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 17.0028X

Issue No: 0

Certificate history:
Issue No. 0 (2018-03-23)

Status: **Current**

Date of Issue: **2018-03-23**

Applicant: **Alphino Pte Ltd**
18 Boon Lay Way #03-110 Tradehub 21
Singapore 609966
Singapore

Equipment: **1E3 Beacon light Series**

Optional accessory:

Type of Protection: **Ex d**

Marking:

Xenon Lamp : Ex db IIC T6-T3 Gb, IP 66 & IP67 (Without dust protection)

Ex db IIC T6-T3 Gb (With dust protection)
Ex tb IIIC T85-T139 Db, IP 66 & IP67.

LED Lamp : Ex db op is IIC T6 Gb, IP 66 & IP67. (Without dust protection)

Ex db op is IIC T6-T3 Gb (With dust protection)
Ex tb op is IIIC T85-T139 Db, IP 66 & IP67.

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:

IECEx Certificate of Conformity

Certificate No: IECEx PRE 17.0028X Issue No: 0

Date of Issue: 2018-03-23

DNV GL Nemko Presafe AS
Veritasveien 3
1363 Høvik
Norway

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Manufacturer: **Alphino Pte Ltd**
18 Boon Lay Way #03-110 Tradehub 21
Singapore 609966
Singapore

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 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
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"

*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/ExTR17.0076/00

Quality Assessment Report:

NO/PRE/QAR18.0006/00

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Description of Product

1E3 Beacon Series is a light transmitting device consists of “LED lamps” and “Xenon lamps” protected with flameproof enclosure. It consists of glass dome, top & bottom housing which are fixed together by threaded joint and a fixed dome guard, which is optional. Silicone sealant used to cement the flame path joint between “glass” and “top enclosure”. Silicone gasket & silicone O-ring are used for the ingress protection of the enclosure. The enclosure is made from stainless steel 316L and includes 8 variants, which consists of two openings for 4 variants and three opening for other 4 varaints to connect the cable entries of sizes M20 x 1.5, M25 x 1.5, ½” NPT & ¾” NPT, which is intended to mount in any direction. The glass dome is made of borosilicate material with following colors; Red, Green, Blue, Yellow, Amber, Violet & Clear as standard colors and any customized color as optional. Xenon lamps are available with variety of energy level from 5 to 30 Joules. 1E3 Beacon Series can either be powered directly by AC or DC sources or be initiated by telephone lines (Optional section as with/ without telephone ring interface).

The light produced from LED diodes are located inside the flameproof enclosure and emits optical radiation to surrounding environments which may be an explosive atmosphere, through the glass dome. LED’s have 3-in-1 function (steady, flash and running/rotating) and interval by setting switch combinations which are provided on circuit board. The optical radiation from the LED Light has been evaluated and found compliant with inherently safe optical radiation, Ex op is.

Type designation
1E3 (Xenon lamps)
1E3 (LED lamps)

Electrical Data
1E3 (Xenon lamps) : 230VAC/110VAC/24VDC/48VDC
1E3 (LED lamps): 100~240VAC/12 ~ 48VDC

SPECIFIC CONDITIONS OF USE: YES as shown below:

1) The cable gland used is only suitable for fixed installations. Cables must be effectively clamped to prevent, pulling or twisting.

2) Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 1 and 2 of EN/IEC 60079-1.

3) According to material type of intended surface at where the beacon to be mounted, use proper length of screw to withhold the beacon safely at the surface.

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EQUIPMENT (continued):

Ambient temperature
-40°C ≤ Tamb ≤ +40°C.
-40°C ≤ Tamb ≤ +55°C.
-40°C ≤ Tamb ≤ +60°C.
-40°C ≤ Tamb ≤ +65°C.
-40°C ≤ Tamb ≤ +70°C.

Routine tests
The enclosure is subjected to routine over pressure test of the 17.55 bar (1.5 times the reference pressure of 11.7 bar) according to cl.16 of IEC/EN 60079-1:2014.

Temperature classification

Model	Lamp Output	Rated input voltage	T rating & T ambient
IE3-5E6	30J	230VAC	T3 for -40°C to + 70° C
			T4 for -40°C to + 65° C
IE3-5E5 / IE3-5E4	25J, 21J	230VAC	T4 for -40°C to + 70° C
1E3-5E3	15J	230VAC	T4 for -40°C to + 70° C
			T5 for -40°C to + 40° C
1E3-5E2/1E3-5E1	10J, 5J	230VAC	T4 for -40°C to + 70° C
			T5 for -40°C to + 55° C
			T6 for -40°C to + 40° C
1E3-4E6/1E3-4E5/ IE3-4E4	30J/25J/21J	110VAC	T4 for -40°C to + 70° C
1E3-4E3 / 1E3-4E2/ 1E3-4E1	15J/10J/5J	110VAC	T4 for -40°C to + 70° C
			T5 for -40°C to + 55° C
			T6 for -40°C to + 40° C
1E3-2E6 / 1E3-2E5 / 1E3-2E4 (24 VDC)	30J, 25J, 21J	24/48 VDC	T4 for -40°C to + 70° C
	15J, 10J, 5J	24/48 VDC	T5 for -40°C to + 70° C
			T6 for -40°C to + 60° C
1E3-5LS 1E3-3LS	2700K (Warm white) 5600K (Cool white)	110~230 VAC/ 12~48 VDC	T6 for -40°C to + 70° C

As a result from the above temperature, the temperature class varies from T6-T3 with respect to the models.

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Additional information:

Descriptive Drawings

Number	Title	Rev.	Date
16-0023-EMA1	GA Drawing for 1E3 Beacon (2 sheets)	2.0	2018-02-01
16-0039-EMA1	Detail Drawing for 1E3 Beacon (2 sheets)	2.0	2018-02-01
16-0040-EM06	Certification drawing for EM06-Product label (for M1E3 Beacon)	2.0	2018-02-01
15-0081-BX38	BX38_Dome Guard for single colour Beacon	1.0	2016-11-03
16-5058-MIE3	Wiring Diagram for IE3 (AC/DC Xenon Beacon) (2 sheet)	2.0	2018-02-01