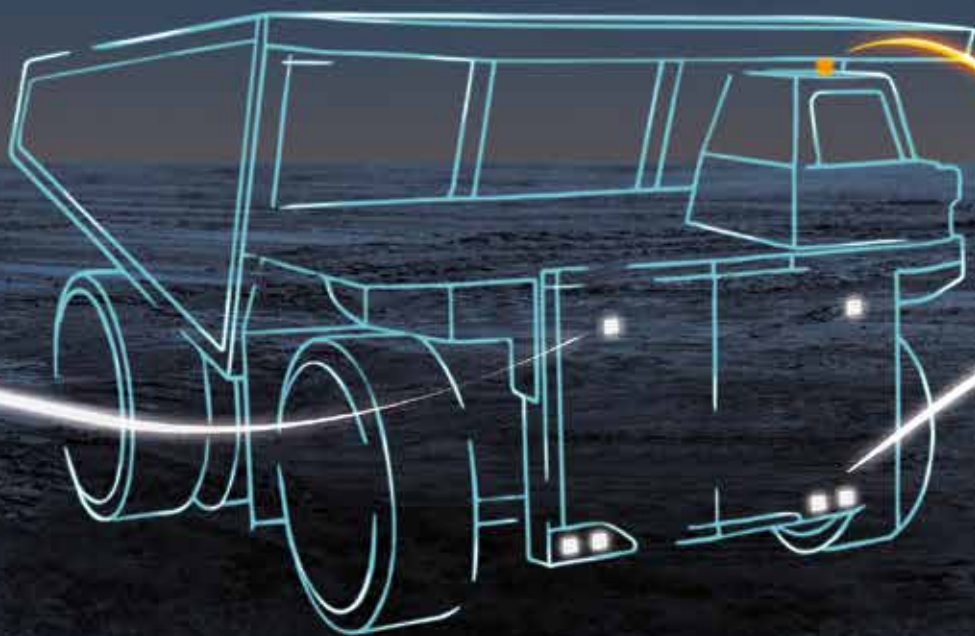




Technology with Vision

PRODUCT OVERVIEW
MINING



LIGHTING DESIGN SOLUTIONS

A SCIENTIFIC APPROACH TO LIGHTING

At HELLA Australia, we offer a professional lighting design service to create the optimum lighting solution for your requirements, taking the guesswork out of lighting and maximising safety, productivity and profitability.

As a global leader in lighting for mining applications, our lighting design team has comprehensive expertise in this sector and extensive knowledge of the operational requirements and the challenges faced when working in this environment.

They work in close partnership with our customers throughout the process and the customised solutions that they create can be evaluated, influenced and optimised by the stakeholders prior to implementation.

What is a lighting design?

Lighting design is traditionally a field within architecture and interior design that is concerned with the design of lighting systems, including natural light, electric light, or both, to serve human needs.

At HELLA Australia, our lighting design process for mining and quarrying applications uses an engineering-based, application-focused approach that takes into account the following factors for both static and mobile installations:

- The ambient light levels of the site, whether a surface mine or underground mine
- The optimum level and distribution of light required to maximise safety and productivity
- The colour of the light and its effect on the user(s)
- Environmental factors, such as dust, moisture or vibration, that may determine the durability of the work lights required
- Cost of ownership and maintenance requirements

The final proposal is provided in a clear and concise document with graphical simulations showing before and after scenarios.

What are the benefits?

Our lighting design team will only propose solutions that they can be confident will deliver clear and measurable results in terms of:

- Increased safety
- Enhanced operator ergonomics
- Higher productivity
- Reduced downtime

Why choose HELLA?

Whilst HELLA products are used in a wide range of industries globally, mining is a specific area of focus for HELLA and we are committed to delivering quality, innovation and value for our customers in this sector.

Whether work lights, beacons or signal lamps, all HELLA products for mining applications are designed, manufactured and rigorously tested to offer class-leading performance and reliability.

CUSTOMISED LIGHTING DESIGN SOLUTIONS

HELLA Mining lighting designs are tailored to each specific vehicle, taking into account the size of the machine and its configuration. Considering all of these variables results in the optimum lighting solution, ensuring clear and uniform illumination of the work area as well as no-go zones around the vehicle for the safety of site personnel.

Example: Excavator

The lighting scheme utilises RokLUME 380 N close range work lights for optimum illumination of the work areas, and UltraRAY 2.0 rotating beacons and BL470 red LED warning lights for maximum operational safety



1 RokLUME 380 N Close Range
Page 21



2 BL470 Red LED Warning Light
Page 33



3 UltraRAY 2.0 Rotating Beacon
Page 7

Contact HELLA Australia to arrange a customised lighting design consultation.

Call 1800 061 729 or email custservice@hella.com

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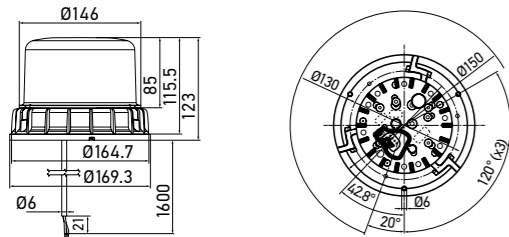
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DuraRAY 4.0

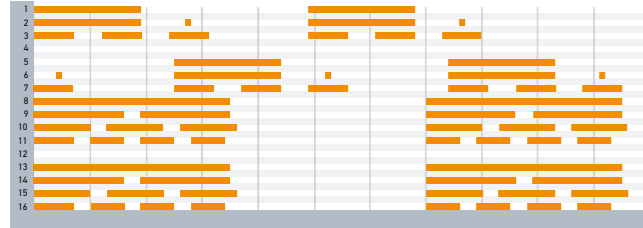
DuraRAY 4.0 is a powerful heavy duty beacon made for mining with an automatically controlled day time / night time sensor and 16 rotating and flashing patterns.



Fixed mount

DuraRAY and K-LED® Flash Pattern

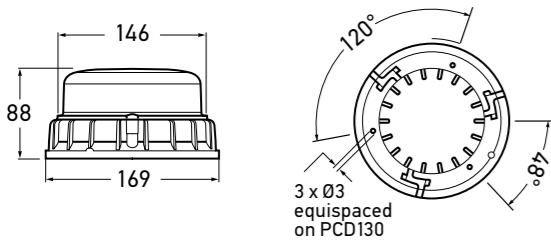
16 different warning signals



4 and 12 = Rotating Warning Signals
Orange: On / White: Off

K-LED® Mining

K-LED® is a powerful heavy duty low profile beacon made for mining with an automatically controlled day time / night time sensor and 16 rotating and flashing patterns.

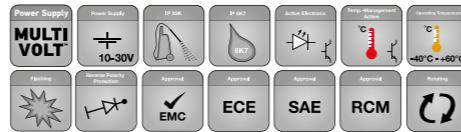


Fixed mount

Fixed Mount	Magnetic Mount	Colour
2XD 012 985-001	2XD 012 985-101*	Amber
2XD 012 985-011	2XD 012 985-111*	Blue
2XD 012 985-021*	2XD 012 985-121*	Red
2XD 012 985-031	2XD 012 985-131*	Green
2XD 012 985-041*	2XD 012 985-141*	White

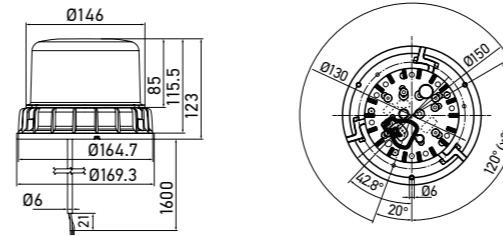
* Contact Customer Service for availability custservice@hella.com or 1800 061 729

Lens Material	Polycarbonate
Housing	Powder-coated die-cast aluminium
Voltage	10-30V
Current Consumption	@ 2.6A (12V), @ 1.3A (24V)
Power Consumption	32W
IP Rating	IP 6K7, IP 6K9K
Operating Temperature	-40°C to 60°C
EMC Interference Immunity	ECE-R10, CISPR 25 Class 5,
Type Approval	SAE J845 class 1, ECE R65



UltraRAY 2.0 / 2.1

UltraRAY 2.0 / 2.1 is a powerful heavy duty beacon made for mining, available either as a rotating 2.0 or flashing 2.1 beacon with interference free EMC properties.



Fixed mount

Fixed Mount	Magnetic Mount	Colour
2RL 012 983-001	2RL 012 983-101	Amber
2RL 012 983-011	2RL 012 983-111*	Blue
2RL 012 983-021*	2RL 012 983-121*	Red
2RL 012 983-031	2RL 012 983-131*	Green
2RL 012 983-041	2RL 012 983-141*	White

Fixed Mount	Magnetic Mount	Colour
2XD 012 984-001	2XD 012 984-101*	Amber
2XD 012 984-011*	2XD 012 984-111*	Blue
2XD 012 984-021*	2XD 012 984-121*	Red
2XD 012 984-031*	2XD 012 984-131*	Green
2XD 012 984-041*	2XD 012 984-141*	White

* Contact Customer Service for availability custservice@hella.com or 1800 061 729

Lens Material	Polycarbonate
Housing	Powder-coated die-cast aluminium
Voltage	10-30V
Current Consumption	Rotating: @ 1.6A (12V) & @ 0.8A (24V) Flashing: @ 1.8A (12V) & @ 0.9A (24V)
Power Consumption	Rotating: 20W, Flashing: 22W
IP Rating	IP 6K7, IP 6K9K
Operating Temperature	-40°C to 60°C
EMC Interference Immunity	ECE-R10, CISPR 25 Class 5,
Type Approval	SAE J845 class 1, ECE R65



K-LED® Nano

HELLA's smallest homologated beacon to date, K-LED Nano generates a long-range, amber warning signal by means of a flashing light.

The standard version is characterised by a slightly curved base which, with a bolt circle diameter of 130 mm, stays true to the usual HELLA mounting points.

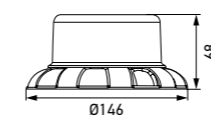
In addition, a variant with flexible pipe socket mounting is available. The shock-absorbing and vibration-damping base briefly tilts the beacon by up to 45° and cushions even strong impacts. Thanks to this option and to the complete sealing of the beacon, the K-LED Nano can also be used both in vibration-intensive and dusty environments.



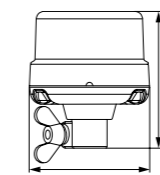
2XD 066 146-001



2XD 066 146-011



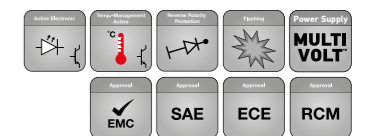
K-LED Nano - Fixed Mount



K-LED Nano - Pipe Mount

Part No.	Mount	Colour
2XD 066 146-001	Fixed Mount	Amber
2XD 066 146-011	Pipe Mount	Amber

Lens Material	Polycarbonate
Housing	Aluminium
Voltage	12V / 24V DC
Power Consumption	Max. 19 W
IP Rating	IP 6K7, IP 6K9
Operating Temperature	-40°C to 60°C
EMC Interference Immunity	CISPR25 class 5, ECE R10
Connection	150 mm cable with 6.3 x 0.8 - 1.5 flat connector
Type Approval	ECE-R65 TA1, SAE J845 Class 1 approval

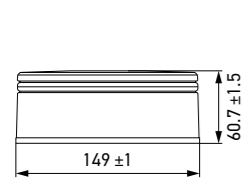


K-LED® Rebellion

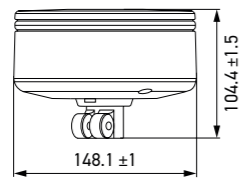
The K-LED® Rebellion is a revolutionary beacon featuring the latest LED technology. It provides maximum performance in a minimalist and highly innovative, dome-free design. Instead, the light is visible through a circumferential, ring-shaped light band. Despite light exit area being smaller than a conventional domed beacon the K-LED® Rebellion emits a highly visible warning signal.



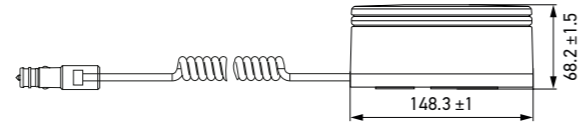
Fixed mounting | Pipe socket mounting | Magnet mounting



Fixed mounting



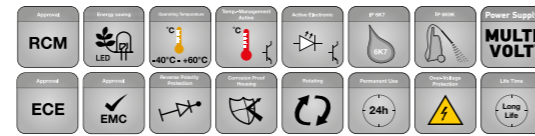
Pipe socket mounting



Magnet mounting

Part No.	Beacon	Mount	Colour
2RL 455 256-001	Rotating	Fixed Mount	Amber
2RL 455 256-011	Rotating	Pipe Socket Mount	Amber
2RL 455 256-021	Rotating	Magnet Mount	Amber

Lens Material	Polycarbonate
Housing	Aluminium
Voltage	Multivolt 12-24V DC
Current Consumption	Rotating: 1.08 A @ 12 V, 0.54 A @ 24 V
Power Consumption	Rotating: max. 13 W
IP Rating	IP 6K7, IP 6K9K
Operating Temperature	-40°C to 60°C
EMC Interference Immunity	ECE-R10, Rotating: CISPR 25 Class 3
Type Approval	ECE-R65 TA1 (E1)



RotaLED Compact

Using the latest LED technology, the RotaLED Compact provides a highly visible rotating warning light pattern without the need for moving parts, ensuring greater reliability and a long, maintenance-free operating lifespan, combined with low power consumption.

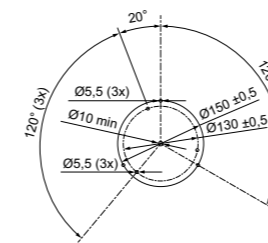
Built to last it features a rugged, ABS case and impact-resistant Polycarbonate dome. Fully sealed and highly-resistant to dust and water ingress, it is rated to IP 67 and IP X9K and will even withstand high-pressure cleaning.



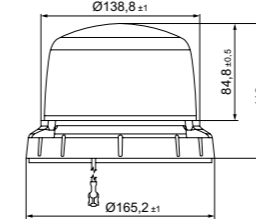
2RL 014 979-001

2RL 014 979-011

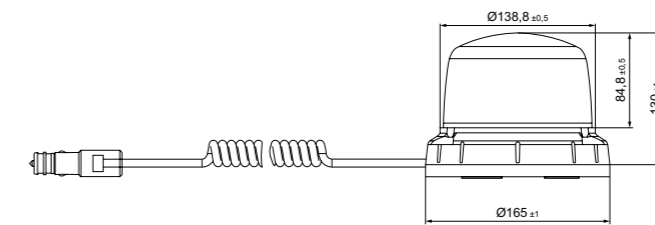
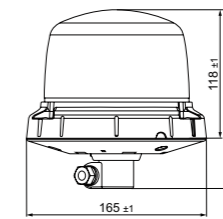
2RL 014 979-021



RotaLED Compact F



RotaLED Compact FL



RotaLED Compact M

Part No.	Mount	Colour
2RL 014 979-001	Fixed Mount	Amber
2RL 014 979-021	Magnetic Mount	Amber
2RL 014 979-011	Pipe Mount	Amber

Lens Material	Polycarbonate
Housing	Black, polycarbonate and ABS
Voltage	Multivolt 10 - 30V DC
Power Consumption	7W Max
IP Rating	IP 67, IP X9K
Operating Temperature	-40°C to 60°C
EMC Interference Immunity	CISPR25 Class 5*
Type Approval	ECE-R65 TA 1 004837 SAE J845, Class 2

*150 - 300 kHz: Class 3



K-LED® REBELION



Scan the QR code to see the video



RotaLED Compact Class 1

RotaLED Compact Class 1 is a powerful warning beacon that meets SAE J845 Class 1 approval.

Using high power LEDs and advanced electronics it provides a highly visible rotating warning light pattern without the need for moving parts, ensuring greater reliability and a long, maintenance-free operating lifespan.

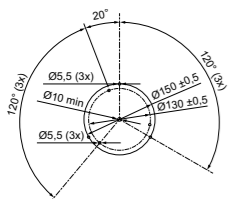
Built to last it features a rugged, ABS case and impact-resistant Polycarbonate dome. Fully sealed and highly-resistant to dust and water ingress, it is rated to IP 67 and IP X9K and will even withstand high-pressure cleaning.



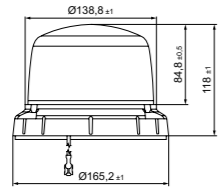
Part No.	Mount	Colour
2RL 014 979-041	Fixed Mount	Amber
2RL 014 979-051	Pipe Mount	Amber
2RL 014 979-061	Magnetic Mount	Amber

Lens Material	Polycarbonate
Housing	Black, polycarbonate and ABS
Voltage	Multivolt 10 – 30 V DC
Power Consumption	7 W
IP Rating	IP 67, IP X9K
Operating Temperature	-40 °C to 60 °C
EMC Interference Immunity	ECE-R10, CISPR25 Class 5*
Type Approval	SAE J845, Class 1

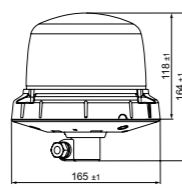
*150 - 300 kHz: Class 3



RotaLED Compact F



RotaLED Compact FL



RotaLED Compact M

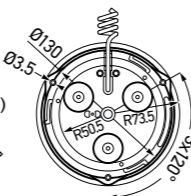
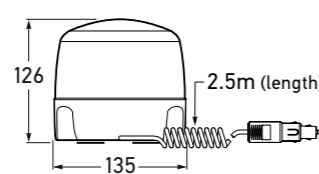
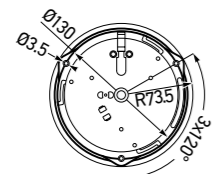
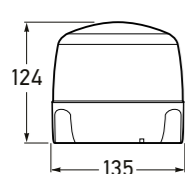
RotaLED Series

RotaLED Beacon, with the latest LED technology provides an optimum signal image with low power consumption. The combination of thermal management and optics in one module makes a remarkably compact design possible. Impact and dirt-resistant Polycarbonate lens.



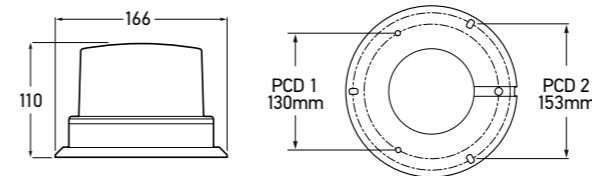
Part No.	Global Part No.	Mount	Colour
1611	2RL 010 979-001	Fixed Mount	Amber
1612	2RL 010 979-011	Pipe Mount	Amber
1613	2RL 010 979-021	Magnetic Mount	Amber

Lens Material	Polycarbonate
Housing	Black, polycarbonate and ABS
Voltage	Multivolt 10 – 30 V DC
Power Consumption	7 W
Rotation	120-133 rpm simulated (2.0-2.2Hz)
IP Rating	IP5KX, IPX4K and IPX9K
Operating Temperature	-40 °C to 60 °C
EMC Interference Immunity	CISPR25 Class 5
Type Approval	ECE R65



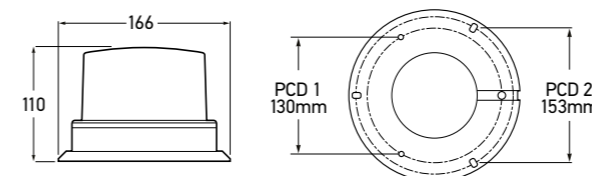
OptiRAY® - E

OptiRAY® E is a compact and extremely robust LED flashing beacon. Impact resistant clear polycarbonate lens and a fibreglass nylon base.



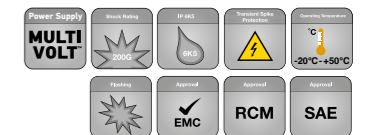
OptiRAY® - R

OptiRAY® R is a compact and extremely robust LED beacon with 8 rotating and flash patterns. Impact resistant clear polycarbonate lens and a fibreglass nylon base.



Part No.	Global Part No.	Mount	Colour
HM300ADIR	2RL 910 073-001	Fixed Mount	Amber
HM300BDIR	2RL 910 075-011	Fixed Mount	Blue
HM300GDIR	2RL 910 075-031	Fixed Mount	Green
HM300RDIR	2RL 910 075-051	Fixed Mount	Red
HM300WDIR	2RL 910 075-071	Fixed Mount	White

Lens Material	Polycarbonate
Housing	Fibreglass Nylon
Voltage	Multivolt 12-30V DC
Power Consumption	12W Max
IP Rating	IP 6K5
Operating Temperature	-20°C to 50°C
EMC Interference Immunity	ECE-R10, EMC
Type Approval	SAE J845 Class 1 (Red) Class 2 (Amber)



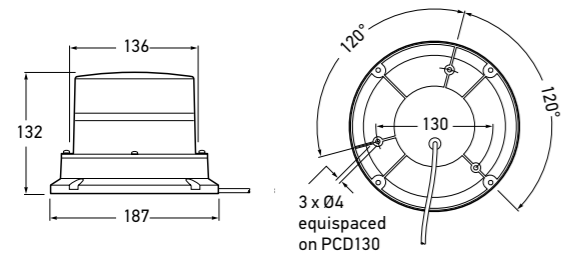
Part No.	Global Part No.	Mount	Colour
HM360ADIR	2RL 910 078-021	Fixed Mount	Amber
HM360BDIR	2RL 910 078-061	Fixed Mount	Blue
HM360GDIR	2RL 910 078-081	Fixed Mount	Green
HM360RDIR	2RL 910 078-111	Fixed Mount	Red

Lens Material	Polycarbonate
Housing	Fibreglass Nylon
Voltage	Multivolt 12-30V DC
Power Consumption	20W Max
IP Rating	IP 6K5
Operating Temperature	-20°C to 50°C
EMC Interference Immunity	ECE-R10, EMC
Type Approval	SAE J845 Class 1 (Red) Class 2 (Amber)



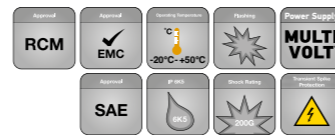
UltraRAY®

UltraRAY® is an extremely robust LED beacon with 4 flash patterns, an impact resistant clear polycarbonate lens and a case alloy base.



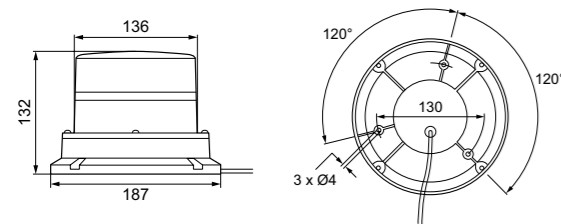
Part No.	Global Part No.	Mount	Colour
HM400ADIR	2RL 910 081-001	Fixed Mount	Amber
HM400BDIR	2RL 910 081-011	Fixed Mount	Blue
HM400GDIR	2RL 910 081-021	Fixed Mount	Green
HM400RDIR	2RL 910 081-031	Fixed Mount	Red
HM400WDIR	2RL 910 081-041	Fixed Mount	White

Lens Material	Polycarbonate
Housing	Powder Coated Cast Alloy
Voltage	Multivolt 12-30V DC
Power Consumption	20W Max
IP Rating	IP 6K5
Operating Temperature	-20°C to 50°C
EMC Interference Immunity	ECE-R10,
Type Approval	SAE J845 Class 1 (Red) Class 2 (Amber)



UltraRAY® - R

UltraRAY® R is an extremely robust LED beacon with rotating or quad flash patterns, an impact resistant clear polycarbonate lens and a case alloy base.



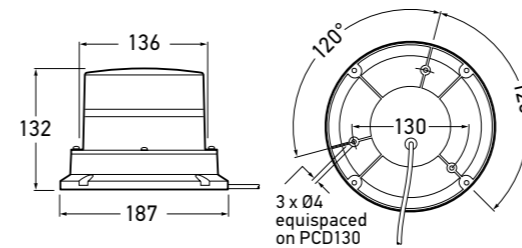
Part No.	Global Part No.	Mount	Colour
HM450ADIR	2RL 910 087-001	Fixed Mount	Amber
HM450BDIR	2RL 910 087-041	Fixed Mount	Blue
HM450GDIR	2RL 910 087-061	Fixed Mount	Green
HM450RDIR	2RL 910 087-081	Fixed Mount	Red

Lens Material	Polycarbonate
Housing	Powder Coated Cast Alloy
Voltage	Multivolt 12-30V DC
Power Consumption	20W Max
IP Rating	IP 6K5
Operating Temperature	-20°C to 50°C
EMC Interference Immunity	ECE-R10,
Type Approval	SAE J845 Class 1 (Red) Class 2 (Amber)



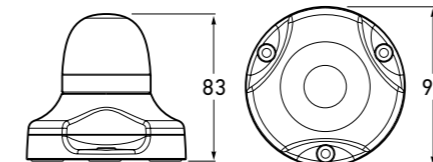
UltraRAY® - R Twin

UltraRAY® R Twin is a High output extremely robust LED beacon with rotating or flash pattern, an impact resistant clear polycarbonate lens and a case alloy base.



LED 360° Multi-flash Signal Lamp

Multi-purpose LED 360° Warning Lamp with clear nylon (PA12) lens, available in four signal colours and white. The HELLA multi-flash range of warning lamps have 10 programmable flash modes and can be synchronised to flash alternately or in unison. Optic appears clear until illuminated.



Part No.	Global Part No.	Mount	Colour
HM500ADIR	2RL 910 097-001	Fixed Mount	Amber
HM500BDIR	2RL 182 653-102	Fixed Mount	Blue
HM500GDIR	2RL 182 653-302	Fixed Mount	Green
HM500RDIR	2RL 182 653-502	Fixed Mount	Red

Lens Material	Polycarbonate
Housing	Powder Coated Cast Alloy
Voltage	Multivolt 10-30V DC
Power Consumption	50W Max
IP Rating	IP 6K5
Operating Temperature	-20°C to 50°C
EMC Interference Immunity	ECE-R10,
Type Approval	SAE J845 Class 1 (Red) Class 2 (Amber)

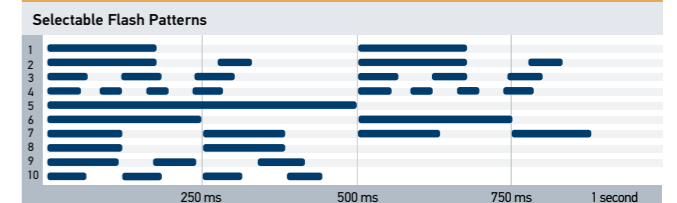


Part No.	Global Part No.	Mount	Colour
98091100	2XD 980 911-002	Surface Mount	White
98091120	2XD 980 911-202	Surface Mount	Green
98091140	2XD 980 911-402	Surface Mount	Red
98091160	2XD 980 911-602	Surface Mount	Amber
98091170	2XD 980 911-702	Surface Mount	Blue

Lens Material	High impact and chemical resistant Grilamid™ lens
Housing	UV Resistant Acrylic
Voltage	Multivolt 9-33V DC
Power Consumption	Less than 5W (less in flashing modes)
IP Rating	IP 6K7
Operating Temperature	-40°C to 60°C
EMC Interference Immunity	ECE-R10,



HELLA MULTI-FLASH LAMP OPERATING MODES



Flashing Options	
Steady state	Lamp operates as a continuous ON signal
Independent flash	Lamp operates from an external flashing system
Flash state	Lamp operates in the flash mode preselected by the user
Blitz state	Lamp operates in a burst of quad flashes (pattern 4)

The blitz mode overrides the other operating modes and is triggered by switching the blue cable to negative (-).

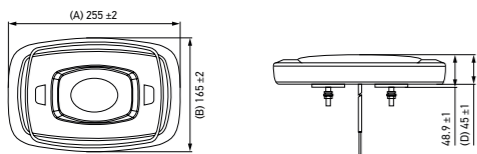
Micro / Mini Lightbar

The Micro and Mini Lightbars combine a flashing and rotating signal in one product and generate an intense 360°-degree warning signal. Both warning lights are optimally protected against strong vibrations and therefore suitable for various applications.

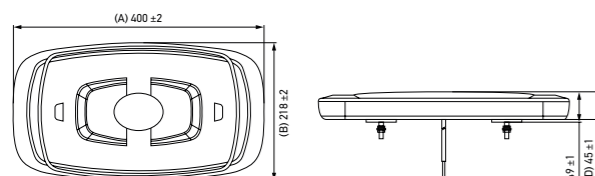


Amber light output, clear lens

Amber light output, amber lens



Micro Lightbar



Mini Lightbar

Micro Lightbar		
Part No.	Mount	Colour
2RL 014 566-111	Bracket	Amber (Clear Lens)
2RL 014 566-311	Bracket	Amber (Amber lens)
2RL 014 566-101	Screw Fixed	Amber (Clear Lens)
2RL 014 566-301	Screw Fixed	Amber (Amber lens)

Mini Lightbar		
Part No.	Mount	Colour
2RL 014 565-111	Bracket	Amber (Clear Lens)
2RL 014 565-311	Bracket	Amber (Amber lens)
2RL 014 565-101	Screw Fixed	Amber (Clear Lens)
2RL 014 565-301	Screw Fixed	Amber (Amber lens)

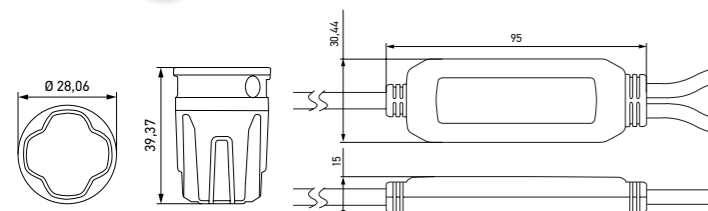
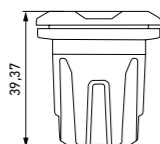
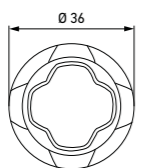
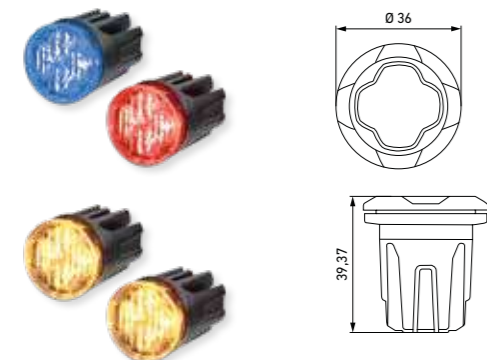
	Micro Lightbar	Mini Lightbar
Lens Material	Polycarbonate	
Housing	Polycarbonate	
Voltage	Multivolt 10-30V DC	
Power Consumption	Max. 66W	Max. 70W
IP Rating	IP 6X, IP X4K, IP X9K	
Operating Temperature	-40°C to 65°C	
EMC Protection	ECE-R10, CISPR 25 Class 3,	
Type Approval	SAE J845 Class 1	



BST Round

The BST-Round warning light is characterised by its new round design which allows flexible installation in different areas of the vehicle. Four power LEDs and high-quality precision optics generate an intensive warning signal with minimum power consumption.

The warning lights are supplied as a set consisting of a controller, two flasher heads and two mounting rings. The power supply cable has an open end and the mounting rings and mounting brackets allow easy and flexible installation. The BST-Round warning light is extremely temperature resistant due to the high-quality aluminium housing and will operate in a temperature range of -40°C to +80°C. The warning lights have different flash patterns, e.g. single flash or double flash. Further details on the different flash sequences can be found in the assembly instructions.



1 9XD 863 533-101

Part No.	Colour
2XD 014 564-001	Blue
2XD 014 564-211	Amber
2XD 014 564-601	Red
2XD 014 564-801	White
2XD 014 564-011	Blue/Amber
2XD 014 564-021	Blue/Red
2XD 014 564-611	Red/Amber

Lens Material	Polycarbonate
Housing	Aluminium
Voltage	Multivolt 11 – 30 V DC
Power Consumption	27 – 33 W
Current Consumption	2.27 – 2.75 A (12 V) 1.13 – 1.37 A (24 V)
IP Rating	Lighthouse: IP 6X, IP X4K, IP X9K Controller: IP X7
Operating Temperature	-40°C to 65°C
EMC Interference Immunity	ECE-R10, CISPR 25 Class 3,
Type Approval	ECE R65 For 2XD 014 564-801: SAE J845 Class 1

BST Slim (3 LED)

The BST-Slim is a high-performance warning light with 3 or 6 LEDs.

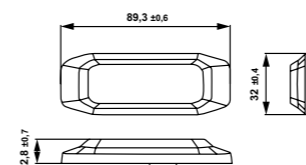
There are different warning light colours and various flashing sequences which create a synchronous or alternating signal. The Dual Colour warning light is ECE-R65 type-tested and the rest are SAE approved. It can be used for single, double, triple and quadruple flash as well as with continuous light. Supplied as a set of two



2XD 014 563-401

2XD 014 563-101

2XD 014 563-701



BST-Slim 3 LED



2XD 014 563-901

BST Slim (6 LED)

The BST-Slim warning light with 6 LEDs provides a highly visible warning with the same flash patterns as its 3 LED counterpart, as well as a day/night mode which adjusts the brightness to the ambient light for increased visibility during the day and avoidance of glare at night. Supplied as a set of two.



2XD 014 562-401

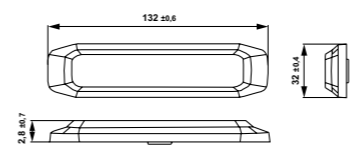
2XD 014 562-101



2XD 014 562-701



2XD 014 562-811



BST-Slim 6 LED



2XD 014 562-901

Part No.	Colour
2XD 014 563-401	Amber
2XD 014 563-101	Blue
2XD 014 563-701	Red
2XD 014 563-901	White

Lens Material	Polycarbonate
Housing	Aluminium
Voltage	Multivolt 11 – 30 V DC
Current Consumption	Amber: 0.7 A (12 V), 0.35 A (24 V) Blue: 0.7 A (12 V), 0.35 A (24 V) Red: 0.54 A (12 V), 0.27 A (24 V) White: 0.7 A (12 V), 0.35 A (24 V)
Power Consumption	7 – 14 W
IP Rating	IPX7, IPX9K
Operating Temperature	-40°C to 65°C
EMC Interference Immunity	ECE-R10, CISPR 25 Class 5,
Type Approval	SAE J595 Class 1



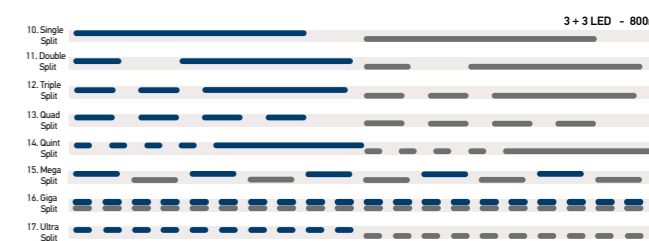
Part No.	Colour
2XD 014 562-401	Amber
2XD 014 562-101	Blue
2XD 014 562-701	Red
2XD 014 562-811	Blue/Red
2XD 014 562-901	White

Lens Material	Polycarbonate
Housing	Aluminium
Voltage	Multivolt 11 – 30 V DC
Current Consumption	Amber: 1.4 A (12 V), 0.7 A (24 V) Blue: 1.4 A (12 V), 0.7 A (24 V) Red: 1.1 A (12 V), 0.55 A (24 V) White: 1.4 A (12 V), 0.7 A (24 V)
Power Consumption	7 – 14 W
IP Rating	IPX7, IPX9K
Operating Temperature	-40°C to 65°C
EMC Interference Immunity	ECE-R10, CISPR 25 Class 5,
Type Approval	SAE J595 Class 1 For 2XD 014 562-811 (blue/red): ECE-R65 XR1 and XB1



HELLA MULTI-FLASH LAMP OPERATING MODES

Signal Warning Lamp - 18 Flash Patterns



HypaLUME 110 / 240V AC

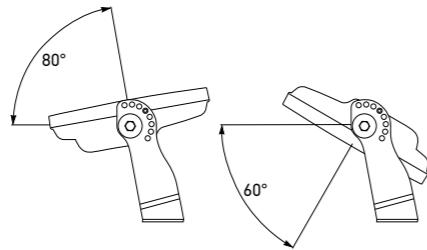
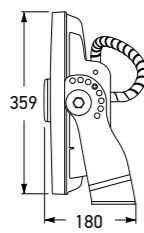
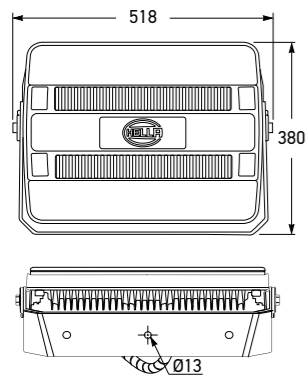
The 110/240V AC HypaLUME has been designed for applications where high output lighting in extreme environments is required.

Comprehensive sealing and anti-corrosion measures have been taken to ensure this lamp withstands the toughest conditions. The premium aluminium housing is corrosion resistant with a non-stick and easy to clean surface coating. The heavy duty Grilamid™ lens provides unbeatable protection against impacts and vibration, while providing long term UV stability and resistance to commonly used chemicals for the life of the product. The LEDs have a colour temperature of 5700K to provide a near daylight work environment that is optimal for fatigue avoidance and high alertness.



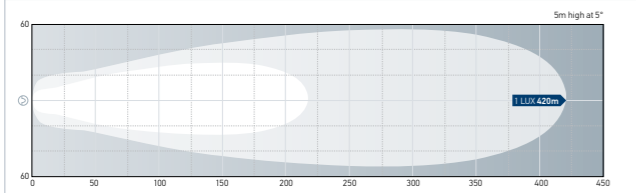
Part No.	Lens Type	Colour
1GJ 958 334-011	Close Range	☐ White
1GJ 958 334-021	Long Range	■ White
1GJ 958 334-031	Extra Wide	☐ White

Lens Material	Grilamid™ Nylon PA12
Mounting	Upright or Pendant
Housing	Aluminium with non-stick coating
Voltage	100 to 240V AC
Power Consumption	300W Max
Actual Light Output	28000 Lumens
IP Rating	IP 6K9K, IP 66, IP 67
Operating Temperature	-40°C to 50°C
LED Colour Temperature	5700 K
Connection	Wieland RST Mini - 16A
EMC Interference Immunity	CISPR 25 Class 3,
Type Approval	AS / NZS 60598.2.5

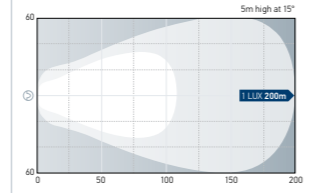


Lamp can be rotated 140°

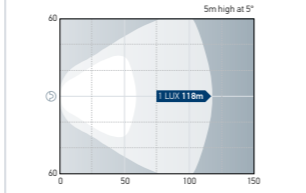
HypaLUME 110 / 240V AC - Long Range



HypaLUME 110 / 240V AC - Close Range



HypaLUME 110 / 240V AC - Extra Wide



HypaLUME 48V DC RfCommSafe

The HypaLUME 48V DC RfCommSafe™ has been designed for applications where high output lighting in extreme environments is required. The lamp produces a net output of 28000 lumens whilst only consuming 300W.

The LEDs have a colour temperature of 5700K to provide a near daylight work environment that is optimal for fatigue avoidance and high alertness.

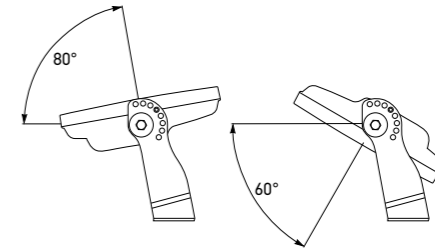
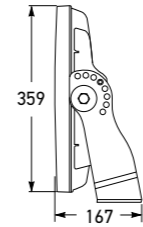
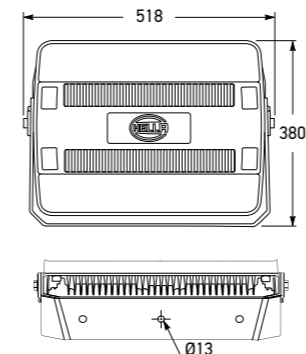
The LED driver electronics ensure light output remains stable over a wide range of voltage variations. The built-in soft start feature eliminates a high in-rush current at start up.

HypaLUME 48V DC is designed to RfCommSafe™, ultra-low emission (EMC) requirements surpassing international standards by a wide margin.



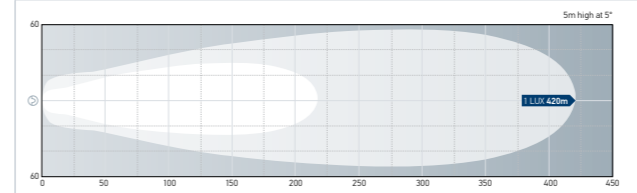
Part No.	Lens Type	Colour
1GJ 011 872-221	Close Range	☐ White
1GJ 011 872-231	Long Range	■ White
1GJ 011 872-241	Extra Wide	☐ White

Lens Material	Grilamid™ Nylon PA12
Housing	Aluminium with non-stick coating
Voltage	46 to 53V DC
Power Consumption	300W Max
Actual Light Output	28000 Lumens
IP Rating	IP 6K9K
Operating Temperature	-40°C to 50°C
LED Colour Temperature	5700 K
Connection	4 Pin Deutsch plug
EMC Interference Immunity	CISPR 25 Class 3,

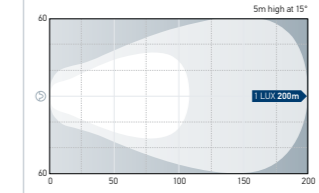


Lamp can be rotated 140°

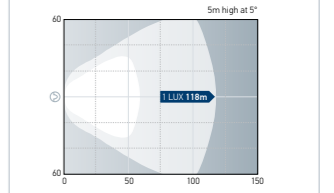
HypaLUME 48V DC - Long Range



HypaLUME 48V DC - Close Range



HypaLUME 48V DC - Extra Wide



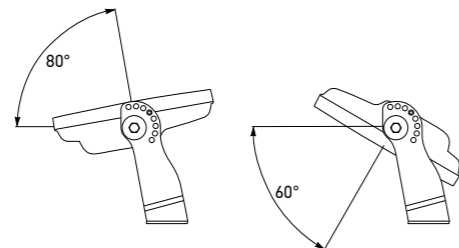
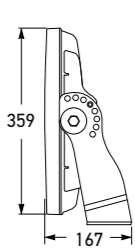
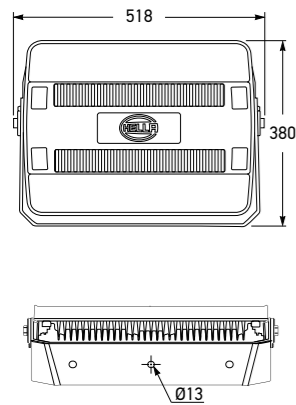
HypaLUME 24 / 48V DC

The HypaLUME 24/48V DC has been designed for applications where high output lighting in extreme environments is required. The lamp produces a net output of 25000 lumens whilst consuming less than 260W. Comprehensive sealing and anti-corrosion measures have been taken to ensure this lamp withstands the toughest conditions. The premium aluminium housing is corrosion resistant with a non-stick and easy to clean surface coating. The LEDs have a colour temperature of 5700K to provide a near daylight work environment that is optimal for fatigue avoidance and high alertness. The LED driver electronics ensure light output remains stable over a wide range of voltage variations. The HypaLUME is also protected from reverse polarity and short circuit faults.

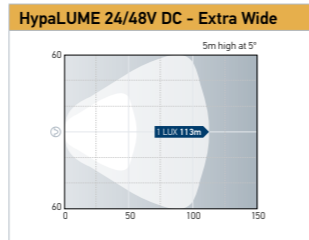
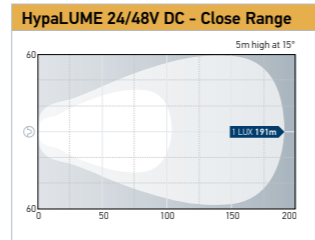
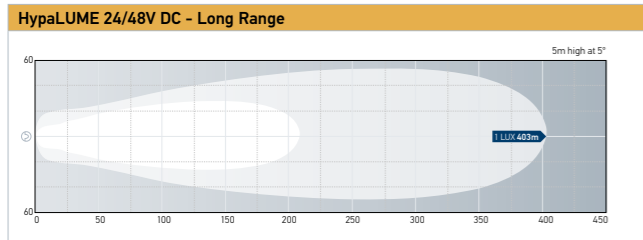


Part No.	Global Part No.	Lens Type	Colour
HMF2000CMOB	1GJ 011 872-501	Close Range	White
HMF2000LMOB	1GJ 011 872-511	Long Range	White
HMF2000WMOB	1GJ 011 872-521	Extra Wide	White
1GJ 011 872-601	1GJ 011 872-601	Close Range	Amber

Lens Material	Grilamid™ Nylon PA12
Housing	Aluminium with non-stick coating
Voltage	22 to 52V DC
Power Consumption	260W Max
Actual Light Output	25000 Lumens
IP Rating	IP 6K9K
Operating Temperature	-40°C to 50°C
LED Colour Temperature	5700 K
Connection	4Pin Deutsch plug
EMC Interference Immunity	CISPR 25 Class 3

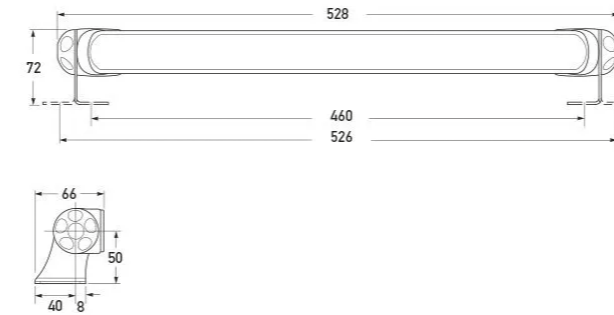


Lamp can be rotated 140°

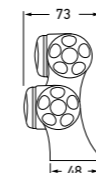
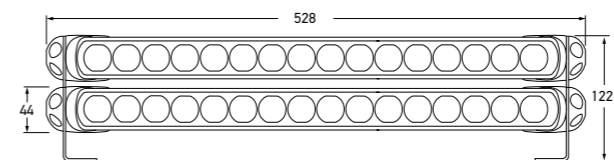


BL 470 Diffused Flood Work Lamp

BL470 Diffused Flood Work Lamp is ideal for illuminating a large area with an ultra-smooth spread. The thermally conductive polymer housing and nylon lens ensure corrosion resistance.



LED Light Bar - HD Double Bracket Kit



HD Double Bracket Kit + 2 LED Light Bar 470

Part No.	Lens Type	Colour
2LT 958 130-501	Diffused Flood	White

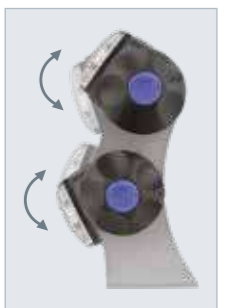
Lens Material	Grilamid™
Housing	Ceramic Polymer
Voltage	Multivolt 9 - 33V
Power Consumption	36W High / 4W Low
IP Rating	IP 6K7, IP 6K9K
Operating Temperature	-40°C to 60°C
EMC Interference Immunity	ECE-R10, CISPR 25 Class 5,



8HG 958 139-851		
Kit Contents: (Lamps not included)	2 x Stainless Steel Double Mounting Feet 4 x Stainless Steel M8 x 20mm Cap Screws 4 x Stainless Steel M8 Nylon Lock Nuts 4 x End Adaptors	4 x Friction Washers 4 x End Clamps 4 x Screw Caps



HD Double Bracket Kit + 2 x LED Light Bar



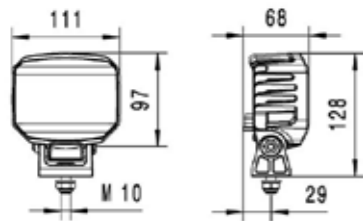
Mounting brackets allow rotation of Light Bar.

RokLUME 190TP

The RokLume 190TP is a robust work lamp designed specifically for mining. The innovative Thermo plastic housing reduces weight and offers complete corrosion resistance.

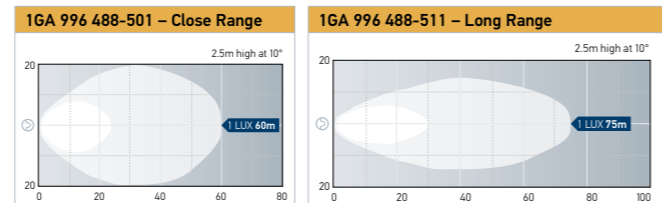


Close Range version



Part No.	Lens Type	Colour
1GA 996 488-501	Close Range	White
1GA 996 488-511	Long Range	White

Lens Material	Grilamid™ Nylon PA12
Housing	Thermally Conductive Plastic
Voltage	Multivolt 9-33V DC
Power Consumption	26W Max
Actual Light Output	1850 Lumens
IP Rating	IP 6K9K, IP 6K7
Operating Temperature	-40°C to 50°C
LED Colour Temperature	5000 K
Connection	Integrated with 2 Pin Deutsch plug
EMC Interference Immunity	ECE-R10, CISPR 25 Class 5,

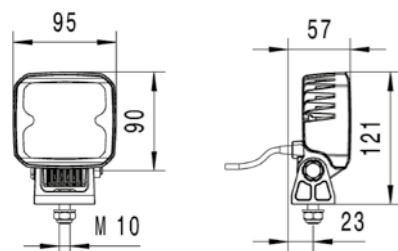


RokLUME 155TP LED

The RokLume 155TP LED is a robust work lamp designed specifically for mining. The innovative Thermo plastic housing reduces weight and offers complete corrosion resistance.



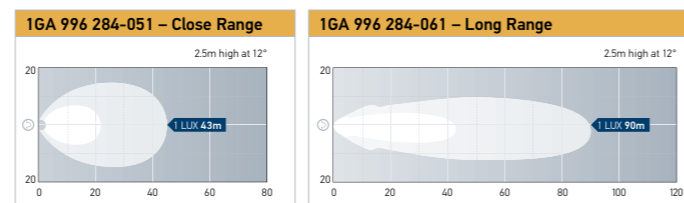
Close Range version



Part No.	Lens Type	Colour
1GA 996 284-051	Close Range	White
1GA 996 284-061	Long Range	White
1GA 996 284-071*	Close Range	Amber

* Contact Customer Service for availability custservice@hella.com or 1800 061 729

Lens Material	Polycarbonate
Housing	Thermally Conductive Plastic
Voltage	9-33V DC
Power Consumption	15W Max
Actual Light Output	1200 Lumens
IP Rating	IP 6K9K, IP 6K7
Operating Temperature	-40°C to 50°C
LED Colour Temperature	5000 K
Connection	Lead with 2 Pin Deutsch plug
EMC Interference Immunity	ECE-R10, CISPR 25 Class 5



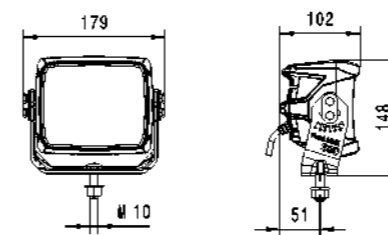
RokLUME 380 N

RokLUME 380N is a high output LED work lamp specifically built for mining with a heavy duty stainless steel bracket and corrosion resistant NanoSafe coating.



ZeroGlare version

Pencil Beam version



Part No.	Lens Type	Colour
1GA 996 197-001	ZeroGlare	White
1GA 996 197-011	Close Range	White
1GA 996 197-021	Long Range	White
1GA 996 197-041	Pencil Beam	White
1GA 996 197-031	Flood	White
1GA 996 197-051	ZeroGlare	Amber
1GA 996 197-061*	Close Range	Amber
1GA 996 197-071*	Long Range	Amber
1GA 996 197-091*	Pencil Beam	Amber
1GA 996 197-081*	Flood	Amber

* Contact Customer Service for availability custservice@hella.com or 1800 061 729

Lens Material	Hard-coated PC
Housing	Aluminium with NanoSafe coating
Voltage	20 - 32V
Power Consumption	84W Max
Actual Light Output	7800 Lumens
IP Rating	IP 6K9K, IP 6K8
Operating Temperature	-40°C to 50°C
LED Colour Temperature	5000 K
Connection	300mm harness with DT socket (counter plug supplied)
EMC Interference Immunity	ECE-R10, CISPR 25 Class 5,



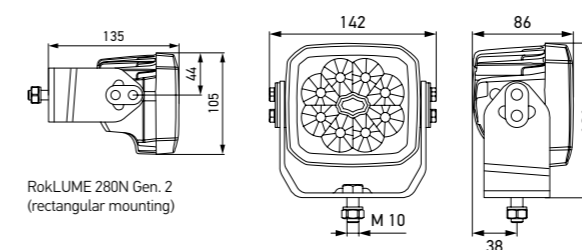
RokLUME 280N GEN 2

RokLUME 280N GEN 2 is a high output LED work lamp specifically built for mining with a heavy duty stainless steel bracket and corrosion resistant NanoSafe coating.



Long Range version

Wall Mount Options

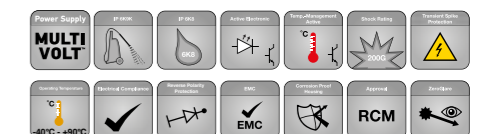


RokLUME 280N Gen. 2 (rectangular mounting)

Part No.	Lens Type	Colour
1GA 995 606-541*	ZeroGlare	White
1GA 995 706-501	Close Range	White
1GA 995 706-531	Pencil Beam	White
1GA 995 706-511	Long Range	White
1GA 995 706-551	Tunnel Flood	White
1GA 995 706-541	Diffused Flood	White

Country of Origin	Austria
Lens Material	Hard-coated PC
Mounting	Upright, Wall or Pendant*
Housing	Aluminium with NanoSafe coating
Voltage	Multivolt 9-33V DC
Power Consumption	50W Max
Actual Light Output	Up to 5000 Lumens
IP Rating	IP 6K9K, IP 6K8
Operating Temperature	-40°C to 90°C
LED Colour Temperature	5000 K
Connection	Integrated 2 Pin Deutsch plug
Weight	1,476 g
EMC Interference Immunity	ECE-R10, CISPR 25 Class 5,

*Available gen 1 only



FMS

The FMS is the ideal work lamp for flat mounting on the vehicle wall and integrates itself perfectly into the appearance of the vehicle. The special design of this work lamp ensures a great ground illumination, even with a vertical wall mounting.

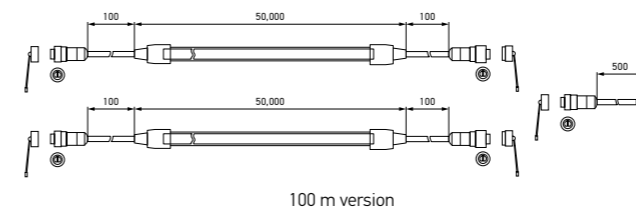
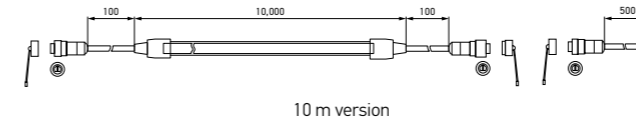


Base	Prime	Illumination	Housing Colour
1GB 996 098-001	1GB 996 098-011	Close Range	Black
Lens Material		Grilamid™	
Housing		Housing: die-cast aluminium, CoroSafe coating	
Voltage		Multi-voltage (9–32 V)	
Power Consumption		Base: 14 W Prime: 28 W	
Actual Light Output		Base: 1,200 lm Prime: 2,500 lm	
IP Rating		IP 6K8, IP 6K9K	
Operating Temperature		-40 °C to 50 °C	
LED Colour Temperature		6,500 K	
Connection		500 mm cable	
EMC Interference Immunity		ECE-R10, RCM, ADR / GGVSEB	
Dimensions		243 x 66 x 38 mm	
Weight		590g	
Country of Origin		Austria	



FlexaTec

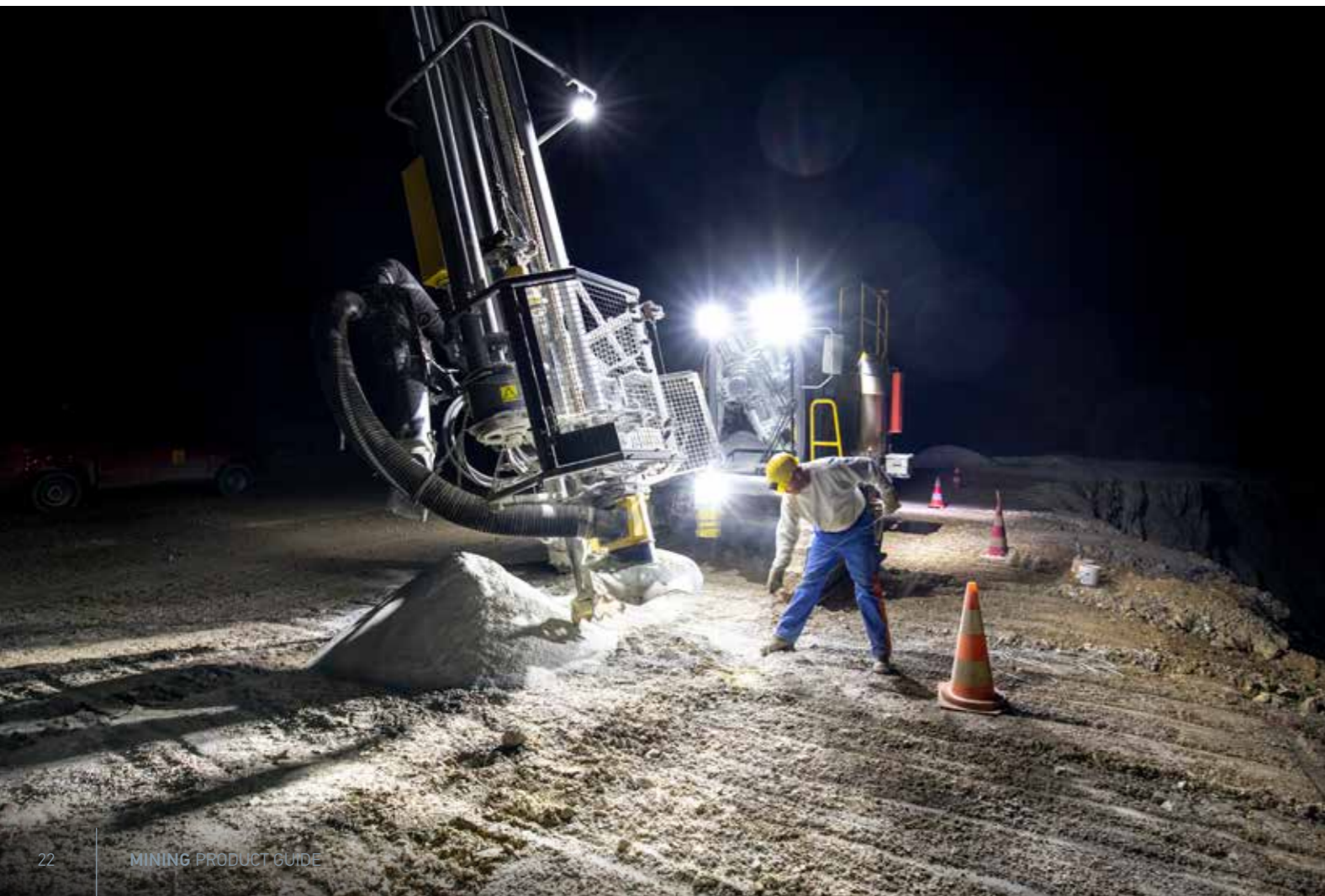
The new flexible LED light strip from HELLA for industrial applications ensures homogenous illumination of the working environment. Installation is easy, thanks to the specially designed clips. FlexaTec can be combined to a length of 100 metres.



Part No.	Length	Type Approval	Rated Voltage
1GJ 995 181-201	10 m	CB (Europe), CB + SAA (Australia), CB (South Africa)	230 V AC
1GJ 995 181-601	100 m (2 x 50m lengths)	CB (Europe), CB + SAA (Australia), CB (South Africa)	230 V AC

Material	PVC (flammability class V0)
Mounting	Quick fastening via specially designed clips (included in the delivery)
Dimensions	Width: 18 mm, Height: 8 mm Length: can be combined up to 100 m
Power Consumption	15W per metre
Light Output	1,500 lumens per metre
IP Rating	IP 6K7
Operating Temperature	-20 °C to 40 °C
LED Colour Temperature	5,000 K
Connection	Cable with open ends
Type Approval	IEC 60598-2-1:1979/AMD1:1987; IEC 60598-1:2014/AMD1:2017 Supplementary approvals: CRS, SAA

Spare parts*	
9XD 990 181-011	Spare parts set 230 V AC version
* Spare parts sets include fastening clips, end cap and connecting cable.	



Module 70 S

The Module 70 S series is the LED successor to the well-known, high-quality and yet affordable Module 70 work lamp.

The S series work lamp provides homogeneous illumination with a colour temperature of 6,500 kelvin, providing a similar light to daylight.

The housing and the cover lens are made of special plastics, which keep them very lightweight and provide a high level of corrosion resistance.

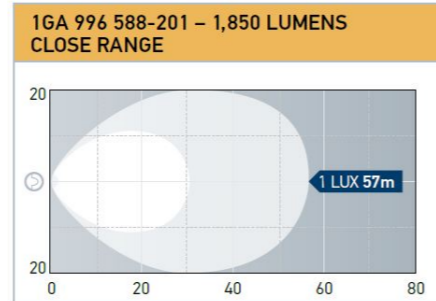
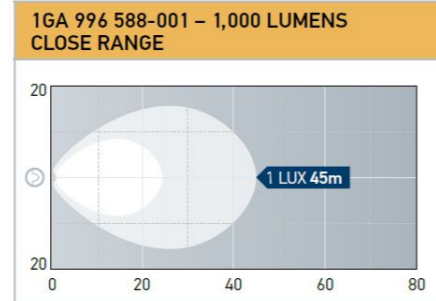
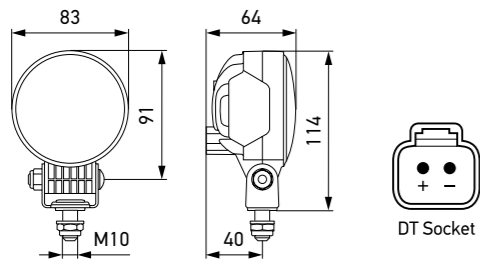
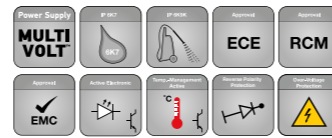


1G0 996 776-001

1G0 996 776-201

Part No.	Lens Type	Lumens
1G0 996 776-001	Close Range	1,000
1G0 996 776-201	Close Range	1,850

	1,000 Lumens	1,850 Lumens
Lens Material	Polycarbonate	
Housing	Heat-conductive plastic	
Voltage	Multivolt 9-33 V DC	
Power Consumption	12 W	19 W
Light Output	1,000 lm	1,850 lm
IP Rating	IP 6K7, IP 6K9K	
Operating Temperature	-40 °C to +85 °C	
LED Colour Temperature	6,500 K	
Connection	DEUTSCH DT connector	
EMC Interference Immunity:	CISPR 25 Class 5,	



S Series Powerbeam

The S Series Powerbeam is the LED successor to the well-known, high-quality and yet affordable Powerbeam halogen work lamp.

The S Series Powerbeam provides homogeneous illumination with a colour temperature of 6,500 kelvin, providing a similar light to daylight.

The housing and the cover lens are made of special plastics, which keep them very lightweight and provide a high level of corrosion resistance.

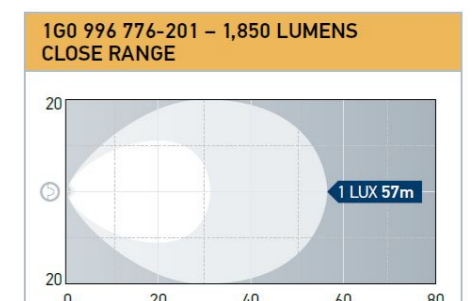
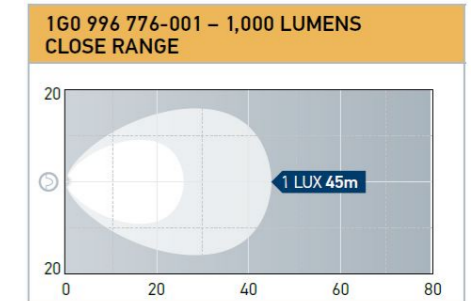
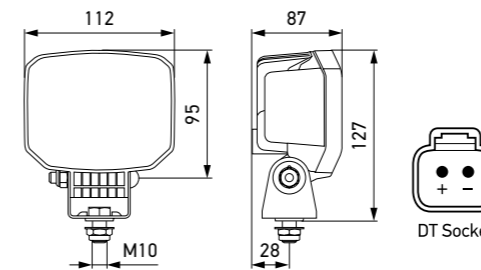
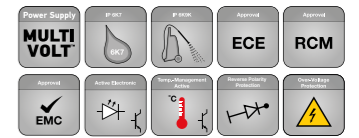


1GA 996 588-001

1GA 996 588-201

Part No.	Lens Type	Lumens
1GA 996 588-001	Close Range	1,000
1GA 996 588-201	Close Range	1,850

	1,000 Lumens	1,850 Lumens
Lens Material	Polycarbonate	
Housing	Heat-conductive plastic	
Voltage	Multivolt 9-33 V DC	
Power Consumption	12 W	19 W
Light Output	1,000 lm	1,850 lm
IP Rating	IP 6K7, IP 6K9K	
Operating Temperature	-40 °C to +85 °C	
LED Colour Temperature	6,500 K	
Connection	DEUTSCH DT connector	
EMC Interference Immunity:	CISPR 25 Class 5,	



C140

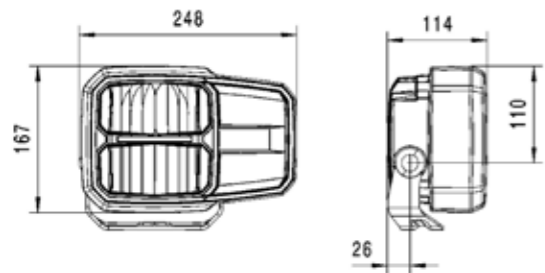
The C140 LED is a combination headlight that features all light functions in LED technology: low beam, high beam, indicator and position light.

A specially developed thermal design with temperature sensors prevents the headlight from overheating.

The housing of the C140 LED is made of aluminium and features cooling fins on its rear, which ensure heat removal from the high-power LEDs. A specially developed thermal design with temperature sensors prevents the headlight from overheating.

With its robust, heavy-duty bracket and a lens made of toughened, shatterproof plastic, the headlight is particularly resistant to vibration and impact. Ideal for the tough conditions on construction vehicles (strong vibrations, dust, moisture, mechanical shock, etc.).

The C140 LED headlight is a fully sealed, maintenance-free system: it obviates the need to replace bulbs, saving time and money for the final consumer. The low LED power consumption compared to conventional halogen headlights also saves fuel, further driving down costs.

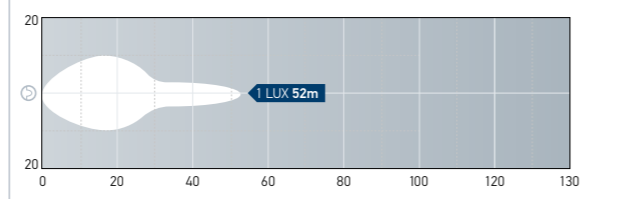


Part No.	Mounting
1LE 996 374-031	Left side, horizontal
1LE 996 374-041	Right side, horizontal

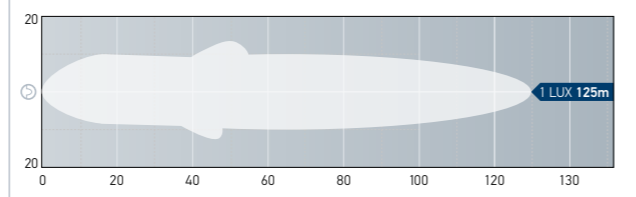
Lens Material	Polycarbonate
Housing	Aluminium
Voltage	10-32V DC
Connection	DEUTSCH connector, 6-pole
Power Consumption	Max. 84W (Reduces if Thermal Management is in effect)
Recommended Tilt Angle	0° to 10°
Energy Consumption	Low beam 25 W High beam 40 W Indicator 8 W Position light 0.8 W
IP Rating	IP 6K9K
Compliance	4080 R112/01 Low & High Beam (Ref 17.5) 4079 R6 Cat.1b & 5, R7/02 ECE R10
Reverse Polarity Protection	Yes



C140 Low beam distance. Recorded with single lamp. Distance in metres.



C140 High beam distance. Recorded with single lamp. Distance in metres.

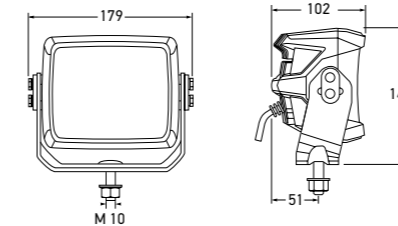


Driving Lamp (ECE Ref. 40)

The RokLUME 380 N LED Driving Lamp (ECE Ref. 40) is an extremely durable wide spot light for road illumination.

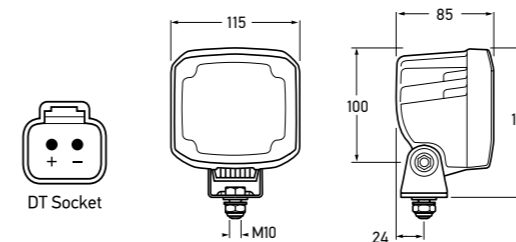
Using LED technology combined with state-of-the-art electronics, it provides a light output of up to 7800 lumens with a colour temperature of 5000K, yet power consumption is a highly efficient 84 W.

Originally developed to perform in the toughest operating environments such as mining, the RokLUME 380 N has a premium aluminium housing with NanoSafe coating (providing a non-stick and easy to clean surface), high-impact hard coated polycarbonate lens and heavy duty stainless steel surrounding bracket.



Ultra Beam LED Gen II

The popular Ultra Beam LED II series has now been expanded to include a Pencil Beam version. The light output is a powerful 4000 lumens with a colour temperature of 6500K. The light is distributed by a specially developed multi-faceted reflector and polycarbonate lens, thus ensuring homogeneous illumination. The integrated electronics protect the device in the event of polarity inversion and guarantee constant brightness, even when operating with voltage fluctuations between 9 and 33 Volts DC.



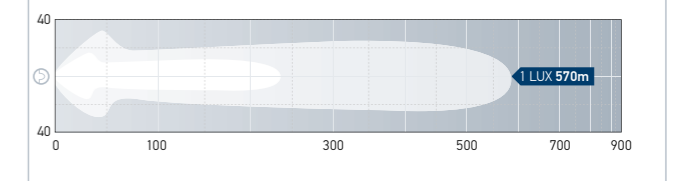
All dimensions in mm.

Part No.	Lens Type
1FA 996 197-151	Pencil Beam, 12V
1FA 996 197-181	Pencil Beam, 24V

Lens Material	Hard-coated PC
Housing	Aluminium
Voltage	12 V DC / 24 V DC
Power Consumption	Max. 84W (Reduces if Thermal Management is in effect)
Max. Light Output	7800 lm
IP Rating	IP 6K8, IP 6K9K
Operating Temperature	-40°C to 90°C
LED Colour Temperature	5000K
Connection	300mm Cable with DT Socket
EMC Interference Immunity	ECE-R10, CISPR 25 Class 5 Ref. 40,
Accessory	9.1551LED.06 DT Pigtail Loom, 2 metres



RokLUME 380N Pencil Beam distance. Recorded with single lamp. Distance in metres.

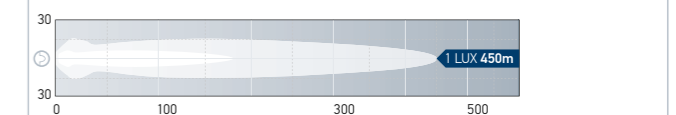


Part No.	Lens Type
1566LEDPB	Pencil Beam
1566LED	Close Range
1566LEDLR	Long Range

Lens Material	Polycarbonate
Housing	Aluminium
Voltage	Multivolt 9-33V DC
Power Consumption	56W
Actual Light Output	4000 lm
IP Rating	IP6K9K and IP6K8, reverse polarity protection, surge protection, overheating protection
Operating Temperature	-40°C to 50°C
LED Colour Temperature	6500K
Mounting	Upright or pendant
Connection	Integrated DT Socket
EMC Interference Immunity	ECE-R10, CISPR 25 Class 5,
Accessory	9.1551LED.06 DT Pigtail Loom, 2 metres



1566LEDPB – Pencil Beam



Black Magic Light Bar

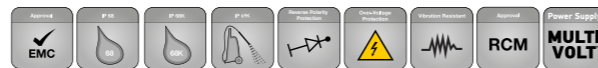
HELLA Black Magic Light Bars feature a slim and edgeless design, fully blacked out (including mounting brackets) for a modern and attractive look. Despite their discreet appearances, they provide a powerful light output of up to 15,000 lumen for excellent visibility in off-road situations.

The sleek, edgeless design prevents dust deposits from settling along edges, enabling HELLA Black Magic Lightbars to achieve the second highest rating for protection against dust and water ingress.

Advanced electronics automatically controls their output to prevent overheating or LED failure in warmer temperatures, whilst increasing light output when the ambient temperature is low, for optimum performance under all conditions.

Part No.	Length
1FJ 358 176-301	20"
1FJ 358 176-311	32"
1FJ 358 176-321	40"
1FJ 358 176-331	50"
1FJ 358 176-401	21.5"

	LED Slim Light Bars					LED Double Light Bar
Variant	20"	32"	40"	50"	21.5"	
Lens Material	Edgeless, coated polycarbonate lens					
Housing	Aluminium					
Voltage	Multivolt 10 - 30 V DC					
Power Consumption	105 W	165 W	210 W	270 W	200 W	
Actual Light Output	6,000 lm	9,000 lm	12,000 lm	15,000 lm	11,000 lm	
IP Rating	Active Thermal Management IP6K8, IP 68, IP 69K (Protection against dust and high-pressure/steam jet cleaning)					
LED Colour Temperature	5,700 K					
Connection	2,000 mm cable with open ends					
EMC Interference Immunity	ECE-R10, RCM					



Black Magic Light Bar 20", Slim



Black Magic Light Bar 32", Slim



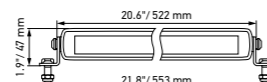
Black Magic Light Bar 40", Slim



Black Magic Light Bar 50", Slim



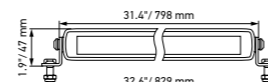
Black Magic Light Bar 21.5", Double



Black Magic Light Bar 20" (Slim)



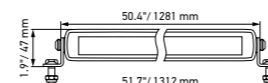
Black Magic Light Bar 32" (Slim)



Black Magic Light Bar 40" (Slim)



Black Magic Light Bar 50" (Slim)



Black Magic Light Bar 21.5" (Double)



8HG 358 176-341



Accessory kit
Slim Light Bar Back Side Mounting Bracket + screws set (2 pcs). Recommended to be used for extra support for 40" and 50" Light Bar. Not suitable for the 21.5" double Light Bar.

Black Magic Mini Light Bar

When there is insufficient space is available to mount a conventional Light Bar, Black Magic Mini Light Bars are the ideal solution.

They are available with either a Flood or Spot beam pattern, they can be upright or pendant mounted.



LED Mini Light Bar 6.2" (Flood)



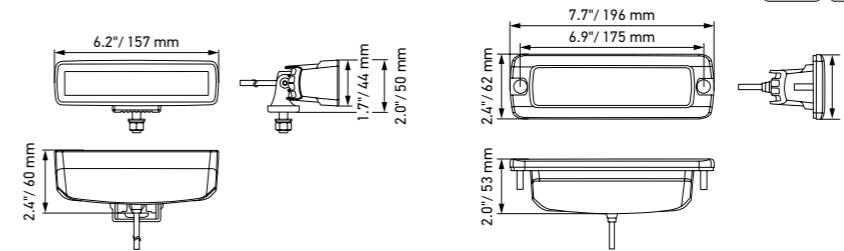
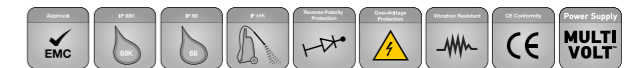
LED Mini Light Bar 6.2" Flush Mount (Flood)



LED Mini Light Bar 6.2" (Spot)

Part No.	Length
1FB 358 176-201	6.2" Flood
1FB 358 176-211	6.2" Spot
1FB 358 176-221	6.2" Flush Mount (Flood)

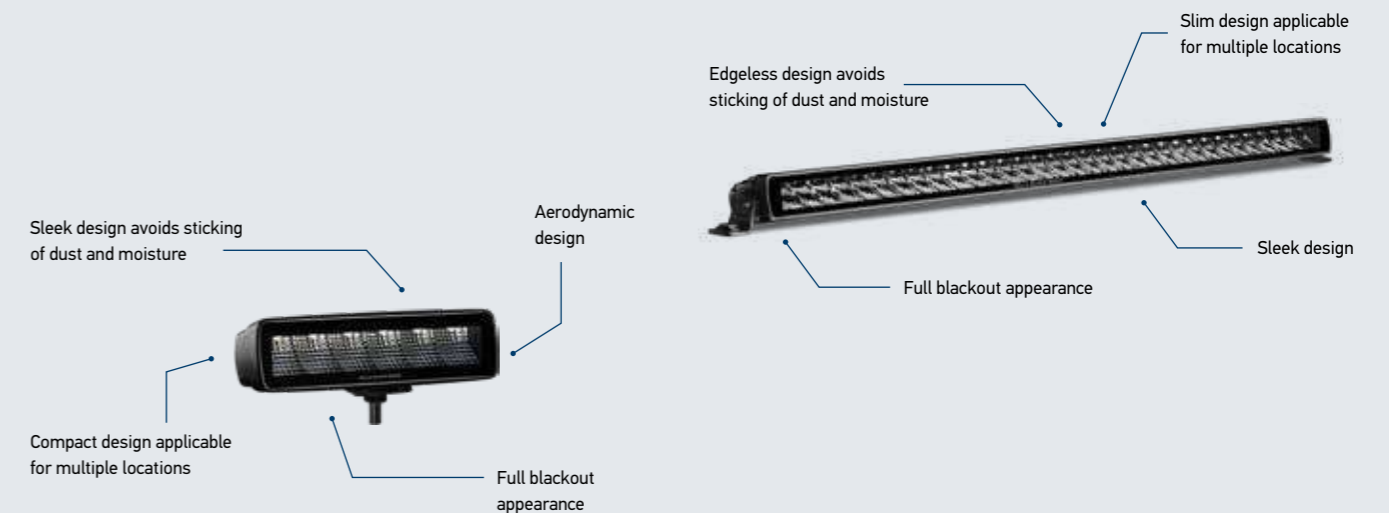
Lens Material	Edgeless, coated polycarbonate lens
Housing	Aluminium
Voltage	Multivolt 10 - 30 V DC
Power Consumption	30 W
Actual Light Output	1,600 lm
IP Rating	Active Thermal Management IP 6K8K, IP 68, IP 69K (Protection against dust and high-pressure/steam jet cleaning)
LED Colour Temperature	5,700 K
Connection	800mm cable with open ends
EMC Interference Immunity	ECE-R10 (E) (E)



Surface mount versions

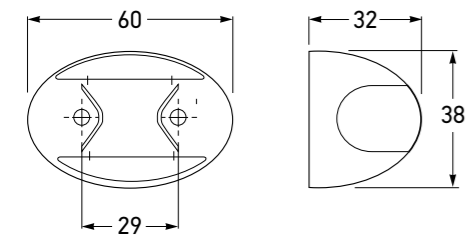
Flush mount version

The new Black Magic range of Light Bars from HELLA offers an unparalleled combination of intense illumination, exceptional efficiency, compact dimensions and discreet styling.



DuraLED Marker Lamps

DuraLED Marker Lamps are ultra high impact resistant available individually or in a bulk pack of 4. Optics appear clear until illuminated.



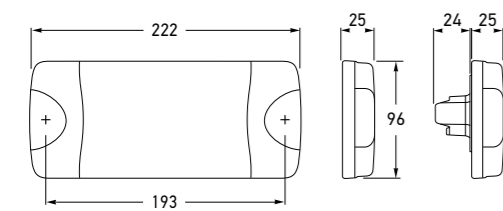
Part No.	Global Part No.	Type	Colour
2053	2PS 959 660-581	Side Marker	Red / Amber
2053BULK	2PS 959 660-502	Side Marker	Red / Amber
2026	2BP 959 660-301	Indicator	Amber
2026BULK	2BP 959 660-357	Indicator	Amber
2054	2PF 959 570-491	Front Position	White
2054BULK	2PF 959 570-557	Front Position	White
2307	2BA 959 560-431	Rear Position	Red
2307BULK	2TM 959 560-517	Rear Position	Red
2051	2PF 959 570-357	Front End Outline	Amber
2051BULK	2PF 959 570-304	Front End Outline	Amber

Voltage	8-28V DC
Housing	Nylon
Power Consumption	1W
IP Rating	IP 6K6, IP 6K7
Cable length	Pre-wired with 0.5m of sheathed multi-core cable. Bulk pack pre-wired with 2.5m of sheathed multi-core cable.
Compliance	2053 ADR 45/01, 2026 ADR 6/00 Cat 5, 2307, 2054, 2051 ADR 49/00,



DuraLED Combi-S

DuraLED Combi-S combination lamp is a stop, tail and indicator lamp with optics that appears clear until illuminated. Ideal for heavy duty applications in mining. With 2.5m lead or Integrated DT.



Part No.	Global Part No.	Type
2378	2SD 980 613-001	2.5m Cable
2378DT	2SD 980 602 001	Integrated DT

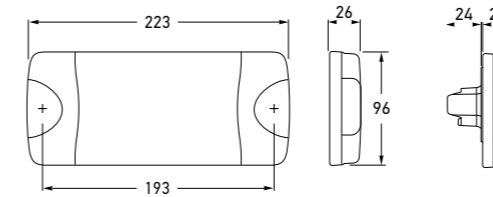
Lens Material	Grilamid™
Voltage	Multivolt for optimum brightness in 12 and 24 volt systems
Power Consumption	Stop: 5W Rear position: 1W Rear direction indicator: 5W
Mounting	Suitable for horizontal or vertical mounting
IP Rating	IP 6K7, IP 6K9K
Compliance	ADR 6/00: Cat 2a ADR 49/00 E24 5883 ECE R6/01 ECE R7/02

COMBI-S LAMP FUNCTIONS



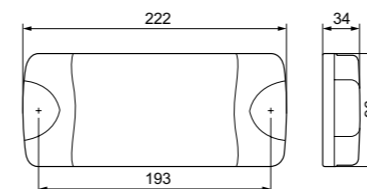
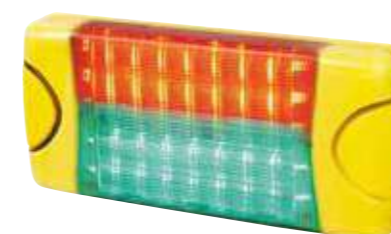
DuraLED® Combi-SR

Stop/Rear Position/Rear Direction Indicator/Reversing Lamp with Retro Reflector. DuraLED® Combi-SR incorporates a built-in retro reflector, saving both time and money on installation. The all-in-one design makes the DuraLED® Combi-SR the ideal choice for trucks, utes and vehicles with limited space to mount a separate reflector.



DuraLED Combi MSIP

DuraLED Combi MSIP is a (Mine Safety Indicator Panel) offers both red and green signals in one compact housing.



Part No.	Carton pack
2VP 015 074-001	CARTON PACK
2VP 015 074-007	PACK OF 12
2VP 015 074-101	HCS 12/24V
2VP 015 075-001	DT
2VP 015 075-101	DT, HCS 12/24V

Lens Material	Grilamid™
Mounting	Surface mount with mounting bushes supplied. Suitable for horizontal mounting
Voltage	Multivolt suitable for 12 and 24 volt systems
Power Consumption	Stop: 5W Rear position: 1.5W Rear direction indicator: 6W Reverse: 2W Night light: 1.5W (DT version only)
IP Rating	IP 6K7, IP 6K9K
Connection	Pre-wired with 2.5m of sheathed multi-core cable (non DT version)
EMC Interference Immunity	ECE R148 ECE R150 ECE R10 ISO 13207-1 ADR 1/00, ADR 6/00 : Cat 2a, ADR 47/00, ADR 49/00



COMBI-SR LAMP FUNCTIONS



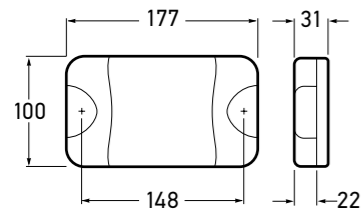
Scan the QR code to see the video

Part No.	Global Part No.	Type
HM95905030	2XA 959 050-301	6M Bare wire
Lens Material	Grilamid™	
Voltage	8 to 28V DC	
Power Consumption	Red Signal High 5W Red Signal Low 1W Green Signal 5W	
Lead Length	6 m cable	
IP Rating	IP 6K6, IP 6K7	



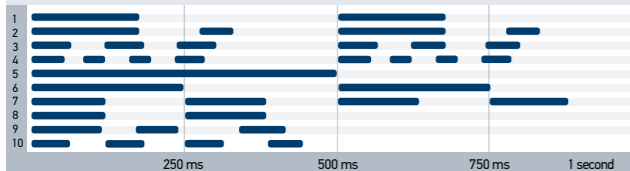
DuraLED Multiflash

DuraLED Multiflash has 11 flash patterns and a high impact resistant Grilamid™ nylon lens for fit and forget applications.



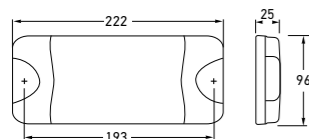
HELLA MULTI-FLASH LAMP OPERATING MODES

Selectable Flash Patterns



DuraLED® Combi-S 50 White LED Lamps

DuraLED® Combi-S 50 White LED lamps are an extremely powerful source of white light and are available in two light patterns, Spread and Wide Spread, to suit a variety of uses including engine rooms, storage lockers or other heavy duty applications where reliability cannot be compromised. Each lamp is completely sealed, UV, impact and shock resistant ensuring an ultra-long service life.



Part No.	Global Part No.	Type	Colour
HM95903710	2XD 959 037-101	Cable	Amber
HM95903760	2XD 959 037-601	Cable	Blue
HM95903780	2XD 959 037-801	Cable	Green
HM95903700	2XD 959 037-001	Cable	Red
HM95903790	2XD 959 037-901	Cable	White
HM95903710D	2XD 959 037-141	DT Connector	Amber
HM95903760D	2XD 959 037-621	DT Connector	Blue
HM95903780D	2XD 959 037-821	DT Connector	Green
HM95903700D	2XD 959 037-021	DT Connector	Red
HM95903790D	2XD 959 037-921	DT Connector	White

Lens Material	Grilamid™
Voltage	9-33V DC
Power Consumption	10W Max
IP Rating	IP 6K6, IP 6K9K
Connector	Cable 2.5M or 250mm cable with DT
EMC Interference Immunity	ECE-R10,

Flashing Options

Steady state	Lamp operates as a continuous ON signal
Independent flash	Lamp operates from an external flashing system
Flash state	Lamp operates in the flash mode preselected by the user
Blitz state	Lamp operates in a burst of quad flashes (pattern 4)

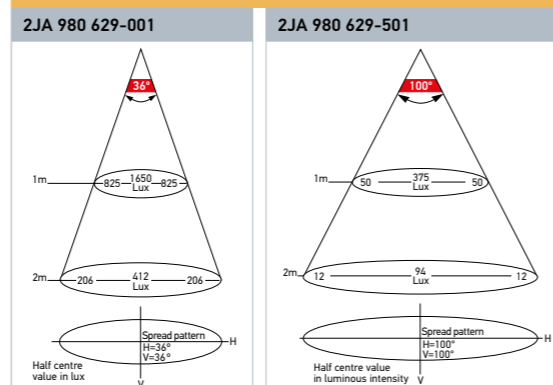
The blitz mode overrides the other operating modes and is triggered by switching the blue cable to negative (-).



Part No.	Lens Type
2JA 980 629-501	Wide Spread
2JA 980 629-001	Spread

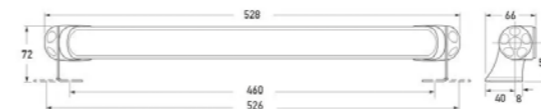
Lens Material	Grilamid™
Voltage	Multivolt for optimum brightness at input voltages from 9 to 33 volts
Power Consumption	<12W
IP Rating	Reverse polarity and transient spike circuit protection. IP 6K7 (Protection against dust and temporary water immersion) IP 6K9K (Protection against dust and high pressure/steam jet cleaning)
EMC Interference Immunity	ECE-R10

ILLUMINATION CHARTS

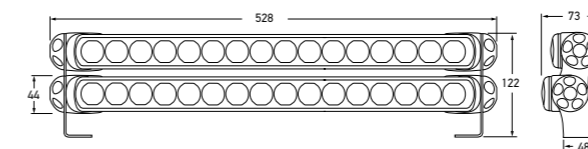


BL 470 Red LED Warning Lamp

BL470 Red LED warning lamp is fitted with the VISIOTECH technology. A special lens optic allows the light to converge and become so sharply focused that a strip-shaped warning line is projected onto the ground to create a no-go zone.



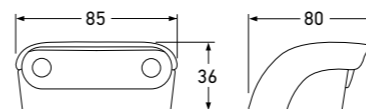
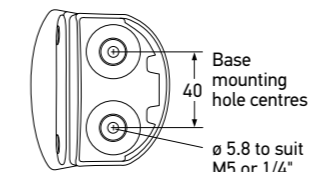
Double Bracket 8HG 958 139-851 available. See page 18.



HD Double Bracket Kit + 2 LED Light Bar 470

LED Licence Plate Lamp

LED Licence Plate Lamp. One lamp required for ADR compliance.



Part No.	Lens Type	Colour
2XD 958 130 661	Spot Beam	Red

Lens	Grilamid™ Nylon PA12
Current Consumption	Multivolt 12 / 24V DC
Power Consumption	36W Max
IP Rating	IP 6K7, IP 6K9K
Operating Temperature	-40°C to 60°C
EMC Interference Immunity	ECE-R10, CISPR 25 Class 5,



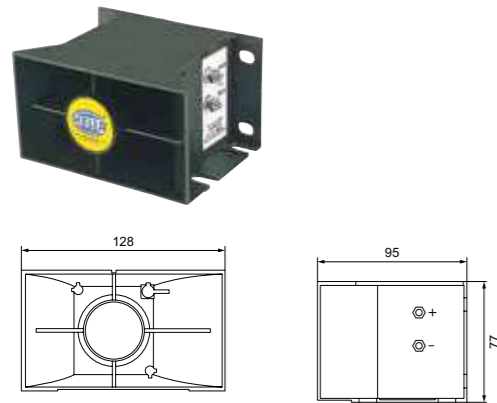
Part No.	Global Part No.	Type
2559-1	2KA 959 640-301	0.5m Cable

Voltage	Multivolt for optimum brightness in 12 and 24 volt systems
Power Consumption	0.5W
Mounting	Surface mount
IP Rating	IP 6K6, IP 6K7
Cable Length	Pre-wired with 0.5m of multi-core cable. Bulk pack pre-wired with 2.5m of multi-core cable. and includes mounting spacer
Compliance	ADR 48/00 ECE R4/00



MotoVox Compact 117 dB Horn

Solid state electronic horn designed for extremely long life and to replace high maintenance electromechanical horns. This model is designed to meet or exceed all applicable SAE specifications. Used by major OEMs.



Part No.	Global Part No.	Type
HMF312P	3TA 910 156-021	12-24V DC, bare wire connection
Volume	117 db @ 1.2 m	
Approvals	SAE J1105 Sept 89, Type K. U.L. recognised for electric vehicles and fork lifts	

MotoVox Forward 117 dB Horn

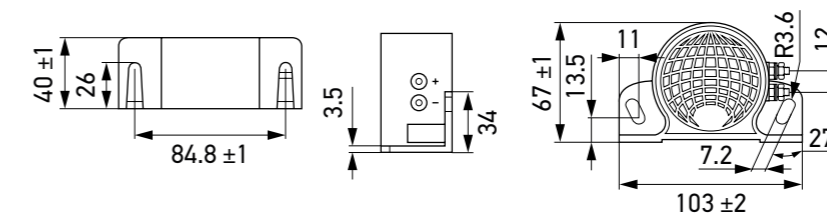
Electronic forward horn is designed to be used where a high-decibel rugged horn is necessary.



Part No.	Global Part No.	Type
HMFH117P	3TA 910 156-011	12-24V DC, bare wire connection
Volume	117 db @ 1.2 m	
Approvals	SAE J1105 Sept 89, Type J @ 24 V systems SAE J1105 Sept 89, Type K @ 12 V systems	

Compact Reverse and Warning Alarm BM10

Ideal for light commercial vehicles, the BM10 reversing alarm is available with a long-range, penetrating 97dB(A) or 107 dB(A) alarm sound. IP67 rated, with an ABS housing and insulated electronics, it has high protection against failure due to rust, moisture and vibrations



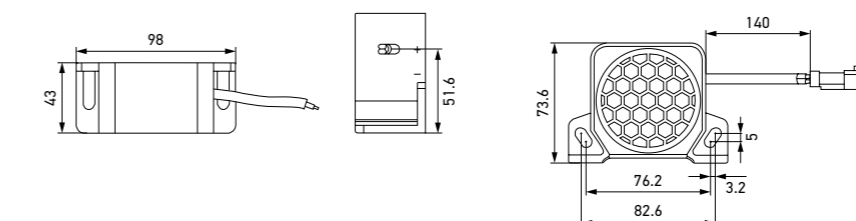
Part No.	Noise Output Type	Output - L ^p @ 1.2m, dB(A)
3SL 009 148-177 (6015)	Standard	97
3SL 009 148-187	Standard	107
3SL 009 148-197 (6009)	Standard	97
3SL 009 148-207 (6010)	Standard	107

Electrical Connection	2 bolt (-177 and -187), 2-Pin DT Type Socket with 140mm lead (-197 and -207)
Voltage	12 – 48 V DC
Power Consumption	12 W
Frequency	700 – 2,800 Hz
Temperature	Operating range -40 °C to 85 °C
Protection	IP 67
EMC Interference Immunity	ECE-R10 SAE J994
Housing	ABS

White Noise Reverse and Warning Alarm BM20

Providing a white noise warning signal for reduced noise pollution, the BM20 reversing alarm is available with outputs of 92, 97 or 102 dB(A), as well as a version with a smart self-adjusting 92-102 dB(A) output level.

IP67 rated, with insulated electronics, it has high protection against failure due to rust, moisture and vibrations.



Part No.	Noise Output Type	Output - L ^p @ 1.2m, dB(A)
3SL 996 139-501 (6015)	White noise	97
3SL 996 139-511 (6052)	White noise	97
3SL 996 139-521	White noise	102
3SL 996 139-531	White Noise	97-102, self-adjusting

Electrical Connection	with 140 mm cable and DEUTSCH connector
Voltage	12 – 32 V DC
Power Consumption	12 W
Frequency	600 – 1600 Hz
Temperature	Operating range -40 °C to 85 °C
Protection	IP 6K7 (Protection against dust and temporary water immersion)
EMC Interference Immunity	ECE-R10 SAE J994
Housing	PA66+15% GA

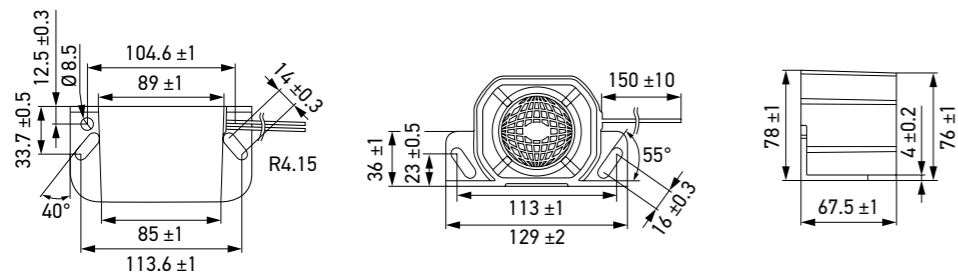
Heavy Duty Reverse and Warning Alarm BM30

Ideal for heavy duty commercial vehicles, the BM30 reversing alarm is available with a long-range, 107 dB(A) or 112 dB(A) alarm sound, as well as a version with an 87 – 112 dB(A) volume level that automatically monitors ambient noise and adjusts to its environment.

Features a glass-filled nylon housing with integrated mounting bracket. IP67 rated, with insulated electronics, it has high protection against failure due to rust, moisture and vibrations.



NEW



Part No.	Noise Output Type	Output - L ^p @ 1.2m, dB(A)
3SL 996 139-247	Standard	107
3SL 996 139-257	Standard	112
3SL 996 139-277	Standard	87 – 112, self adjusting

Electrical Connection	with 140 mm cable and DEUTSCH connector
Voltage	12 – 48 V DC
Power Consumption	12 W
Frequency	700 – 2,800 Hz
Temperature	Operating range -40 °C to 85 °C
Protection	IP 67
EMC Interference Immunity	ECE-R10 SAE J994
Housing	Glass-filled nylon

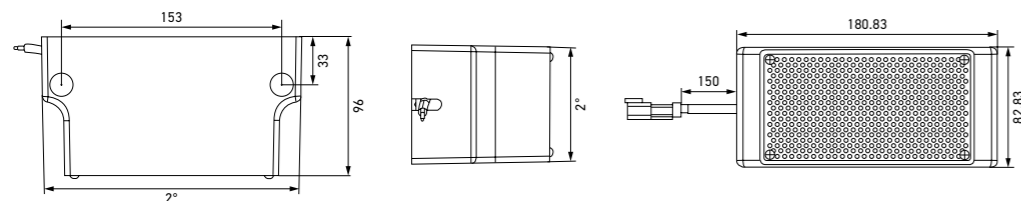
Heavy Duty White Noise Reverse and Warning Alarm BM40

Ideal for heavy duty commercial vehicles, the BM40 reversing alarm is available in variants with white noise or standard (tonal) noise profiles. Noise outputs are either switchable or variable with a smart self-adjusting output function that automatically monitors ambient noise and adjusts to its environment.

Features a glass-filled nylon housing with integrated mounting bracket. IP67 rated, with insulated electronics, it has high protection against failure due to rust, moisture and vibrations.



NEW



Part No.	Noise Output Type	Output - L ^p @ 1.2m, dB(A)
3SL 996 139-551 (6049)	Standard	97, 102 or 122, Switchable
3SL 996 139-561	White noise	97, 102 or 122, Switchable
3SL 996 139-571 (6048)	Standard	97-112, self-adjusting
3SL 996 139-581	White noise	97-107, self-adjusting

Electrical Connection	with 150 mm cable and DEUTSCH connector
Voltage	12 – 48 V DC
Power Consumption	18 W
Frequency	80 – 1400 Hz 600-1600 Hz (White noise)
Temperature	Operating range -40 °C to 85 °C
Protection	IP 65
EMC Interference Immunity	ECE-R10 SAE J994
Housing	PA60

Battery Master Switch

Double-pole, 2-position (off-on) Battery Master Switch with plated steel case designed to disconnect both battery and field circuit. Actuated by chrome-plated die-cast lever. Part No. 4643 features silver laminated contacts.



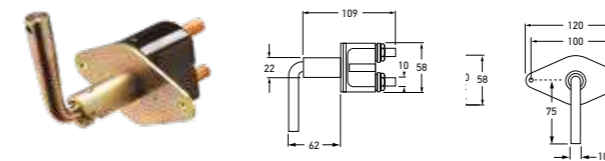
Battery Master Switch (Weatherproof)

Weatherproof double-pole, 2-position (off-on) Battery Master Switch featuring plated steel case, silver laminated contacts and O-ring seal to protect from dirt and moisture. Also features index pin to align unit and prevent rotation.



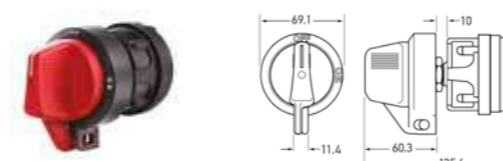
Heavy Duty Battery Master Switch

For trucks, buses and earth moving equipment. Complete with removable key.



Battery Master Lockout Switch - 2 Pole

Heavy-duty 2-pole lockable battery lock out switch. The Battery lockout switch provides a reliable power disconnection and safety cut-off that protects the vehicle against tampering, theft and battery drain. It also protects service personnel from electrical hazards during service operations.



Part No.	Global Part No.	Variant
4642	6EK 905 424-001	Standard Contact
4643	6EK 905 424-011	■ Silver Laminated Contacts

Mounting	19mm diameter opening
Maximum Load	1000A at 6-36V DC intermittent
Maximum Continuous Load	125A at 6-36V DC continuous (large studs) 20A continuous (small studs)
For Panels	Up to 4.75mm thick
Spare Part	4645 Key ①
Accessories	4646 Face Plate ②

Part No.	Global Part No.	Variants
4644	6EK 905 424-021	■ Silver Laminated Contacts

Mounting	19mm diameter opening.
Maximum Load	1000A at 6-36V DC intermittent
Maximum Continuous Load	125A at 6-36V DC continuous (large studs) 20A continuous (small studs)
For Panels	Up to 6.75mm thick.
Spare Part	4645 Key ①
Accessories	4646 Face Plate ②

Part No.	Global Part No.	Positions
4653	6EK 001 559-002	OFF-ON

Mounting	22mm diameter opening
Maximum Load	12V DC 5000A for 10 seconds 24V DC 2500A for 10 seconds
Maximum Continuous Load	12 / 24V DC 100A continuous at a maximum ambient temperature of 60°C with 50mm ² lead connected with ring-type terminals
Termination	2 x 10mm studs
Protection	IP X4 (Protection against water splashing)
Spare Part	4654 Spare key

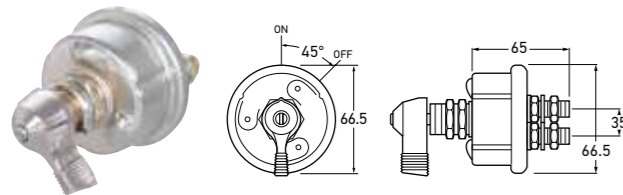
Switch not designed for marine applications.

Part No.	Global Part No.	Variants
HM7592B	9MK 910 109-001	■ Red handle
HM7592Y	9MK 910 109-011	■ Yellow handle

Mounting	Sealed design allows switch to be mounted in the best location regardless of environment.
Operating Temp.	-40°C to 85°C
Protection	Waterproof and dustproof to IP67

Battery Master Lockout Switch - 4 Pole

Heavy-duty 4-pole lockable battery lock out switch. The Battery lockout switch provides a reliable power disconnection and safety cut-off that protects the vehicle against tampering, theft and battery drain. It also protects service personnel from electrical hazards during service operations. Isolates of both positive and negative sides from the battery, or isolation of one circuit with only one switch.

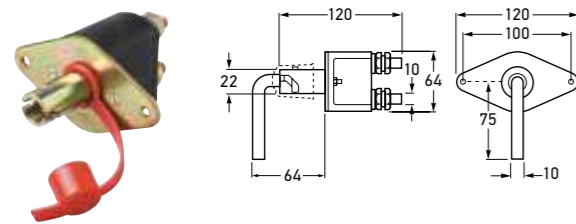


Part No.	Global Part No.	Variants
HM7591S	9MK 910 109-201	■ Silver Laminated Contacts

Mounting	19mm diameter opening
Operating Temp.	-40°C to 29°C
Maximum Load	125A at 6-36V DC continuous
Protection	Waterproof and dustproof to IP67

Heavy Duty Battery Master Switch

Extremely robust, single-pole (2 post) Battery Master Switch featuring double-cut copper contacts. Supplied complete with removable handle, security chain and PVC protective cover. Suitable for industrial vehicles and agricultural machinery.



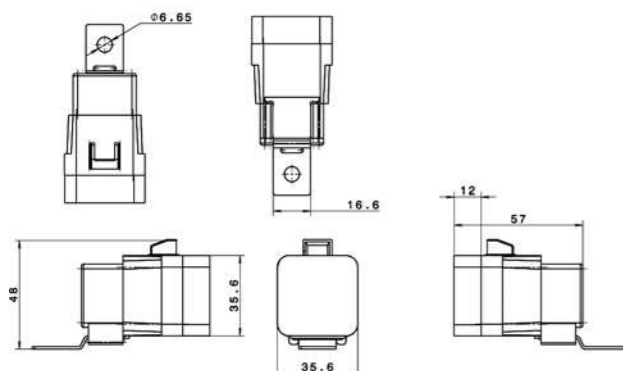
Part No.	Global Part No.
4655	6EK 905 397-001

Mounting	24mm diameter opening
Maximum Load	2500A at 12-24V DC for 5 seconds
Maximum Continuous Load	250A at 12-24V DC continuous
Protection	IP 66
Spare Parts	4655COV Strap & PVC Protective Cover ① 4655KEY Handle, Chain & Protective Cover ②



Relays

Weatherproof Changeover Relay and Connector Assembly Kits.

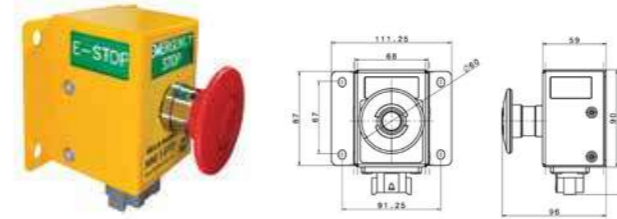


Part No.	Global Part No.	Rating
HMWPR001	8KW 910 182-001	12V
HMWPR002	8KW 910 182-011	24V

Operating Range	-40°C to 125°C	
Contact Current Rating	12V NO 35A / NC 20A 24V NO 40A / NC 30A	
Coil Resistance	12V 70-90 Ohms @ 23°C 24V 300 Ohms	
Transient Suppressor Resistor	12V 680 Ohms 24V 2700 Ohms	
Kit Contents	ISO mini relay and connector assembly kit contains: 1 x ISO-style changeover relay. 1 x Connector body with seals for pull to seat terminals. 3 x Large barrel pull to seat terminal 6.3mm width suits cable size 3.00mm ² 2 x Small barrel pull to seat terminal 6.3mm width suits cable size 1.00 - 2.00mm ²	

Mining E-Stop

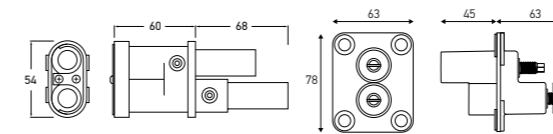
The Mining E-Stop offer versatility, safety and fast installation. This Heavy Duty unit features LED illumination visible from 3 sides for added safety, a user-friendly 60mm push button, DT connection and direct mount capability. It is a fully-sealed, pressure tested unit, IP 6K9 / IP 6K8 rated.



Jump Start System

Heavy duty, high capacity jump-start connectors for vehicles and equipment, ideal for use where access to terminals is restricted or dangerous. Eliminates chance of cross polarity connections through the specially shaped plug and reduces chance of sparking and possible ignition of flammable materials.

Mounting bracket, protective cap, and kit containing the terminal, bracket and cap are also available. Suitable for 70 mm² cable. Connection via crimping and soldering process.

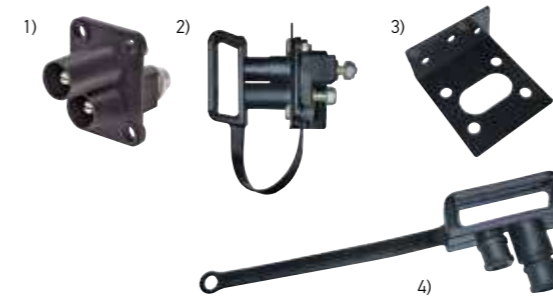


Part No.	Global Part No.
HM7593E	6HF 012 416-001

Features and benefits:

- Added safety through illumination via LED (visible from 3 sides)
- IP 6K9 und IP 6K8 rated fully-sealed, pressure tested unit
- "Plug and Play", supplied with mating DT Connector
- High visibility yellow powder-coated 316 Stainless Steel
- User friendly, large 60 mm mushroom button
- Two normally closed and one normally open contacts (each rated 10A)

Jump Start Plug		
Part No.	Global Part No.	Description
HM7546P	8JA 177 305-101	High impact ABS plastic. Copper (silver brass coated) terminals



Jump Start Terminal		
Part No.	Global Part No.	Description
HM7546J	8JB 177 305-001	1) Jump Start Terminal Removes risk of terminal crossing, high impact ABS plastic, zinc coated terminals
HM7546KIT	8HG 177 305-031	2) Terminal Kit Kit of jump start terminal, bracket and cap
HM7546B	8HG 177 305-021	3) Terminal Bracket Bracket for mounting jump start terminal to vehicle body
HM7546C	9HD 177 305-011	4) Terminal Cap Cap to protect terminal from external environment when not in use

AC / DC Converter

AC / DC Electronic Transformers allow low voltage DC lighting to be used where AC mains power is available. The converters are fully sealed to IP67 for the vigorous demands of mining.



Part No.	Rating	Power Consumption
HM1220AC	1.67A	20W
HM1260AC	5A	60W
HM2420AC	0.84A	20.2W
HM2460AC	2.5A	60W
HM24100AC	4A	96W
HM24320AC	13.3A	320W

Replacement DT Connectors / Tools

DT connectors are environmentally sealed connectors rated at -55°C to +125°C. Solid copper crimp contacts (pins) rated to 13A and locking wedges

Part No.	Pack Qty.	Description
9.HM4940	15	2-Way Plug DT Connector (incl. wedge)
9.HM4941	15	2-Way Receptacle DT Connector (incl. wedge)
9.HM4942	15	3-Way Plug DT Connector (incl. wedge)
9.HM4943	15	3-Way Receptacle DT Connector (incl. wedge)
9.HM4944	10	4-Way Plug DT Connector (incl. wedge)
9.HM4945	10	4-Way Receptacle DT Connector (incl. wedge)
9.HM4946	10	6-Way Plug DT Connector (incl. wedge)
9.HM4947	10	6-Way Receptacle DT Connector (incl. wedge)
9.HM4948	5	8-Way Plug DT Connector (incl. wedge)
9.HM4949	5	8-Way Receptacle DT Connector (incl. wedge)
9.HM4950	5	12-Way Plug DT Connector (incl. wedge)
9.HM4951	5	12-Way Receptacle DT Connector (incl. wedge)
9.HM4954	100	DT-Type Connector Socket Terminals
9.HM4955	100	DT-Type Connector Plug Terminals
9.HM4956	100	DT-Type Connector Blanking seal plug (white)
8KA 958 363-001	1	DT Extension Cable 2.5m
8KA 958 360-001	1	Switch cable DT
8KA 958 361-001	1	Y Splitter Joint Cable
8KV 910 585-001	1	DT 3 Way Splitter (one inlet, three outlets)
9.HM4959	1	Locking Wedge and Contact Pin Release Tool
HM8275	1	Premium Contact Crimping Tool – Adjustable
HM8277	1	DT Contact Crimping Tool – 0.5 - 1.0mm



Handy Box® DT Connector Kit

The Handy Box® DT Connector Kit (incl. Crimping Tool HM8277) contains 258 of the most popular DT Connectors including tools. All parts in the kit are available as spares.



Handy Box® DT Connector Kit HM8292

Contents:

- 10 x 2-Way Male DT Connector incl. Wedge
- 10 x 3-Way Male DT Connector incl. Wedge
- 8 x 6-Way Male DT Connector incl. Wedge
- 10 x 2-Way Female DT Connector incl. Wedge
- 10 x 3-Way Female DT Connector incl. Wedge
- 8 x 6-Way Male DT Connector incl. Wedge
- 100 x Male DT Connector Socket
- 100 x Female DT Connector Socket
- 1 x Crimping Tool
- 1 x DT Wedge Removal Tool

Insulated Terminal and Connector Kit 1025 Piece

This professional assortment containing 1025 HELLA Connectors / Terminals (incl. Ratchet Crimping Tool 8273) is designed to meet the requirements of the mining industry. Includes a quantity of 20 complete packs.



Insulated Terminal and Connector Kit -1025 Piece 8284

Contents: Quantity

Female blade terminal	100
Female blade terminal	100
Female blade terminal	50
Fully Insulated female blade terminal	50
Female blade terminal	50
Male blade terminal	50
Male blade terminal	50
Male bullet connector	50
Male bullet connector	50
Male bullet connector	50
Female bullet connector	50
Female bullet connector	50
Cable connector	50
Cable connector	50
Eye terminal	50
Eye terminal	50
Eye terminal	50
Eye terminal	25
Eye terminal	25
Eye terminal	25

Crimp Terminals

Female Blade Terminals			
Part No.	Qty	Size	Cable Conductor Size (Diameter or Area)
8500	100	6.3mm	2.5 to 3mm cable 0.75 to 1.13mm ² cable
8501	100	6.3mm	4mm cable. 1.84mm ² cable
8502	50	6.3mm	5 To 6mm cable 2.9 To 4.59mm ² cable
8503	50	9.5mm	5 To 6mm cable 2.9 To 4.59mm ² cable
Fully Insulated Female Blade Terminals			
8504	100	6.3mm	2.5 To 3mm cable 0.75 To 1.13mm ² cable
8505	100	6.3mm	4mm cable. 1.84mm ² cable
2-Way Male and Female Blade Terminals			
8510	100	6.3mm	2.5 To 3mm cable 0.75 To 1.13mm ² cable
8511	100	6.3mm	4mm cable. 1.84mm ² cable
Male Blade Terminals			
8513	100	6.3mm	2.5 To 3mm cable 0.75 To 1.13mm ² cable
8514	100	6.3mm	4mm cable. 1.84mm ² cable
8515	100	6.3mm	5 To 6mm cable 2.9 To 4.59mm ² cable
Male Bullet Connector			
8520	100	-	2.5 To 3mm cable 0.75 To 1.13mm ² cable
8521	100	-	4mm cable. 1.84mm ² cable
Female Bullet Connector			
8522	100	-	2.5 to 3mm cable 0.75 to 1.13mm ² cable
8523	100	-	4mm cable 1.84mm ² cable
Cable Connector			
8530	100	-	2.5 to 3mm cable 0.75 to 1.13mm ² cable
8531	100	-	4mm cable 1.84mm ² cable
8532	100	-	5 to 6mm cable 2.9 to 4.59mm ² cable
Eye Terminals			
8541	100	5mm	2.5 to 3mm cable 0.75 to 1.13mm ² cable
8543	100	5mm	4mm cable. 1.84mm ² cable
8544	100	6.3mm	4mm cable. 1.84mm ² cable
8546	50	6.3mm	5 to 6mm cable 2.9 to 4.59mm ² cable
8547	50	8.4mm	5 to 6mm cable 2.9 to 4.59mm ² cable
8548	50	9.5mm	5 to 6mm cable 2.9 to 4.59mm ² cable
Crimping Tool			
8273	1	Crimps for 2.5 - 6mm dia. cable	Adjustable ratchet mechanism and spring release ensures a perfect crimp every time for insulated terminals.



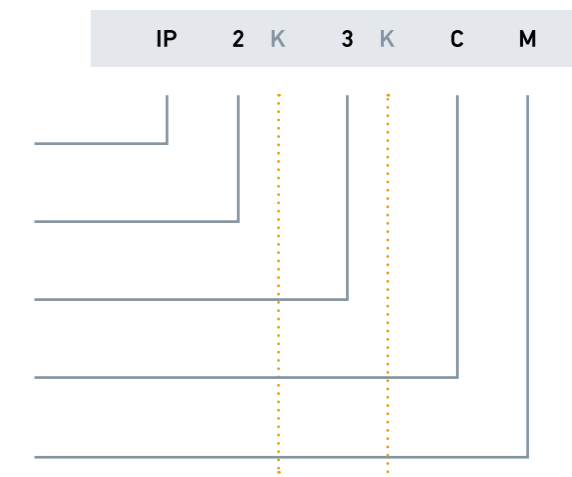
CONSTRUCTION AND MEANING OF THE IP (INGRESS PROTECTION) CODE

The specification of a degree of protection for protection against access and foreign object includes all lower degrees of protection.

The degrees of protection 1 to 6K for protection against water include all the lower degrees of protection.

Due to different physical affects, this does not automatically have to apply to water protection grades 7, 8 and 9K.

- Code letters**
(Ingress Protection)
- First characteristic numeral**
(Numerals 0 to 6 or letter X)
- Second characteristic numeral**
(Numerals 0 to 8 or letter X)
- Additional letter (optional)**
(Letters A, B, C, D)
- Supplementary letter (optional)**
(Letters M, S)
(Letter K)



Element	Numeral/letter	Meaning for the protection of electrical equipment	Meaning for the protection of persons
First characteristic numeral / supplementary letter		Against the ingress of solid foreign objects (including dust):	Against access to hazardous parts (unless described by extra letters):
	0	Not protected	Not protected
	1	With $\varnothing \geq 50$ mm	With back of hand
	2	With $\varnothing \geq 12.5$ mm	With finger
	3	With $\varnothing \geq 2.5$ mm	With tool
	4	With $\varnothing \geq 1$ mm	With wire
	5K	Dust-protected	With wire
Second characteristic numeral / supplementary letter	6K	Dust-tight	With wire
		Against the ingress of water:	
	0	Not protected	
	1	Vertical dripping	
	2	Dripping (inclined 15°)	
	3	Spraying	
	4	Splashing	
	4K	Same with increased pressure	
	5	Jetting	
	6	Powerful jetting	
6K	Same at increased pressure		
Additional letter (optional)	7	Temporary immersion	
	8	Continuous immersion	
	9K	High-pressure / steam jet cleaning	
			Against access to hazardous parts (unless described by first characteristic numeral):
Supplementary letter (optional)	A		With back of hand
	B		With finger
	C		With tool
	D		With wire
Supplementary letter (optional)		Meaning for the protection of electrical equipment:	
	M	Movement of moving parts during water test	
	S	Standstill of moving parts during water test	
	K	Specifically for the electrical equipment in road vehicles	

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