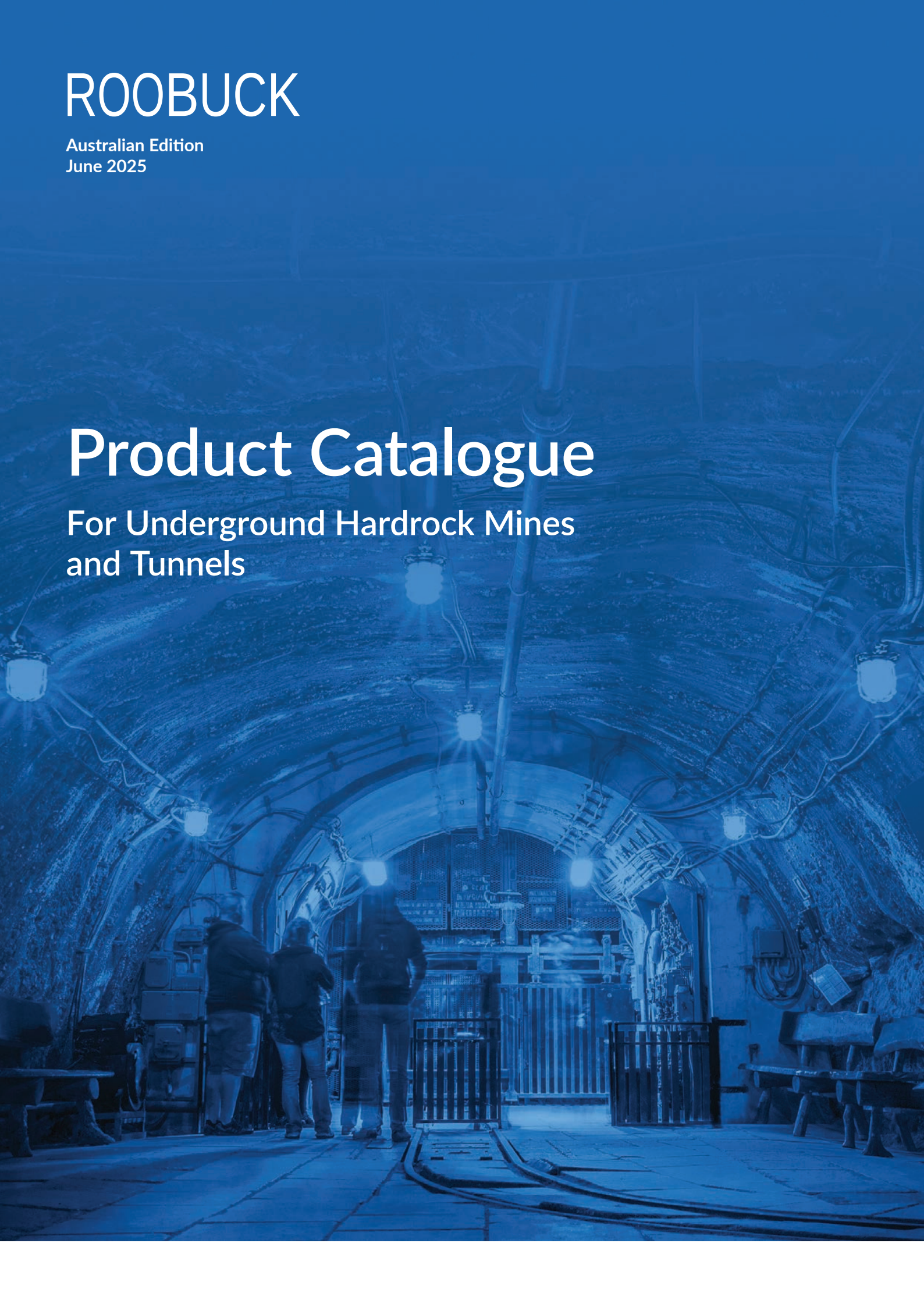


ROOBUCK

Australian Edition
June 2025

Product Catalogue

For Underground Hardrock Mines
and Tunnels



Roobuck is a leading provider of MineloT Solutions and Devices, Cap Lamps, Safety Lights, and other Explosion-proof Products

Accreditations

Subject to market and regional requirements, products can comply to:

- Ex Certificates/Approvals: IECEx, MSHA, IA, CNEx
- Ex Quality Standards: ISO/IEC80079-34
- Certification & Compliance Marks: FCC, CE, RCM, ICASA

Mining IoT Solutions

- Personnel, Vehicle, Asset Tracking and Emergency/Evacuation.
- IoT Device/Data Management with Solution Customisation.
- Personnel Sign-In, Sign-Out and/or Assignment of Assets.
- Collision Avoidance and Proximity Detection Systems using a variety of Technologies including DSRC and UWB.
- Intrinsically Safe versions are available.

Products

- **Wireless devices** - Long-Range WiFi Access Point, Cap Lamps, Belt Tags, Badge Tags and Vehicle Tags utilising various wireless technologies including WiFi, BLE, LTE, DSRC, UWB, LoRa, RFID, NFC.
- **Cordless Cap Lamps** - To suit all working conditions and needs. High performance or great value. Complete charging facilities and accessories.
- **Safety Lights** - Runway lights, Strip signalling lights, LED illumination strip lights for underground mines, Helmet Beacons, Hi-Vis LED vest.

R&D Services for Wireless Devices

Roobuck provides development services for integration with our partners/customers. Roobuck offers expertise and engineering resources for intrinsically safe or industrial device design and manufacture.



R&D Projects

Industry, Federal and State Government supported MineloT projects in collaboration with world leading universities including CRC-Ps, ARCs, TDRI, ACARP, GGCIP and PSF. Roobuck is constantly bringing cutting edge technology to the METS sector.

Global Reach - Exports from Australia to:

NZ, PNG, Mongolia, Uzbekistan, Kazakhstan, UAE, Qatar, Saudi Arabia, Egypt, Indonesia, Singapore, South Africa, Zimbabwe, Peru, Colombia, Chile, USA, Canada and Sweden

Customers

BHP, Rio Tinto, South32, Glencore, petroleum companies, military and government

IECEX Certified Cordless Cap Lamp: KH4E-Ex	5
Cordless Cap Lamp: RN3U	6
Cordless Cap Lamp with Safety Beacon: RN4UB	7
Charging Banks and Single Chargers for KH4E-Ex, RN3U, RN4UB	8
IECEX Certified Cordless Cap Lamp: KH2T-Ex	9
Cordless Cap Lamp: RN2T	10
Charging Banks and Single Chargers for KH2T-Ex & RN2T	11
IECEX Certified Cordless Cap Lamp: KH2M-Ex	12
Charging Banks and Single Chargers for KH2M-Ex	13
Cordless Cap Lamp: KL10M	14
Charging Banks and Single Chargers for KL10M	15

Which Cordless Cap Lamp is best for my needs?

Questions – Do you need	KH4E-Ex	RN3U	KH2T-Ex	RN2T	KH2M-Ex	RN4E- RN4E-WB	KC4E-WB-Ex	RN4UB
An IoT Cap Lamp Solution?						✓	✓	
An IECEX Certificate?	✓		✓		✓		✓	
Bright light for underground operations?	✓	✓				✓	✓	✓
Low cost product?			✓	✓	✓			
>15-20 hour duration		✓			✓			
Both focused & spread beam			✓	✓				
An angle adjustable cap lamp?	✓	✓			✓	✓	✓	✓
The lightest Cap Lamp in our range?			✓	✓				
Cap Lamp with rear safety beacon?								✓

Cap Lamp Accessories: RRS, ML, HS, RCB, TG57***	16
Helmet Beacon: RHB10G1	17
Intrinsically Safe Strip Light: RIS12*-Ex	18
Intrinsically Safe Battery Powered LED Strip Light: RBS*AR#-Ex	19
MineloT Solutions	20
Personnel, Vehicle, Asset Tracking and Emergency/Evacuation Solution	21
IoT Device Management with Solution Customisation	23
Personnel Sign-in, Sign-out &/or Assignment of Assets Solution	25
IoT Devices	27
DSRC Cordless Cap Lamp: RN4E-WBD	28
I.S. WiFi/BLE Cordless Cap Lamp: KC4E-WB-Ex	29
IoT Cordless Cap Lamp: RN4E-*	30
WiFi/BLE Cordless Cap Lamp: RN4E-WB	31
WiFi/BLE Rechargeable Belt Tag: RBT6A-WB	32
WiFi/BLE Rechargeable Portable Tag: RPT6A-WB	33
IoT Device Charging Options	34
Collision Avoidance and Proximity Detection Systems	35

Cordless Cap Lamp

Performance series – for Underground Hardrock Mines, Tunnels and Petrochemical Environments

Features



Three operating modes – Main, High Beam, Auxiliary



Adjustable beam angle to point wherever you look



Lightweight, comfortable and ergonomic



Rugged casing made from GERMAN FRAS material for rough handling & wide ambient temperature range



World's safest and most reliable Panasonic battery



Made from Top Brand, high quality components and parts



UHF 860 - 960 MHz RFID can be integrated into registration and access control systems



13.56 MHz for use with your Kiosk, Digital Tagboard and Inventory solutions



Product Specifications



IP Rating - IP67

Submersible in water up to 1m for 30min



Illumination

6800 Lx Main Mode
10000 Lx High-Beam Mode



Charging Time

9 h



Running Time

14 h Main Mode



Ambient Temperature

-20°C ≤ Ta ≤ 40°C



Weight

154 g

Certifications:

- Certificate #: IECEx TSA 19.0008
- Ex Marking: Ex ia op is IIB T3 Gb

Standard #:

- IEC 60079-0
- IEC 60079-11
- IEC 60079-28



Cordless Cap Lamp

Performance series – for Mining and Industrial Applications without the need for Ex Certificate

Features



Three operating modes – Main, High Beam, Auxiliary



Adjustable beam angle to point wherever you see



Lightweight, comfortable and ergonomic



Tough GERMAN enclosure material to withstand rough handling



Rugged casing made from GERMAN FRAS material for rough handling & wide ambient temperature range



Rounded front housing for best impact resistance



Product Specifications



IP Rating - IP67

Submersible in water up to 1m for 30min



Illumination

5000 Lx Main Mode
8000 Lx High-Beam Mode



Charging Time

9 h



Running Time

16 h Main Mode



Weight

165 g



Cordless Cap Lamp

Multi-Function Series – with Rear Signalling Beacon for Underground Hardrock Mines and Tunnels

Features

-  Three operating modes – Main, High-Beam, Auxiliary
-  Adjustable beam angle to point wherever you look
-  Lightweight, comfortable and ergonomic
-  Rugged casing made from GERMAN FRAS material for rough handling & wide ambient temperature range
-  World's safest and most reliable Panasonic battery
-  Made from Top Brand, high quality components and parts
-  Rounded front housing for best impact resistance



Beacon Features

-  World's only cap lamp with rear beacon for miner's protection
-  Three beacon modes - Steady, slow flashing, fast flashing
-  Green, Red, Blue, White & Amber
-  Beacon is replaceable

Product Specifications

 IP Rating - IP67 Submersible in water up to 1m for 30min	 Illumination 6500 Lx Main Mode; 8000 Lx High-Beam Mode
 Charging Time 9 h	 Running Time 13 h Main Mode
 Weight 201 g	

Chargers - KH4E-Ex, RN3U, RN4UB

CB8E Charging Bank For 8 Cordless Cap Lamps



Features

- Portable, Wall Mountable, Vehicle Installation
- Locking Plate is optional extra (CB8(E)-LPU)
- Charging Connection Indicator
- Automatic over-load protection – cuts off that circuit when Cap Lamp battery is fully charged

Specifications

Input	240 VAC or 12-24 VDC
Dimensions	33 x 21 x 5.5 cm
Weight	1.1 kg

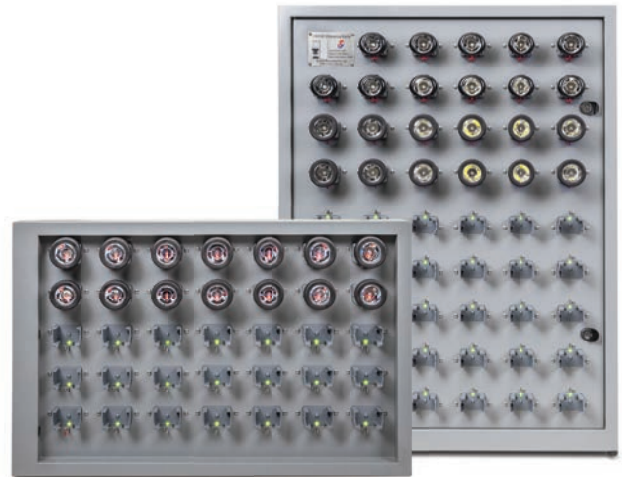
CB35E/CB53E - Charging Banks For 35/53 Cordless Cap Lamps

Features

- Automatic over-load protection – cuts off the circuit when Cap Lamp battery is fully charged
- Label groove
- Padlock bracket
- Charging Connection Indicator
- Includes wall mounting kit
- 2 x foot pads for CB53E
- Circuits are easily accessible for servicing

Specifications

Input	240 VAC	
Dimensions	CB35E: 87 x 11 x 56 cm	CB53E: 84 x 13 x 110 cm
Weight	CB35E: 17 kg	CB53E: 31 kg



Individual Chargers & Accessories

- MCE:** Single Mains Charger - AU, EU, UK, USA
UCE: Single USB Charger



Cordless Cap Lamp

Lightweight series – for Petrochemical Environments and Surface Operations

Features



Three operating modes – Standard Focus, High-Beam Focus, Spread



Thin design means Cap Lamp fits behind visor and allows it to go up and down



Lightweight, comfortable and ergonomic



Rugged casing made from GERMAN FRAS material for rough handling & wide ambient temperature range



World's safest and most reliable Panasonic battery



Made from Top Brand, high quality components and parts



Product Specifications



IP Rating - IP67

Submersible in water up to 1m for 30min



Illumination

2800 Lx Standard Focus
5500 Lx High-Beam Focus



Charging Time

7 h



Running Time

13 h Standard Focus



Ambient Temperature

$-20^{\circ} \leq T_a \leq 40^{\circ}$



Weight

97 g



Certifications:

- Certificate #: IECEx TSA 19.0008
- Ex Marking: Ex ia op is IIB T3 Gb

Standard #:

- IEC 60079-0
- IEC 60079-11
- IEC 60079-28



Cordless Cap Lamp

Lightweight series – for Industrial and Surface Mining Applications without the need for Ex Certificate

Features



Three operating modes – Standard Focus, High-Beam Focus, Spread



Thin design works with most helmet visors



Lightweight, comfortable and ergonomic



Rugged casing made from GERMAN FRAS material for rough handling & wide ambient temperature range



World's safest and most reliable Panasonic battery



Made from Top Brand, high quality components and parts



Product Specifications



IP Rating - IP67

Submersible in water up to 1m for 30min



Illumination

2800 Lx Standard Focus
5500 Lx High-Beam Focus



Charging Time

7 h



Running Time

13 h Standard Focus



Weight

97 g



Chargers - KH2T-Ex, RN2T ROOBUCK

CB8T Charging Bank For 8 Cordless Cap Lamps



Features

- Portable, Wall Mountable
- Charging Connection Indicator
- Automatic over-load protection – cuts off that circuit when Cap Lamp battery is fully charged

Specifications

Input	240 VAC
Dimensions	33.4 x 18.2 x 6.6 cm
Weight	860 g

CB28T Charging Bank For 28 Cordless Cap Lamps

Features

- Wall Mountable
- Locking Bar for Cap Lamp safety
- Charging Connection Indicator
- Automatic over-load protection – cuts off that circuit when Cap Lamp battery is fully charged
- Space to attach identification label

Specifications

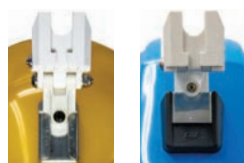
Input	240 VAC
Dimensions	84 x 60 x 11.5 cm
Weight	9 kg



Individual Chargers & Accessories



UCT: Single USB Charger



RCB-A

RCB-U

RCB-A/U: Angle Adjustable Brackets

RCB-A slides between the sides of the helmet bracket whereas RCB-U slides between the front & back of the helmet bracket.

Cordless Cap Lamp

Lightweight series – for Petrochemical Environments & Surface Operations

Features



Two operating modes – Main, Low



Well distributed light pattern



Adjustable beam angle to point wherever you look



Lightweight, comfortable and ergonomic



Made from Top Brand, high quality components and parts



Product Specifications



IP Rating - IP67

Submersible in water up to 1m for 30min



Illumination

2000 Lx Main Mode



Charging Time

7 h



Running Time

20 h Main Mode



Ambient Temperature

$-20^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$



Weight

119 g



Certifications:

- Certificate #: IECEx TSA 19.0008
- Ex Marking: Ex ia op is IIB T3 Gb

Standard #:

- IEC 60079-0
- IEC 60079-11
- IEC 60079-35-1



CB8 Charging Bank For 8 Cordless Cap Lamps



Features

- Portable, Wall Mountable, Vehicle Installation
- Locking Plate is optional extra (CB8(E)-LPU)
- Charging Connection Indicator
- Automatic over-load protection – cuts off the circuit when Cap Lamp battery is fully charged

Specifications

Input	240 VAC or 12-24 VDC
Dimensions	33 x 21 x 6 cm
Weight	1 kg

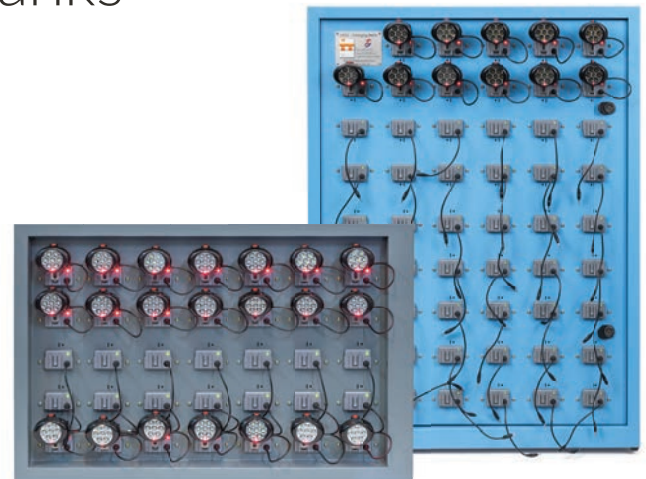
CB35/CB53 - Charging Banks For 35/53 Cordless Cap Lamps

Features

- Automatic over-load protection – cuts off the circuit when Cap Lamp battery is fully charged
- Label groove
- Padlock bracket
- Charging Connection Indicator
- Includes wall mounting kit

Specifications

Input	240 VAC	
Dimensions	CB35: 87 x 11 x 56 cm	CB53: 84 x 13 x 110 cm
Weight	CB35: 16 kg	CB53: 31 kg



Individual Chargers & Accessories

MC: Single Mains Charger - AU, EU, UK, USA

VC: Single Car Charger - Cigarette Lighter

Corded Cap Lamp

For Underground Hardrock Mines and Tunnels

Features



The brightest cap lamp we sell



Impact resistant design & material



Two operating modes – Main, Auxiliary



Push button on/off switch



Made from Top Brand, high quality components and parts



Product Specifications



IP Rating - IP68
Submersible in water up to 1.5m for 30min



Illumination
16000 Lx Main Mode



Charging Time
10 h



Running Time
15 h Main Mode



Weight
600 g



CR32 / CR60 / CR102 Charging Banks

For 32, 60 or 102 Corded Cap Lamps

Features

- Purpose designed for standard Cabled Cap Lamps with a Li-ion battery
- Red/Green indicator light for each charging port
- Automatic over-load protection – cuts off the circuit when Cap Lamp battery is fully charged

Specifications

CR32

Input	240 VAC
Output	4.2 VDC / 1.5 A
Dimensions	109 x 45 x 119 cm
Net Weight	64 kg

CR60

Input	240 VAC
Output	4.2 VDC / 1.5 A
Dimensions	125 x 40 x 180 cm
Net Weight	114 kg

CR102

Input	240 VAC
Output	4.2 VDC / 1.5 A
Dimensions	202 x 40 x 180 cm
Net Weight	174 kg



Individual Chargers & Accessories



MCE: Single Mains Charger
AU, EU, UK, USA



RCB-A



RCB-U

RCB-A/U: Angle Adjustable Brackets

RCB-A slides between the sides of the helmet bracket whereas RCB-U slides between the front & back of the helmet bracket.

RRS: Rubber Ring Sheath

Protect your Performance Series Cordless Cap Lamp with a cost effective, coloured rubber ring. It can protect the cordless cap lamp when dropped, bumped or from dripping water. Comes in seven colours that can be used for easy identification of position, department or shift.



ML: Mining Lanyard

Keep hold of your Cordless Cap Lamp if you drop your helmet. Enables Cordless Cap Lamp to be fastened to your belt or belt loop.

HS: Head Strap

Fastens your Cap Lamp to hard hats without a mounting bracket. Uses four brim clips to for secure attachment to the helmet.



RCB-A



RCB-U

RCB: Angle Adjustable Cap Lamp Bracket

Roobuck's patented Cap Lamp Bracket transforms a fixed Cap Lamp into a flexible one. Comes in two versions RCB-A and RCB-U.

RCB-A slides between the sides of the helmet bracket whereas RCB-U slides between the front & back of the helmet bracket.

TG57: Miner's Hard Hat

Strong but lightweight A.B.S construction for durability and robustness with a rolled gutter around the brim for water control.

Features adjustable 6-point web harness with universal slots to accept 25~30mm insert attachments.

White hard hat is in stock but colour options are available upon request.



Helmet Beacon Light

For Underground Hardrock Mines and Tunnels

Features



Red, Green, Blue



Low running cost



Easily attached to helmet



Fully sealed for the best ingress protection



Replaceable coin battery



Product Specifications



IP Rating - IP65

Dustproof and direct spray proof



Operating Mode

Steady, Flash, Blink



Running Time

200 h in Flashing Mode



Weight

45 g



Intrinsically Safe Strip Light for Area Illumination For Underground Coal Mines, Petrochemical Environments and Underground Hardrock Mines

The RIS12*-Ex strip light is Intrinsically Safe and designed for area illumination in underground coal mines, petrochemical environments and underground hardrock mines. It is easy to mount and can be attached to machinery, walls or other objects. It is lightweight and can be carried if you need portable illumination.

It is powered by an external 12VDC I.S. power supply. There is a 2-wire lead at an end of the strip light to connect to a junction box or I.S. power supply directly.



Feature	RIS12S-Ex	RIS12M-Ex	RIS12L-Ex	Installation Accessories
 Power	1.4 W	2.8 W	4.2 W	• Clips for wall mounting • Tags • Sticky tabs • Brackets All models come with 1 metre of cable to connect into your intrinsically safe power supply
 Number of LEDs	42	84	126	
 Length of Light	0.8 m	1.5 m	2.2 m	
 Weight	200 g	300 g	400 g	

Product Specifications



IP Rating - IP65
Dustproof and direct spray proof



Ambient Temperature
 $-20^{\circ} \leq T_a \leq 40^{\circ}$

Certifications:

- Certificate #: IECEx TSA 22.0010
- Ex Marking: Ex ia op is I Ma or Ex ia op is IIB T4 Gb

Standard #:

- ICE 60079-0 :2017
- IEC 60079-11 :2011
- IEC60079:28:2015



Intrinsically Safe Battery Powered LED Strip Light

For Petrochemical Environments, Petrochemical Environments and Underground Hardrock Mines

This strip light is a chain of several LED Soft Bars. There are different types of LED Soft Bars with different numbers of LEDs. A LED Soft Bar is consisting of a FPCB fully sealed in a transparent shrink tube. All LED Soft Bars are connected using cables, connectors and jointing boards to form a complete Battery Strip Light. The Battery Box connects to the LED strip chain either directly or through a connector to supply power.

Applications

LED Workwear design
Portable safety product design
Sign enhancement
Equipment visualisation
Site safety

Features



Zone 0 environment



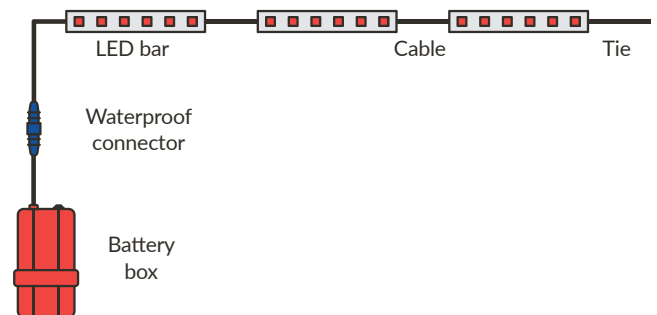
Flexible construction



Portable and stationary



Indoor or outdoor use



This product is certified with great flexibility and is custom made. Specify the:

- amount of LED bars and their positions
- amount of LEDs in each bar
- length of each cable

Batteries: 2xAA

Default LED color is Red. Other colours optional.
Other LED colours and 3AH rechargeable Lithium battery are available, subject to price variations and extended delivery times.

Running time (T) is decided by the total number of LEDs (N) and operating mode. T in hours in steady mode can be estimated using the following formula. In a flashing mode, T is doubled.

$$T = 300/N \leq 16$$

Attention: Product Developers

This Strip Light is an OEM product. You are welcome to use it to design your own intrinsically safe products with our engineering support.

Certifications:

- Certificate #: IECEx TSA 22.0007X
- Ex Marking: Ex ia op is I Ma / Ex ia op is IIB T3 Ga

Standard #:

- ICE 60079-0:2017
- IEC 60079-11:2011
- IEC 60079-28:2015



Product Specifications



IP Rating - IP65

Dustproof and direct spray proof



Operating Mode

Steady, Slow Flashing,
Fast Flashing



Ambient Temperature

$-20^{\circ} \leq T_a \leq 40^{\circ}$



Weight

90 g - battery box

For Safer, more efficient and productive mining

Through collaboration with leading Australian universities, industry partners and mining digitalisation leaders, Roobuck has developed cutting edge solutions that reduce mine operation costs, increase productivity, improve safety and enable customers to attain ESG targets in the mining sector.

Roobuck's Mine IoT Solutions:

- Are modular and scalable, allowing solution deployment in sync with the implementation schedule of your digitalisation roadmap
- Are easy to integrate into your existing onsite mine network. Our solutions can run entirely onsite, enabling smooth initial setup and minimal IT maintenance.
- Enhance the value and capabilities of compatible Roobuck IoT devices such as WiFi/BLE cordless cap lamps and belt/portable tags.

Roobuck provides the following Mine IoT Solutions for use in underground hardrock mines:

- Personnel, Vehicle and Asset Tracking and Emergency/Evacuation
- Personnel Sign-In, Sign-Out and/or Assignment of Assets
- IoT Device and Data Management with Solution Customisation

Technological solutions need to be implemented at an operational level and require people and process to enable them to succeed. Our technology is flexible and can be integrated into your current network. Roobuck can assist you with a systemic approach to tackling problems and solving your pain points. Roobuck solutions provide immediate high value returns by improving safety and significant long-term value through productivity and efficiency enhancements.

The data produced by the Mine IoT Solutions can be used to for operational insights and improvements.

The Mine IoT Solutions can be used separately or together and are explained in more detail on the following pages. Roobuck's Mine IoT Solutions work with Roobuck's IoT Devices. Please see page 27.

Personnel, Vehicle, Asset Tracking and Emergency/Evacuation Solution

Increase Safety, Improve Decision Making and Asset Performance

Maximise the efficiency of your operation and hand back time to your team by implementing a personnel, vehicle and asset tracking solution. Roobuck offers a comprehensive suite of software and IoT devices to form a tracking solution that allows you to monitor the location and provide instantaneous two-way signalling with your personnel underground where there is network connectivity available. IoT Solutions using Intrinsically Safe devices are available.

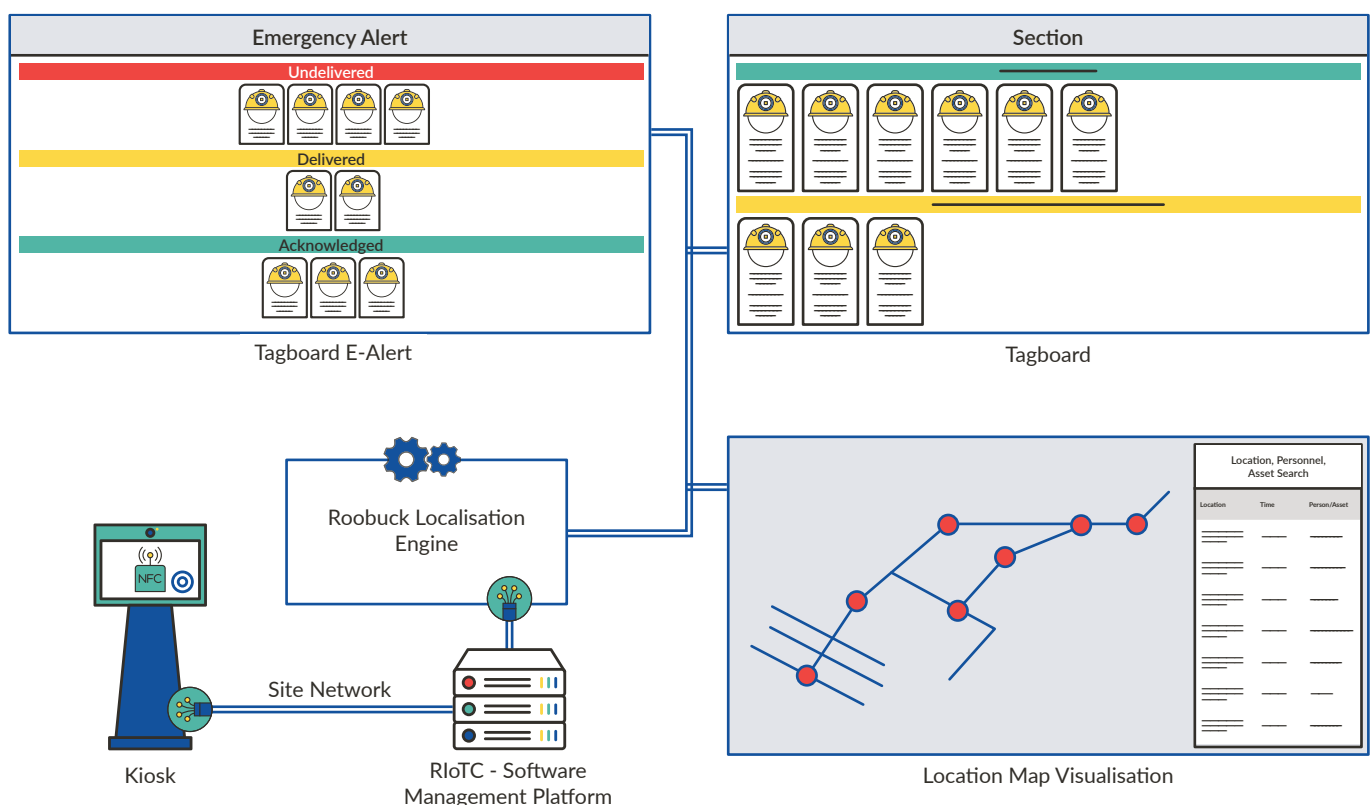
This solution enables you to implement:

- Personnel tracking
- Vehicle tracking
- Asset tracking
- Emergency evacuation
- Lone and isolated worker tracking

Enabling:

- Incident investigation
- Live monitoring and equipment control
- Data visualisation
- Big data collection

Personnel onsite can sign-in using their ID cards and IoT devices such as the Roobuck WiFi/BLE Cordless Cap Lamp. These devices send out location, battery level, IMU and other data to the Roobuck onsite server that feeds information to a Localisation Engine and Visualisation System. The locations of signed-in personnel can be seen on a map that updates as they move throughout the mine.

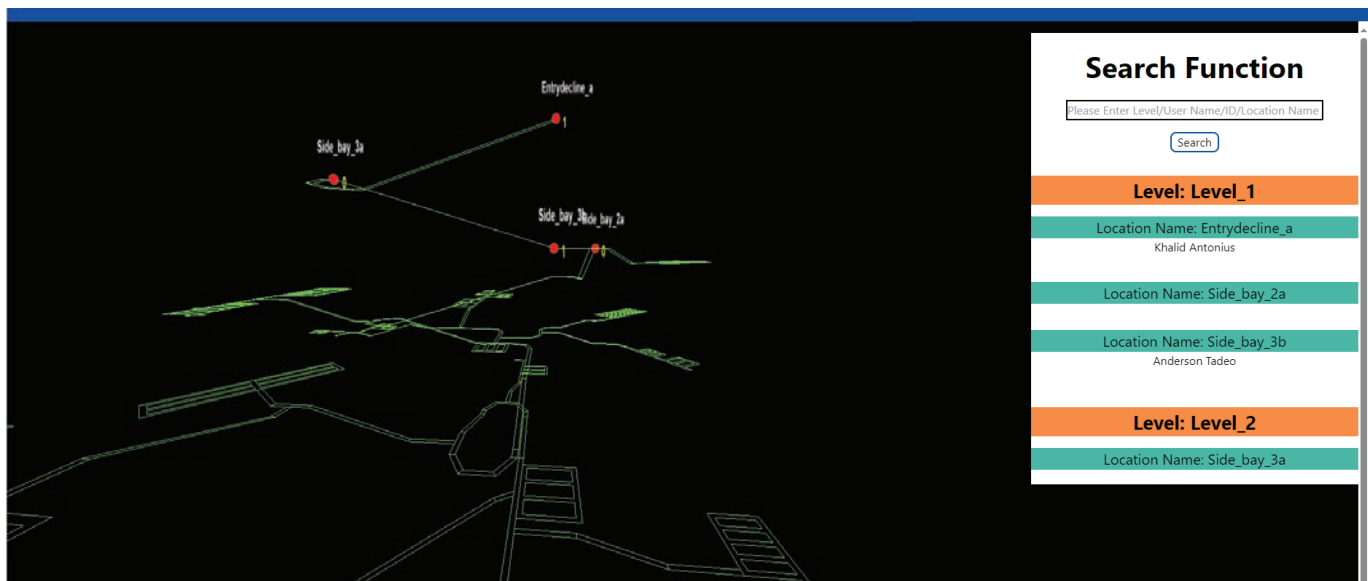


Digital Tagboard

Incorporating miner and cap lamp registration, shift sign-in/sign-out, miner to cap lamp pairing and inventory record, the Digital Tagboard is a comprehensive solution to record:

- Who is tagged in
- What section of the mine they are working in
- Which kiosk they used to sign in
- What department they are assigned to
- What devices are assigned to the person. Examples are cap lamps, self-rescuers, belt tags, gas monitors
- Nearest Access Point to identify personnel's location. Users paired with Roobuck IoT devices can have their locations with time stamps updated on the Digital Tagboard.

The Digital Tagboard has multiple views of all personnel tagged in. Personnel and their associated assets can be viewed by Section, Department, Kiosk and nearest AP location. It is now easy to search for personnel and their associated information using multiple large screens strategically located underground. Operational Supervisors & Safety Managers can access views on their PC screens and tablets.



Location Map Visualisation

Emergency Alert and Duress Call

On the Digital Tagboard there is a view to see the current status and location of all signed-in personnel during an emergency call event. Personnel that have yet to receive an emergency alert called by the control room are placed into one category, **Undelivered**. A second category, **Delivered**, displays personnel who have received the emergency alert, but are yet to respond. A final category, **Acknowledged**, displays personnel who have acknowledged the emergency alert by pressing the button on their flashing IoT device. The IoT device can be a Roobuck cap lamp or belt tag.

The Digital Tagboard also displays and alerts the control room to any signed-in personnel that makes a duress call using the IoT device. To make a Duress Call, hold down the button on the cap lamp or belt tag.

IoT Device/Data Management with Solution Customisation

Increase Safety, Improve Efficiencies Through Technology

Roobuck's IoT device management solution is essential for maximising the value provided by your personnels' equipment, cap lamps and belt tags, on site. The IoT devices enable critical solution deployments such as Tracking and Digital Kiosks. Over-the-Air updates and mass device configurations ensure your site can rapidly deploy new solutions/network improvements/expansions without the risk of making your IoT devices redundant. IoT Solutions using Intrinsically Safe devices are available.

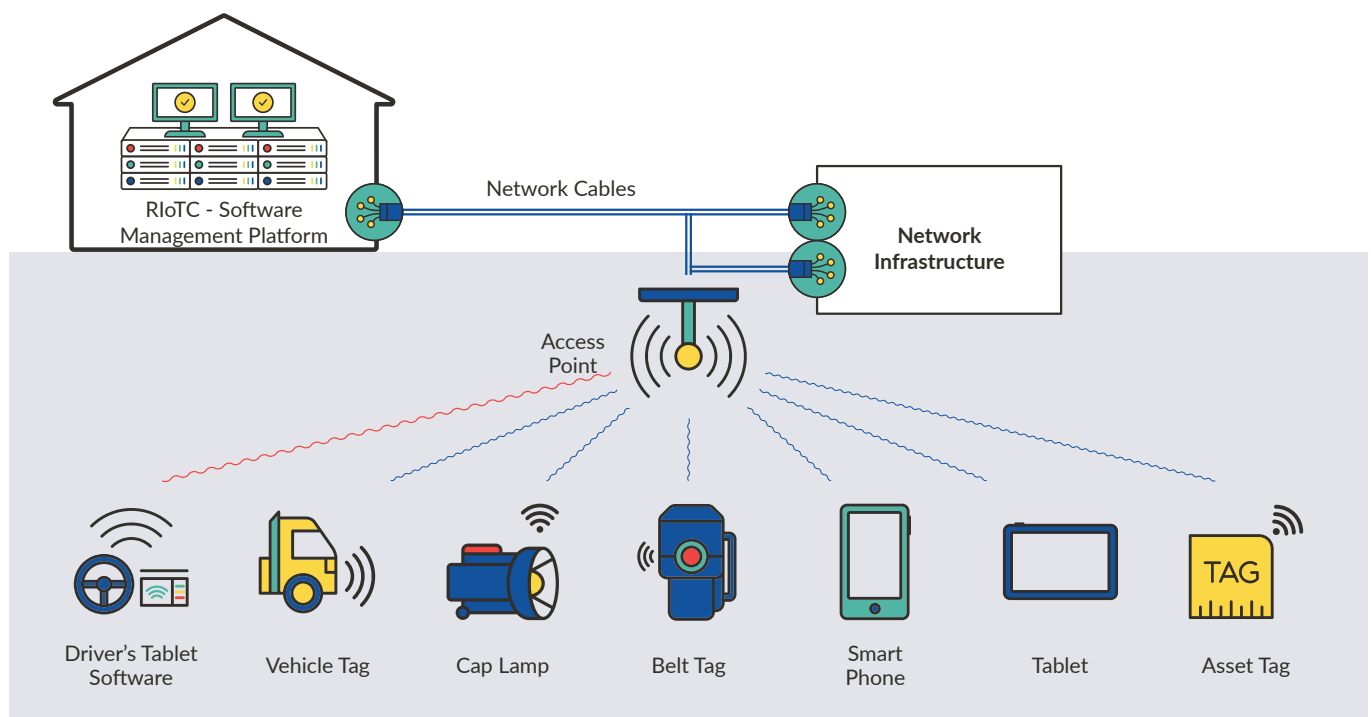
This solution includes our device management platform which includes:

- Over-the-Air updates
- Bulk configuration
- Customisation opportunities
- Integration services

Enabling:

- Big data collection
- Knowledge generation
- The ability to facilitate AI

Roobuck's team of specialist engineers can create custom solution integrations for your site specific projects.



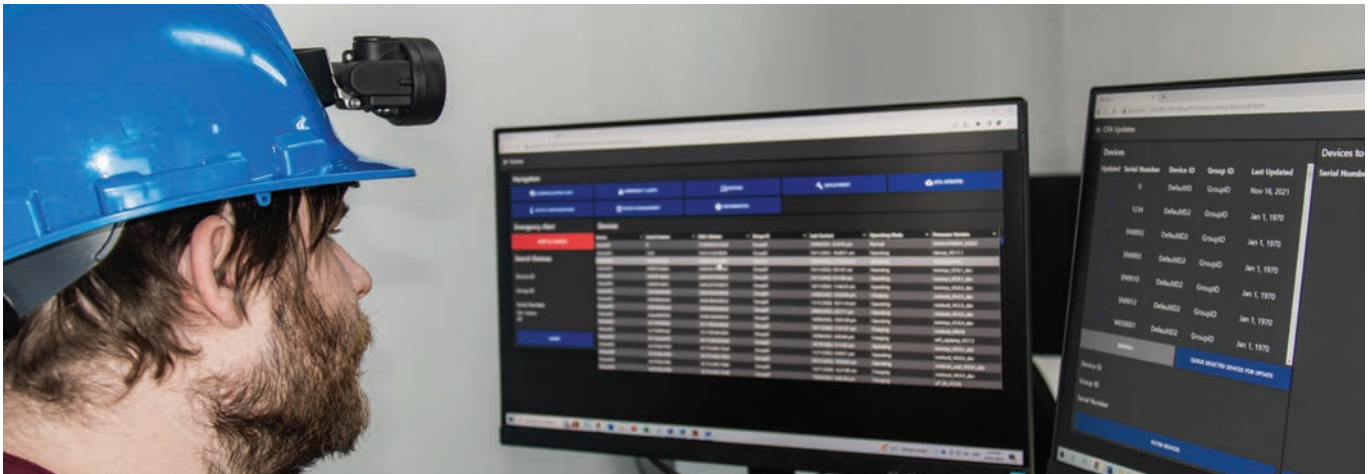
Device/Data Management ROOBUCK

RloTC – Device Management Software Platform

The Roobuck Internet of Things Configurator, RloTC, is a platform for managing Roobuck IoT Devices such as Roobuck's WiFi/BLE cap lamps or belt tags. This software runs in an onsite server and can be configured to connect to devices that are registered on your network.

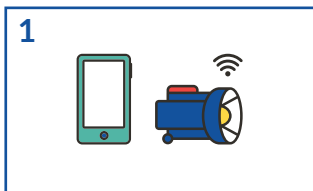
This platform performs the following functions:

- Over-the-Air firmware updates
- Historical data of communication logs from IoT devices
- User device allocation and management. This is for sites with devices permanently assigned to personnel
- Configurations: network, lighting, flashing patterns and operations
- Two-way signalling, including individual paging with historical data of communication logs
- Systems integration via MQTT to Roobuck solutions or external platforms

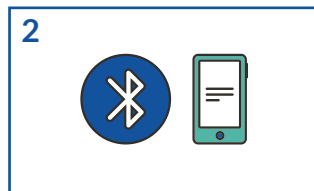


Mobile RloTC

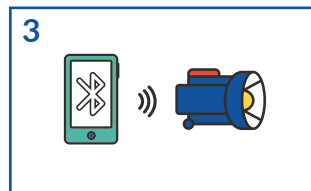
Roobuck's Mobile Configuration App for Android devices allows for immediate diagnosis and configuration of Roobuck IoT devices via Bluetooth pairing.



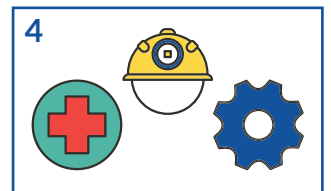
1 A device's internal NFC tag is scanned using an Android device.



2 The BLE MAC address and serial number is read from the tag and displayed on the device.



3 By using BLE, new WiFi and MQTT credentials and settings can be set on the device.



4 Device health checks and user registration details can be retrieved from central database via MQTT. Current device configurations can be read via BLE.

Personnel Sign-In, Sign-Out &/or Assignment of Assets

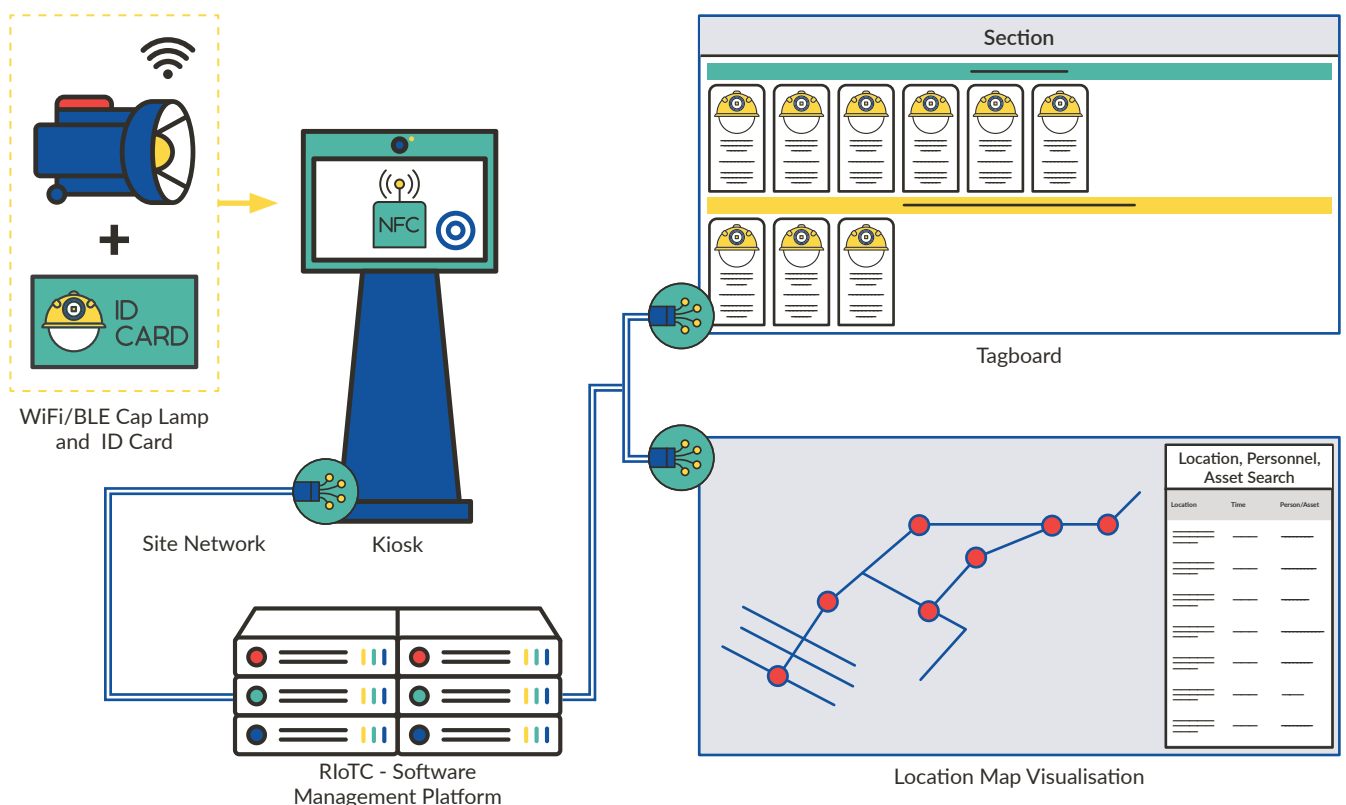
Increase Safety, Improve Productivity & Operational Efficiency

Hand back time to your busy team by implementing an automated sign-in/sign-out solution that is linked to your tracking and asset assignment systems. Avoid human error and equipment misplacement by assigning assets to personnel who sign-in, then track their location underground using WiFi and BLE. IoT Solutions using Intrinsically Safe devices are available.

This solution enables you to:

- Trace who is signed-in & signed-out
- Implement automation tracking
- Automate processes to avoid human error
- Integrate into systems
- Implement asset management
- Comply to safety policies and procedures
- Implement productivity enhancements
- Collect big data for analytics & reporting

Roobuck provides IoT personal devices such as WiFi/BLE cordless cap lamps and belt tags that are designed to be assigned to your staff via a kiosk terminal. Rugged touch screens with NFC scanners run our Digital Kiosk software that allows personnel to scan their ID and IoT devices. These devices then send data to our Roobuck onsite server that can be hosted locally onsite to enable tracking and emergency alert applications. Roobuck has a specialist R&D team that can integrate your existing ID card system into our Digital Kiosk as a customised site specific project.



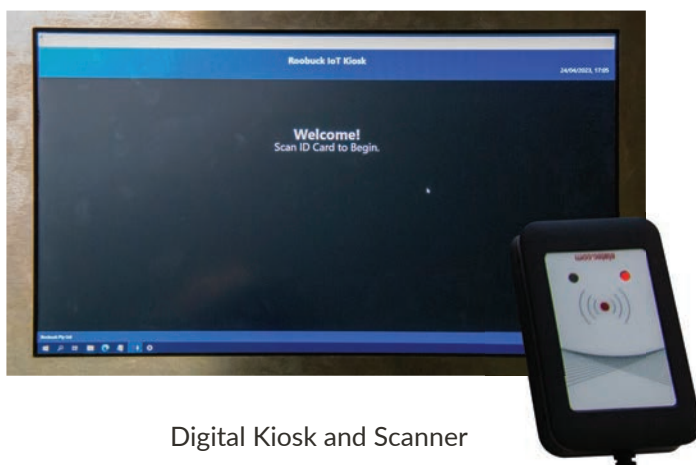
Digital Kiosk Linked to Live Applications

Personnel scan their ID card, then their equipment. Equipment can include a Roobuck IoT device, such as a WiFi/BLE cap lamp or belt tag or any device with an NFC sticker or tag attached. This person is then displayed on the Digital Tagboard and is visible on the Location Map Visualiser in real time. They will also receive emergency alerts sent via the evacuation tool, and can send duress calls, which will be received and displayed on the Tagboard. Emergency Alerts and Duress Calls are simultaneously displayed on operational PCs and tablets.

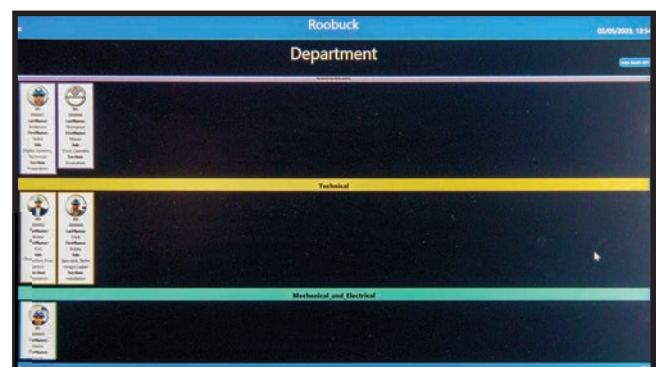
Asset Assignments

Equipment such as a hard hat or respirator can be registered into the system database.

- NFC tags or stickers are attached to equipment.
- The equipment is registered using the Tag Configurator Tool
- When a member of your team is signing-in to work, they scan their ID card, IoT device, and any registered equipment they are taking underground.
- If a vital piece of equipment is not scanned as part of sign-in, a digital record is kept and the control room can be alerted. This procedure can be configured to match your current compliance policy system.
- When a signed-in person is selected on the Digital Tagboard, a list of all their equipment is displayed
- Equipment usage data is stored and available for integration into your maintenance cycle system so you can make sure there is a record of all critical equipment going underground.



Digital Kiosk and Scanner



Tagboard

Cap Lamps, Belt Tags & Portable Tags

The Mine IoT devices complement our Mine IoT solutions for underground hardrock mines. On the following pages are the brochures with the product information and specifications of each IoT device.



RN4E-WB

WiFi/BLE Cordless Cap Lamp



KC4E-WB-Ex

I.S. WiFi/BLE Cordless Cap Lamp



KH4E-WB-Ex

I.S. WiFi/BLE Cordless Cap Lamp



RN4E-WBD

DSRC Cordless Cap Lamp



RBT6A-WB

WiFi/BLE Rechargeable Belt Tag



RPT6A-WB

WiFi/BLE Rechargeable Portable Tag

Technology



WiFi 802.11 b/g/n



Bluetooth V4.2, BLE



UHF 860 - 960 MHz RFID can be integrated into tracking, registration & access control systems



13.56 MHz for use with your Kiosk, Digital Tagboard and Inventory solutions



IMU for your movement data collection and personnel safety applications



Compatible with Roobuck solutions or your choice of enterprise tracking software

Roobuck is developing Cap Lamps, Belt Tags and Portable Tags utilising various wireless technologies including LTE, DSRC, UWB and LoRa.

Emergency Management

Using the Roobuck Emergency Management System you can dramatically reduce the time it takes to inform personnel underground to evacuate. Roobuck IoT devices such as WiFi/BLE cap lamps or belt tags, that are signed-in using the Digital Kiosk, will respond to emergencies sent from the emergency management system by flashing.

When personnel press the button on their flashing device, they acknowledge receipt of the emergency message. They can also make a Duress Call by holding down the button of their device, prompting the control room to respond and make contact.

DSRC Cordless Cap Lamp

With WiFi and BLE

The DSRC cordless cap lamp is designed to enable the following Mine IoT Solutions for underground hardrock mines:

- Vehicle to Pedestrian Collision Avoidance System using DSRC
- Personnel, Vehicle and Asset Tracking and Emergency/Evacuation
- Personnel Sign-In, Sign-Out and/or Assignment of Assets
- IoT Device and Data Management with Solution Customisation

DSRC cordless cap lamps use Cohda Wireless V2X technology and are compatible with Maptek™ VisionV2X.

Technical Features

-  DSRC 802.11p standard compatible
-  WiFi 802.11 b/g/n
-  Bluetooth V4.2, BLE
-  UHF 860 - 960 MHz RFID can be integrated into tracking, registration and access control systems
-  13.56 MHz for use with your Kiosk, Digital Tagboard and Inventory solutions
-  IMU for your movement data collection and personnel safety applications

Cap Lamp Features

-  Three operating modes – Main, High-Beam, Auxiliary
-  Adjustable beam angle to point wherever you look
-  Lightweight, comfortable and ergonomic
-  Rugged casing made from GERMAN FRAS material for rough handling & wide ambient temperature range
-  World's safest and most reliable Panasonic battery
-  Made from Top Brand, high quality components and parts



Product Specifications

- | | |
|---|--|
|  IP Rating - IP67
Submersible in water up to 1m for 30min |  Illumination
5000 Lx Main Mode
8000 Lx High-Beam Mode |
|  Charging Time
9 h |  Running Time
14-18 h Main Mode |
|  Weight
165 g | |

Certifications

- | | |
|---|--|
| 
CE | 
RCM |
|---|--|

Charging Banks for 8/35/53 Cap Lamps

I.S. WiFi/BLE Cordless Cap Lamp

The Intrinsically Safe WiFi/BLE cordless cap lamp is designed to enable the following Mine IoT Solutions for underground coal and hardrock mines:

- Personnel, Vehicle and Asset Tracking and Emergency/Evacuation
- Personnel Sign-In, Sign-Out and/or Assignment of Assets
- IoT Device and Data Management with Solution Customisation

Technical Features



WiFi 802.11 b/g/n



Bluetooth V4.2, BLE



UHF 860 - 960 MHz RFID can be integrated into tracking, registration and access control systems



13.56 MHz for use with your Kiosk, Digital Tagboard and Inventory solutions



IMU for your movement data collection and personnel safety applications



Cap Lamp Features



Three operating modes – Main, High-Beam, Auxiliary



Adjustable beam angle to point wherever you look



Lightweight, comfortable and ergonomic



Rugged casing made from GERMAN FRAS material for rough handling & wide ambient temperature range



World's safest and most reliable Panasonic battery



Made from Top Brand, high quality components and parts

Product Specifications



IP Rating - IP67

Submersible in water up to 1m for 30min



Illumination

5000 Lx Main Mode
8000 Lx High-Beam Mode



Charging Time

9 h



Running Time

14 h Main Mode



Weight

160 g

Certifications



Certifications:

- Certificate #: IECEx TSA 19.0008
- Ex Marking: Ex ia op is I Ma IEC 60079-35-1

Standard #:

- IEC 60079-0
- IEC 60079-11
- IEC 60079-28
- IEC 60079-35-1



FCC ID:

2BDKT4EWB



ICASA ID:

TA-2023/3422



CE



RCM

Integration Specifications

MQTT Compatible

API Available

LED Flashing Modes
Configurable

Running Time/Brightness
Configurable

Charging Banks for 8/35/53 Cap Lamps

IoT Cordless Cap Lamp

The IoT cordless cap lamps come with the technology you require to work with the application used in your underground mining solution. The model number depends on the technology you require. The * will be replaced with the following letters:

- W

WiFi (2.4GHz) for Tracking, Emergency & Duress Call
- L

LTE (Cat M1) for Tracking, Emergency & Duress Call
- B

BLE for location IDs, asset locationing, light control, sensor data log
- U

UWB for Collision Avoidance
- D

DSRC (802.11p) for Collision Avoidance
- M

Multiple Proprietary 3rd party WiFi Tags

Please note that LTE, DSRC and Proprietary Wireless Tags cannot exist in the same cap lamp

All Models come with RFID/NFC.
Not all Models are currently available. Some are under development. Please contact Roobuck for details.

Features

Three operating modes – Main, High-Beam, Auxiliary

Adjustable beam angle to point wherever you look

Lightweight, comfortable & ergonomic

Rugged casing made from GERMAN FRAS material for rough handling & wide ambient temperature range

World's safest and most reliable Panasonic battery

Made from Top Brand, high quality components and parts

IMU for your movement data collection & personnel safety applications

Product Specifications

IP Rating - IP67
Submersible in water up to 1m for 30min

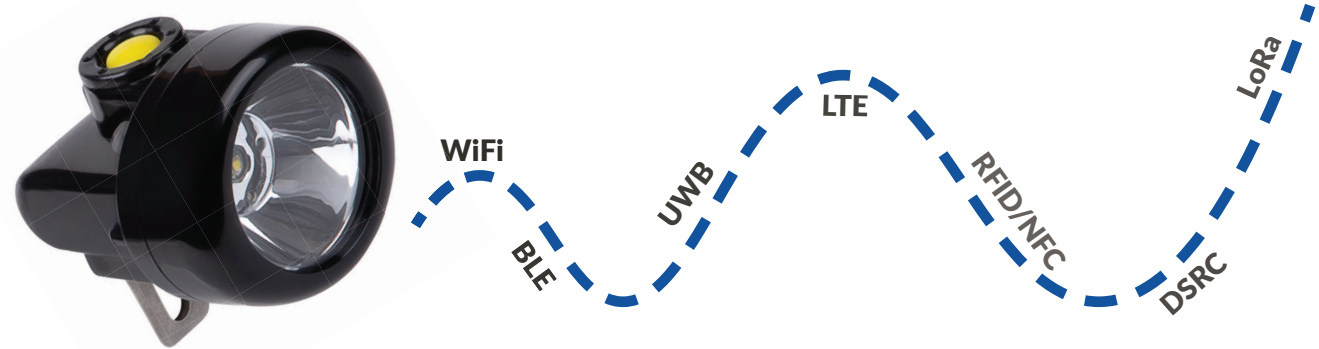
Illumination
5000 Lx Main Mode
8000 Lx High-Beam Mode

Charging Time
9 h

Running Time
14 h Main Mode

Weight
160 g - 180 g

Charging Banks for 8/35/53 Cap Lamps



WiFi/BLE Cordless Cap Lamp

The WiFi/BLE cordless cap lamp is designed to enable the following Mine IoT Solutions for underground hardrock mines:

- Personnel, Vehicle and Asset Tracking and Emergency/Evacuation
- Personnel Sign-In, Sign-Out and/or Assignment of Assets
- IoT Device and Data Management with Solution Customisation

Technical Features



WiFi 802.11 b/g/n



Bluetooth V4.2, BLE



UHF 860 - 960 MHz RFID can be integrated into tracking, registration and access control systems



13.56 MHz for use with your Kiosk, Digital Tagboard and Inventory solutions



IMU for your movement data collection and personnel safety applications

Cap Lamp Features



Three operating modes – Main, High-Beam, Auxiliary



Adjustable beam angle to point wherever you look



Lightweight, comfortable and ergonomic



Rugged casing made from GERMAN FRAS material for rough handling & wide ambient temperature range



World's safest and most reliable Panasonic battery



Made from Top Brand, high quality components and parts

Product Specifications



IP Rating - IP67

Submersible in water up to 1m for 30min



Illumination

5000 Lx Main Mode
8000 Lx High-Beam Mode



Charging Time

9 h



Running Time

14 h Main Mode



Weight
160 g

Integration Specifications

MQTT Compatible

API Available

LED Flashing Modes
Configurable

Running Time/Brightness
Configurable

Certifications



CE



RCM

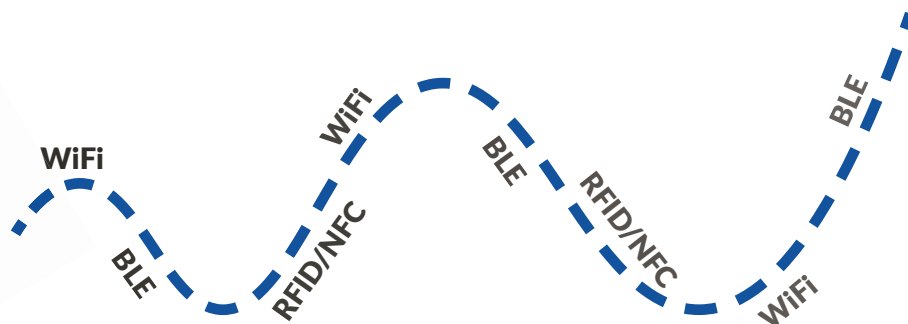


FCC ID:
2BDKT4EWB



ICASA ID:
TA-2023/3422

Charging Banks for 8/35/53 Cap Lamps



WiFi/BLE Rechargeable Belt Tag

The WiFi/BLE Belt Tag is especially suitable for surface and underground hardrock mines and tunnels. It integrates WiFi and BLE into a single wearable device. It features a user interface for miner activities, such as acknowledging emergency/evacuation alerts, sending duress calls, location information, text messaging and a digital clock.

The WiFi/BLE Rechargeable Belt Tag and WiFi/BLE Portable Tag are designed to enable the following Mine IoT Solutions:

- Personnel, Vehicle and Asset Tracking and Emergency/Evacuation
- Personnel Sign-In, Sign-Out and/or Assignment of Assets
- IoT Device and Data Management with Solution Customisation

Belt Tag Features



Easy to carry and charge



No charging socket to ensure best ingress protection



Utilises the same Charging Bank Infrastructure as Roobuck Cap Lamps



World's safest and most reliable Panasonic battery



Manufactured to quality management standard ISO/IEC 80079-34

Product Specifications



Ingress Protection Rating
IP66/IP67



Running Time
30+ h



Charging Time
10 h



Battery Capacity
6 AH



Weight
160 g



Dimensions
79 x 63 x 52 mm

Technology



WiFi 802.11 b/g/n



Bluetooth V4.2, BLE



IMU for your movement data collection and personnel safety applications

Certifications



CE



RCM



FCC ID:
2BDKTB6WB



ICASA ID:
TA-2023/2699

Charging Banks for 8/35/53



Integration Specifications

- MQTT Compatible
- API Available
- LED Flashing Modes Configurable

User Interface

- Duress alert and Evacuation alert
- Send & receive preconfigured messages
- Configurations display
- Time display
- Battery life display

Display

- Type: OLED
- Size: 0.96 inch / 2.44 cm
- Colour: White text on black background
- Pixels: 128 x 64

Alerts

- Warning/illumination Light with two LEDs and frosted transparent cover
- Audio Buzzer
- Vibration Alert

RPT6A-WB

WiFi/BLE Rechargeable Portable Tag

The Portable Tag utilises the same hardware as the Belt Tag but has firmware designed for installation on vehicles or assets. It is not worn by personnel. It can be installed in a charging unit inside a vehicle for vehicle tracking. It can also be attached to a portable machine, tool or asset to track these objects.

Attachment/Mounting accessories can be provided. The device firmware can be customised and Over-the-Air updated to meet the functional requirements to accelerate your digital road map.

RBT6A-* / RPT6A-*

Rechargeable Belt Tag & Portable Tag

Other than WiFi/BLE, Belt Tags and Portable Tags come with other wireless technologies. The * in the model number will be replaced with the following letters corresponding to the technology:

W	WiFi (2.4GHz) for Tracking, Emergency & Duress Call	D	DSRC (802.11p) for Collision Avoidance
L	LTE (Cat M1) for Tracking, Emergency & Duress Call	M	Multiple Proprietary 3rd party Wireless Tags
B	BLE for location IDs, asset locationing, light control, sensor data log	O	LoRa to be released soon
U	UWB for Collision Avoidance	Please note that some wireless tag combinations cannot exist in the same enclosure	

Some Models are currently under development. Please contact Roobuck for details.

IoT Device Charging Options R00BUCK

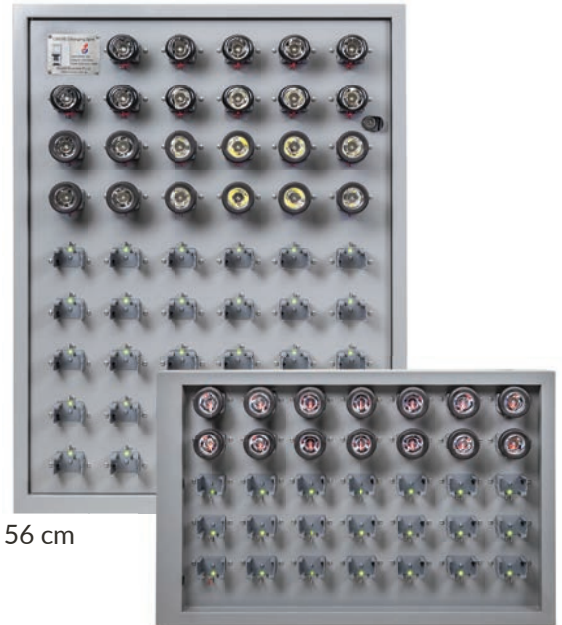
CB53X/CB35X - Charging Bank For 53/35 IoT Cap Lamps, Belt Tags and Portable Tags

Features

- Automatic over-load protection – cuts off the circuit when Cap Lamp battery is fully charged
- Label groove
- Padlock bracket
- Charging Connection Indicator
- Includes wall mounting kit
- 2 x foot pads for CB53E
- Circuits are easily accessible for servicing

Specifications

Input	240 VAC
Dimensions	CB53X: 84 x 13 x 110 cm CB35X: 87 x 11 x 56 cm
Weight	CB53X: 31 kg CB35X: 17 kg



CB8X - Charging Bank For 8 IoT Cap Lamps, Belt Tags and Portable Tags



Features

- Portable, Wall Mountable, Vehicle Installation
- Locking Plate is optional extra (CB8X-LPU)
- Charging Connection Indicator
- Automatic over-load protection – cuts off the circuit when Cap Lamp battery is fully charged

Specifications

Input	240 VAC or 12-24 VDC
Dimensions	33 x 21 x 5.5 cm
Weight	1.1 kg

Individual Chargers & Accessories

- MCX:** Single Mains Charger - EU, UK, AU, USA
UCX: Single USB Charger



V2X-DSRC Cordless Cap Lamp

Patent App No: 2023248110

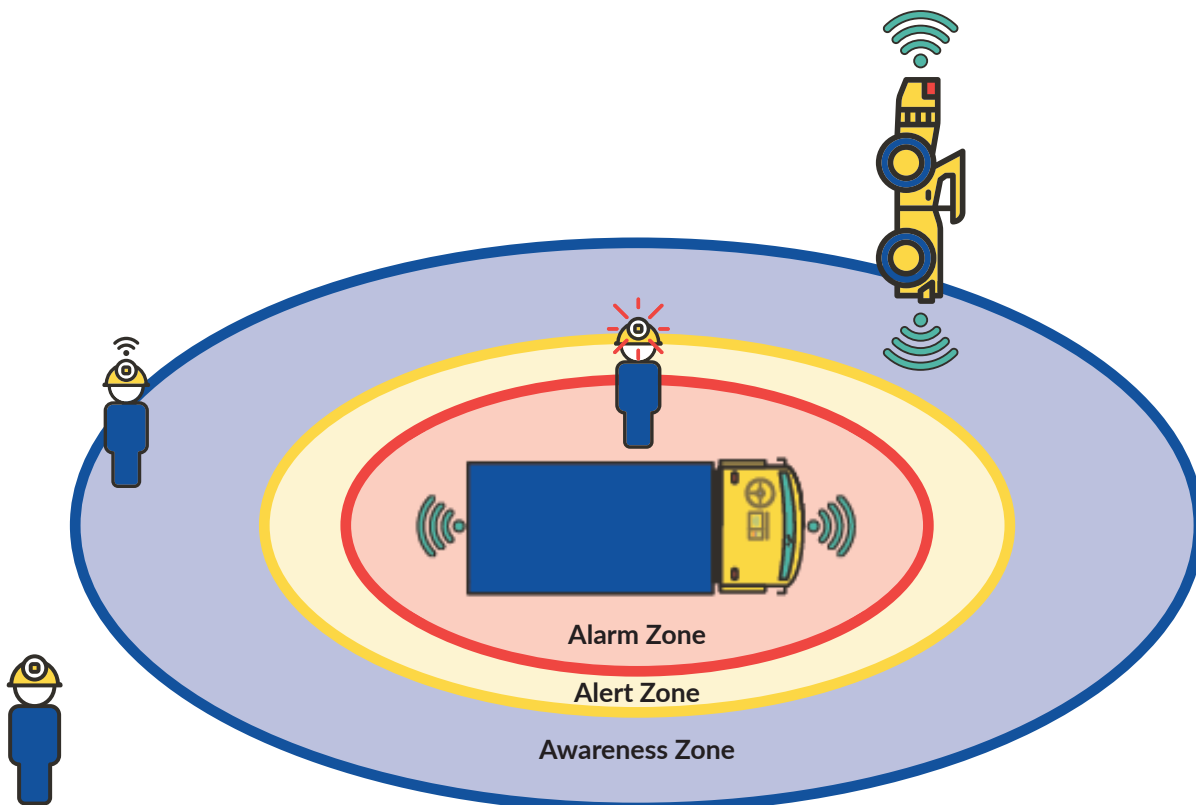
Enabling Safer Working Conditions

Vehicle related accidents are a leading cause of injury for mine sites worldwide. Collision Avoidance Systems (CAS) or Proximity Detection Systems (PDS) can provide critical information/alerts to pedestrians and drivers or enable intervention controls which prevent these incidents occurring. Roobuck supplies both vehicle and personnel CAS components using a variety of high precision technologies such as Ultra Wide Band (UWB) and Dedicated Short Range Communications (DSRC) (802.11p).

Roobuck supplies V2P (Vehicle to Pedestrian) compatible cordless cap lamps so that personnel are detected by vehicles before a collision occurs. The V2X-DSRC Cordless Cap Lamps are 802.11p standard compatible and enable personnel to be detected by Vehicle to Everything (V2X) systems installed on vehicles. The cordless cap lamps are ideal for use in an underground environment as they can be detected up to 30 metres around corners and do not require line of sight with a vehicle to be detected. Moving vehicles can detect personnel wearing DSRC cordless cap lamps and other moving or stationary vehicles. This early warning system prevents accidents, potentially saving lives and preventing downtime.

The collision detection zones are fully configurable, allowing our solution to be customised to meet site specific requirements:

- Blue Zone is Awareness and can be 40-60 m
- Yellow Zone is Alert and can be 20-40 m
- Red Zone is Alarm and can be 0-20 m



How Does This Work?

Our cap lamps utilise 802.11p DSRC technology in conjunction with WiFi and BLE to enable integration into comprehensive V2X tracking solutions. The embedded DSRC module implements flashing warning signals to inform the wearer that there are vehicles in their Awareness, Alert, Alarm zones. At the same time the drivers of the vehicles are informed of people in their Awareness, Alert, Alarm zones.

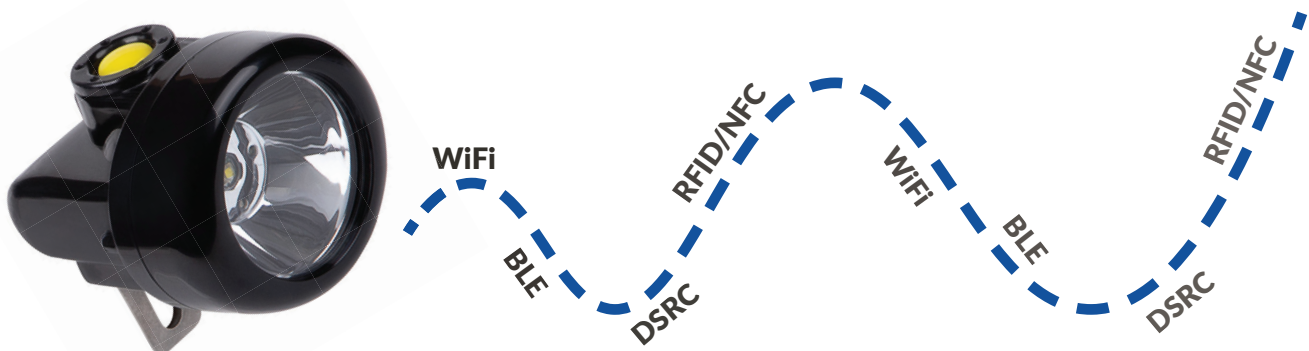
In situations where drivers of vehicles don't have a good view of people and other vehicles in their pathway, the V2X solution significantly reduces the risk of collisions that could result in injuries or damage to assets. The DSRC Cap Lamp Solution includes a configuration, update and maintenance dashboard. Data collected by the V2X solution can be used for:

- centralised reporting of live vehicle and personnel location
- in-vehicle traffic management advice to optimise production workflows
- comprehensive incident analysis, production tracking and centralised co-ordination
- equipment & system health checks, equipment usage, tracking when vehicles are in use
- monitoring current or last known location

The deployed V2X solution includes the Vehicle Operator's Display where:

- Remote Objects are displayed within the relevant zone, giving them the relative distance using zone and direction ahead or behind the vehicle
- Remote Objects are identified as either people or vehicles, allowing for efficient communication
- Audible alerts can be triggered for critical situations and when objects enter the Alarm Zone

As the DSRC cordless cap lamp include WiFi and BLE capabilities, it can be used for other functions including data forwarding, tracking, traffic management, evacuation and alert management.



V2X-DSRC Cordless Cap Lamp

Technology



DSRC 802.11p standard compatible



WiFi 802.11 b/g/n



Bluetooth V4.2, BLE



UHF 860 - 960 MHz RFID can be integrated into tracking, registration & access control systems



13.56 MHz for use with your Kiosk, Digital Tagboard and Inventory solutions



IMU for your movement data collection and personnel safety applications

Cap Lamp



Three operating modes – Main, High-Beam, Auxiliary



Adjustable beam angle to point wherever you look



Lightweight, comfortable and ergonomic



Rugged casing made from GERMAN FRAS material for rough handling & wide ambient temperature range



World's safest and most reliable Panasonic battery



Made from Top Brand, high quality components and parts

Specifications



Running Time
14 h Main Mode



Charging Time
11 h



Weight
165 g



IP Rating - IP67
Submersible in water up to 1m for 30min

Charging Banks for 8/35/53 Cap Lamps

Roobuck Pty Limited

ABN 68 130 073 451

Headquarters:

Suite 6, 20 West Street
Brookvale, NSW 2100
Australia

Phone: + 61 2 9938 1550

Fax: +61 2 9939 8532

Email: info@roobuck.com.au

Web: roobuck.com.au

Other Australian Catalogues

Product Catalogue for Underground
Coal Mines

Product Catalogue for Surface Operations
and Industrial Applications

Product Catalogue IECEx Group II for
Petrochemical Environments