

Innovation that Saves

SCHAULICHT SMARTLITE LFP 12AH CAPLAMP

ENGINEERED FOR THE DEMANDS OF SOUTH AFRICAN UNDERGROUND MINING

The Schaulicht SmartLite LFP 12Ah Caplamp is purpose-built to address the harsh, high-risk conditions of South Africa's underground mining operations. Combining robust design, high-intensity illumination, and advanced safety technologies, it provides miners with a reliable lighting solution that enhances visibility, situational awareness, and overall occupational safety.

Powered by a **compact and durable 12Ah Lithium Iron Phosphate (LFP) battery**, the SmartLite delivers more than **24 hours of primary LED illumination** and over **100 hours on auxiliary mode**, ensuring dependable performance throughout extended shifts. The LFP chemistry offers exceptional thermal stability and a **4-year / 1000-cycle battery life**, reducing maintenance costs and lowering total cost of ownership.

The Caplamp incorporates **intelligent battery and lamp status indicators**, including multi-colour LEDs for battery level, charge status, and fault detection. These real-time alerts help prevent unexpected power loss and assist in proactive maintenance. Built within a rugged polycarbonate housing and equipped with an effective cable management system, the SmartLite is designed to withstand the mechanical and environmental stresses of underground work.

Beyond lighting, the Schaulicht SmartLite LFP Caplamp supports **integration with modern underground safety systems**. Its tri-colour LED signalling aligns with TMM, winch, and locomotive communication protocols, while optional upgrades enable collision avoidance, personnel tracking, trapped miner location, and early-warning gas detection.

BENEFITS

Compact and Powerful
12Ah 1000 Cycle 4 Year LFP Battery

High Intensity LED Light Source

Low Cost of Ownership

Polycarbonate Housing

Cable Management System



mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA



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PROBLEMS THE SMARTLITE SOLVES

1 Poor visibility in hazardous stopes and haulages

High-intensity LED output (>12 000 lux at start) ensures miners can navigate and identify hazards more effectively.

2 Battery failures and overheating risks

LFP technology and built-in temperature protection significantly improve safety compared to conventional lithium-ion chemistries.

3 Unpredictable equipment downtime

Real-time charge, fault, and health indicators reduce operational disruptions.

4 Harsh underground conditions

Durable materials and cable protection reduce damage, extending equipment lifespan.

5 Limited safety communication channels

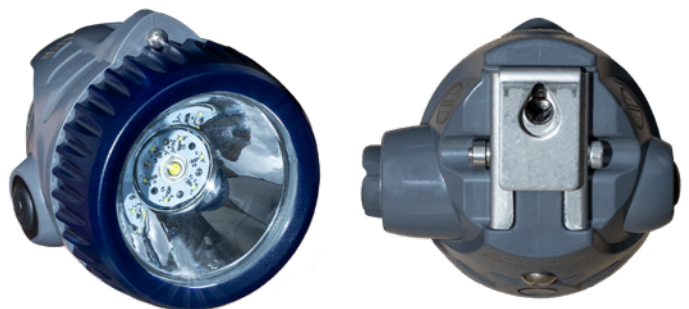
Optional system integrations enhance miner location awareness, emergency communication, and gas-related early warnings.

ADDITIONAL FEATURES

- Tri-colour LED to supports TMM, Winch and Loco System protocols
- Charging optimisation to reduce charging time
- NFC to enable OEM to scan battery pack for cycle count
- Battery status indication
- Battery temperature monitoring

OPTIONAL UPGRADES

- Collision avoidance integration
- Personnel tracking
- Asset management & control
- Trapped miner location
- Paging and early warning
- Real time communication
- Early warning gas detection
- Communicate gas reading with GDI
- Time and date display



Parameter		Value	Remarks
Rated Voltage	Battery voltage	3.2V	
	Boost voltage	3.5V	
Rated Capacity		12AH	Battery capacity
Primary LED Illuminating Time of Operation		> 24H	Exclusion of using any add-on device
Auxiliary LED Illuminating Time of Operation		> 100H	Using only auxiliary LED and with primary LED off
Primary LED	Rated voltage	2.9V	Minimum voltage
	Rated current	0.30A	
Primary LED Illuminating Intensity	Start	> 12 000 Lux	1m distance
	After 14 hours	> 10 000 Lux	1m distance
Auxiliary LED (6 PCB LED)	Rated voltage	2.6V	Minimum voltage
	Rated current	< 0.022	
Operating Temperature Range		-10 to +60 °C	
Charging Time		8-12H	
Battery Cycle Life		> 1 000 times	Or 4 years
Primary LED Life		> 50 000H	
Battery Weight		0.550Kg	
Weight of the Lamp		0.900Kg	

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