EC Type Examination Certificate CML 13ATEX3007 Issue 2

1 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

2 Equipment **Spartan FL** Luminaire**

3 Manufacturer **Raytec Ltd**

4 Address Unit 3 Wansbeck Business Park, Rotary Parkway, Ashington Northumberland NE63 8QW UK

5 The equipment is specified in the schedule of this certificate and the documents to which it refers.

6 Certification Management Limited, Unit 1 Newport Business Park, New Port Road, Ellesmere Port CH65 4LZ, UK, Notified Body Number 2503, in accordance with Article 9 of Directive 94/9/EC, 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 Annex II to the Directive.

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 conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.

8 This EC Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 94/9/EC Article 8 apply to the manufacture of the equipment or component and are separately certified.

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 60079-0:2012 EN 60079-7:2007 EN 60079-18:2009 EN 60079-31:2009

10 The equipment shall be marked with the following:

Standard Versions	Emergency Versions
II 2 G D	II 2 G D
Ex em IIC T6 Gb	Ex em IIC T6 Gb
Ta=-50°C to +48°C	Ta=-20°C to +48°C
Ex em IIC T5 or T4 Gb	Ex em IIC T5 or T4 Gb
Ex tb IIIC T82°C Db	Ex tb IIIC T82°C Db
Ta=-50°C to +55°C	Ta=-20°C to +55°C
IP66	IP66

M D Shearman
Managing Director

11 Description

The Spartan FL** luminaire is fitted with LED lamp modules and is rated at 110V to 254 V, 50/60 Hz. The luminaire 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.

The front housing has a soda lime toughened glass lens that is available in clear or coloured options. 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.

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.

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.

A Spartan FLT** transportable variant of 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.

12 Document history and evaluation reports

Issue	Date	Report	Notes
1	13 Dec 2013	R34A/00	The release of the prime certificate
2	03 Jan 2014	R34A/01	Issued to recognise correction to drawing 910-SD-001 Sheet 1, an additional drawing and modified report with change to conditions of manufacture.

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

13 Conditions of manufacture

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

13.1 Where the product incorporates certified components the manufacturer shall ensure that any changes to those components do not affect the compliance of the certified product that is the subject of this certificate.

13.2 A dielectric strength test shall be carried out on all units manufactured in accordance with EN 60079-7:2007 clause 7.1 and EN 60079-18:2009, clause 9.2, 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.

13.3 A visual inspection shall be carried out on the encapsulated parts to check for damage, in accordance with EN 60079-18:2009, clause 9.1.

14 Special Conditions for Safe Use (Conditions of Certification)

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

None

Certificate Annex

Certificate Number	CML 13ATEX3007
Equipment	Spartan FL** Luminaire
Manufacturer	Raytec Ltd

The following documents describe the equipment or component defined in this certificate:

Issue 1

Drawing No	Sheets	Rev	Approved date	**Title**
910-SD-0001	1 to 4	A	13 Dec 2013	Spartan LED Floodlight Ex em
910-SD-0002	1 to 2	A	13 Dec 2013	Standard and Emergency PCB Schematic Diagram
910-SD-0003	1 to 5	A	13 Dec 2013	Parts List FMEA Spartan Floodlight Main Power Supply
910-SD-0004	1 to 5	A	13 Dec 2013	Parts List FMEA Spartan Floodlight Emergency Power Supply

Issue 2

Drawing No	Sheets	Rev	Approved date	**Title**
910-SD-0001	1 of 4	B	03 Jan 2014	Spartan LED Floodlight Ex em
910-SD-0005	1 to 2	A	16 Dec 2013	Component tolerance driver circuit