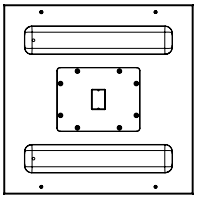
raytec

SPI WARRIOR
Recess Range - Installation Guide

This installation guide provides instructions for installing WARRIOR series of industrial Recess luminaires.

Text in italics is specific for emergency variants.

Overview



1 Safety Instructions

2 Installation

3 Maintenance

4 Technical Specification

Important Information

The WARRIOR series of industrial luminaires are specialist devices, certified for use in specific operating environments.

The units must be installed in accordance with these instructions, must be correctly certified for the specific operating environment and must be installed by suitably qualified personnel.

If you have any queries about the installation or the certification of the unit – please contact Raytec for immediate assistance and advice.

1285-D-00008-Rev 3

1. Safety Instructions

1. Read this leaflet carefully before commencing to install the WARRIOR unit and retain it for future use. Installation can only be carried out by suitably qualified personnel.

2. Check the certification to ensure that the mains supply and ambient temperature present are suitable for the environment the unit is being installed in.

3. If the WARRIOR unit is to be installed in areas of high vibration, please consult with Raytec.

4. Externally the WARRIOR unit housing is constructed from aluminium and polycarbonate outer optic, stainless steel brackets/fasteners and silicone gaskets, internally there are many non metallic components. The end user must ensure that these materials are suitable for the environment the WARRIOR unit will be installed in.

   Plastic components may be cleaned with water containing a small amount of detergent, followed by a clean water wash. Chemicals/ oils that come into contact with plastic parts may cause stress cracking and premature component failure.

5. Check certification nameplate on cover of the luminaire to ascertain type of threaded cable entry on the luminaire. Select suitably certified cable glands and stopper plugs, the cable entry devices selected must maintain the IP rating of the luminaire.

6. The incoming mains cable should not exceed a temperature rise of 27°C above the ambient conditions; select suitable cable.

7. When the unit is installed correctly and in accordance with these installation instructions it will not harm humans or animals.

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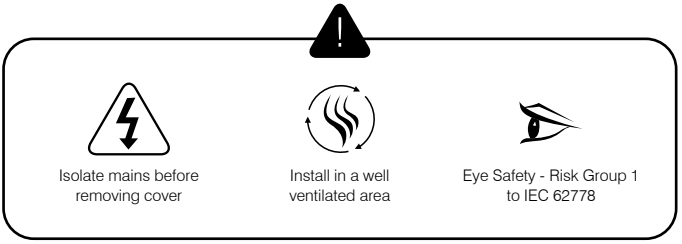
8. Before installing emergency luminaires please check the last charge date of the battery. This is shown on the external product packaging and also on the battery label, alternatively consult date shown on the declaration at the back of this leaflet. If the last charge date was in excess of 3 months (if stored at 5°C to 25°C) or 1 month (if stored outside this range) from date of installation, please consult Raytec document 0010-D-00001 Battery Handling Guide.

9. The luminaire can be installed to interface with fire resistant ceiling systems to maintain a B15 SOLAS fire rating; the integrity of the ceiling and insulation must be maintained using suitable insulation materials. The ceiling/fitting and insulation should be continuous (without any gaps), care must be taken to maintain this classification.

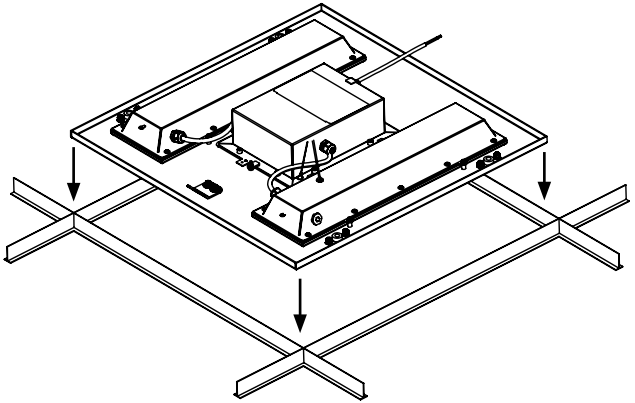


2. Installation

Mounting WARRIOR Unit

1. The rear of the unit has 4 or 6 sets of M6 fixing points, a range of mounting accessories are available including a pull up / plasterboard ceiling fixing kit, surface mount brackets, secondary retention mount eyelets. Please consult www.raytecled.com for further details.

2. The product is delivered suitable for laying in to a standard recessed ceiling grid. See product dimensions below. For other mounting applications please refer to accessory installation instructions or overleaf for Swing Arm Kit (SPX-BKT-RC-SW4) Installation method.



3. The PSU enclosure can be accessed either from the front or rear of the luminaire.
    - For front access loosen the M4 screws securing the cover and lower the cover.
    - For rear access loosen the M4 nuts securing the PSU enclosure to the luminaire. Rotate the PSU enclosure and remove cover as above. Rotate the PSU enclosure and remove cover as above.

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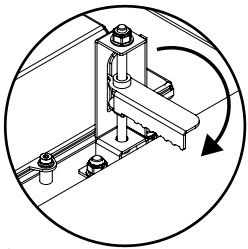
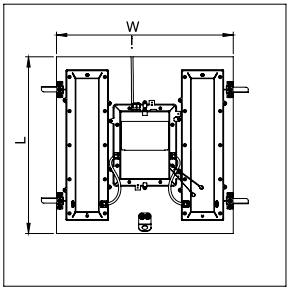
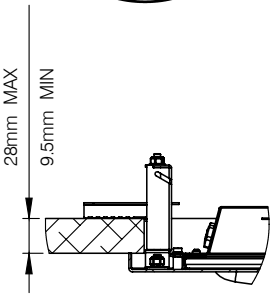
Mounting WARRIOR Unit with Swing Arm Kit (SPX-BKT-RC-SW4)

1. The rear of the unit has 4 or 6 sets of M6 fixing points, mount the Swing Arm brackets to the product using the fasteners provided ensuring correct orientation of the bracket as below. Tighten to 3Nm.



2. If mounting into a solid or plasterboard ceiling the ceiling cut out dimensions and adjustment range for ceiling thickness are shown below for the modular variants.



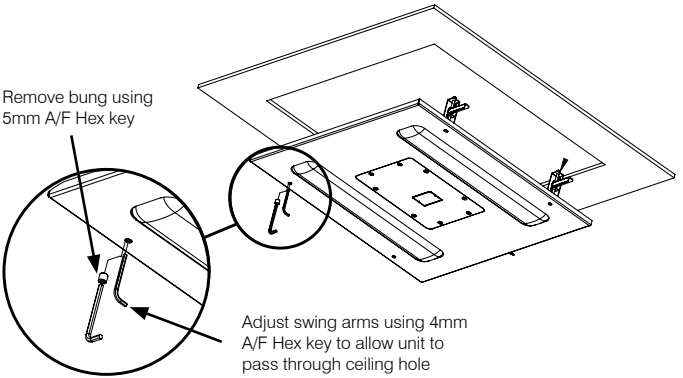


Ceiling Cut Out Dimensions

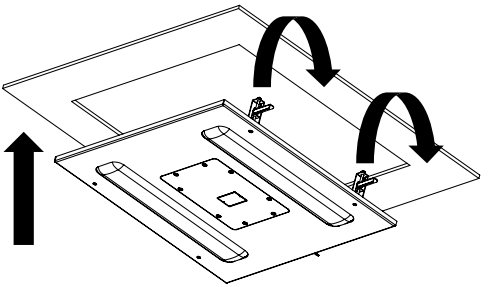
Product	W (max/min)	L (max/min)
RCM66	590mm-570mm	590mm-570mm
RCM312	270mm-290mm	1190mm-1170mm
RCM612	590mm-570mm	1190mm-1170mm

3. If mounting into a solid ceiling without access to the cable gland entries after install it is advisable to make off the cable and glands before installing the unit in the ceiling.

4. Remove the bungs in each corner from the front side and retain.



5. To ease installation adjust the swing arms on one side of the product so that they are in the open position. Leave the swing arms on the opposite side in the closed position. Offer up the product to the aperture and hook the open swing arms over solid ceiling or ceiling T. Pivot the luminaire into position and adjust the swing arms on the opposite side out to retain the product in the ceiling.



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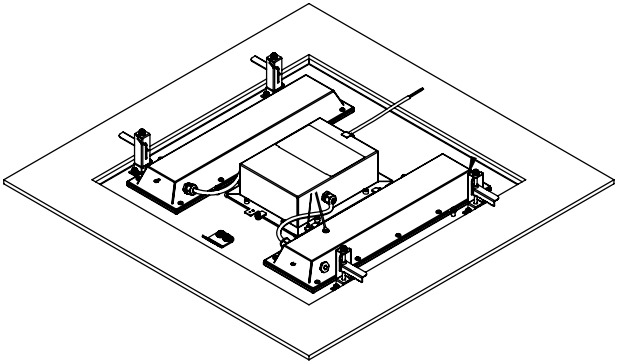
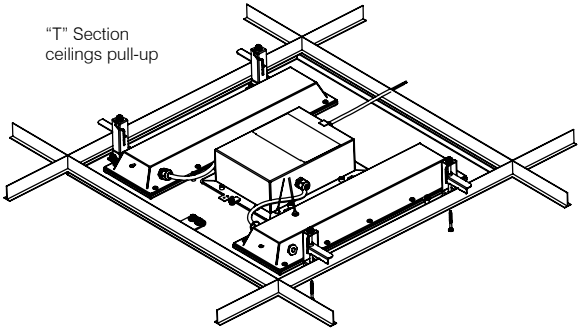
6. Tighten swing arms until resistance is felt and then tighten to 3-3.5Nm. Ensure the product is secured in the ceiling and replace bungs.

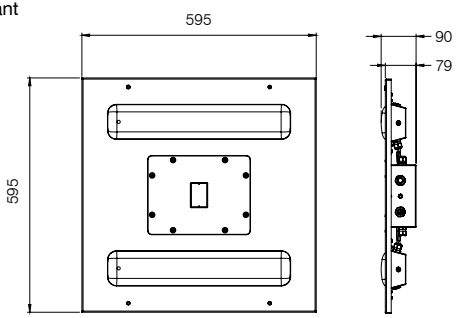




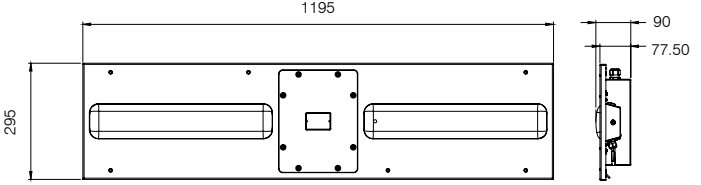
7. If required seal gap between luminaire flange and ceiling with a bead of silicone sealant of appropriate grade for application.

SPARTAN Unit Dimensions

600 x 600 Variant



1200 x 300 Variant



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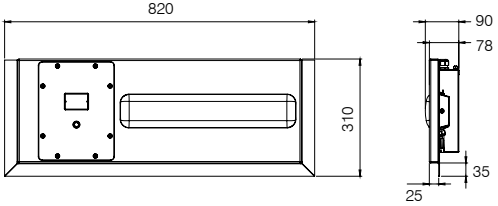
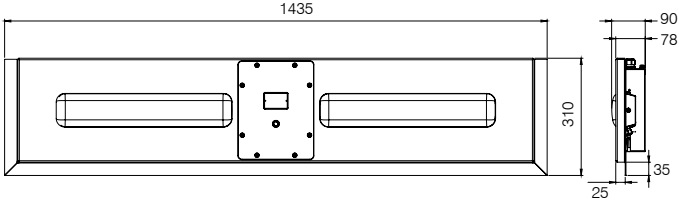
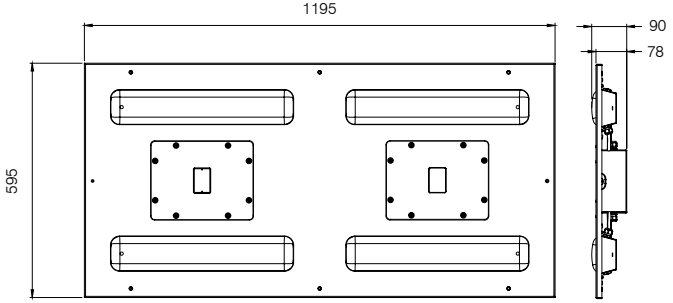
275 x 800 Variant



275 x 1400 Variant



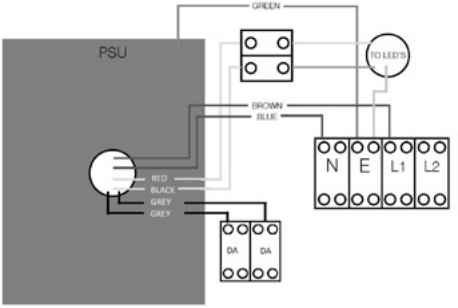
1200 x 600 Variant



Typical Wiring Diagrams

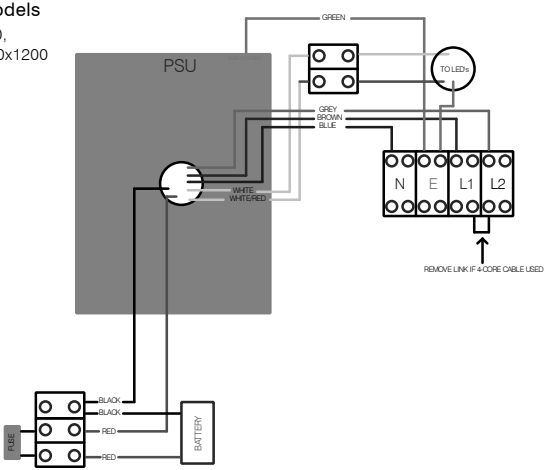
Standard Models

600x600, 275x800,
275x1400 and 300x1200



Emergency Models

600x600, 275x800,
275x1400 and 300x1200



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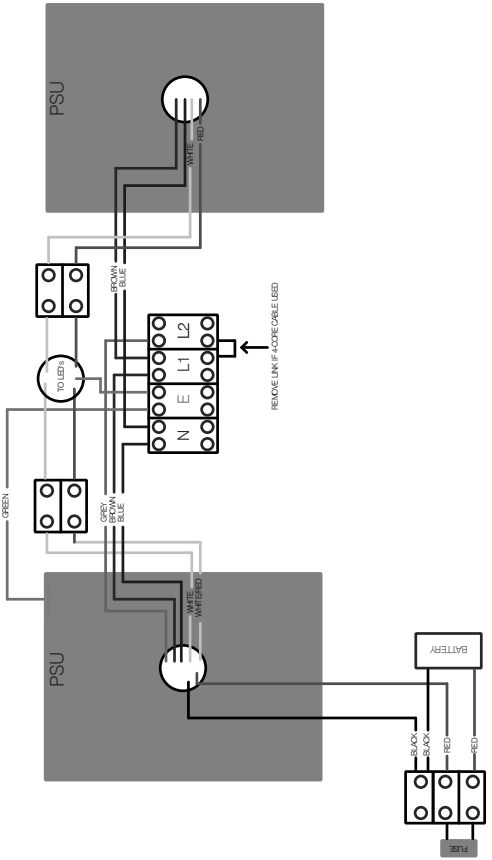
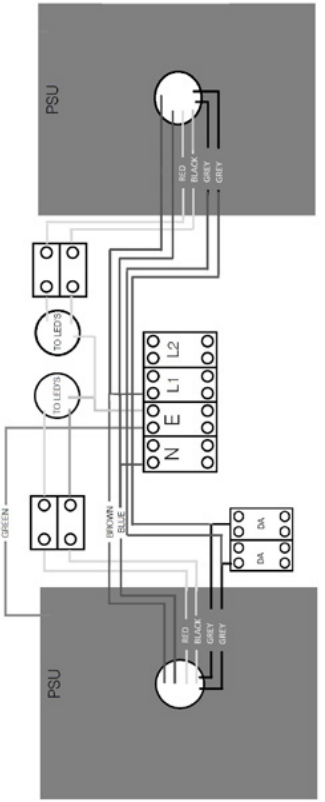
Emergency Models

1200 x 600



Standard Models

1200 x 600



1. Wire the Mains cable into the terminal block. Provision has been made for this and identified as the E (Earth), L1 (Live switched), L2 (Live permanent) and N (Neutral) terminals. There are two pairs of contacts for each of these to facilitate a mains cable that can be looped in and out of the unit. The L2 terminals on a standard unit is not electrically connected but allows them to be used on the same circuits as emergency luminaires.

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2. Installer should earth the unit separately – an internal and external earth point are provided as standard.
3. Connect wires to mains supply.
4. If the unit is opened for any reason, disconnect mains – On emergency luminaires there may be more than one mains supply
5. All WARRIOR luminaires have terminal blocks suitable for looping 4mm2 cable, only one cable should be connected to each terminal block connection
6. The battery fuse is located in the PSU compartment, the battery positive is disconnected after final manufacturing testing. When installing the battery positive will need to be reconnected and the unit charged for 24 hours and then discharged (repeated 3 times) to bring the battery up to peak capacity. (Unless an 'EMX' intelligent emergency variant – see notes below). On standard 110-277V versions a 2 pole terminal block is provided for looping in / looping out DALI cables upto 4mm2
7. If a 4 core cable is used on emergency luminaires – L1, L2, N and E the link cable at the front of the terminal block between L1 and L2 should be removed
8. During emergency operation the light output and duration will be determined by the variant purchased
9. Once wiring is complete replace terminal enclosure cover. Ensure gasket is undamaged and no wires are trapped between cover and body. Tighten screws to 1Nm
10. If carrying out Insulation Resistance tests the normal method of insulation testing is to connect Live and Neutral together and test between this point and Earth to prevent the risk of damage to the electronic control gear.

Description	Behaviour	Installation
Maintained Unswitched	The unit is on 100% under normal conditions and is switched to emergency mode in the event of a mains failure.	A single unswitched mains supply is provided the live line connected to L2. The link between L1 and L2 remains.
Maintained Switched	The unit is on or off depending on the switched line under normal operation and is switched to emergency mode in the event of a mains failure	An unswitched mains supply is provided with the live line connected to L2. A switched mains supply is also provided with the switched live connected to L1. The link between L1 and L2 should be removed.
Non-maintained	The unit is off and only comes on in emergency mode in the event of failure in the mains supply	A single unswitched mains supply is provided the live line connected to L2. The link between L1 and L2 should be removed.

WARRIOR Intelligent Emergency Operation Guide

Operation

The light fitting will carry out the following function **automatically** after installation:

- Commissioning Cycle
- Function test
- Self-test

A tri-colour LED indicator displays the light fitting status. The indication colours are shown in table 1.

a. Commissioning Cycle

- Starts automatically after 24 hours of uninterrupted charging. If there is a mains failure in this time the count resets for another 24 hours.
- 3 charge/discharge cycles to optimise battery's full capacity.
- Battery is charged for 24 hours before each discharge cycle.
- No need for manual commissioning

b. Function Test

- Carried out every 7 days.
- Checks the function of the battery, lamp and power supply.
- Lasts for few minutes only.

c. Self-test

- Carried out at a random time every 3 months.
- Checks the battery's capacity and lamp's condition.
- Performs self-recovery for the battery if not at peak capacity.
- Is carried out at 100% load
- Discharges only 2/3 of the battery's capacity.

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LED Indication

LED Indication	Condition
Static Amber	Commissioning in progress
Flashing	Discharge cycle in progress
	LED will flash in relevant colour while discharging
Static Red	Battery defective/Fuse blown
	PSU error
	Battery not at peak capacity
	Light engine failure
No light	Emergency mode activated
Static Green	Commissioning completed

Notes

- The luminaire will switch off momentarily (<0.5sec) during the transition between a test and normal operation.
- If a test was interrupted by a mains failure, the test will be halted, and the unit will enter emergency mode. Once the mains supply is back, the unit will allow 24 hours to recharge the battery before continuing the tests.
- The self-test is carried out at a random time to eliminate the possibility of having more than one unit undergoing the test at the same time.

3. Maintenance

1. It is essential that all WARRIOR units are maintained by qualified personnel.
2. **IMPORTANT**. No modifications are permitted to the unit, all spare parts must be purchased from the manufacturer, unauthorized modifications or spare parts will invalidate certification and make the equipment dangerous.
3. Isolate the WARRIOR unit from the mains supply and allow to cool before carrying out any maintenance work.
4. In the unlikely event of a number of LED's failing, the light engine assembly must be replaced. This is achieved by opening the PSU enclosure and remove the wiring connections to the light engine. Loosen the cable gland and remove the light engine cable from the PSU enclosure. Remove the 4 screws securing the light engine to the front frame and pull the light engine free. Re fitting a light engine is the reversal of the above procedure.
5. The unit has either 1 or 2 independent power supplies located in the terminal chamber covers, in the event that a power supply needs to be replaced the terminal chamber cover should be removed. Take note of the wiring connections and remove all wiring from the PSU. Remove the 2xM6 screws securing the PSU and withdraw from the PSU enclosure. Refitting is the reversal of the above procedure.
6. Disposal of packaging, WARRIOR unit and old LED assemblies/power supplies should be carried out in accordance with national regulations.

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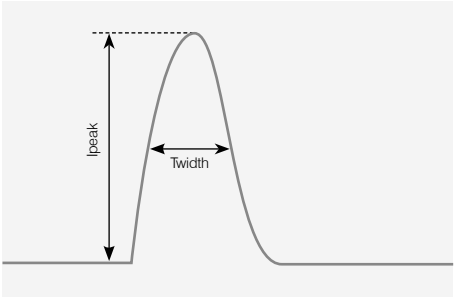
4. Technical Specification

	600x600-STD 1200x300-STD	600x600-EM 1200x300-EM	1200x600-STD	1200x600-EM
Input Voltage	110-277V AC or 18-48V AC/18-69V DC (LV Version)			
Input Current (230Vac, full load)	0.15A		0.3A	
Consumption	23W STD	32W EM	46W STD	56W EM
High Output Version	46W		92W	
Power Factor (230Vac, full load)	>0.95			
Mains Frequency	50/60Hz			
Total Harmonic Distortion (230Vac, full load)	<10%			
IP Rating	IP65			
Weight (std)	7Kg	7.8Kg	14Kg	15.6Kg
Dimensions	See previous pages for line diagrams			

Inrush Current Typical Curve



Max number of fittings allowed per MCB (Based on 230V)

MCB Type	Rating	600x600, 275x800, 275x1400, 300x1200 STD / HO	600x600, 275x800, 275x1400, 300x1200 EM	600x1200 STD	600x1200-EM / 600x600, 275x800, 275x1400, 300x1200 HO-EM	600x1200 HO
B	10A	18	17	16	11	7
B	16A	29	28	26	19	13
B	20A	36	35	33	24	16
B	25A	45	44	41	30	20
C	10A	30	25	25	18	11
C	16A	49	40	40	29	18
C	20A	61	51	51	36	23
C	25A	76	64	63	46	28

Product	Inrush Pk / Duration Imax50
600x600, 275x800, 275x1400, 300x1200 STD / HO	23A (136us)
600x600, 275x800, 275x1400, 300x1200 EMX	12A (256us)
600x1200 STD	23A (136us)
600x1200-EM / 600x600, 275x800, 275x1400, 300x1200 HO-EM	29A (152us)
600x1200 HO	46A (152us)

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