

Type Examination Certificate CML 21UKEX4104 Issue 5
United Kingdom Conformity Assessment

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended)
- 2 Equipment **Spartan LED Linear 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, 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 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 IEC 60079-7:2015+A1:2018 EN 60079-31:2014
EN 60079-18:2015+A1:2017

- 10 The equipment shall be marked with the following:

Standard		Emergency	
 II 3 G D	 II 3 G D	 II 3 G D	 II 3 G D
Ex ec mc IIC T5 Gc	Ex ec mc IIC T6 Gc	Ex ec mc IIC T5 Gc	Ex ec mc IIC T6 Gc
Ex ec mc IIC T4 Gc	Ex tc IIIC T65°C Dc	Ex ec mc IIC T4 Gc	Ex tc IIIC T65°C Dc
Ex tc IIIC T80°C Dc	Ta= -40°C to +45°C	Ex tc IIIC T75°C Dc	Ta= -20°C to +40°C
Ta= -40°C to +60°C		Ta= -20°C to +50°C	





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11 Description

The Spartan LED Linear Luminaires are a range of LED luminaires. There are four luminaire sizes available varying in length WL84, WL84-1200, WL168 and WL168-1500. LV (Low Voltage) or HV (High Voltage) variants are available with the following ratings. The HV luminaires may also be supplied with a battery pack and inverter to enable operation in 'emergency' mode.

Power Supply Variant	Ratings
HV Standard	110-280 VAC and 154 – 355 VDC
HV Emergency	110-280 VAC
LV Standard	18-48 VAC
HV Dual	110-280 VAC and 154 – 355 VDC
LV DC	18-48 VAC and 18-68 VDC
HV Intelligent Emergency	110-280 VAC
HV Universal	110-254V AC and DC
HV Universal DALI Dimmable and Extended Input Voltage	110-277V AC and DC

The Spartan LED linear Luminaire enclosure is made from extruded aluminium with a transparent polycarbonate lens. The aluminium enclosure has cast aluminium end sections fitted with cast aluminium covers.

The equipment utilises silicone sponge gaskets to seal the external lens and end covers to the main enclosure and maintain the IP66 rating. Samples of the luminaire have also been independently tested against the requirements of IEC 60529 Ed 2.1 and have passed IPX6 and IPX7.

The end sections house separately certified terminals and a maximum of two separately certified cable entries per end. The end covers house either the encapsulated power supply or the optional emergency mode battery. The covers are fixed to the end sections using two M6 bolts per cover. Alternatively, an option of fitting a blanking cover at one end to provide two cables entries at one end can be used on WL84 and WL84-1200 standard variants only.

The main section of the luminaire is fitted with an encapsulated light engine. This light engine is an extruded aluminium frame fitted with a PCB containing up to 80 surface mounted LED's.

These LED's are fitted with transparent polycarbonate lenses, each lens covering up to 16 LED's. The PCB; complete with fitted lenses, is encapsulated securing the lenses in place and coating the PCB up to the walls of the light engine.

The WL84 and WL84-1200 variants are fitted with one light engine and one external lens. The WL168 and WL168-1500 variants are fitted with two light engines and two external lenses.

The LED's are available in white, coloured or infra-red. The enclosure has fixing holes to the rear, the size, pitch and quantity can be customised to suit customer needs.

All enclosures offer internal and external earthing facilities. An optional replaceable antistatic lens film is available across the range.



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Variants of the standard mains voltage luminaires can be supplied which deliver increased light output, these are designated WL84-HO and WL168-HO and can have a maximum power of 46W and 92W respectively. Additionally, an increased light output emergency model WL84-HO-EM (alternately marked WL84-HO-EMX) is available with a maximum power of 60W and battery pack.

Variation 1

This variation introduces the following modifications:

- i. Alternative electronic components for power supply unit.
- ii. Correction of typographical errors on schedule drawings.

Variation 2

This variation introduces the following modifications:

- i. To assess the Universal Power Supply.
- ii. To assess the High Output variant of the Spartan LED Linear Luminaires
- iii. To correct UKEX standard references
- iv. To correct UKEX Conditions of Manufacturer

Variation 3

This variation introduces the following modifications:

- i. To provide clarification on product specification on certification documents.
- ii. To introduce a High Output Emergency variant of the luminaire.

Variation 4

This variation introduces the following modifications:

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

Variation 5

This variation introduces the following modification:

- i. To permit updated power supply table within description

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	26 Mar 2021	R13817A/00	Issue of prime certification
1	29 Jun 2021	R14354A/00	Introduction of variation 1.
2	24 Aug 2022	R15050A/00	Introduction of variation 2.
3	03 Feb 2023	R16135A/00	Introduction of variation 3.
4	16 Apr 2024	R17429A/00	Introduction of variation 4.
5	07 Feb 2025	R18347A/00	Introduction of variation 5.

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



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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. The manufacturer shall supply copies of instructions for all certified Ex-Equipment and Ex-Components fitted.
- ii. A dielectric strength test shall be carried out on all units manufactured in accordance with EN 60079-7:2015+A1:2018 clause 7.1 and EN 60079-18:2015+A1:2017, clause 9.2, depending on the power supply type and input rating at the voltages and durations shown in the following table:

Power Supply Type/ Rating	110 to 280 Vac	154 to 355 Vdc
HV, Universal, Extended universal, DALI	1560V AC for 1 Minute	1810 V for 100 mS
Power Supply Type/ Rating	18 to 48 Vdc	28 to 68 Vdc
LV	500 Vac for 1 Minute	700 V for 1 Minute

No breakdown shall occur. Tests shall be carried out between each circuit and earth.

- iii. A visual inspection shall be carried out on the encapsulated parts to check for damage, in accordance with EN 60079-18:2015+A1:2017, 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 21UKEX4104
Equipment Spartan LED Linear Luminaire
Manufacturer Raytec Ltd.



The following documents describe the equipment defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
920-SD-0035	4 of 4	A	26 Mar 2021	Spartan Linear Gen 2

Issue 1

	Drawing No.	Sheets	Rev	Approved date	Title
01	920-SD-0035	1 of 4	A	29 Jun 2021	Spartan LED Linear GEN 2
01	920-SD-0035	2 of 4	B	29 Jun 2021	Spartan LED Linear GEN 2
01	920-SD-0035	3 of 4	A	29 Jun 2021	Spartan LED Linear GEN 2
01	920-SD-0035	4 of 4	B	29 Jun 2021	Spartan LED Linear GEN 2
02	910-SD-0057	1 to 3	B	29 Jun 2021	Spartan dual power supply PCB Schematic
03	910-SD-0058	1 to 7	B	29 Jun 2021	FMEA Spartan dual power supply
04	910-SD-0059	1 of 1	B	29 Jun 2021	Part list spartan dual power supply
05	920-SD-0037	Sheet 5	B	29 Jun 2021	FMEA other spartan single stage power supply

Issue 2

	Drawing No.	Sheets	Rev	Approved date	Title
01	920-SD-0035	2 of 4	C	24 Aug 2022	SPARTAN LED LINEAR – GEN 2
02	920-SD-0035	4 of 4	C	24 Aug 2022	SPARTAN LED LINEAR – GEN 2
03	SB SD 4 C 145 75 0	1 to 10	0	24 Aug 2022	Safety assessment for LED ECG 4 C 145 75 0
04	70.03-01	1 to 7	0	24 Aug 2022	Test Report - LED Control Gear (Parts List 4 C 145 75 0 Rev 0)
05	BOM 4 C 145 75 0	1 to 2	0	24 Aug 2022	LED Control Gear 700 mA, 45 W, 110 - 254 V
06	BOM S 002 88 0	1 to 3	0	24 Aug 2022	SMD LED Control Gear 700 mA, 45 W, 110 - 254 V
07	BOM 5 A 003 44 1	1 of 1	0	24 Aug 2022	Lighting, Z.-Nr.: 7 E 00 187 01 0
08	BOM 5 A 003 44 2	1 of 1	0	24 Aug 2022	Lighting, Z.-Nr.: 7 E 00 187 01 0
09	BOM 5 A 003 44 3	1 of 1	0	24 Aug 2022	Lighting, Z.-Nr.: 7 E 00 187 01 0
10	BOM 5 A 003 44 4	1 of 1	0	24 Aug 2022	Lighting, Z.-Nr.: 7 E 00 187 01 0
11	BOM 5 A 003 44 5	1 of 1	0	24 Aug 2022	Lighting, Z.-Nr.: 7 E 00 187 01 0

Certificate Annex

Certificate Number CML 21UKEX4104
Equipment Spartan LED Linear Luminaire
Manufacturer Raytec Ltd.



	Drawing No.	Sheets	Rev	Approved date	Title
12	NP2021-15414	1 to 3	G	24 Aug 2022	ICT Approval Application EFD25/16/9 X'Fmr

Issue 03

#	Drawing No.	Sheets	Rev	Approved date	Title
01	920-SD-0035	1 of 4	B	03 Feb 2023	Spartan LED Linear – Gen 2
	920-SD-0035	2 of 4	D	03 Feb 2023	Spartan LED Linear – Gen 2
	920-SD-0035	3 of 4	B	03 Feb 2023	Spartan LED Linear – Gen 2
	920-SD-0035	4 of 4	D	03 Feb 2023	Spartan LED Linear – Gen 2

Issue 04

#	Drawing No.	Sheets	Rev	Approved /issued date	Title
01	920-SD-0035	1 to 4	B	16 Apr 2024	SPARTAN LED LINEAR - GEN 2

Issue 05

None.