible by years of lamp experience and sophisticated computer technology.
2. **Fully Automated Halogen Lamp (Double-ended) Manufacturing Facilities**
   All processes are monitored and controlled electronically by computer-type techniques. Materials are supplied automatically and assembled by various production equipment, making it the world's fastest labor-saving halogen production line today.
3. **Automated Incandescent Lamp (EYE Reflector Lamp) Production Line**
   Since production was begun in 1949, Iwasaki has developed EYE reflector lamps as its main line of products
4. **Fluorescent Lamp Production Line**
   Iwasaki entered the fluorescent lamp market in 1972 with a rapid expansion of production.
5. **Development Center**
   Constantly at work researching new products and technology, Iwasaki utilizes the latest in light- source testing equipment, such as X-ray microanalyzers and fluorescent X-ray diffraction equipment.



IWASAKI LIGHTING EXAMPLES

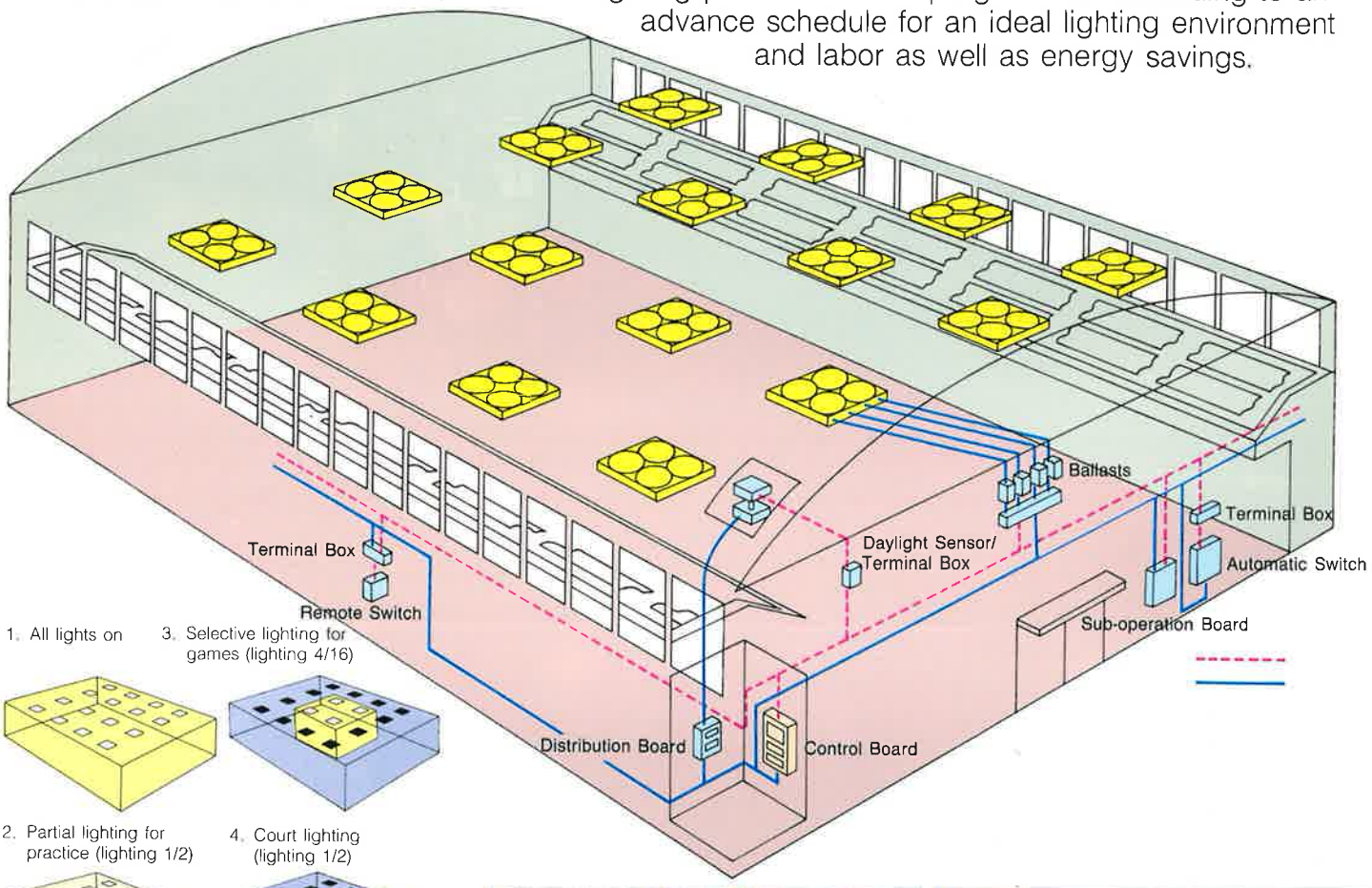
(Upper photo)
Tokyo Station, the hub of Tokyo's mass transit system, glistens under night illumination.

(Middle photo)
The professional baseball stadium of the Seibu Lions features the latest in lighting facilities.

(Bottom photo)
The first trial night illumination of a horse racing track in Japan, carried out at Oi Race Track.

Lighting fixture conditions controlled according to purpose

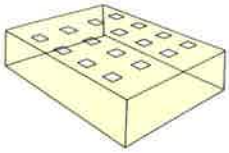
EYE MACLS is a lighting control system which allows management of all lighting fixtures from a single location. Lighting conditions can be viewed on a graphic panel and monitored, for purpose-oriented illumination. In addition, individual lighting patterns can be programmed according to an advance schedule for an ideal lighting environment and labor as well as energy savings.



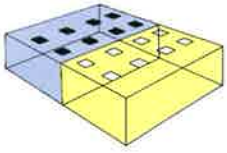
1. All lights on

3. Selective lighting for games (lighting 4/16)

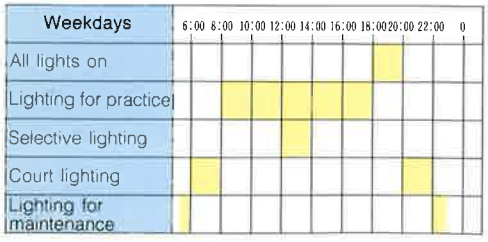
2. Partial lighting for practice (lighting 1/2)

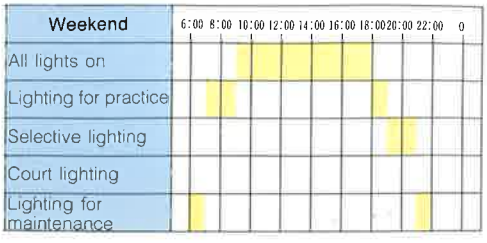


4. Court lighting (lighting 1/2)



Example: Gymnasium Time Schedule





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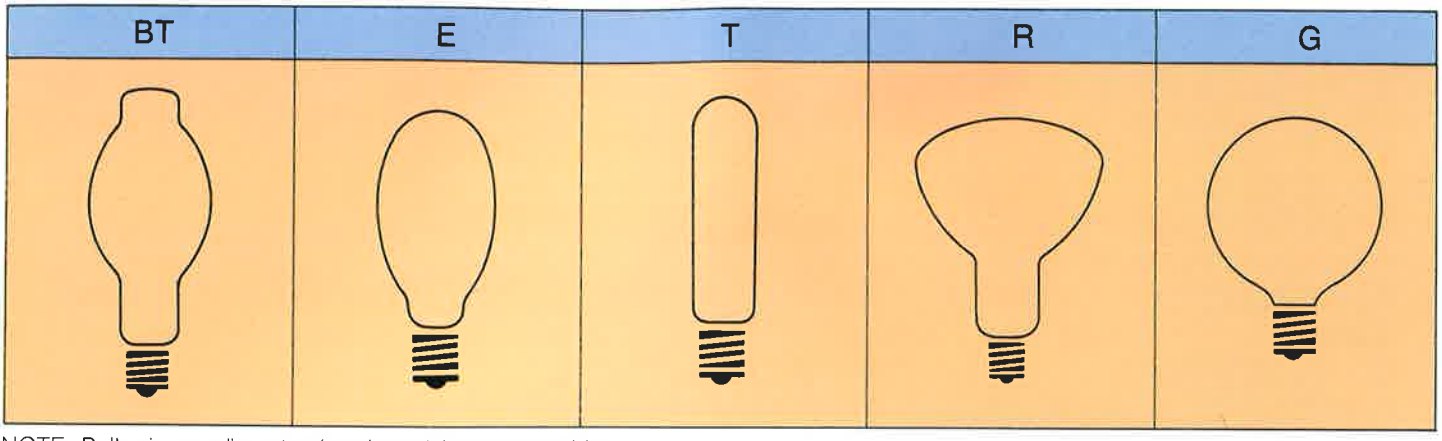
LAMPS

EYE LAMP INFORMATION

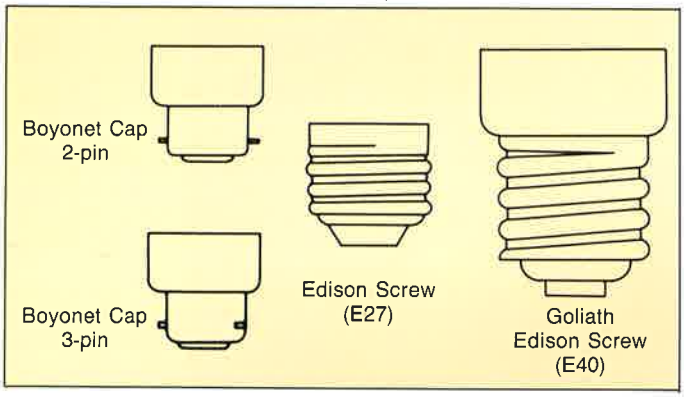
High Intensity Discharge Lamp

BULB SHAPES (Not actual sizes)

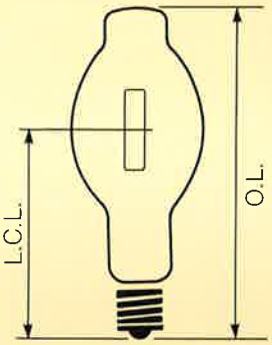


NOTE: Bulb size or diameter (maximum) is expressed in eights of an inch (1/8″)
For example: An BT 56 bulb is 56 eighths of an inch or 7″ in diameter at its maximum dimension.

BASE TYPES (Not actual size)



EXPLANATIONS



O.L.: Overall Length

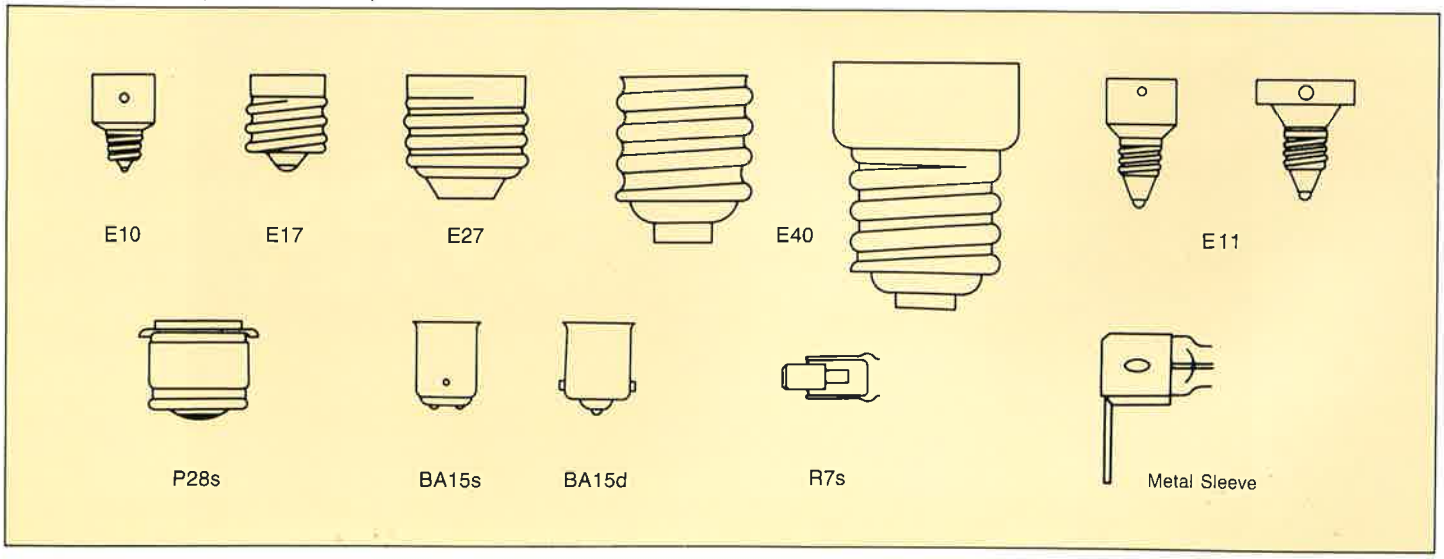
L.C.L.: Light Center Length (top of base fins)

Approx Initial Lumens: After 100 burning hours

Rated Av. Life: Rated Average Life is the life obtained on the average from large representative groups of lamps in laboratory tests under controlled conditions at 10 or more burning hours per start. It is based on survival of at least 50% of the lamps and allows for individual lamps or group of lamps to vary considerably from the average.

Tungsten Halogen Lamp

BASE TYPE (Not actual size)



1-1 HIGH INTENSITY DISCHARGE LAMPS

What are H.I.D Lamps

H.I.D. stands for "High Intensity Discharge Lamps," a general term for high pressure mercury metal halide, and high pressure sodium lamps.

MAIN FEATURES OF H.I.D. LAMPS

- High lamp efficacy ..... low power expense outlays
- Large single lamp lumens.... minimal investment requirements
- Long service life ..... simple and inexpensive maintenance

TYPES OF H.I.D. LAMPS

(1) High Pressure Sodium Lamps
(2) Metal halide Lamps
(3) Mercury lamps

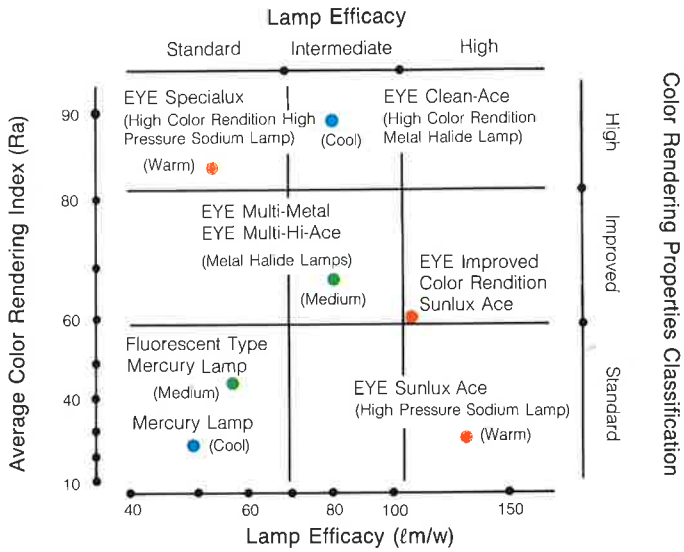
There are three basic types of H.I.D. lamps, each with its own strengths and weaknesses. Recent developments, however, have witnessed new lamp designs which have brought about improvements in these areas. In this brochure, we will introduce 7 different types of H.I.D. lamps designed for a wide range of applications.

H.I.D. LAMP CHARACTERISTICS

(1) Lamp Efficacy
(2) Color Rendering Properties
(3) Light Color (color temperature)

With a large single lamp lumens, H.I.D. lamps provide extremely efficient illumination in a large area: Lamp characteristics, however, vary according to use. The chart to the lower right shows the characteristics of the 3 basic H.I.D. lamp types, according to the 3 variables listed above. The chart shown on the upper right helps to show the positioning of the various light source types which are introduced later in the text.

LAMP EFFICACY



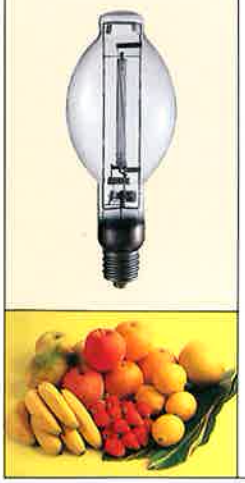
LIGHT COLOR CLASSIFICATION

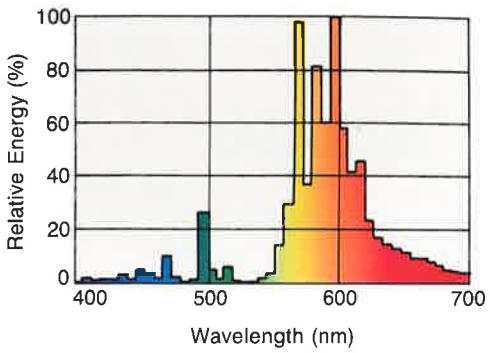
Class	Color Temp. Range	Appearance
Cool	Over 5000 K	Bluish white
Medium	3300 ~ 5000 K	White
Warm	Below 3300 K	Reddish white

- **Lamp Efficacy:** Luminous efficacy per unit of power consumption. High value indicates higher efficiacy, lower power expenditures. [unit: ℓm/w].
- **Color Rendering Properties:** appearance of object color when illuminated.
- **Average Color Rendering Index:** [which is evaluated according to 8 prescribed tests.] Number indicates fidelity of rendered color (symbolized by Ra).
- **Special Color Rendering Index:** indicates variance from prescribed test colors (symbolized by Ri).
- **Light Color (Color temperature):** bluish-white element of light color increases. As color temperature rises. [unit: K (kelvin)]

Lamp Type	Spectral Distribution	Characteristics	Applications

EYE Sunlux Super Ace (NH-LC, NH-FLC, NH-BLC, NH-BFLC)
EYE Sunlux Ace (NH-LX, NH-FLX)
EYE Sunlux (NH-, NH-F)



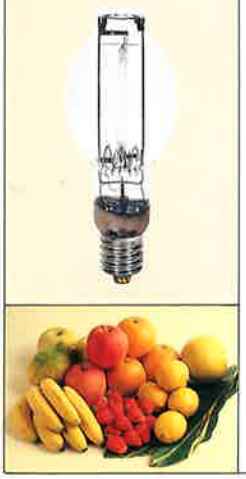


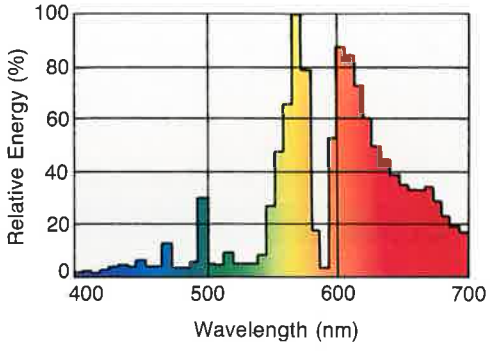
This lamp provides extremely efficient continuous spectral production by raising sodium vapor pressure, utilizing an arc tube of translucent alumina ceramic.
The LX type increases xenon gas pressure to approximately 20 times that of standard type, and features a built-in starting unit, making it an inexpensive, yet extremely efficient HID lamp, capable of operating with a standard mercury ballast.
Ra = 25
Tc = 2,100K

- Roads, parking lots, intersections, plant yards and other outdoor facilities
- Baseball fields, tennis courts, soccer fields and other outdoor sports facilities
- Lighting of plants having high or medium-height bays

EYE Sunlux Super Ace (LC-Type)
New installations or illumination improvement projects utilizing standard mercury lamp ballast units.

EYE Improved Color Rendition Sunlux Ace (NH-DL, NH-FDL)



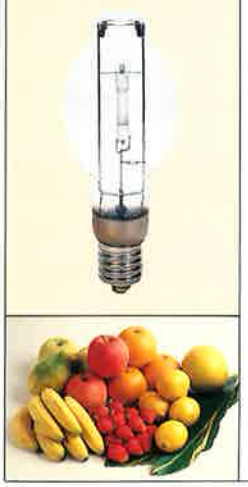


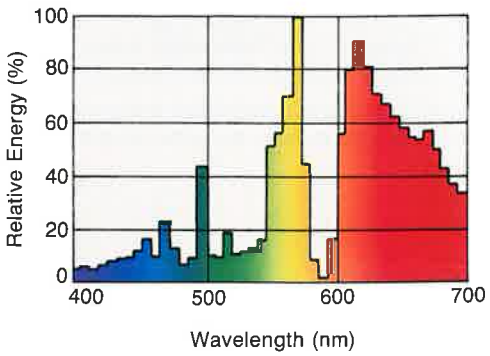
Lighting structure is similar to the L-type. Sodium vapor pressure is increased without sacrificing high-efficiency. EYE Sunlux characteristics and color rendering properties have been improved.
Ra = 60
Tc = 2,150K

Some problems with color appearance may occur when EYE Middle-Color-Rendition Sunlux Ace (DL-type) is used in the following applications:

- Facilities using high or medium-height bay lighting
- Sports facilities and other facilities using floodlighting
- Roadway lighting

EYE Specialux (High Color Rendition High Pressure Sodium Lamp) (NH-DX/PN, NH-FDX/PN)

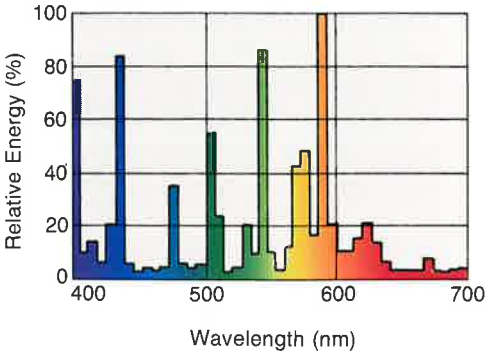
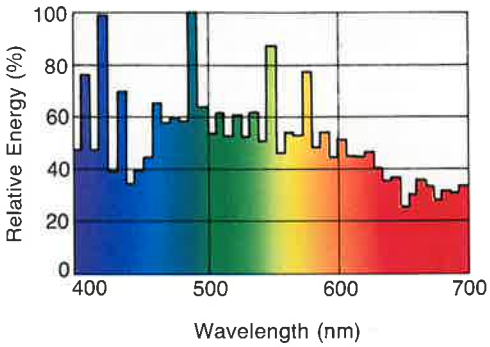




The color rendering properties of this lamp are drastically improved by an increase in sodium vapor pressure during operation to 400 Torr (4 times that of S-type lamps).
It provides a warm light color similar to incandescent lamp lighting, providing beautiful color appearance.
Ra = 85
Tc = 2,500K

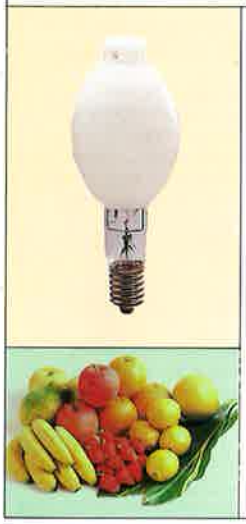
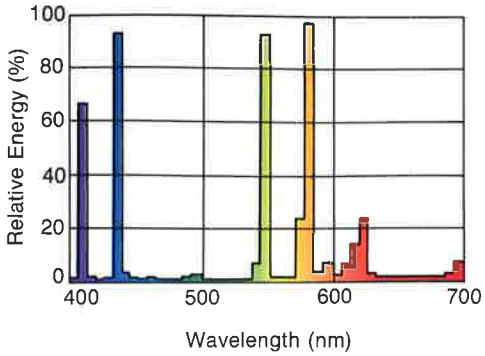
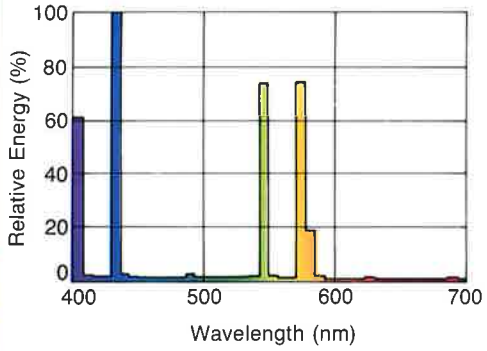
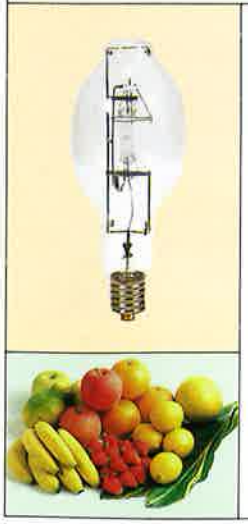
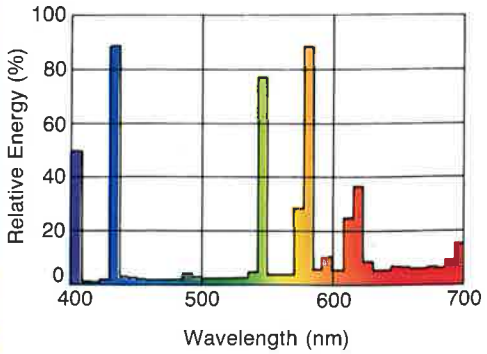
Use in place of incandescent lighting in the following applications:

- Medium-height bay indoor lighting
- Store lighting
- Small to medium-scale indoor sports facility lighting
- Large chandeliers
- Floodlighting requiring accurate color rendering properties

Lamp Type	Spectral Distribution	Characteristics	Applications
EYE Multi-Metal Lamps (M, MF) **EYE Multi-Hi-Ace (M-LE, MF-LE)**			
		This new lamp features high efficacy and outstanding color rendering properties, with scadium electrodes, mercury and argon sealed in a quartz arc tube, in addition to thorium, sodium and other halides. • EYE Multi-Hi-Ace features a special starter housed in an outer bulb, so that the lamp may be operated with a standard mercury ballast (including low starting current types). It is a new Multi-Metal Lamp featuring improved efficacy over former Multi-Ace types. • Clear Type Ra = 65, Tc = 4,200K • Fluorescent Type Ra = 70, Tc = 3,800	• High-bay lighting at plants • Bank, office bldgs., and airport lobbies • Assembly halls and auditoriums • Indoor gymnaslums, pools and other sports facilities • Lighted wells in dept. stores, supermarkets, shopping centers, malls, underground shopping centers, etc. • Parks, streets • Multi-Hi-Ace Perfect for new Installation or improvement of existing mercury lamp illumination. (NOTE) Clear and Fluorescent types may be used in basically the same types of applications.
EYE Clean-Ace (MT-DL)			
		The metal halide lamp can be operated using a mercury ballast, and provides illumination light color which is closest to natural day light. It is clear tubular type lamp, which features a special starter in the outer tube. Ra = 90 Tc = 6,500K	• Store illumination • Building illumination • Public, production facility illumination • Sports facility illumination • Greenhouse illumination

Mixed lighting using EYE Specialux and EYE Multi-Metal Lamps
This is widely used in stores and commercial displays as it features superior color rendering properties.

HID Lamp lighting at a ski slope
When HID lamps of various colors are used, efficient, multi-colored illumination becomes possible.

Lamp Type	Spectral Distribution	Characteristics	Applications
EYE Mercury Lamps (Phosphor Coated) (HF-PD) (Power Deluxe)			
		EYE Power Deluxe This lamp diffuses fluorescence emitting from the red colored region inside the outer bulb, providing superior light color and color rendering properties. Compared with the clear type, this lamp is more efficient and provides widely improved red color rendering characteristics. Ra = 40 Tc = 4,100K	EYE Power Deluxe • Lobby, elevator hall, factory, gymnasium and other indoor high-bay lighting • Roadway, parking lot, intersection, shopping area, factory and other outdoor illumination
EYE Mercury Lamps (Clear) (H—)			
		This lamp uses an outer bulb, and gives off a bluish-white light. It is often used in flood-lighting applications, as luminance is high and small-angle luminous intesity distribution is easily obtained. It does not work as well as some other types in applications where color rendering properties are important. Ra = 25 Tc = 5,700K	• Floodlighting for sports facilities such as baseball fields, golf courses, etc. • Park & garden lighting
EYE Self-Ballasted Mercury Lamps			
		In this lamp type, a built-in ballast filament is connected in series with the arc tube in place of a separate ballast. As a result, a ballast is unnecessary and the lamp can be illuminated by connecting the power source directly, as with incandescent lamps. • Clear Type Ra = 38, Tc = 5,500K • Fluorescent Type Ra = 58, Tc = 3,700K	• Small scale floodlighting applications, construction sites, advertising towers, billboards • High-bay lighting, plants, gymnasiums • Upgrading of lighting formerly using incandescent lights

Choosing a Suitable High Pressure Sodium Lamp

Iwasaki offers 5 different types of high pressure sodium lamps. Choose the correct lamp type according to your needs and conditions.

EYE Sunlux Super Ace
Operates with existing mercury ballast, (constant wattage-type ballast, reactor and lag-autotransformer type mercury ballast), together with a built-in starter

EYE Sunlux
Standard type, operating with exclusive use ballast for EYE Sunlux (S-type)

EYE Specialux
Provides highest-quality color rendering characteristics and operates with uses exclusive-use ballast for EYE Sunlux (S-type)

EYE Sunlux Ace
Economical operation with mercury ballast; features built-in starter

EYE Improved Color Rendering Type Sunlux Ace
Features improved color rendering properties; operates with mercury ballast

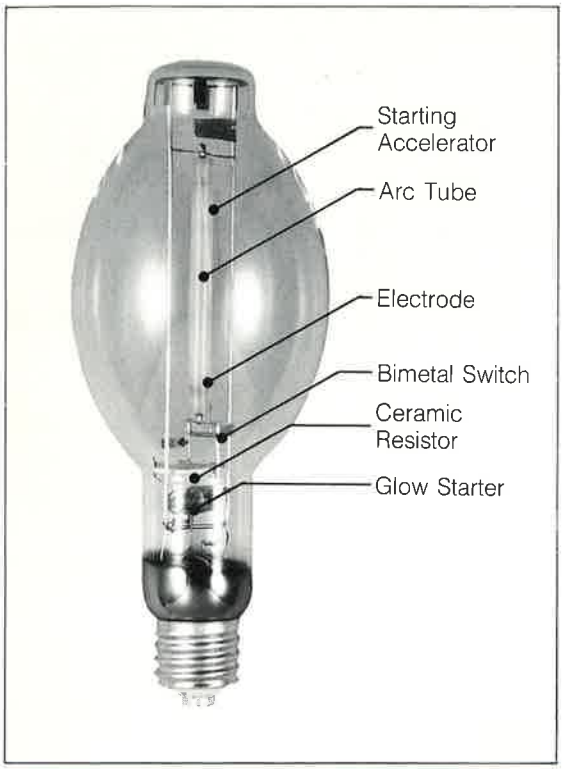
CHARACTERISTICS

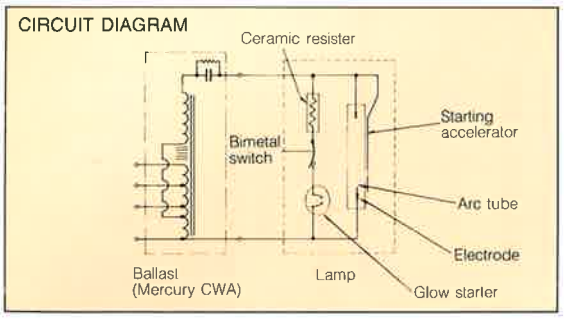
Type	EYE Sunlux Super Ace	EYE Sunlux Ace	EYE Improved Color Rendering Type Sunlux Ace	EYE Sunlux	EYE Specialux
	Built-in Starter				
Wattage (W)	150 ~ 940	75 ~ 940	220•360•660	35 ~	150•250•400
Efficiency (ℓm/w)	97 ~ 138	80 ~ 155	86 ~ 106	61 ~ 130	49 ~ 60
Color Temp. (°K)	1800 ~ 2100	2100	2150	2100	2500
Av. Color Rendering Index (Ra)	17, 25	25	60	25	85
Compatibe Ballast	(For Mercury Lamps) H—RC, H—T•TC H—C•CC, H—CL	(For Mercury Lamps) H—T•TC, H—C•CC, H—CL	(For Mercury Lamps) H—T•TC, H—C•CC, H—CL	(Exclusive Use) NH—CCP, NH—TCP NH—RCP	(Exclusive Use) NH—CCP, NH—TCP NH—RCP
Applications	Factory Sports Facility Highway	Factory Sports Facility Wall Surface Exterior Lighting	Factory Billboard	Factory Sports Facility	Interior Lighting Store illumination

BALLAST TYPE AND DESCRIPTION

Type	Description
C	Reactor (Choke)
CC	Reactor (Choke) + P.F. Capacitor
CCP	CC + Pulse ignitor
T	Auto-Transformer
TC	Auto-Tranformer + P.F. Capacitor
RC	Regulator (with series Capacitor)
RP	Regulator + Peaking Capacitor (Lead Peak Type)

EYE Sunlux Super Ace

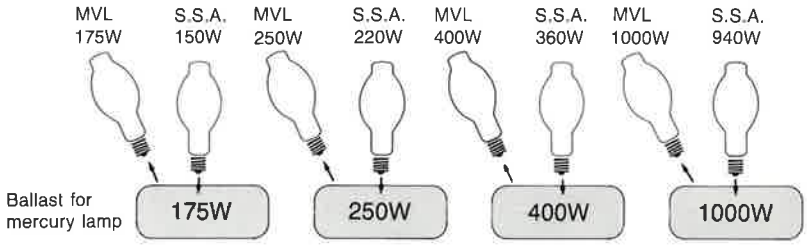




Upgrade illumination and save energy with your existing mercury lamp facilities

FEATURES

1. **Applicable with mercury lamp ballasts**
   EYE Sunlux Super Ace can be used with not only reactor and lag type ballasts, but also CW and CWA mercury lamp ballasts.
2. **Recycling at the end of lamp life eliminated**
   Recycling—flashing on and off—near the end of lamp life can be damaging to the ballast unit. EYE Sunlux Super Ace lamps have eliminated this problem.
3. **High efficiency**
   EYE Sunlux Ace lamps offer higher efficiency than mercury or metal halide lamps.
4. **Resistance to extinction due to vibration**
   Because all of sodium amalgam in the arc tube is evaporated during operation, extinction caused by vibrations will not be virtually happened.
   *EYE Sunlux Super Ace is not a vibration resistant type lamp, and will not withstand vibrations causing damage to the outer bulb, arc tube or supporting structures.



COMPARISON OF LUMENS

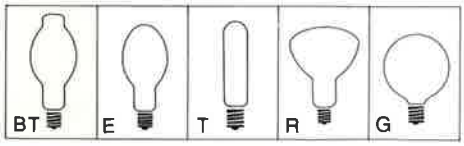
Type	175W	250W	400W	1000W
EYE Mercury Lamp	7800ℓm	12000ℓm	21000ℓm	58000ℓm
EYE Sunlux Super Ace	15000ℓm	25000ℓm	45000ℓm	130000ℓm

HOW IT WORKS

1. The built-in starter consists of a glow starter, a ceramic resistor and a starter accelerator, and gives reliable ignition with relatively low pulse.
2. With new design, alumina ceramic tube keeps sodium loss to a minimum. Therefore, the excessive amount of Na amalgam required for conventional high pressure sodium lamps is not necessary.
3. The minimum of amalgam used is sufficient enough to suppress increase in lamp voltage.

APPLICATIONS

Can be operated anywhere mercury lamps or high pressure sodium lamps are used, such as streets, public spaces, factories or sports facilities. Perfect for the user with conventional mercury lamp facilities who wants to improve lighting and lower energy costs.

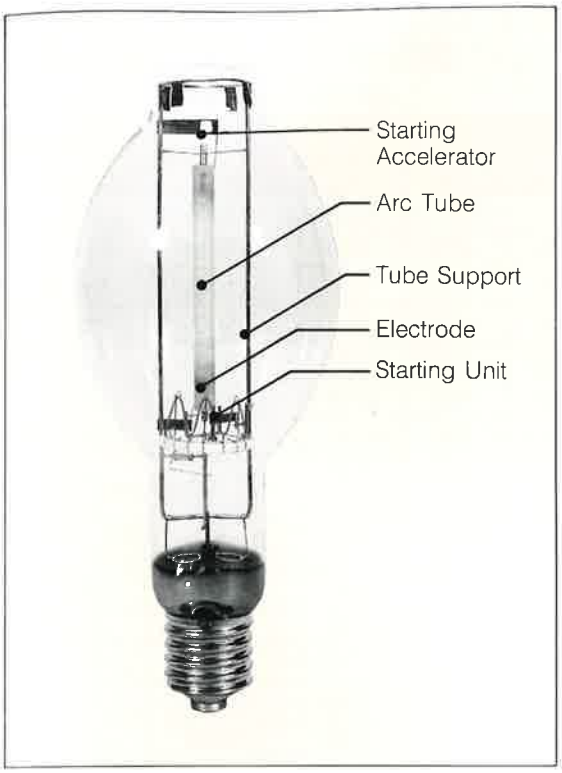


PHYSICAL DATA AND CHARACTERISTICS

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
NH150FLC	150	BT90	E39/E40	12	206	145	130	1.50	14500	24000
NH220FLC	220	BT90	E39/E40	12	221	150	130	2.13	24000	24000
NH360FLC	360	BT116	E39/E40	12	286	181	135	3.25	43000	24000
NH940BFLC	940	BT180	E39/E40	6	386	241	265	4.00	123000	24000
NH150LC	150	BT90	E39/E40	12	206	145	130	1.50	15000	24000
NH220LC	220	BT90	E39/E40	12	221	150	130	2.13	25000	24000
NH360LC	360	BT116	E39/E40	12	286	181	135	3.25	45000	24000
NH940BLC	940	BT180	E39/E40	6	386	241	265	4.00	130000	24000

NOTE: Initial lumens are values after 100 hours of operation. Burning position/Any

EYE Sunlux Ace



The EYE Sunlux Ace operates with a mercury lamp ballast of associated wattage which results in a tremendously increased light output together with a substantial power savings.

In addition Iwasaki has introduced supplementary combination ballasts which, when added to existing mercury lamp installations, allow changeover to EYE Sunlux Ace lamps of lower wattage. The result is an increase of light output with significant power cost savings.
This lamp can operate on standard mercury reactor or autotransformer-type ballasts only.

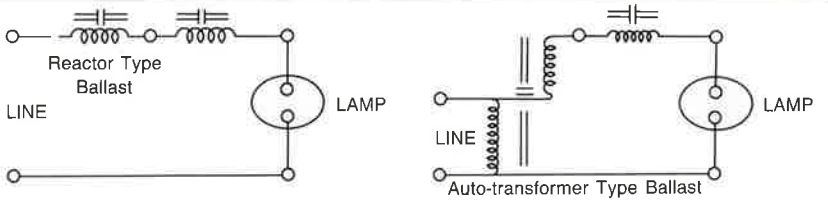
COMBINATION OF EYE SUNLUX ACE AND MERCURY LAMP BALLAST

Sunlux Ace	Mercury Lamp Ballast (Reactor or Auto transformer)
75W	80W
110W	125W
220W	250W
360W	400W
660W	700W
940W	1000W

Existing Mercury Lamp	Existing Mercury Ballast	Interchangable Sunlux Ace	Supplementary Combination Ballasts
1000W	1000W-reactor or autotransformer	660W	BN6.6L
		360W	BN3.6/H10
700W	700W-reactor or autotransformer	360W	BN3.6L
400W	400W-reactor or autotransformer	220W	BN2.2L
250W	250W-reactor or transformer	110W	BN1.1L
125W	125W-reactor or transformer	75W	BN0.75L

REMARKS: 1. When ordering, please mention the exact type of Supplementary Combination Ballast, mains voltage and frequency.
2. These Supplementary Combination Ballasts are connected as shown in the diagram.

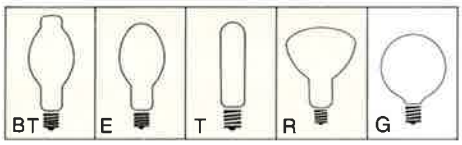
Supplementary Combination Ballast



OPERATING INSTRUCTIONS

1. EYE Sunlux Ace lamps operate on standard Mercury Vapor Reactor or Auto-transformer type ballasts. The use of incompatible ballasts will result in failure or damage to the lamp.
2. The wiring distance between the ballast and the lamp is extendable up to 50 m. (25 m maximum for 75W and 110W rating lamp).
3. At end of it's life, replace lamp as soon as possible after extinction. Due to the high vacuum within the outer envelope, ensure that precautions are taken if the outer envelop is accidentally damaged.
4. Refer to other pages for lighting fixture information concerning EYE Sunlux Ace or the existing Sunlux lamp, as the characteristics of lamps may be affected due to the type of lighting fixture in which the lamp is used.

EYE SunluxAce



PHYSICAL DATA AND CHARACTERISTICS

E & BT Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
NH75F/LX/70S	75	E70	E27	24	153	98	115	0.80	6200	20000
NH75F/LX/70H	75	E70	E27 or B22d-3	24	153	98	115	0.80	6200	20000
NH110FLX	110	BT70	E27 or B22d-3	24	175	115	125	1.15	11000	24000
NH150FLX	150	BT90	E40	12	206	145	130	1.50	15000	24000
NH180FLX	180	BT90	E40	12	221	146	120	1.90	19000	24000
NH220FLX	220	BT90	E40	12	221	146	130	2.13	26500	24000
NH270FLX	270	BT116	E40	12	290	185	130	2.50	33000	24000
NH360FLX	360	BT116	E40	12	290	185	135	3.25	47500	24000
NH660FLX	660	BT150	E40	6	370	240	140	5.40	95000	24000
NH940FLX	940	BT180	E40	6	390	245	145	7.50	141000	24000
NH75/LX/70S	75	E70	E27	24	153	98	115	0.80	6500	20000
NH75/LX/70H	75	E70	E27 or B22d-3	24	153	98	115	0.80	6500	20000
NH110LX	110	BT70	E27 or B22d-3	24	175	115	125	1.15	11600	24000
NH150LX	150	BT90	E40	12	206	145	130	1.50	15500	24000
NH180LX	180	BT90	E40	12	221	146	120	1.90	20000	24000
NH220LX	220	BT90	E40	12	221	146	130	2.13	28000	24000
NH270LX	270	BT116	E40	12	290	185	130	2.50	35000	24000
NH360LX	360	BT116	E40	12	290	185	135	3.25	50000	24000
NH660LX	660	BT150	E40	6	370	240	140	5.40	100000	24000
NH940LX	940	BT180	E40	6	390	245	145	7.50	148000	24000

T Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
NHT220LX	220	T48	E40	12	252	150	130	2.13	28000	24000
NHT360LX	360	T48	E40	12	280	175	135	3.25	50000	24000
NHT660LX	660	T55	E40	12	325	205	140	5.40	100000	24000
NHT940LX	940	T67	E40	12	370	240	145	7.50	148000	24000

R Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	Lamp		Beam Lumens (ℓm)	Max. Light Intensity (cd)	Rated Av. Life (hrs)
						Voltage (V)	Current (A)			
NHR75LX	75	R126	E27 or B22d-3	6	195	115	0.80	0~67.5° 3700 0~90° 4400	1120	16000
NHR110LX	110	R126	E27 or B22d-3	6	195	125	1.15	0~67.5° 6200 0~90° 7400	1900	24000
NHR220LX	220	R165	E40	6	305	130	2.13	0~67.5° 17200 0~90° 20000	5000	24000
NHR270LX	270	R180	E40	6	315	130	2.50	0~67.5° 20900 0~90° 26200	6500	24000
NHR360LX	360	R180	E40	6	315	135	3.25	0~67.5° 27500 0~90° 36000	8200	24000
NHR660LX	660	R280	E40	1	410	140	5.40	0~67.5° 55600 0~90° 72000	16500	24000
NHR940LX	940	R280	E40	1	410	145	7.50	0~67.5° 85000 0~90° 110000	25000	24000

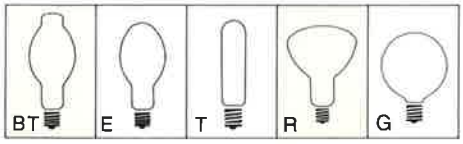
NOTE: NH-LX indicates clear lamp, NH-F. LX coated lamp, and NHR-LX reflector lamp
Initial lumens is the value after 100 hrs of operation.
Burning position: Any
NH75/LX/70S indicates soft glass and NH75/LX/70H hard glass.

EYE Improved Color Rendering Sunlux Ace

The EYE Improved Color Rendering Sunlux Ace lamp is similar to the LX type in appearance, dimensions, and type of starting mechanism, but boasts improved color rendition characteristics without sacrificing efficiency.

FEATURES

1. High efficiency with improved color rendition (Ra = 60)
2. Operates with standard mercury lamp ballast
3. Provides warm light color (Color temperature Tc = 2150 K)



PHYSICAL DATA AND CHARACTERISTICS

BT Bulb Series

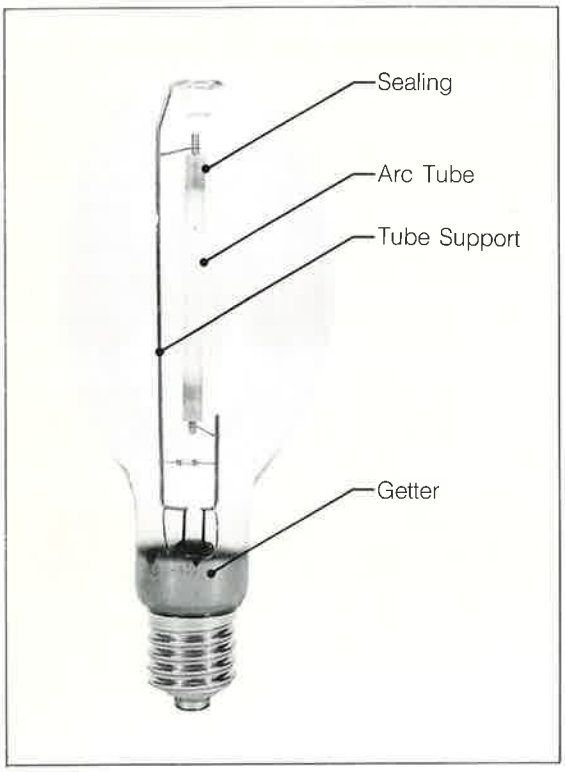
Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
NH220FDLX	220	BT90	E40	12	221	146	130	2.13	19000	24000
NH360FDLX	360	BT116	E40	12	290	185	135	3.25	36000	24000
NH660FDLX	660	BT150	E40	6	370	240	140	5.40	69000	24000
NH220DLX	220	BT90	E40	12	221	146	130	2.13	20000	24000
NH360DLX	360	BT116	E40	12	290	185	135	3.25	38000	24000
NH660DLX	660	BT150	E40	6	370	240	140	5.40	73000	24000

R Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	Lamp		Beam Lumens (ℓm)	Max. Light Intensity (cd)	Rated Av. Life (hrs)
						Voltage (V)	Current (A)			
NHR220DLX	220	R165	E40	6	305	130	2.13	0~65° 12000 0~90° 14500	3200	24000
NHR360DLX	360	R180	E40	6	315	135	3.25	0~65° 22000 0~90° 27000	5900	24000
NHR660DLX	660	R280	E40	1	410	140	5.40	0~65° 41000 0~90° 53500	11000	24000

NOTE: Initial lumens are values after 100 hours of operation.
Burning position: Any

EYE Sunlux



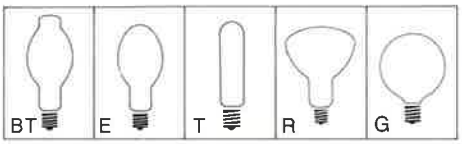
IWASAKI's most popular High Pressure Sodium Lamp

FEATURES

1. **High Efficiency**
   Features lamp lumens which are twice as intense as mercury lamps rated at the same wattage
2. **Warmth of Color**
   Warm color in comparison with that of mercury lamps
   Color Temperature: 2100 K
   Average Color Rendition: Ra = 29

OPERATING INSTRUCTIONS

1. As no restriction is imposed on the type of wiring cables connecting the ballast and the lamp, any cables including 600 IV cable, F cable, cabtyre cable, or CV power cable can be used. The wiring distance between the ballast and the lamp is extendable up to 100m (15m maximum for 70W and 6m maximum for 35W and 50W rating lamps).
2. Ensure that existing ballasts which are used in conjunction with new types are in good serviceable condition. Ballasts used over a long period may deteriorate and should be replaced as a preventive measure.



PHYSICAL DATA AND CHARACTERISTICS

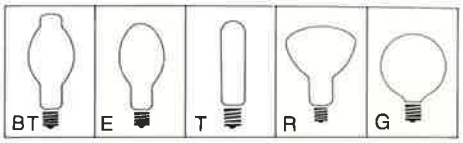
E & BT Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
NH100F	100	E75	E40	12	181	127	100	1.20	9500	24000
NH150F	150	E90	E40	12	221	146	100	1.80	14000	24000
NH250F	250	E90	E40	12	221	146	100	3.00	25800	24000
NH400F	400	E120	E40	12	280	185	105	4.40	47800	24000
NH700F	700	BT150	E40	6	370	240	105	7.50	84000	24000
NH1000F	1000	BT180	E40	6	390	245	110	10.30	125000	24000
NH100	100	E75	E40	12	181	127	100	1.20	10000	24000
NH150	150	E90	E40	12	221	146	100	1.80	14500	24000
NH250	250	E90	E40	12	221	146	105	3.00	27500	24000
NH400	400	E120	E40	12	285	185	105	4.40	50000	24000
NH700	700	BT150	E40	6	370	240	105	7.50	88000	24000
NH1000	1000	BT180	E40	6	390	245	110	10.30	133000	24000

T Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
NHT70	70	T38	E27	24	153	104	90	0.98	6000	24000
NHT100	100	T48	E40	12	212	127	100	1.20	10000	24000
NHT150	150	T48	E40	12	212	127	100	1.80	14500	24000
NHT250	250	T48	E40	12	252	150	100	3.00	27500	24000
NHT400	400	T48	E40	12	280	175	105	4.40	50000	24000
NHT700	700	T55	E40	12	325	205	105	7.50	88000	24000
NHT1000	1000	T67	E40	12	370	240	110	10.30	133000	24000
NHT1000B	1000	T67	E40	12	370	222	250	4.70	140000	24000

Please refer to next page for R, G and E Bulb Series



PHYSICAL DATA AND CHARACTERISTICS

R Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	Lamp		Beam Lumens (ℓm)	Max. Light Intensity (cd)	Rated Av. Life (hrs)
						Voltage (V)	Current (A)			
NHR150	150	R165	E40	6	310	100	1.80	0~65° 8500 0~90° 9700	2200	24000
NHR250	250	R165	E40	6	310	100	3.00	0~65° 17400 0~90° 19800	5500	24000
NHR400	400	R180	E40	6	320	105	4.40	0~65° 29800 0~90° 33600	8600	24000

G Bulb Series

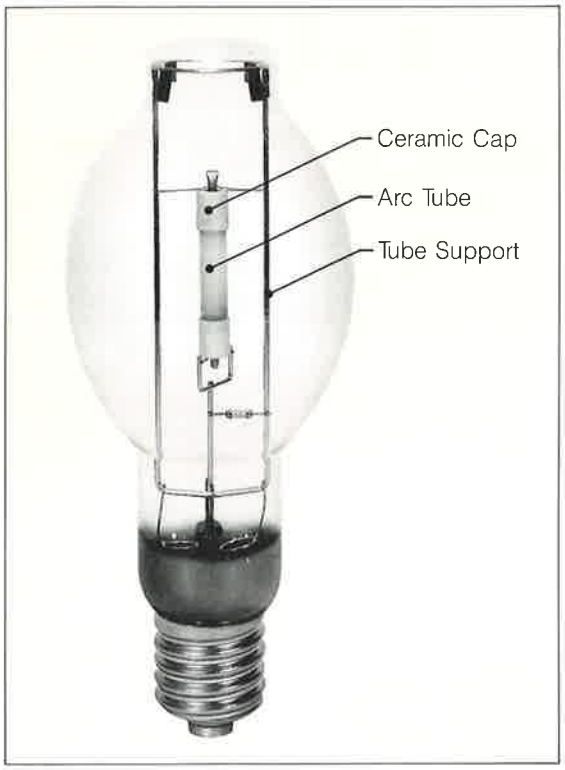
Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
						Voltage (V)	Current (A)		
NHG250	250	G150	E40	6	255	100	3.0	27500	24000
NHG250F	250	G150	E40	6	255	100	3.0	25800	24000

E Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
NH35F/LV/55H	35	E55	E27	12	135	84	52	0.83	2150	16000
NH50F/LV/55H	50	E55	E27	12	135	84	52	1.18	3800	24000
NH50F/HV/70S	50	E70	E27	24	153	98	90	0.72	3800	24000
NH50F/N/HV/70S	50	E70	E27	24	153	98	90	0.72	3800	16000
NH70F/LV/55H	70	E55	E27	12	135	84	52	1.60	5800	24000
NH70F/HV/70S	70	E70	E27	24	153	98	90	0.98	5800	24000
NH70F/N/HV/70S	70	E70	E27	24	153	98	90	0.98	5800	16000
NH100F/LV/55H	100	E55	E27	12	135	84	55	2.10	8800	24000
NH150F/LV/55H	150	E55	E27	12	138	87	55	3.20	15000	24000
NH150F/HV/70H	150	E70	E27	24	153	98	100	1.80	14000	24000
NH150F/N/HV/70H	150	E70	E27	24	153	98	100	1.80	14000	24000
NH35/LV/55H	35	E55	E27	12	135	84	52	0.83	2250	16000
NH50/LV/55H	50	E55	E27	12	135	84	52	1.18	4000	24000
NH50/HV/70S	50	E70	E27	24	153	98	90	0.72	4000	24000
NH50/N/HV/70S	50	E70	E27	24	153	98	90	0.72	4000	16000
NH70/LV/55H	70	E55	E27	12	135	84	52	1.60	6000	24000
NH70/HV/70S	70	E70	E27	24	153	98	90	0.98	6000	24000
NH70/N/HV/70S	70	E70	E27	24	153	98	90	0.98	6000	16000
NH100/LV/55H	100	E55	E27	12	135	84	55	2.10	9500	24000
NH150/LV/55	150	E55	E27	12	138	87	55	3.20	16000	24000
NH150/HV/70H	150	E70	E24	24	153	98	100	1.80	14500	24000
NH150/N/HV/70H	150	E70	E27	24	153	98	100	1.80	14500	24000

NOTE: Meaning of symbols
LV: Low voltage S: Soft bulb HV: High voltage H: Hard bulb
N: No external ignitor is required F: Diffuse bulb
Initial lumens are values after 100 hours of operation.
Burning position: Any

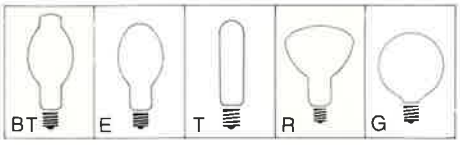
EYE Specialux (High Color Rendition)



This lamp can be operated on standard high pressure sodium lamp ballast.

FEATURES

With high sodium vapour pressures that exceeds even the level of Sunlux (high pressure sodium lamp), EYE SPECIALUX features a wide emission spectrum extending over the full visible range, developing virtually the same light source color and color rendition as the incandescent lamp. This lamp is comparable to the mercury lamp in lamp efficiency which is about three times that of the incandescent lamp and thus spares the number of lamps to be installed for a given illuminance. With this lamp, you can enjoy both the warmth of incandescent lamp lighting and the merit of power saving at the same time. Moreover, the arc tube is made of aluminium ceramics and affords a 9,000-hour life expectancy, nine times greater than the incandescent lamp.



PHYSICAL DATA AND CHARACTERISTICS

BT Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
NH150FDX/PN	150	BT90	E40	12	221	146	100	1.80	7300	9000
NH250FDX/PN	250	BT90	E40	12	221	146	100	3.00	12800	9000
NH400FDX/PN	400	BT116	E40	12	290	185	105	4.40	23000	9000
NH150DX/PN	150	BT90	E40	12	221	146	100	1.80	7800	9000
NH250DX/PN	250	BT90	E40	12	221	146	100	3.00	13500	9000
NH400DX/PN	400	BT116	E40	12	290	185	105	4.40	24000	9000

R Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	Lamp		Beam Lumens (ℓm)	Max. Light Intensity (cd)	Rated Av. Life (hrs)
						Voltage (V)	Current (A)			
NHR150DX/PN	150	R165	E40	6	305	100	1.80	0~65° 4800 0~90° 5900	1400	9000
NHR250DX/PN	250	R165	E40	6	305	100	3.00	0~65° 8000 0~90° 9500	2200	9000
NHR400DX/PN	400	R180	E40	6	315	105	4.40	0~65° 15500 0~90° 18000	4200	9000

WARNING

For Users of EYE High Pressure Sodium Lamps

In General

Apply for
- EYE Sunlux Super Ace
- EYE Sunlux
- EYE Specialux
- EYE Sunlux Ace
- EYE Improved Color Rendering Sunlux Ace

1. The lamp must have a suitable ballast. If it is connected directly without a ballast, the lamp will instantly fail. This is an electric discharge lamp for use only with proper auxiliary equipment, compatible with electrical specifications (e.g. rated lamp watts, supply volts and frequency, etc.) established by local authorities and the lamp manufacturer. Failure to comply with this may result in poor lamp performance and possible personal injury or property damage for which IWASAKI ELECTRIC COMPANY will not be held responsible.
2. Do not touch hot lamps, and keep away from any inflammable goods during operation or immediately after the power is turned OFF.
3. Do not scratch bulb or subject lamp. This could result in lamp breakage.
4. When installing and replacing a lamp, power must be OFF to avoid possible electric shock hazards.
5. When the lamp has failed, replacement should be made as soon as possible after power is turned OFF.
6. When replacing a lamp, check the durability of the ballast, the wiring and the luminaire. If they have deteriorated, replace them with new ones immediately.
7. The lamp must have external protection against direct contact with water to minimize the possibility of glass bulb reakage with the exception of reflector type ones, unless otherwise noted.
8. This lamp is suitable for operation in any position.
9. For total supply load figures, add auxiliary watts to lamp watts.
10. When operating this lamp, the base temperature should not exceed 210°C (410°F), the outer envelope should not exceed 400°C (752°F).
    Do not use this lamp in a fixture designed for less than the rated lamp wattage.
11. Do not use this lamp in a location subject to vibration or shock, unless an adequate vibration-proof fixture is used.
12. Do not use this lamp in a corrosive atmosphere, unless an adequate corrosion resistant fixture is used.
13. The recommended ambient temperature range for this lamp is −60°C (− °F) minimum; 50°C (122°F) maximum.
14. This is a discharge lamp and requires a certain time to restart and achieve full brightness after a power interruption.

For EYE Sunlux Super Ace

1. EYE Sunlux Super Ace (LC) should be operated either with lag-type or regulator-type (CW/CWA) Mercury ballast with an open circuit voltage below 270V.
2. For the combination operation of EYE Sunlux Super Ace (LC) and a Regulator-type Mercury ballast, the supply voltage should be kept to within ±10% of the rated operating voltage of the ballast.

For EYE Sunlux Ace

1. EYE Sunlux Ace (LX) should be operated with reactor-type Mercury ballast which has an open circuit voltage below 270V.
2. The supply voltage should be kept to within ±6% of the rated operating voltage of the reactor-type ballast of EYE Sunlux Ace (LX).
3. The cable, from lamp to ballast, should be limited to 50m maximum length because of reduction of pulse volts. (25m maximum for 70W and 110W rating lamps.)

NOTE: As the supply voltage in Japan never fluctuates more than ±6%, we used this figure. Our lamps, however, can be operated with ballasts made in accordance with IEC Recommendations allowing voltage fluctuations of ±10%.

Choosing a Suitable Metal Halide Lamp

Iwasaki offers 3 different types of metal halide lamps.
Choose the correct lamp type according to your needs and conditions.

EYE Multi-Hi-Ace — Operates with mercury ballast and features built-in starter.

EYE Clean-Ace — Operates with mercury ballast and built-in starter. Features excellent color rendition equivalent to daylight.

EYE Multi-Metal Lamp — Standard type using exclusive use ballast for EYE Multi-Metal Lamp.

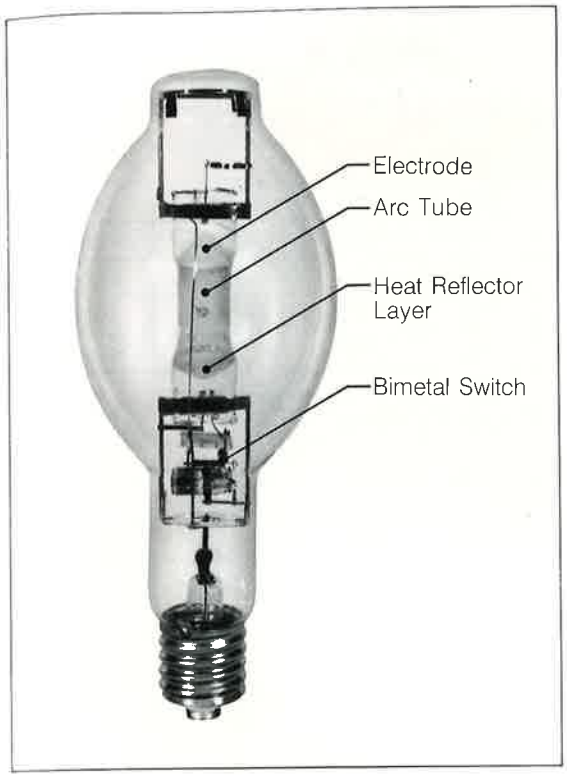
CHARACTERISTICS

Type	EYE Multi-Hi-Ace	EYE Clean-Ace	EYE Multi-Metal Lamp
	Built-in Starter		
Wattage (W)	100 ~ 1000	250, 400	250 ~ 3500
Efficiency (ℓm/W)	65 ~ 100	73, 80	80 ~ 109
Color Temp. (K)	3800 (Phosphor) 4200 (Clear)	6500	3800 (Phosphor) 4200 (Clear)
Av. Color Rendering Index (Ra)	65 (Clear) 70 (Phosphor)	90	65 (Clear) 70 (Phosphor)
Compatible Ballasts	(For Mercury Lamps) H—C, H—CC, H—T, H—TC	(For Mercury Lamps) H—C, H—CC, H—T, H—TC	(Exclusive use) M—CCP, M—RP
Applications	Factory, Lobby, Gymnasium, Public Hall, Swimming Pool, Supermarket, Arcade, Park	Store Illumination, Floodlight, Building, Sports facility, Horticulture	Factory, Athletic stadium, Sports facility, Gymnasium, Public Hall, Supermarket, Arcade, Park, Yard

BALLAST TYPE AND DESCRIPTION

Type	Description
C	Reactor (Choke)
CC	Reactor (Choke) + P.F. Capacitor
T	Auto-Transformer
TC	Auto-Transformer + P.F. Capacitor
CCP	CC + Pulse ignitor
RP	Regulator + Peaking Capacitor (Lead Peak Type)

EYE Multi-Hi-Ace (For use with Mercury Lamp Ballast only.)



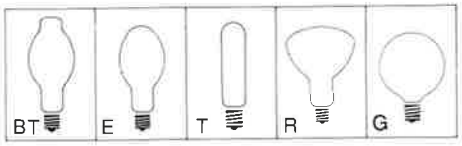
A new type of Metal Halide Lamp, EYE Multi-Hi-Ace lamp operates on the reactor or transformer type mercury lamp ballast.

FEATURES

1. The lamp exterior bulb features a built-in starter with a glow switch and ceramic heater combined.
2. Features the same light color and beam characteristics as the Multi Metal lamp, which does not feature a starter.

R WARNING

- This lamp can cause serious skin burn and eye inflamation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punctured.
- Do not use in an area where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used.
- Lamps that will automatically turn off when the outer envelope is broken or punctured are commercially available.
- Burning position is specified for this lamp, so use caution.

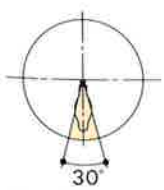


PHYSICAL DATA AND CHARACTERISTICS

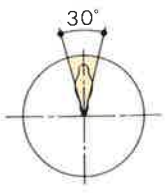
BT Bulb Series (Phospher Coating Type)

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
MF100LE/BU	100	BT70	E27	12	175	115	115	1.00	6500	6000
MF100LE/BD	100	BT70	E27	12	175	115	115	1.00	6500	6000
MF125LE/BUH	125	BT70	E27	12	175	115	125	1.15	8500	6000
MF125LE/BD	125	BT70	E27	12	175	115	125	1.15	8500	6000
MF250LE/BUH	250	BT90	E40	12	245	160	130	2.13	20000	9000
MF250LE/BD	250	BT90	E40	12	245	160	130	2.13	20000	9000
MF300LE/BUH	300	BT116	E40	12	290	185	130	2.50	25500	9000
MF300LE/BD	300	BT116	E40	12	290	185	130	2.50	25500	9000
MF400LE/BUH	400	BT116	E40	12	290	185	135	3.25	38000	9000
MF400LE/BD	400	BT116	E40	12	290	185	135	3.25	38000	9000
MF700LE/BUH	700	BT150	E40	6	370	240	140	5.40	58000	9000
MF700LE/BD	700	BT150	E40	6	370	240	140	5.40	58000	9000
MF1000LE/BUH	1000	BT180	E40	6	390	245	145	7.50	87000	9000
MF1000LE/BD	1000	BT180	E40	6	390	245	145	7.50	87000	9000

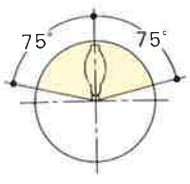
Burning Position



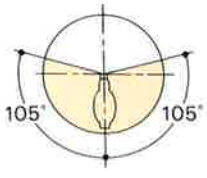
Base up (BU)/(100W)



Base down (BD)/(100W)



Base down (BD)

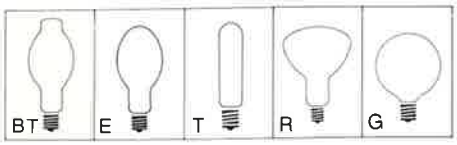


Base up/Base horizontal/(BUH)

NOTE: Clear type is shown on next page.

EYE Multi-Hi-Ace

(For use with Mercury Vapor Lamp Ballast only.)

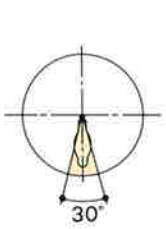


PHYSICAL DATA AND CHARACTERISTICS

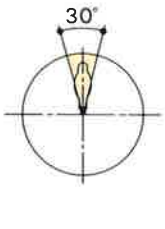
BT Bulb Series (Clear Type)

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
M100LE/BU	100	BT70	E27	12	175	115	115	1.00	7000	6000
M100LE/BD	100	BT70	E27	12	175	115	115	1.00	7000	6000
M125LE/BUH	125	BT70	E27	12	175	115	125	1.15	9000	6000
M125LE/BD	125	BT70	E27	12	175	115	125	1.15	9000	6000
M250LE/BUH	250	BT90	E40	12	245	160	130	2.13	21500	9000
M250LE/BD	250	BT90	E40	12	245	160	130	2.13	21500	9000
M300LE/BUH	300	BT116	E40	12	290	185	130	2.50	27000	9000
M300LE/BD	300	BT116	E40	12	290	185	130	2.50	27000	9000
M400LE/BUH	400	BT116	E40	12	290	185	135	3.25	40000	9000
M400LE/BD	400	BT116	E40	12	290	185	135	3.25	40000	9000
M700LE/BUH	700	BT150	E40	6	370	240	140	5.40	60000	9000
M700LE/BD	700	BT150	E40	6	370	240	140	5.40	60000	9000
M1000LE/BUH	1000	BT180	E40	6	390	245	145	7.50	90000	9000
M1000LE/BD	1000	BT180	E40	6	390	245	145	7.50	90000	9000

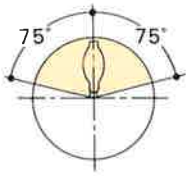
Burning Position



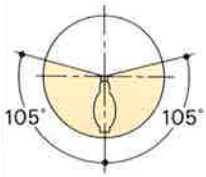
Base up (BU)/(100W)



Base down (BD)/(100W)

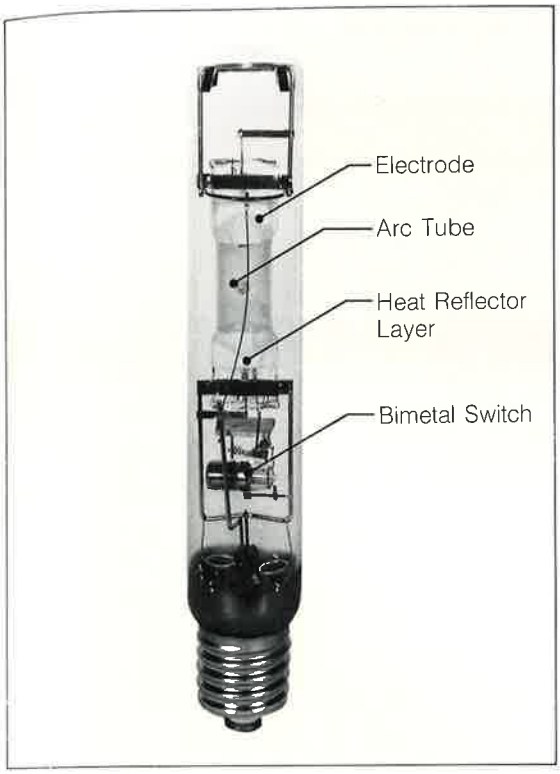


Base down (BD)



Base up/Base horizontal (BUH)

EYE Clean-Ace (For use with Mercury Lamp Ballast only.)



With its excellent color rendering properties, this metal halide lamp features a light color which is closer to natural daylight than that of any other H.I.D. lamp.

FEATURES

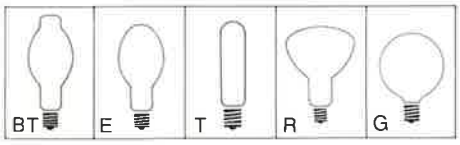
1. Excellent color rendition virtually equivalent to daylight.
2. Operation with inexpensive mercury lamp ballast.
3. Remarkable power savings due to high efficiency and improved life expectancy.
4. Brightness approximately 1.5 times that of mercury lamp of equal wattage (400W).

Color temperature	6500K
Average color rendition	Ra:90

REMARKS 1. The operation of EYE Clean-Ace lamps is limited to the Reactor and/or Auto-transformer ballast for mercury vapor lamp.
2. Variation of the line volts should be kept within ±6% of the rated volgage of the ballast.

R WARNING

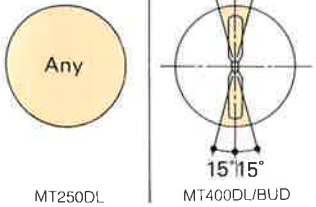
- This lamp can cause serious skin burn and eye inflamation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punctured.
- Do not use in an area where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used.
- Lamps that will automatically turn off when the outer envelope is broken or punctured are commercially available.
- Burning position is specified for this lamp, so use caution.



PHYSICAL DATA AND CHARACTERISTICS

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp Voltage (V)	Lamp Current (A)	Approx. Initial Lumens (ℓm) (1)	Rated Av. Life (hrs) (2)
MT250DL	250	T48	E40	12	245	160	130	2.13	18200	9000
MT400/DL/BUD	400	T48	E40	12	290	185	135	3.25	32000	9000
MF250DL	250	BT100	E40	12	245	160	130	2.13	14500	9000
MF400DL	400	BT116	E40	12	290	185	135	3.25	24500	9000
M250DL	250	BT100	E40	12	245	160	130	2.13	15500	9000
M400DL	400	BT116	E40	12	290	185	135	3.25	26500	9000

Burning Position

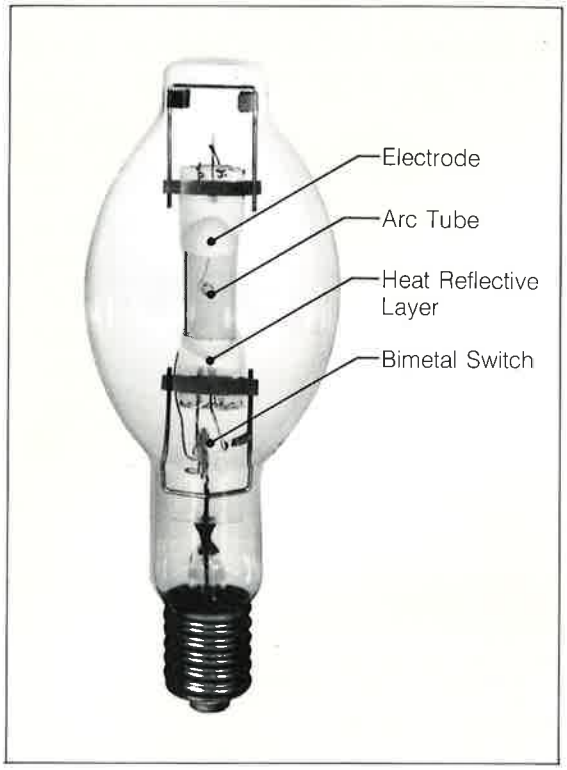


MT250DL
M(F)250DL
M(F)400DL

MT400DL/BUD

NOTE: (1) This lumen is at vertical burning position. Lumen at horizontal burning position is 14,500 ℓm for M250DL, 13,500ℓm for MF250DL, 25,000ℓm for M400DL and 23,000ℓm for MF400DL.
(2) This life is at vertical burning position. Life at horizontal burning position is 6000hrs for M(MF)250DL and M(MF)400DL.
- For use in enclosed fixtures only.
- Values in lamp voltage and lamp current stated in the above table will vary somewhat according to the supply voltage.

EYE Multi-Metal (For use with Metal Halide Lamp Ballast and ignitor.)



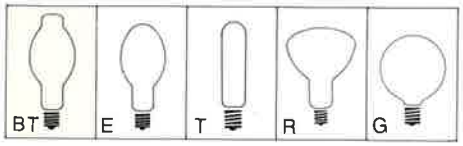
EYE Multi-Metal lamp provides well balanced white light

FEATURES

1. Produces sharp white light featuring continuous spectra across the visible region.
2. Provides high efficiency and is 1.8 times brighter than mercury vapor lamp of equal wattage (at 400W).

R WARNING

- This lamp can cause serious skin burn and eye inflamation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punctured.
- Do not use in an area where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used.
- Lamps that will automatically turn off when the outer envelope is broken or punctured are commercially available.
- Burning position is specified for this lamp, so use caution.

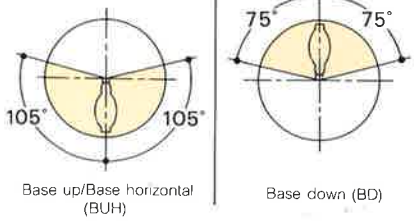


PHYSICAL DATA AND CHARACTERISTICS

BT Bulb Series (Phospher Coating Type)

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Req. Starting Voltage (v)	Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)			
MF250/BUH	250	BT100	E40	12	245	160	130	2.13	1000	20000	9000
MF250/BD	250	BT100	E40	12	245	160	130	2.13	1000	20000	9000
MF400/BUH	400	BT116	E40	12	290	185	135	3.25	1000	38000	10000
MF400/BD	400	BT116	E40	12	290	185	135	3.25	1000	38000	10000
MF700/BUH	700	BT150	E40	6	370	240	140	5.40	1000	58000	9000
MF700/BD	700	BT150	E40	6	370	240	140	5.40	1000	58000	9000
MF1000A/BUH	1000	BT180	E40	6	390	245	145	7.50	1000	87000	9000
MF1000A/BD	1000	BT180	E40	6	390	245	145	7.50	1000	87000	9000
MF1000B/BUH	1000	BT180	E40	6	390	245	250	4.50	1000	106000	9000
MF1000B/BD	1000	BT180	E40	6	390	245	250	4.50	1000	106000	9000
MF1500B/BUH	1500	BT180	E40	6	390	245	250	6.40	1000	140000	3000
MF1500B/BD	1500	BT180	E40	6	390	245	250	6.40	1000	140000	3000
MF2000B/BUH	2000	BT200	E40	1	490	310	230	9.20	1200	180000	6000
MF2000B/BD	2000	BT200	E40	1	490	310	230	9.20	1200	180000	6000

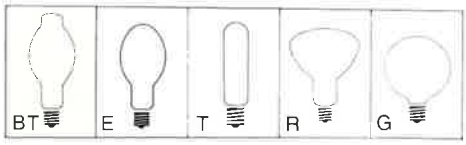
Burning Position



Base up/Base horizontal (BUH)

Base down (BD)

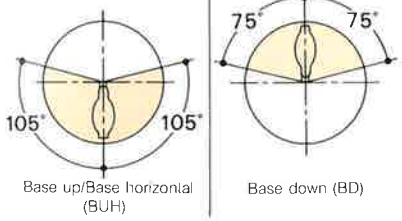
NOTE: Clear type is shown on next page.



BT Bulb Series (Clear Type)

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Req. Starting Voltage (v)	Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)			
M250/BUH	250	BT100	E40	12	245	160	130	2.13	1000	21500	9000
M250/BD	250	BT100	E40	12	245	160	130	2.13	1000	21500	9000
M400/BUH	400	BT116	E40	12	290	185	135	3.25	1000	40000	10000
M400/BD	400	BT116	E40	12	290	185	135	3.25	1000	40000	10000
M700/BUH	700	BT150	E40	6	370	240	140	5.40	1000	60000	9000
M700/BD	700	BT150	E40	6	370	240	140	5.40	1000	60000	9000
M1000A/BUH	1000	BT180	E40	6	390	245	145	7.50	1000	90000	9000
M1000A/BD	1000	BT180	E40	6	390	245	145	7.50	1000	90000	9000
M1000B/BUH	1000	BT180	E40	6	390	245	250	4.50	1000	109000	9000
M1000B/BD	1000	BT180	E40	6	390	245	250	4.50	1000	109000	9000
M1500B/BUH	1500	BT180	E40	6	390	245	250	6.40	1000	145000	3000
M1500B/BD	1500	BT180	E40	6	390	245	250	6.40	1000	145000	3000
M2000B/BUH	2000	BT200	E40	1	490	310	230	9.20	1200	185000	6000
M2000B/BD	2000	BT200	E40	1	490	310	230	9.20	1200	185000	6000

Burning Position



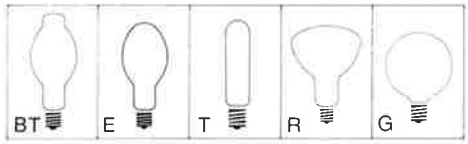
Base up/Base horizontal (BUH)

Base down (BD)

NOTE: 1. For use in enclosed fixtures only.
2. Values in lamp voltage and lamp current stated in the above table will vary somewhat according to the supply vodltage.

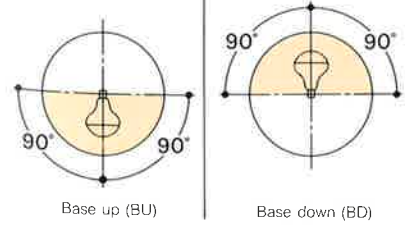
Reflector Bulb Series

(For use with Multi-Metal Discharge Lamp Ballast and ignitor.)



Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	Lamp		Beam Lumens (ℓm)	Max. Light Intensity (cd)	Rated Av. Life (hrs)
						Voltage (V)	Current (A)			
MRF250/BU	250	R180	E40	6	315	130	2.13	0~65° 12500 0~90° 13700	1000	7500
MRF250/BD	250	R180	E40	6	315	130	2.13	0~65° 12500 0~90° 13700	1000	7500
MRF400/BU	400	R180	E40	6	315	135	3.25	0~65° 19000 0~90° 22000	1000	7500
MRF400/BD	400	R180	E40	6	315	135	3.25	0~65° 19000 0~90° 22000	1000	7500
MRF1000/BU	1000	R280	E40	1	410	250	4.50	0~65° 54000 0~90° 64000	1000	7500
MRF1000/BD	1000	R280	E40	1	410	250	4.50	0~65° 59000 0~90° 64000	1000	7500

Burning Position



Base up (BU)

Base down (BD)

NOTE: 1. For use in enclosed fixtures only.
2. Values in lamp voltage and lamp current stated in the above table will vary soamewhat according to the supply voltage.

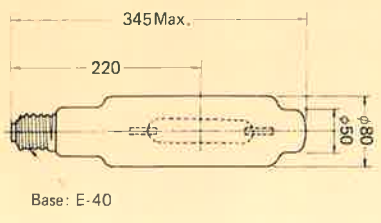
EYE Multi-Metal

Tubular Bulb Series (For use with Multi-Metal Lamp Ballast.)

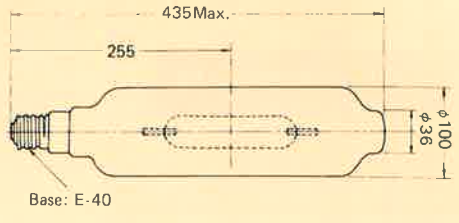
EYE Multi-Metal Lamps in Tubular bulb series are available with "Accelerated Re-start" type, "Ignitor-less Start" and "Instant Re-start" models which include the same characteristics as the conventional BT or Reflector bulb series.

Dimensions

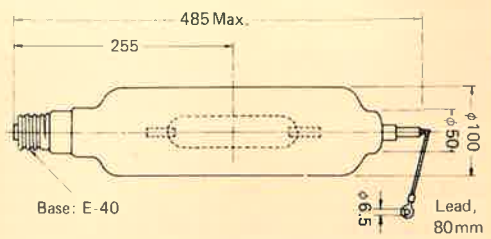
MT1000A-BH-L
MT1000B-BH-N



MT2000B-BH-N
MT3500B-BH-N
MT2000B-BH-L



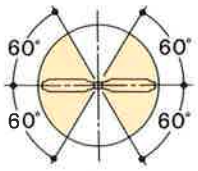
MT2000B-BH-I



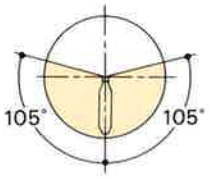
PHYSICAL DATA AND CHARACTERISTICS

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Req. Starting Voltage (V)	Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Curent (A)			
MT125/BUH	125	T38	E27	24	163	117	125	1.15	1000	8000	4000
MT250/BH	250	T48	E40	12	220	150	130	2.13	1000	18000	6000
MT400/BH	400	T48	E40	12	280	175	135	3.25	1000	32000	6000
MT1000A-BH-L	1000	T80	E40	12	345	220	145	7.50	1200	85000	3000
MT1000B-BH-N	1000	T80	E40	12	345	220	230	4.70	4000	90000	3000
MT2000B-BH-N	2000	T100	E40	12	435	255	230	9.20	4000	200000	2000
MT2000B-BH-L	2000	T100	E40	12	435	255	230	9.20	360	200000	2000
MT2000B-BH-I	2000	T100	E40	12	485	255	230	9.20	60000	200000	2000
MT3500B-BH-N	3500	T100	E40	12	435	255	230	16.00	4000	350000	1500

Burning Position



Base horizontal (BH)

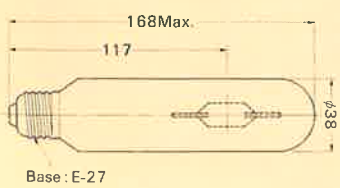


Base up/Base horizontal (BUH)

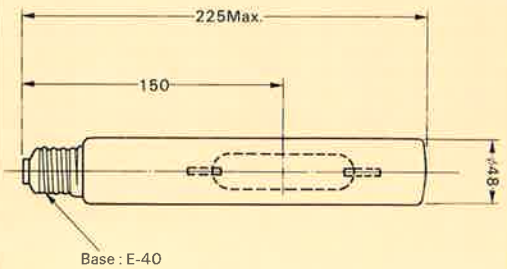
NOTE: 1. For use in enclosed fixtures only.
2. Values in lamp voltage and lamp current stated in the above table will vary somewhat according to the supply voltage.

REMARKS: N: Accelerated Re-start type for use with Multi-Metal Discharge Lamp Ballast and ignitor providing a high voltage pulse.
I: Instant Re-start type for use with Multi-Metal Discharge Lamp Ballast with ignitor providing a special high voltage pulse.
L: MT1000A-BH-L: Use with mercury lamp 1000W Ballast and external ignitor.
MT2000B-BH-L: Operate with mercury lamp 2000W Ballast without ignitor but use of external ignitor is recommended when the temperature is below −10°C.

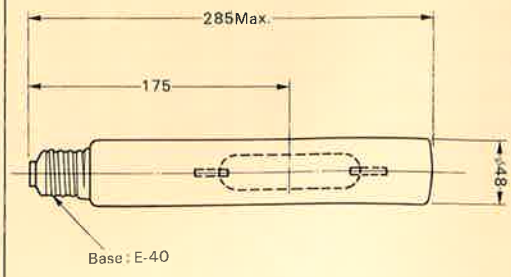
MT125/BUH



MT250/BH



MT400/BH



WARNING

For Users of EYE Metal Halide Lamps

In General

1. This is an electric discharge lamp for use only on proper circuits and with proper auxiliary equipment, compatible with electrical specifications established by the local authorities and the lamp manufacturer. Failure to comply with this may result in poor lamp performance and possible personal injury or property damage for which IWASAKI ELECTRIC COMPANY will not be held responsible.
2. Do not touch hot lamps and, keep away from any inflammable goods during operation or immediately after the power is turned OFF.
3. Do not scratch bulb or subject lamp. This could result in lamp breakage.
4. This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punchtured. Do not use in areas where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used.
   Lamps that will automatically turn off when the outer envelope is broken or punchtured are commercially available.
5. When installing and replacing a lamp, power must be OFF to avoid possible electric shock hazards.
6. When the lamp has failed, replacement should be made as soon as possible after power is turned OFF.
7. When replacing a lamp, check the durability of the ballast, the wiring and the luminaire. If they have deteriorated, replace them with new ones immediately.
8. The lamp must have external protection against direct contact with water to minimize the possibility of glass bulb breakage.
9. The lamp should be firmly, but not forcibly, screwed into the socket.
10. Check the operating position of the lamps marked on the outer envelope. Lamps should be utilized in the correct operating position.
11. The lamp lumens will vary somewhat according to the operating position.
12. The lamp must have a suitable ballast. If it is connected directly without a ballast, the lamp will instantly fail.
13. For total supply load figures, add auxiliary watts to lamp watts..
14. Variation of line volts should be kept to within ±6% of the rated voltage of the ballast.
15. Do not use this lamp in a fixture designed for less than the rated lamp wattage.
16. These lamps normally exhibit some color variation from lamp to lamp and a gradual change in color throughout life.
    Operating conditions such as mounting and/or voltage variation can also effect the color of these lamps.
17. When operating this lamp, the base temperature should not exceed 230°C (446°F), the outer envelope should not exceed 400°C (752°F).
18. Do not use this lamp in a location subject to vibration or shock, unless an adequate vibration-proof fixture is used.
19. Do not use this lamp in a corrosive atmosphere, unless an adequate corrosion resistant-fixture is used.
20. The recommended ambient temperature limit for this lamp is −5°C (23°F) minimum; 40°C (104°F) maximum.
21. This is a discharge lamp and requires a certain amount of time to restart and achieve full brightness after a power interruption.

For EYE Multi-Metal Lamps

1. This lamp should operate exclusively with ballast for metal halide lamps. Never use mercury lamp ballasts.
2. When using this lamp the fixture must be enclosed. Enclosures must be made of suitable materials. Enclosures containing EYE Multi Metal lamps must be capable of withstanding the discharge of hot quartz arc tube particles. IWASAKI ELECTRIC COMPANY has identified only tempered glass as suitable lens or diffuser material. End users should contact the fixture manufacturer to determine if a suitable enclosure is available.

For EYE Multi-Hi-Ace, EYE Clean Ace lamps

1. This lamp should be operated with the reactor or transformer type mercury ballasts. Never operate with the lamp constant type.
2. When using this lamp the fixture must be enclosed. Enclosures must be made of suitable materials. Enclosures containing EYE Multi-High-ACE lamps must be capable of withstanding the discharge of hot quartz arc tube particles. IWASAKI ELECTRIC COMPANY has identified only tempered glass as a suitable lens or diffuser material. End users should contact the fixture manufacturer to determine if a suitable enclosure is available.
3. The wire length between the ballast and lamp should be not more than 50m. (Maximum 25m for)
4. The applied voltage at the lamp terminals should not exceed 265V as this may impair or damage the internal ignitor of the lamp.

NOTE: As the supply voltage in Japan never fluctuates more than ±6%, we used this figure. Our lamps, however, can be operated with ballasts made in accordance with IEC Recommendations allowing voltage fluctuations of ±10%.

Choosing a Suitable High Pressure Mercury Lamp

Iwasaki offers 2 different types of high pressure mercury lamps. Choose the correct lamp type according to your needs and conditions.

EYE High Pressure Mercury Lamp

EYE High Pressure Mercury Lamp for Cold Atmosphere Use

For use in areas where the temperature drops below −20°C

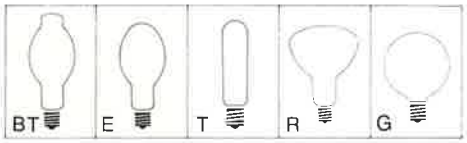
CHARACTERISTICS

Type	EYE High Pressure Mercury Lamp		EYE High Pressure Mercury Lamp for Cold Atmosphere Use	
Wattage (W)	40 ~ 2000		200 ~ 1000	
Efficiency (ℓm/w)	32.5 ~ 64.0		49.5 ~ 59.5	
Color Temperature (K)	4100 (Phosphor)	5700 (Clear)	4100 (Phosphor)	5700 (Clear)
Av. Color Rendering Index (Ra)	25 (Clear)	40 (Phosphor)	25 (Clear)	40 (Phosphor)
Compatible Ballasts	H—C, H—CC, H—T, H—TC, H—RC		H—C, H—CC, H—T, H—TC, H—RC	
Applications	Sports Facility Factory Roadway	Car parking Park & Garden Gymnasium	Skiing Field Ice skating rink Cold-storage Warehouse	

BALLAST TYPE AND DESCRIPTION

Type	Description
C	Reactor (Choke)
CC	Reactor (Choke) + P.F. Capacitor
T	Auto-Transformer
TC	Auto-Tranformer + P.F. Capacitor
RC	Regulator (with Series Capacitor)

Standard Type Mercury Lamp



PHYSICAL DATA AND CHARACTERISTICS

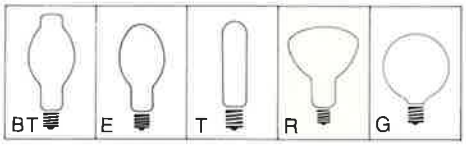
E Bulb & BT Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
HF40PD	40	E55	E27	30	127	89	90	0.53	1500	8000
HF50PD	50	E55	E27	30	127	89	95	0.62	1900	8000
HF50PD/H	50	E55	E27	30	127	89	95	0.62	1900	8000
HF80PD	80	E70	E27 or B22d-3	24	153	96	115	0.80	3600	16000
HF80PD/H	80	E70	E27 or B22d-3	24	153	96	115	0.80	3600	16000
HF100PD	100	E75	E27 or B22d-3	24	174	115	115	1.00	4500	24000
HF125PD	125	E75	E27 or B22d-3	24	174	115	125	1.15	6250	24000
HF125PD/H	125	E75	E27 or B22d-3	24	174	115	125	1.15	6250	24000
HF175PD	175	BT90	E40	12	211	130	130	1.50	8900	24000
HF250PD	250	BT90	E40	12	226	130	130	2.13	13700	24000
HF300PD	300	BT116	E40	12	290	185	130	2.50	17000	24000
HF400PD	400	BT116	E40	12	290	185	135	3.25	24000	24000
HF700PD	700	BT150	E40	6	370	240	140	5.40	44000	24000
HF1000PD	1000	BT180	E40	6	390	245	145	7.50	64000	16000
HF1000BPD	1000	BT180	E40	6	390	245	265	4.00	64000	24000
HF2000BPD	2000	BT200	E40	1	490	310	270	8.00	125000	10000
H40	40	E55	E27	30	127	89	90	0.53	1300	8000
H50	50	E55	E27	30	127	89	95	0.62	1650	8000
H50/H	50	E55	E27	30	127	89	95	0.62	1650	8000
H80	80	E70	E27 or B22d-3	24	153	96	115	0.80	3000	16000
H80/H	80	E70	E27 or B22d-3	24	153	96	115	0.80	3000	16000
H100	100	E75	E27 or B22d-3	24	174	115	115	1.00	4000	24000
H125	125	E75	E27 or B22d-3	24	174	115	125	1.15	5400	24000
H125/H	125	E75	E27 or B22d-3	24	174	115	125	1.15	5400	24000
H175	175	BT90	E40	12	211	130	130	1.50	7800	24000
H250	250	BT90	E40	12	226	130	130	2.13	12000	24000
H300	300	BT116	E40	12	290	185	130	2.50	15000	24000
H400	400	BT116	E40	12	290	185	135	3.25	21000	24000
H700	700	BT150	E40	6	370	240	140	5.40	39500	24000
H1000	1000	BT180	E40	6	390	245	145	7.50	58000	16000
H1000B	1000	BT180	E40	6	390	245	265	4.00	58000	24000
H2000B	2000	BT200	E40	1	490	310	270	8.00	120000	10000

NOTE: Elliptical bulb from 250W to 1000W is available upon request.

Power Deluxe Mercury Reflector Lamps (HRF-PD)

Power Deluxe Mercury Reflector Lamps are manufactured with hard glass and are suitable for both indoor and outdoor applications. The inside mirror of the lamp has a coating of Europium-Yttrium Phosphor providing improved color rendition.



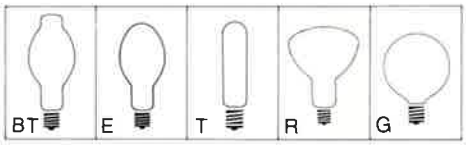
PHYSICAL DATA AND CHARACTERISTICS

R Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	Lamp		Beam Lumens (ℓm)	Max. Light Intensity (cd)	Rated Av. Life (hrs)
						Voltage (V)	Current (A)			
HRF50PD	50	R95	E27	12	135	95	0.62	0~65° 1140 0~90° 1300	280	8000
HRF80PD	80	R95	E27	12	135	115	0.80	0~65° 2000 0~90° 2500	680	16000
HRF100PD	100	R126	E27	6	190	115	1.00	0~65° 2800 0~90° 3300	800	24000
HRF125PD	125	R126	E27	6	195	125	1.15	0~65° 3700 0~90° 4300	1200	24000
HRF250PD	250	R165	E40	6	305	130	2.13	0~65° 7800 0~90° 8800	2500	24000
HRF300PD	300	R165	E40	6	305	130	2.50	0~65° 10000 0~90° 11200	2900	24000
HRF400PD	400	R180	E40	6	315	135	3.25	0~65° 14000 0~90° 15500	4000	24000
HRF700PD	700	R280	E40	1	410	140	5.40	0~65° 27000 0~90° 31000	8500	24000
HRF1000PD	1000	R280	E40	1	410	145	7.50	0~65° 38000 0~90° 46000	11000	16000

*Bulb material: Hard glass

Clear Mercury Reflector Lamps (NARROW BEAM)

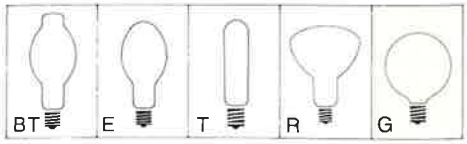


PHYSICAL DATA AND CHARACTERISTICS

R Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	Lamp		Beam Lumens (ℓm)	Max. Light Intensity (cd)	Rated Av. Life (hrs)
						Voltage (V)	Current (A)			
HR100-N	100	R130	E27	6	190	115	1.00	0~15° 1100 0~90° 2500	25000	24000
HR250-N	250	R200	E40	6	305	130	2.13	0~15° 3000 0~90° 9000	58000	24000
HR300-N	300	R200	E40	6	305	130	2.50	0~15° 3500 0~90° 10000	71000	24000
HR400-N	400	R200	E40	6	305	135	3.25	0~15° 5300 0~90° 13500	90000	24000
HR700-N	700	R280	E40	1	410	140	5.40	0~15° 9000 0~90° 25000	155000	24000
HR1000-N	1000	R280	E40	1	410	145	7.50	0~15° 13000 0~90° 36600	200000	16000

G-Type Power Deluxe Mercury Lamps (HGF-PD)

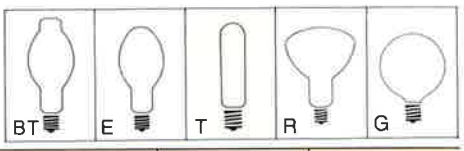


PHYSICAL DATA AND CHARACTERISTICS

G Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
HGF40PD	40	G95	E27	12	139	91	90	0.53	1400	8000
HGF50PD	50	G95	E27	12	139	91	95	0.62	1750	8000
HGF80PD	80	G125	E27	12	177	114	115	0.80	3600	16000
HGF100PD	100	G125	E27	12	177	114	115	1.00	4500	24000
HGF125PD	125	G125	E27	12	177	114	125	1.15	6250	24000
HGF250PD	250	G150	E40	12	250	170	130	2.13	12800	24000

Tubular Type Mercury Lamps

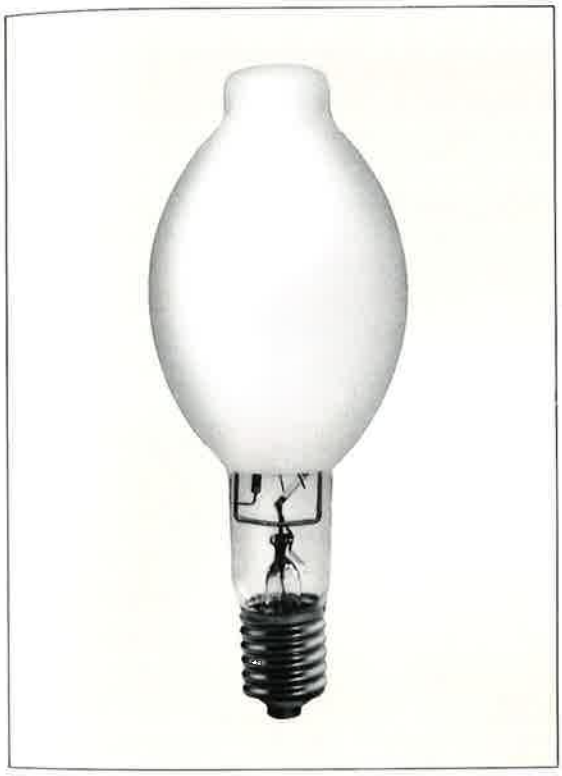


PHYSICAL DATA AND CHARACTERISTICS

Tubular Bulb Series

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
HT250	250	T48	E40	12	257	158	130	2.13	11500	16000
HT400	400	T48	E40	12	285	177	135	3.25	21000	16000

Mercury Lamps for Cold Atmosphere Use



APPLICATIONS

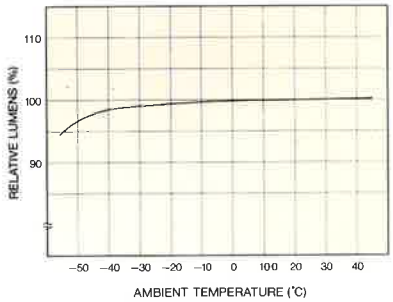
1. During winter months when temperatures go lower than −5°C
2. Inside cold storage facilities
3. In any other applications where normal mercury lamps are used.

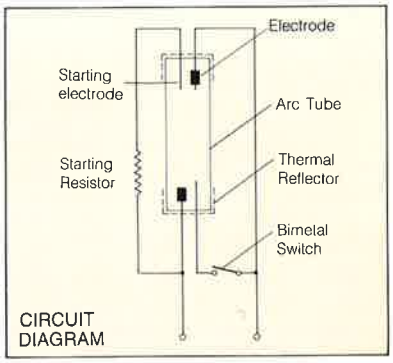
FEATURES

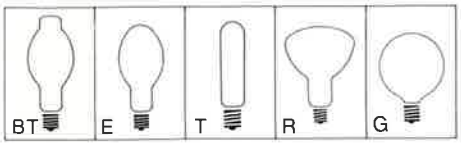
1. Can be used in temperatures from −5°C to −30°C.
2. Includes the same electrical characteristics and dimensions as standard mercury lamps, so no special fixtures or ballasts are necessary.
3. Both reactor and constant wattage ballasts may be used.
4. May also be operated in high temperatures, including the summer months, the same as normal mercury lamps.

HOW IT WORKS

1. In cold temperatures, the bimetal switch is in the closed position.
2. Because the bimetal switch is closed, an arc discharge is initiated between the auxiliary electrode and its neighboring main electrode when voltage is introduced. As the electrode heats up, mercury vapor pressure increases providing suitable starting conditions. When this discharge continues for 2 or 3 minutes, the bimetal switch opens, and a temperature equivalent to that in normal mercury lamp is achieved.
3. When the arc is discharged from the main electrode, a protective film is produced at the edge of the luminous tube so that a relatively small stabilizing ballast can be used for short periods of time.





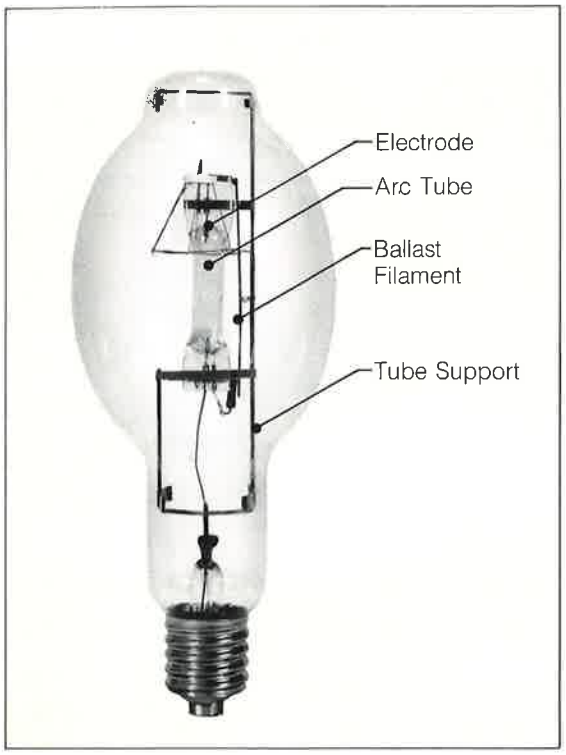


PHYSICAL DATA AND CHARACTERISTICS

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Overall Length (mm)	L.C.L. (mm)	Lamp		Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
							Voltage (V)	Current (A)		
KHF250PD	250	BT90	E40	12	226	130	130	2.13	12800	24000
KHF400PD	400	BT116	E40	12	290	185	135	3.25	22000	24000
KHF700PD	700	BT150	E40	6	370	240	140	5.40	41000	24000
KHF1000PD	1000	BT180	E40	6	390	245	145	7.50	59500	16000

*KHF-PD: Power Deluxe Mercury Lamps for cold atmpsphere use

EYE Self-Ballasted Mercury Lamps



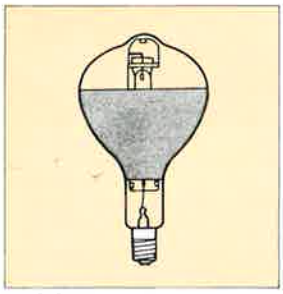
This mercury lamp can be hooked up directly to the power source, eliminating the need for a ballast.

FEATURES

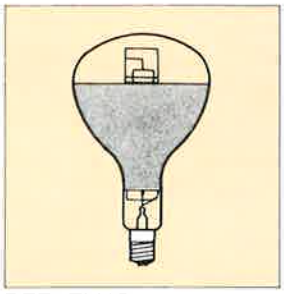
1. Features a built-in ballast filament so that it may be hooked up directly to the power source without the use of a ballast.
2. Mixed light provides more natural and improved light color
3. 1.5 times brighter than a comparable incandescent lamp, with a service life that is approximately 1.6 times longer
4. Wide variety of models including combinations of wattage, voltage, bulb style, base type, and coating

R WARNING

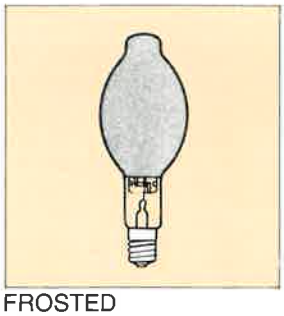
- This lamp can cause serious skin burn and eye inflamation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured.
- Do not use in an area where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used.
- Lamps that will automatically turn off when the outer envelope is broken or punctured are commercially available.
- Burning position is specified for this lamp, so use caution.



FLOOD
Frosted bulb and pure aluminum inner reflector provide uniformity of light for all flood lighting purposes.

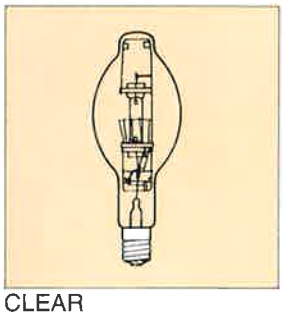


REF, FLUO
Hi-Fidelity phosphor coating on pure aluminum inner refflector for good color rendition and uniformity of light.



FROSTED
Frosted bulb provides properly diffused light with appropriate amount of glare reduction.

WHITE
Coated with Hi-Fidelity phosphor. Excellent color rendition for utilization in most lighting applications.



CLEAR
Transparent outer bulb. Filament provides color correction.

HOW IT WORKS

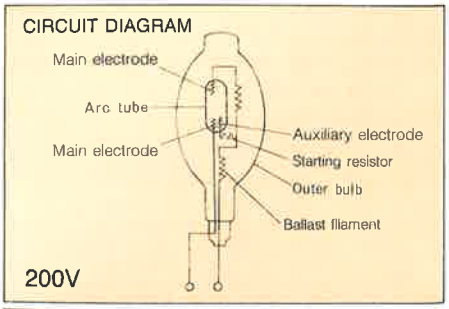
The EYE Self-Ballasted Lamp operates without the use of a ballast unit, featuring a mercury vapor arc tube connected in series with a current-limiting tungsten filament.
As it stabilizes current passing through the arc tube, this ballast filament produces incandescent light which is mixed with light produced by the mercury lamp, resulting in excellent color mixture. There are some slight differences in composition between the 200V and 100V models.

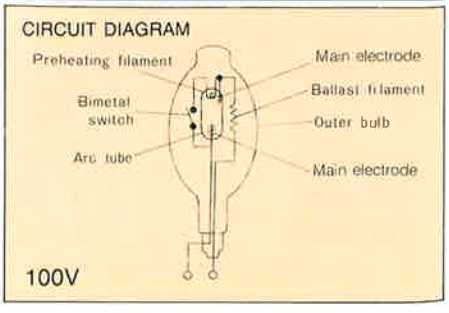
(a) 200V type

When the power is turned ON, a partial discharge is produced between the main and auxiliary electrodes via the ballast filament. Once the arc strikes between the two electrodes, the ballast filament heats up, emitting incandescent light which becomes brighter as mercury vapor pressure increases. In the meantime, the ballast continues to control the lamp voltage while providing a stable discharge.

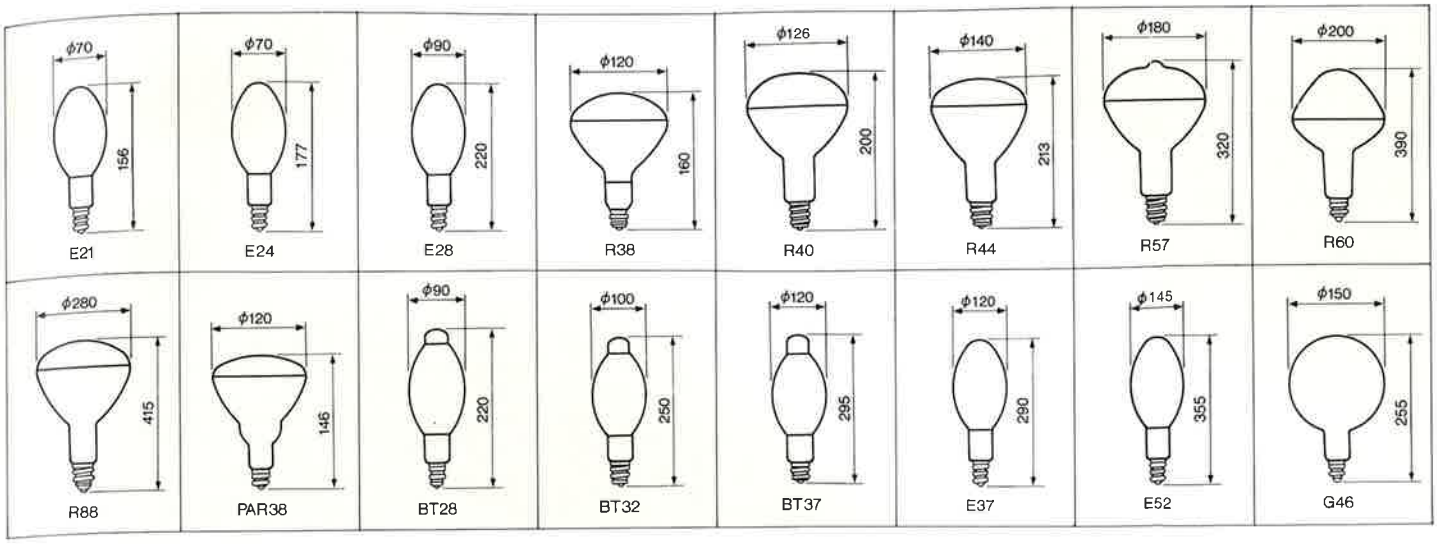
(b) 100V type

Mercury lamps require a minimum of 200V in order for the arc to strike. Because of this, it is necessary to preheat both electrodes before starting in order to operate the 100V variety. This is accomplished with the use of a preheating filament in the arc tube as well as a bimetal switch situated parallel to the arc tube.
When power is turned ON, the bimetal switch is closed. The preheating filament is then heated via the ballast filament, and when a certain temperature is reached in the tube, the bimetal switch opens. At this point, discharge between the electrodes is achieved. Other operational principles are the same as for the 200V type.





BULB SHAPES & SIZES (Scale in mm)



PHYSICAL DATA AND CHARACTERISTICS

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Max. Overall Length (mm)	L.C.L. (mm)	Current		Approx Initial Lumens (ℓm)	Approx. Beam Lumen	Rated Av. Life (hrs)
							Starting (A)	Running (A)			
100WSB/E21 White	100	E21	E27 or B22d-2	24	156	95	0.94	0.85	1100	—	6000 ①
100W-HSB/E21 White	100	E21	E27 or B22d-2	24	156	95	0.94	0.85	1100	—	6000 ②
160WSB/E24 Clear	160	E24	E27 or B22d-2	24	177	118	1.70	1.40	2400	—	8000 ①
160WSB/E24 White	160	E24	E27 or B22d-2	24	177	118	1.70	1.40	3100	—	8000 ①
160W-HSB/E24 White	160	E24	E27 or B22d-2	24	177	118	1.70	1.40	3100	—	8000 ③
160W-HSB/R38 Ref. Fluo.	160	R38	E27	12	160	96	1.70	1.40	—	1680	10000 ③
160WSB/PAR38 Ref. Fluo.	160	PAR38	E27	12	147	96	1.70	1.40	—	1680	10000 ②
160WSB/R40 Flood	160	R40	E27	12	200	137	1.70	1.40	—	1680	10000 ③
250WSB/E28 Clear	250	E28	E27 (B22d-2, E40)	12	220 (227)	140	2.70	2.20	5300	—	12000 ③
250WSB/BT28 Frosted	250	BT28	E40	12	220	140	2.70	2.20	5300	—	12000 ③
250WSB/E28 White	250	E28	E27 (B22d-2, E40)	12	220 (227)	140	2.70	2.20	5700	—	12000 ③
250WSB/R40 Flood	250	R40	E27 (E40)	12	200 (210)	142 (157)	2.70	2.20	—	3900	12000 ③
250WSB/R40 Ref. Fluo.	250	R40	E27 (E40)	12	200 (210)	142 (157)	2.70	2.40	—	3900	12000 ③
275WSB/E28 Clear	275	BT28	E40	12	226	140	2.90	2.40	5600	—	12000 ③
275WSB/BT28 White	275	BT28	E40	12	226	140	2.90	2.40	5600	—	12000 ③
275WSB/E28 White	275	E28	E27 (B22d-2, E40)	12	220 (227)	140	2.90	2.40	5700	—	12000 ③
275WSB/BT32 Clear	275	BT32	E40	12	250	160	2.90	2.40	5600	—	12000 ③
275WSB/BT32 White	275	BT32	E40	12	250	160	2.90	2.40	5900	—	12000 ③
275WSB/R40 Flood	275	R40	E27 (E40)	12	200 (210)	142 (157)	2.90	2.40	—	4000	12000 ②
275WSB/R40 Ref. Flou	275	R40	E27 (E40)	12	200 (210)	142 (157)	2.90	2.40	—	4000	12000 ②
275WSB/R44 Flood	275	R44	E27 (E40)	12	207 (213)	142 (157)	2.90	2.40	—	4000	12000 ③
275WSB/R44 Ref. Flou	275	R44	E27 (E40)	12	207 (213)	142 (157)	2.90	2.40	—	4000	12000 ③
300WSB/G46 Clear	300	G46	E40	10	255	176	3.20	2.60	6100	—	12000 ③
300WSB/G46 White	300	G46	E40	10	255	176	3.20	2.60	6500	—	12000 ③
300WSB/E28 Clear	300	E28	E40	12	227	150	3.20	2.60	6100	—	12000 ②
300WSB/E28 White	300	E28	E40	12	227	150	3.20	2.60	6500	—	12000 ②
300WSB/R40 Flood	300	R40	E27 (E40)	12	200 (210)	157	3.20	2.60	—	4200	12000 ②
300WSB/R40 Ref. Fluo.	300	R40	E27 (E40)	12	200 (210)	157	3.20	2.60	—	4200	12000 ②
300WSB/R44 Flood	300	R44	E27 (E40)	12	207 (213)	157	3.20	2.60	—	4200	12000 ③
300WSB/R44 Ref. Fluo.	300	R44	E40	12	207 (213)	157	3.20	2.60	—	4200	12000 ③

450 ~ 1250W lamps are listed on the next page.

EYE Self-Ballasted Mercury Lamps (450～1250W)

PHYSICAL DATA AND CHARACTERISTICS

Type	Watts	Bulb	Base	Std. Pkg. Qty.	Max. Overall Length (mm)	L.C.L. (mm)	Current		Approx Initial Lumens (ℓm)	Approx. Beam Lumen	Rated Av. Life (hrs)
							Starting (A)	Running (A)			
450WSB/BT37 Clear	450	BT37	E40	12	295	195	5.30	4.00	10100	—	16000③
450WSB/BT37 White	450	BT37	E40	12	295	195	5.30	4.00	10800	—	16000③
450WSB/R57 Flood	450	R57	E40	6	320	202	5.30	4.00	—	6800	16000③
450WSB/R57 Ref. Fluo.	450	R57	E40	6	320	202	5.30	4.00	—	6800	16000③
500WSB/E37 Clear	500	E37	E40	12	290	195	6.00	4.50	11000	—	16000②
500WSB/E37 White	500	E37	E40	12	290	195	6.00	4.50	14000	—	16000②
500WSB/R57 Flood	500	R57	E40	6	320	202	6.00	4.50	—	9100	16000③
500WSB/R57 Ref. Fluo.	500	R57	E40	6	320	202	6.00	4.50	—	9100	16000③
750WSB/BT46 Clear	750	BT46	E40	6	375	239	9.00	6.50	19500	—	16000③
750WSB/BT46 White	750	BT46	E40	6	375	239	9.00	6.50	21000	—	16000③
750WSB/R57 Flood	750	R57	E40	6	320	226	9.00	6.50	—	14000	16000②
750WSB/R57 Ref. Fluo.	750	R57	E40	6	320	226	9.00	6.50	—	14000	16000②
750WSB/R60 Ref. Fluo.	750	R60	E40	4	390	226	9.00	6.50	—	14000	16000③
1000WSB/BT56 Clear	1000	BT56	E40	6	395	245	9.20	6.10	29000	—	16000③
1000WSB/BT56 White	1000	BT56	E40	6	395	245	9.20	6.10	31000	—	16000③
1000WSB/E52 Clear	1000	E52	E40	6	355	215	9.20	6.10		—	16000③
1000WSB/E52 White	1000	E52	E40	6	355	215	9.20	6.10	31000	—	16000③
1000WSB/R88 Flood	1000	R88	E40	1	415	280	6.80	4.90	—	20000	16000③
1000WSB/R88 Ref. Fluo.	1000	R88	E40	1	415	280	6.80	4.90	—	20000	16000③
1250WSB/BT56 Clear	1250	BT56	E40	6	395	245	9.20	6.10	39000	—	16000③
1250WSB/BT56 White	1250	BT56	E40	6	395	245	9.20	6.10	41000	—	16000③
1250WSB/R88 Flood	1250	R88	E40	1	415	280	9.20	6.10	—	26000	16000③
1250WSB/R88 Ref. Fluo.	1250	R88	E40	1	415	280	9.20	6.10	—	26000	16000③

NOTE: 1. Lamp can be operated in any position
2. The characteristics are of 100V range lamps and 200V range lamp characteristics may vary somewhat.
3. Burning condition.
① Indoor use.
② For indoor or outdoor use: If outdoors, base-down operation lamp should be protected by a fully enclosed fixture which is adequately ventilated. Base up operation lamp can be used in open face fixture 40° below horizontal.
③ Indoor and outdoor use.
4. Deluxe White Phosphor is coated for White and Ref. Fluo. type lamps.

LIGHTING RESTRICTIONS
1. Indoor/Outdoor Uncovered Lighting
Can be used indoors or out, however an Iwasaki holder must be used for outdoor applications. The use of other holders may cause damage.
2. Indoor/Outdoor Lighting
Can be used indoors or out, however a waterproof or resistant fixture should be used for outdoor applications.

EYE Horticultural Lamps

PHYSICAL DATA AND CHARACTERISTICS

Type	Axis Intensity	Beam Spread	Beam Lumen	Total Lumen	Bulb Diameter	Overall Length
220/230V 160W-HSB/R40	500	120	1680	1750	126	195

WARNING

For Users of High Pressure Mercury Lamps and EYE Self-Ballasted Mercury Lamps

In General

1. The lamp must have a suitable ballast. If it is connected directly without a ballast, the lamp will instantly fail. This is an electric discharge lamp for use only with proper auxiliary equipment, compatible with electrical specifications (e.g. rated lamp watts, supply volts and frequency, etc.) established by local authorities and the lamp manufacturer. Failure to comply with this may result in poor lamp performance and possible personal injury or property damage for which IWASAKI ELECTRIC COMPANY will not be held responsible.
2. Do not touch hot lamps with fingers or skin, and keep away any inflammable goods during the operation or immediately after the power is turned OFF.
3. Do not scratch bulb or subject lamp to undue pressure which could result in lamp breakage.
4. This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punctured.
   Do not use where people will remain more than a few minutes unless adequate shielding or other safety precautions are used.
   Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.
5. When installing and replacing a lamp, power must be OFF to avoid possible electric shock hazards.
   The lamp should be firmly but not forcibly screwed into the socket.
6. When the lamp has failed, replacement should be made as soon as possible after power is turned OFF.
7. When replacing a lamp, check the durability of the ballast, the wiring and the luminaire. If they have deteriorated, replace with new ones immediately.
8. The lamp must have external protection against direct contact with water to minimize the possibility of glass bulb breakage, unless otherwise noted, with the exception of reflector type ones.
9. This lamp is suitable for operation in any position.
10. For total supply load figures add auxiliary watts to lamp watts
11. Variation of line volts should be kept to within the permissible range of voltage variation of the ballasts.
12. When operating this lamp, the base temperature should not exceed 210°C (410°F), and the outer envelope should not exceed 400°C (752°F).
    Do not use this lamp in a fixture designed for less than the rated lamp wattage.
13. Do not use this lamp in a location subject to vibration or shock, unless an adequate vibration-proof fixture is used.
14. Do not use this lamp in corrosive atmosphere, unless an adequate corrosion resistant fixture is used.
15. The recommended ambient temperature limit for this lamp is −5°C (23°F) minimum; 50°C (122°F) maximum.
16. This is a discharge lamp and requires a certain time to restart and achieve full brightness, after a power interruption.

Cross Reference Guide

EYE	PHILIPS	THORN	OSRAM	SYLVANIA G.T.E.	GE
H40 soft					
H50 soft					
H80 soft					
H100 soft					HR100A38
H125 soft					
H175					HR175A39
H200					
H250					HR250A37
H300					
H400					HR400A33
H700					HR700A35
H1000					HR1000A34
H1000B					HR1000A36
H2000B					
HF40PD soft					HR40/50DX45-46
HF50PD soft	HPL-N50W	MBF50W	HQL50W	HSL-BW/50	HR40/50DX45-46
HF80PD soft	HPL-N80W	MBF80W	HQL80W	HSL-BW/80	
HF100PD soft					HR100DX38
HF125PD soft	HPL-N125W	MBF125W	HQL125W	HSL-BW/125	
HF175PD	HPL-N175W				HR175DX39
HF200PD					
HF250PD	HPL-N250W	MBF250W	HQL250W	HSL-BW/250	HR250DX37
HF300PD					
HF400PD	HPL-N400W	MBF400W	HQL400W	HSL-BW/400	HR400DX33
HF700PD	HPL-N700W	MBF700W	HQL700W	HSL-BW/700	HR700DX35
HF1000PD	HPL-N1000W	MBF1000W	HQL1000W	HSL-BW/1000	HR1000DX34
HF1000B-PD					HR1000DX36
HF2000B-PD	HPL-N2000W				
HRF50PD	HPLR Comfort 50W				
HRF80PD	HPLR Comfort 80W				
HRF100PD					HR100RDXFL38
HRF125PD	HPLR125W				
HRF200PD 165* 305**					
HRF250PD 165 305	HPLR250W 168 260	MBFR250W 166 260	HQL-R250W 165 260	HSR-BW/250 165 260	
HRF300PD 165 305					
HRF400PD 180 315	HPLR400W 184 300	MBFR400W 181 300	HQL-R400W 180 300	HSR-BW/400 180 300	
HRF700PD 280 410	HPLR700W 204 328	MBFR700W 202 328			
HRF1000PD 280 410	HPLR1000W 224 380	MBFR1000W 221 380			
HRF1000B-PD					

(*upper: Max length
**down: Max dia.)

1) Please note that due to continuing research and development, some products may vary slightly from descriptions given.
2) No responsiblity for error or omissions
3) Although our lamps and those of other companies may be similar, they are not necessarily interchangeable.

EYE	PHILIPS	THORN	OSRAM	SYLVANIA G.T.E.	GE
NH100					
NH150					LU150/100
NH250					
NH400					
NH700					
NH1000					
NH100F	SON100W	SON100W	NAV-E100W	SHP100/40	
NH150F	SON150W	SON150W	NAV-E150W	SHP150	
NH250F	SON250W	SON250W	NAV-E250W	SHP250	LU250/D
NH400F	SON400W	SON400W	NAV-E400W	SHP400	LU400/D
NH700F					
NH1000F	SON1000W	SON1000W	NAV-E1000W		
NHR150					
NHR250				SHP-R/250	
NHR400					
NHT70	SON-T70W-E	SON-T70W	NAV-T70W/E	SHP-T/70/CL/E	
NHT100	SON-T100W	SON-T100W	NAV-T100W	SHP-T/100/40	
NHT150	SON-T150W	SON-T150W	NAV-T150W	SHP-T/150	
NHT250	SON-T250W	SON-T250W	NAV-T250W	SHP-T250	LU250
NHT400	SON-T400W	SON-T400W	NAV-T400W	SHP-T/400	LU400
NHT700					
NHT1000	SON-T1000W	SON-T1000W	NAV-T1000W		
NHT1000B					

NH35/LV/55H					LU35/MED
NH35F/LV/55H					LU35/D/MED
NH50/LV/55H					LU50/MED
NH50F/LV/55H					LU50/D/MED
NH70/LV/55H					LU70/MED
NH70F/LV/55H					LU70/D/MED
NH100/LV/55H					LU100/MED
NH100F/LV/55H					LU100/D/MED
NH150/LV/55H					LU150/MED
NH150F/LV/55H					LU150/D/MED
NH50/N/HV/70S (H)				SHP50/CL/I	
NH50F/N/HV/70S (H)	SON50W-I		NAV-E50W/I	SHP50/CO/I	
NH50/HV/70S (H)				SHP50/CL/E	
NH50F/HV/70S (H)		SON50W	NAV-E50W/E	SHP50/CO/E	
NH70/N/HV/70S (H)				SHP70/CL/I	
NH70F/N/HV/70S (H)	SON70W-I		NAV-E70W/I	SHP70/CO/I	
NH70/HV/70S (H)				SHP70CL/E	
NH70F/HV/70S (H)	SON70W-E	SON70W	NAV-E70W/E	SHP70CO/E	
NH50/LV/75H					LU50
NH50F/LV/75H					LU50/D

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HIGH INTENSITY DISCHARGE LAMPS

EYE	PHILIPS	THORN	OSRAM	SYLVANIA G.T.E.	GE
NH70/LV/75H					LU70
NH70F/LV/75H					LU70/D
NH100/LV/75H					LU100
NH100F/LV/75H					LU100/D
NH150/LV/75H					LU150/55
NH150F/LV/75H					LU150/55/D
NH150DX/PN					
NH250DX/PN					
NH400DX/PN					
NH150FDX/PN		SONDL-E150W			
NH250FDX/PN		SONDL-E250W		SHP250W-E (*)	
NH400FDX/PN		SONDL-E400W		SHP400W-E (*)	
NHR150DX/PN					
NHR250DX/PN					
NHR400DX/PN					
NH75/LX/70S (H)					
NH110LX					
NH220LX					LUH215/EZ
NH270LX					
NH360LX					
NH660LX					
NH940LX					
NH75F/LX/70S (H)					
NH110FLX	SON-H110W	SON-H110W	NAV-E110W	SHX110W	LUH110/D/EZ
NH150FLX					
NH220FLX	SON-H210W	SON-H210W	NAV-E210W	SHX210W	LUH215/D/EZ
NH270FLX					
NH360FLX	SON-H350W	SON-H350W	NAV-E350W	SHX350W	
NH660FLX					
NH940FLX					
NHR75LX					
NHR110LX					
NHR220LX					
NHR360LX					
NHR660LX					
NHR940LX					
NHT220LX					
NHT360LX					
NHT660LX					
NHT940LX					

*Disparity in lumen output

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EYE	PHILIPS	THORN	OSRAM	SYLVANIA G.T.E.	GE
NH220DLX					
NH220FDLX					
NHR220DLX					
NH360DLX					
NH360FDLX					
NHR360DLX					
NH660DLX					
NH660FDLX					
NHR660DLX					
M250/BUH				MS250/HOR	MVR250/U
M250/BD					MVR250/U
MF250/BUH		MBIF250W/BUH	HQI-E250W/D	MS250/C/HOR	MVR250/C/U
MF250/BD					MVR250/C/U
MRF250/BU					
M400/BUH		MBI400W/BU		MS400/$^{HOR}_{BU}$	MVR400/U
M400/BD				MS400/BD	MVR400/U
MF400/BUH	HPI400W	MBIF400W/BU H	HQI-E400W/DV	MS400/C/$^{HOR}_{BU}$	MVR400/C/U
MF400/BD				MS400/C/BD	MVR400/C/U
MRF400/BU					
M700/BUH					
M700/BD					
MF700/BUH					
MF700/BD					
M1000A/BUH					
M1000A/BD					
MF1000A/BUH			HQI-E1000W/N		
MF1000A/BD					
M1000B/BUH		MBI1000W/U		MS1000/BU	MVR1000/U
M1000B/BD				MS1000/BD	MVR1000/U
MF1000B/BUH		MBIF1000W/U		MS1000/C/BU	MVR1000/C/U
MF1000B/BD				MS1000/C/BD	MVR1000/C/U
MRF1000B/BU					
M1500B/BUH				MS1500/$^{HOR}_{BU}$	MV1500/HBU/E
M1500B/BD				MS1500/BD	MV1500/HBD/E
MF1500B/BUH					
MF1500B/BD					
M2000B/BUH					
M2000B/BD					
MF2000B/BUH					
MF2000B/BD					

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HIGH INTENSITY DISCHARGE LAMPS

EYE	PHILIPS	THORN	OSRAM	SYLVANIA G.T.E.	GE
MT125/BUH					
MT250/BH	HPI-T250W	MQI-T250W	HQI-T250W/D		
MT400/BH	HPI-T400W	MQI-T400W	HQI-T400W/DH		
MT250DL					
MT400DL/BUD					
MT1000A-BH-L	HPI-T1000W		HQI-T1000W/D		
MT1000B-BH-N					
MT2000B-BH-N	HPI-T2000W		HQI-T2000W/D		
MT2000B-BH-L			HQI-T2000W/D		
MT2000B-BH-I			HQI-TS2000W/D		
MT3500B-BH-N			HQI-T3500W/D		
MT3500B-BH-I			HQI-TS3500W/D		

M100LE/BU					
M100LE/BD					
MF100LE/BU					
MF100LE/BD					
M125LE/BUH					
M125LE/BD					
MF125LE/BUH					
MF125LE/BD					
M250LE/BUH					
M250LE/BD					
MF250LE/BUH	HPI250WBUS				
MF250LE/BD					
M400LE/BUH					MVR400/I/U
M400LE/BD					
MF400LE/BUH	HPI400WBUS				MVR400/C/I/U
MF400LE/BD					
M700LE/BUH					
M700LE/BD					
MF700LE/BUH					
MF700LE/BD					
M1000LE/BUH					MVR950/I/VBU
M1000LE/BD					MVR950/I/VBD
MF1000LE/BUH					
MF1000LE/BD					

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1-2 H.I.D. LAMP BALLASTS

THE PURPOSE OF LAMP BALLAST

HID lamps, like other electric discharge lamps, feature negative characteristics, wherein lamp pressure decreases as lamp current increases. A direct supply of power will result in permanent damage to the lamp, and therefore, the use of a ballast is necessary. The main functions of the ballast are as follows:

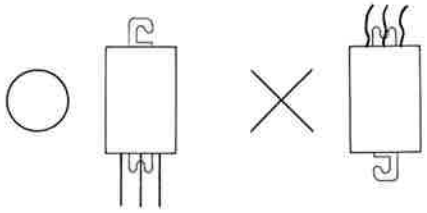
1. To transfer lamp starting voltage (secondary voltage)
2. To control lamp current for appropriate starting voltage and maintenance of stabilized lighting
3. To improve initial power ratio to high power ratio.

FEATURES

1. **Special design for outdoor use**
   EYE HID Lamp Ballasts are waterproof eliminating the need for auxiliary ballast cases.
   Ballasts for sodium and multi-metal lamps feature built-in capacitors and ignitors.
2. **Safe design**
   Ballasts for use with sodium lamps feature a built-in thermostat which automatically cuts off unnecessary voltage supply.

OPERATING INSTRUCTIONS

1. In case of outdoor use, please install the ballast as specified in the illustration below.



2. All electric characteristics are altered in case of change in input voltage.
3. When ordering, please specify the input voltage and frequency required.
4. Auto-Transformer type ballasts for H.P.Mercury, H.P. Sodium and Metal Halide Lamp are available. In case of 100V class input voltage like 120V and/or 130V, please select Auto-Transformer type ballasts (T,TC,TCP).
5. In case of wide input voltage fluctuation, constant wattage type ballasts are recommended, Variation of lamp wattage can be regulated within ±5% by 10% line voltage variation. In addition, the power factor improves substantially, approaching 95%.
6. Required ambient temperature for operation is max. 40°C at operating time. In case ambient temperature is more than 40°C, a special ballast can be supplied upon request.
7. When several ballasts are installed within one single casing, proper ventilation must by insured in order to maintain ambient temperatures of less than 40°C among the ballasts.

EXPLANATION OF BALLAST TYPE

H4CC22A50 (Example)

- H — Ballast Type
- 4 — Lamp Wattage
- CC — Circuit
- 22 — Supply Voltage
- A — Frequency
- 50 — Compatible Pole

BALLAST TYPE	
H	Mercury lamp, EYE Multi-Hi-Ace, EYE Sunlux Ace
M	EYE Multi-Metal
NH	EYE Sunlux, EYE Specialux
NX	Low pressure sodium lamp

LAMP WATTAGE			
0.35	35W	2	200W (180W)
0.4	40W	2.5	250W (220W)
0.5	50W	3	300W (270W)
0.7	70W	4	400W (360W)
0.8	80W	7	700W (660W)
1	100W	10	1000W (940W)
1.1	110W	10B	1000WB Type
1.5	150W	20B	2000W B Type

NOTE: Wattage in ( ) are for EYE Sunlux Ace lamps.

CIRCUIT	
C	Reactor (Choke) Low Power Factor
T	Auto-Transformer Low Power Factor
CC	Reactor (Choke) + P.F. Capacitor High Power Factor
TC	Auto-Transformer + P.F. Capacitor High Power Factor
CCP	CC + Pulse Ignitor
TCP	TC + Pulse Ignitor
RP	Regulator + Peaking Capacitor (Lead Peak Type)
RC	Regulator (with Series Capacitor)
RCP	RC + Pulse Ignitor
CD	CC + Dimming
RD	RC + Dimming
CDT	CD + Timer
RDT	RD + Timer

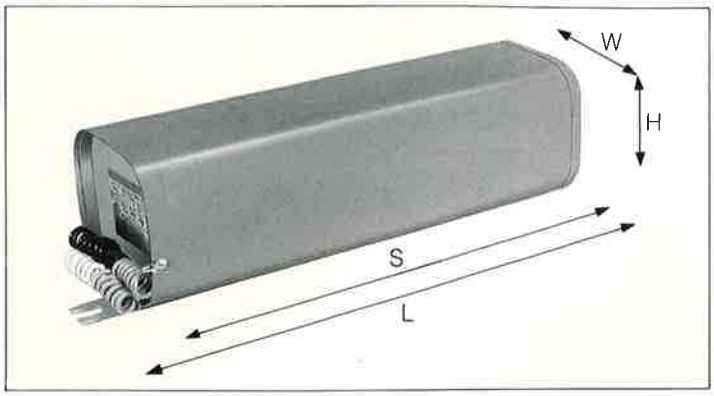
SUPPLY VOLTAGE					
12	120V	22	220V	23	230V

FREQUENCY			
A	50Hz	B	60Hz

COMPATIBLE POLE			
34	3 1/2	60	6B, 7A (Tapered)
40	4B	70	7B
50	5B	NOTE: Number in front of B indicates inside diameter of pole in inches.	

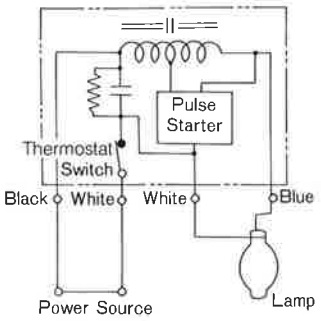
EYE High Pressure Sodium Lamp Ballasts (For EYE Sunlux Lamps) Weather-proof Type

Reactor Type (Reactor type ballast with built-in capacitor and pulse generator)



No extra ballast casing is required for outdoor use.

An emergency thermostat is built in to cut off the power automatically in the event of any electrical disturbances.



PHYSICAL DATA AND CHARACTERISTICS

Lamp Watts	Type	Input Voltage	Frequency	Input Current			Watts Input (W)	Power Factor (%)	Open Circuit Voltage	Short Circuit Current	Lamp Current	Dimensions (mm)				Weight (kg)
				Open Circuit	Starting	Operating						L	S	W	H	
150	NH1.5CCP22A(B)40	220	50(60)	1.47	0.93	0.86	170	90	—	2.4	2.0	320	295	82	92	4.0
250	NH2.5CCP22A(B)50	220	50(60)	2.4	1.5	1.4	280	90	—	3.8	3.1	390	360	112	112	7.5
400	NH4CCP22A(B)50	220	50(60)	3.35	2.3	2.2	440	90	—	5.8	4.7	390	360	112	112	9.0
700	NH7CCP22A(B)70	220	50(60)	6.0	4.3	3.9	765	90	—	9.7	7.9	450	420	125	150	15.0
1000	NH10CCP22A(B)	220	50(60)	8.2	5.2	5.4	1070	90	—	13.4	11.1	420	385	180	150	20.0

COMBINATION OF LAMP AND BALLAST

200V CLASS SUPPLY VOLTAGE

Type of Lamps	Required Ballast	Reason
NH150/N/HV/70S(75S)	NHL1.5CC22A(B)	Lamp Voltage is 90V
NH150F/N/HV/70S(75S)		
NH150/N/HV/70H(75H)		
NH150F/N/70H(75H)		
NH70/N/HV/70S	NHL0.7CC22A(B)	
NH70F/N/HV/70S		
NH70/N/HV/70H		
NH70F/N/HV/70H		
NH50/N/HV/70S	NHL0.5CC22A(B)	
NH50F/N/HV/70S		
NH50/N/HV/70H		
NH50F/N/HV/70H		
NH35/LV/55H	NH0.35TC22A(B)	Lamp Voltage is 52V
NH35F/LV/55H		
NH50/LV/55H	NH0.5TC22A(B)	
NH50F/LV/55H		
NH70/LV/70S(75S)	NH0.7TC22A(B)	
NH70F/LV/70S(75S)		
NH150/LV/55H	NH1.5TC22A(B)	Lamp Voltage is 55V
NH150F/LV/55H		
NH150/LV/70H(75H)		
NH150F/LV/70H(75H)		

In case of 100V class supply voltage, please consult International Business Division of Iwasaki Electric Co., Ltd.

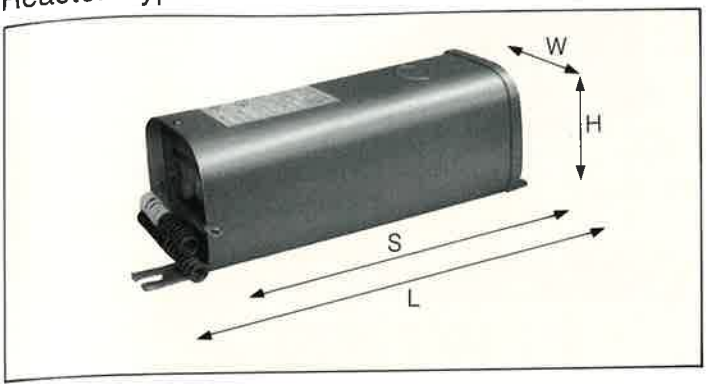
NOTE:

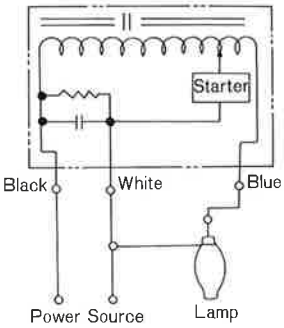
1. "EYE" Sunlux Ballasts incorporate a high-voltage pulse generator for starting (except ballast for N: with built-in generator) type lamp. The pulse generator does not effect the lamp during arcing.
2. Although no specific limit is placed on the type or length of the secondary line (lamp cord), it is advisable to use the cord at about 100m length to prevent voltage reductions while in use. In case of 35W and 50W lamps, allowable maximum length of secondary line cord is 6m and 70W is 15m.
3. Constant wattage type ballast (NH-RCP type) is available when there is wide voltage fluctuation.
4. Dimmer type ballast (NH-LPD type) is also available upon request. Used in conjunction with a timer, it is ideally suited for controlling lamp operation at night.

EYE Metal Halide Lamp Ballasts (For EYE Multi-Metal Lamps) Weather-Proof Type

No extra ballast casing is required for outdoor use.

Reactor Type





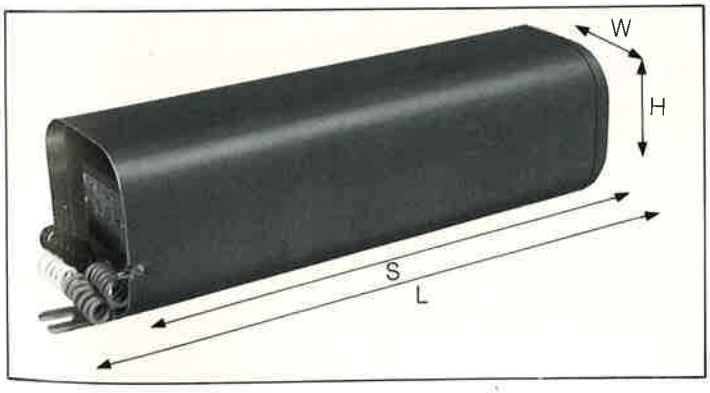
APPLICATIONS

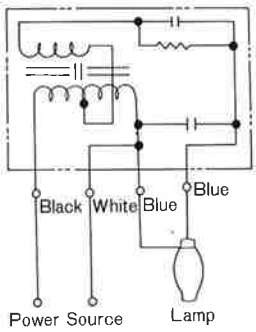
1. Gymnasiums, auditoriums and other rooms where multiple ballasts can be fixed on the ceiling. (Locations requiring low noise)
2. Locations with stable power supply voltage.
3. Locations where temperature is at least −5 degrees C at starting time.

PHYSICAL DATA AND CHARACTERISTICS

Lamp Watts	Type	Input Voltage	Frequency	Input Current		Watts Input (W)	Power Factor (%)	Open Circuit Voltage	Short Circuit Current	Lamp Current	Dimensions (mm)				Weight (kg)
				Starting	Operating						L	S	W	H	
250	M2.5CCP22A(B)40	220	50(60)	2.3	1.36	270	90	—	3.35	2.1	320	295	82	92	4.5
400	M4CCP22A(B)50	220	50(60)	3.57	2.14	425	90	—	5.18	3.3	330	300	112	112	7.0
700	M7CCP22A(B)60	220	50(60)	6.36	3.76	745	90	—	9.1	5.9	420	390	122	122	10.0
1000	M10CCP22A(B)60	220	50(60)	9.5	5.3	1050	90	—	13	7.5	450	429	122	122	12.0
2000	M20B-CWP22A(B)	220	50(60)	11.1	11.1	2200	90	320	15	9.2	510	480	160	140	25.0
2000	M20B-CC38A(B)	380	50(60)	10	6.14	2100	90	380	15	9.2	470	440	160	140	21.0

Lead Peak Type





APPLICATIONS

1. Park & street lightidng
2. Locations with radical fluctuations in power supply voltage.
3. Locations where temperature is less than −5 degrees C at starting time.
4. Locations with extremely cold outdoor temperature (to −30 degrees C).
5. Locations requiring high lamp efficiency.

PHYSICAL DATA AND CHARACTERISTICS

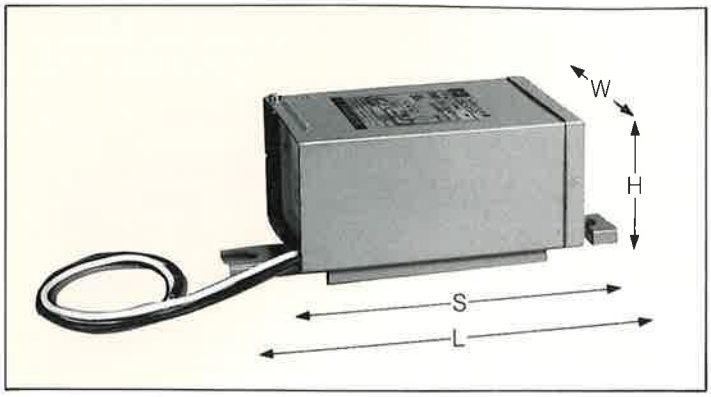
Lamp Watts	Type	Input Voltage	Frequency	Input Current		Watts Input (W)	Power Factor (%)	Open Circuit Voltage	Short Circuit Current	Lamp Current	Dimensions (mm)				Weight (kg)
				Starting	Operating						L	S	W	H	
250	M2.5RP22A(B)50	220	50(60)	Max.1.45	1.45	300	95	300	2.6	2.1	470	440	112	112	13.0
400	M4RP22A(B)50	220	50(60)	Max.2.2	2.2	460	95	260	4	3.3	470	440	112	112	14.0
700	M7RP22A(B)70	220	50(60)	Max.4.0	4.0	780	95	300	6.5	5.9	570	540	125	150	22.0
1000	M10BRP22A(B)70	220	50(60)	Max.5.3	5.3	1110	95	420	5.1	4.5	570	540	125	150	22.0
2000	M20BRP22A(B)	220	50(60)	Max.10.5	10.5	2200	95	490	9.8	8.7	350	330×200	285	350	70.0

NOTE: 1. Although no specific limit is placed on the type or length of the secondary line (lamp cord), a cord of 100m or so is recommended in order to prevent voltage reductions while reactor-type ballast is in use. Maximum distance between lamp and lead peak type ballast is 200m.

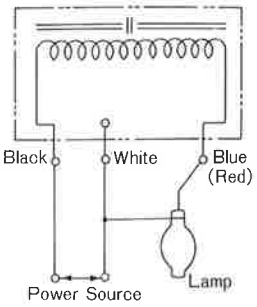
2. Low starting current type ballast (NH-CLP type) is also available. When wiring capacity is limited and voltage fluctuation is within 6% against rated voltage, this M-CLP type ballast can be used with savings in total wiring costs.

EYE Mercury Lamp Ballasts (Weather-proof Type)

Reactor Type



No extra ballast casing is required for outdoor use.



Low power factor type ballast. . . . . This is a ballast with a power factor of 60% or so. For 10% power voltage variations, lamp power varies 18 to 22%. The crest factor is as good as 1.4 to 1.5, causes less damage to the electrodes, and prolongs the life of the lamp. This ballast is economical where there is a large margin in the power supply and wiring capacity.

PHYSICAL DATA AND CHARACTERISTICS

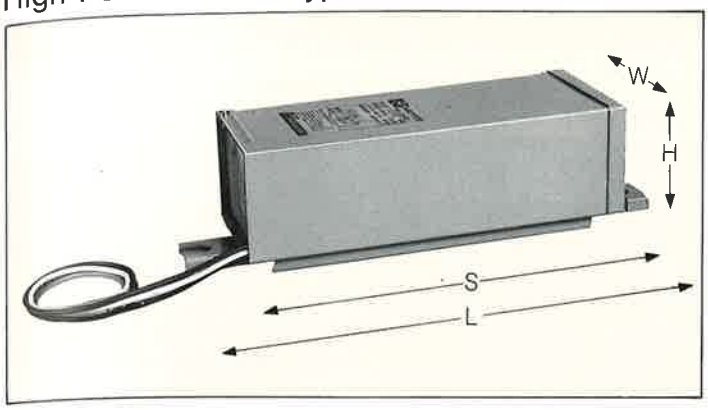
Lamp Watts	Type	Input Voltage	Frequency	Input Current		Watts Input (W)	Power Factor (%)	Open Circuit Voltage	Short Circuit Current	Lamp Current	Dimensions (mm)				Weight (kg)
				Starting	Operating						L	S	W	H	
40	H0.4C22A(B)34	220	50(60)	0.58	0.51	48	40	—	0.64	0.53	180	165	83	77	2.5
50	H0.5C22A(B)34	220	50(60)	0.77	0.59	62	45	—	0.83	0.62	180	165	83	77	2.5
80	H0.8C22A(B)34	220	50(60)	1.2	0.8	93	53	—	1.2	0.8	180	165	83	77	2.5
100	H1C22A(B)34	220	50(60)	1.45	1.0	114	50	—	1.45	1.0	180	165	83	77	2.5
125	H1.25C22A(B)34	220	50(60)	1.75	1.15	140	55	—	1.75	1.15	180	165	83	77	2.5
175	H1.75C22A(B)40	220	50(60)	2.45	1.65	198	55	—	2.62	1.5	200	175	77	77	2.9
200	H2C22A(B)40	220	50(60)	2.7	1.9	220	52	—	2.70	1.9	200	175	77	77	2.9
250	H2.5C22A(B)40	220	50(60)	3.35	2.1	270	58	—	3.35	2.13	200	175	77	77	3.0
300	H3C22A(B)40	220	50(60)	3.9	2.5	323	58	—	3.9	2.5	230	205	77	77	3.1
400	H4C22A(B)40	220	50(60)	5.18	3.3	425	58	—	5.18	3.25	230	205	77	77	3.4
700	H7C22A(B)50	220	50(60)	9.1	5.9	745	57	—	9.1	5.4	240	210	122	122	6.5
1000	H10C22A(B)50	220	50(60)	12.5	8.3	1055	57	—	13.0	7.5	270	240	122	122	8.0

*This type of ballast compatible with both high pressure sodium (Ace Type) and metal halide lamps (Ace Type, Clean-Ace Type).

COMBINATION OF LAMP AND BALLAST

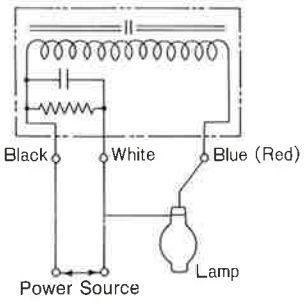
Type of Ballast	Adaptable Lamp	
	EYE Sunlux Ace	EYE Multi-Hi-Ace (EYE Clean-Ace)
H0.8C22A(B)34	NH75(F)/LX/70S(H)	
H1C22A(B)34		M(F)100LE/BUH·BD
H1.25C22A(B)34	NH110(F)LX	M(F)125LE/BUH·BD
H1.75C22A(B)40	NH150(F)LX	
H2C22A(B)40	NH180(F)LX	
H2.5C22A(B)40	NH220(F)LX	M(F)250LE/BUH·BD (MT250DL)
H3C22A(B)40	NH270(F)LX	M(F)300LE/BUH·BD
H4C22A(B)40	NH360(F)LX	M(F)400LE/BUH·BD (MT400L/BUD)
H7C22A(B)50	NH660(F)LX	M(F)700LE/BUH·BD
H10C22A(B)50	NH940(F)LX	M(F)1000LE/BUH·BD

High Power Factor Type



High power factor type ballast. . .

This is a combination of low power factor type ballast with a built-in condenser to improve the power factor.
The power factor is as good as 90%, making this model the most economical mercury lighting circuit.



PHYSICAL DATA AND CHARACTERISTICS

Lamp Watts	Type	Input Voltage	Frequency	Input Current		Watts Input (W)	Power Factor (%)	Open Circuit Voltage	Short Circuit Current	Lamp Current	Dimensions (mm)				Weight (kg)
				Starting	Operating						L	S	W	H	
40	H0.4CC22A(B)34	220	50(60)	0.29	0.241	48	90	—	0.64	0.53	260	245	83	77	3.0
50	H0.5CC22A(B)34	220	50(60)	0.46	0.31	62	90	—	0.83	0.62	260	245	83	77	3.0
80	H0.8CC22A(B)34	220	50(60)	0.73	0.45	93	90	—	1.2	0.8	260	245	83	77	3.0
100	H1CC22A(B)34	220	50(60)	0.9	0.55	116	90	—	1.0	1.45	260	245	83	77	3.0
125	H1.25CC22A(B)34	220	50(60)	1.09	0.7	140	90	—	1.75	1.15	260	245	83	77	3.0
175	H1.75CC22A(B)40	220	50(60)	1.52	1.0	198	90	—	2.62	1.5	280	255	77	77	3.0
200	H2CC22A(B)40	220	50(60)	1.53	1.1	215	90	—	2.7	1.9	280	255	77	77	3.0
250	H2.5CC22A(B)40	220	50(60)	2.16	1.28	245	90	—	3.35	2.13	280	255	77	77	3.2
300	H3CC22A(B)40	220	50(60)	2.73	1.6	316	90	—	3.9	2.5	280	255	77	77	3.5
400	H4CC22A(B)40	220	50(60)	3.57	2.14	420	90	—	5.18	3.25	280	255	77	77	4.0
700	H7CC22A(B)50	220	50(60)	6.36	3.76	745	90	—	9.1	5.4	330	300	122	122	8.5
1000	H10CC22A(B)50	220	50(60)	9.5	5.3	1055	90	—	13.0	7.5	390	360	122	122	8.5

*This type of ballast is compatible with high pressure sodium (Ace Type) and metal halide lamps (Ace Type, Clean-Ace Type).

COMBINATION OF LAMP AND BALLAST

Type of Ballast	Adaptable Lamp	
	EYE Sunlux Ace	EYE Multi-Hi-Ace (EYE Clean-Ace)
H0.8CC22A(B)34	NH75(F)/LX/70S(H)	
H1CC22A(B)34		M(F)100LE/BUH·BD
H1.25CC22A(B)34	NH110(F)LX	M(F)125LE/BUH·BD
H1.75CC22A(B)40	NH150(F)LX	
H2CC22A(B)40	NH180(F)LX	
H2.5CC22A(B)40	NH220(F)LX	M(F)250LE/BUH·BD (MT250DL)
H3CC22A(B)40	NH270(F)LX	M(F)300LE/BUH·BD
H4CC22A(B)40	NH360(F)LX	M(F)400LE/BUH·BD (MT400L/BUD)
H7CC22A(B)50	NH660(F)LX	M(F)700LE/BUH·BD
H10CC22A(B)50	NH940(F)LX	M(F)1000LE/BUH·BD

NOTE: 1. Improved Color Rendering type Sunlux Ace Lamp (Model NH-(F)DLX) is also operated with high pressure mercury lamp ballast.
2. Auto-transformer type ballasts for sunlux Ace and Multi-Hi-Ace lamp are also available.
3. Constant wattage type ballast is not suitable for Sunlux Ace and Multi-Hi-Ace lamp.
4. Maximum recommended lengths of the secondary line cord (lamp cord) to prevent voltage reduction while lamp is in use are as follows.

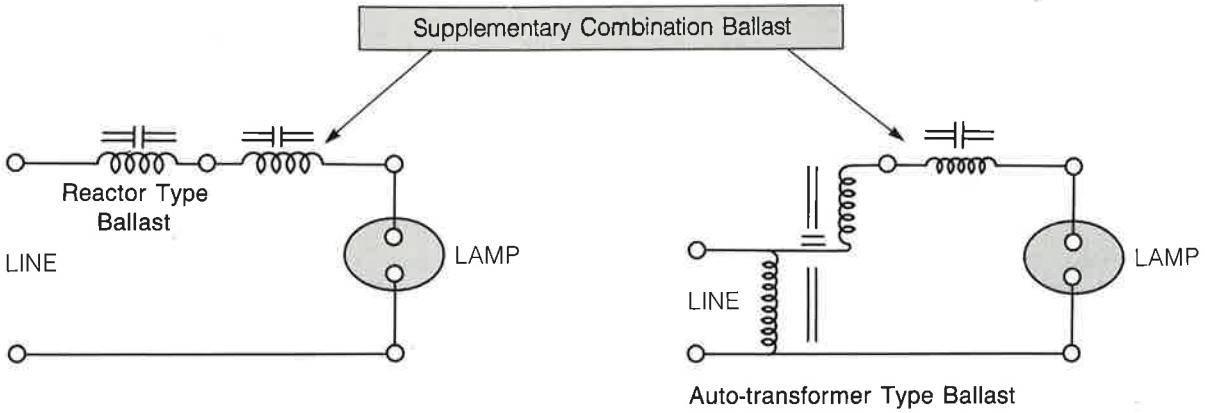
Type of Lamp	Wattage	Max. Length
Sunlux Ace	75 ~ 110W	25m
Sunlux Ace	150 ~ 940W	50m
Multi-Hi-Ace	100 ~ 125W	25m
Multi-Hi-Ace	250 ~ 1000W	50m

Supplementary Combination Ballasts

Cost savings on existing Mercury lamp installations

REMARKS:
1. When ordering, please specify the exact type of Supplementary Combination Ballast, main voltage, and frequency.
2. These Supplementary Combination Ballasts are connected as shown in the diagram.

Existing Mercury Lamp	Existing Mercury Ballast	Type of Interchanged EYE Sunlux Ace	Supplementary Combination Ballasts
1000W	1000W-reactor or autotransformer	660W	BN6.6L
		360W	BN3.6/H10
700W	700W-reactor or autotransformer	360W	BN3.6L
400W	400W-reactor or autotransformer	220W	BN2.2L



1-3 TUNGSTEN HALOGEN LAMPS

High Efficiency and Constant Lumen Maintenance

These lamps operate on the Tungsten-halogen principle which eliminates filament evaporation and bulb blackening. As a result, the initial lumens and colour temperature are maintained throughout the lamp life. The use of bromine, which is a transparent gas, increases efficiency by 28—33ℓm/W as compared with iodine because there is less absorption of light by the filled gas.

Super-mini Size and High Colour Temperature

Due to the seal of the highly reactive bromine gas, the lamp emits a fresh light color with high color temperature.

Excellent Energy Distribution

Features exceptional color rendition together with outstanding light quality as a result of the similar energy distribution of the perfect radiator.

Patent filed in 10 Countries around the World.

"EYE" Halogen Lamps are well-accepted throughout the world and, because the bromine gas technique was developed by Iwasaki engineers, export of the lamp without patent infringement is possible. Patented in West Germany, Belgium, Italy, canada, U.S.A., France, Switzerland, Mexico, England and Holland.

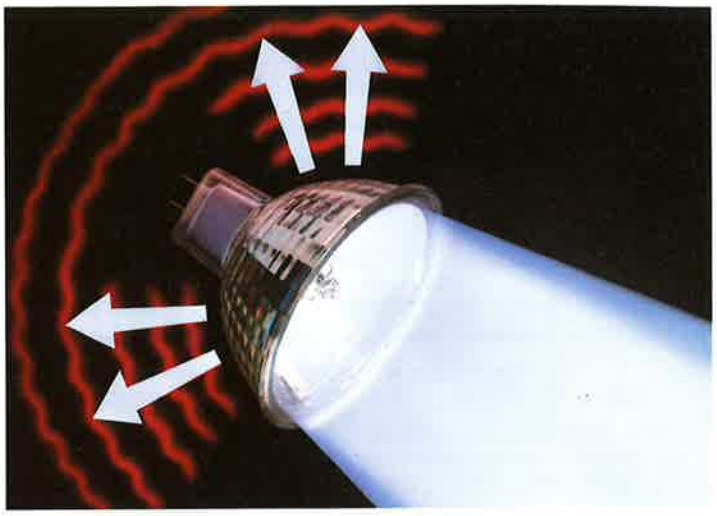
Principle of tungsten halogen Regenerative cycle process

1. When the lamp is turned on, tungsten particles evaporate from the filament and attach to the bulb wall. At the same time halogen decomposes around the filament at a high temperature and becomes atomic halogen.
2. Atomic halogen is diffused on the bulb wall and combines with free tungsten particles to become transparent and volatile tungsten halide.
   $W + 2X - WX_2$ (Forward Reaction)
3. Due to the high temperature (over 500°F) on the bulb wall, tungsten halide is volatilized and circulates back to the filament.
4. After tungsten halide decomposes, halogen gas is released, ready to combine again, and tungsten is re-deposited on filament, whereby the process is ready to begin again.
   $W + 2X - WX_2$ (Reverse Reaction)

IWASAKI Halogen Lamp Lighting Examples

EYE DICHRO-COOL™ Halogen Lamps

EYE DICRO-COOL Halogen Lamp is a totally new type of compact light source with a dichroic mirror that lets more than 80% of the heat produced escape towards the rear. This dramatic reduction in heat radiation means less heat damage or discoloration of products, while non-damaging white light is radiated forward for attractive illumination of product displays. Both 12V and 110V types are available, and, with either type, changes in light flux are possible with a simple change of the lamp. A full lineup offers choices to meet a wide range of needs.



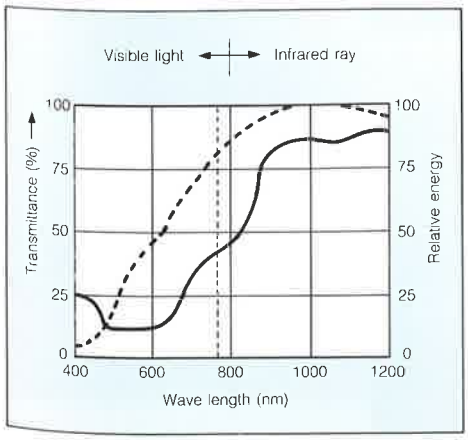
LIGHT DISTRIBUTION

Narrow Beam
For spotlighting specific products. This type of lamp concentrates lighting onto a specific area for a highlighted effect.

Medium Beam
For general lighting of an entire display. Perfect for uniform lighting across a wide area.

Wide Beam
For lighting of a product display, as well as the surrounding area. Adds a fresh, vibrant touch.

Spectral energy distribution of tungsten halogen lamp and characteristics of dichroic mirror



CHARACTERISTICS

	DICHRO-COOL halogen 100W JDR	Super beam Incandescent lamp 100W	
Light color	White (3600K)	Warm white (2800K)	
Thermal radiation (w/m²/1000lx)	13 (30%)	Heat cut type 44 (100%)	Standard type 65 (148%)
Temperature rise (°C)*	2	6	10
Dimension of lamp	ϕ50 × 75 (mm) (10%)	ϕ120 × 144 (mm) 100%	
Color rendition	All colors look bright. White appears white even under fluorescent light.	Red, orange are stressed. Green, blue, violet look less briliant.	

*At 1m distance, black painted steel board surface temperature rise to the room temperature.

EYE DICHRO-COOL™ Halogen Lamps

EYE DICHRO-COOL Halogen Lamps Lineup

E17  2 pin 

Operating Voltage	Watts		Narrow Beam	Medium Beam	Wide Beam
120V	75W	300K	E17 Base	E17 Base	E17 Base
		3600K			
	100W	3000K	E17 Base	E17 Base	E17 Base
		3600K			
*Above lamps are used with Mum Mirror					
12V	20W		2pin ESX	Not Available	2pin BAB
	35W		2pin FRB	2pin FRA	2pin FMW
	42W		2pin ERY	2pin EYS	2pin EYP
	50W		2pin EXT	2pin EXZ	Medium Wide Beam: 2pin ENL; 2pin EXN
	75W		2pin EYF	2pin EYJ	2pin EYC
13.8V	50W		2pin EPZ		
*Above lamps are used with Facet Mirror.					

12V-NARROW BEAM

12V-MEDIUM BEAM

12V-WIDE BEAM

EYE DICHRO-COOL™ Halogen Lamps (Line Voltage Type)

EYE DICHRO-COOL Halogen Lamp is a reflector-type tungsten-halogen spot lamp for general lighting service which combines the small, compact size of the tungsten-halogen lamp with a dichroic mirror.

FEATURES

1. White light with color temperature of 3600K or 3000K.
2. Reduction of forward heat radiation (about 1/5 of beam lamp, 1/3 of heat cut type beam lamp).
3. Compact and lightweight
   (about 1/10 of beam lamp in cubic volume, weight: 25～60g)
4. Can be operated with 100～120V AC commercial power source.
   (model JDR)

HOW IT WORKS

The dichroic mirror is the reflector coating of the dichroic films on glass substrate. The mirror reflects the majority of infrared radiation toward the rear of the mirror and transmits visible light towards the front. The DICHRO-COOL halogen lamp radiates white light with color temperatures of 3600K or 3000K with a significant reduction in frontward heat, thereby reducing thermal damage of irradiated goods.

JDR-TYPE

NARROW BEAM

JDR100W/2N

MEDIUM BEAM

JDR100W/2M

WIDE BEAM

JDR100W/2W

Comparison of Lighting Effect between 3600K and 3000K

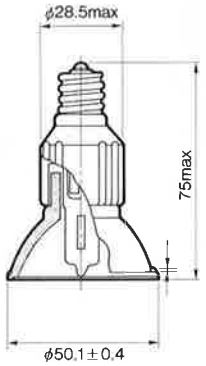
■ 3600K

■ 3000K

EYE DICHRO-COOL™ Halogen Lamps (Model JDR)

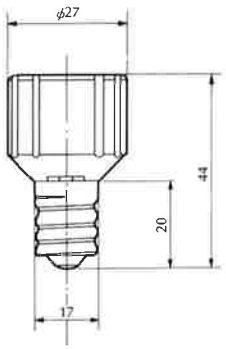
3000K and 3600K Series

NARROW BEAM LAMPS

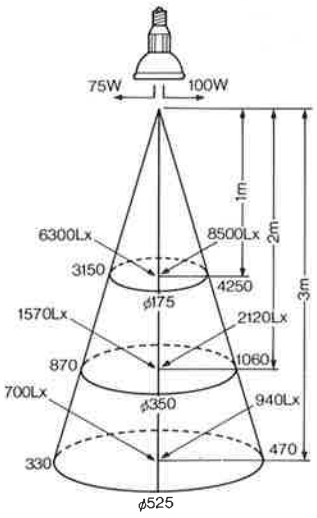


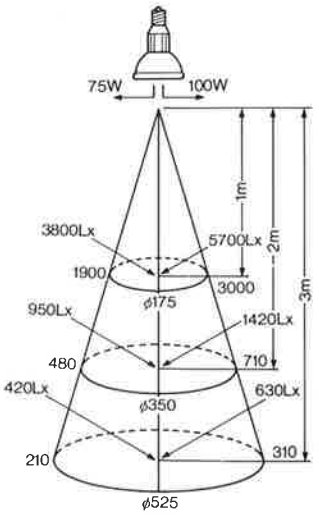
Lamp Type	3000K Series		3600K Series	
	JDR75W/2N	JDR100W/2N	JDR75W/N	JDR100W/N
Volts (V)	110, 120	110, 120	110, 120	110, 120
Watts (W)	75	100	75	100
Axis Cd (cd)	6300	8500	3800	5700
Color Temperature (K)	3000	3000	3600	3600
Beam Angle (V° × H°)	10° × 10°	10° × 10°	10° × 10°	10° × 10°
Rated Average Life (hrs)	2000	2000	2000	2000
Base	E17	E17	E17	E17

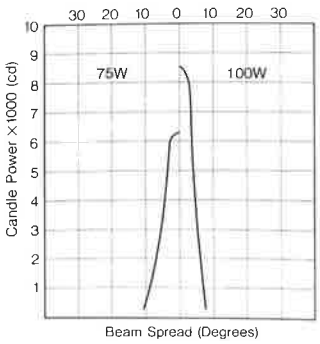
Burning Position : Any

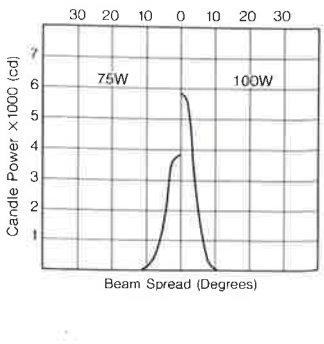


E17

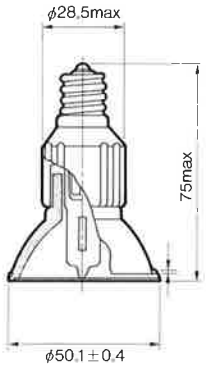




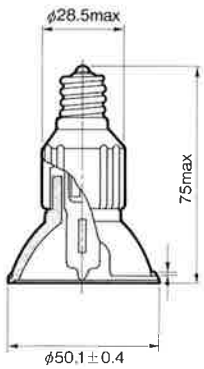




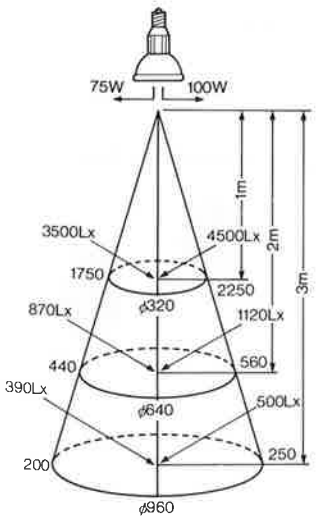
MEDIUM BEAM LAMPS

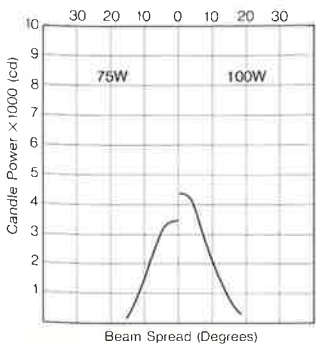


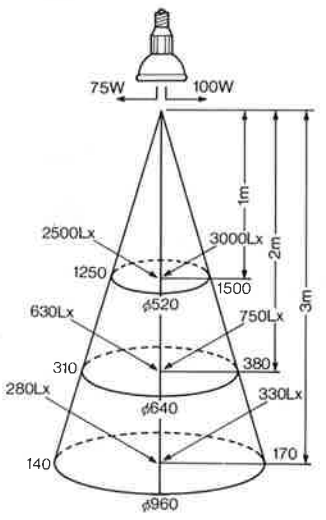
WIDE BEAM LAMPS

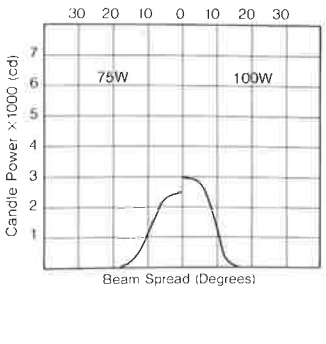


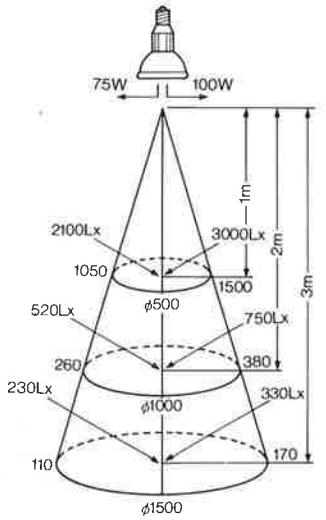
3000K Series		3600K Series		3000K Series		3600K Series	
JDR75W/2M	JDR100W/2M	JDR75W/M	JDR100W/M	JDR75W/2W	JDR100W/2W	JDR75W/W	JDR100W/W
110, 120	110, 120	110, 120	110, 120	110, 120	110, 120	110, 120	110, 120
75	100	75	100	75	100	75	100
3500	4500	2500	3000	2100	3000	1500	1800
3000	3000	3600	3600	3000	3000	3600	3600
18° × 18°	18° × 18°	18° × 18°	18° × 18°	28° × 28°	28° × 28°	28° × 28°	28° × 28°
2000	2000	2000	2000	2000	2000	2000	2000
E17	E17	E17	E17	E17	E17	E17	E17

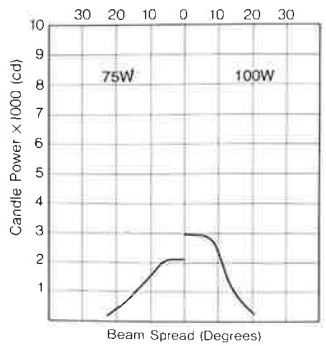


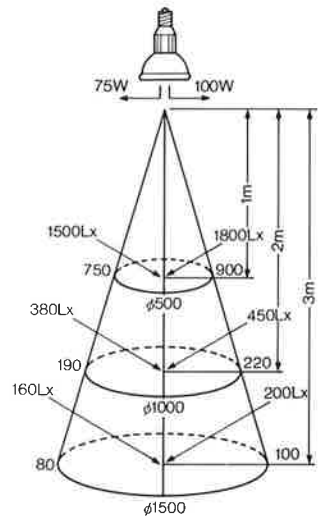


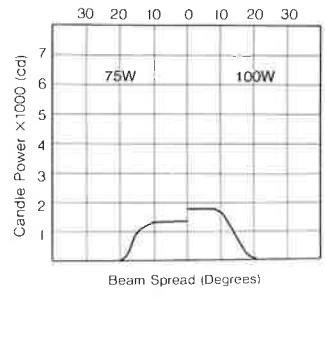




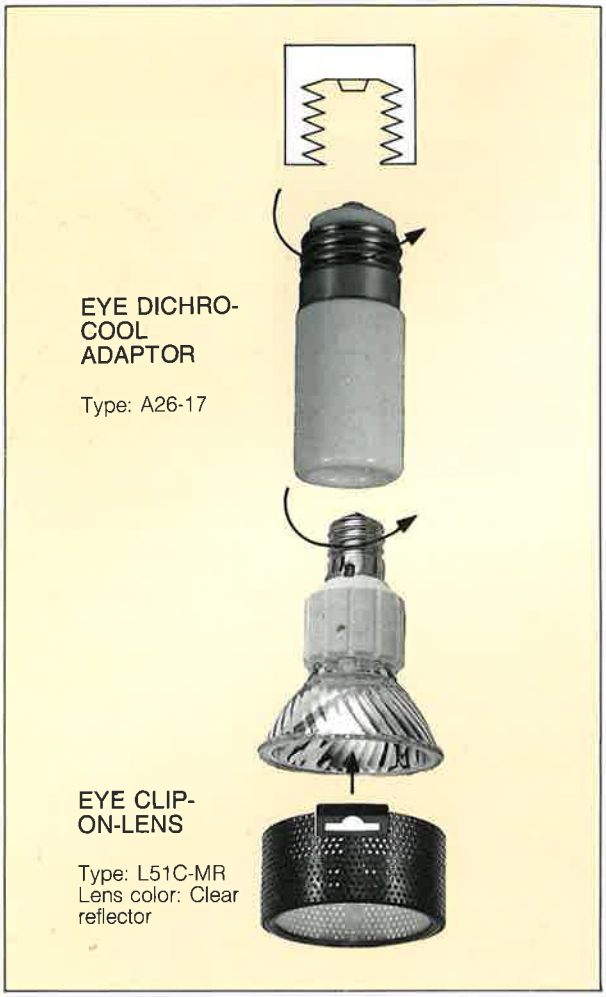








EYE DICHRO-COOL™ Retro-Fit Lamp Kit



Light up your life by changing your light—with EYE DICHRO-COOL!

The EYE DICHRO-COOL Retro-Fit Lamp Kit is a standard 120V MR-16 tungsten halogen lamp with a dichroic reflector and a clip-on-lens plus an A26-17 medium-intermediate adapter. The EYE DICHRO-COOL Retro-Fit Lamp Kit is designed for a standard reflector lamp (PAR 38 or R40 bulb) with the 120V EYE DICHRO-COOL 120V MR-16 halogen lamp. It can be installed in either new or existing lighting fixtures designed for reflector, flood, or spot lamps in down-lights or spotlights with a minimum rating of 100 Watts.

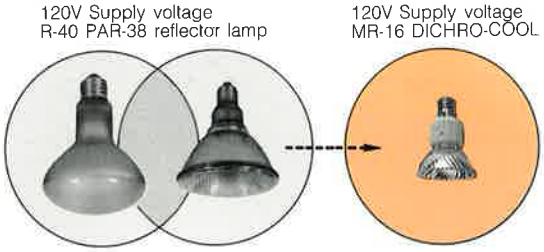
EYE DICHRO-COOL Adaptor

The A26-17 EYE DICHRO-COOL Adapter is a medium intermediate adaptor designd to retro-fit a standard reflector lamp (PAR38 or R40 bulb) with an EYE DICHRO-COOL JDR type 120V MR-16 tungsten halogen lamp.

EYE Clip-on Lens

The EYE DICHRO-COOL lamp requires a front glass-protector.

Cool and crisp white light
The EYE DICHRO-COOL does not need a step-down transformer. And it helps you cut energy costs by enabling you to replace your 100W and 150W bulbs with 75W and 100W bulbs respectively.
Suitable for use with lighting fixtures designed for incandescent reflector lamps of more than 100W such as PAR38 or R40 bulbs.

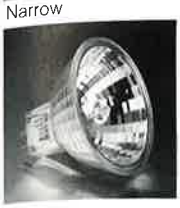


Ordering code		Characteristics			Lamp	Adapter	Clip-on-lens
EYE DICHRO-COOL RETRO-FIT KIT		Watt	Color temperature (K)	Beam Spread			
Kit-100-2N	120V	100W	3000	10° Narrow	JDR 120V 100W/2N	A26-17	L51C-MR
Kit-100-2M	120V			18° Medium	JDR 120V 100W/2M		
Kit-100-2W	120V			28° Wide	JDR 120V 100W/2W		
Kit-100-N	120V	100W	3600	10° Narrow	JDR 120V 100W/N		
Kit-100-M	120V			18° Medium	JDR 120V 100W/M		
Kit-100-W	120V			28° Wide	JDR 120V 100W/W		
Kit-75-2N	120V	75W	3000	10° Narrow	JDR 120V 75W/2N		
Kit-75-2M	120V			18° Medium	JDR 120V 75W/2M		
Kit-75-2W	120V			28° Wide	JDR 120V 75W/2W		
Kit-75-N	120V	75W	3600	10° Narrow	JDR 120V 75W/N		
Kit-75-M	120V			18° Medium	JDR 120V 75W/M		
Kit-75-W	120V			28° Wide	JDR 120V 75W/W		

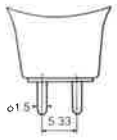
EYE DICHRO-COOL™ Halogen Lamps-Low Voltage

MR-16Facet


Narrow


Medium


Wide



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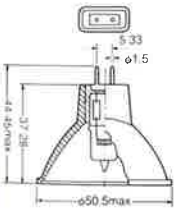
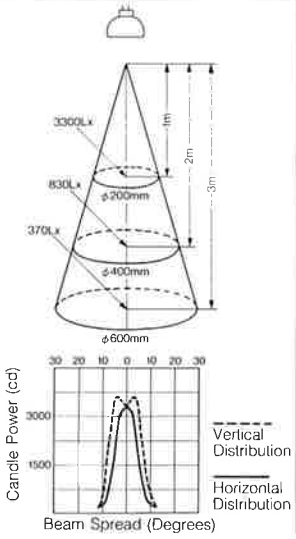
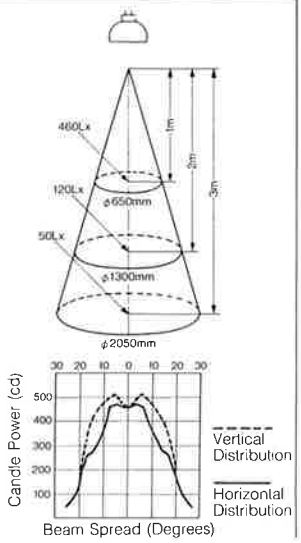
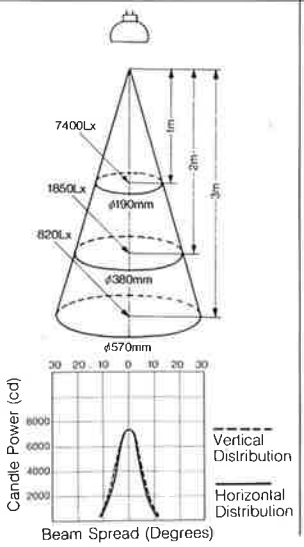
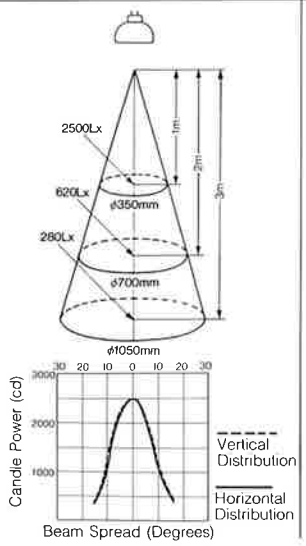
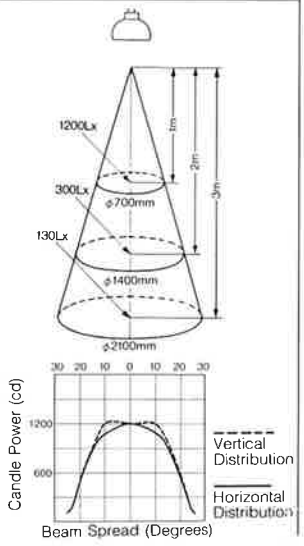


20W	Narrow Beam Lamp	Medium Beam Lamp	Wide Beam Lamp
Lamp Type	JR12V20W/ESX	———	JR12V20W/BAB
Volts (V)	12		12
Watts (W)	20		20
Axis Cd (cd)	3300		460
Color Temperature (K)	2950		2950
Beam Angle (V° × H°)	13° × 10°		37° × 36°
Rated Av. Life (hrs)	2000		2000
Base	GX5.3		GX5.3
Burning position: Any			

35W	Narrow Beam Lamp	Medium Beam Lamp	Wide Beam Lamp
Lamp type	JR12V35W/FRB	JR12V35W/FRA	JR12V35W/FMW
Volts (V)	12	12	12
Watts (W)	35	35	35
Axis Cd (Cd)	7400	2500	1200
Color Temperature(K)	3050	3050	3050
Beam Angle (V° × H°)	12° × 11°	23° × 20°	39° × 37°
Rated Av. Life (hrs)	3000	3000	3000
Base	GX5.3	GX5.3	GX5.3
Burning position: Any			

EYE DICHRO-COOL™ Halogen Lamps-Low Voltage

HALOGEN

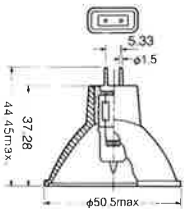
MR-16Facet

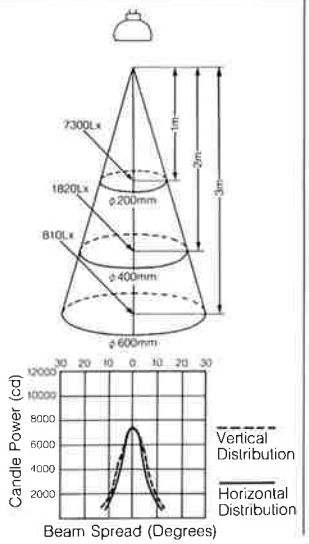
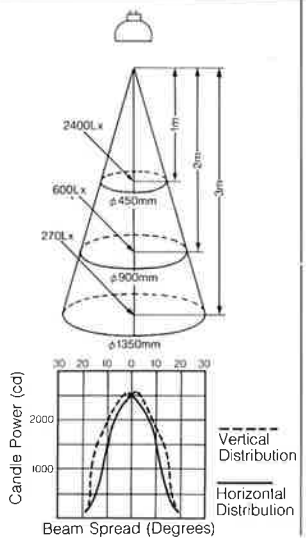
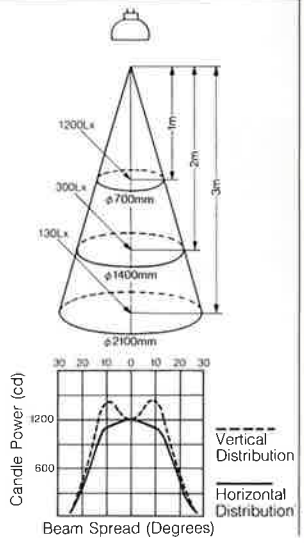

Narrow

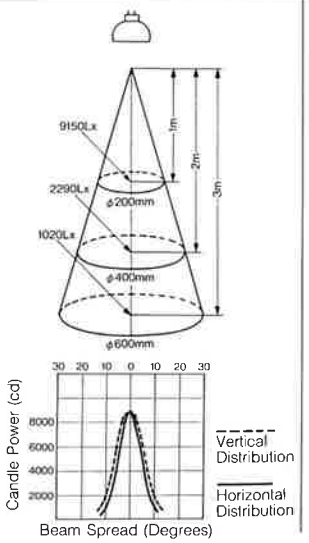
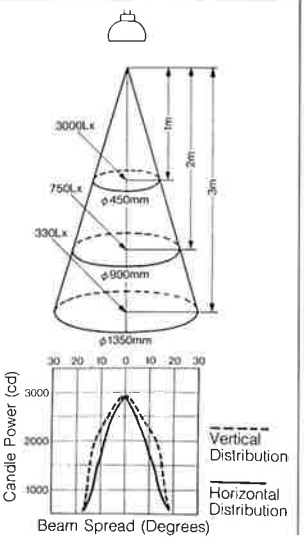
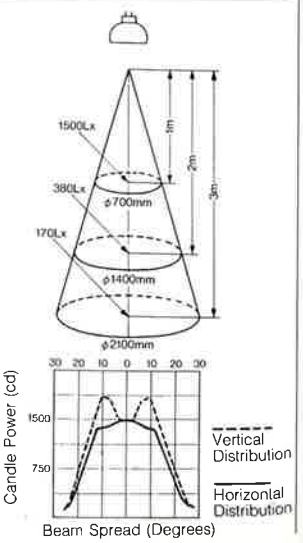

Medium


Wide

GX5.3

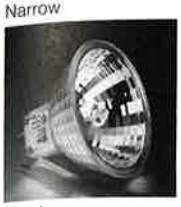


42W	Narrow Beam Lamp	Medium Beam Lamp	Wide Beam Lamp
Lamp Type	JR12V42W/EYR	JR12V42W/EYS	JR12V42W/EYP
Volts (V)	12	12	12
Watts (W)	42	42	42
Axis Cd (cd)	7300	2400	1200
Color Temperature (K)	3050	3050	3050
Beam Angle (V° × H°)	13° × 11°	27° × 22°	39° × 37°
Rated Av. Life (hrs)	3000	3000	3000
Base	GX5.3	GX5.3	GX5.3
Burning Position: Any			

50W	Narrow Beam Lamp	Medium Beam Lamp	Wide Beam Lamp
Lamp Type	JR12V50W/EXT	JR12V50W/EXZ	JR12V50W/EXN
Volts (V)	12	12	12
Watts (W)	50	50	50
Axis Cd (cd)	9150	3000	1500
Color Temperature (K)	3050	3050	3050
Beam Angle (V° × H°)	13° × 11°	27° × 22°	39° × 37°
Rated Av. Life (hrs)	3000	3000	3000
Base	GX5.3	GX5.3	GX5.3
Burning position: Any			

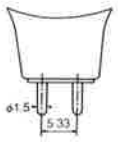
MR-16Facet

Narrow

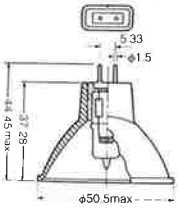


Medium

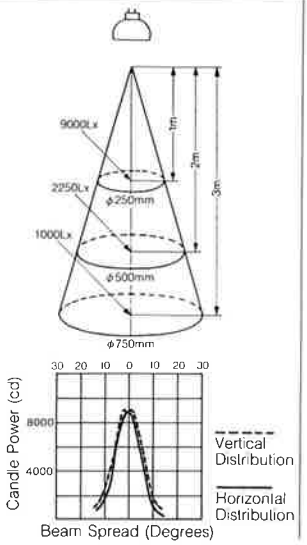
Wide

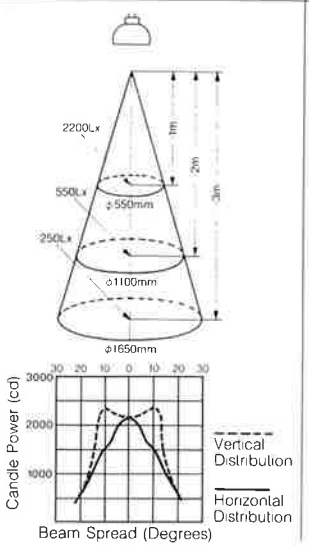


GX5.3

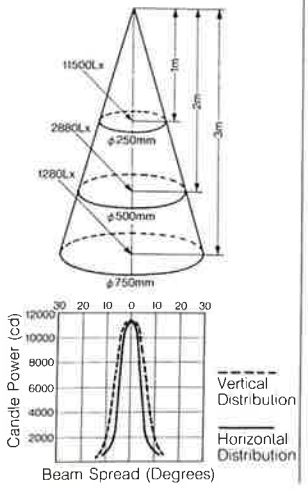


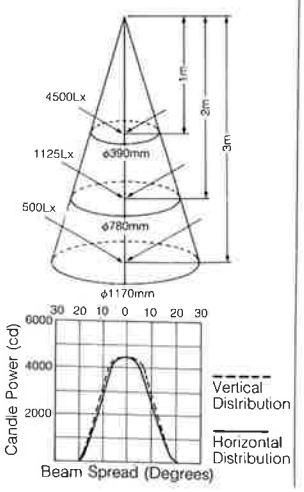
50W	Narrow Beam Lamp	Medium Beam Lamp	Wide Beam Lamp
Lamp Type	JR13.8V50W/EPZ	JR12V50W/ENL	———
Volts (V)	13.8	12	
Watts (W)	50	50	
Axis Cd (cd)	9000	2200	
Color Temperature (K)	3150	3050	
Beam Angle (V° × H°)	14° × 12°	31° × 30°	
Rated Av. Life (hrs)	1000	3000	
Base	GX5.3	GX5.3	
Burning position: Any			

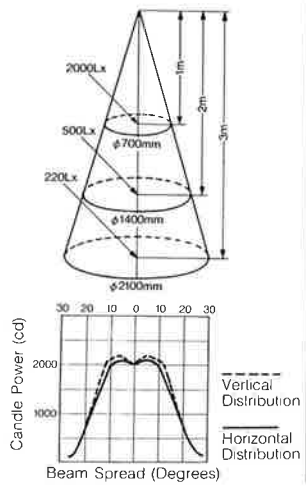




75W	Narrow Beam Lamp	Medium Beam Lamp	Wide Beam Lamp
Lamp Type	JR12V75W/EYF	JR12V75W/EYJ	JR12V75W/EYC
Volts (V)	12	12	12
Watts (W)	75	75	75
Axis Cd (cd)	11500	4500	2000
Color Temperature (K)	3050	3050	3050
Beam Angle (V° × H°)	15° × 14°	24° × 20°	40° × 38°
Rated Av. Life (hrs)	3500	3500	3500
Base	GX5.3	GX5.3	GX5.3
Burning position: Any			



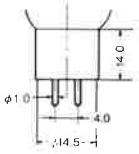




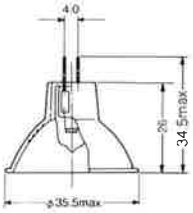
MR-11Stipple

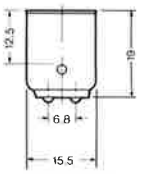
Narrow

Medium

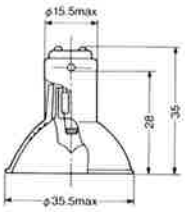


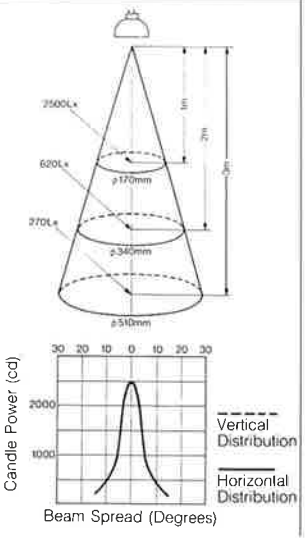
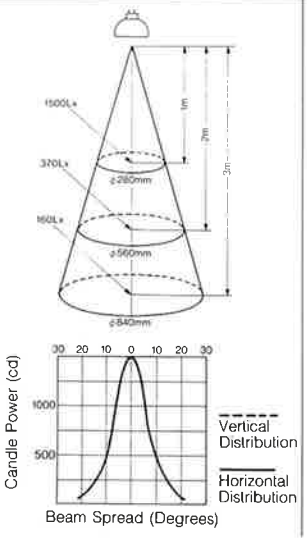
GZ4

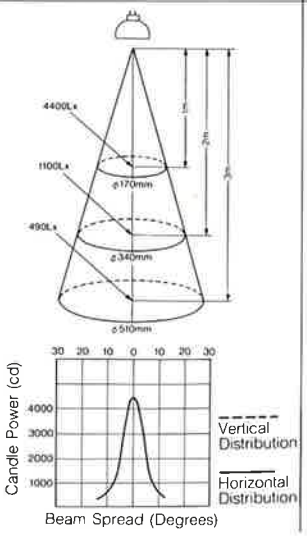
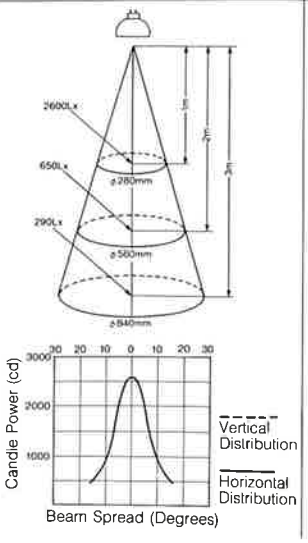




BA15d (BD)



20W	Narrow Beam Lamp	Medium Beam Lamp	Wide Beam Lamp
Lamp Type	JRM12V20W/2N/GZ4 (BD)	JRM12V20W/2M/GZ4 (BD)	———
Volts (V)	12	12	
Watts (W)	20	20	
Axis Cd (cd)	2500	1500	
Color Temperature (K)	3000	3000	
Beam Angle (V° × H°)	10° × 10°	16° × 16°	
Rated Av. Life (hrs)	2000	2000	
Base	GZ4 or BA15d	GZ4 or BA15d	
Burning position: Any			

35W	Narrow Beam Lamp	Medium Beam Lamp	Wide Beam Lamp
Lamp type	JRM12V35W/2N/GZ4(BD)	JRM12V35W/2M/GZ4(BD)	———
Volts (V)	12	12	
Watts (W)	35	35	
Axis Cd (Cd)	4400	2600	
Color Temperature(K)	3000	3000	
Beam Angle (V° × H°)	10° × 10°	16° × 16°	
Rated Av. Life (hrs)	2000	2000	
Base	GZ4 or BA15d	GZ4 or BA15d	
Burning position: Any			

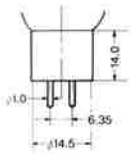
Reflector Type

Aluminum Reflector

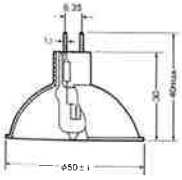
Spot

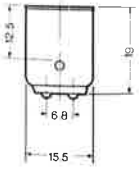
Medium Spot

Flood

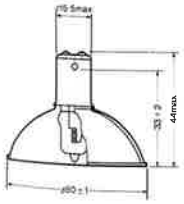


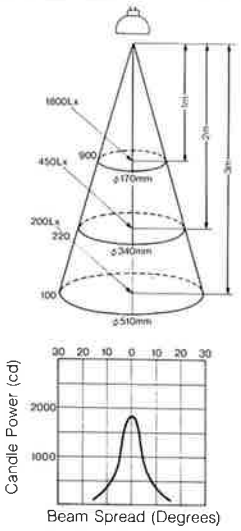
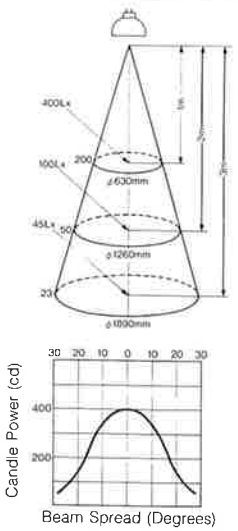
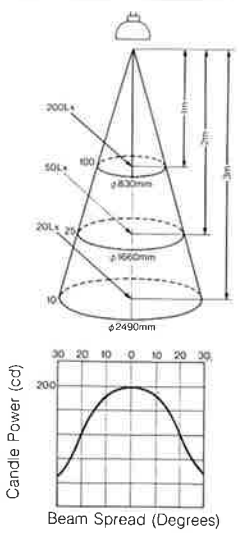
GZ6.35 (G1)

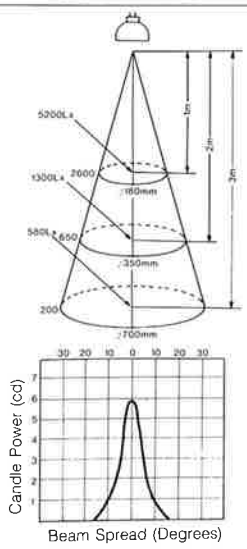
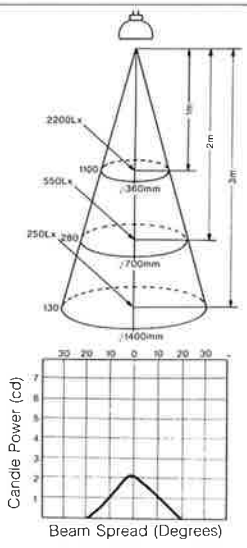
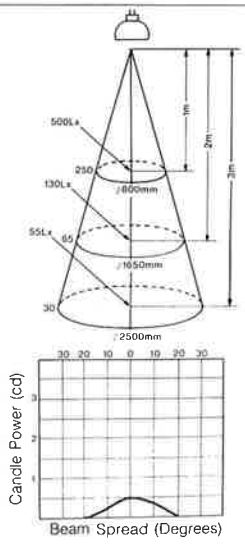




BA15d (BD)



20W	Spot Lamp	Medium Spot Lamp	Flood Lamp
Lamp Type	JS12V20WS/G1 (BD)	JS12V20WM/G1 (BD)	JS12V20WF/G1 (BD)
Volts (V)	12	12	12
Watts (W)	20	20	20
Axis Cd (cd)	1800	400	200
Color Temperature (K)	2800	2800	2800
Beam Angle (V° × H°)	10° × 10°	35° × 35°	45° × 45°
Rated Av. Life (hrs)	2000	2000	2000
Base	GZ6.35 or BA15d	GZ6.35 or BA15d	GZ6.35 or BA15d
Burning position: Any			

50W	Spot Lamp	Medium Spot Lamp	Flood Lamp
Lamp Type	JS12V50WS/G1 (BD)	JS12V50WM/G1 (BD)	JS12V50WF/G1 (BD)
Volts (V)	12	12	12
Watts (W)	50	50	50
Axis Cd (cd)	5200	2200	500
Color Temperature (K)	2850	2850	2850
Beam Angle (V° × H°)	10° × 10°	20° × 20°	45° × 45°
Rated Av. Life (hrs)	3000	3000	3000
Base	GZ6.35 or BA15d	GZ6.35 or BA15d	GZ6.35 or BA15d
Burning position: Any			

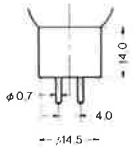
Reflector Type

HALOGEN

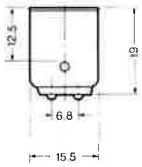
Aluminum Reflector

Spot

Medium Spot



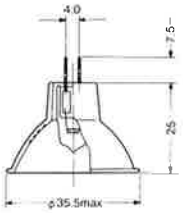
G4 (G4)

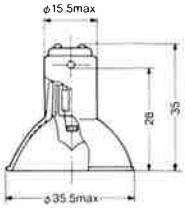


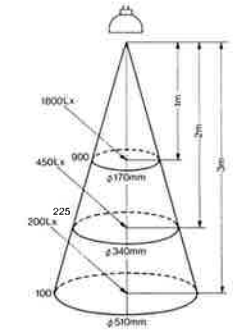
BA15d (BD)

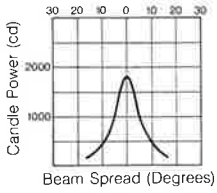
20W	Spot Lamp	Medium Spot Lamp	Flood Lamp
Lamp Type	JSM12V20WS/G4 (BD)	JSM12V20WM/G4 (BD)	———
Volts (V)	12	12	
Watts (W)	20	20	
Axis Cd (cd)	1800	250	
Color Temperature (K)	2800	2800	
Beam Angle (V° × H°)	10° × 10°	40° × 40°	
Rated Av. Life (hrs)	2000	2000	
Base	G4 or BA15d	G4 or BA15d	

Burning position: Any

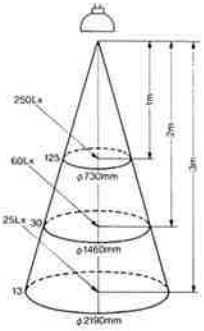


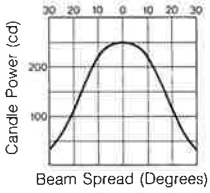






Beam Spread (Degrees)





Beam Spread (Degrees)

WARNING

EYE DICHRO-COOL Tungsten Halogen Lamps and EYE Single Ended Tungsten Halogen Lamps with aluminum reflector are pressurized and may shatter.

1. Do not operate lamps in excess of rated voltages as this will increase lamp pressure and the risk of shattering. JDR type lamps operate at 120 volts. If used in circuits of 200~240 volts or higher, there is an increased possibility that the bulb will shatter.
   JR type lamps operate at low-voltage such as 12 volts and/or 13.8 volts. The bulb may shatter if used in circuits of 110~120 volts or higher.
2. Protect lamp against abrasions and scratches and against contact with liquids while lamp is in operation.
3. Grasp the reflector when installing or removing. Do not grasp the bulb in any case when treating.
4. Use only in lighting fixtures designed for these lamps which comply with established electrical and terminal standards, as well as offer protection in case of bulb shattering.
5. Use only in sockets and housing designed to withstand the lamp's high operating temperatures.
6. Do not operate in close proximity to persons, combustible materials, or substances that are flammable or adversely affected by heat or drying.
   Do not touch or look at lamp while in operation to avoid risk of burns or other injury.
7. Do not disturb lamp or lighting fixture while in operation because such mechanical shock can cause shattering and lamp failure.
8. Turn power off before removing lamp as well as during installation.
9. Tungsten halogen lamps reach extremely high temperature during operation. Care should be taken to allow lamp to cool before removing.
10. Dispose of lamp with care.
11. The reflector has an unprotected dichroic coating (JDR and JR type) or aluminized (JS type) surface. Corrosive, dusty or humid environments may cause the reflector to deteriorate causing a reduction of light output and decolorization of light.
12. Periodically check the dichroic coating or aluminized surface for deterioration and replace if any occurs.
13. For satisfactory performance:
    1) Avoid touching dichroic coating or aluminized surface of reflector as it may cause damage.
    2) Limit seal and outer pins temperature of bulb to 350°C (662°F).
    3) Limit temperature increase of bulb to 50°C (112°F) between the temperature with fixture and without fixture. Excessive temperature increase can cause lamp failure or blackening.
    4) Limit the reflector temperature to 300°C. Excessive temperature rise can cause decolorization or damage of the coated film. Maintain a minimum bulb wall temperature of 250°C (482°F) for operation of the halogen cycle.
    5) If necessary to touch lamp during installation, clean the bulb and the reflector with alcohol and dry with clean, soft cloth before operation.

DIMMING

Diming above 60% of the rated volts is possible. However, dimming below 60% of the rated volts can cause blackening.

LIFE

A slight change of voltaged will cause a great shift in lamp life. Rated lamp life represent average life under controlled operation conditions.

Single Ended Type

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JD28V75W/M1		28	75	1350	2950	2000	10.3	61	29.5	E10	CC-6	1
JD75W/M2 (M3~M7)		100,110,120	75	1200	2850	1500	11.5	70	46	E11 or E14	CC-8	2
JD100W/M2 (M3~M7)		100,120	100	1600	2850	1500	11.5	70	49	E11 or E14	CC-8	2
JD100W/M2 (M5~M7)		220/230	100	1400	2850	1500	16.0	80	55	E11 or E14	CC-13	3
		240/250	100	1400	2850	1500	16.0	80	55	E11 or E14	CC-13	3
JD150W/M2 (M3~M7)		110,120	150	2400	2850	1500	14.0	70	49	E11 or E14	CC-8	2
JD150W/M2 (M5~M7)		220/230	150	2250	2900	1500	16.0	80	55	E11 or E14	CC-13	3
		240/250	150	2250	2900	1500	16.0	80	55	E11 or E14	CC-13	3
JD250W/M2 (M5~M7)		110,120	250	4500	2900	2000	14.0	81	61	E11 or E14	CC-8	4
JD250W/M2 (M5~M7)		220/230	250	4500	2900	2000	15.0	81	61	E11 or E14	CC-8	4
		240/250	250	4500	2900	2000	15.0	81	61	E11 or E14	CC-8	4
JD500W/M2 (M5~M7)		110,120	500	9500	2950	2000	14.0	95	66	E11 or E14	CC-8	4
JD500W/M2 (M5~M7)		220/230	500	9500	2950	2000	15.0	95	66	E11 or E14	CC-8	4
		240/250	500	9500	2950	2000	15.0	95	66	E11 or E14	CC-8	4

Burning position: Any

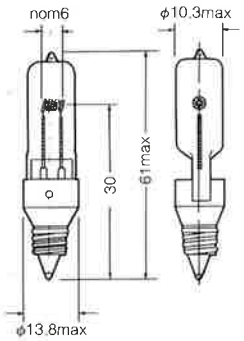


Fig. 1

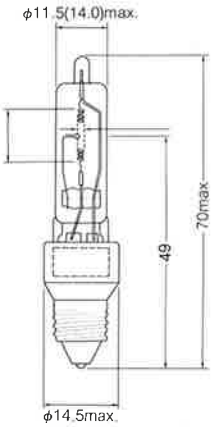


Fig. 2 ( ) 150W

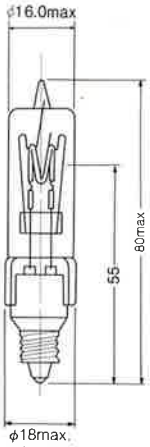


Fig. 3

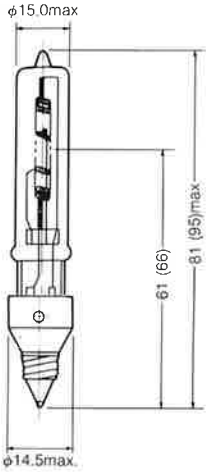
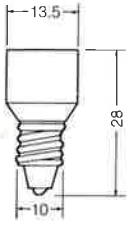
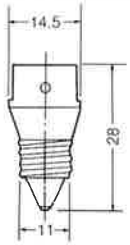


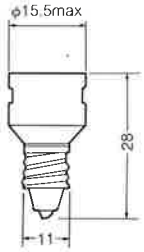
Fig. 4 ( ) 500W



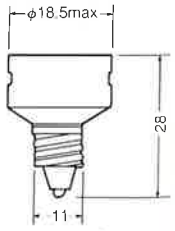
E10 (M1)



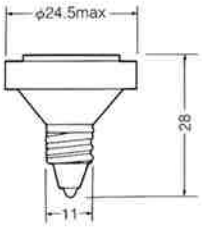
E11-14 (M2)



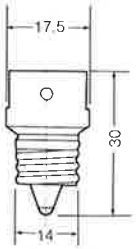
E11-15 (M3)



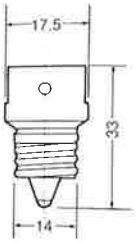
E11-18 (M4)



E11-24 (M5)



E14-17 (M6)



E14-17A (M7)

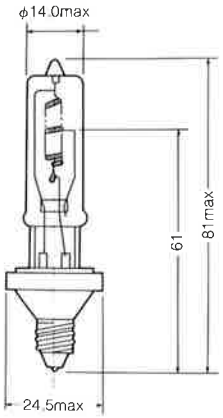


Fig. 5
JD250W/M5

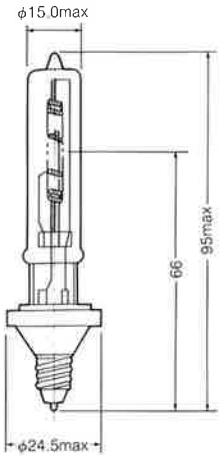


Fig. 6
JD500W/M5

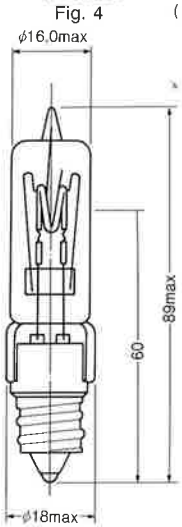


Fig. 7
JD100W & 150W/M7
220/230V
240/250V

*Please specify base type when ordering.
Example: JD220/230V 150W/M2 E11-14
JD220/230V 100W/M6 E14-17

Single Ended Type

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JD28V75W/BD		28	75	1350	2950	2000	10.3	60	37	BA15d	CC-8	3
JD100W/E2 (E1)		110,120	100	1600	2850	1500	11.5	88	69	E27-30	CC-8	1
JD100W/BD		110,120	100	1600	2850	1500	11.5	63	33	BA15d	CC-8	4
JD100W/E2 (E1)		220,230	100	1400	2700	1500	16.0	105	77	E27-30	CC-13	2
		240,250	100	1400	2700	1500	16.0	105	77	E27-30	CC-13	2
JD100W/BD		220,230	100	1400	2700	1500	16.0	87	55	BA15d	CC-13	5
		240,250	100	1400	2700	1500	16.0	87	55	BA15d	CC-13	5
JD150W/E2 (E1)		110,120	150	2400	2850	1500	14.0	90	69	E27-30	CC-8	1
JD150W/BD		110,120	150	2400	2850	1500	14.0	63	33	BA15d	CC-8	6
JD150W/E2 (E1)		220,230	150	2250	2900	1500	16.0	105	77	E27-30	CC-13	2
		240,250	150	2250	2900	1500	16.0	105	77	E27-30	CC-13	2
JD150W/BD		220,230	150	2250	2900	1500	16.0	87	55	BA15d	CC-13	7
		240,250	150	2250	2900	1500	16.0	87	55	BA15d	CC-13	7

Burning position: Any

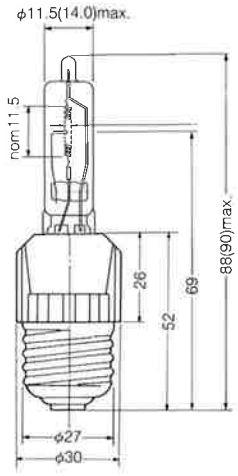


Fig. 1 ( ) 150W

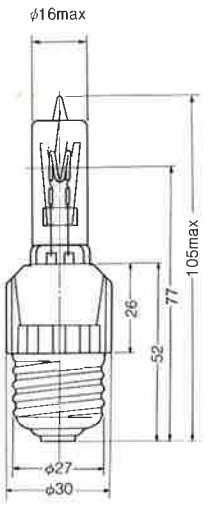


Fig. 2B

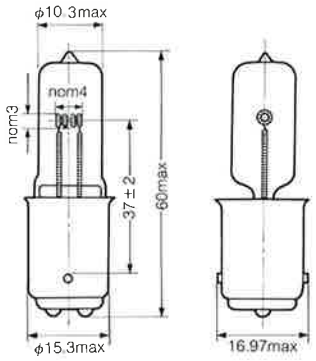
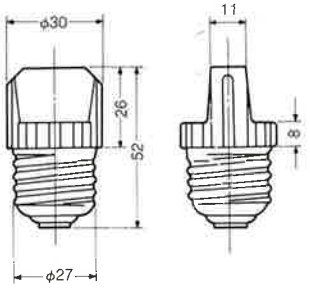
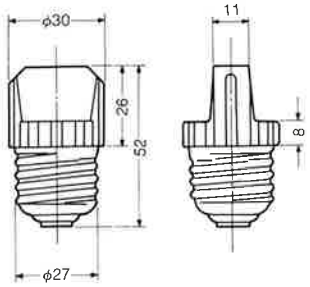


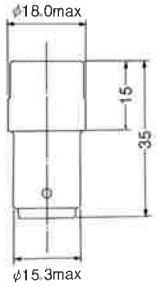
Fig. 3



E26/30 (E1)



E27/30 (E2)



BA15d
for 200V range
100W & 150W

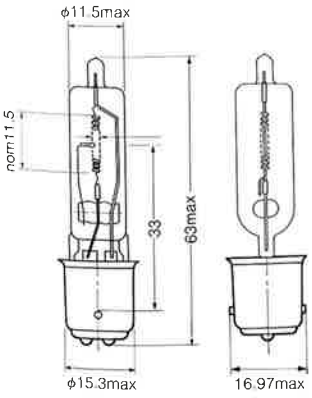


Fig. 4

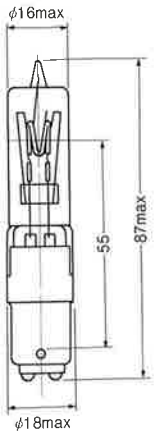


Fig. 5

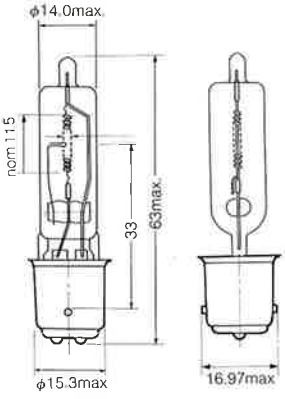


Fig. 6

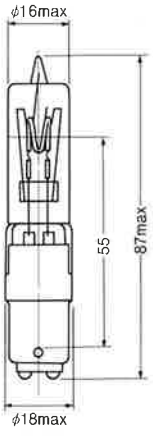


Fig. 7

Single Ended Type

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D. d	M.O.L. l	L.C.L.			
JD250W/E2 (E1)		110,120	250	4500	2900	2000	14.0	100	72	E27-30	CC-8	1
JD250W/BD		110,120	250	4500	2900	2000	14.0	75	42	BA15d	CC-8	3
JD250W/E2 (E1)		220,230	250	4500	2900	2000	15.0	100	72	E27-30	CC-8	(1)
		240,250	250	4500	2900	2000	15.0	100	72	E27-30	CC-8	(1)
JD250W/BD		220,230	250	4500	2900	2000	15.0	75	42	BA15d	CC-8	4
		240,250	250	4500	2900	2000	15.0	75	42	BA15d	CC-8	4
JD500W/E2 (E1)		110,120	500	9500	2950	2000	14.0	113	81	E27-30	CC-8	(2)
JD500W/BD		110,120	500	9500	2950	2000	14.0	90	48	BA15d	CC-8	5
JD500W/E2 (E1)		220,230	500	9500	2950	2000	15.0	113	81	E27-30	CC-8	2
		240,250	500	9500	2950	2000	15.0	113	81	E27-30	CC-8	2
JD500W/BD		220,230	500	9500	2950	2000	15.0	90	48	BA15d	CC-8	6
		240,250	500	9500	2950	2000	15.0	90	48	BA15d	CC-8	6

Burning position: Any

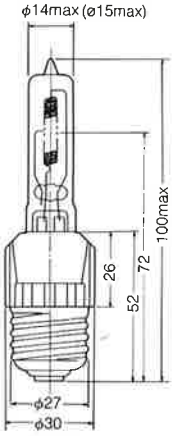


Fig. 1

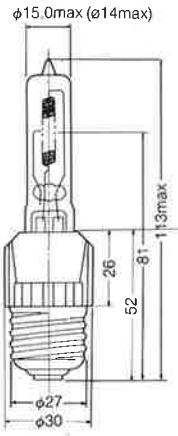


Fig. 2

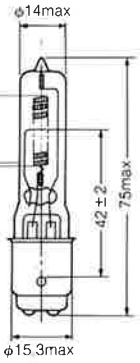


Fig. 3

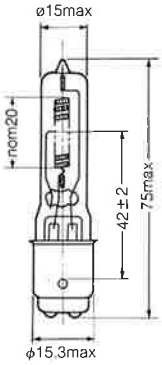


Fig. 4

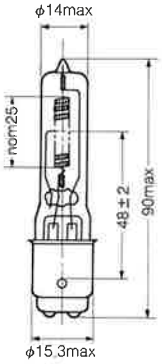


Fig. 5

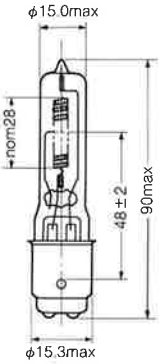
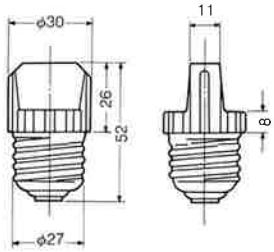


Fig. 6



E27/30 (E2)
(E26/30 (E1))

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JC12V20W20H/G4		12	20	350	2850	2000	9.0	30	19.5	G4	C-6	1
JC12V20W20H/G1		12	20	350	2850	2000	11.0	44	30.0	G6.35	C-6	2
JC12V50W20H/G1		12	50	950	3000	2000	11.0	44	30.0	G6.35	C-6	2
JC12V100W20H/G1		12	100	2000	3000	2000	11.0	44	30.0	G6.35	C-6	2

Burning position: Any

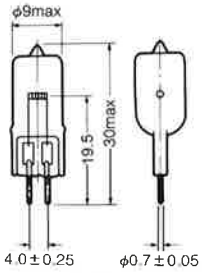


Fig. 1

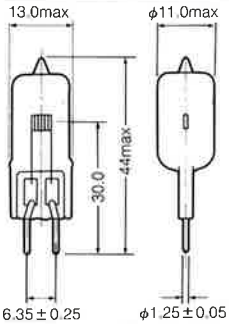
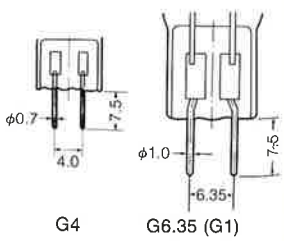


Fig. 2



G4 G6.35 (G1)

Double Ended Type

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No. & Remarks
							M.D. d	C. to B.E. c	M.O.L. l			
J200W		110/120	200	3200	2850	2000	9.0	117.6	119.0	R7s	C-8	1
J200W		220/230	200	3200	2800	1500	9.0	117.6	119.0	R7s	CC-8	1
		240/250	200	3200	2800	1500	9.0	117.6	119.0	R7s	CC-8	1
J250W		110/120	250	4000	2850	2000	9.0	117.6	119.0	R7s	C-8	1
J250W		220/230	250	4000	2800	1500	9.0	117.6	119.0	R7s	CC-8	1
		240/250	250	4000	2800	1500	9.0	117.6	119.0	R7s	CC-8	1
J300W		110/120	300	5400	2900	2000	9.0	117.6	119.0	R7s	C-8	1
J300W		220/230	300	5000	2850	1500	9.0	117.6	119.0	R7s	CC-8	1
		240/250	300	5000	2850	1500	9.0	117.6	119.0	R7s	CC-8	1
J500W		110/120	500	10,000	3000	2000	9.0	117.6	119.0	R7s	C-8	1A
J500W		220/230	500	9,500	2900	2000	9.0	117.6	119.0	R7s	CC-8	1
		240/250	500	9,500	2900	2000	9.0	117.6	119.0	R7s	CC-8	1
J500W-L		220/230	500	8750	2900	2000	11.0	189.1	190.5	R7s	CC-8	1
		240/250	500	8750	2900	2000	11.0	189.1	190.5	R7s	CC-8	1
J750W		110/120	750	15000	3000	2000	11.0	189.1	190.5	R7s	C-8	1A
J750W		220/230	750	15000	3000	2000	11.0	189.1	190.5	R7s	C-8	1
		240/250	750	15000	3000	2000	11.0	189.1	190.5	R7s	C-8	1
J1000W		110/120	1000	21000	3000	2000	11.0	189.1	190.5	R7s	C-8	1A
J1000W		220/230	1000	21000	3000	2000	11.0	189.1	190.5	R7s	C-8	1A
		240/250	1000	21000	3000	2000	11.0	189.1	190.5	R7s	C-8	1A
J1000W-L		110/120	1000	21000	3000	2000	11.0	254.1	255.7	R7s	C-8	1A
J1000W-L		220/230	1000	21000	3000	2000	11.0	254.1	255.7	R7s	C-8	1A
		240/250	1000	21000	3000	2000	11.0	254.1	255.7	R7s	C-8	1A
J1500W		110/120	1500	33000	3000	2000	11.0	254.1	255.7	R7s	C-8	1A
J1500W		220/230	1500	33000	3000	2000	11.0	254.1	255.7	R7s	C-8	1A
		240/250	1500	33000	3000	2000	11.0	254.1	255.7	R7s	C-8	1A
J2000W		220/230	2000	44000	3000	2000	11.0	331.9	333.5	R7s	C-8	1
		240/250	2000	44000	3000	2000	11.0	331.9	333.5	R7s	C-8	1
J2000W/Fa4		220/230	2000	44000	3000	2000	11.0	—	334.4	Fa4	C-8	2
		240/250	2000	44000	3000	2000	11.0	—	334.4	Fa4	C-8	2
JD500W		120	500	7500	2850	2000	14.0	74.9	78.4	RSC	CC-8	3A
JD1000W		120	1000	20000	3000	2000	20.0	138.1	140.0	RSC	CC-8	3A

Burning position: Horizontal ±5°
Remarks : A = Burning position: Any

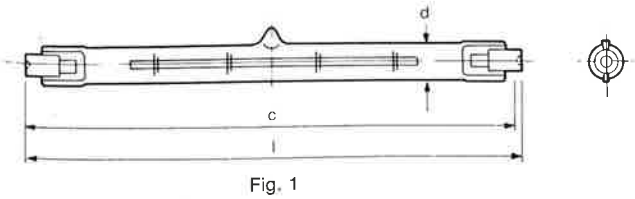


Fig. 1

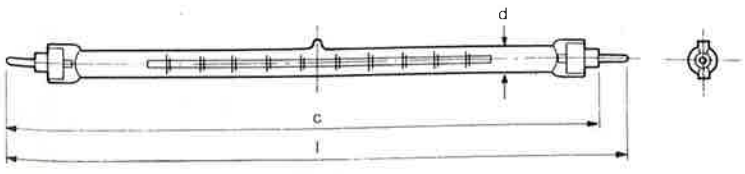


Fig. 2

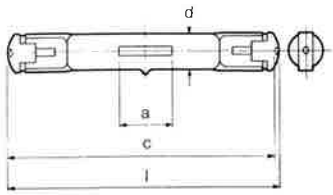


Fig. 3

Double Ended Type

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D. d	M.O.L. l	L.L. a			
J150W		100/120V	150	2250	2850	2000	9.0	—	—	R7s	C-8	1
J150W		220/230V	150	1875	2800	1500	9.0	—	—	R7s	CC-8	1
		240/250V	150	1875	2800	1500	9.0	—	—	R7s	CC-8	1
J100W-S		110/120V										
J100W-S		220/230V										
		240/250V										
J150W-S		110/120V	150	2400	2900	1500	9.0	80.3	23	R7s	CC-8	2
J150W-S		220/230V	150	1950	2800	1500	9.0	80.3	31	R7s	CC-8	2
		240/250V	150	1950	2800	1500	9.0	80.3	31	R7s	CC-8	2
J200W-S		110/120V	200	3400	2900	1500	11.0	80.3	30	R7s	CC-8	2
J250W-S		220/230V	250	3250	2850	1500	11.0	80.3	32	R7s	CC-8	2
		240/250V	250	3250	2850	1500	11.0	80.3	32	R7s	CC-8	2
J300W-S		110/120V	300	5400	3000	2000	11.0	80.3	27	R7s	CC-8	2

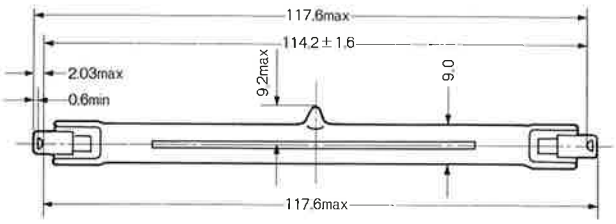


Fig. 1

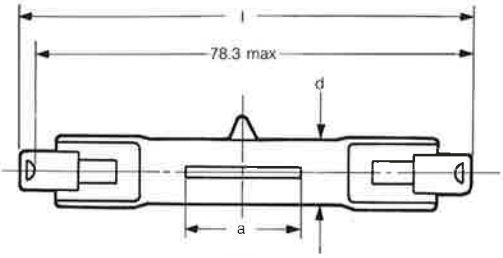


Fig. 2

Double Envelope Type

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JT500W		125/130	500	12000	3000	2000	38	215	130	E40	C-8	1
JT500W		230/240	500	10000	3000	2000	38	215	130	E40	CC-8	1
		240/250	500	10000	3000	2000	38	215	130	E40	CC-8	1
JT1000W		230/240	1000	24000	3000	2000	38	255	155	E40	C-8	2
		240/250	1000	24000	3000	2000	38	255	155	E40	C-8	2

Burning position: Horizontal ±15°

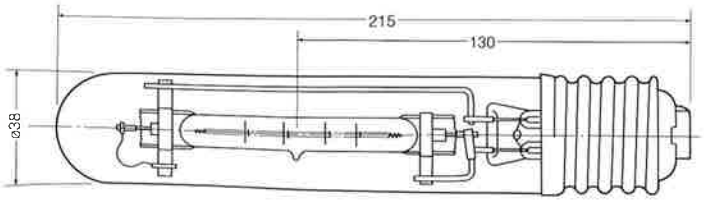


Fig. 1

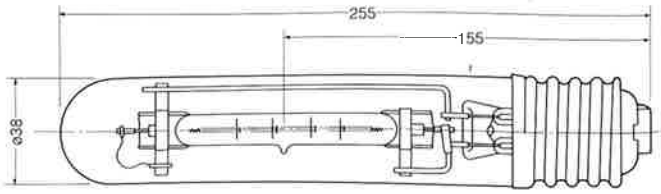


Fig. 2

Projection Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JC12V40W/G1		12	40	1040	3300	50	11	44	30	G6.35	C-6	1
JC12V50W/G1	BRL A1/220	12	50	1400	3300	50	11	44	30	G6.35	C-Bar-6	1
JC12V100W/G2	FCR A1/215	12	100	2800	3350	70	11	44	30	GY6.35	C-Bar-6	2
JC12V100WVF/G2		12	100	2900	3300	70	11	44	30.5	GY6.35	C-8	3
JC15V150W/G1	BRJ A1/234	15	150	4700	3400	70	11	44	30	G6.35	C-Bar-6	1
JC24V150W/G1	FCS A1/216	24	150	4700	3400	70	13.5	50	32	G6.35	C-Bar-6	4
JC24V150W1H/G1	FDV	24	150	4300	3250	100	13.5	50	30	G6.35	C-Bar-6	5
JC24V150W2H/G1		24	150	4350	3300	200	13.5	50	30	G6.35	C-Bar-6	5
FCS24V150W	FCS A1/216	24	150	4700	3400	70	13.5	50	30	G6.35	C-Bar-6	5
JC24V250W/G1	EHJ A1/223	24	250	8250	3400	70	13.5	55	33	G6.35	C-Bar-6	6
JC24V250WR/G1		24	250	8250	3400	50	13.5	55	33	G6.35	C-Bar-6	6
JC24V300W/G2		24	300	9900	3400	50	13.5	55	33	GY6.35	C-Bar-6	7
JC36V400W/G1	EVD A1/239	36	400	14000	3450	50	16	60	36	G6.35	C-Bar-6	8

Burning position: Any

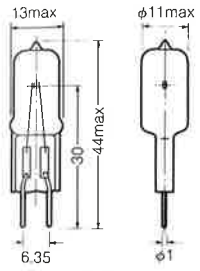


Fig. 1

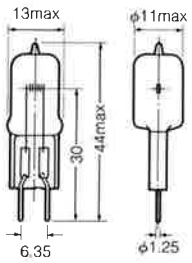


Fig. 2

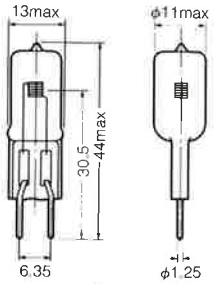
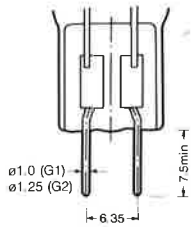


Fig. 3



G6.35 (G1)
GY6.35 (G2)

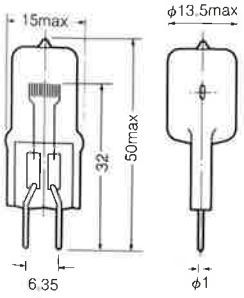


Fig. 4

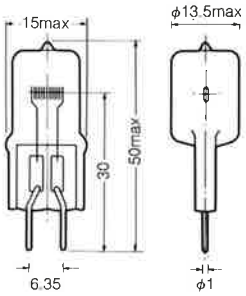


Fig. 5

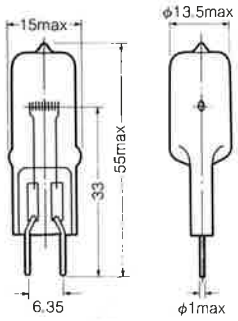


Fig. 6

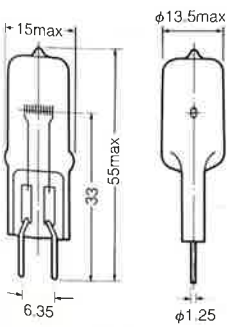


Fig. 7

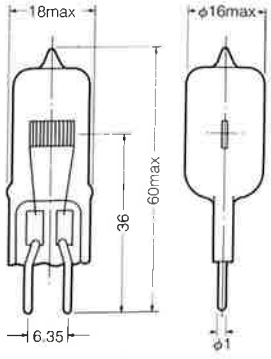
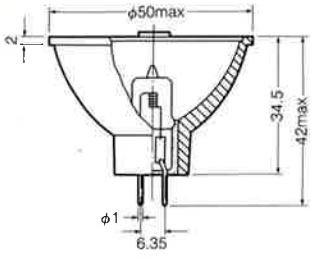


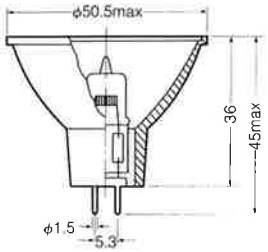
Fig. 8

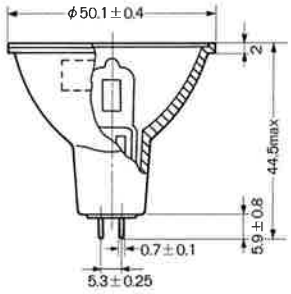
Projection Halogen Lamps

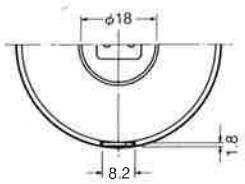
PHYSICAL DATA AND CHARACTERISTICS

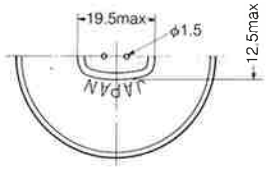
IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)		Base	Mounting Distance	Fig. No. & Remarks
						M.D.	M.O.L.			
JCR8V50WG1	EFM A1/229	8	50	3350	50	49.7	42	GZ6.35	32	1A
JCR12V75W/G1	EFN A1/230	12	75	3350	50	49.7	42	GZ6.35	32	1B
JCR12V100W/G1	EFP A1/231	12	100	3400	50	49.7	42	GZ6.35	32	1B
JCR15V150W/G1	EFR A1/232	15	150	3450	50	49.7	42	GZ6.35	32	1B
JCR24V250WA/G1	A1/246	24	250	3400	50	49.7	42	GZ6.35	32	1B
JCR30V80W/G2	ELB	30	80	3400	15	50.5	45	GX5.3	29	2B
JCR21V150W/G2	EJM	21	150	3350	40	50.5	45	GX5.3	38	2B
JCR24V200W/G2	EJL	24	200	3400	50	50.5	45	GX5.3	32	2B
JCR24V250W/G2	ELC	24	250	3400	50	50.5	45	GX5.3	32	2B
JCR120V300W	ELH ✕	120	300	3250	35	50.5	44.5	GY5.3	152.4	3B
JCR82V360W	ENX ✕	82	360	3250	75	50.5	44.5	GY5.3	298.5	3B
JCR120V300W	ENG	120	300	3450	15	50.5	44.5	GY5.3	152.4	3B











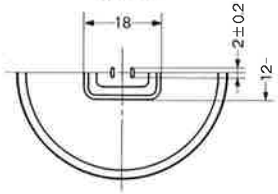
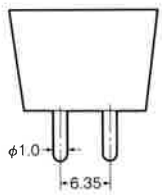
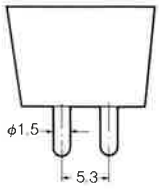


Fig. 1 Fig. 2 Fig. 3

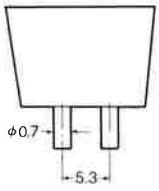
Burning position: Any
Remarks : A = Aluminum reflector
B = Dichroic reflector



GZ6.35 (G1)



GX5.3 (G2)



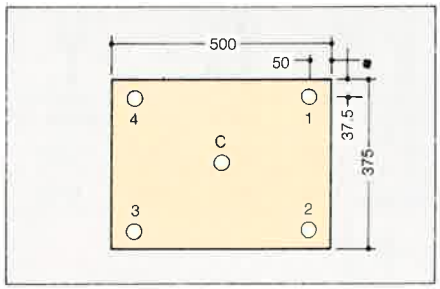
GY5.3

LUMINOUS INTENSITY ON SCREEN

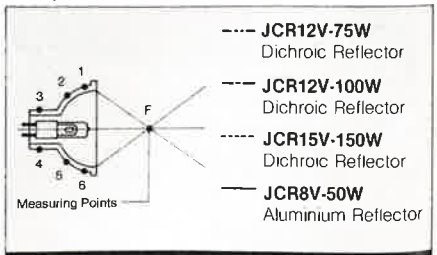
Measuring Condition

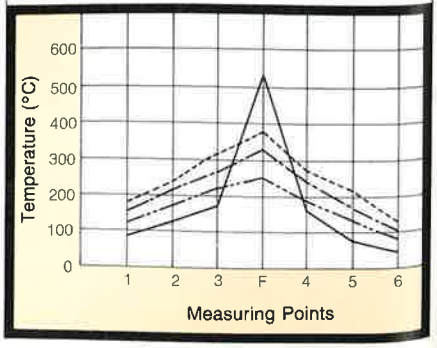
Lens: Elmo 1.3 Fixed Focus 18mm
Measuring Machine: Ours
Aperture Size: Super (5.32mm × 3.95mm)
Shutter: None

Measuring Points (Scale mm)



Temperature on Reflector





Luminous intensity at various temperatures on film surface
(Compared with alminum reflector)

Lamp	Center Illuminance at C (ℓ×)	Corner (point 1—4) to centre ratio	Dichroic reflector (°C)	Aluminium reflector (°C)
JCR8V50W	Over 800	More than 55%	—	520
JCR12V75W	Over 1000	More than 55%	250	620
JCR12V100W	Over 1200	More than 55%	320	780
JCR15V150W	Over 1400	More than 55%	390	800

Projection Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JCD150W-S/G1		100,120	150	4050	3250	50	13.5	50	30	G6.35	CC-6	1
JCD200W-S/G1		220/230	200	4700	3100	50	17.0	63	40	G6.35	CC-13	3
		240/250	200	4700	3100	50	17.0	63	40	G6.35	CC-13	3
JCD250W-S/G1		100,120	250	7000	3300	50	17.0	50	33	G6.35	CC-6	2
JCD250W-S/G1		220/230	250	6250	3200	50	17.0	63	40	G6.35	CC-13	3
		240/250	250	6250	3200	50	17.0	63	40	G6.35	CC-13	3
JCD300W-S/G1		100,120	300	8400	3250	50	17.0	50	33	G6.35	CC-6	2
JCD300W-S/G1		220/230	300	7500	3200	50	21.0	63	40	G6.35	CC-13	3
		240/250	300	7500	3200	50	21.0	63	40	G6.35	CC-13	3
FDX12V100W	FDX	12	100	2800	3350	70	11.0	44	30	GY6.35	C-Bar-6	4
FDW24V150W	FDW	24	150	4700	3400	70	13.5	50	30	G6.35	C-Bar-6	4
FDT12V100W	FDT	12	100	2800	3350	70	11.0	52	27	GY9.5	C-Bar-6	5
FDS24V150W	FDS A1/262	24	150	4700	3400	70	13.5	60	33	GY9.5	C-Bar-6	6
DZE24V150W	DZE	24	150	4300	3250	100	13.5	60	33	GY9.5	C-Bar-6	6

Burning position: Any

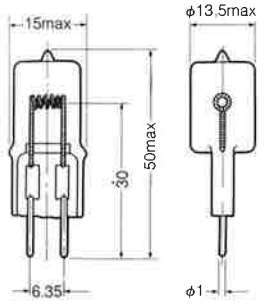


Fig. 1

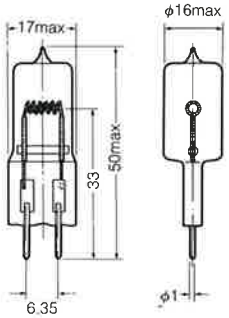


Fig. 2

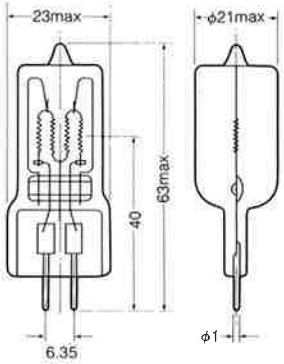
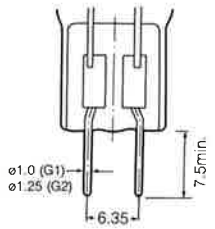


Fig. 3



G6.35 (G1)
GY6.35 (G2)

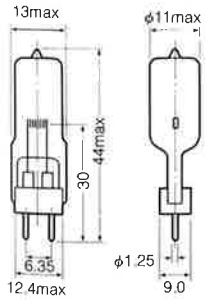


Fig. 4

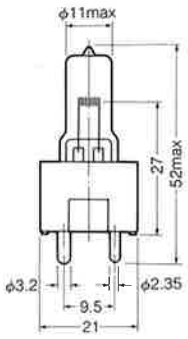


Fig. 5

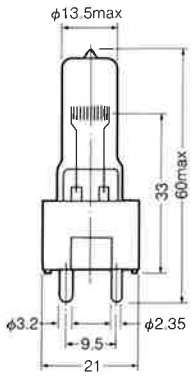
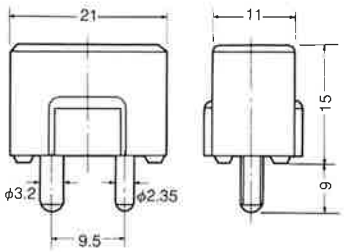


Fig. 6



GY9.5 (B)

Projection Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No. & Remarks
							M.D.	M.O.L.	L.C.L.			
JCD360W/A1	EYB	82	360	11000	3250	75	11	57	32.8	G5.3	CC-8	1
JCD500WS/A1		100,120	500	15500	3400	25	22	61	37	G5.3	CC-6	(2)
JCD500WC/A1		100,120	500	14000	3200	75	22	61	37	G5.3	CC-6	(2)
JCD500WS/A2		100,120	500	15500	3400	25	22	61	37	G6.35-1.5	CC-6	2
JCD500WC/A2		100,120	500	14000	3200	75	22	61	37	G6.35-1.5	CC-6	2
JCD600WS/A1		100,120	600	18600	3400	25	22	61	37	G5.3	CC-6	(2)
JCD600WC/A1	DYH	100,120	600	17000	3200	75	22	61	37	G5.3	CC-6	(2)
JCD600WS/A2		100,120	600	18600	3400	25	22	61	37	G6.35-1.5	CC-6	2
JCD600WC/A2		100,120	600	17000	3200	75	22	61	37	G6.35-1.5	CC-6	2
JCD650WS/B		100,120	650	20000	3400	25	22	63	36.5	GY9.5	CC-6	3
JCD650WC/B		100,120	650	18200	3200	50	24	66	36.5	GY9.5	CC-6	3
JCD650WC/B	DYR	220/230	650	16500	3200	50	24	66	36.5	GY9.5	2CC-8	4
		240/250	650	16500	3200	50	24	66	36.5	GY9.5	2CC-8	4
JCD530WC/B	DYR A1/244	220/230	530	14500	3200	50	22	66	36.5	GY9.5	2CC-8	6
		240	530	14500	3200	50	22	66	36.5	GY9.5	2CC-8	6
JP500WC/GY	A1/244	220/230	500	13500	3200	50	22	75	36.5	GY9.5	C-13×8	5.A
		240/250	500	13500	3200	50	22	75	36.5	GY9.5	C-13×8	5.A
JP650WC/GY	A1/247	220/230	650	17750	3200	75	23	75	36.5	GY9.5	C-13×8	5.A
		240/250	650	17750	3200	75	23	75	36.5	GY9.5	C-13×8	5.A
JP800WC/GY	A1/245	220/230	800	21500	3200	50	22	84	44.5	GY9.5	C-13×8	5.A
		240/250	800	21500	3200	50	22	84	44.5	GY9.5	C-13×8	5.A

Burning position: Any
Remarks : A = Burning position Base down ±90°

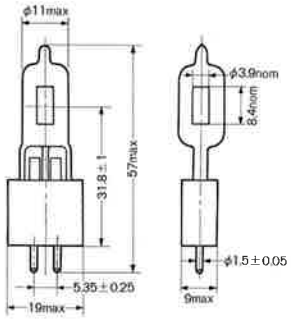


Fig. 1

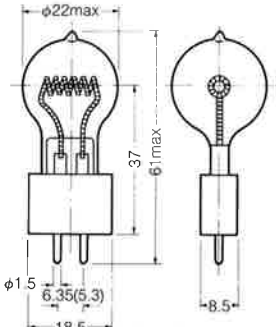


Fig. 2

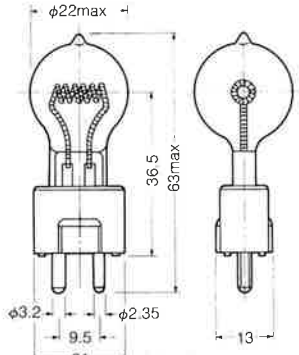


Fig. 3

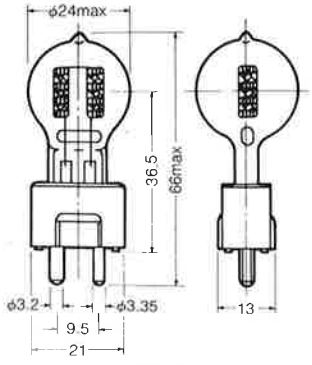


Fig. 4

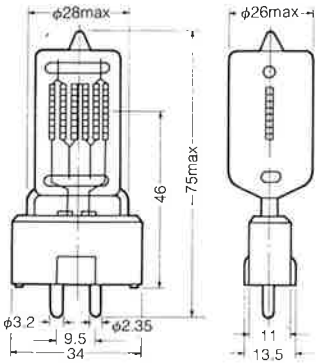


Fig. 5

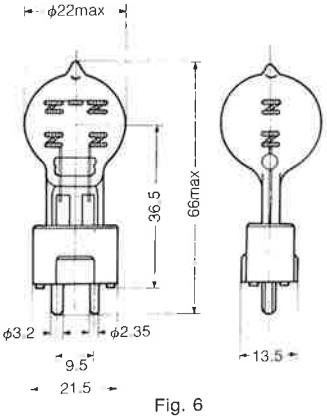
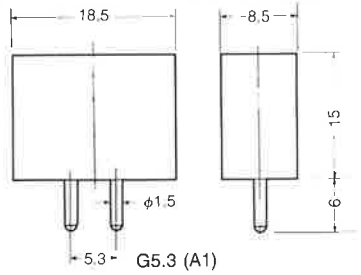
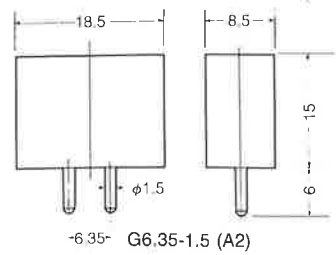


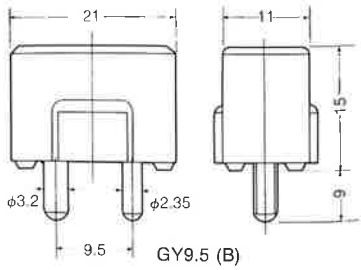
Fig. 6



G5.3 (A1)



G6.35-1.5 (A2)



GY9.5 (B)

Miscellaneous Projector Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JC12V20W20H/G1		12	20	350	2850	2000	11.0	44	30	G6.35	C-6	1
JC12V20W20H/G2		12	20	350	2850	2000	11.0	44	30	GY6.35	C-6	2
JC12V20W20H/G4		12	20	350	2850	2000	9.0	33	19.5	G4	C-6	3
JC12V35W20H/G1		12	35	560	2900	2000	11.0	44	30	G6.35	C-6	4
JC12V35W20H/G2		12	35	560	2900	2000	11.0	44	30	GY6.35	C-6	5
JC12V50W20H/G1		12	50	950	3000	2000	11.0	44	30	G6.35	C-6	1
JC12V50W20H/G2		12	50	950	3000	2000	11.0	44	30	GY6.35	C-6	2
JC12V50W20H/G2S	M32	12	50	850	3000	2000	11.0	44	30	GY6.35S	C-Bar-6	6
JC24V50W20H/G1		24	50	850	2950	2000	11.0	44	30	G6.35	C-Bar-6	7
JCD24V55W10H/G1		24	55	990	3000	1000	11.0	40	27.8	G6.35	CC-8	8
JCD24V75W20H/G1		24	75	1350	3000	2000	11.0	44	30	G6.35	CC-6	9
JC12V100W10H/G2		12	100	2200	3100	1000	11.0	44	30	GY6.35	C-Bar-6	10
JC12V100W20H/G1		12	100	2000	3000	2000	11.0	44	30	G6.35	C-Bar-6	7
JC12V100W20H/G2		12	100	2000	3000	2000	11.0	44	30	GY6.35	C-Bar-6	10
JC12V100W20H/G2S	M28	12	100	2000	3000	2000	11.0	44	30	GY6.35S	C-Bar-6	6
JC12V100W10H/B	DZZ	12	100	2200	3000	1000	12.2	52	27	GY9.5	C-Bar-6	11
JCD24V100W20H/G1		24	100	1800	3000	2000	11.0	44	30	G6.35	CC-6	9
JC24V150W10H/G1		24	150	3450	3100	1000	13.5	50	30	G6.35	C-Bar-6	12
JC24V150W20H/G1		24	150	3150	3000	2000	13.5	50	30	G6.35	C-Bar-6	12

Burning position: Any

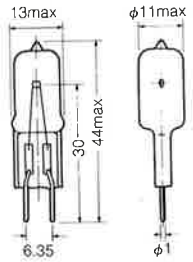


Fig. 1

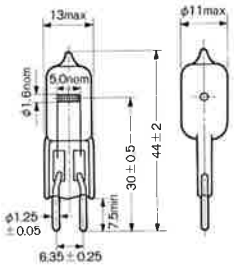


Fig. 2

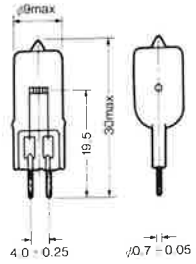


Fig. 3

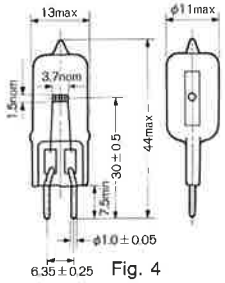


Fig. 4

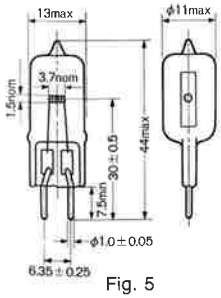


Fig. 5

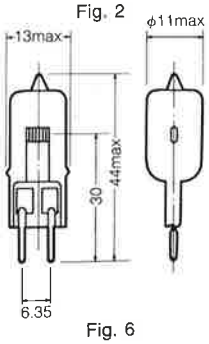


Fig. 6

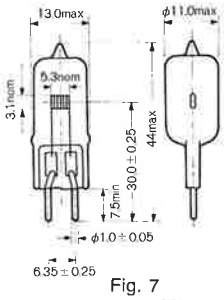


Fig. 7

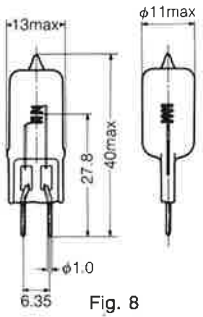


Fig. 8

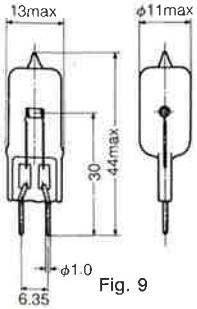


Fig. 9

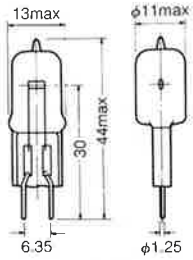


Fig. 10

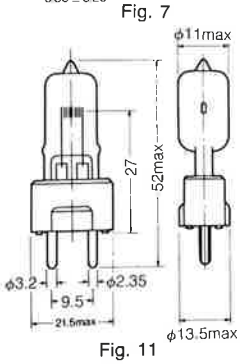


Fig. 11

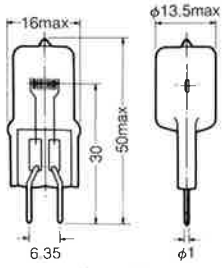
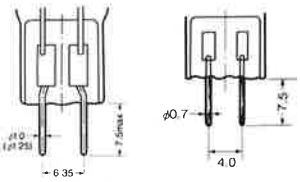
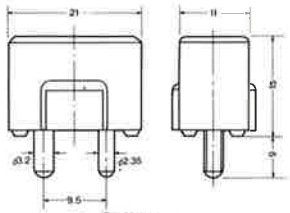


Fig. 12

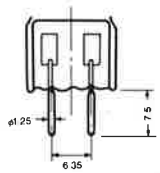


G6.35 (G1)
GY6.35 (G2)

G4 (G4)



GY9.5 (B)



GY6.35S (G2S)

Miscellaneous Projector Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No. & Remarks
							M.D.	M.O.L.	L.C.L.			
JCR9.5V55W15H/G1		9.5	55	—	3000	1500	50.0	42	—	GZ6.35	C-8	1A
JCR12V75W15H/G1		12	75	—	3000	1500	50.0	42	—	GZ6.35	C-8	1B
JVR120V150W2H/G1/D4		120	150	—	3200	200	50.5	46.5	—	GZ6.35	CC-2V	2B
JC24V200W20H/G1		24	200	4400	3000	2000	13.5	50	30	G6.35	C-Bar-6	3
JC24V250W3H/G1	M33	24	250	6750	3300	300	13.5	55	33	G6.35	C-Bar-6	4
JC24V250W20H/G1	M36	24	250	5500	3000	2000	13.5	55	33	G6.35	C-Bar-6	4

Burning position: Any
Remarks : A = Aluminium reflector
B = Dichroic mirror

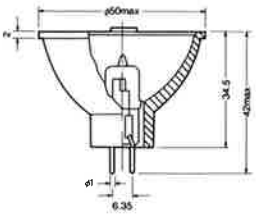


Fig. 1

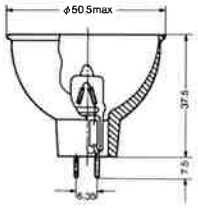


Fig. 2

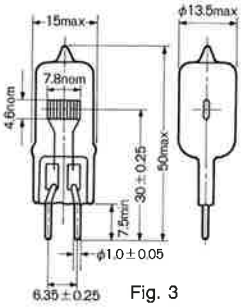


Fig. 3

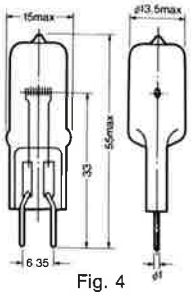
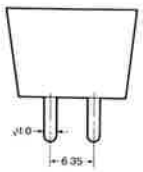
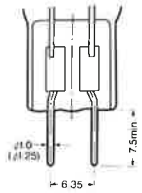


Fig. 4



GZ6.35 (G1)



G6.35 (G1)

Miscellaneous Projector Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JCD150WL/G1		100,120	150	3300	3100	300	13.5	50	30	G6.35	CC-6	1
JCD200WL/G1		100,120	200	4400	3100	300	15.5	50	33	G6.35	CC-6	1
JCD200WL/G1		220/230	200	4000	3000	150	15.5	63	40	G6.35	CC-13	2
		240/250	200	4000	3000	150	15.5	63	40	G6.35	CC-13	2
JCD250WL/G1		100,120	250	5750	3100	300	15.5	50	33	G6.35	CC-6	1
JCD250WL/G1		220/230	250	5000	3100	200	15.5	63	40	G6.35	CC-13	2
		240/250	250	5000	3100	200	15.5	63	40	G6.35	CC-13	2
JCD300WL/G1	DRA	100,120	300	6900	3100	300	15.3	50	33	G6.35	CC-6	1
JCD300WL/G1	A1/249	220/230	300	6600	3100	300	21.0	63	40	G6.35	CC-13	2
		240/250	300	6600	3100	300	21.0	63	40	G6.35	CC-13	2
JCD300W/A2		220/230	300	6900	3100	200	15.0	65	37	G6.35-1.5	CC-2V	3
		240/250	300	6900	3100	200	15.5	65	37	G6.35-1.5	CC-2V	3

Burning position: Any

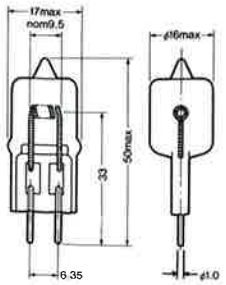


Fig. 1

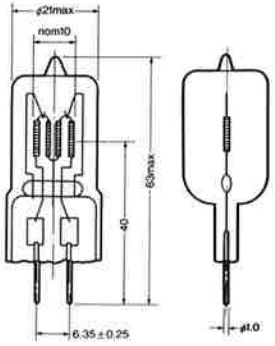


Fig. 2

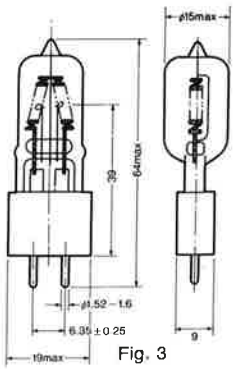
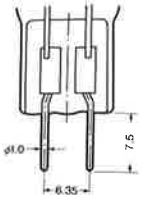
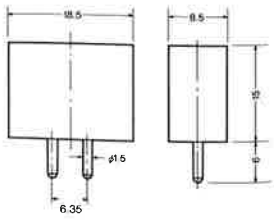


Fig. 3



G6.35



G6.35-1.5 (A2)

Photographic Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)				Filament	Fig. No.
							M.D. d	L.L. a	M.O.L. l	C. to B.E. c		
JPD250W/DXM	DXM	30	250	8400	3400	12	14.0	8	59.6	56.6	CC-8	1
JPD375W/DWZ	DWZ	30	375	7200	3000	1000	14.0	10	79.3	76.3	CC-8	1
JPD420WC/FAL	FAL A1/227	120	420	11000	3200	75	14.0	19	66.9	63.6	CC-8	1
JPD650WC		220/230	650	16250	3200	100	14.0	26	79.3	76.3	CC-8	1
		240	650	16250	3200	100	14.0	26	79.3	76.3	CC-8	1
JPD650WS		220/230	650	19500	3400	25	14.0	26	79.3	76.3	CC-8	1
		240	650	19500	3400	25	14.0	26	79.3	76.3	CC-8	1
JPD800WC/DXX	DXX P2/13	220/230	800	20000	3200	75	14.0	29	79.3	76.3	CC-8	1
		240	800	20000	3200	75	14.0	29	79.3	76.3	CC-8	1
JPD600WC/FCB	FCB A1/228	120	600	16250	3200	75	14.0	19	93.6	90.2	CC-8	1
JPD600WC/FEB	FEB A1/228	220/230	600	15000	3200	75	14.0	19	93.6	90.2	CC-8	1
JPD600WC/FEA	FEA A1/228	240	600	15000	3200	75	14.0	19	93.6	90.2	CC-8	1

Burning position : Any
Base : R7S

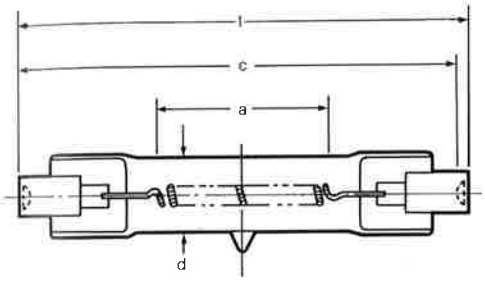


Fig. 1

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)				Filament	Fig. No.
							M.D. d	L.L. a	M.O.L. l	C. to B.E. c		
JP1000WS	P1/12	220/230	1000	32000	3400	15	11.0	80	127.0	124	C-8	1
JPD650WS/DWY	DWY P1/9	115/120	650	19500	3400	25	14.0	25	79.3	76.3	CC-8	1
JPD1000WS/DXN	DXN	120	1000	30000	3400	30	16.0	25	95.1	92.1	CC-8	1
JCR150W/G1/A1		100/120	150	—	3000	50	50.5	—	—	—	CC-8	2

Burning position : Any

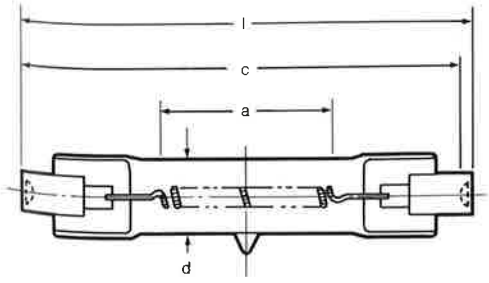


Fig. 1

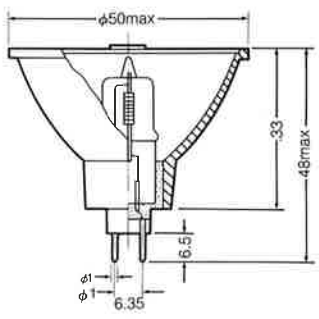
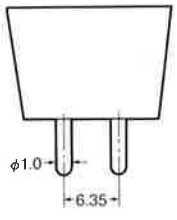


Fig. 2



GZ6.35 (G1)

Studio Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts (V)	Watts (W)	Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Live (hrs.)	Dimensions (mm)				Filament	Fig. No.
							M.D. d	L.L. a	M.O.L. l	C. to B.E. c		
JP425WC1		115/120	425	10600	3200	300	11.0	62	119.0	117.6	C-8	1
JP500WC1		115/120	500	13250	3200	400	11.0	68	119.0	117.6	C-8	1
JP625WC1	P2/15	115/120	625	16250	3200	75	11.0	68	119.0	117.6	C-8	1
JP625WC1	P2/15	220/230	625									
		240	625	16250	3200	150	11.0	68	119.0	117.6	C-8	
JP800WC1	P2/11	220/230V	800	21600	3200	150	11.0	68	119.0	117.6	C-8	1
JP1000WC1		115/120	1000	26000	3200	300	11.0	75	119.0	117.6	C-8	1
※ JP1000WC1		220/230	1000									
JP1000WC2		115/120	1000	25000	3200	200	11.0	75	127.0	125.6	C-8	1
JP1000WC2		220/230	1000	25000	3200	200	11.0	75	127.0	125.6	C-8	1
		240	1000	25000	3200	200	11.0	75	127.0	125.6	C-8	1
※ JP1000WC3	P2/7	115/120	1000	26000	3200	200	11.0	115	190.5	189.1	C-8	1
JP1000WC3	P2/7	220/230	1000	26000	3200	200	11.0	133	190.5	189.1	C-8	1
		240	1000	26000	3200	200	11.0	133	190.5	189.1	C-8	1
※ JP1250WC3	P2/12	115/120	1250	33500	3200	200	11.0	120	190.5	189.1	C-8	1
JP1250WC3	P2/12	220/230	1250	33500	3200	200	11.0	138	190.5	189.1	C-8	1
		240	1250	33500	3200	200	11.0	138	190.5	189.1	C-8	1
JP2000WC		220/230	2000	54000	3200	200	11.0	260	333.5	331.9	C-8	1
		240	2000	54000	3200	200	11.0	260	333.5	331.9	C-8	1
※ JP2000W10H/Fa4		220/230	2000	47000	3050	1000	11.0	250	334.4	—	C-8	2
		240	2000	47000	3050	1000	11.0	250	334.4	—	C-8	2
JPD420WC/FAL	FAL	120	420	11000	3200	75	14.0	19	66.9	63.6	CC-8	3
JPD600WC/FFJ	FFJ	120	600	17000	3200	75	14.0	19	66.9	63.6	CC-8	3
JPD400WC/FDA	FDA	120	400	10400	3100	200	14.0	25	79.3	76.3	CC-8	3
JPD650WC/FAD	FAD	120	650	16500	3200	100	14.0	25	79.3	76.3	CC-8	3
JPD650WC		220/230	650	16250	3200	100	14.0	26	79.3	76.3	CC-8	3
		240	650	16250	3200	100	14.0	26	79.3	76.3	CC-8	3
JPD800WC/DXX		220/230	800	20000	3200	75	14.0	29	79.3	76.3	CC-8	3
		240	800	20000	3200	75	14.0	29	79.3	76.3	CC-8	3
JPD500WC/FGD	FGD	120	500	13000	3200	100	14.0	19	79.3	76.3	CC-8	3
JPD600WC/FCB	FCB	120	600	16500	3200	75	14.0	19	93.6	90.2	CC-8	3
JPD600WC/FEB	FEB	220/230	600	15000	3200	75	14.0	19	93.6	90.2	CC-8	3
JPD600WC/FEA	FEA	240	600	15000	3200	75	14.0	19	93.6	90.2	CC-8	3
※ JPD750WC/FGB	FGB	120	750	19500	3200	125	16.0	26	95.1	92.1	CC-8	3
JPD1000WC/DXW	DXW	120	1000	25000	3200	150	16.0	25	95.1	92.1	CC-8	3
※ JPD1000WC/DYN	DYN	120	1000	24500	3100	150	16.0	28	111.1	108.1	CC-8	3
JPD1000WC/DYA	DYA	120	1000	28000	3200	200	16.0	28	111.1	108.1	CC-8	3
JPD2000WC/FEX	FEX	220/230	2000	50000	3200	200	26.0	35	142.9	138.8	CC-8	3
		240	2000	50000	3200	200	26.0	35	142.9	138.8	CC-8	3

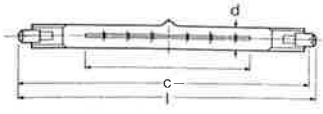


Fig. 1

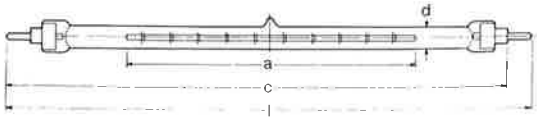


Fig. 2

Burning position: Any
Base: R7s

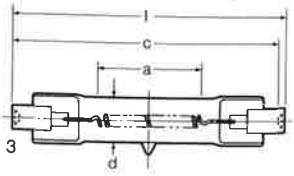


Fig. 3

Studio Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No. & Remarks
							M.D. d	M.O.L.	L.C.L.			
JCD30V250WSB/B	DYG	30	250	7500	3300	30	22.0	60	36.5	GY9.5	CC-6	3
JCD30V250W/M1	FBV	30	250	7000	3400	30	10.3	61	27.5	E10	CC-8	1
JCD250WC/A1		120	250	6250	3200	75	22.0	61	37.0	G5.3	CC-6	2 Video
JCD600WC/A1	DYH	120	600	17000	3200	75	22.0	61	37.0	G5.3	CC-6	2
JCD650WC/A1	DVY	120	650	20000	3400	25	22.0	61	37.0	G5.3	CC-6	2
JCD600WC/B	DYS	120	600	17000	3200	75	22.0	63	36.5	GY9.5	CC-6	3
JCD650WC/B		120	650	18200	3200	75	22.0	63	36.5	GY9.5	CC-6	3
JCD650WS/B	EKD	120	650	20000	3400	25	22.0	63	36.5	GY9.5	CC-6	3
JCD650WC/B	DYR	220/230	650	16500	3200	50	24.0	66	36.5	GY9.5	2CC-8	4
		240/250	650	16500	3200	50	24.0	66	36.5	GY9.5	2CC-8	4
JPD500W20H/G9.5	EHD	120	500	9500	2950	2000	14.0	105	60.5	G9.5	CC-8	6
JPD750WB/G9.5		220/230	750	16500	3000	750	15.0	105	60.5	G9.5	CC-8	6
		240	750	16500	3000	750	15.0	105	60.5	G9.5	CC-8	6
JPD1000WC/G9.5	FEL	100	1000	28000	3200	300	19.0	105	60.5	G9.5	CC-8	6
		120	1000	28000	3200	300	19.0	105	60.5	G9.5	CC-8	6
JPD1000WC/G9.5	FEP	220/230	1000	25000	3200	150	19.0	105	60.5	G9.5	CC-8	6
		240/250	1000	25000	3200	150	19.0	105	60.5	G9.5	CC-8	6
JPD1000WB/G9.5		220/230	1000	22000	3050	500	19.0	105	60.5	G9.5	CC-8	6
		240/250	1000	22000	3050	500	19.0	105	60.5	G9.5	CC-8	6
JCD1000WC/C3		100	1000	28000	3200	75	26.0	75	46.0	GY9.5	2CC-8	5
		120	1000	28000	3200	75	26.0	75	46.0	GY9.5	2CC-8	5
JCD1000WC/C3		220/230	1000	26000	3100	75	26.0	80	46.0	GY9.5	2CC-8	5
		240/250	1000	26000	3100	75	26.0	80	46.0	GY9.5	2CC-8	5

Burning position: Any

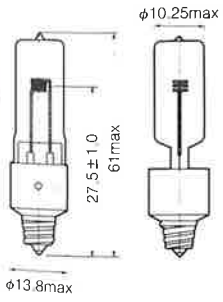


Fig. 1

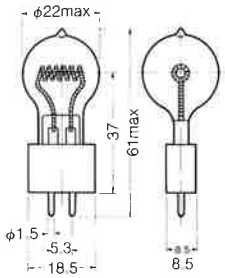


Fig. 2

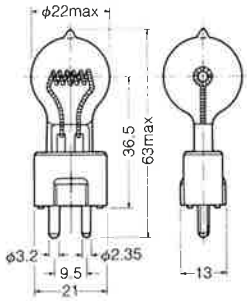


Fig. 3

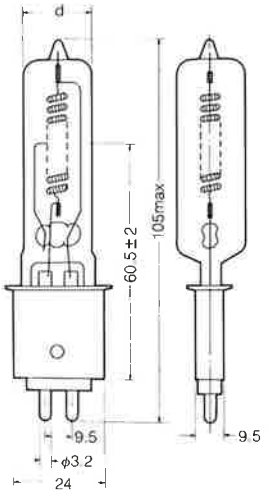
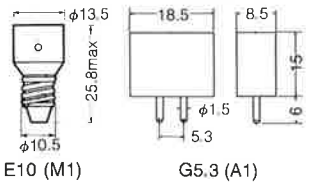
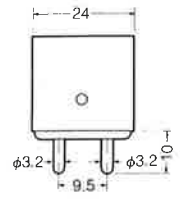


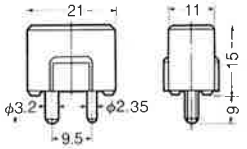
Fig. 6



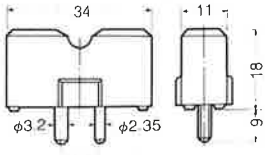
E10 (M1) G5.3 (A1)



G9.5



GY9.5 (B)



GY9.5 (C3)

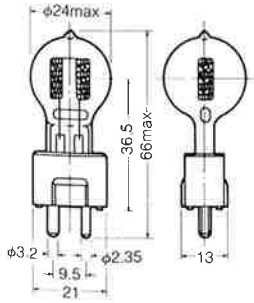


Fig. 4

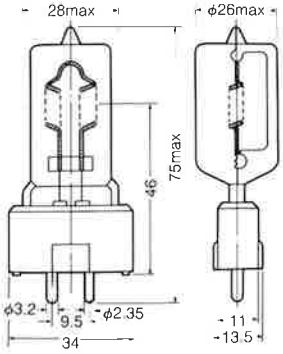


Fig. 5

Studio Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JP650WC/GX/55	CP23/47	115/120	650	17000	3200	100	22.0	110	55	GX9.5	C-13×8	1
JP650WC/GX/55	CP23	220/230	650	16800	3200	100	22.0	110	55	GX9.5	C-13×8	1
		240	650	16800	3200	100	22.0	110	55	GX9.5	C-13×8	1
JP1000C/GX/55	CP24	115/120	1000	27000	3200	200	25.5	110	55	GX9.5	C-13×8	1
JP1000C/GX/55	CP24	220/230	1000	26000	3200	200	25.0	110	55	GX9.5	C-13×8	1
		240	1000	26000	3200	200	25.0	110	55	GX9.5	C-13×8	1
※ JP650WC/G22	CP39	115/120	650	17000	3200	100	22.0	140	63.5	G22	C-13×8	3
※ JP650WC/G22	CP39	220/230	650	16800	3200	100	22.0	140	63.5	G22	C-13×8	3
		240	650	16800	3200	100	22.0	140	63.5	G22	C-13×8	3
※ JP1000WC/G22	CP40	115/120	1000	27000	3200	200	25.0	140	63.5	G22	C-13×8	3
※ JP1000WC/G22	CP40	220/230	1000	26000	3200	200	25.0	140	63.5	G22	C-13×8	3
		240	1000	26000	3200	200	25.0	140	63.5	G22	C-13×8	3
※ JP2000WC/GY16	CP43	220/230	2000	54000	3200	400	30.0	145	70.0	GY16	C-13×8	2
		240	2000	54000	3200	400	30.0	145	70.0	GY16	C-13×8	2
※ JP650WC/P28S	CP51/69	115/120	650	17000	3200	100	22.0	130	55.5	P28S	C-13×8	4
※ JP650WC/P28S	CP51/69	220/230	650	16800	3200	100	22.0	130	55.5	P28S	C-13×8	4
		240	650	16800	3200	100	22.0	130	55.5	P28S	C-13×8	4
※ JP1000WC/P28S	CP52	115/120	1000	17000	3200	200	25.0	130	55.0	P28S	C-13×8	4
※ JP1000WC/P28S	CP52	220/230	1000	16800	3200	200	25.0	130	55.0	P28S	C-13×8	4
		240	1000	16800	3200	200	25.0	130	55.0	P28S	C-13×8	4

Burning position: Base down ±90°

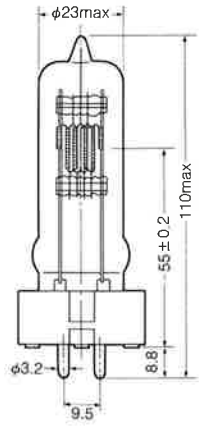


Fig. 1

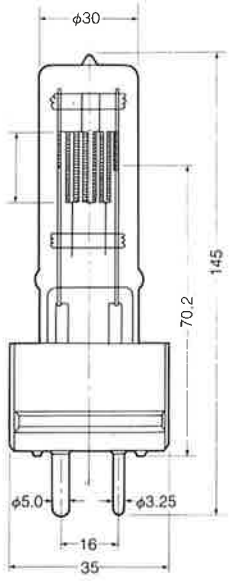


Fig. 2

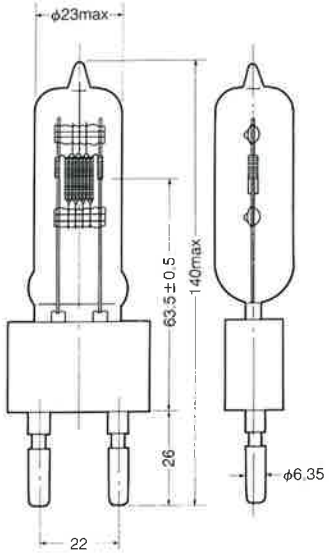


Fig. 3

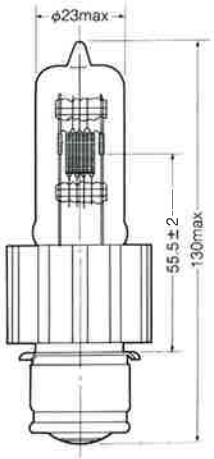


Fig. 4

Stage Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JP500WB/GY/46		115/120	500	11000	3050	300	22.0	90	46.5	GY9.5	C-13×8	1
JP500WB/GY/46	T/18	220/230	500	11000	3050	300	22.0	90	46.5	GY9.5	C-13×8	1
		240	500	11000	3050	300	22.0	90	46.5	GY9.5	C-13×8	1
※ JP500WB/P28/55		115/120	500	9500	3000	750	22.0	130	55.5	P28S	C-13×8	2
※ JP500WB/P28/55	T/17, T/27	220/230	500	9500	3000	750	22.0	130	55.5	P28S	C-13×8	2
		240	500	9500	3000	750	22.0	130	55.5	P28S	C-13×8	2
※ JP650WB/P28/55		115/120	650	13500	3000	750	22.0	130	55.5	P28S	C-13×8	2
※ JP650WB/P28/55	T/13, T/22	220/230	650	13500	3000	750	22.0	130	55.5	P28S	C-13×8	2
		240	650	13500	3000	750	22.0	130	55.5	P28S	C-13×8	2
JP650WB/GX/55		115/120	650	13500	3000	750	25.0	110	55	GX9.5	C-13×8	3
JP650WB/GX/55	T/12	220/230	650	13500	3000	750	25.0	110	55	GX9.5	C-13×8	3
		240	650	13500	3000	750	25.0	110	55	GX9.5	C-13×8	3
JP650W/GY/46	T/26	220/240	650	14300	3050	300	22.0	90	46.5	GY9.5	C-13×8	3
		240	650	14300	3050	300	22.0	90	46.5	GY9.5	C-13×8	3
※ JP1000WB/P28/55		115/120	1000	23000	3050	750	75.0	130	55.5	P28S	C-13×8	2
※ JP1000WB/P28/55	T/14, T/20	220/230	1000	23000	3050	750	75.5	130	55.5	P28S	C-13×8	2
		240	1000	23,000	3050	750	75.5	130	55.5	P28S	C-13×8	2
※ JP1000WB/P28/89		115/120	1000	23000	3050	750	23.0	160	89.0	P28S	C-13×8	2
※ JP1000WB/P28/89	T/15, T/23	220/240	1000	23000	3050	750	23.0	160	89.0	P28S	C-13×8	2
		240	1000	23000	3050	750	23.0	160	89.0	P28S	C-13×8	2
JP1000WB/GX/55		115/120	1000	23000	3050	750	25.0	110	55	GX9.5	C-13× 8	3
JP1000WB/GX/55-BP	T/11	220/230	1000	23000	3050	750	25.0	110	55	GX9.5	C-13×D	(3)
		240	1000	23000	3050	750	25.0	110	55	GX9.5	C-13×D	(3)
JP1000WB/GX/55	T/11	220/230	1000	23000	3050	750	25.0	110	55	GX9.5	C-13×8	3
		240	1000	23000	3050	750	25.0	110	55	GX9.5	C-13×8	3

Burning position: Base down ±90°

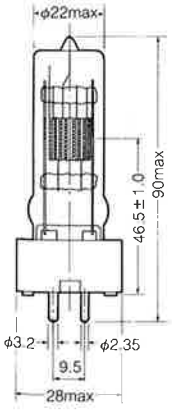


Fig. 1

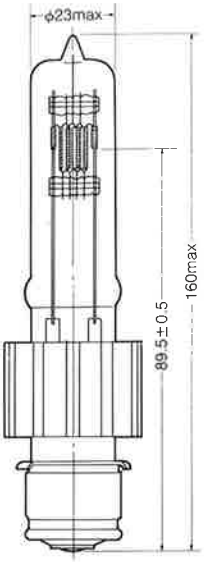


Fig. 2

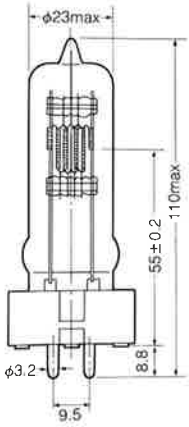
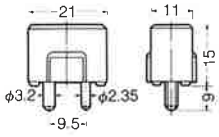
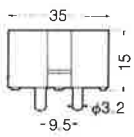


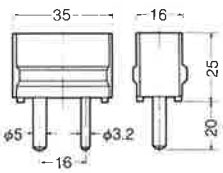
Fig. 3



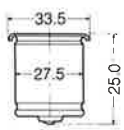
GY9.5



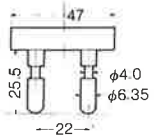
GX9.5



GY16



P28S



G22

Traffic Signal Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JC12V50W20H/G2S	M32	12	50	950	3000	2000	11.0	44	30	GY6.35S Soft Pin	C-Bar-6	1
JC12V100W20H/G2S	M28	12	100	2000	3000	2000	11.0	44	30	GY6.35S Soft Pin	C-Bar-6	1
JCD24V100W20H/G1		24	100	1800	3000	2000	13.0	44	30	G6.35	CC-6	2

Burning position: Any

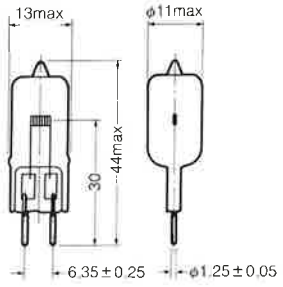


Fig. 1

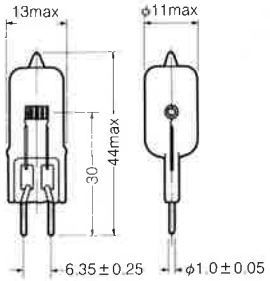
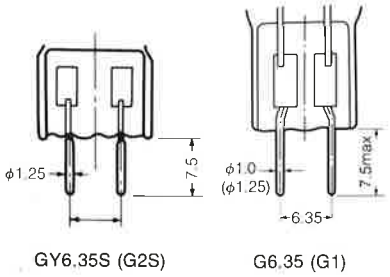


Fig. 2



GY6.35S (G2S)

G6.35 (G1)

Aircraft Use Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts (V)	Watts (W)	Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JCD24V150W10H/G1		24	150	2700	3000	1000	15.0	63.0	38.5	G6.35	CC-6	1
JCD26V150W10H/G1		26	150	2700	3000	1000	15.0	63.0	38.5	G6.35	CC-8	1
JC12V125W10H/BD		12	125	2400	3000	1000	12.0	52.0	28.8	BA15d/19	C-8	2
JCD24V150W5H/BD		24	150	3630	3150	500	14.0	52.0	28.8	BA15d/19	CC-8	3
JCD26V150W5H/BD		26	150	3630	3150	500	14.0	52.0	28.8	BA15d/19	CC-8	3
J10V100W		10	100	1800	2950	2000	11.0	52.0	—	Metal Sleave	C-8	4

Burning position: Any

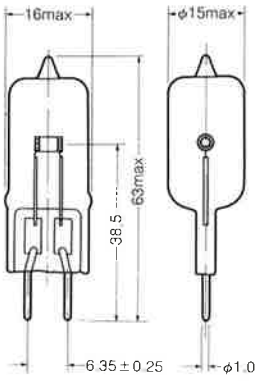


Fig. 1

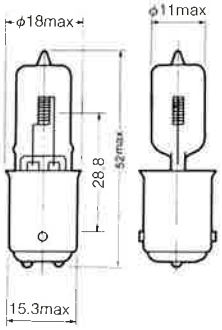


Fig. 2

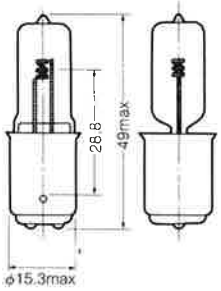


Fig. 3

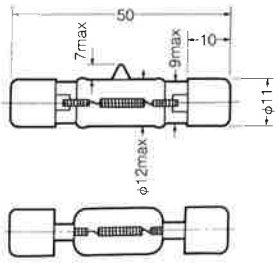
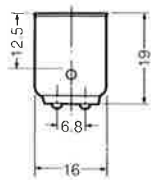


Fig. 4



BA15d/19 (BD)

Airfield Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts (V)	Watts (W)	Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
※ JF6.6A45W/B		—	45	740	2900	500	11.0	65	39	GY9.5	C-Bar-6	1
JF6.6A45W02/B	EXM	—	45	750	2900	1000	11.0	44	25.5	GY9.5	C-8	2
JF6.6A150W/B	EWR	—	150	3600	3100	500	13.5	65	39	GY9.5	C-Bar-6	1
JF6.6A200W/B		—	200	4300	3000	500	13.5	65	39	GY9.5	CC-6	3
JF6.6A30W02/B		—	30	375	2800	1000	11.5	44	25.4	GY9.5	C-8	2
※ JF6.6A115W/B		—	115	2500	3000	500	11.5	65	39	GY9.5	C-Bar-6	1
※ JF6.6A45W/PK30d		—	45	800	3000	1000	13.5	—	16	PK30d	C-8	—
JF6.6A100W/PK30d		—	100	2200	3100	1000	13.5	—	20	PK30d	C-Bar-6	—
JF6.6A150W/PK30d		—	150	3600	3000	1000	13.5	—	20	PK30d	CC-6	4
JF6.6A200W/PK30d		—	200	4800	3000	1000	13.5	—	20	PK30d	CC-6	4
JF6.6A45W		—	45	630	2850	1000	8.0	52.0		R7s	C-8	5
JF6.6A100W		—	100	2120	3000	1000	11.0	63.6		R7s	CC-8	6
JF6.6A100W-2		—	100	2120	3000	1000	11.0	58.0		R7s	CC-8	6
JF6.6A200W		—	200	4240	3000	1000	11.0	63.6		R7s	CC-8	6
JF6.6A100W Wire Lead		—	100	2120	3000	1000	11.0	49.0		Wire Lead	CC-8	7
JF6.6A100W Wire Lead		—	200	4240	3000	1000	11.0	49.0		Wire Lead	CC-8	7

Burning position: Any

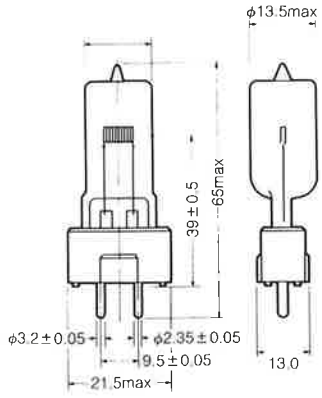


Fig. 1

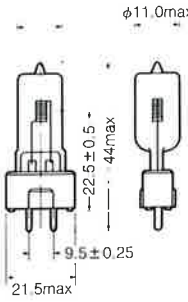


Fig. 2

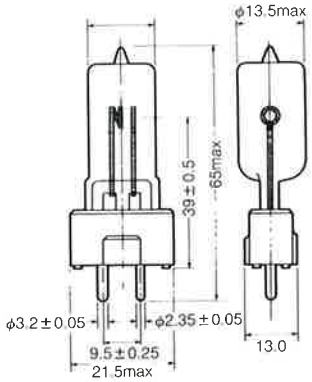
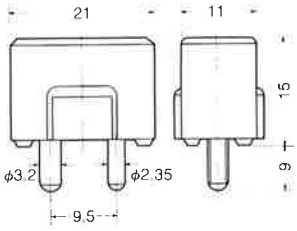


Fig. 3



GY9.5 (B)

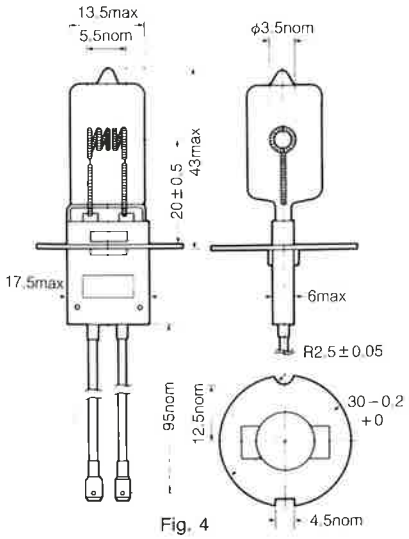


Fig. 4

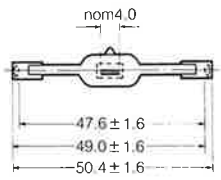


Fig. 5

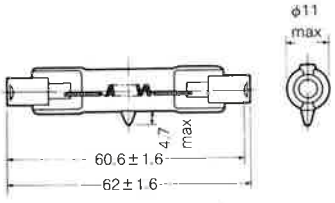


Fig. 6

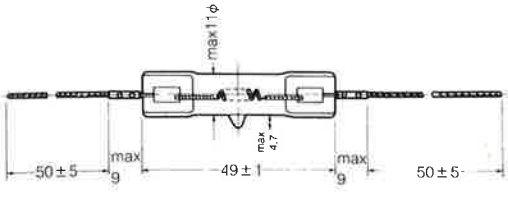


Fig. 7

Marine & Boat Use Tungsten Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JCD24V150W5H/BD		24	150	3650	3150	500	14.0	49	28.8	BA15d/19	CC-8	1
JD250W/M5		120	250	4500	2900	2000	15.0	81	61	E11-24	CC-8	2
JD250W/M5		220/230	250	4500	2900	2000	15.0	81	61	E11-24	CC-8	2
		240/250	250	4500	2900	2000	15.0	81	61	E11-24	CC-8	2
JD500W/M5		120	500	9500	2950	2000	15.0	95	66	E11-24	CC-8	2
JD500W/M5		220/230	500	9500	2950	2000	15.0	95	66	E11-24	CC-8	2
		240/250	500	9500	2950	2000	15.0	95	66	E11-24	CC-8	2
JD250W/E2		120	250	4500	2900	2000	15.0	102	73	E27-30	CC-8	3
JD250W/E2		220/230	250	4500	2900	2000	15.0	102	73	E27-30	CC-8	3
		240/250	250	4500	2900	2000	15.0	102	73	E27-30	CC-8	3
JD500W/E2		120	500	9500	2950	2000	14.0	113	81	E27-30	CC-8	3
JD500W/E2		220/230	500	9500	2950	2000	15.0	113	81	E27-30	CC-8	3
		240/250	500	9500	2950	2000	15.0	113	81	E27-30	CC-8	3
JT500W		125/130	500	12000	3000	2000	38.0	215	130	E40	C-8	4
JT500W		230/240	500	10000	3000	2000	38.0	215	130	E40	CC-8	4
		240/250	500	10000	3000	2000	38.0	215	130	E40	CC-8	4
JT1000W		230/240	1000	24000	3000	2000	38.0	255	155	E40	C-8	4
		240/250	1000	24000	3000	2000	38.0	255	155	E40	C-8	4

Burning position: JCD & JD: any, JT: Horizontal ±15°

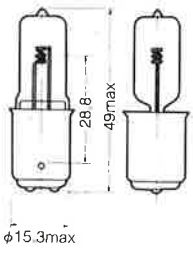


Fig. 1

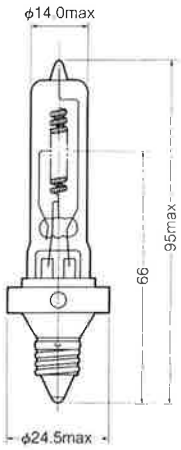


Fig. 2

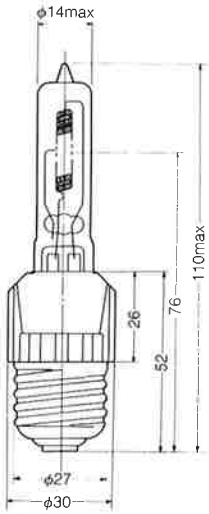
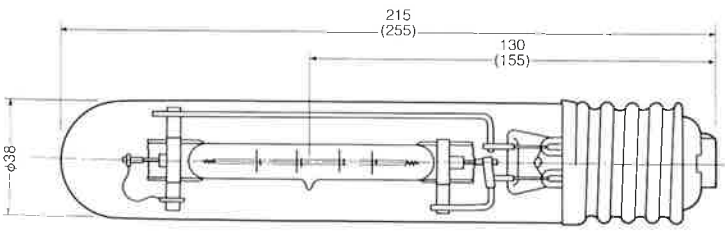


Fig. 3



( )1000W

Fig. 4

Miniature Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No.
							M.D.	M.O.L.	L.C.L.			
JC6V10W20H/G4		6	10	140	2850	2000	9.0	33	19.5	G4	C-6	1
JC6V20W20H/G4		6	20	280	2850	2000	9.0	33	19.5	G4	C-6	1
JC12V20W20H/G4		12	20	350	2850	2000	9.0	30	19.5	G4	C-6	2
JC12V20W20H/BS		12	20	350	2850	2000	9.0	36.5	15.5	Ba9s	C-6	3

Burning position: Any

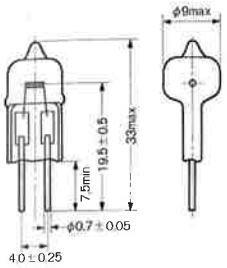


Fig. 1

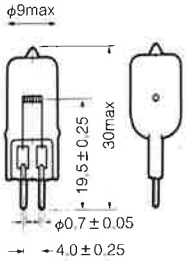


Fig. 2

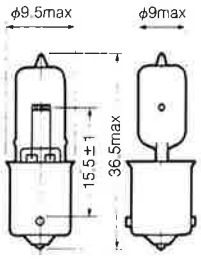
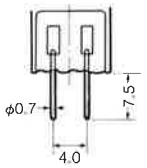
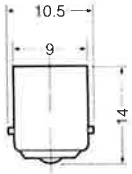


Fig. 3



G4



Ba9S

Photocopying-Use Halogen Lamps

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)				Filament	Fig. No.
							M.D.	C. to B.E.	M.O.L.	L.L.		
※ JPC500W/52241		120	500	13000	3200	100000	9.4	117.6	119.0	60	C-8	1
※ JPC550W/52237		100	500	14300	3200	100000	9.4	117.6	119.0	60	C-8	1
※ JPC500W/52236		110	500	13000	3200	100000	9.4	117.6	119.0	60	C-8	1
※ JPC305W/52239		120	305	7500	3100	100000	9.4	117.6	119.0	60	C-8	1
※ JPC425W/52240		120	425	10600	3150	100000	9.4	117.6	119.0	60	C-8	1
※ JPC-1000W/52238		115	1000	24500	3200	100000	9.4	359.6	361.2	301	Segment	2
※ JPC950W/52235		100	950	20000	3000	100000	9.4	315.6	317.2	268	Segment	3

Burning position : Horizontal ±5°
Base : R7S

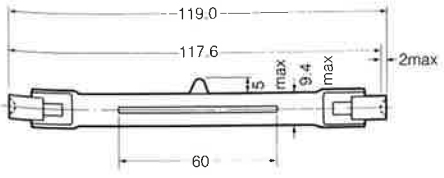


Fig. 1

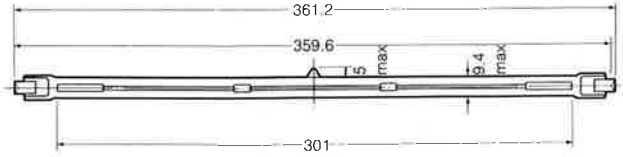


Fig. 2

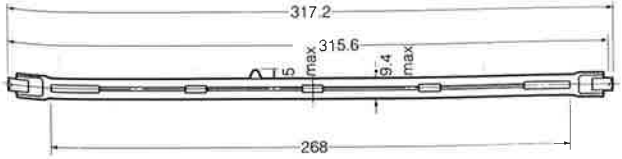


Fig. 3

Quartz Heaters

PHYSICAL DATA AND CHARACTERISTICS

IWASAKI Lamp Type	Reference or Substitute Lamp	Volts	Watts	Approx. Initial Lumens (ℓm)	Color Temperature (K)	Rated Average Life (hrs.)	Dimensions (mm)			Base	Filament	Fig. No. & Remarks
							M.D.	M.O.L. l	L.L. a			
QIR500W/F		100/110	500	—	2450	5000	11.0	222	127	Lead Wire	C-8	1A
QIR500W/C		100/110	500	—	2450	5000	11.0	222	127	Lead Wire	C-8	1B
QIR1000W/F		200/220	1000	—	2450	5000	11.0	350	254	Lead Wire	C-8	1A
QIR1000W/C		200/220	1000	—	2450	5000	11.0	350	254	Lead Wire	C-8	1B
QIR1000W/G		200/220	1000	—	2450	5000	11.0	350	254	Lead Wire	C-8	1C
QIR6000W/Wire Lead		480	6000	—	3200	150	11.0	303	245	Lead Wire	C-8	2B

REMARKS: A = Frosted, B = Clear
C = Clear, with golden reflector

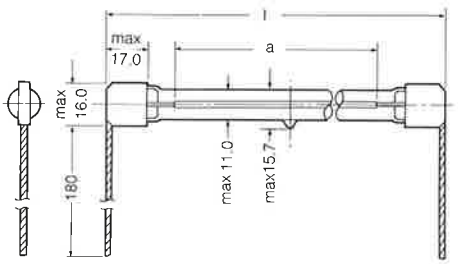


Fig. 1

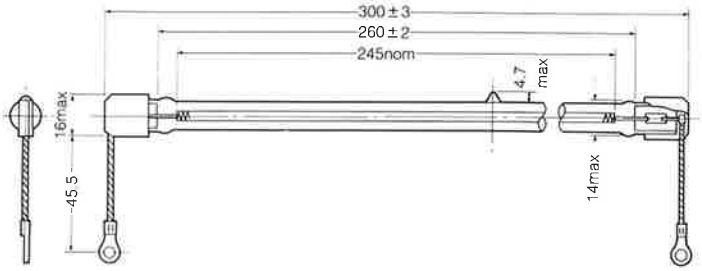
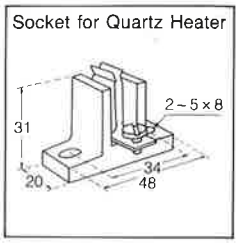


Fig. 2



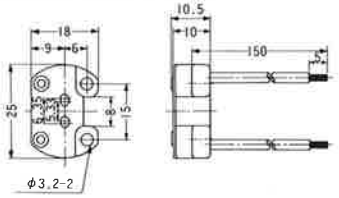
CROSS REFERENCE GUIDE (Reference only)

ANSI CODE	IWASAKI TYPE NO.	ANSI CODE	IWASAKI TYPE NO.	ANSI CODE	IWASAKI TYPE NO.	ANSI CODE	IWASAKI TYPE NO.
BAB	JR12V20W/BAB	EFP	JCR12V100W/G1	ETE	—	FCR	JC12V100W/G2
BRJ	JC15V150W/G1	EFR	JCR15V150W/G1	EVA	JC12V100W10H/G2	FCS	FCS24V150W
BRL	JC12V50W/G1	EHG	JPD120V750WB/G9.5	EVR	JD120V500W/M2	FCZ	J120V500WF
DRA	JCD300WL/G1	EHJ	JC24V250W/G1	EXN	JR12V50W/EXN	FDA	JPD400WC/FDA
DVS	110/120V500W	EHM	J110/120V300W	EXT	JR12V50W/EXT	FDS	JC24V150W
DVY	JCD650WC/A1	EJL	JCR24V200W/G2	EXZ	JR12V50W/EXZ	FDT	JC12V100W
DWY	JPD120V650WS/DWY	EJM	JCR21V150W/G2	EYB	JCD82V360W/EYB	FDV	JC24V150W2H/G1
DXM	JPD250W/DXM	EKD	JCD120V650WS/B	EYC	JR12V75W/EYC	FDW	FDW24V150W
DXN	JPD1000WC/DXN	ELB	JCR30V80W/G2	EYF	JR12V75F/EYF	FDX	JC12V100W
DXW	JPD1000WC/DXW	ELC	JCR24V250W/G2	EYH/FKT	JCD120V250WC/A1	FEA	JPD600WC/FEA
DXX	JPD800WC/DXX	ELH	JCR120V300W/ELH	EYP	JR12V42W/EYP	FEB	JPD600WC/FEB
DYA	JPD1000WC/DYA	ENL	JR12V50W/ENL	EYR	JR12V42W/EYR	FEL	JPD120V1000WC/G9.5
DYH	JPD120V600WC/A1	ENX	JCR82V360V/ENX	EYS	JR12V42W/EYS	FEP	JPD240V1000WC/G9.5
DYH	JCD220V600WC/A1	EPZ	JR13.8V50W/EPZ	EYV	JD130V500WF/M2	FEX	JPD2000WC/FEX
DYN	JPD120V1000WC/DYN	ESL	—	EYW	JD130V500W/M2	FFJ	JPD600WC/FFJ
(DYR)	(JCD530WC/B)	ESN	—	EYX	JD120V500WF/M2	FGB	JPD750WC/FGB
DYR	JCD220V650WC/B	ESP	—	FAD	JPD120V650WC/FAD	FGD	JPD500WC/FGD
DYR	JCD240V650WC/B	ESR	—	FAL	JPD120V420WC/FAL	FSA	JDR120V75W/2N
DYS/BHC/DYV	JCD120V600WC/B	ESS	—	FBV	JCD30V250W/M1	FSB	JDR120V75W/2M
DZE	JC24V150W	ESX	JR12V20W/ESX	FCB	JPD120V600WC/FCB	FSC	JDR120V100W/2N
DZZ	JC12V100W	ESY	JCD150WL/G1	FCB	JPD120V600WC/FCB	FSD	JDR120V75W/2W
EFM	JCR8V50W/G1	ETB	JD120V250WF/BD	FCL	J120V500W	FSE	JDR120V100W/2M
EFN	JCR12V75W/G1	ETD	JD120V100WF/02/BD	FCM	JP120V1000WC1	FSF	JDR120V100W/2W

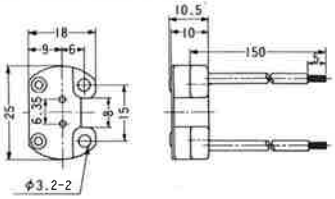
Sockets for 2PIN Base Type

NICKEL CONTACT TYPE

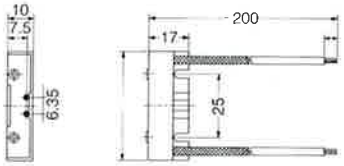
HS-300
Adaptable Lamp Base: G5.3, GX5.3',G6.35--1.5
Lead Wire Length: 200mm



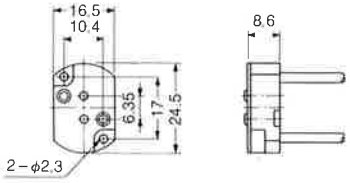
HS-310
Adaptable Lamp Base: G6.35, GZ6.35',GY6.35
Lead Wire Length: 200mm



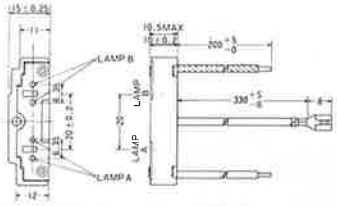
HS-14-1
Adaptable Lamp Base: G6.36
HS-14-1.25/1.5
Adaptable Lamp Base: GY6.35



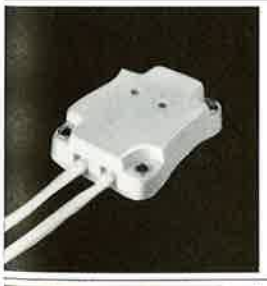
HS-6T
Adaptable Lamp Base: G6.35
Lead Wire Length: 200mm



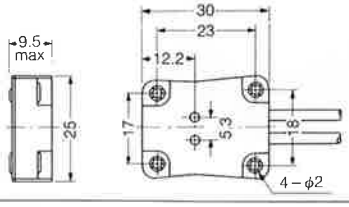
HS-900D
Adaptable Lamp Base: G6.35, GY6.35
Lead Wire Length: 200mm



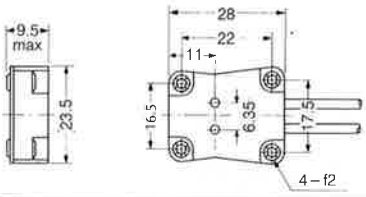
COPPER ALLOY CONTACT TYPE

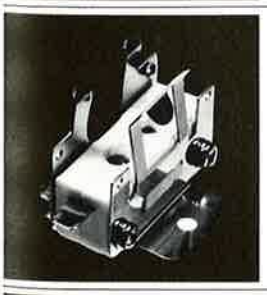


HS-6E for JCR type
Adaptable Lamp Base: G5.35-1.5
Lead Wire Length: 200mm

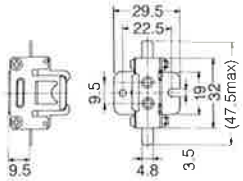


HS-6A for JCR type
Adaptable Lamp Base: G6.35
Lead Wire Length: 200mm

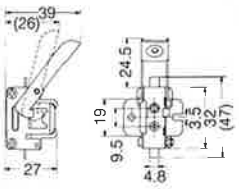




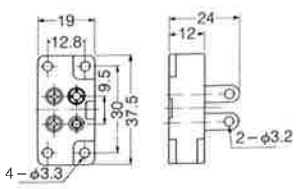
HS-8
Adaptable Lamp Base: GY9.5
Lead Wire Can Be Attached



HS-8L
Adaptable Lamp Base: GY9.5
Lead Wire Can Be Attached

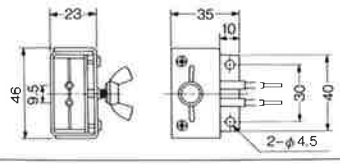


HS-4
Adaptable Lamp Base: GY9.5

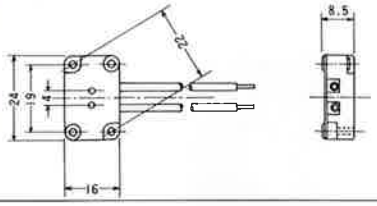


HS-16N
Adaptable Lamp Base: G9.5, GX9.5

HS-17N
Adaptable Lamp Base: GY9.5

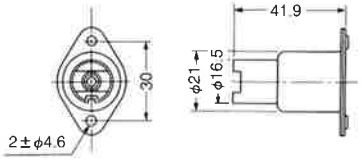


G4-N3
Adaptable Lamp Base: G4
Lead Wire Length: 200mm

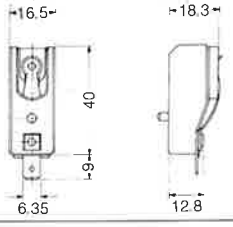


Sockets for RSC (R7C) Type Base

SJD1
Adaptable Lamp Base: R7S
Lead Wire Length: 850mm

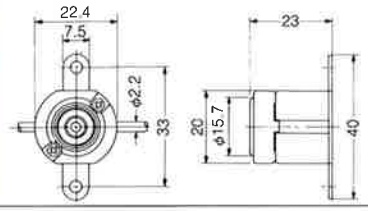


HS-1C
Adaptable Lamp Base: R7S

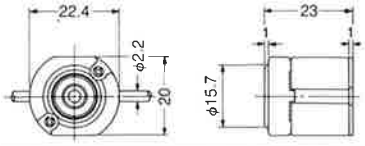


Sockets for Screw Base

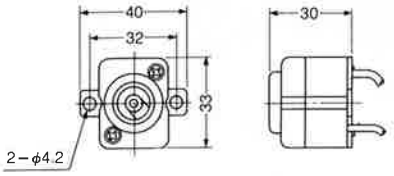
HS-600 Adaptable Lamp Base: E10
HS-700 Adaptable Lamp Base: E11



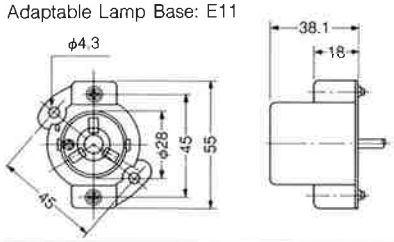
HS-610
Adaptable Lamp Base: E10
HS-710
Adaptable Lamp Base: E11



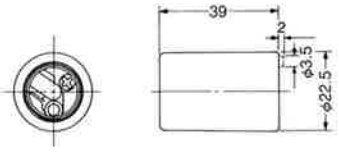
SJE11-2
Adaptable Lamp Base: E11
Lead Wire Length: 260mm



SJE11-4
Adaptable Lamp Base: E11

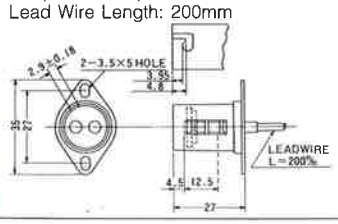


1711Y
Adaptable Lamp Base: E17

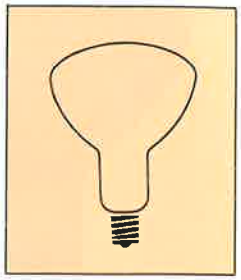


Sockets for B15D Base

S-220
Adaptable Lamp Base: B15D
Lead Wire Length: 200mm



2-3 INCANDESCENT REFLECTOR LAMPS



EYE Reflector Lamps
PHYSICAL DATA AND CHARACTERISTICS

Watts	Type	Bulb	Base	Std. Pkg. Qty.	M.O.L. (mm)	Total Lumens (ℓm)	Max. Light Intensity (cd)	Rated Av. Life (hrs)
90	RS220V 90WH	R120	E27	10	157	760	4000	2000
	RF220V 90WH	R120	E27	10	157	640	280	2000
135	RS220V 135WH	R120	E27	10	157	1280	5920	2000
	RF220V 135WH	R120	E27	10	157	1120	440	2000
180	RS220V 180WH	R120	E27	10	157	1840	7200	2000
	RF220V 180WH	R120	E27	10	157	1560	640	2000
270	RS220V 270WH	R140	E40	10	189	2920	5200	2000
	RF220V 270WH	R135	E40	10	211	2920	3200	2000
450	RS220V 450WH	R170	E40	10	234	5120	22400	2000
	RF220V 450WH	R160	E40	10	238	5120	5280	2000
900	RS220V 900WH	R200	E40	6	310	10800	16000	2000
	RF220V 900WH	R180	E40	6	316	10800	8000	2000

240V range lamp is available upon request, but characteristics may vary somewhat.

EYE HI-BEAM Reflector Color Lamps for Indoor Use
PHYSICAL DATA AND CHARACTERISTICS

Watts	Type	Bulb	Base	Std. Pkg. Qty.	M.O.L. (mm)	Rated Av. Life (hrs)
60	RM60W/A.G.R or B	R62	E27 or B22d-2pin	20	102	1000
100	RM100W/A.G.R or B	R80	E27 or B22d-2pin	10	125	1000
150	RM150W/A.G.R or B	R80	E27 or B22d-2pin	10	125	1000
200	RM200W/A.G.R or B	R100	E27 or B22d-2pin	10	140	1000
300	RM300W/A.G.R or B	R110	E27 or B22d-2pin	10	155	1000

A: Amber, G: Green, R: Red, B: Blue

EYE HI-BEAM Reflector Lamps for Indoor Use
PHYSICAL DATA AND CHARACTERISTICS

Watts	Type	Bulb	Base	Std. Pkg. Qty.	M.O.L. (mm)	Beam Lumens (ℓm)	Max. Light Intensity (cd)	Rated Av. Life (hrs)
60	RM 60W/C.F.	R62	E27 or B22d-2pin	20	102	0~90° 323	200	1000
100	RM100W/C.F.	R80	E27 or B22d-2pin	10	125	0~90° 598	420	1000
150	RM150W/C.F.	R80	E27 or B22d-2pin	10	125	0~90° 1468	950	1000
200	RM200W/C.F.	R100	E27 or B22d-2pin	10	140	0~90° 1917	1300	1000
300	RM300W/C.F.	R110	E27 or B22d-2pin	10	155	0~90° 3231	2850	1000
500	RM500W/C.F.	R127	E27 or B22d-2pin	10	175	0~90° 5443	5000	1000

C: Clear, F: Frosted

EYE Neodymium Lamps

OUTLINE

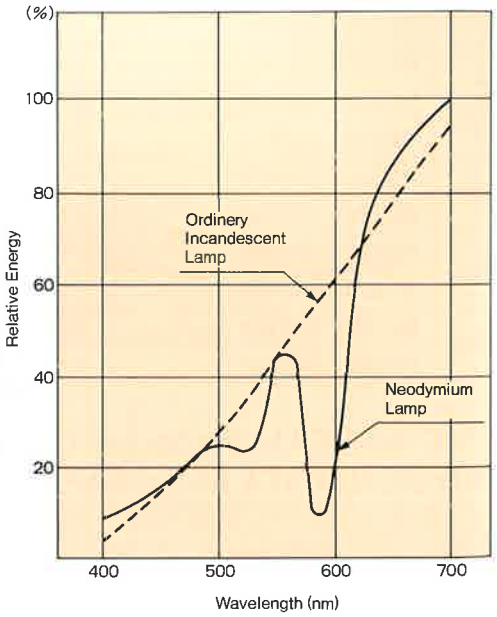
- The EYE Neodymium Lamp is designed to highlight and enhance all the colors of the visible spectrum.
- Standard incandescent lamps tend to shade the color spectrum with a yellow tint, reducing the brilliance of color.
- By introducing neodymium (rare earth element) into the lamp, absorption to 590nm's of the visible light spectrum is obtained and therefore the natural color is highlighted.
- The EYE Neodymium Lamp creates true colors and is ideal for use where good color rendition is required for merchandising consumer products.

FEATURES

1. Enhanced presentation of products by highlighting appealing natural color.
2. Can be used in both commercial and domestic applications.
3. The EYE Neodymium Reflector type lamp is an energy-efficient light source.

APPLICATIONS

1. Domestic lighting, Department stores, Supermarkets, Meat Markets, Beauty Salons, Florist shops.
2. EYE Neodymium Lamps are especially recommended where color plays an important role in the consumer decision.
3. EYE Neodymium Lamps create a pleasant atmosphere in Restaurants, Coffee shops, Bars, Hotel lobbies.
4. EYE Neodmium Lamps also are effective in enhancing that special display or architectural feature.



PHYSICAL DATA AND CHARACTERISTICS

Watts	Type	Bulb	Base	Std. Pkg. Qty.	M.O.L. (mm)	Beam Lumens (ℓm)	Max. Light Intensity (cd)	Rated Av. Life (hrs)
60	RF60N/R80	R80	E27	10	127	360	160	1000
	RS60N/R80	R80	E27	10	127	320	480	1000
100	RF100N/R80	R80	E27	10	127	700	350	1000
	RS100N/R80	R80	E27	10	127	630	900	1000
	RF1000N/R95	R95	E27	10	136	700	300	1500
	RS100N/R95	R95	E27	10	136	630	1000	1500
	ARF100N/PAR38	PAR38	E27	10	146	650	1870	1500
150	RF150N/R127	R127	E27	10	171	1000	1000	1500
	RS150N/R127	R127	E27	10	171	1100	2400	1500
	ARF150N/PAR38	PAR38	E27	10	146	1150	2300	1500

EYE Infrared Ray Lamps

OUTLINE

The EYE Infrared Ray lamp has a built-in reflector and is designed to produce more infrared rays at a lower filament temperature compared with that of ordinary incandescent lamps.
Our Infrared Ray lamps are manufactured strictly in accordance with Japanese Industrial Standards (JIS) at our authorized factory. Materials used for filaments, outer bulbs, bases, etc., are carefully selected under strict quality control standards and manufactured with precision and care.

FEATURES

1. As heat radiation increases, it is absorbed directly by the objective materials with minimal loss and high speed.
2. These infrared ray lamps can be installed in small places because of their compact size and their high efficiency is insured by a built-in vaporized aluminum reflector.
3. A mechanical base is employed, instead of a conventional asbestos one, which increases mechanical strength as it reduces the possibility of accidents due to a loose base or an electric shock.
4. The outer bulb is made of hard, heat-resistant glass which ensures satisfactory service in all weather conditions.
5. Because the gas is sealed into bulbs with a special mechanism, a higher efficiency can be maintained and reflector deterioration can be eliminated. Thus, EYE Infrared Ray lamps have longer life with less maintenance costs.
6. The replacement of lamps and cleaning can be performed easily and safely.

APPLICATIONS

- Painting Industries: Heating for electric apparatus, painting of automobiles, etc.
- Textile Industries: Heating for starching, dyeing and weaving of textiles.
- Metal Industries: Heating for soaking pit and galvanizing line. Heating for cast iron and sand casts.
- Electrical Industries: Heating for motor, generator and electric cathode.
- Chemical Industries: Heating for plastics, fine products, rebber, vinyl, oiled paper, clothes, etc.
- Glass Industries: Heating for glass and mirror coatings, bottles and glass plates.
- Food Industries: Heating for mushrooms, tea, seaweed, dried small sardines and other agricultural and fishery products.
- Printing Industries: Heating for photogravure printing, metal plate printing, papers for printing and color rendition processes.
- Pharmaceutical Industries: Heating for powder and tablets, explosives, ampoules and germicidal use.
- Medical use: Warming affected parts and drying gypsum, gipusu etc.
- Beauty Salon: For beauty culture and permanent dryers.
- Household: Heating for bathroom, Kitchen and bedroom.
- Livestock and Poultry Farm: Heating System for an incubator, pigs and sericulture.

PHYSICAL DATA AND CHARACTERISTICS

Watts	Type	Bulb	Base	Std. Pkg. Qty.	M.O.L. (mm)	Initial Characteristics		Color Temperature (K)	Rated Av. Life (hrs)
						Total Radiant Flax (W)	Radiant Efficiency (%)		
125	IR100/110V125W-RH	R127	E27	10	185	80min.	65min.	2300	6000
	IR220V125W-RH	R127	E27	10	185	77min.	62min.	2250	6000
250	IR100/110V250W-RH	R127	E27	10	185	175min.	70min.	2400	6000
	IR220V250W-RH	R127	E27	10	185	165min.	66min.	2350	6000
375	IR100/110V375W-RH	R127	E27	10	185	270min.	72min.	2400	6000
	IR220V375W-RH	R127	E27	10	185	255min.	68min.	2400	6000

EYE Photographic Incandescent Reflector Lamps

PRS (Photo-Spot)

EYE Photo-Spot Provides a narrow angle distriution of about 30°. Applications include accent and key lighting. It is best suited as a light source for highlighting specific aspects of an object.

PRF (Photo-Flood)

EYE Photo-Flood Provides broad-beam main or fill lighting. Shadows are minimalized particularly when cross beams from several lamps are employed. Combinations of floods and spots produce excellent effects.

PSR (Photo-Soft)

EYE Photo-Soft lamp combines elliptical and spherical reflectors to produce their particular effect of wide flooding. It is suitable for both main and auxiliary lighting as well as for close-up photography.

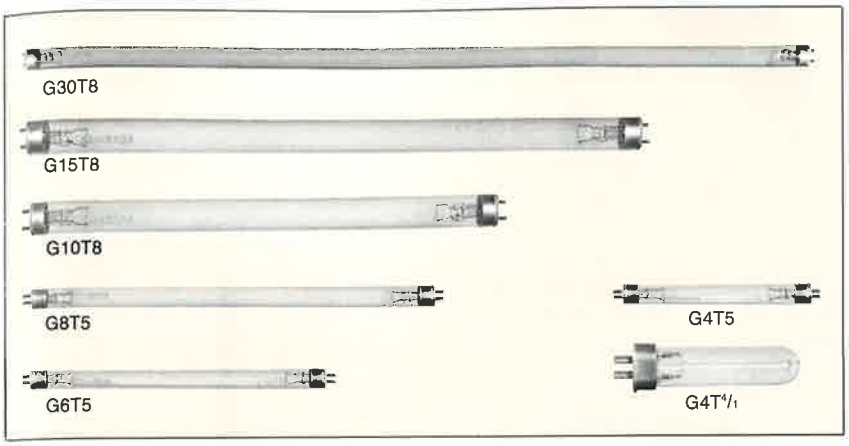
PHYSICAL DATA AND CHARACTERISTICS

Type		Volts	Watts	Dimensions and Lamp Base			Initial Characteristics				
				Bulb Shape (mm)	Overall Length (mm)	Base	Beam Lumensn (ℓm)	Cente Beam Intensity (cd)	Beam Angle (°)	Rated Av. Life (hrs)	Color Temperature (K)
Spot	PRS150W	220	150	R80	125	E27	2400	3500	30	25	3100
	PRS250W	220	250	R100	135	E27	4600	7400	30	25	3200
	PRS300W	220	300	R110	150	E27	5400	8000	30	100	3200
	PRS500W	220	500	R127	175	E27	9500	20000	30	100	3200
	PRS500W (For Color)	220	500	R130	170	E27	3500	5500	30	10	5900
	PRS1000W/M	220	1000	R150	200	E40	20000	20000	45	100	3200
Flood	PRF150W	220	150	R80	125	E27	2400	1500	60	25	3100
	PRF250W	220	250	R100	135	E27	4600	3600	60	25	3200
	PRF300W	220	300	R110	150	E27	5200	3750	60	100	3200
	PRF350W (For Cine)	220	350	R130	170	E27	7400	6000	50	25	3200
	PRF350W (For Cine Color)	220	350	R130	170	E27	2000	2000	50	10	5900
	PRF500W	220	500	R127	175	E27	9000	6000	80	100	3200
	PRF500W (For Color)	220	500	R130	170	E27	3400	2500	60	10	5900
	PRF1000W/M	220	1000	R150	200	E40	20000	13000	70	100	3200
Super Flood	PSR200W	220	200	SR80	125	E27	3600	1500	100	30	3200
	PSR300W	220	300	SR100	140	E27	5400	3000	100	30	3200
	PSR500W	220	500	SR120	160	E27	12000	5000	100	30	3200
	PSR500WD (For Color)	220	500	SR120	160	E27	3500	1500	100	10	5900

NOTE: 1. When ordering, please specify required voltage.
2. Initial characteristics given cover only lamps of 100 Volts range. 200 Volts range lamp characteristics may vary somewhat.

1-4 SPECIAL APPLICATION LAMPS

EYE Ultraviolet Germicidal Lamps



OUTLINE

It is well known that natural sunlight has germicidal properties which, as scientists have discovered, are the result of ultraviolet rays. Further research revealed additional properties of ultraviolet light and eventually succeeded in it's artificial production.
As a result, our germicidal lamps have been successfully designed and manufactured to produce the highest ultraviolet ray of 2537 Angstroms for the most effective germicidal reaction.
EYE germicidal lamps also have an excellent reputation for efficiency, economy and effectiveness among pharmaceutical industries for the prevention of offensive odors, elimination of harmful bacteria from drinking water and food stuffs, as well as a wide range of other applications.

CHARACTERISTICS

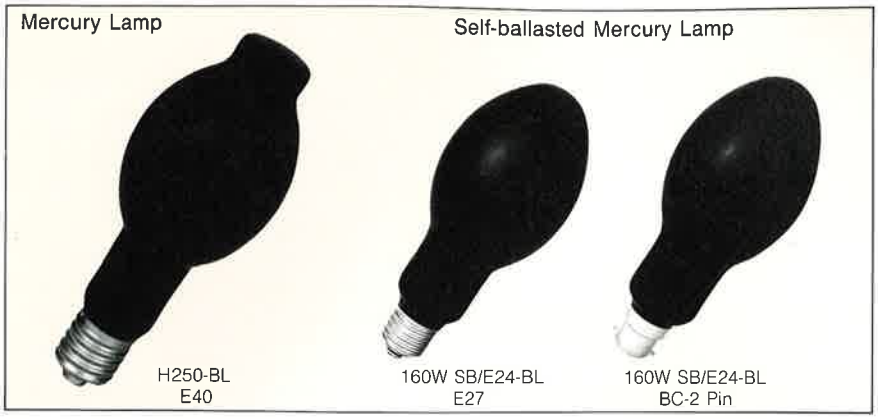
1. Effective against all kinds of bacteria.
2. Does not affect at all the quality of the objective in and after the radiation.
3. Can be easily handled at an inexpensive cost.
4. Germicidal reaction completed without alteration of taste and smell. The germicidal reaction created by the ultraviolet rays is completely harmless to humans—it has the same of effect as boiling water.
5. Air, water and the surfaces of other materials are effectively rid of bacteria by EYE germicidal lamps.

PHYSICAL DATA AND CHARACTERISTICS

	Type	Nominal Watts	Bulb Designation	Base	Std. Pkg. Qty.	Overall Length (mm)	Diameter (mm)	Approx. Tube Amperes (A)	Ultravidet Output Total Watts	Ultravoilet Micro Watts at 1 Meter ( )	Rated Av. Life (hrs)	Auxiliary (Ballast, Starter, Socket, Etc.)
Germicidal Lamps	G30T8	30	T-8	Medium Bipin	100	893	25	0.340	8.3	85	7500	
	G15T8	15	T-8	Medium Bipin	200	436	25	0.300	3.6	38	7500	Same as for 15W Fluorescent Lamp
	G10T8	10	T-8	Medium Bipin	200	330	25	0.230	1.7	17.5	7500	Same as for 10W Fluorescent Lamp
	G8T5	8	T-5	Miniature Bipin	500	287	15	0.170	1.6	17	5000	Same as for 8W Fluorescent Lamp
	G6T5	6	T-5	Miniature Bipin	500	210	15	0.147	1.0	22	5000	Same as for 6W Fluorescent Lamp
	G4T5	4	T-5	Miniature Bipin	1000	134	15	0.125	0.5	5.4	5000	Same as for 4W Flourescent Lamp
	G4S11	3.5	S-11	Inter	1000	54	35	0.350	0.1	1	5000	Starterless
	G4T $^4/_1$	4	T-4	Radio Contact	300	122	13.5	0.080	0.7	7.5	5000	U-type
Ozone Lamps	OZ8T5	8	T-5	Miniature Bipin	500	287	15	0.170	1.8	19.5	5000	Same as for 8W Fluorescent Lamp
	OZ6T5	8	T-5	Miniature Bipin	500	210	15	0.147	1.2	13	5000	Same as for 6W Fluorescent Lamp
	OZ4T5	4	T-5	Miniature Bipin	1000	134	15	0.125	0.6	6.5	5000	Same as for 4W Fluorescent Lamp
	OZ4S11	3.5	S-11	Inter	1000	54	35	0.350	0.15	1.7	5000	Starterless

NOTE: 1. Wattage is bulb lamp Watts only.
2. Length is base face to base face.
3. 2537 Angstrom output after 100 hours burning measured in still air at 80°F ambient and under specified test condition.
4. Microwatts per square centimeter at one meter from lamp.

EYE Black Light Lamps



OUTLINE

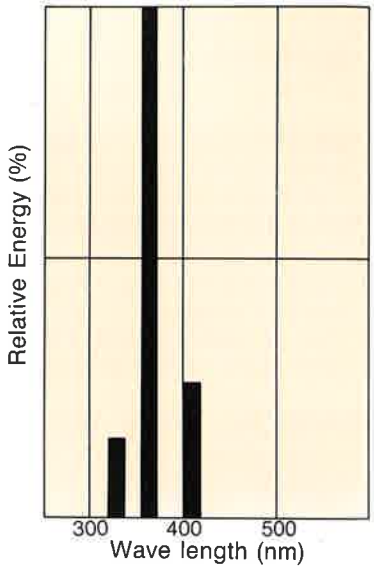
"EYE" Black Light is designed to effectively absorb visible light and emit near ultraviolet rays through a dark bulb of special filter glass. Using a near ultraviolet phosphor like that used for fluorescent chemical lamps, it produces highly efficient ultraviolet rays without a loss of visible light.

SPECIAL

APPLICATIONS

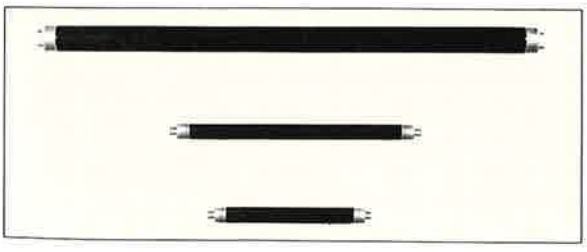
1. Food Industries:
   To inspect classification, freshness, harmful mixtures, etc. in food stuffs.
2. Metal and Mining Industries:
   To discriminate ores such as uranium, tungsten, etc. and also to detect the defects on the surface of metals and others.
3. Textile Industries:
   To determine the raw materials of textiles to near-ultraviolet rays by their respective unique fluorescence reaction.
4. Lighting:
   Illumination for sign boards, show windows, wall decorations, stages, control boards, etc.
5. Reproduction:
   To utilize the maximum sensitivity to light at 350—400um, the black light to be used for the effective source of photo-sensitivity.
6. Insecticidal Use:
   To perform the effective elimination of harmful insects because of their sensitive reaction to blue light or near-ultraviolet rays.
7. Promotion of Photo-Chemical Reaction:
   To be utilized for the acceleration of photo-chemical reactions such as chloride addition to BHC, composition of artificial rubber, disposal of pulps, etc.
8. Discovery of Forgery:
   To discover the forgery of checks, stamps, documents, etc. and also the imitation of jewels.

SPECTRAL DISTIBUTION



PHYSICAL DATA AND CHARACTERISTICS

Watts	Type	Bulb	Base	Std. Pkg. Qty.	M.O.L. (mm)	L.C.L. (mm)	Lamp		Rated Av. Life (hrs)
							Voltage (Volts)	Current (A)	
100	H100-BL	E75	E27	12	177	117	115	1.0	3000
125	H125-BL	E75	E27	12	177	117	125	1.1	3000
250	H250-BL	BT100	E40	12	250	160	130	2.13	3000
400	H400-BL	BT116	E40	12	295	185	135	3.3	3000
160	160W SB/E24-BL	E24	E27	12	177	117	220/230	0.8	3000



PHYSICAL DATA AND CHARACTERISTICS

Watts	Type	Dimension		Lamp		Rated Av. Life (hrs)
		Length (mm)	Diameter (mm)	Volts	Current (A)	
4	FL 4 BLB	134	15	100	0.125	3000
6	FL 6 BLB	210	15	100	0.147	3000
8	FL 8 BLB	287	15	100	0.170	3000
10	FL 10 BLB	330	25	100	0.230	4000
15	FL 15 BLB	436	25	100	0.300	4000
20	FL 20 BLB	580 or 588.5	32	100	0.350	4000
40	FL 40 BLB	1198	32	200	0.415	5000

EYE Xenon Flashtubes

OUTLINE

"EYE" Xenon Flashtubes and Xenon Arc Lamps are products manufactured by Iwasaki Electric Co., Ltd., the specialist in lamps and lighting fixtures. Their high quality and excellent characteristics have been appreciated by many customers and are responsible for their outstanding reputation.

FEATURES

1. "EYE" Xenon Flashtube converts electric energy charged in a capacitor into a high intensity flash in a matter of seconds.
2. "EYE" Xenon Flashtube is powerful in a misty atmosphere owing to high penetration of its flash and is used as a warning light or beacon in misty, rainy and cloudy conditions. Such applications increase year by year.

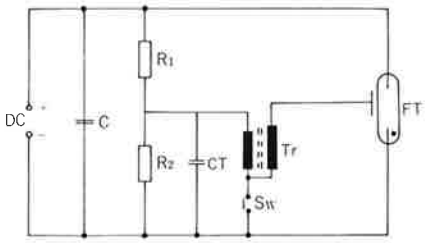
Guidance for selection of Xenon flashtubes and lamps on each application

1. Arc length
2. Tube overall length
3. Tube diameter
4. Quality of tube
5. Spectrum distribution
6. Lamp operating voltage
7. Lamp input wattage
8. Flash repetition (Flash/min.)
9. Trigger voltage
10. Lamp life

APPLICATIONS

- Photograph
- Laster stimulation
- Marine beacons
- Aerial beacons
- Signals
- Photographic plate making and printing use
- Emergency light
- Warning signals
- Laboratory use
- Strobo scopic use
- Timing lights
- Wheel balancer
- Advertising display
- Beam-guns
- General lighting

Trigger coil (Flash-tubes)
The most suitable trigger coil is used for obtaining the maximum intensity of flashtubes.



DC : Input power source CT: Trigger capacitor
FT : Flashtube Tr : Trigger transformer
C : Capacitor Sw: Trigger switch
R1R2: Registor

Energy consumption
$E = \frac{1}{2}CV^2$
E = Energy in joules
C = Capacitance, in microfarads
V = Operating voltage, in kilo-volts

Other types can be available upon request.

Fig. 1

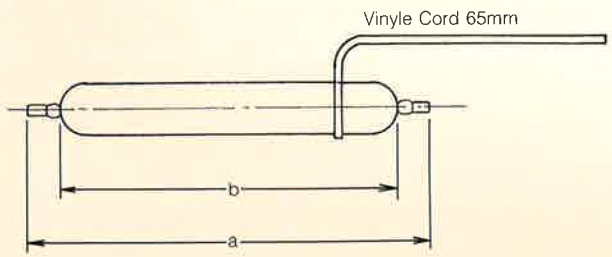
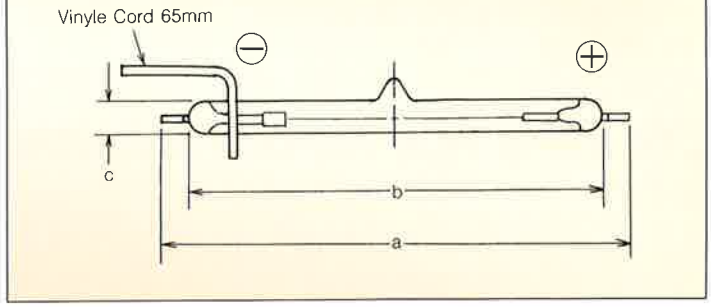


Fig. 2



PHYSICAL DATA AND CHARACTERISTICS

Type	Max. Energy Input per Flash (W/sec.)	Design Flash Voltage	Max. Flash Voltage	Min. Starting Voltage with Mini 4KV Trigger	Arc Length (mm)	Max. Flash Repetition at Max. Energy Input per Min. (flash)	Rated Av. Life (flash)	Applications	Max. Dimensions (mm)			
									a	b	c	Fig.No
IFT-3124C (IFT-3124G)	15	330	360	240	15	4	3000	Photographing	28	25.5	φ3.3	1
IFT-3235C (IFT-3135G)	22	330	350	230	22	4	6000	Photographing	39	35.5	φ3.33	1
IFT-3245C (IFT-3245G)	22	330	350	240	33	4	6000	Photographing	51	46.5	φ3.35	1
IFT-3650C (IFT-3650G)	80	330	350	240	35	4	3000	Photographing	55	51.5	φ3.75	1
IFT-45S	30	300	400	200	30	5	5000	Photographing	55	45	φ6	2
IFT-47S	35	300	400	200	35	5	5000	Photographing	58	47	φ5	2
IFT-50S	30	350	500	200	40	5	5000	Photographing	56	50	φ4.2	2
IFT-55S	40	300	350	220	40	5	5000	Photographing	65	55	φ5.5	2
IFT-60S	45	300	500	200	40	5	5000	Photographing	68	60	φ5.5	2

EYE Xenon Flashtubes for Timing Lights & EYE U-Type Xenon Flashtubes

Fig. 1

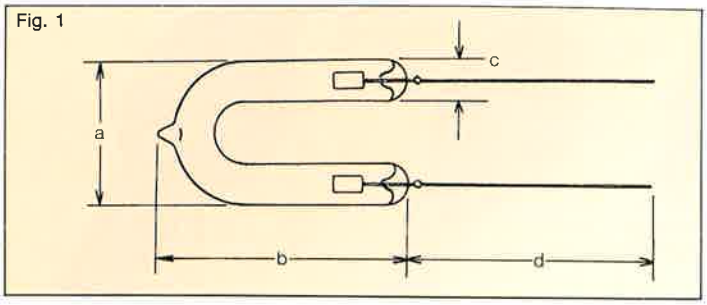
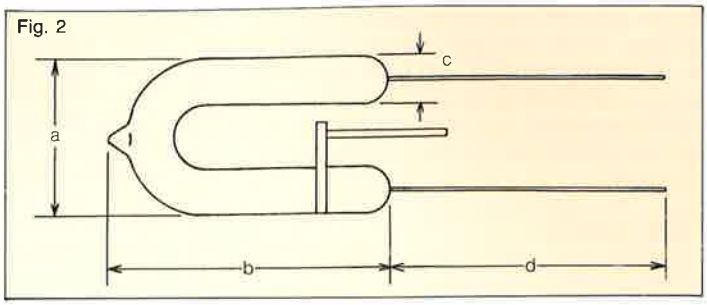


Fig. 2



PHYSICAL DATA AND CHARACTERISTICS

EYE Xenon Flashtubes for Timing Lights

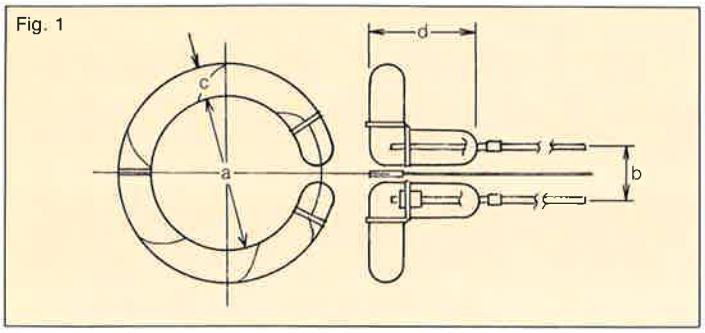
Type	Max. Energy Input per Flash (W/sec.)	Design Flash Voltage	Max. Flash Voltage	Connect to Ignition Coil Directly	Arc Length (mm)	Max. Flash Repetition at Max. Energy Input per Min. (flash)	Rated Av. Life (flash)	Applications	Max. Dimensions (mm)				
									a	b	c	d	Fig.No
IFT-1000	5	300	400	150	35	60	5×10^6	Timing Light, Signal Light	23	34	ϕ6.5	40 (min)	1
IFT-1210	5	300	400	150	33	60	5×10^6	Timing Light, Signal Light	18.5	37	ϕ6.5	40 (min)	1
IFT-1200	4	250	350	150	43	60	5×10^6	Timing Light, Signal Light	18.5	42	ϕ6.5	40 (min)	1

EYE U-Type Xenon Flashtubes

IFT-106	50	300	400	200	46	5	10000	Photographing	16	38	ϕ6	40 (min)	2
IFT-110	100	300	500	220	73	5	10000	Photographing	22.5	38	ϕ6	40 (min)	2

EYE Ring Type Xenon Flashtubes

Fig. 1



PHYSICAL DATA AND CHARACTERISTICS

Type	Max. Energy Input per Flash (W/sec.)	Design Flash Voltage	Max. Flash Voltage	Min. Starting Voltage with Min. 8KV Trigger	Arc Length (mm)	Max. Flash Repetition at Max. Energy Input per Min. (flash)	Rated Av. Life (flash)	Applications	Max. Dimensions (mm)				
									a	b	c	d	Fig.No
IFT-200R	200	450	700	220	16	5	10000	Photographing, Printing Process Use	42	17	ϕ6.7	25	1
IFT-500R	500	600	700	260	20	3	10000	Photographing Printing Process Use	47	21.5	ϕ12	40	1
IFT-800R	800	630	700	300	20	6	10000	Photographing, Printing Process Use	58	20	ϕ12	45	1
IFT-1200R	1.200	630	700	400	20	6	10000	Photographing, Printing Process Use	80	20	ϕ13	45	1
IFQ-1200S	1.200	600	700	350	15	10	10000	Photographing, Printing Process Use	45	17	ϕ10	40	1
IFQ-2400C	2.400	630	700	350	20	12	10000	Photographing, Printing Process Use	40	20	ϕ13	55	1

EYE Helicial Type Xenon Flashtubes

Fig. 1

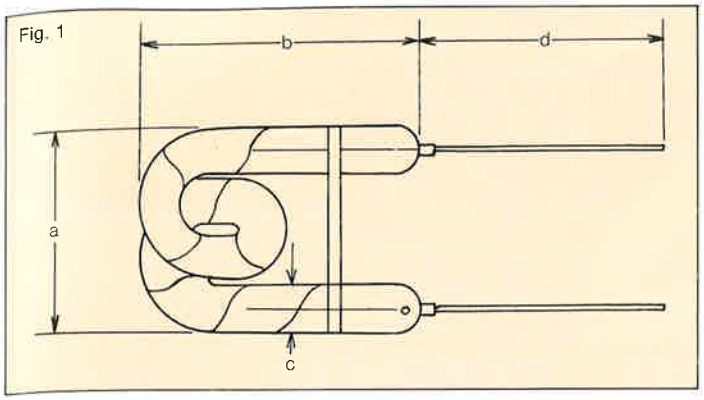
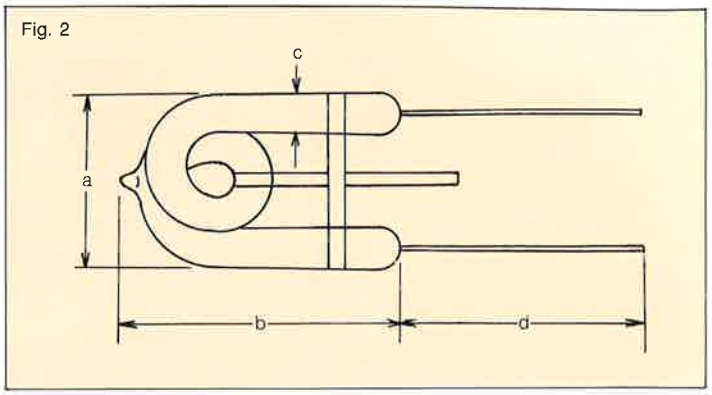


Fig. 2



PHYSICAL DATA AND CHARACTERISTICS

Type	Max. Energy Input per Flash (W/sec.)	Design Flash Voltage	Max. Flash Voltage	Min. Starting Voltage with Min. 5KV Trigger	Arc Length (mm)	Max. Flash Repetition at Max. Energy Input per Min. (flash)	Rated Av. Life (flash)	Applications	Max. Dimensions (mm)				
									a	b	c	d	Fig.No
IFT-152L	16	280	400	(10KV) 230	95	60	1000	Photographing, Signal Light	29	42	φ6.5	40 (min)	1
IFT-118	125	500	550	400	102	4	10000	Photographing, Signal Light	25	45	φ5	40 (min)	2
IFT-218	200	900	1050	800	120	4 or 60	20000 5×10^6	Photographing, Signal Light	30	50	φ6	40 (min)	2

SPECIAL

EYE Spiral Type Xenon Flashtubes

Fig. 1

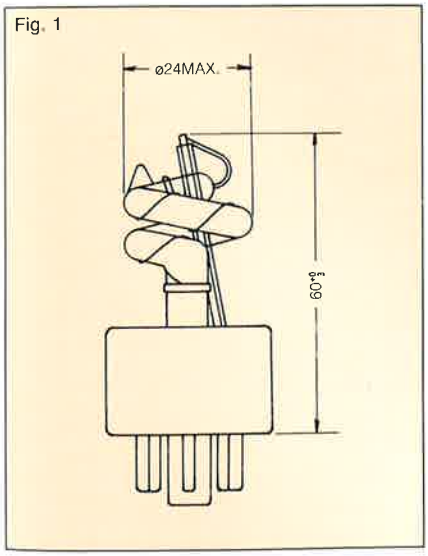
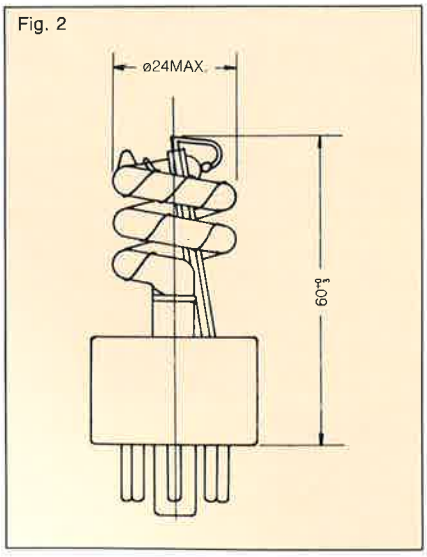
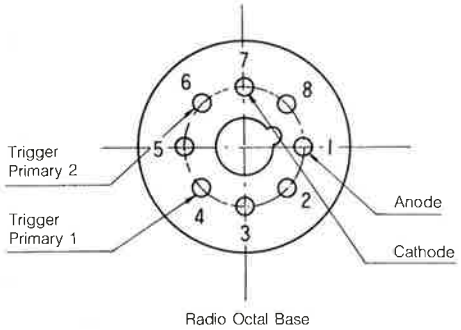


Fig. 2



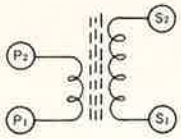
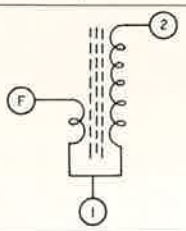
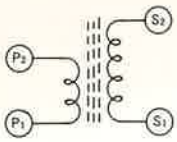
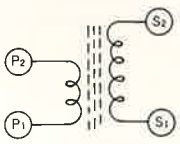
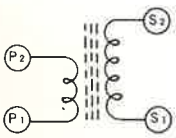
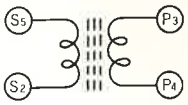


Radio Octal Base

PHYSICAL DATA AND CHARACTERISTICS

Type	Max. Energy Input per Flash (W/sec.)	Design Flash Voltage	Max. Flash Voltage	Min. Starting Voltage with Min. 4KV Trigger	Arc Length (mm)	Max. Flash Repetition at Max. Energy Input per Min. (flash)	Rated Av. Life (flash)	Applications	Fig.No
IFT-75S	75	450	500	300	10	20000	15W 75	Signal Light	1
IFT-150S	150	450	500	300	10	20000	24W 150	Signal Light	2

EYE Trigger Coils

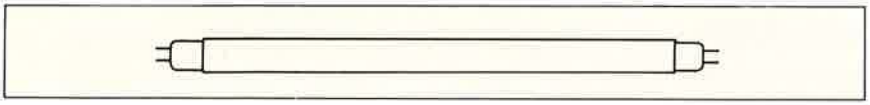
ITC-21	ITC-31	ITC-32	ITC-50	ITC-75	ITCM-23
					
					

PHYSICAL DATA AND CHARACTERISTICS

Type		ITC-21	ITC-31	ITC-32	ITC-50	ITC-75	ITC-3D
Output Voltage (KV)		4	6	9	10	15	4
Rated Input	(mWs)	0.6	0.9	0.9	10	15	0.6
	(μ F/V)	0.04/170	0.05/190	0.05/190	0.22/300	0.22/300	0.04/170

SPECIAL

EYE Preheat-Start Fluorescent Lamps



PHYSICAL DATA AND CHARACTERISTICS

Type	Color Description	Color Temp (K)	Base (bi-pin)	Nominal Watts	Nominal Length		Tube Diameter			Approx. Initial Lumens (ℓm)	Rated Av. Life (hrs)
					(mm)	(inches)	(mm)	(inches)	(type)		
FL4T5/D	Daylight	6500	Med	4	134.5	6	15.5	5/8	T5	95	3000
FL4T5/CW	Cool White	4200	Med	4	134.5	6	15.5	5/8	T5	110	3000
FL4T5/W	White	3500	Med	4	134.5	6	15.5	5/8	T5	105	3000
FL4T5/WW	Warm White	3000	Med	4	134.5	6	15.5	5/8	T5	105	3000
FL6T5/D	Daylight	6500	Med	6	210.5	9	15.5	5/8	T5	210	3000
FL6T5/CW	Cool White	4200	Med	6	210.5	9	15.5	5/8	T5	240	3000
FL6T5/W	White	3500	Med	6	210.5	9	15.5	5/8	T5	230	3000
FL6T5/WW	Warm White	3000	Med	6	210.5	9	15.5	5/8	T5	230	3000
FL8T5/D	Daylight	6500	Med	8	287	12	15.5	5/8	T5	350	3000
FL8T5/CW	Cool White	4200	Med	8	287	12	15.5	5/8	T5	400	3000
FL8T5/W	White	3500	Med	8	287	12	15.5	5/8	T5	390	3000
FL8T5/WW	Warm White	3000	Med	8	287	12	15.5	5/8	T5	390	3000
FL10T8/D	Daylight	6500	Med	10	330	13	25.5	1	T8	420	5000
FL10T8/CW	Cool White	4200	Med	10	330	13	25.5	1	T8	490	5000
FL10T8/W	White	3500	Med	10	330	13	25.5	1	T8	470	5000
FL10T8/WW	Warm White	3000	Med	10	330	13	25.5	1	T8	470	5000
FL15T8/D	Daylight	6500	Med	15	436	18	25.5	1	T8	750	5000
FL15T8/CW	Cool White	4200	Med	15	436	18	25.5	1	T8	860	5000
FL15T8/W	White	3500	Med	15	436	18	25.5	1	T8	830	5000
FL15T8/WW	Warm White	3000	Med	15	436	18	25.5	1	T8	830	5000

NOTE: Approx. Initial Lumens indicate the value after 100-hour operation.

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