rayTEC

SPARTAN

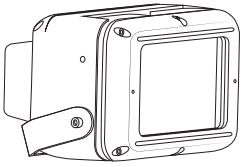
Floodlight Range Installation Guide

CML13ATEX3007 IEC Ex CML14.0001

This installation guide provides instructions for installing the Infra-Red and White-Light SPARTAN SPX series of explosion protected floodlights.

Text in **Bold** is specific for emergency variants

Overview



Important information

The SPARTAN series of explosion protected floodlights 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.

Emergency floodlights will require the fuse to be reconnected upon installation and the floodlight subjected to three 24 hour charge/discharge cycles to bring the battery up to peak capacity.

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

910-M-0094 Rev D

1. Safety instructions

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

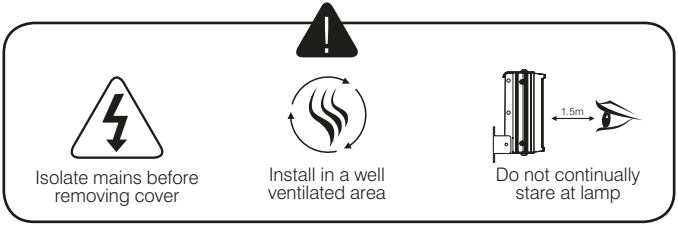
2. Check the certification to ensure that the mains supply and the ambient temperature present is suitable for the unit being installed.

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

4. The SPARTAN unit housing is constructed from marine grade aluminium and toughened glass. The end user must ensure that these materials are suitable for the environment the SPARTAN unit will be installed in; Zone 1 and Zone 2 Hazardous areas.

5. Check certification nameplate on side of floodlight to ascertain type of threaded cable entry on the luminaire. Select suitably certified ATEX/IEC Ex cable glands and stopper plugs, these must be parallel thread, have a minium of 5 full thread engagement and be of a medium/fine tolerance to ISO965-1 and ISO965-3. 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 20°C above the ambient conditions; select suitable cable.

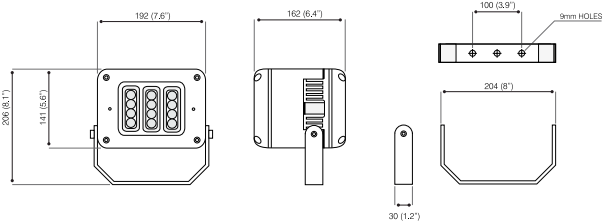


2. Installation

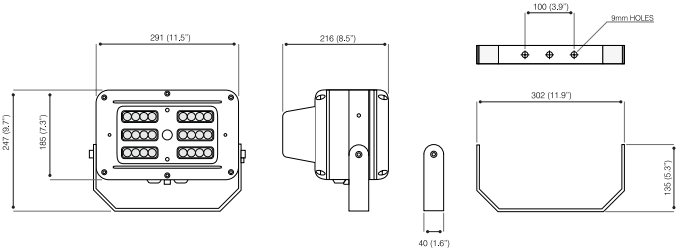
Mounting SPARTAN Unit

1. To meet the requirements of certification a MINIMUM of 2 fixing points must be used, the fixing points must be suitable the conditions of use.

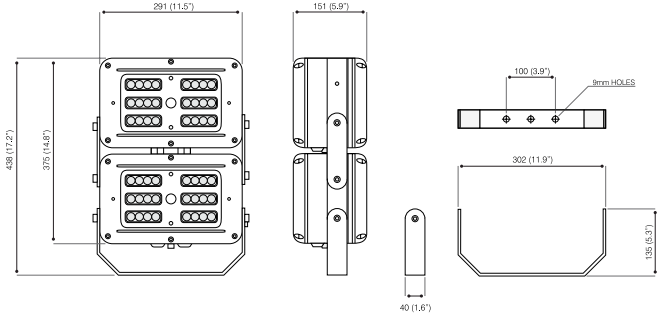
Spartan 12 Floodlight



Spartan 24 **(Emergency Variant Shown)**



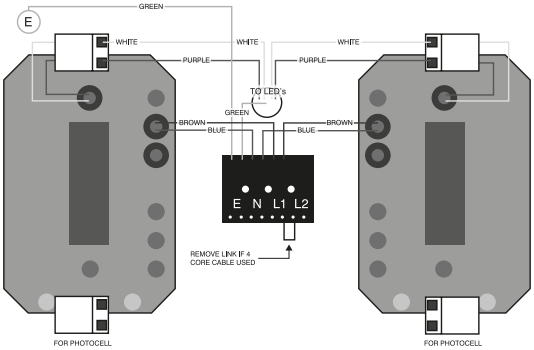
Spartan 48



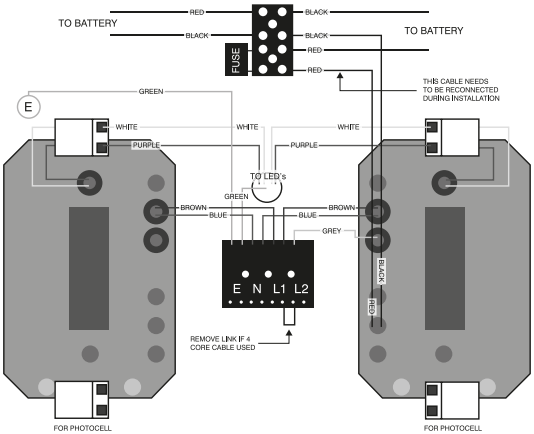
2. The unit may have been supplied with an integrated photocells. Care should be taken when positioning the unit to ensure the sensors are not shielded, is not pointing directly at another light source and is monitoring the general, prevailing light conditions.

3. The SPARTAN floodlight and the mounting bracket is supplied together as a unit. The bolts in the side of the housing shall be removed and used to secure the bracket to the SPARTAN housing, the bracket can be attached in the top or bottom position depending on the mounting application, where possible the cable glands should be kept to the bottom of the floodlight. It is very important that the red fibre washers are fitted between the SPARTAN housing and the mounting bracket. The unit must be aligned first before securing the bracket, on SPARTAN 24 and 48 units a locking screw is provided to lock the luminaire at various angles, the unit can be mounted horizontally or vertically allowing the unit to point up/down or left/right.

Typical wiring diagram – standard luminaires



Typical wiring diagram – emergency luminaires



4. Wire the Mains cable into the terminal block. Provision has been made for this and identified as the E (Earth), L (Live), Ls (Live switched) 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 Ls terminals on a standard unit is not electrically connected but allows them to be used on the same circuits as **emergency floodlights**.

5. Installer should earth the unit separately – an internal and external earth point are provided as standard.

6. Connect wires to mains supply.

7. If the unit is opened for any reason, disconnect mains – **On emergency luminaires there may be more than one mains supply.**

8. All SPARTAN floodlights have terminal blocks suitable for looping 4mm2 cable, only one cable should be connected to each terminal block connection.

9. **Emergency SPARTAN floodlights may have a single green LED fitted adjacent to the incoming cable glands, when illuminated the green LED indicates that the emergency system is healthy.**

10. **The battery fuse located in the power supply lid on emergency variants is disconnected after final manufacturing testing. When installing the floodlight the battery fuse 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.**

11. **If a 4 core cable is used on emergency luminaires – L, Ls, N and E the link cable at the front of the terminal block between L and Ls should be removed.**

12. **During emergency operation the light output and duration will be determined by the variant purchased.**

3. Maintenance

1. It is essential that all SPARTAN units are maintained in accordance with the requirements of the EN60079-17standard: (Electrical apparatus for explosive gas atmospheres – other than mines).
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 SPARTAN 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 tilting the luminaire so that the LEDs are pointing upwards, removing the power supply cover, disconnect the white and violet cable to each power supply, remove the two M8 bolts at the rear of the casting, release the safety cable and pull the light engine assembly clear. Re fitting a light engine is a reversal of the above procedure.
5. The unit has 2 independent power supplies, in the event that a power supply needs to be replaced the cables to the LED and mains terminal block will need to be disconnected, the four M6 bolts released the power supply can then be removed. Fitting a new power supply is a reversal of the above procedure, please note that the power supplies are left handed or right handed and the correct variant will need to be ordered/fitted
6. Disposal of packaging, SPARTAN unit and old LED assemblies should be carried out in accordance with national regulations.

4. Technical Specification

	Spartan 12	Spartan 24	Spartan 48
Input Voltage	110-254V AC		
Consumption	30W max	60W max	120W max
Consumption (Emergency variant)	N/A	65W max	125W max
Power Factor	>0.95		
Mains Frequency	50/60Hz		
IP Rating	IP66/67		
Weight Environment	5kg (11lbs)	9.5kg (20.9lbs)	19kg (41.9lbs)
Weight Environment (Emergency variant)	N/A	11.5kg (25.3lbs)	21kg (46.3lbs)
Dimensions Dimensions	See previous pages for line diagrams		
ATEX and IECEx Rating	See below		

Protection/Certification

II 2 GD Ex em IIC T4 or T5 Gb
Ta -52°C to +55°C
or
II 2 GD Ex em IIC T6 Gb
Ta -52°C to +48°C
Ex tb IIIC T82°C Db
IP66 & IP67
Ta = -52°C to +55°C
110V to 254V AC ONLY

5. Trouble Shooting

1. Ensure the two LED boards are correctly wired to terminal block.
   White to White : Violet to Violet
2. Ensure Mains input is correctly connected.
3. Ensure Mains Input is turned on at the source
4. On emergency variants check fuse to ensure it has not blown
5. If LED panel fails to light is it possible to identify if problem is with LED panel or power supply by swapping LED cables to opposite power supply to help identify problem.

*For emergency variants add –EM to the end of above codes (not available for FL12)

Spartan: White Light

Part Code	Description	Max Lighting Distance*
SPX-FL12-W-1010	Spartan Flood, 12 LED, White-Light, 10˚x10˚	93m
SPX-FL12-W-3030	Spartan Flood, 12 LED, White-Light, 30˚x30˚	46m
SPX-FL12-W-5050	Spartan Flood, 12 LED, White-Light, 50˚x50˚	33m
SPX-FL12-W-120120	Spartan Flood, 12 LED, White-Light, 120˚x120˚	15m
SPX-FL24-W-1010	Spartan Flood, 24 LED, White-Light, 10˚x10˚	132m
SPX-FL24-W-3030	Spartan Flood, 24 LED, White-Light, 30˚x30˚	64m
SPX-FL24-W-5050	Spartan Flood, 24 LED, White-Light, 50˚x50˚	46m
SPX-FL24-W-120120	Spartan Flood, 24 LED, White-Light, 120˚x120˚	20m
SPX-FL48-W-1010	Spartan Flood, 48 LED, White-Light, 10˚x10˚	187m
SPX-FL48-W-3030	Spartan Flood, 48 LED, White-Light, 30˚x30˚	91m
SPX-FL48-W-5050	Spartan Flood, 48 LED, White-Light, 50˚x50˚	65m
SPX-FL48-W-120120	Spartan Flood, 48 LED, White-Light, 120˚x120˚	28m

For emergency variants add -EM to the end of above codes (not available for FL12)
For photocell variants add -PC to the end of the above codes

*CCTV Camera use

Spartan: Infra-red

Part Code	Description	Max Lighting Distance*
SPX-FL12-I-1010	Spartan Flood, 12 LED, Infra-Red, 10˚x10˚	230m
SPX-FL12-I-3030	Spartan Flood, 12 LED, Infra-Red, 30˚x30˚	112m
SPX-FL12-I-5050	Spartan Flood, 12 LED, Infra-Red, 50˚x50˚	80m
SPX-FL12-I-120120	Spartan Flood, 12 LED, Infra-Red, 120˚x120˚	52m
SPX-FL24-I-1010	Spartan Flood, 24 LED, Infra-Red, 10˚x10˚	325m
SPX-FL24-I-3030	Spartan Flood, 24 LED, Infra-Red, 30˚x30˚	158m
SPX-FL24-I-5050	Spartan Flood, 24 LED, Infra-Red, 50˚x50˚	113m
SPX-FL24-I-120120	Spartan Flood, 24 LED, Infra-Red, 120˚x120˚	73m
SPX-FL48-I-1010	Spartan Flood, 48 LED, Infra-Red, 10˚x10˚	459m
SPX-FL48-I-3030	Spartan Flood, 48 LED, Infra-Red, 30˚x30˚	224m
SPX-FL48-I-5050	Spartan Flood, 48 LED, Infra-Red, 50˚x50˚	160m
SPX-FL48-I-120120	Spartan Flood, 48 LED, Infra-Red, 120˚x120˚	103m

For emergency variants add -EM to the end of above codes (not available for FL12)
For photocell variants add -PC to the end of the above codes

*CCTV Camera use

Typircal Spare Parts: 24 - 48 variants

Part Code	Description
SFL-PSUL-STD-T4	PSU Left hand
SFL-PSUR-STD-T4	PSU Right hand
SFL-PSUL-EMER-T4	Emergency PSU Left hand
SFL-PSUR-EMER-TR	Emergency PSU Right hand
SFL-LE-MW-1010	White LED Assembly 10x10
SFL-LE-MW-3030	White LED Assembly 30x30
SFL-LE-MW-5050	White LED Assembly 50x50
SFL-LE-MI-1010	IR LED Assembly 10x10
SFL-LE-MI-3030	IR LED Assembly 30x30
SFL-LE-MI-5050	IR LED Assembly 50x50
W300-PSU-GASKET-MF	Gasket - Power Supply
W300-GLASS-GASKET-MF	Gasket - Glass
W300-LIGHTENGINE-GASKET-MF	Gasket - LED
W300-GLASS-MF	Glass

Declaration Of Conformity With The Atex Directive 94/9/Ec

RayLED Ltd. declares under our sole responsibility that the product(s) listed below conform with the relevant provisions of directive 94/9/EC of 23rd March 1994

Description of Equipment	Spartan range of floodlights – standard and emergency
Notified Bodies	**Sira Certification Services (0518)** Rake Lane Eccleston Chester CH4 9JN
Certificate numbers	CML13ATEX3007 and CML14.0001 Quality Assurance Notification Sira 13 ATEX M592 IEC Ex Quality Assessment Report GB/SIR/QAR13.0018/00
Equipment Marking	II 2 GD Ex em IIC T4 or T5 Gb Ta -52°C to +55°C or II 2 GD Ex em IIC T6 Gb Ta -52°C to +48°C Ex tb IIIC T82°C Db IP66 & IP67 Ta = -52°C to +55°C 110V to 254V AC ONLY

Emergency variants restricted to -20°C

Compliance with the Essential Health and Safety Requirements has been assessed by reference to the following standards -

IEC 60079-0 : 2012	IEC 60079-7 : 2007
IEC 60079-18 : 2009	IEC 60079-31 : 2009

And also 89/336/EEC – Electromagnetic Compatibility

Signed	
Name	Barry Thompson
Position	Head of Hazardous Area Division
Dated	
Serial number	