



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 CML 16.0120 Issue No: 2 Certificate history:
Status: **Current** Issue No. 2 (2019-08-28)
Date of Issue: **2019-08-28** Page 1 of 4 Issue No. 1 (2019-04-09)
Applicant: **Abtech Limited** Issue No. 0 (2017-09-25)
199 Newhall Road, Lower Don Valley, Sheffield, S9 2QJ
United Kingdom

Equipment: **Exodus Bulkhead Luminaires**
Optional accessory:

Type of Protection: **Increased Safety "eb/ec", Intrinsic Safety "ib/ic", Powder Filled "q", Optical Radiation "op is", Dust Ignition "tb/tc"**

Marking:
Ex eb ib op is q IIB T4 Gb
Ex ec ic op is q IIB T4 Gc
Ex tb op is IIIC T135°C Db
Ex tc op is IIIC T135°C Dc
Ta: -20°C to +55°C

Approved for issue on behalf of the IECEx
Certification Body:

H M Amos MIET

Position:

Technical Manager

Signature:
(for printed version)

Date:

August 28, 2019

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:

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





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Manufacturer: **Abtech Limited**
199 Newhall Road, Lower Don Valley, Sheffield, S9 2QJ
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Additional 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 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 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-28 : 2015 Edition:2	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-5 : 2015 Edition:4.0	Explosive atmospheres –Part 5: Equipment protection by powder filling "q"
IEC 60079-7 : 2015 Edition:5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

*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/CML/ExTR16.0160/00](#) [GB/CML/ExTR19.0057/00](#)

Quality Assessment Report:

[GB/CML/QAR16.0021/02](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Exodus Bulkhead Emergency is an LED luminaire containing LED arrays supplied by an intrinsically safe supply from an integrated driver unit and also capable of emergency operation from the self-contained batteries which are also charged from the driver unit.

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):

Issue 1

1. Amendment to equipment description to distinguish the emergency version from standard type as a separate design option.
2. The introduction of alternative luminaire arrangement, with changes to the description and conditions of manufacture

Issue 2

1. To update QAR reference

Annex:

[Certificate Annex IECEx CML 16.0120 Issue 2.pdf](#)

Annexe to: IECEx CML 16.0120 Issue 2
Applicant: Abtech Limited
Apparatus: Exodus Bulkhead Luminaires



Product Description

The Exodus Bulkhead is an LED luminaire containing LED arrays supplied by an intrinsically safe supply from an integrated driver unit. The equipment may provide in two formats; standard type or standard type integrated with emergency backup unit which allows emergency operation from self-contained batteries. The batteries are charged from the driver unit.

The Exodus LED Driver is designed to be supplied from a source voltage of between 90 Vac and 250 Vac 50/60 Hz. The luminaire contains a sand filled enclosure which in turn contains a switch mode power supply and an LED driver/charging circuit. It also contains a terminal block to permit the connection of both the mains and the intrinsically safe output, as well as housing the LED array, battery pack and glass lens. Sealing of the enclosure is by means of a closed cell silicone gasket. Intrinsic safety is provided by duplicated voltage and current trips that provide the following outputs:

$U_m = 250 \text{ Vac}$

$U_o = 13.5 \text{ V}$

$I_o = 2 \text{ A}$

$C_o = 0$

$L_o = 0$

Intrinsic safety of the LED driver is achieved by limiting energy storage and discharge, and by connecting to the non-hazardous area via the intrinsically safe LED driver.

The equipment incorporates the use of the Abtech Zag enclosure which is previously certified under Sira 99ATEX3174U & IECEx SIR 12.0116U. The equipment also includes suitably certified increased safety terminals.

The Exodus has an alternative housing of tubular shape known as NIMO. The alternative arrangement is comprising of the same driver or electronic with electrical characteristics but housed inside a different enclosure. The driver enclosure is fabricated from metallic sheet bend in U-shape. Two plates as end wall are welded inside the U-shaped body at a distance apart from each other to form the driver enclosure. Two holes on each end wall and one threaded entry on one of the end walls are constructed as cable entry. The driver enclosure is quartz filled and a cover is glued by silicon 153 RTV paste to seal and permanently riveted at 6 locations. The back side of the U-shaped body is fitted with LED board.

The driver and LED board assembly are fitted inside a glass tube. The glass tube is sealed and supported by silicon gaskets and metallic end caps at each end retained by tie rods together. The luminaire is provided with appropriately dimensioned terminal compartment and threaded entry at one end fitted with suitable terminal block. The terminal compartment is closed by a threaded cover and linked to the LED compartment by suitably certified increased safety cable gland. The luminaire assembly is fitted to a reflector which also is used as mounting fixture for the luminaire.

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Conditions of Manufacture

The following are conditions of manufacture:

- 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 powder filled enclosure shall be subjected to a routine overpressure test at 50 kPa (0.5 bar) in accordance with EN 60079-5:2015, clause 5.2.1. for a minimum of 10 seconds. There shall be no permanent deformation exceeding 0.5 mm in any of its dimensions. Alternatively, batch testing in accordance with clause EN 60079-5:2015, clause 5.2.1 may be conducted.
- iii. Each unit manufactured shall be subjected to an electric strength test in accordance with EN 60079-7:2015 clause 7.1. It shall be carried out either at 1000 V + 2U for 60 seconds or at 1.2 times this test voltage for at least 100 ms. No flashover or breakdown shall occur.
- iv. Each batch of the filling material shall be subjected to a dielectric strength test in accordance with EN 60079-5:2015 clause 5.2.2 for a minimum of 60 seconds.
- v. The driver enclosure cover shall be sealed using Silicone 153 on sealing edges with continuous bead. The cover shall be permanently closed and any excess silicone to be wiped and cleaned.
- vi. The NIMO luminaire shall not be used without the reflector.

Special Conditions for Safe Use

None