

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 product



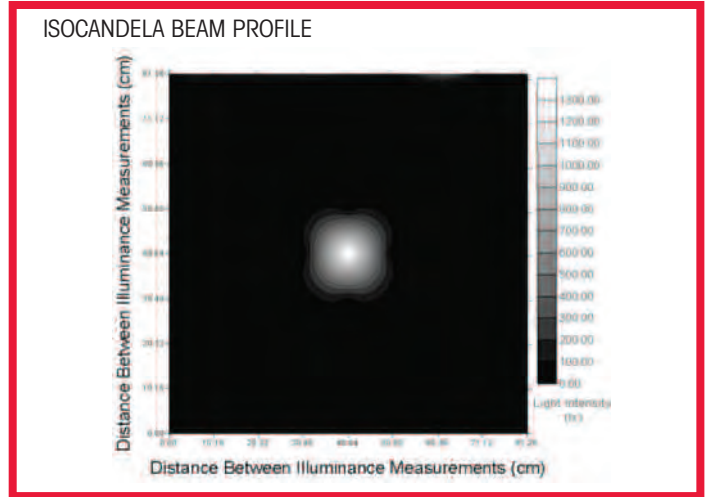
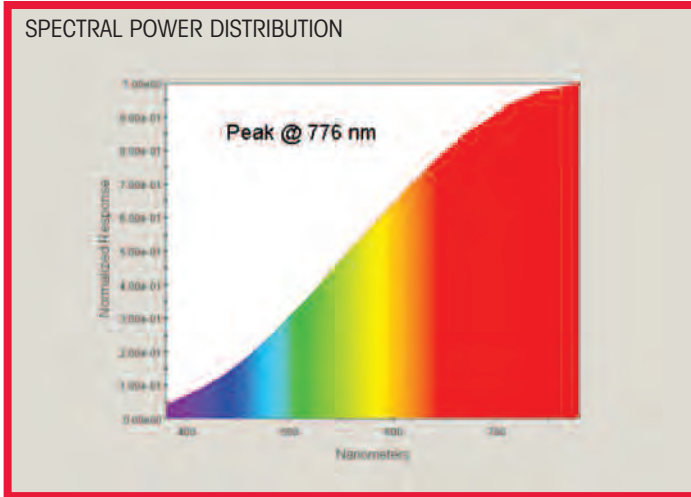
GL16 LAMP CERTIFICATION	GL16 Mining
ATEX Certification	SIRA 07ATEX 9033
IECEX Certification	IECEX SIR 07.0018
Certification Type Code	EEx1 (Ta = 0°C to +40°C)
Temperature Classification	T2

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 30	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 to study the behaviour of the human eye in different lighting and working conditions. 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 10 Cd over 120 degrees.

The battery voltage seriously affects 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. Rods have greater short-wavelength spectral sensitivity than cones and are more sensitive to light. The cones work in the longer light wavelengths and are more sensitive to colour.

The spectral content of visible light can be characterised by the spectral power distribution as shown above, indicating the visible spectrum of light produced by the G-type caplamp.

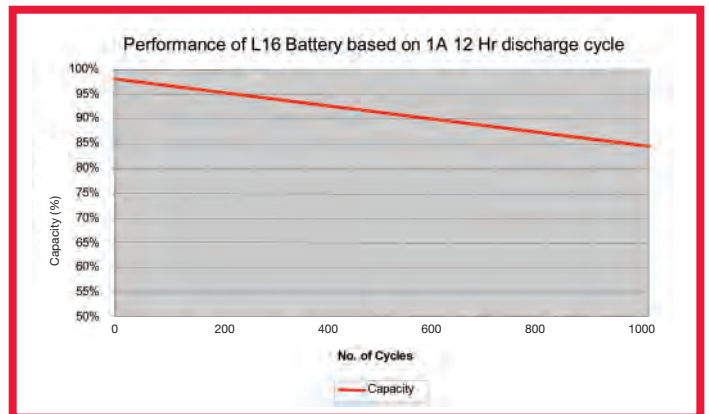
The halogen bulb fitted in the G headpiece has a greater intensity in the long-wave region of the light spectrum when compared with other light sources. This activates the cones and enables the eye to see colour, making the lamp more suitable for seeing detail such as the ore vein in a nickel mine.

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 glare and disability glare, and 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, 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.