

EU-Type Examination Certificate

- [2] COMPONENT INTENDED FOR USE ON/IN AN EQUIPMENT OR PROTECTIVE SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 2014/34/EU
- [3] EU-Type Examination Certificate Number: Presafe 15 ATEX 6296U Issue 2
- [4] Product: LED lamp
- [5] Manufacturer: Barel AS
- [6] Address: Havneveien 8
9917 Kirkenes
Norway
- [7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] DNV GL Nemko Presafe AS, notified body number 2460, 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 product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products 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/A11:2013 and EN 60079-18:2015 and EN 60079-28:2015
- [10] The sign “U” is placed after the certificate number. It 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 EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
- [12] The marking of the product shall include the following:



II 2 G

Ex mb op is IIC Gb
(T-class is specified in Schedule of Limitations)

Date of issue: 2017-12-12

Asle Kaastad
For DNV GL Nemko Presafe AS

The Certificate has been digitally signed.
See www.presafe.com/digital_signatures for more info



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

[13] **Schedule**

[14] **EU-TYPE EXAMINATION CERTIFICATE No.:** Presafe 15 ATEX 6296U **Issue 2**

[15] **Description of Product**

This certificate covers the LED lamp models, ARC 600 & ARC 1200 & ARC 1200-2 which are manufactured by Barel AS. The PCB with LED components are placed on an aluminium profile with encapsulation covering all live parts. The entry wires are also covered with encapsulation but the free ends must be protected and terminated in accordance to another type of protection as listed in EN 60079-0, for example “Ex e”. The optical radiation complies with requirements of “Ex op is”.

Type designation

ARC 600: length 0.6m. ARC 1200 & ARC 1200-2: length 1.200m. These models may have variants with different colour, with and without diffuser.

Model	Art	Lumen	Lamp colour	Rated	Remark
Rev 0 & 1					(PCB/electronic module)
ARC 600	11923	2500lm	4000K	65V/370mA	Fortimo LED Line HV2
ARC 600	11924	2800lm	6000K	65V/370mA	Fortimo LED Line HV2
ARC 1200	11943	5000lm	4000K	130V/370mA	Fortimo LED Line HV2
ARC 1200	11944	5600lm	6000K	130V/370mA	Fortimo LED Line HV2
ARC 1200-2	11933	2500lm	4000K	65V/370mA	Fortimo LED Line LV2 *)
ARC 1200-2	11934	2800lm	6000K	65V/370mA	Fortimo LED Line LV2 *)
Supplementary information: *) No longer produced.					
Rev 2					(PCB/electronic module)
ARC 600 840 G3	11974	2500	4000K	65V/370mA	Fortimo LED Line HV3
ARC 600 860 G3	11976	2800	6000K	65V/370mA	Fortimo LED Line HV3
ARC 1200 840 G3	11994	5000	4000K	130V/370mA	Fortimo LED Line HV3
ARC 1200 860 G3	11996	5600	6000K	130V/370mA	Fortimo LED Line HV3
ARC 600 840 BG3	11964	2500	4000K	65V/370mA	Barel LM 40x552
ARC 600 860 BG3	11966	2800	6000K	65V/370mA	Barel LM 40x552
ARC 1200 840 BG3	11984	5000	4000K	130V/370mA	Barel LM 40x552
ARC 1200 860 BG3	11986	5600	6000K	130V/370mA	Barel LM 40x552

Electrical Data

See Table above.

Degrees of protection (IP Code)

(Built-in Ex component)

Temperature range

Operating temperature range: -52°C to +58°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: 2015
- Dielectric strength test according to clause 9.2 of EN 60079-18: 2015

[16] Report No.:

D0001324-02

[17] Schedule of Limitations

- The ARC LED can be supplied by the LED driver modules models HFX LED and HFXE LED which are covered by certificates Presafe 14 ATEX 5355U and IECEx PRE 14.0039U, or other LED driver with the following ratings:
 - Rated current of 370mA
 - Rated voltage ARC LED 600 and ARC 1200-2 = 65VDC
 - Rated voltage ARC LED 1200 = 130VDC
 - The supply circuit must include a protective device that limits the current to 850mA.
Or include a fuse with max rated current of 500mA, having corresponding rated voltage and is capable to withstand a prospective short-circuit current of 1500A.
- The ARC LED lamp must be mounted inside an enclosure which is meeting the requirements of a specific type of protection as listed in IEC 60079-0, Cl. 1. E.g. an "Ex e" enclosure.
- The permanently connected supply wires, must be protected and terminated in accordance to one of the specific types of protection as listed in IEC 60079-0, Cl. 1. E.g. use of Ex e terminals inside an "Ex e" enclosure.
- The operating temperature range is: -52°C to 58°C.
- The Tc point of the ARC LED shall not exceed +80°C in normal operation.
- Temperature class and suitable temperature range may be determined in the final application for the end-product. For the listed operating temperature range (-52°C to 58°C):
 - Models ARC 600 840 G3 & ARC 600 860 G3 & ARC 1200 840 G3 & ARC 1200 860 G3, achieved compliance of T3 temperature class whereof temperature increase is $\Delta T = 76^{\circ}\text{C}$
 - All other models achieved compliance of T4 temperature class whereof temperature increase is $\Delta T = 71^{\circ}\text{C}$

[18] Essential Health and Safety Requirements

Essential Health and Safety Requirements (EHSRs) are covered by the standards listed at item 9

[19] Drawings and Documents

Number	Title	Rev.	Date
250025	ARC END 5_4	-	2014-05-14
250028	ARC END 5_4 open	A	2015-06-16
250026-250029	ARC 5_4, aluminum profile	B	2017-08-23
ASSY 11964-84	ARC ASSY BG3 030817	-	2017-08-03
ASSY 11974-94	ARC ASSY G3 030817	-	2017-08-03
250030	ARC Estk G3 270617	-	2017-04-04
I_U197	Assembly and potting ARC	3	2017-08-23
BOM 11923	BOM ARC	11	2016-01-15
BOM 11964-96	BOM ARC G3	2	2017-08-23
Label ARC	Label ARC	8	2018-08-22
PCB 305A 2x276	PCB 305A 2x276 07082017	A	2017-08-07
PCB 306 1x152	PCB 306A 1x552 07082017	A	2017-08-07
SCH Fortimo 2FT 1R	SCH Fortimo HV3	D	2017-09-21
SCH 305	SCH 305-6A 07.08.2017	A	2017-08-07

[20] Certificate History

Issue	Description	Issue date	Report no.
0	Original report	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 5mW/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
2	Two new LED modules (PCB), Fortimo LED Line HV3 and Barel LM 40x552, are added as part of the LED lamps and by which are making up for new models as listed in Item "Type Designation".	2017-12-12	D0001324-02

END OF CERTIFICATE