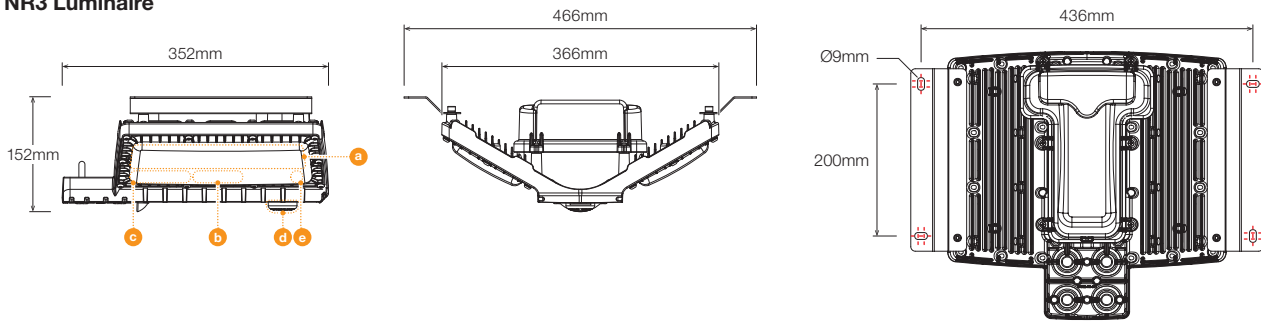


TNR3 Luminaire



- a Main LEDs (dual alternating CCT)
- b RGBW Indicator
- c EM LEDs
- d EM Test Button
- e Red LED Indicator (Mains Presence)

Technical Specifications

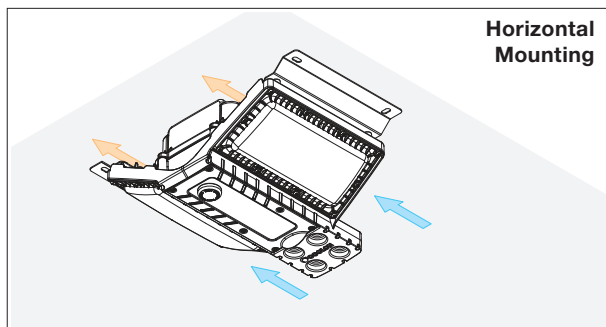
VOLTAGE IN	POWER	IP RATING	IK RATING
200 – 240VAC 50/60Hz, 190 – 250VDC	68W Max	IP66	IK09
OPERATING TEMPERATURE	STORAGE TEMPERATURE	STORAGE SHELF LIFE*	
0°C ≤ T _{amb} ≤ 50°C	0°C ≤ T _{amb} ≤ 45°C	Up to 12months @ 20±5°C, Up to 6months @ 0 to 15°C or 25 to 45°C	

* Shelf life is defined as time when the Battery Isolation Switch is placed in OFF position after the product had completed a charge cycle. A factory charge cycle is completed prior to the unit being dispatched. Units stored for periods exceeding the shelf life need to undertake a charge cycle within the prescribed time to ensure battery health, see Storage Shelf Life section of the installation manual.

INSTALLATION INSTRUCTIONS

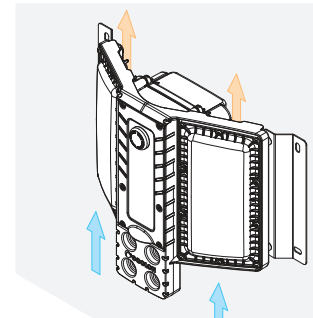
Step 1

Choose luminaire position and orientation. When choosing the location of TNR3 luminaire, please ensure that sufficient clearance is allowed for the airflow through the heatsink. Avoid blocking the air vents.



Vertical Mounting

In a vertical mount, mount the TNR3 in the following orientation to maximize the airflow through the heatsink.



Step 2

Remove the junction box lid (6x TX25 Torx captive screws) proceed to connect wires as required.

See TNR3 operating modes for wiring/operation options.

Proceed to connect wires as required.

You can secure the cable using the plastic clamp.


Conductor Requirements


CONDUCTOR SIZE

1 – 2.5mm²

CABLE OD MIN/MAX

7mm/13mm

 24mm wrench required for tightening the cable gland

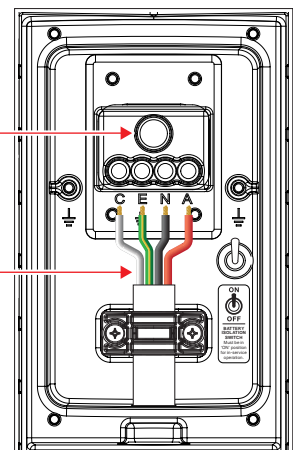
 Housing is earthed internally.

Emergency Condition Test Button

Optional Control Wire

Luminaire can be digitally switched via BitCortex

The Control terminal must be linked to the Active terminal via bridge link.

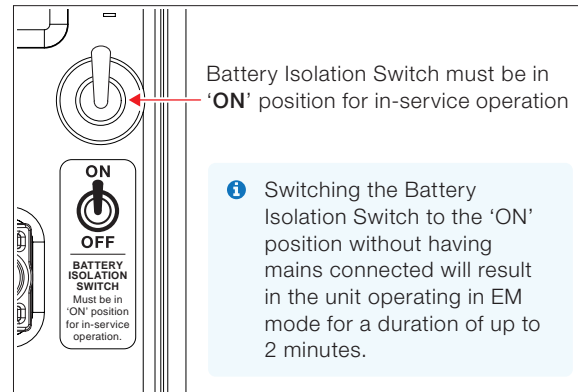


INSTALLATION INSTRUCTIONS (CONTINUED)**Step 3**

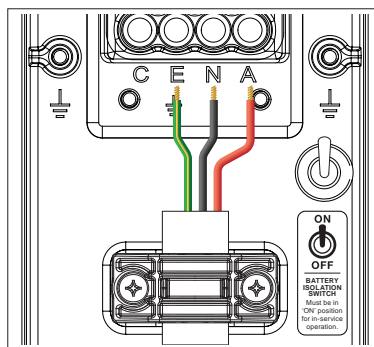
Put the Battery Isolation Switch in the 'ON' position if the unit is expected to be commissioned or put In-Service within the next **24-hours**. This 24-hour window may be extended up to 14 days if a Battery Charge Cycle (see respective section) was completed within three months prior to the installation.

Switching the Battery Isolation Switch to the 'ON' position will initiate the EMBH "TEST" mode, where the unit performs a self-check and enables the Battery Module to supply power to LEDs for a duration of up to 2 minutes. This indicates that the battery is functional and in working order.

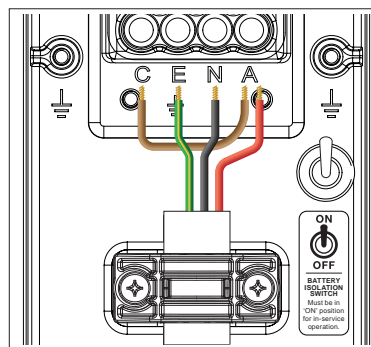
The Battery Isolation Switch must be left in the 'OFF' position if the above conditions cannot be met. Failing to do so may lead to battery depletion below a recoverable level. This type of failure is not covered under warranty.

**Step 4**

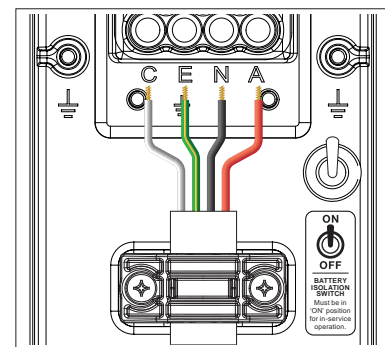
Reattach the junction box lid (6x TX25 Torx captive screws).
Ensure the cover lanyard is not caught between the internal test button and cover.

OPERATION**Operating Modes**

NON-MAINTAINED
Emergency use only
3 Wires Constant Active Only



MAINTAINED
Always ON*
3 Wires Constant Active Only



SWITCHED
Conventional luminaire use
with emergency backup
4 Wires Constant Active
and Switched Active

OPERATION STATE	ACTIVE	CONTROL	LUMINAIRE STATE	DESCRIPTION
Non-Maintained	ON	N/A	OFF	Main LEDs is OFF.Red LED indicator will indicate mains presence with Red Indicator LED ON.
Non-Maintained	OFF	N/A	ON-EM	Main LEDs is OFF. EM LEDs is ON (power supplied from battery). Red LED Indicator will not be visible.
Maintained	ON	ON (Link)	ON	Main LEDs is ON. Red LED indicator will indicate mains presence with Red Indicator LED ON.
Maintained	OFF	OFF (Link)	ON-EM	Main LEDs is OFF. EM LEDs is ON (power supplied from battery). Red LED Indicator will not be visible.
Switched	ON	ON	ON	Main LEDs is ON. Red LED indicator will indicate mains presence with Red Indicator LED ON.
Switched	ON	OFF	OFF	Main LEDs is OFF.Red LED indicator will indicate mains presence with Red Indicator LED ON. Any induced voltage on the Control wire should be no greater than 10V when the Control is OFF.
Switched	OFF	ON or OFF	ON-EM	Main LEDs is OFF. EM LEDs is ON (power supplied from battery). Red LED Indicator will not be visible.
Switched**	ON	Digital ON	ON	Main LEDs is ON. Red LED indicator will indicate mains presence with Red Indicator LED ON.
Switched**	ON	Digital OFF	OFF	Main LEDs is OFF. Red LED indicator will indicate mains presence with Red Indicator LED ON.
Switched**	OFF	Digital ON or OFF	ON-EM	Main LEDs is OFF. EM LEDs is ON (power supplied from battery). Red LED Indicator will not be visible.

* Unless switched digitally.

** Via BitCortex application, gateway required. The Control terminal must be linked to the Active terminal via bridge link.

OPERATION (CONTINUED)

Commissioning / Put In-Service

The commissioning of the TNR3 involves the following:

1. Verify that the TNR3 is installed and wired appropriately as per the Installation Instructions.
2. Ensure the Battery Isolation Switch is in the 'ON' position in accordance with **Step 3** of the Installation Instructions.
3. Supply mains power continuously for at least 16 hours.
4. Conduct the Commissioning EM Operation test by disconnecting the mains power. The unit is deemed to have passed the test if light is produced for a minimum of 120 minutes.

The unit is considered to be **In-Service** once it is provided a minimum of 16 hours of uninterrupted mains supply following the Commissioning EM Operation test.

Testing (In-Service)

There are 2 ways to test the TNR3 for EM Operation as outlined below.

NOTE: The unit needs to complete the Commissioning EM Operation test prior to undergoing In-Service EM testing.

1. Test Button
 - a. Press the Test Button to interrupt mains supply to the TNR3.
 - b. The TNR3 is deemed to have passed the test if the Red LED Indicator is not visible and Emergency Light is produced.
 - c. Release the Test Button to allow mains supply to energize the TNR3 and revert its operating state appropriate for the wiring configuration.
2. In-Service EM Test

NOTE: The TNR3 should have a minimum of 16 hours of uninterrupted mains supply prior to the In-Service EM Test.

- d. Disconnect power to the TNR3, the Red LED Indicator will stop illuminating and the unit will provide Emergency Light.
- e. The TNR3 is deemed to have passed the test if it produces light for 90 minutes.
- f. Reconnect power to the TNR3. It will revert to its operating state appropriate for the wiring configuration.

Power Interruption

The TNR3 is designed to provide reliable Emergency Light in the event of a power outage. Users can expect a minimum of 90 minutes of Emergency Light during **In-Service** operation when power is supplied for a minimum of 16 hours prior to the event.

If an area needs to be accessed prior to the TNR3 completing the 16-hour charge period, the Coolon App can be used to identify the TNR3 unit in the area and determine its calculated Emergency Light runtime – see "Predicted Duration" in the app. This allows the operator to determine if the emergency light output duration will be sufficient for their task in the event of a power interruption/outage.

If the TNR3 is expected to be deenergised for more than 7 days, the Battery Isolation Switch must be set to the 'OFF' position. This will prevent the TNR3 battery from depleting below the recoverable level due to the prolonged power interruption. Failing to do so may result in irreparable damage to the battery, which is not covered under warranty.

Storage / Removal from In-Service

The Battery Isolation Switch must be set to the 'OFF' position if the TNR3 is to be removed from In-Service operation for storage, transportation or any other reason. Please ensure the TNR3 has had a minimum of 16 hours uninterrupted mains power supplied prior to this. Take note of the date the TNR3 is taken out of service and observe the requirements set in the Storage Shelf Life section.

Storage Shelf Life

The TNR3 has a storage shelf life of up to 12 months when stored at a temperature of $20\pm5^{\circ}\text{C}$ after dispatch from the factory.

Storage temperatures outside of $20\pm5^{\circ}\text{C}$ but within the specified unit operating temperature limit will decrease the product shelf life to 6 months. The TNR3 should be put through a Battery Charge Cycle if it cannot be commissioned within the prescribed shelf life. Following the Battery Charge Cycle, the TNR3 can be stored for a further period appropriate to the storage temperature.

Failure to comply with the above requirements may result in irreparable damage to the battery since such a state would permanently alter the battery chemistry. This type of failure is excluded from the warranty.

OPERATION (CONTINUED)

Battery Charge Cycle

1. Connect A (Active), N (Neutral) and E (Earth) terminals of the unit to mains voltage. Control line remains unconnected.
2. Turn the battery isolation switch to the ON (connected) position.
3. Energize the unit and allow to charge for 16 hours. Red LED Indicator should be visible (ON).
Flashing Red LED Indicator means battery disconnected or a battery fault.
4. De-energize the unit and disconnect mains supply.
5. Turn the battery isolation switch to the OFF (disconnected) position.
6. Record the date of the Battery Charge Cycle.
7. Pack the unit for storage or proceed to the next operation / installation step.

Battery Replacement Procedure

The TNR3 emergency LED luminaire is designed to operate providing specified emergency operating time using the in-built battery for the life of the product. As a result, there is no field battery replacement capability.

Extended Functionality

As part of the Brilliant Connected Lights (BCL) series, the TNR3 supports many extended functionalities to improve site visibility, situational awareness, and general productivity. The key functions below can be configured and controlled via the BitCortex webapp when a gateway is present:

- Luminaire
 - Identification (luminaire will flash)
 - Meta data capture (assigned location, alias etc)
 - Time from factory dispatch
 - Alarms/alerts
 - Historical data
- Main LEDs
 - Dynamic colour switching (Amber or White)
 - Dim level
 - ON/OFF
 - Behaviour on sensor input*
- EM LEDs
 - Battery health
 - Predicted duration
 - Power outage history
 - Emergency operation logging for AS2293 test and reporting
- RGBW Indicator LEDs
 - Various colours available (colour palette defined in the Bit Cortex UI)
 - Frequency
 - Trigger

NOTE: The TNR3 must be within 30 meters (line of sight) of either a gateway or from a BCL chain of luminaires which have connection to the gateway.

- Additionally, the TNR3 together with other BCL enabled luminaires mesh together autonomously to form a IoT backbone* for:
 - Asset Tracking & Monitoring
 - Personnel tracking
 - Machine condition monitoring
 - Electronic interface

* Additional wireless IoT devices purchased separately.

OPERATION (CONTINUED)**Troubleshooting****Red LED Indicator is flashing**

Flashing Red LED Indicator means battery disconnected (Battery Isolation Switch is in the OFF position) or a battery fault.

The unit does not turn off when the Switched Active / Control line is de-energized

This may be one of two common reasons, either

- a. The induced voltage at the Control terminal is sufficiently high to signal the unit that the switch is still on. Check the voltage at the Control terminal or the Switched Active line to ensure it is below 10V.
- b. The Constant Active and Switched Active lines are wired into wrong terminals. Having a Switched Active line connected to the Active terminal will give the impression that the TNR3 is operating correctly, however, when the Switched Active line is deenergized, the unit will interpret that action as a power loss and will start to provide Emergency Light. An inspection of the wiring would be able to identify if this is the case, alternatively, if the unit does switch off up to 2 hours after the line is deenergized, this would be a clear indicator of incorrect wiring. Under normal working "Switched" conditions, when the Switched Active line is deenergized, the TNR3 will stop producing light and the Red LED Indicator will be green (unless triggered) indicating the presence of mains at its Active terminal.



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! IMPORTANT

Primary use: conveyor light for commercial and industrial applications. The light source of this luminaire is not replaceable, when the light source reaches its end of life the whole luminaire shall be replaced.

- Read through this manual before installation
- Handle the product with care
- The product must be grounded
- The product must be installed by a suitably qualified person
- Do not stare at operating lamp, may be harmful to the eyes

- Turn OFF the power before installation and maintenance
- Make sure the product is securely installed
- The housing might become hot after operation
- Keep optical face clean



