



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX SIR 09.0029X** issue No.: **0** Certificate history:

Status: **Current**

Date of Issue: **2010-01-04** Page 1 of 3

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

Electrical Apparatus: **Petrel Series 7 Luminaire**
Optional accessory:


Type of Protection: **Flameproof and Dust**

Marking: **Ex d IIB T6 Gb**
Ex d IIC T6 Gb
Ex tb IIIC T100°C Db IP66
Ta = -20°C to +55°C

Approved for issue on behalf of the IECEx Certification Body: **C Ellaby**

Position: **Certification Officer**

Signature:
(for printed version)



2010-01-04

Date:

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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

SIRA Certification Service
Rake Lane
Ecclestone
Chester
CH4 9JN
United Kingdom

sira
CERTIFICATION



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Manufacturer: **Petrel Limited**
Fortnum Close
Kitts Green
Birmingham B33 0LB
United Kingdom

Manufacturing location(s):

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 electrical apparatus 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 : 2007-10 Explosive atmospheres - Part 0: Equipment - General requirements
Edition: 5

IEC 60079-1 : 2007-04 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition: 6

IEC 61241-1 : 2004 Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"
Edition: 1

*This Certificate **does not** indicate compliance with electrical 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/SIR/ExTR09.0181/00

Quality Assessment Report:

GB/SIR/QAR08.0014/01



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Petrel Series 7 Luminaire comprises a lamp tube assembly with two end caps. The design allows the installation of various internal fluorescent bi-pin lamps or compact fluorescent lamps (see table below). The end caps provide access to internal circuitry via removable screwed lids and have threaded cable entry facilities to permit the installation of suitably certified cable entries. The end caps are made from aluminium alloy, LM25TF to BS 1490:1988.

See the Annexe for further information.

CONDITIONS OF CERTIFICATION: YES as shown below:

1. When fitted with a glass tube, the Petrel Series 7 Luminaire shall only be installed in areas where there is a low risk of impact

Annexe to: IECEx SIR 09.0029X Issue 0

Applicant: Petrel Limited

Apparatus: Petrel Series 7 Luminaire



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

The lamp tube assembly employs a tube that is made from either toughened borosilicate glass or a polycarbonate material, Makralon® 3103 or 3203 manufactured by Bayer AG. The fluorescent lamps are housed within the lamp tube assembly, together with the associated control equipment.

Eccobond® 45 LV cement, manufactured by Emerson and Cumming, is used to seal the end caps to the tube. This is also used as the battery pack bushing potting material. The integrity of the cement seal between the end cap and the tube is maintained by two, 12 mm diameter tie bars. These connect both end caps together, thus compressing the tube and cemented joints between the caps. In the case of the bushing seal, a groove is machined internally, thus effectively locking the potting material in position.

All sizes of luminaires are also fitted with battery backup facilities. These take the form of battery packs mounted on the gear tray or installed within the remote battery housing as indicated below. The range of luminaries are defined as follows:

Size (ft)	Gas Group	T5 Lamps	T8 Lamps	PL# Lamps	Emergency Version (Maximum No. of Cells)	Max.m Circuit Watts For:	
						Ta Maximum	Ta Reduced
1	IIB/IIC	1 or 2 8 W		2 26 W	3	T4 @ 32 W Ta 52°C	T5 @ 65 W Ta 40°C
1	IIB/IIC	1 or 2 8 W *			2	T6 @ 19 W Ta 55°C	T5 @ 65 W Ta 40°C
2	IIB/IIC		1 or 2 18 W	2 55 W	5	T5 @ 69.5 W Ta 55°C	T6 @ 126 W Ta 40°C
4	IIB		1 or 2 36 W	2 55 W	6 (remote pack only)	T5 @ 133 W Ta 55°C	T6 @ 133 W Ta 40°C
4	IIC	1 or 2 39 W			6 (remote pack only)	T5 @ 133 W Ta 55°C	T6 @ 133 W Ta 40°C
5	IIB		1 or 2 58 W		6 (remote pack only)	T5 @ 152 W Ta 55°C	T6 @ 152 W Ta 40°C
6	IIB		1 or 2 70W		6 (remote pack only)	T4 @ 175 W Ta 55°C	T5 @ 175 W Ta 40°C

* Only one lamp may be operated at a time.

Both the IIC and IIB versions of luminaires may be used for emergency lighting, in the case of the IIC, with self-contained battery and inverter units. For the IIB versions, the battery must be installed with a remote battery housing. The remote battery housing is IIC in all instances. The IIC and IIB versions can be wired for non-maintained, maintained or sustained lighting.

There is a mounting lug on each body casting of the luminaires, this can be used for solid fixing of the luminaire or suspending it. The lug can also be used for mounting a guard or an external reflector.

The luminaire is only suitable for dust environments when the toughened borosilicate glass tube is specified.

The Manufacturer shall comply with the following conditions of manufacture:

- 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 clause 16.1 of IEC 60079-1. There shall be no permanent deformation or damage to the enclosure.

Equipment	Hydrostatic Overpressure Test Pressure Applied IIC		Hydrostatic Overpressure Test Pressure Applied IIB	
	Bar	Lbf/in ²	Bar	Lbf/in ²
1 foot	14.00	203.00	N/A	N/A
2 foot	14.00	203.00	N/A	N/A
4 foot	12.60	182.70	N/A	N/A
5 foot			20.55	297.98
6 foot			14.00	203.00

- ii. The manufacturer shall be responsible for the safety integrity of the battery charger/inverter with respect to compliance with clause E.6.4 of IEC60079-1.

Date: 22 December 2009

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Sira Certification Service

Rake Lane, Eccleston, Chester, CH4 9JN, England

Tel: +44 (0) 1244 670900

Fax: +44 (0) 1244 681330

Email: info@siracertification.com

Web: www.siracertification.com