



# 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 14.0012X**

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Certificate history:

Status: **Current**

Issue No: 5

[Issue 4 \(2021-11-22\)](#)

[Issue 3 \(2019-11-18\)](#)

[Issue 2 \(2019-07-22\)](#)

[Issue 1 \(2017-03-29\)](#)

[Issue 0 \(2014-12-18\)](#)

Date of Issue: 2022-10-28

Applicant: **Petrel Limited**  
22 Fortnum Close  
Mackadown Lane  
Kitts Green  
Birmingham  
B33 0LB  
**United Kingdom**

Equipment: **7 Series Luminaires**

Optional accessory:

Type of Protection: **Flameproof "db", Dust Ignition "tb"**

Marking: Fluorescent Luminaire  
Ex db II\* T\* Gb  
Ex tb IIIC T\*\*\*°C Db  
IP66  
LED Luminaire  
Ex db II\* T6 Gb  
Ex tb IIIC T\*\*\*°C Db  
IP66

(See description in the certificate annex for apparatus group, temperature class and ambient temperature range)

Approved for issue on behalf of the IECEx  
Certification Body:

**L A Brisk**

Position:

**Certification Officer**

Signature:  
(for printed version)

Date:  
(for printed version)

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Certificate issued by:

**Eurofins E&E CML Limited**  
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**United Kingdom**





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Birmingham  
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Manufacturing  
locations: **Petrel Limited**  
22 Fortnum Close  
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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 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

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/ExTR14.0028/00](#)  
[GB/CML/ExTR21.0201/00](#)

[GB/CML/ExTR17.0028/00](#)  
[GB/CML/ExTR22.0190/00](#)

[GB/CML/ExTR19.0123/00](#)

Quality Assessment Report:

[GB/CML/QAR19.0029/03](#)



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Date of issue: 2022-10-28

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**EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The Petrel Series 7 Luminaires comprise a lamp tube assembly with two end caps. The design allows the installation of various fluorescent bi-pin lamps, compact fluorescent lamps or LED assemblies.

**Refer to Annex for full description and conditions of manufacture.**

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

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



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

### **Issue 1**

This issue introduced the following changes:

1. To allow the inclusion of alternate design of LED strip and Driver/Inverter Arrangement
2. Amended marking for optical radiation for the LED versions.
3. Update of applicable standards to the latest editions and inclusion of reference to EN/IEC 60079-28.

### **Issue 2**

This issue introduced the following changes:

1. Addition of new supplier for the LED Strip.

### **Issue 3**

This issue introduced the following changes:

1. To update the QAR reference only

### **Issue 4**

This issue introduced the following changes:

1. Update the equipment to the latest edition standards.
2. Update the marking to include information relating to the UKEX approval of the product.
3. Removal of IEC 60079-28 as a protection concept and removal of "op is" from the marking

### **Issue 5**

This issue introduced the following changes:

1. To allow blue/UV LED tube and accompanying driver to be used as an alternative for the 2ft model in the range.

### **Annex:**

[IECEx 14.0012X Iss. 5 Certificate Annex\\_1.pdf](#)

**Annexe to:** IECEx CML 14.0012X Issue 5

**Applicant:** Petrel Ltd

**Apparatus:** 7 Series Luminaires

## Description

The Petrel Series 7 Luminaires comprise a lamp tube assembly with two end caps. The design allows the installation of various fluorescent bi-pin lamps, compact fluorescent lamps or LED assemblies (See table below). The end caps provide access to internal circuitry and lamp arrangements via removable screw lids and have threaded cable entry facilities to permit the installation of suitably certified cable glands.

The fluorescent lamps / LEDs are housed within the lamp tube assembly, together with the associated control gear and battery backup equipment (when fitted).

There is an option to install a remote battery pack in place of one of the screw-on lids. This battery pack is separated from the main enclosure by means of a potted terminal bush and uses the same screw-on lid facility.

The lamp tube assembly employs a polycarbonate tube and aluminium alloy end caps. An Epoxy adhesive is used to seal the end caps to the lamp tube, this is also used as the remote battery pack bushing material. The integrity of the cement seal between the end caps and the lamp tube is maintained by two tie bars, these connect both ends together.

The Tie bars are secured internally via a M6 x 35mm cap head screw, in accordance with ISO 4762, minimum grade 12.9

All sizes of luminaire can also be fitted with battery backup facilities. These take the form of battery packs and inverter/charging facilities mounted on the gear tray, alternatively, the battery packs may be installed within the remote battery housing.

A 2ft length, UV output model fitted with two UV LED tubes, powered by either a single driver or two individual drivers running at 100-240VAC can be manufactured. This model is specifically aimed at producing a narrow band UV light output specifically aimed at attracting flies. This model of luminaire is permitted to have its light transmitting part manufactured from glass only.

The luminaires may also be fitted with an optional motion sensor.

The range of luminaires are defined as follows:



Certificate Annex IECEx  
Version: 9.0 Approval: Approved

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## Fluorescent Luminaires:

Maximum Configurations for Fluorescent Luminaires							
Size (ft)	Gas Group	T5 Lamps	T8 Lamps	PI# Lamps	Emergency version Max. No. of cells	Maximum Circuit Watts for temperature class:	
						Ta Max.	Ta Reduced
1	IIB / IIC	1 or 2 lamps up to 8W	-	2 x 26W Max.	3	T4/T135°C @ 32W Max Ta = 52°C	T5/T100°C @ 65W Max Ta = 40°C
1	IIB / IIC	1 or 2 lamps up to 8W*	-	-	2	T6/T85°C @ 19W Max Ta = 55°C	T5/T100°C @ 65W Max Ta = 40°C
2	IIB / IIC	1 or 2 lamps up to 14W	1 or 2 lamps up to 18W	2 x 55W Max.	5	T5/T100°C @ 69.5W Max Ta = 55°C	T6/T85°C @ 126W Max Ta = 40°C
4	IIB	-	1 or 2 lamps up to 36W	2 x 55W Max.	6 (Remote pack only)	T5/T100°C @ 133W Max Ta = 55°C	T6/T85°C @ 133W Max Ta=40°C
4	IIC	1 or 2 lamps up to 39W		-	6 (Remote pack only)	T5/T100°C @ 133W Max Ta = 55°C	T6/T85°C @ 133W Max Ta = 40°C
5	IIB	-	1 or 2 lamps up to 58W	-	6 (Remote pack only)	T5/T100°C @ 152W Max Ta = 55°C	T6/T85°C @ 152W Max Ta = 40°C
6	IIB	-	1 or 2 lamps up to 70W	-	6 (Remote pack only)	T4/T135°C @ 175W Max Ta = 55°C	T5/T100°C @ 175W Max Ta = 40°C

\*Only one lamp may be operated at a time

# LED Luminaires:

Maximum Configurations for LED Drivers								
Size (ft)	Gas Group	LED Strips			Max. number of drivers		Emergency version Max. No. of cells	Temperature class
		Qty	(mA)	(W)	Standard	Emergency		
1	IIB/IIC	1	700	11.4	1 x 16W	1 x 16W	5 or 8 (2)	T6/T85°C @ Ta = 55°C

Maximum Configurations for LED Drivers								
Size (ft)	Gas Group	LED Strips			Max. number of drivers		Emergency version Max. No. of cells	Temperature class
		Qty	(mA)	(W)	Standard	Emergency		
2	IIB/IIC	2	700	22.8	1 x 25W	2 x 16W	5 or 8 (2)	T6/T85°C @ Ta = 55°C
4	IIB/IIC	4	700	45.6	2 x 25W	1 x 25W & 2 x 16W	5 or 8 (2)	T6/T85°C @ Ta = 55°C
4	IIB/IIC	4	1050	75.2	2 x 35W	2 x 25W, 1 x 35W	5 or 8 (2)	T6/T85°C @ Ta = 55°C
5	IIB	5	700	57.0	2 x 25W, 1 x 16W	2 x 25W, 1 x 16W	5 or 8 (2)	T6/T85°C @ Ta = 55°C
5	IIB	5	1050	94.0	2 x 35W, 1 x 25W	2 x 35W, 1 x 25W	5 or 8 (2)	T6/T85°C @ Ta = 55°C

Note: 1. Emergency versions employ one inverter/charger in addition to above  
2. Number of cells is either 5 for 230V or 8 for 110V

## Conditions of Manufacture

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

- i. Each enclosure shall be subjected to a routine overpressure test in accordance with the table below. In all cases, the pressure shall be maintained for at least 10 s as required by EN 60079-1, clause 16.1. There shall be no permanent deformation or damage to the enclosure.

Enclosure size (ft)	Hydrostatic Overpressure Test			
	Pressure applied for IIC		Pressure applied for IIB	
	Bar	Lbf/in <sup>2</sup>	Bar	Lbf/in <sup>2</sup>
1	14.00	203.00	N/A	N/A
2	14.00	203.00	N/A	N/A
4	12.60	182.70	7.8	113.20
5	N/A	N/A	20.55	297.98
6	N/A	N/A	14.00	203.00
Battery box	10.4	150.84	10.4	150.84

- ii. Where the product incorporates certified parts or safety critical components, for example; the battery charger/inverter, 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.

## Specific Conditions of Use

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

- i. Due to the risk of static hazards, the equipment shall only be cleaned with a damp cloth.