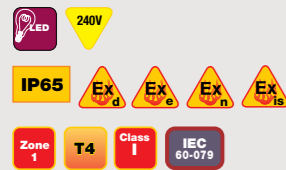
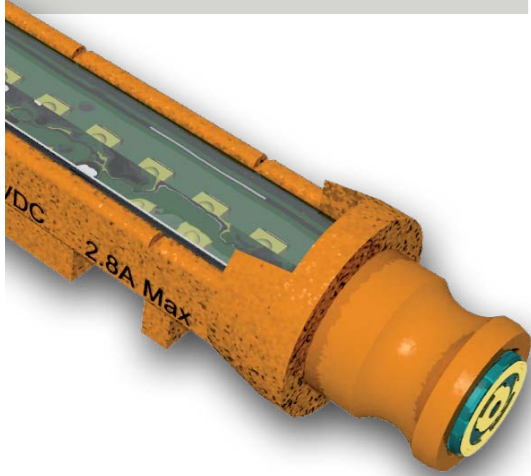
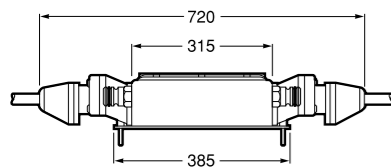
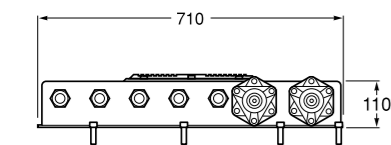


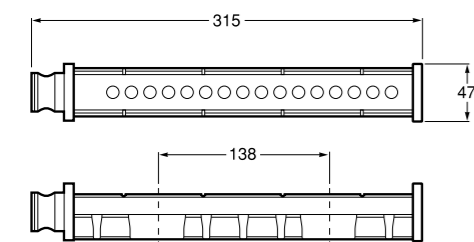
OmniLUX® Lighting System



Due to the complexity of this product and country-specific legal requirements, please contact Hella for detailed applications engineering assistance to suit your project.



OmniLUX PSU



OmniLUX LED Light

Hella OmniLUX® is a new lighting system for use on longwalls and continuous mining machines in underground coal mines.

The system delivers significant advances in safety, reduction in down time and light failures, reduction in the cost of ownership, reduction in maintenance and operator training, and simplified diagnostics, logistics, maintenance and certification.

Hella OmniLUX enables fault finding without test equipment and eliminates certified workshop repairs wherever possible. OmniLUX was designed to reduce luminaire voltage to SELV levels ($\leq 48V$) and to maximise the mean time between failures for the lights in particular. OmniLUX uses invisible technology to automate and integrate the system and enable lamp replacements without power shutdown.

OmniLUX PSU enclosure

The modular design of the OmniLUX system allows the Power Supply Unit (PSU) control electronics to be housed in either an Ex e or Ex d type enclosure.

OmniLUX PSU controller

A fully developed system requires more than just a simple IS power supply. The OmniLUX PSU system controller contains a mains voltage supply (110/240V AC) crossover relay and Intrinsically Safe (IS) power supply. The controller unit is a fully encapsulated module with brass faceplate/heat sink, equipped with four status indicators to inform the operator of the mains power system health and operational conditions. This module fits into a stainless steel Ex e rated housing that carries the mains and IS connectors.

A crossover relay system monitors both main power cables and selects the cable with the best quality power. The system features an auto switch-over in case of a lost phase or full failure. This module also rotates the phases from box to box. A simple LED array provides full indication of the power supply condition, eliminating 90% of cable tracing because the faulty cables can be located without any test equipment.

Isolating one of the main power lines will automatically force the system to the other supply, allowing faulty cables or even whole units to be replaced *in situ* whilst the lights are working.

The standard IS power supply module has up to 10 completely independent IS power outlets. An optional and additional IS power outlet, configured to supply any specified roof support controller, can be accommodated. The IS power modules and connectors are pre-wired and fitted with dedicated plug and sockets to eliminate all on-site cable terminations or wiring. These systems allow Hella 100% quality control and significantly reduce the training

requirements of site staff. On site maintenance consists of simply removing a faulty module and replacing it with a new unit, without risk of faulty cabling or other errors.

OmniLUX FLP power connectors

Hella also developed a new FLP connector system for the main power supply (500V AC – 100V AC).

This connector range is designed for dual 3-phase plus pilot systems, and also includes the power cable (AS1792). The system is designed for easy repair and even includes moulded protective covers for protection of the flame path surfaces in the connectors during shipment and on site transport.

OmniLUX IS connectors

Hella designed a new toolless IS interconnect system, styled like the male camlock high pressure fluid connector. The electrical connectors are flat faced so they are easy to clean underground and offer no coal-dust collecting holes. An electrical connection is made by joining two male connectors by means of a unique double female camlock coupler developed by Hella. Once connected, the concentric gold plated corrosion-resistant electrical contacts are hermetically sealed inside the double female connector. Each male connector is self-illuminated when powered, enabling fault finding without test instruments.

The OmniLUX IS cable, connecting the PSU Controller to the LED light, consists of a pair of male connectors joined by a Flame Retardant & Anti-Static (FRAS) sheath that is constructed like an hydraulic hose. This sheath provides mechanical protection to the multi-core IS cable carrying the electrical current.

OmniLUX IS LED light

The Intrinsically Safe design of the OmniLUX allows the lights to be connected and disconnected inside the hazardous area without switching off the power.

LED is energy efficient, and operates at low temperatures and safe low voltages, eliminating overheating and electrical shock hazards. LEDs are robust and resistant to damage from mechanical shock and vibration.

In the OmniLUX, ultra-efficient, high intensity white LEDs provide wide, even distribution of light, with a 16 LED array providing light output equivalent to a 60W lamp; 8 and 4 LED options are also available.

Each OmniLUX IS LED light is constructed as a fully sealed (IP6K9) fit and forget unit, with an abrasion and impact resistant lens, permanently sealed into a copper alloy body. The low profile body provides mechanical strength and acts as a heatsink for the LEDs.

The standard OmniLUX camlock connector and integral magnetic mount ensures a low installed profile of only 55mm. Bolt installation and cable connection options can be accommodated.

Product features

- Minimised physical inspection tasks
- Reduced system operator training requirements
- Minimised inventory requirements
- LED light source
- IS power supply system (SELV)
- Modular Plug & Play architecture
- IP65 or better ingress protection
- Toolless cable tracing
- Toolless luminaire replacement
- Fully automatic dual mains supply management

Specifications

OmniLUX PSU

Dual circuit, multi channel Intrinsically Safe power supply for use in underground coal mine longwall systems.

Classification:	Enclosure Ex e Group1 IIA T4 PSU Ex is Group1 IIA T4
Supply voltage:	120 or 240 V AC (3 phase delta)
Load:	350W max (29.A @120V or 1.45A @240V)
Output voltage:	LED light channel 9.0V DC (10 channels) Chock control channel to specification
Output voltage:	2.8A Max
Output Power:	27W Max per channel
Temp:	$\leq 42^{\circ}C$ above ambient or $70^{\circ}C$ max
Mass:	45kg (fully assembled)
Dimensions:	L 695mm H 100mm W 390mm
Protection:	IP6K5K
Shock rating:	200G
Vibration rating:	50mm/sec
HV Connector:	Hella OmniLUX Exd system
IS Connector:	10 x Hella OmniLUX camlocks for lights 1 x chock power to specification. 6 x M8 bolt in key hole slots
Fixing:	Main enclosure: Stainless steel 4mm PSU module: Brass faceplate and enclosure HV connectors: Brass body, silver plated contacts IS connectors: Brass body, gold plated contacts
Material:	

OmniLUX IS LED light

Fully encapsulated Intrinsically Safe SELV LED light for use in underground coal mine longwall systems.

Classification:	Ex is Group1 IIA T4
Light source:	LED white
Voltage:	9.0V DC
Current:	2.8A Max
Power:	27W Max
Temp:	$\leq 42^{\circ}C$ above ambient or $70^{\circ}C$ max
Mass:	2.0kg
Dimensions:	L 315mm H 47mm W 46mm
Protection:	IP6K9K
Shock rating:	200G
Vibration rating:	50mm/sec
Connector:	Hella patented OmniLUX IS camlock system or optional 3m captive flex.
Fixing:	Dual neodymium magnets approx 30kg separation force integrated into body or optional stainless steel bracket
Material:	Brass body with polycarbonate lens

