

### GL16 CAPLAMP - FEATURES & BENEFITS:

**Extreme lightweight of the Lithium-ion battery:**  
Reduced weight for user to carry, less fatigue.

**Lithium-ion battery does not suffer from "memory effect":**  
Full capacity available every time after recharge.

**Lithium-ion battery has low self-discharge rate:**  
Long shelf life if stored during mine down-time.

**Rugged battery and headpiece design:**  
Longer life expectancy, even in the harshest environments.

**Maintenance-free battery design:**  
Reduced lamproom maintenance requirements.

**Fully repairable G headpiece:**  
Low operational and life running costs.

**48 lumen output focussed over 3 degrees angle:**  
High intensity light concentrated in the operator's field of vision.

**Bulb manufactured to Oldham's specific criteria:**  
Optimised lighting and battery performance even at end of shift.

**Inter-modular battery and lamptop design:**  
Fully compatible & interchangeable with other Oldham products.



**OLDHAM**  
Lithium Battery

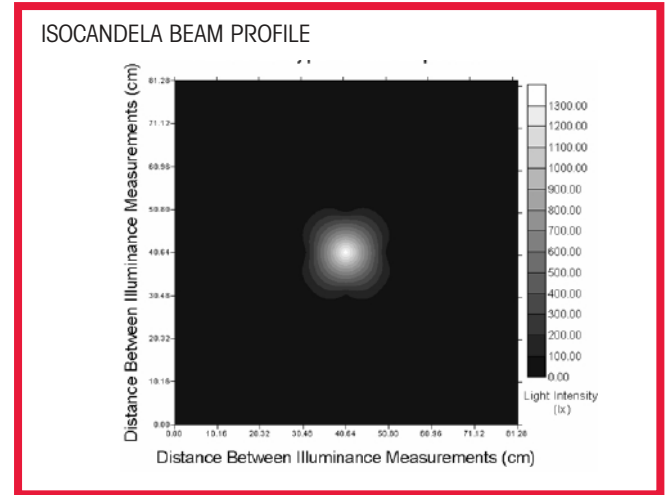
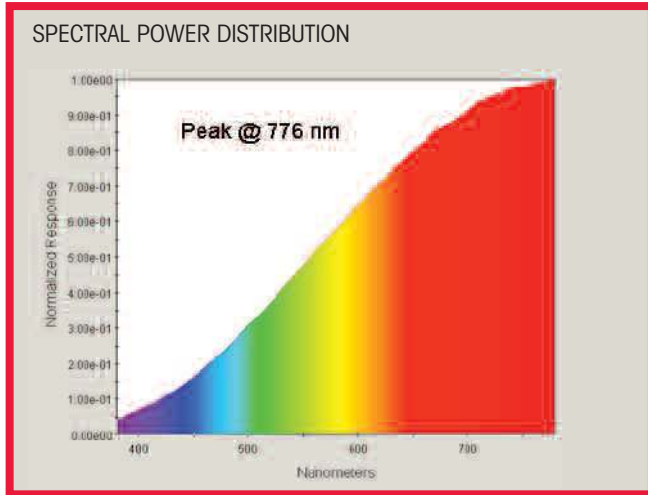
GL16 LAMP CERTIFICATION	GL16 Mining
ATEX Certification	SIRA 07ATEX 9033
IECEX Certification	IECEX SIR 07.0018
Certification Type Code	EEx1 (Ta = 0°C to +40°C)
Temperature Classification	T2

BATTERY & CAPLAMP PART NUMBERS	
L16 Lithium-Ion Battery	M456323
GL16 Lamp (48L halogen main bulb)	M261651
Single Lamp Charger	M656501
10-Lamp Charger	M656601

GL16 – HEADPIECE, CABLE & BATTERY SPECIFICATION	
Number of bulbs	2 (1 main, 1 auxiliary)
Main bulb (halogen) rating	4.1V48L 48 lumens ~ 12 hour shift
Auxiliary bulb rating	0.46A
Type of cable	Flexible twin core short lay polychloroprene sheath
Max. beam intensity over 3°	9500cd
Angle over which intensity is not less than 1 candela	120°
Burning time with auxiliary light	30+ hours
Fuse rating	3A
Length of battery (at base / at lid)	111 / 152 mm
Height of battery terminals / cover	95 / 125 mm
Width of battery	55 mm
Battery case & cover material	Polycarbonate
Nominal battery voltage	4.20 v
Number of cells	8
Working Capacity to 3.7v	16 Ah
Total Lamp Weight	0.960 kg
Maintenance	NONE – maintenance free

Research was undertaken by the University of New South Wales (Australia) in the late 1980's and the light distribution of the Oldham main light source was engineered using this research to provide the optimal working light. The Oldham G caplamp achieves a spot of 9500 Cd over 3 degrees (this is the normal area of focused sight for the human eye) and 1 Cd over 120 degrees.

The battery voltage seriously effects the light output from a halogen bulb, where a small percentage change in voltage greatly reduces the lumen output of the light source. To counter this effect, the main bulb has been designed and manufactured to Oldham's specific criteria, which stabilises voltage toward the end of the daily working shift, and optimises light output. This results in a brighter lighting performance from 8 to 12 hours, higher than any competitor. The main bulb has a life of more than 1000 hours.



The retina of the human eye plays a critical role in how we see. The retina, located at the back of the eyeball, contains photoreceptors that convert light to electrical impulses that travel through the optic nerve to the brain. There are two types of photoreceptors: cones and rods. The rods are sensitive to light and the cones to colour.

As light levels decrease, the rod receptors play an increasing role in vision. Rods have greater short-wavelength spectral sensitivity than cones.

Lighting research indicates that at low-light (mesopic) conditions where rods and cones both contribute to vision, a short-wavelength spectral content adds to visual performance, whilst longer wavelength light assists in viewing colour, contrast and detail.

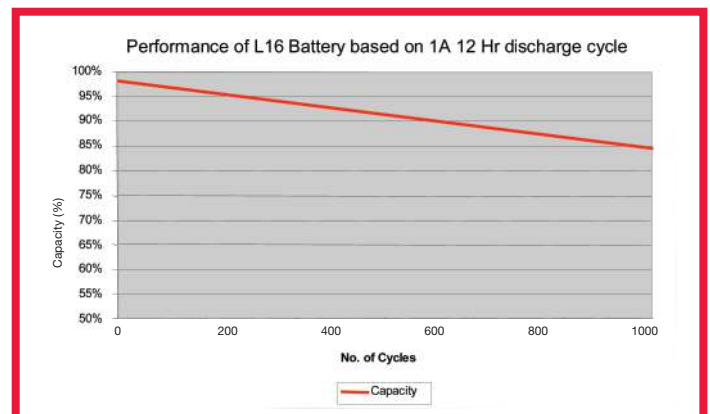
The halogen bulb fitted in the G headpiece has greater intensity in the medium and long-wave region of the light spectrum when compared with other light sources. This activates the cones, enabling the eye to see colour. Combined with the tight beam focus, this makes the lamp more useful for viewing objects where colour contrast is required such as the ore vein in a nickel mine.

Beam profile measurements are used to evaluate the illuminance distribution, and are useful for identifying illuminance "hot spots", evaluating beam uniformity, and to determine overall average illuminance. Hot spots or uneven light distribution can cause excessive discomfort and disability glare, which can be detrimental to peripheral visual performance. The tight beam profile of the G-type caplamp, clearly shows the beneficial properties for viewing distant objects or for conducting fine detail work tasks that require high illuminance.

### L16 BATTERY PERFORMANCE:

A measured 12-hour discharge of the battery shows the high performance characteristics of the lithium-ion technology.

Cycle performance tests indicate that even after 1000 shifts, the lamp will still achieve more than 85% of the original rated capacity. Thus ensuring that the operator has excellent lighting performance from the lamp even at the end of its operational life.



### IMPORTANT NOTE:

L16 LI-ION BATTERIES MUST BE RECHARGED ON "OLDHAM" MULTI-STAGE MICRO-PROCESSOR CHARGERS IN ORDER TO ACHIEVE MAXIMUM LIFE AND PERFORMANCE.