

1 EU - Type Examination Certificate

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

3 Certificate Number: **ExVeritas 19 ATEX 0478U** Issue: **2**

4 Equipment: **ARC BG4 & BG5 series LED Modules and VSI LED Status Indicator**

5 Manufacturer: **BAREL AS**

6 Address: **Havneveien 8, N-9917 Kirkenes, Norway**

7 This component and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 ExVeritas, Notified Body number 2804 in accordance with Article 9 of the Council Directive 2014/34/EU of 26 February 2014, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to design and construction of equipment and protective systems for use in potentially explosive atmospheres given in Annex II to the Directive

9 Compliance with the applicable Essential Health and Safety Requirements has been assured by compliance with the following Standards and section 16 of this report:

EN IEC 60079-0: 2018

EN 60079-18: 2015

10 If 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 the basis for certification of an equipment or protective system.

11 This EU-Type Examination Certificate relates only to the design, construction, examination and tests of the specified component in accordance to the Directive 2014/34/EU. 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 the equipment shall include the following:

 II 2 G Ex mb IIC Gb



On behalf of ExVeritas



Peter Lauritzen
Managing Director

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

The certificate is only valid when it carries an original signature.

For help or assistance relating to this certificate, contact info@exveritas.com.

ExVeritas ApS, Severinsmindevej 6, 4420 Regstrup, Denmark.

ExVeritas® is a registered trademark, unauthorised use will lead to prosecution.

Schedule

13 Description of Equipment or Protective System

The ARC BG4 and BG5 are Ex Component approved LED arrays for use in hazardous area luminaires. The rated service temperature range for the BG4 series is: Ts -40°C to +80°C. The rated service temperature range for the BG5 series and the VSI LED Status Indicator is: Ts -40°C to +95°C.

The VSI LED Status Indicator, which can be used with BG4 and BG5 model types, is employed to indicate battery status and is available in 4 colour options: Clear Green, White Green, Clear Red/Green and White Red Green.

The tables below detail the ARC BG4 and BG5 model types covered under this approval.

Name	Description	Model	Barel art	Type	Length mm	Color temp	Input rating	Nominal power W
ARC BG4	LED lamp	600	11283	ARC BG4 600 830	574	3000K	370mA/64V	23,7
			11284	ARC BG4 600 840	574	4000K		
			11286	ARC BG4 600 860	574	6000K		
			11283HF	ARC BG4 600 830 HF	574	3000K	550mA/64V	
			11284HF	ARC BG4 600 840 HF	574	4000K		
			11286HF	ARC BG4 600 860 HF	574	6000K		
		1200	11483	ARC BG4 1200 830	1134	3000K	370mA/128V	47,3
			11484	ARC BG4 1200 840	1134	4000K		
			11486	ARC BG4 1200 860	1134	6000K		
			11483HF	ARC BG4 1200 830 HF	1134	3000K	550mA/128V	
			11484HF	ARC BG4 1200 840 HF	1134	4000K		
			11486HF	ARC BG4 1200 860 HF	1134	6000K		
	LED lamp with E-indicator	600	11283E	ARC BG4 600 830 E	574	3000K	370mA/64V	23,7
			11284E	ARC BG4 600 840 E	574	4000K		
			11286E	ARC BG4 600 860 E	574	6000K		
			11283EHF	ARC BG4 600 830 E HF	574	3000K	550mA/64V	
			11284EHF	ARC BG4 600 840 E HF	574	4000K		
			11286EHF	ARC BG4 600 860 E HF	574	6000K		
1200		11483E	ARC BG4 1200 830 E	1134	3000K	370mA/128V	47,3	
		11484E	ARC BG4 1200 840 E	1134	4000K			
		11486E	ARC BG4 1200 860 E	1134	6000K			
		11483EHF	ARC BG4 1200 830 E HF	1134	3000K	550mA/128V		
		11484EHF	ARC BG4 1200 840 E HF	1134	4000K			
		11486EHF	ARC BG4 1200 860 E HF	1134	6000K			

Certificate ExVeritas 19 ATEX 0478U Issue 2

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

For help or assistance relating to this certificate, contact info@exveritas.com.

ExVeritas ApS, Severinsmindevej 6, 4420 Regstrup, Denmark.

ExVeritas® is a registered trademark, unauthorised use will lead to prosecution.

Schedule

Description of Equipment (cont'd)

Name	Length mm	Color temp CRI80	Input rating DC	Nominal power, W	Total lumen output (Calc)
ARC BG5 300 830	290	3000K	370mA/32 V	12	1824
ARC BG5 300 840	290	4000K			1903
ARC BG5 300 850	290	5000K			1913
ARC BG5 300 860	290	5700K			1936
ARC BG5 600 830	574	3000K	370mA/64 V	24	3649
ARC BG5 600 840	574	4000K			3805
ARC BG5 600 850	574	5000K			3829
ARC BG5 600 860	574	5700K			3873
ARC BG5 1200 830	1134	3000K	370mA/128 V	48	7298
ARC BG5 1200 840	1134	4000K			7611
ARC BG5 1200 850	1134	5000K			7656
ARC BG5 1200 860	1134	5700K			7745
ARC BG5 1200 830 HF	1134	3000K	550mA/128 V	70	10735
ARC BG5 1200 840 HF	1134	4000K			11208
ARC BG5 1200 850 HF	1134	5000K			11276
ARC BG5 1200 860 HF	1134	5700K			11343
ARC BG5 1500 830	1412	3000K	370mA/160 V	60	9122
ARC BG5 1500 840	1412	4000K			9514
ARC BG5 1500 850	1412	5000K			9569
ARC BG5 1500 860	1412	5700K			9682
ARC BG5 1500 830 HF	1412	3000K	550mA/160 V	88	13419
ARC BG5 1500 840 HF	1412	4000K			14010
ARC BG5 1500 850 HF	1412	5000K			14095
ARC BG5 1500 860 HF	1412	5700K			14179

14 Descriptive Documents

14.1 Associated Report and Certificate History:

Report Number	Cert Issue Date	Issue	Comment
R1954/A/1	17/05/2019	0	Initial issue of the Prime Certificate
R2539/A/1	06/04/2020	1	Extension of Ts range.
R2894/A/1	05/03/2021	2	Addition of BG5 model types and VSI LED status indicator

Certificate ExVeritas 19 ATEX 0478U Issue 2

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

For help or assistance relating to this certificate, contact info@exveritas.com.

ExVeritas ApS, Severinsmindevej 6, 4420 Regstrup, Denmark.

ExVeritas® is a registered trademark, unauthorised use will lead to prosecution.

Schedule

14.2 Compliance Drawings:

Issue 0

Number	Date	Issue	Description
11280EHF-AS	06.05.2019	4	ARC BG4-600 E HF
11280HF-AS	06.05.2019	4	ARC BG4-600 HF
11480EHF-AS	06.05.2019	4	ARC BG4-1200 E HF
11480HF-AS	06.05.2019	4	ARC BG4-1200 HF
Label ARC BG4	15.05.2019	3	Label ARC BG4
I_P252	12.04.2019	2	Assembly and potting ARC BG4
BoM 321-323	08.11.2018	1	BoM 321-323
PCB 321	22.10.2018	B	PCB 321
PCB 323	22.10.2018	A	PCB 323
SCH 321-323	23.11.2018	A	SCH 321-323

Issue 1

Number	Date	Issue	Description
Label ARC BG4	06.04.2020	4	Label ARC BG4

Updated drawing

Issue 2

Number	Date	Issue	Description
460229	24.04.2020	2	PC-cover LM321
250040-1-2-3	28.05.2020	1	Al-profile ARC BG5
AS300BG5	05.06.2020	1	ASSY ARC 300 BG5
AS600BG5	05.06.2020	1	ASSY ARC 600 BG5
AS1200BG5	05.06.2020	1.1	ASSY ARC 1200 BG5
AS1500BG5	05.06.2020	1.1	ASSY ARC 1500 BG5
AS9204X	25.08.2020	4	ASSY VSI
BoM 321	09.10.2020	5	BoM LM 321
650002	25.02.2021	4	Label ARC BG5
920001	15.02.2021	2	Label VSI
TDS ARC BG5	25.02.2021	7	Technical Data ARC BG5
-	25.02.2021	4	Technical Data VSI – Indicator LED

New / additional drawings

Certificate ExVeritas 19 ATEX 0478U Issue 2

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

For help or assistance relating to this certificate, contact info@exveritas.com.

ExVeritas ApS, Severinsmindevej 6, 4420 Regstrup, Denmark.

ExVeritas® is a registered trademark, unauthorised use will lead to prosecution.

Schedule

15 Conditions of Certification

15.1 Schedule of Limitations

1. When the ARC BG4 or BG5 LED Modules and VSI LED Status Indicator are installed in an enclosure it must comply with the requirements of EN/IEC 60079-0 for a minimum rating of IP54.
2. The ARC LED modules must be connected to a suitable constant current LED driver with a minimum rated breaking capacity of 1500A such as the Barel HFX/E LED, note that an external protective device can be used for this purpose.
3. The VSI indicators must not be subject to fault currents in excess of 30 mA when incorporated into the end use product.
4. The ARC BG5 and VSI indicators have a Service Temperature (Ts) range of -40°C to +95°C and must not be subjected to temperatures, internal ambient air temperatures around the component when incorporated into the end use product, of less than -40°C or greater than 76°C for the 370mA rated model types and less than -40°C or greater than 66°C for the 550mA rated versions.
5. The ARC BG4 has a Service Temperature (Ts) range of -40°C to +80°C and must not be subjected to temperatures, internal ambient air temperatures around the component when incorporated into the end use product, of less than -40°C or greater than 61°C for the 370mA rated model types and less than -40°C or greater than 51°C for the 550mA rated versions.
6. The embedded thermal fuses in ARC LED modules will limit the maximum surface temperature to not exceed 100°C under fault conditions.

15.2 Routine Tests

Visual inspections

Each piece of "m" equipment shall be subjected to a visual inspection. No damage shall be evident, such as cracks in the compound, exposure of the encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion (separation of any adhered parts) or softening.

Dielectric strength test

The dielectric strength test shall be done between the metallic frame of the device and the input wiring. The test voltage used is detailed below:

LED Type	AC test Voltage (Vrms)	DC test Voltage (Vdc)
ARC BG4 / BG5 300/600 64V	500 V, 48 Hz to 62 Hz	700
VSI Indicator 3.2V	500 V, 48 Hz to 62 Hz	700
ARC BG4 / BG5 1200/1500 128V	1,500 V, 48 Hz to 62 Hz	2100

The test voltage shall be maintained for at least 1 s without the breakdown or arcing.

16 Essential Health and Safety Requirements

Essential Health and Safety Requirements are addressed by the standards listed in section 9 and where required the report listed in section 14.1

The manufacturer shall inform the Notified Body of any modifications to the design of the product described by this schedule.

Certificate ExVeritas 19 ATEX 0478U Issue 2

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

For help or assistance relating to this certificate, contact info@exveritas.com.

ExVeritas ApS, Severinsmindevej 6, 4420 Regstrup, Denmark.

ExVeritas® is a registered trademark, unauthorised use will lead to prosecution.