

MegaLUX® Flameproof Lighting



Hella MegaLUX® flameproof lighting, for use on mining machines, delivers significant advances in safety and a reduction in down time and light failures. Reducing the cost of ownership, maintenance and operator training, the Hella MegaLUX simplifies diagnostics, logistics, maintenance and certification but still provides significantly improved coal mine illumination.

Flameproof lighting enclosure

The primary protection against explosion is a heavy cast brass body, machined to very tight tolerances.

This enclosure is strong enough to contain an explosion of gas, and will allow the pressure to escape at a controlled rate without a flame. This prevents the ignition of flammable gas outside the enclosure. The design of the body is in strict accordance with IEC Ex 60079 requirements for Ex d approvals.

WireCOM® (optional)

A typical installation consists of a WireCOM module right at the alternator, integrated with the Methane shutdown system, and four lights. At switch on, the system will first pass a low level encrypted data signal that requires each load to identify itself, preventing the fitment of unauthorised equipment. Once the system has approved each load, it will switch each light on individually. If any of the following conditions occurs, WireCOM will shut down power:

- Short circuit or leakage to earth (positive or negative) in cabling
- Globe failure (short circuit or open circuit)
- Over temperature
- Lens damage
- Overload.

SmartGLASS® (optional)

If the glass lens in a typical flameproof (FLP) light fails or is cracked, the integrity of the enclosure is compromised, however the power supply is not interrupted, creating a potentially dangerous condition by exposing the high temperature light source and unprotected electrical components to the environment. The Hella MegaLUX light includes a SmartGLASS lens in the WireCOM failsafe circuits of the system; this shuts down the power supply to the light if the lens is compromised. The integrity detection circuit on the lens can also function as an antenna that allows the light to be

programmed without being opened. It is possible to replace the Hella SmartGLASS lens in the field, without having to send the whole light back to a certified repairer.

LED ring (optional)

Underground mining machines are basically bidirectional and need equally good lighting in both directions, as well as clear indication of their direction of travel, their operational condition and if they are stationary or parked.

The Hella MegaLUX light incorporates a LED ring as secondary light source and multifunction status indicator. The LED ring can illuminate in at least red and green and is subdivided into 4 sectors that can be flashed and switched as desired. This ring is controlled via the WireCOM module and can be linked to the machine controls and/or Methane shutdown system to indicate direction of travel and any other operational status desired. The individual lights can be programmed with their location on the machine via the SmartGLASS lens.

UltraBEAM optics (10 options)

The primary light source for this product is the popular and proven UltraBEAM work lamp optics. This compact light produces a very even trapezoidal light distribution that suits the work environment. UltraBEAM lights can be supplied with D2S Xenon lamps or Halogen lamps (H3, H9 and H11).

UltraBEAM provides the first high efficiency and long life Xenon lights available for use in underground coal mines. Typical FLP lights currently in use are based on MR16 Halogen light sources developed for retail and household lighting tasks. These lamps are inefficient and produce inappropriate light distribution patterns. Round "pencil" beams produce high illumination levels in the centre but almost no spread

Hella UltraBEAM lights are designed specifically as work lamps, using Free-Form optics to produce highly efficient and suitable luminaires, with trapezoid light distributions.

Free-Form reflector

Each point on the reflector surface can have the function to collect, concentrate, direct or distribute light. The light distribution is achieved by the reflector alone.

Ballast (Xenon only)

Discharge lamps require special control gear to operate correctly. Hella MegaLUX lights utilise the ultra heavy-duty ballast developed specifically for mining work lamps (not an automotive grade unit designed for passenger cars).

Product features

- Fully encapsulated control gear
- Integral thermal protection
- Integral over load protection
- Integral open circuit protection
- Integral over/under voltage protection
- 12V & optional 24V
- 200G shock certified
- Captive M8 bolts
- Field replaceable lens
- Self-cleaning body
- Gland protection
- Copper alloy body
- IP6K6
- Multiple light distribution options
- Xenon, LED & Halogen options

Specifications

MegaLUX Multi function explosion proof light for use in underground coal mine systems.	
Mass:	12kg
Dimensions:	L 234mm H 147mm W 147mm
Protection:	IP6K5K
Shock rating:	200G
Vibration rating:	50mm/sec
Connector:	Ex d rated M20 compression gland
Fixing:	M12 bolt x 4
Material:	Main enclosure: Brass casting
Light source:	Xenon 35W/50W, 12 or 24V
	Halogen 65W max, 12 or 24V
	LED secondary Red /Green function
Safety system:	Hella WireCOM
Enclosure:	IEC 60079 Ex d Group1 IIA T4



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

