



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 PRE 15.0014U Issue No: 1 Certificate history:
Status: **Current** Page 1 of 4 [Issue No. 1 \(2016-01-21\)](#)
Date of Issue: **2016-01-21** [Issue No. 0 \(2015-05-08\)](#)
Applicant: **Barel AS**
Havneveien 8
9917 Kirkenes
Norway
Electrical Apparatus: **LED lamp**
Optional accessory:
Type of Protection: **Encapsulation "Ex mb"**
Marking: Ex mb op is IIC Gb

Approved for issue on behalf of the IECEx
Certification Body:

Bjørn Spongsveen

Position:

Certification Manager

Signature:
(for printed version)

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](#).

Certificate issued by:

DNV Nemko Presafe AS
Gaustadalleen 30
P.O.Box 73 Blindern
0314 Oslo
Norway





IECEx Certificate of Conformity

Certificate No: IECEx PRE 15.0014U

Issue No: 1

Date of Issue: 2016-01-21

Page 2 of 4

Manufacturer: **Barel AS**
Havneveien 8
9917 Kirkenes
Norway

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 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 : 2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-18 : 2014 Explosive atmospheres – Part 18: Equipment protection by encapsulation “m”
Edition:4.0

IEC 60079-28 : 2015 Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
Edition:2

*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:

[NO/PRE/ExTR15.0016/00](#) [NO/PRE/ExTR15.0016/01](#)

Quality Assessment Report:

[NO/NEM/QAR08.0001/05](#)



IECEx Certificate of Conformity

Certificate No: IECEx PRE 15.0014U

Issue No: 1

Date of Issue: 2016-01-21

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

This certificate covers Barel AS Ex components ARC 600 and ARC 1200. The LED's are mounted on a PCB which is placed on an aluminum profile with encapsulation covering all live parts. The entry wires is also covered with encapsulation but the free ends must be protected and terminated according to another type of protection as listed in IEC 60079-0, for example an "Ex e". The LED light has been assessed according to "Ex op is" and comply with the optical irradiance requirements, less than 5mW/mm^2 with fault applied.

For further details, see Annex to IECEx PRE 15.0014U Issue 1.

CONDITIONS OF CERTIFICATION: NO



IECEX Certificate of Conformity

Certificate No: IECEx PRE 15.0014U

Issue No: 1

Date of Issue: 2016-01-21

Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

This issue 1 Included generation 2 of the LED PCB, new material of the aluminium profile, new version of ARC 1200, ARC 1200-2 were added where the two LED modules are connected in parallel instead of series, this reduces the power and the Lumen from the luminaire by half. The optical irradiance was measure and confirmed less than 5mW/mm² which allow us to waive the schedule of limitation: IP6X and distance from the LED to external surface of 14mm. The certificate was updated to the latest standards.

Annex:

[Annex to IECEx PRE 15.0014U Issue 1.pdf](#)

Annex to the certificate: IECEx PRE 15.0014U Issue 1

Type Identification and electrical data:

ARC 600: LED light with a length of ~600mm includes 44 LEDs, 2800lm. It can be delivered in different colors, 4000K and 6000K with and without diffuser.

ARC 1200: LED light with a length of ~1200mm includes 88 LEDs, 5600lm. It can be delivered in different colors, 4000K and 6000K with and without diffuser.

ARC 1200-2: LED light with a length of ~1200mm includes 88 LEDs, 2800lm. It can be delivered in different colors, 4000K and 6000K with and without diffuser.

Model	Art	Light	Lamp color	Input Voltage	Input Current	TC
ARC 600	11923	2500lm	4000K	65VDC	370mA	+80°C
ARC 600	11924	2800lm	6000K	65VDC	370mA	+80°C
ARC 1200	11943	5000lm	4000K	130VDC	370mA	+80°C
ARC 1200	11944	5600lm	6000K	130VDC	370mA	+80°C
ARC 1200-2	11933	2500lm	4000K	65VDC	370mA	+80°C
ARC 1200-2	11934	2800lm	6000K	65VDC	370mA	+80°C

Routine Test:

Routine test that shall be carried out by the manufacturer on all units:

- Visual inspection according to clause 9.1 of IEC 60079-18
- Dielectric strength test according to clause 9.2 of IEC 60079-18

Schedule of Limitations:

- The ARC LED can be supplied by HFX LED and HFXE LED, certified Presafe 14 ATEX 5355U and IECEx PRE 14.0039U or other LED driver with the following ratings:
 - o Rated current of 370mA
 - o Rated voltage ARC 600 and ARC 1200-2 = 65VDC
 - o Rated voltage ARC 1200 = 130VDC
 - o The supply circuit must include a protective device that limits the current to 850mA, for example a 500mA fuse with a rated voltage corresponding to the type identification
- The supply circuit must include a fuse according to the rated voltage, capable of withstanding a prospective short-circuit current of 1500A
- The ARC LED has to be mounted inside an enclosure meeting the requirements of IEC 60079-0, for example an "Ex e" luminaire.
- The wires, flying leads, must be protected and terminated according to one of the specific types of protection as listed in IEC 60079-0, Cl. 1, for example inside an "Ex e" enclosure with "Ex e" terminals.
- The minimum operating temperature is: -52°C
- The Tc point of the ARC LED shall not exceed: +80°C in normal operation
- The temperature increase from normal operation to fault condition has been determined to 50K based on the input current to the ARC LED is limited to 850mA, +80°C + 50K + 5K = 135°C, T4