

EC-Type Examination Certificate

- [2] COMPONENT INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC
- [3] EC-Type Examination Certificate Number: Presafe 15 ATEX 6296U Issue 1
- [4] Component: LED lamp
- [5] Applicant – Manufacturer or Authorized representative: Barel AS
- [6] Address: Havneveien 8
9917 Kirkenes
Norway
- [7] This component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] DNV Nemko Presafe AS, notified body number 2460 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this component has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in confidential reports listed in section 16.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with: EN 60079-0: 2012 and EN 60079-18:2015 and EN 60079-28:2007 (IEC 60079-28:2015)
- [10] The sign 'U' placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.
- [11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified component. Further requirements of the Directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.
- [12] The marking of component shall include the following:

 II 2 G Ex mb op is IIC T4 Gb

Bjørn Spongsveen
For DNV Nemko Presafe AS
Information on electronic signature www.presafe.com



Date of issue: 2016-01-20

This certificate may only be reproduced in its entirety and without any change, schedule included.

[13]

Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No.: Presafe 15 ATEX 6296U Issue 1

[15] **Description of Component**

This certificate covers Barel AS Ex components ARC 600 and 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 EN 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/mm² with fault applied.

Type designation

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 tests

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

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

[16] **Report No.:** D0001324 Rev 1

[17] **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
 - o 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 EN 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 EN 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

[18] **Essential Health and Safety Requirements**

See part 9 of this certificate

[19] **Descriptive Documents**

Number	Title	Rev.	Date
250025	ARC END 5_4	-	2014-05-14
250026-250029	ARC 5_4, aluminum profile	A	2015-12-09
250028	ARC END 5_4 open	A	2015-06-16
11924-11934-11944	ARC ASSY Gen 2	-	2016-01-11
I_U197	Assembly and potting ARC	2	2015-08-31
BoM 11923	BoM ARC	11	2016-01-15
Label ARC	Label ARC	7	2016-01-15
SCH Fortimo 2FT 1R	SCH Fortimo LED	C	2016-01-11

[20] **Certificate History**

Issue	Description	Issue date	Report no.
0	Original issue	2015-05-08	D0001324
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 $5\text{mW}/\text{mm}^2$ 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.	2016-01-19	D0001324 Rev 1

END OF CERTIFICATE