



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX CML 23.0094X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2023-06-08

Applicant: **Raytec**  
Unit 15 Wansbeck Business Park  
Rotary Parkway, Ashington  
Northumberland, NE63 8QW  
**United Kingdom**

Equipment: **SPARTAN LED Street Luminaire, types SPX and SPZ**

Optional accessory:

Type of Protection: **Increased Safety Ex eb, and Ex ec, and Encapsulation Ex mb and Ex mc**

Marking: SPX (Zone 1) SPZ (Zone 2)  
Ex eb mb IIC T4 Gb Ex ec mc IIC T4 Gc  
Ex tb IIIC T80°C Db Ex tc IIIC T80°C Dc  
TaL: -40 °C to +50 °C Ta: -40 °C to +50 °C

Approved for issue on behalf of the IECEx  
Certification Body:

**L A Brisk**

Position:

**Assistant Certification Manager**

Signature:  
(for printed version)

Date:  
(for printed version)

8 June 2023

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
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Certificate issued by:

**Eurofins E&E CML Limited**  
Unit 1, Newport Business Park  
New Port Road  
Ellesmere Port, CH65 4LZ  
**United Kingdom**





# IECEX Certificate of Conformity

Certificate No.: **IECEX CML 23.0094X**

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Date of issue: 2023-06-08

Issue No: 0

Manufacturer: **Raytec**  
Unit 15 Wansbeck Business Park  
Rotary Parkway, Ashington  
Northumberland, NE63 8QW  
**United Kingdom**

Manufacturing  
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended

## STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-18:2017](#) Explosive atmospheres - Part 18: Protection by encapsulation "m"  
Edition:4.1

[IEC 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

## TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[GB/CML/ExTR23.0146/00](#)

Quality Assessment Report:

[GB/SIR/QAR13.0018/11](#)



# IECEX Certificate of Conformity

Certificate No.: **IECEX CML 23.0094X**

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Date of issue: 2023-06-08

Issue No: 0

**EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The SPARTAN LED SPX and SPY Street Luminaires are luminaires intended for mount on either a vertical or horizontal pole that provides downward illumination *in Zone 1/Zone 2 or Zone 21/ Zone 22* Gas and Dust explosive atmospheres.

**See Annex for full description and Conditions of Manufacture.**

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

**See Annex for Specific Conditions of Use.**

**Annex:**

[IECEX CML 23.0094X Certificate Annex IECEx \(1\).pdf](#)

**Annexe to:** IECEx CML 23.0094X Issue 0  
**Applicant:** Raytec Ltd.,  
**Apparatus:** SPARTAN LED Street Luminaire, types SPX and SPZ

## Description

The SPARTAN LED SPX and SPZ Street Luminaires are luminaires intended for mount on either a vertical or horizontal pole that provides downward illumination *in Zone 1/Zone 2 or Zone 21/Zone 22* Gas and Dust explosive atmospheres.

The luminaires consist of an aluminium housing containing the Light Engine, LED Driver, and connection facilities. The housing is mounted using a pole entry that permits the assembly to be mounted on either a vertical or horizontal pole with a downward illumination with an orientated angle up to a maximum  $\pm 15^\circ$  from the horizontal of the glass window.

The Main Body housing is constructed using a cast/extruded aluminium body that is common with separate Driver/Connection and Light Engine compartments.

A cast/extruded aluminium Lid with recessed Silicone Sponge gasket bolts to the Main Body housing to form and seal the Driver/Connection compartment. The compartment contains a Stainless Steel /Steel / Aluminium chassis plate mounted with LED Driver and terminal blocks that provide connections for internal and external wiring. Field wiring enters via a cable entry with a suitably certified Cable Gland.

The Zone 1 and Zone 21 Light Engine carrier assembly is constructed using 96 LEDs mounted on an Insulated Metal Substrate (IMS) Printed circuit Board (PCB). The LEDs are mounted in 6 separate segments, each containing 16 LED's. Each segment is fitted with an optic/lens bolted to the PCB then covered with a polycarbonate cover secured to the PCB using silicone adhesive.

The PCB assembly is fitted inside an aluminium carrier that is filled with Silicone Elastomer around the polycarbonate covers. The complete carrier assembly is bolted to the Main Body.

The construction is similar for the Zone 2/Zone 22 versions except that each segment is only fitted with an optic/lens bolted to the PCB. There are no polycarbonate covers and no silicone elastomer filler.

The PSU compartment contains an encapsulated LED Driver and, certified terminal blocks for connection of field using a certified cable entry, and internal wiring between the LED Driver and Light Engine. The LED Driver and certified terminal blocks are mounted on either a stainless steel or aluminium chassis plate.

The units have an environmental rating of IP64. The equipment may also be marked with the manufacturer's ingress protection rating of IP66. An ingress protection rating of IPX6 has not been verified under the CML certification.



Certificate Annex IECEx  
Version: 8.0 Approval: Approved

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## Rating

Input	Maximum Power
110 V to 254 V	60 W

## Conditions of Manufacture

The following are conditions of manufacture:

- 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. The LED driver and encapsulated LED assembly shall each be subjected to an electric strength test in accordance with IEC/EN60079-18 Clause 9.2 using a test voltage of 1500Vac applied between the terminals and the surface of the encapsulant (covered in foil), for a period of 1 second.

Alternatively:

- a) voltage of 20% higher may be applied for 0.1 second, or
- b) d.c. test voltage at 170% of the specified a.c. r.m.s. test voltage.

There shall be no flashovers.

- iii. The LED driver and encapsulated LED assembly shall each be visually inspected. No damage shall be evident, such as cracks in the compound, exposure of encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion, or softening.
- iv. The equipment shall be subjected to an electric strength test in accordance with the requirements of IEC/EN60079-7 Clause 6.1 using a test voltage of 1500Vac applied between the supply terminals and frame, for a period of 1 second.  
  
Alternatively, a d.c. test voltage is allowed as an alternative to the a.c. test voltage and shall be 170% of the specified a.c. r.m.s. test voltage.
- v. The manufacturer shall ensure that requirements for suitable glands for use with this equipment are included in the instructions supplied with all equipment.



## Specific Conditions of Use

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

- i. Equipment must only be installed in a position that satisfies a low risk of mechanical danger from impact. (4 J).

### Components covered by Ex Certificates issued to older editions of Standards

Component	Manufacture	Certificate	Standards Applied	Differences Considered
862 SERIES	WAGO	IECEX PTB 05.0003U Issue 03	IEC 60079-0:2017 ed.7 IEC 60079-7:2017 ed. 5.1	N/A
MK6 SERIES BK SERIES MK3 SERIES	WEIDMULLER	IECEX TUR 18.0019U Issue 02	IEC 60079-0:2017 ed.7 IEC 60079-7:2017 ed. 5.1	N/A