

TECHNICAL SPECIFICATION

Sl. No.	Description of Items	Specification of Parameter
1.	DGMS and BIS approved intrinsically safe LED portable miner Cap Lamp complete with Li-Ion battery, cable, head piece, LED Light source with chargers & racks for use in Underground Mines.	<p>Every unit shall be identical in construction and design as Approved by DGMS. Every cap lamp supplied by supplier shall carry the mark of valid DGMS approval number.</p> <p>The cap lamp shall consist of maintenance free Li-ion battery, head piece, and cable. The cap lamp shall be type tested at CIMFR Dhanbad / Govt. test house and approved by DGMS for use in underground coal mines by miners and shall be as per BIS certification conforming to IS/IEC60079-11:2006 for intrinsically safe circuit of LED cap lamp.</p> <p>All LED cap lamp should be tested as per IEC standard 60079-35 (part I&II) of Sept. 2011 and with latest amendment thereafter at manufacture's lab to check its standard before supplying to use such cap lamp. Random sample shall also be tested at CIMFR / Govt. approved lab under same standard @ .25 % of each lot of total supply determined to its next full figure. It shall be ensure During testing in Govt. lab. that at least three tests namely intrinsically safe circuit test, impact test and drop test are Conducted to ensure its performance. Report should be submitted along with the supplies.</p> <p>With every consignment of cap lamp written instruction manual dealing the method of operation , care , maintenance and limitation of use shall be sent to the purchaser.</p> <p>The users in particular the lamp room staff and official concerned shall be given training on operation and maintenance of the cap lamp by the supplier free of cost.</p> <p>Proper arrangement for after sale technical services as well as supply of spare parts / components, manufactured by you to the same specification as those of original parts / components shall be made. All main and important components/ fittings of the cap lamp shall be marked with Model and approval no.</p> <p>Any complaint from the user about the quality of the product shall be attended expeditiously</p> <p>Copy of valid BIS license for IS/IEC 60079-11:2006 and DGMS approval certificate duly signed by notary shall be submitted by bidder.</p> <p>Battery capacity shall be 4 to 5 Ah</p> <p>Battery voltage shall be 3 to 4.5 Volts</p> <p>The charging time for totally discharged battery shall be around 6 to 8 hours.</p> <p>Continuous discharging time for fully charged battery shall not be less than 12 hours.</p> <p>Minimum charging / discharging cycle of the battery shall be 1000.times</p>

LED voltage rating shall be 3 to 3.7 Volts.
Main LED light power rating shall be minimum 01 Watt.
Auxiliary LED light power shall be minimum 0.5 Watt.
Minimum illuminating intensity of main LED light source after 08 to 12 hours shall be 2500 LUX at a distance of 1 Mtr.
ON-OFF selector switch shall be single ON, OFF and Auxiliary selector.
The average lamp life of LED light shall be minimum 50000 hours.
The bidder should give guarantee service support and spare supply throughout service life(50000hours) minimum.
Clipping suitability of the head piece with safety helmet provision shall be made.
Ingress protection class shall be IP 65
Battery shall be rechargeable type maintenance free, sealed, leak proof, tamper proof and tough enough to withstand mechanical impact.
Fully charged battery shall provide reasonably consistent voltage over at least 10 hours for bright LED light.
Battery protection system shall be provided against
a.) Short Circuit
b.) Over charge
c.) Over discharge cutoff.
Cap lamp shall be provided with auxiliary LED for emergency escape light for longer use in case of low battery.
Each cap lamp battery shall be legibly marked with the following :
a) Name of the manufacturer.
b) Model & sl. no.
c) Month and year of manufacturing.
d) DGMS approval no.
e) IS/ IEC number of intrinsically safe circuit
f) Word "UCIL"
g) Not for Sale.
The cap lamp set shall be of modular design with suitable Neoprene rubber protected / sealed & terminated with sleeve at cable entry point.
Cap Lamp should be provided with at least 1.5 mtrs flexible well insulated cable with DGMS approval.
The weight of the battery shall be max. 0.4 kgs , entire (battery+cable+head lamp) shall be, max. 0.700 kgs.
The charging rack shall be designed for multi charge of Li-ion battery of 120 lamps on constant current and constant voltage charging. The charger rack shall be made of double face with minimum 1.0 mm thick CRCA plate (cold rolled carbonized & annealed). On the upper portion of charger

rack there shall be digital indicators to know the input & output voltage and input & output current.	
Protection like input over current and under voltage, protection and output over current & over voltage, protection shall be provided. The charger shall be protected against over voltage of 280 volts and lower voltage of 70 volts by cutting OFF the mains power and when power restores normally back to 85 to 265 volts, the charger should get ON automatically.	
The charging circuit shall be such that, it automatically monitors and control the charging process. The constant current is about 800 milli-amps for each battery and constant voltage is about 5 volts, charging time shall be less than 08 hours. At the beginning of the charging, it shall have constant current charge at 800 milli amps for each battery, and the charger indicator is red colour. When charging voltage reaches 5 volts, automatically it should turn to constant voltage charging and current starts decreasing step by step. When the battery is fully charged, it should automatically stop charging and charge indicator should display green.	
The charging rack shall be so designed such that batteries are placed in upright position and adequately spaced so that cable are not entangled.	
Charging input shall be 85 to 265 volts, Single phase AC, frequency 50 Hz and output current shall be max. 800 mA and output voltage 05 Volts DC.	
Charging Racks should be designed for multi charge of Li-Ion battery of 120 lamps.	
Certification from supplier / manufacturer about the following statements shall be submitted along with each consignment.	
(a). The ultimate responsibility for supply of correct materials as per requirement of relevant specification lies solely with the manufacturer/ supplier in spite of clearance /acceptance by inspecting authority.	
(b). The issue of inspection certificate by UCIL or their authorized representative shall not bind UCIL / authorized representative to accept the product should it on further check/ test before / during after/ erection be found not to comply with the correct specification.	
Installation / Commissioning of the apparatus should be done by the supplier on site free of cost.	