



# 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.:    | <b>IECEx CML 17.0074</b>   | Page 1 of 4 | <u>Certificate history:</u> |
| Status:             | <b>Current</b>   | Issue No: 3 | Issue 2 (2018-06-18)        |
| Date of Issue:      | 2020-10-27   |             | Issue 1 (2018-03-05)        |
|                     |  |             | Issue 0 (2017-07-24)        |
| Applicant:          | <b>Raytec Ltd.</b><br>Unit 15 Wansbeck Business Park<br>Rotary Parkway<br>Ashington<br>Northumberland<br>NE63 8QW<br><b>United Kingdom</b>   |             |                             |
| Equipment:          | <b>Spartan High Power LED Floodlight/Highbay</b>   |             |                             |
| Optional accessory: |  |             |                             |
| Type of Protection: | <b>Flameproof, Increased safety, Encapsulation, Type n, Dust</b>   |             |                             |
| Marking:            | Zone 1 version<br>Ex db eb mb IIB+H2 T4 Gb<br>Ex db eb mb IIB T4 Gb<br>Ex tb IIIC T104°C Db<br>Zone 2 version<br>Ex ec nR IIC T4 Gc<br>Ex tc IIIC T104°C Dc<br>T <sub>amb</sub> = -50°C to +50°C |             |                             |

Approved for issue on behalf of the IECEx  
Certification Body:

**A Snowdon MIET**

Position:

**Assistant Certification Manager**

Signature:  
(for printed version)

Date:

2020-10-27

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.
3. The Status and authenticity of this certificate may be verified by visiting [www.iecex.com](http://www.iecex.com) or use of this QR Code.



Certificate issued by:

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





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Date of issue: 2020-10-27

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

Additional  
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 60079-1:2014-06** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

**IEC 60079-15:2017** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"  
Edition:5.0

**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 Reports:

[GB/CML/ExTR17.0109/00](#)  
[GB/CML/ExTR20.0200/00](#)

[GB/CML/ExTR18.0058/00](#)

[GB/CML/ExTR18.0133/00](#)

Quality Assessment Report:

[GB/SIR/QAR13.0018/07](#)



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Certificate No.: **IECEx CML 17.0074**

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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The HP Spartan LED Luminaire are a Floodlight and Highbay luminaire that are suitable for installation in either Gas or Dust environments with different mounting arrangements and orientations.

The encapsulated LED Head assembly contains upto 2 x 12 LED circuits protected by encapsulation, located behind a glass window.

**Refer to Annex for full description and Conditions of Manufacture.**

**SPECIFIC CONDITIONS OF USE: NO**



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

Refer to certificate annex for details of certificate changes.

**Annex:**

[IECEx CML 17.0074 Iss 3 Annex.pdf](#)

**Annexe to:** IECEx CML 17.0074, Issue 3  
**Applicant:** Raytec Ltd  
**Apparatus:** HP Spartan LED Luminaire



## 1 Product Description

### 1.1 Zone 1 version

The HP Spartan LED Luminaire are a Floodlight and Highbay luminaire that are suitable for installation in either Gas or Dust environments with different mounting arrangements and orientations.

The encapsulated LED Head assembly contains upto 2 x 12 LED circuits protected by encapsulation, located behind a glass window. The LED Head connects to either:

- A combined flameproof PSU and increased safety JB assembly, or
- An increased safety JB assembly;

The combined flameproof PSU and increased safety JB assembly, consists of separate enclosures containing LED Driver circuits and suitably certified Ex Component terminals for connection of internal and field wiring using suitably certified cable glands. The two enclosures are separated using a suitably certified bushing.

The increased safety JB assembly consisting a single enclosure containing suitably certified Ex Component terminals for connection of internal and field wiring using suitably certified cable glands. The combined assembly is used with a separately mounted combined flameproof PSU and increased safety JB assembly, connected using suitably certified cable glands.

The combined or separate assemblies have an environmental rating of IP 66.

The equipment is also marked with an ingress protection rating of IP67. An ingress protection rating of IPX7 has not been verified under the CML certification.

An optional self-adhesive anti-static film can be fitted over the glass externally

Operating voltage may be 150 -264V AC/DC or 110V -264V AC/DC

Nomenclature:

MM (1) - HP (22) (33) K - W - xxyy

Where:

|      |    |  |
|------|----|--|
| MM   | SP | SPARTAN High Power Flood,              |
| (1)  | X  | Zone 1 /Zone 21                        |
| (22) | FL | Floodlight                             |
|      | BY | Highbay                                |
| (33) | ** | Lumens (x 1,000) up to a maximum of 25 |
| K    |    | Lumens (x 1,000)                       |
| W    |    | White Light                            |
| xxyy |    | Circular beam pattern, xx° x yy° beam  |



**Annexe to:** IECEx CML 17.0074 Issue 3  
**Applicant:** Raytec Ltd  
**Apparatus:** HP Spartan LED Luminaire



## 1.2 Zone 2 version

The combined restrictive breathing PSU and increased safety JB assembly, consists of separate enclosures containing LED Driver circuits and suitably certified Ex component terminals for connection of internal and field wiring using suitably certified cable glands. The two enclosures are separated using a suitably certified bushing.

The increased safety JB assembly consisting a single enclosure containing suitably certified Ex Component terminals for connection of internal and field wiring using suitably certified cable glands. The combined assembly is used with a separately mounted combined restrictive breathing PSU and increased safety JB assembly, connected using suitably certified cable glands.

The combined or separate assemblies have an environmental rating of IP 66.

The equipment is also marked with an ingress protection rating of IP67. An ingress protection rating of IPX7 has not been verified under the CML certification.

An optional self-adhesive anti-static film can be fitted over the glass externally

Operating voltage may be 150 -264V AC/DC or 110V -264V AC/DC

Nomenclature:

**SP (1) - HP (22) (33) K - W - xxyy**

Where:

|      |    |  |
|------|----|--|
| SP   |    | SPARTAN High Power Flood,              |
| (1)  | Z  | Zone 2 / Zone 22                       |
| (22) | FL | Floodlight                             |
|      | BY | Highbay                                |
| (33) | ** | Lumens (x 1,000) up to a maximum of 25 |
| K    |    | Lumens (x 1,000)                       |
| W    |    | White Light                            |
| 3030 |    | Circular beam pattern, xx° x yy° beam  |

**Annexe to:** IECEx CML 17.0074 Issue 3  
**Applicant:** Raytec Ltd  
**Apparatus:** HP Spartan LED Luminaire



## 2 Conditions of manufacture

### 2.1 Zone 1 version

- i. Where the product incorporates certified parts or safety critical components, the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.
- ii. The manufacturer shall fit only the certified Ex Components listed in the certification documentation and the manufacturer's instructions. All Special Conditions of Certification/ Special Conditions for Safe Use/ Schedule of Limitations shall be satisfied for each part fitted.
- iii. If the terminals or components are fitted with cables/wiring by the manufacturer; all cables/wires shall be suitable for rated voltage and current of each separate circuits and Ex Components to which they are connected.
- iv. All creepage and clearance distances as defined in IEC 60079-7 Table 2 shall be observed for the voltage rating marking.
- v. The routine overpressure test shall be carried out in accordance with the static method (IEC 60079-1, clause 15.1.3.1) at the following pressures:

| Type                                       | Test Pressure              |
|--|----------------------------|
| MMX-HP (Zone 1/ 21 Group IIB + H2 Version) | 7.61bar x 1.5 = 11.42 bar  |
| MMX-HP (Zone 1/ 21 Group IIB Version)      | 6.73 bar x 1.5 = 10.10 bar |

- vi. All "m" equipment shall be subjected to a visual inspection. No damage shall be evident, such as cracks in the compound, exposure of the encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion (separation of any adhered parts) or softening.
- vii. A dielectric strength test shall be carried out on all units manufactured in accordance with IEC 60079-7 clause 7.1 at 1508 V for 1 minute, or alternatively at 1.2 times this test voltage for 100 ms. No breakdown shall occur. Tests shall be carried out between each circuit and earth.
- viii. The Line Bushing shall be suitable for a service temperature range of at least -50°C to +85°C.

**Annexe to:** IECEx CML 17.0074 Issue 3  
**Applicant:** Raytec Ltd  
**Apparatus:** HP Spartan LED Luminaire



## **2.2 Zone 2 version**

- i. Where the product incorporates certified parts or safety critical components, the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.
- ii. The manufacturer shall fit only the certified Ex Components listed in the certification documentation and the manufacturer's instructions. All Special Conditions of Certification/ Special Conditions for Safe Use/ Schedule of Limitations must be satisfied for each part fitted.
- iii. If the terminals or components are fitted with cables/wiring by the manufacturer; all cables/wires shall be suitable for rated voltage and current of each separate circuits and Ex Components to which they are connected.
- iv. All creepage and clearance distances as defined in IEC 60079-7 Table 2 shall be observed for the voltage rating marking.
- v. The equipment shall be subjected to a dielectric strength test in accordance with IEC 60079-7 clause 7 using a test voltage of 1,500 Vac applied between the encapsulated circuit and earth for 60 s. Alternatively, the test voltage shall be 2,100 Vdc. There shall be no evidence of flashover or breakdown and the maximum current flowing shall not exceed 5 mA.
- vi. The Line Bushing shall be suitable for a service temperature range of at least -50°C to +85°C.



**Annexe to:** IECEx CML 17.0074 Issue 3  
**Applicant:** Raytec Ltd  
**Apparatus:** HP Spartan LED Luminaire



### 3 Details of certificate changes

#### Variation/Issue 1

This variation introduces the following modifications:

- i. To allow an alternative label to be fitted, the equipment is marketed under the product range name 'Wadco Lighting'.
- ii. To allow the use of alternative model names

#### Variation/Issue 2

This variation introduces the following modifications:

- i. To allow a 110V-264V AC/DC supply rating option, in addition to the existing 150V-264V AC/DC option. The supply voltage rating is dependent on the power supply fitted.
- ii. To permit the use of an optional self-adhesive anti-static film which can be fitted over the glass externally.
- iii. The description on the certificate has been updated to show details of the above modifications.
- iv. To modify the description of the Zone 2 version, to match the ATEX certificate.
- v. Compiling of all drawings from the previous certificate issues into one complete list of current drawings.
- vi. Change to the Condition of Manufacture defining the service temperature range of the line bushings.

#### Variation/Issue 3

This variation introduces the following modifications:

- i. To update and review the product against the latest editions of the standards.
- ii. To remove the type of protection 'op is' and standard IEC 60079-28 from the certification.
- iii. To assess and confirm the toughened glass window assembly meets the high risk level impact energy (7J).
- iv. To amend the certification by including the latest component certification for the BK and MK series terminal blocks and remove the old versions.
- v. Clarification regarding the marked current rating.
- vi. Changes to the ingress protection rating specified on the marking and the addition of information to the product description, also relating to the marked IP rating.
- vii. Removal of an alternative marking label option from the certification, and removal of reference to this option from the product description.
- viii. The introduction of an alternative LED.

**Annexe to:** IECEx CML 17.0074 Issue 3  
**Applicant:** Raytec Ltd  
**Apparatus:** HP Spartan LED Luminaire



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

| Certificate number       | Standards (incl Ed)                    | Assessment result  |
|--------------------------|--|--|
| IECEX PTB 04.0004U Iss 1 | IEC 60079-0 Ed 6<br>IEC 60079-7 Ed 5   | No applicable technical differences  |
| IECEX PTB 04.0003U Iss 3 | IEC 60079-0 Ed 6<br>IEC 60079-7 Ed 5   | Technical differences evaluated and found satisfactory. For detail see original Evaluation Report R1722A, GB/CML/ExTR17.0109/00 and R13535A, GB/CML/ExTR20.0200/00 |
| IECEX PTB 05.0003U Iss 3 | IEC 60079-0 Ed 7<br>IEC 60079-7 Ed 5.1 |  |
| IECEX TUR 18.0019U Iss 2 | IEC 60079-0 Ed 7<br>IEC 60079-7 Ed 5.1 |  |
| IECEX EPS 13.0045U Iss 2 | IEC 60079-0 Ed 7<br>IEC 60079-1 Ed 7   |  |