# EU Type Examination Certificate CML 17ATEX3027X Issue 4

1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

2 Equipment **Area Light / Z1ALED***, ALED*/*/Z1… & TLED*/*/Z1… series**

3 Manufacturer **Petrel Ltd.**

4 Address Kitts Green
Birmingham
West Midlands
B33 0LB
United Kingdom

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

6 CML B.V., Chamber of Commerce No 6738671, Koopvaardijweg 32, 4906CV Oosterhout, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 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 IEC 60079-0:2018
EN IEC 60079-7:2015+A1:2018
EN IEC 60079-18:2015+A1:2017
EN 60079-31:2014

10 The equipment shall be marked with the following:

II 2 G D

Ex eb mb IIC T4 Gb

Ex tb IIIC T135°C Db

-25°C/-40°C ≤ Ta ≤ +55°C*

* See description for model variants ambient ranges.

## 11 Description

The Area Light / Z1ALED*** is an LED luminaire for installations in Zone 1 / EPL Gb and Zone 21 / Db. Two Aluminium enclosures are fitted, the LED enclosure has a large 1500 $mm^2$ 4mm thick window; and houses the LED array. The power supply enclosure houses an encapsulated 150 W max / 220-250Vac / 700 or 400 mA power supply and separately certified Ex e terminals. Cable entries are provided with separately certified cable glands and blanks.

The luminaires are rated for ingress protection IP66 and IP67.

An inherently safe cool white LED array is housed in the LED enclosure; the LEDs are mounted on a white substrate. An optically clear silicone is applied for the LED array.

**Area Light Maxi 400 (ALED4/*/Z1/***/**):**

The Area light Maxi 400 luminaire is an alternative variant of the existing design fitted with an alternative LED array board/light engine and new LED driver. The luminaire is fitted with an encapsulated LED driver unit of either 216W Max, 120-270Vac or 156W Max, 230-240Vac power supply, increased safety terminal box containing a suitably certified terminal block. For the EPL Gb Db variants Zone 1 application, the LED board is encapsulated. The cable entries are fitted with suitably certified cable glands or stopping plugs. The luminaire may be supplied with either a toughened glass or hard coated polycarbonate window.

**Area Light Midi 300 (ALED3/*/Z1/***/**):**

The Area Light Midi 300 is provided with metallic enclosure body approximately 900 $cm^2$ and cover fitted with a window of either toughened glass or hard coated polycarbonate. The luminaire is fitted with an encapsulated LED driver unit of 86W Max, 120-270Vac power supply, increased safety terminal box containing a suitably certified terminal block. For the EPL Gb Db variants Zone 1 applications the LED board is encapsulated. The cable entries are fitted with suitably certified cable glands or stopping plugs.

**Area Light Mini 200 (ALED2/*/Z1/***/**):**

The Area Light Mini 200 is provided with metallic enclosure body approximately 400 $cm^2$ and cover fitted with a window of either toughened glass or hard coated polycarbonate. The luminaire is fitted with an encapsulated LED driver unit of 45W Max, 120-270Vac power supply, increased safety terminal box containing a suitably certified terminal block. For the EPL Gb Db variants Zone 1 application the LED board is encapsulated. The cable entries are fitted with suitably certified cable glands or stopping plugs.

**Transportable options (TLED*/*/Z1/***/**/**/**):**

The Area Light Maxi 400, Midi 300 and Mini 200 variants are suitable for transportable application luminaires. In this form they are provided with stand frame and trumpet gland and flying cable fitted with or without increased safety terminal box. A suitably equipment certified mains plug and/or socket may be added to the flying lead. The electrical and temperature ratings remain the same as described for the Mini 200, Midi 300 and Maxi 400 models. All variants may be fitted with glass or polycarbonate window, however, when fitted with a polycarbonate window, the Mini 200 shall be marked for lower ambient temperature of -25°C for both transportable and fixed applications.

| Luminaire Type | *Ambient Range | Temperature Class |
|---|---|---|
| Area Light Maxi 400 (ALED4/*/Z1/***/**) | -40°C to +55°C | T4/T135°C |
| Area Light Midi 300 (ALED3/*/Z1/***/**) | -40°C to +55°C | T4/T135°C |
| Area Light Mini 200 (ALED2/G/Z1/***/**)<br>Fixed installation fitted with Glass Window | -40°C to +55°C | T4/T135°C |
| Area Light Mini 200 (ALED2/P/Z1/***/**)<br>Fixed installation fitted with Polycarbonate window | -25°C to +55°C | T4/T135°C |
| Area Light Mini 200 (TLED2/P/Z1/***/**)<br>Transportable option fitted with Polycarbonate window | -25°C to +55°C | T4/T135°C |

**Variation 1**

This variation introduced the following modifications:

i. The modification to equipment model and description.
ii. To remove the previous specific condition of use referenced below:
14.1 The Area Light luminaire shall be installed and maintained in accordance with the manufacturer's instructions.
iii. The introduction of an alternative Area Light Maxi 400 with different LED array board and LED driver.
iv. The inclusion of polycarbonate lens for the luminaire cover.
v. The introduction of new Area light type Midi 300 and Mini 200.
vi. The introduction of transportable variants Area Light Maxi 400, Midi 300 and Midi 200.
vii. The clarification on Dielectric Resin material Type/Model number.

**Variation 2**

This variation introduced the following modifications:

i. Update the equipment to the latest edition standards.
ii. Update the marking to include information relating to the UKEX approval of the product.
iii. Removal of EN 60079-28 as a protection concept and removal of "op is" from the marking.

**Variation 3**

This variation introduced the following modifications:

i. To assess and permit the addition of a new driver for the Area Light Maxi 400.
ii. To remove temperature class options T5 and T6 from the coding for the Area Light Zone 1/21 models.

## 12 Certificate history and evaluation reports

| Issue | Date | Associated report | Notes |
|---|---|---|---|
| 0 | 31/03/2017 | R1308A/00 | Report for prime certificate. |
| 1 | 24/01/2019 | - | Re-issued to correct a typographic error. |
| 2 | 21/08/2019 | R12150A/00 | Variation to include the new area light types, LED driver and window cover (Variation 1). Transfer to CML B.V. |
| 3 | 22/11/2021 | R14528A/00 | Introduction of Variation 2. |
| 4 | 10/08/2022 | R15272A/00 | Introduction of Variation 3. |

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.

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. Each unit manufactured shall be subjected to an electric strength test in accordance with EN IEC 60079-7:2015+A1:2018 clause 7.1. It shall be carried out at 1500 Vac for 60 seconds or at 1.2 times this test voltage for at least 100 ms

iii. Each encapsulated unit shall undergo a visual inspection in accordance with EN IEC 60079-18:2015+A1:2017 clause 9.1

iv. Each encapsulated unit manufactured shall be subjected to an electric strength test in accordance with EN IEC 60079-18:2015+A1:2017 clause 9.2. It shall be carried out at 1000 V + 2U for 60 seconds or at 1.2 times this test voltage for at least 100 ms

v. For the transportable variant model Mini 200, the assembly is fitted with or without an increased safety terminal box, cable flying lead fitted with suitably certified plug.

## 14 Specific Conditions of Use (Special Conditions)

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

i. To prevent electrostatic static discharge, the units shall be cleaned with a damp cloth only. See instructions for manufacturer guidance to minimize the risk from electrostatic discharge.

ii. The area lights once fitted with specific frame for transportable option are only to be powered once placed in appropriated place. The luminaires are not to be carried by a person whilst it is energized.

# Certificate Annex

| | |
|---|---|
| **Certificate Number** | CML 17ATEX3027X |
| **Equipment** | Area Light / Z1ALED***, ALED*/*/Z1… & TLED*/*/Z1… series |
| **Manufacturer** | Petrel Ltd. |

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

**Issue 0**

| **Drawing No** | Sheets | Rev | Approved date | **Title** |
|---|---|---|---|---|
| AREA 001 | 1 to 2 | 1 | 31/03/2017 | Area Light G.A. |
| ALED10180 | 1 of 1 | 1 | 31/03/2017 | Area Light Zone 1 LED Marking Plate |
| AREA 100 | 1 of 1 | 2 | 31/03/2017 | LED Driver Thermal Fuse Positions |
| AREA 002 | 1 of 1 | 1 | 31/03/2017 | Encapsulation Certification Drawing for Area Light Drivers |
| AREA EPROC | 1 of 1 | 1 | 31/03/2017 | AREA LIGHT Encapsulants |
| ALED10010 | 1 of 1 | 1 | 31/03/2017 | Area Light Engine |

**Issue 1**

No new drawings

**Issue 2**

| **Drawing No** | Sheets | Rev | Approved date | **Title** |
|---|---|---|---|---|
| AREA 003 | 1 of 1 | 1 | 19 Sep 2019 | Thermal fuse positions – Fulham T1M1UNV140P-200LES & PCB0030 |
| AREA 004 | 1 of 1 | 1 | 19 Sep 2019 | Thermal fuse positions – Fulham T1M1UNV240P-96LES & PCB00027 |
| AREA 005 | 1 of 1 | 1 | 19 Sep 2019 | Thermal fuse positions – Fulham T1UNV1400-60L & PCB00029 |
| A400L020 | 1 of 1 | 1 | 19 Sep 2019 | AREA 400 Light Engine |
| A300L020 | 1 of 1 | 1 | 19 Sep 2019 | AREA 300 Light Engine |
| A200L020 | 1 of 1 | 1 | 19 Sep 2019 | AREA 200 Light Engine |
| AREA-002 | 1 of 1 | 1 | 19 Sep 2019 | Encapsulation certification drawing for area light drivers |
| GA 001 | 1 to 4 | 1 | 19 Sep 2019 | AREA LIGHT G.A. |
| ALED 10180 | 1 of 1 | 2 | 19 Sep 2019 | Area Light Zone 1 LED Marking Plate |
| AREA-EPROC | 1 of 1 | 2 | 19 Sep 2019 | Area Light Encapsulants |

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| **Manufacturer** | Petrel Ltd. |

**Issue 3**

| Drawing No | Sheets | Rev | Approved date | Title |
|---|---|---|---|---|
| ALED10180 | 1 of 1 | 3 | 22 Nov 2021 | Area Light Zone 1 Marking Plate |

**Issue 4**

| Drawing No | Sheets | Rev | Approved date | Title |
|---|---|---|---|---|
| 6HPCB00032 | 1 of 1 | 3 | 09 Aug 2022 | ALED4 Vossloh Thermal Fuse PCB |
| GA 001 | 1 of 1 | 2 | 09 Aug 2022 | Area Light G.A. |
| AREA-002 | 1 of 1 | 2 | 09 Aug 2022 | Encapsulation Certification Drawing for Area Light Drivers |
| AREA006 | 1 of 1 | 1 | 09 Aug 2022 | Thermal Fuse Positions VS Ref No 186863 & 6HPCB00032 |
| ALED10180 | 1 of 1 | 4 | 09 Aug 2022 | Area Light Zone 1 Marking Plate |