

UK Type Examination Certificate CML 21UKEX3099 Issue 4
United Kingdom Conformity Assessment

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **Spartan SPX FL** Luminaire**
- 3 Manufacturer **Raytec Ltd**
- 4 Address **Unit 15 Wansbeck Business Park,
Rotary Parkway, Ashington,
Northumberland,
NE63 8QW, UK**

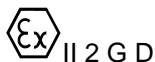
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential reports listed in Section 12.

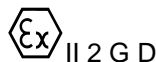
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This UK Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018	EN 60079-1:2014	EN IEC 60079-7:2015+A1:2018
EN 60079-18:2015+A1:2017	EN 60079-31:2014	

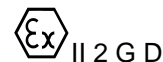
- 10 The equipment shall be marked with the following:

Spartan Power Supply
FL Versions**


Ex eb mb IIC T5/T4 Gb
Ta = -52 °C to +55 °C
Ex eb mb IIC T6 Gb
Ta = -52°C to 48°C
Ex tb IIIC T82 °C Db

BL Versions**


Ex eb mb IIC T4 Gb
Ta = -52 °C to +55 °C
Ex eb mb IIC T5 Gb
Ta = -52°C to +48°C
Ex tb IIIC T98 °C Db

BL Emergency Version**


Ex eb mb IIC T5/T4 Gb
Ex tb IIIC T98 °C Db
IP66 IP67
Ta = -20°C to +46 °C

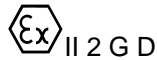



IP66 IP67
Ta = Up to -52 °C to +55 °C
All Emergency variants have a lower ambient of -20°C only

IP66 & IP67
Ta = -52 °C to +55 °C

Marking continued:

Sockets Fitted:

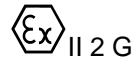


Ex db eb mb IIC T6 Gb

Ex tb IIIC T82°C Db

Ta= Up to -20°C to +40°C*

Socket GHG 54** Fitted:



Ex db eb mb IIC T6 Gb

Ta= Up to -20°C to +40°C

*When alternative enclosure material version of GHG 5118*** socket is fitted ambient range increased -55°C to +55°C.

Universal Power Supply, Extended Input Voltage Universal PSU and DALI Dimmable Universal PSU

FL Versions**



Ex eb mb IIC T4 Gb

Ex tb IIIC T82 °C Db

Ta = Up to -52 °C to +55 °C

IP66 IP67

BL Versions**



Ex eb mb IIC T4 Gb

Ex tb IIIC T98 °C Db

Ta = Up to -52 °C to +55 °C

IP66 IP67

BL Emergency Version**



Ex eb mb IIC T4 Gb

Ex tb IIIC T98 °C Db

Ta = -20°C to +46 °C

IP66 IP67

11 Description

The Spartan SPX FL** luminaire is a range of LED luminaires. There are three sizes available in the range FL12 (Small) FL24 (Medium) and FL48 (Large). All size enclosures are offered as LV (Low Voltage); rated at 18V - 48V AC / 18V – 68V DC or HV (High Voltage); rated at 110V – 254V AC or DC (when using the Universal Power Supply). When using The Extended Input Voltage Universal Power Supply or the DALI dimmable Universal Power Supply, the Spartan SPX FL** luminaires are rated at 110 to 277 V.

The ELV (Extra Low Voltage); rated at 12V AC or DC is also available. The HV luminaires may be supplied with a battery pack and inverter to enable operation in ‘emergency’ mode.

The luminaire enclosure comprises, front, centre, and rear cast aluminium housings that are fixed together with bolts. There are fixing points for a mounting bracket that enable the luminaire to be fixed in any orientation, alternative fixing points are also provided for additional mounting accessories.

Inside the centre housing there are two independent encapsulated power supplies (electronic control gear) and supply /connection terminal blocks. Cable entries are also present for the connection of mains electrical supply. Internal and external earth points are available. Alternatively, a single 700 mA encapsulated Universal Power Supply may be installed. The Universal Power Supply, rated at 110 – 254 V AC or DC, or 110 to 277 V AC or DC with the Extended Input Voltage Universal PSU and DALI dimmable Universal PSU, with a maximum power of 60 W. Any of the Universal Power Supply options may be installed in each of the FL24, FL48 and FL72 enclosures.

The front housing has a soda lime toughened glass lens that is available in clear or coloured options, Suitable for the portable/transportable variant an additional gasket is required to support the glass. Internally the LED's are mounted onto two independent IMS PCBs which are attached to the rear heat sink, each PCB utilises twelve LED's which can be white, infra-red, coloured or a combination. Alternatively LED's are mounted on a single IMS PCB attached to rear heat sink with 96 LED's (arranged in 6 x clusters of 16 LED's) that are either white, infra-red, coloured or a combination. The LED's must be fitted with individual optics, these optics are available in a range of beam patterns to suit the end user application. The LED's/optics are positioned in groups of four, each group of four is in turn covered with an individual clear polycarbonate cover which is then partially encapsulated.

Alternatively the LEDs/optics are positioned in groups of 16, each group of 16 is in turn covered with an individual clear polycarbonate cover which is then encapsulated.

The emergency version utilises a modified rear housing which incorporates a rechargeable battery pack, connection terminal block and encapsulated fuse. An optional encapsulated single green LED can be fitted to the wall of the centre housing which provides the end user with an indication that the emergency system is healthy.

The luminaire is available in three sizes, small, medium and large. The medium variant as described above, the small variant which only utilises one power supply/LED board and the larger variants which consist of a number of medium luminaires fixed together with unions and alternative mounting brackets.

The small, medium and large variants may all be fitted with an optional encapsulated photocell which is located in the wall of the centre housing positioned to suit the customer's application. Also on all variants a 'Vario' holographic diffuser film may be fitted behind the glass to give alternative light patterns. The front and middle/rear housing of the luminaires may be split to allow the LED assembly to be mounted remotely from the power supply/emergency enclosure. An EMC filter module may be fitted as an optional extra, this is an additional encapsulated board, located in place of the terminal block bracket (when fitted).

A Spartan SPX FLT** transportable variant of the luminaire is available which consists of one of the luminaires above mounted in a sturdy frame and supplied with suitable cable and certified ATEX plugs and sockets.

A Bulkhead variant of the luminaire is available, the Spartan SPX BL24. Based on the FL24 floodlight it is modified to utilise a narrower enclosure and run at half of the power. It is offered as standard with the LV version, HV version or as HV emergency where it is supplied with a battery pack and inverter.

The BL24 is designed for wall mounting in any orientation using steel brackets at the back of the luminaire. The enclosure consists of a front cover and rear body and utilises the power supply, inverter, control board and modified light engine from the FL24. The BL luminaire can be offered as transportable and with an optional photocell.

The FL 12, FL 24 and BL 24 are offered as portable variants FLP 12, FLP 24 and BLP 24.

The SPX range may be fitted with a selection of separately certified sockets mounted onto the back of the existing luminaire enclosures. When sockets are mounted onto the portable variants they are fitted with an essential carrying frame.

An optional replaceable antistatic lens film is available across the range.

The equipment may be fitted with alternative labels, when fitted with these labels, the equipment is marketed under the product range name HAZX Nero or WADCO BOSSE LED, carrying the following alternative model names:

Original Model Name	Alternative Model Name	Alternative Model Name
FL12	HAZ-NER-M	WBF34S
FL24	HAZ-NER-S	WBF68S
FL48	HAZ-NER-D	WBF136S
FL72	HAZ-NER-T	WBF204S
BL24	HAZ-NEB-S	WBF34S
FLP12	HAZ-NEP-M	
FLP24	HAZ-NEP-S	
BLP24	HAZ-NEP-B	
FLT24	HAZ-NET-S	

Variation 1

This variation introduces the following modifications:

- i. To assess the Universal Power Supply.
- ii. To correct UKEX standard references.
- iii. To correct UKEX Conditions of Manufacturer

Variation 2

This variation introduces the following modification:

- i. To permit an increase in upper ambient temperature.

Variation 3

This variation introduces the following modifications:

- i. Assessment of Extended Input Voltage Universal PSU.
- ii. Assessment of DALI dimmable Universal PSU.

Variation 4

This variation introduces the following modification:

- i. To introduce an alternate light engine.

12 Certificate history and evaluation reports

Issue	Date	Associated Report	Notes
0	26 Mar 2021	R13817A/00	Issue of Prime Certification
1	02 Sep 2022	R15050A/00	Issue of Variation 1
2	29 Sep 2023	R16926A/00	The issue of Variation 15
3	16 Apr 2024	R17429A/00	Issue of Variation 3
4	06 Dec 2024	R17815A/00	The issue of Variation 17

Note: Drawings that describe the equipment are listed in the Annex.

13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated'.
- ii. A dielectric strength test shall be carried out on all units manufactured in accordance with EN 60079-7, clause 7.1 and EN 60079-18, clause 9.2, at 1560 VAC for 1 minute, or alternatively at 1.2 times this test voltage for 100ms. Alternatively, a 1.4 times d.c. voltage dielectric strength test may be carried out. No breakdown shall occur. Tests shall be carried out between each circuit and earth and between each circuit and the surface of the encapsulated parts.
- iii. A visual inspection shall be carried out on the encapsulated parts to check for damage, in accordance with EN 60079-18, clause 9.1.
- iv. When fitted with universal PSU module, equipment shall only be marked T4 for Gb applications.

14 Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

None.

Certificate Annex

Certificate Number CML 21UKEX3099 Issue 4
Equipment Spartan SPX FL** Luminaire
Manufacturer Raytec Ltd



The following documents describe the equipment defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved Date	Title
910-SD-0001	1 of 6	L	26 Mar 2021	SPARTAN LED FLOODLIGHT Em em
910-SD-0001	6 of 6	C	26 Mar 2021	SPARTAN LED FLOODLIGHT Em em
940-SD-0001	1 of 3	E	26 Mar 2021	SPARTAN BULKHEAD
940-SD-0001	2 of 3	D	26 Mar 2021	SPARTAN BULKHEAD

Issue 1

Drawing No.	Sheets	Rev	Approved Date	Title
910-SD-00061	1 of 1	A	24 Aug 2022	ALTERNATIVE UNIVERSAL OUTPUT POWER SUPPLY FOR FL AND BL PRODUCT RANGES
910-SD-0001	1 of 6	M	24 Aug 2022	SPARTAN LED FLOODLIGHT Ex Em
910-SD-0001	2 of 6	K	24 Aug 2022	SPARTAN LED FLOODLIGHT Ex EM
910-SD-0001	6 of 6	D	24 Aug 2022	SPARTAN LED FLOODLIGHT Ex EM
940-SD-0001	2 of 3	E	24 Aug 2022	SPARTAN BULKHEAD
940-SD-0001	1 of 3	F	24 Aug 2022	SPARTAN BULKHEAD

Issue 2

Drawing No.	Sheets	Rev	Approved Date	Title
910-SD-0001	1 of 1	D	29 Sep 2023	Spartan LED Floodlight Ex em

Issue 3

#	Drawing No.	Sheets	Rev	Approved Date	Title
01	910-SD-0001	1 to 6	N	16 Apr 2024	SPARTAN LED FLOODLIGHT Em em
02	910-SD-00061	1 of 1	B	16 Apr 2024	ALTERNATIVE UNIVERSAL OUTPUT POWER SUPPLY FOR FL AND BL PRODUCT RANGES
03	940-SD-0001	1 to 3	G	16 Apr 2024	SPARTAN BULKHEAD

Certificate Annex

Certificate Number CML 21UKEX3099 Issue 4
Equipment Spartan SPX FL** Luminaire
Manufacturer Raytec Ltd



Issue 4

#	Drawing No.	Sheets	Rev	Approved Date	Title
01	940-SD-0001	1 of 1	H	06 Dec 2024	SPARTAN BULKHEAD
02	940-SD-0001	1 of 1	G	06 Dec 2024	SPARTAN BULKHEAD
03	940-SD-0001	1 of 1	H	06 Dec 2024	SPARTAN BULKHEAD
04	940-SD-0001	1 of 1	B	06 Dec 2024	SPARTAN BULKHEAD