

Type Examination Certificate CML 23UKEX5451X Issue 0

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 Recess**
- 3 Manufacturer **Raytec Ltd.**
- 4 Address **Unit 15, Wansbeck Business Park,
Ashington,
Northumberland,
NE63 8QW**

- 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

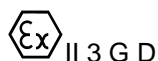
EN IEC 60079-18:2015+A1:2017

EN 60079-31:2014

- 10 The equipment shall be marked with the following:

LV, STD, HO

Emergency



II 3 G D



II 3 G D

Ex ec mc IIC T4/T5 Gc

Ex ec mc IIC T4/T5 Gc

Ex tc IIIC T95°C Dc

Ex tc IIIC T95°C Dc

Ta= -40°C to +60°C (no insulation)

Ta= -20°C to +50°C (no insulation)



CML 23UKEX5451X
Issue 0

11 Description

The Spartan LED Recess luminaire is a range of LED luminaires intended for recessed mounting with different arrangements and orientations. They are available in several sizes and model. The luminaires consist of a combination of light engines and PSUs secured onto a metallic mounting frame.

RC600600, RC3001200 and RC2751300 consist of 2 light engines and 1 PSUs secured on different sized mounting frames. RC6001200 consists of 4 light engines and 2 PSUs secured on a mounting frame. RC275800 consists of 1 light engine and 1 PSU secured on a mounting frame. Special application model allows for the light engines and PSUs to be fitted without the mounting frame.

The luminaire range is available in Low voltage (18 to 84 V AC, 18 to 68V DC), standard (110 to 280 V AC, 154 to 355 V DC), high output (110 to 280 V AC, 154 to 355 V DC), and emergency (110 to 280 V AC, 154 to 355 V DC). Emergency is supplied with a rechargeable battery pack.

All luminaires within the range may be installed with or without insulation as specified in the user instructions.

Installed <u>WITHOUT</u> Insulation				
Model	Variant	Voltage	Ambient	Marking
RC600600 RC6001200 RC3001200 RC2751300 Special App	Low Voltage	18 to 84 V AC 18 to 68V DC	-40°C to +60°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db
	Standard	110 to 280 V AC 154 to 355 V DC	-40°C to +60°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db
	High Output	110 to 280 V AC 154 to 355 V DC	-40°C to +60°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db
	Emergency	110 to 280 V AC 154 to 355 V DC	-20°C to +50°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db
RC275800 Special App	Low Voltage	18 to 84 V AC 18 to 68V DC	-40°C to +60°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db
	Standard	110 to 280 V AC 154 to 355 V DC	-40°C to +60°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db
	Emergency	110 to 280 V AC 154 to 355 V DC	-20°C to +50°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db

Installed <u>WITH</u> Insulation				
Model	Variant	Voltage	Ambient	Marking
RC600600 RC6001200	Low Voltage	18 to 84 V AC 18 to 68V DC	-40°C to +50°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db



CML 23UKEX5451X
Issue 0

Installed <u>WITH</u> Insulation				
Model	Variant	Voltage	Ambient	Marking
RC3001200 RC2751300 Special App	Standard	110 to 280 V AC 154 to 355 V DC	-40°C to +50°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db
	High Output	110 to 280 V AC 154 to 355 V DC	-40°C to +50°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db
	Emergency	110 to 280 V AC 154 to 355 V DC	-20°C to +40°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db
RC275800 Special App	Low Voltage	18 to 84 V AC 18 to 68V DC	-40°C to +50°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db
	Standard	110 to 280 V AC 154 to 355 V DC	-40°C to +50°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db
	Emergency	110 to 280 V AC 154 to 355 V DC	-20°C to +40°C	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T95°C Db

Each light engine has a metallic enclosure with polycarbonate lens, internally holding a PCB consisting of 80 LEDs. The PSU has a metallic tray and lid, internally holding an encapsulated power supply and battery pack where applicable. Both enclosures utilise a silicone gasket secured between mounting faces. The metallic mounting tray is available in several sizes (model dependent).

PSU and light engines are connected using separately certified cable glands and suitable conductors. Separately certified terminals are utilised in both the light engine and PSU.

Certificate Number	Standards	Differences Considered
PTB 03ATEX1189U	EN IEC 60079-0:2018 EN 60079-7:2015+A1:2018	Standards editions aligned with equipment certificate.
TUV 18ATEX8209U	EN IEC 60079-0:2018 EN 60079-7:2015+A1:2018	Standards editions aligned with equipment certificate.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	04 Jun 2024	R16298A/00	Issue of prime certificate

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



CML 23UKEX5451X
Issue 0

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 IEC 60079-7 clause 7.1 and EN IEC 60079-18 clause 9.2. Tests shall be carried out between each circuit and earth and between each circuit and the surface of the encapsulant.
 - Standard and emergency models shall withstand a voltage of 1560V for a minimum of 1 minute without dielectric breakdown.
 - Low voltage model shall withstand a voltage of 500V for a minimum of 1 minute without dielectric breakdown.
 - Alternatively at 1.2 times the test voltages above for 100ms.
 - Alternatively, a 1.4 times d.c. voltage dielectric strength test may be carried out
- iii. A visual inspection shall be carried out on all encapsulated parts to check for damage in accordance with EN IEC 60079-18 clause 9.1.
- iv. When fitted with the universal power supply equipment shall only be marked T4 for Gb applications.
- v. Models fitted with only 1 light engine must not be supplied by a high output PSU.

14 Specific Conditions of Use

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

- i. Spartan Recess may be installed with insulation covering the rear of the luminaire. The insulation may be a maximum of 100mm thick and with a maximum density of 110kg/m³.
- ii. Static hazard – clean only with damp cloth.

Certificate Annex

Certificate Number CML 23UKEX5451X
Equipment Spartan LED Recess
Manufacturer Raytec Ltd.



The following documents describe the equipment defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
1285-SD-00001	1 to 4	A	22 May 2024	Spartan LED Recess
1285-M-00001	5 of 5	A	22 May 2024	Spartan LED Recess
SB SD 4 C 145 75 0	1 to 10	0	22 May 2024	Safety assessment - Power supply universal output HV
70.03- (01 to 07)	1 to 7	0	22 May 2024	Fault assessment – Power supply universal output HV
4 C 145 75 0	1 to 2	0	22 May 2024	LED control gear – 700 mA, 45 W, 11 – 254 V
4 S 002 88 0	1 to 3	0	22 May 2024	SMD LED Control Gear 700 mA, 45 W, 110 – 254 V
5 A 003 44 1	1 of 1	0	22 May 2024	Leitung, Z.-Nr.: 7 E 00 187 01 0
5 A 003 44 2	1 of 1	0	22 May 2024	Leitung, Z.-Nr.: 7 E 00 187 01 0
5 A 003 44 3	1 of 1	0	22 May 2024	Leitung, Z.-Nr.: 7 E 00 187 01 0
5 A 003 44 4	1 of 1	0	22 May 2024	Leitung, Z.-Nr.: 7 E 00 187 01 0
5 A 003 44 5	1 of 1	0	22 May 2024	Leitung, Z.-Nr.: 7 E 00 187 01 0
910-SD-0030	1 to 2	A	22 May 2024	18-48V AC/18-68V DC Power Supply Thermal Fuse Positions
910-SD-0031	1 of 1	A	22 May 2024	Component Tolerance
910-SD-0032	1 to 4	A	22 May 2024	FMEA Power supply LV
910-SD-0051	1 of 1	A	22 May 2024	Spartan Standard Power Supply PCB Schematic
910-SD-0052	1 to 6	A	22 May 2024	FMEA Spartan Standard Power Supply
910-SD-0053	1 of 1	A	22 May 2024	Parts List Spartan Standard Power Supply
910-SD-0054	1 of 1	A	22 May 2024	Spartan Emergency Power Supply PCB Schematic
910-SD-0055	1 to 5	A	22 May 2024	FMEA Spartan Emergency Power Supply
910-SD-0056	1 of 1	A	22 May 2024	Parts List Spartan Emergency Power Supply
910-SD-0057	1 to 2	A	22 May 2024	Spartan Dual Power Supply PCB Schematic
910-SD-0058	1 to 7	A	22 May 2024	FMEA Spartan Dual Power Supply
910-SD-0059	1 of 1	A	22 May 2024	Parts List Spartan Dual Power Supply

Certificate Annex

Certificate Number CML 23UKEX5451X
Equipment Spartan LED Recess
Manufacturer Raytec Ltd.



Drawing No	Sheets	Rev	Approved date	Title
920-SD-0035	1 to 4	A	22 May 2024	Spartan LED Linear- Gen 2