

CESI**CERTIFICATE****ISMES****IPH**
BERLIN**FGH**

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[1] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE

**[2] Equipment or Protective System intended for use
in potentially explosive atmospheres
Directive 2014/34/EU**

[3] Supplementary EU-Type Examination Certificate number:

CESI 12 ATEX 006 /02

**[4] Product: Luminaries (Pendant lighting fixture) series EV., EW., EWA., EVE.,
EWE., EWAE.. model 50**

[5] Manufacturer: CORTEM S.p.A.

[6] Address: Via Aquileia 10, I - 34070 Villesse (GO), Italy

[7] This supplementary certificate extends EC-Type Examination Certificate CESI 12 ATEX 006 to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to..

[8] CESI, notified body n. 0722 in accordance with Article 17 of the Directive 2014/34/EU of the Parliament and Council of 26 February 2014, certifies that this equipment or protective system 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 report n. EX-B7006315.

[9] In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

[12] The marking of the equipment or protective system shall include the following:

II 2 GD Ex db IIC T6 to T3 Gb (models EV.. EW.. EWA..)
Ex tb IIIC T54°C to T185 °C Db
IP66

or
 II 2 GD Ex db eb IIC T6 to T3 Gb (models EVE.. EWE.. EWAE..)
Ex tb IIIC T54°C to T185 °C Db
IP66

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Date 2017.04.28 - Translation issued the 2017.04.28

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Approved
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Testing & Certification Division
Business Area Certification
Il Responsabile

(Roberto Piccin)

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ACCREDIA
ENTE ITALIANO DI ACCREDITAMENTO

PRD N. 0188
Membro degli Accordi di Mutuo
Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC
Mutual Recognition Agreements

Schema di certificazione

CESI-ATEX

[13]

Schedule

[14] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 006 /02

[15] **Description of the variation to the product**

- Updating to standards EN60079-1:2014, EN60079-7:2015, EN60079-31:2014.

Description of equipment

Luminaries (pendant Lighting fixtures) series EV., EW. and EWA. Model 50 are used in hazardous area, indoor and/or outdoor, where inflammable or explosive gas and vapours or combustible dusts are present.

The luminaries are assembled in two main executions:

- One single explosion proof housing; it contains the lamp holder with lamp and the electrical apparatus (if necessary).
- Two separate explosion proof housings: one contains lamp holder and lamp, one contains terminal block and/or electrical apparatus. The bushing between the two housings is sealed by means of two-compound resin. Glass globe is mounted in an appropriate aluminium threaded ring, sealed by means of silicon compound.

The guard is fixed on aluminium ring for globe, by means of screws. For all models the reflector is inserted and locked. Reflector and guard are external and not influence the Explosion proof protection.

The EV. models Lighting fixtures (execution Ex db) are assembled in one Ex db housing that contains lamp holder and lamp.

The EW. and EWA. Lighting fixtures (execution Ex db) are assembled in two separate Ex db housings: one contains lamp holder and lamp and one contains terminal block and electrical apparatus used for HID lamps (high intensity discharge).

The execution Ex db eb for EV., EW. and EWA. are made by means of an Ex eb housing added on top of lighting fixture with internal terminals; the code became EVE., EWE. and EWAE.. The cable passage between lighting fixture and Ex eb housing is made by a special sealed bushing.

On lighting fixtures sizes EV...-5050, EV...-5060 execution Ex db and sizes EVE...-5050, EVE...-5060 execution Ex db eb, instead of standard lamps can be installed two types of LED lamps:

- with a polycarbonate diffuser made by remote phosphor technology;
- with polycarbonate lens for restrict light emission angle 10° (narrow), 20° (medium) or 40° (wide).

For fixing the EV., EW. and EWA. Lighting fixtures at external structures are foreseen different components; all the components are interchangeable and can be mounted on all the sizes and models.

Lighting fixtures wall mounting types EVIX., EWIX. and EWAIX. must have sealed joint between lamp housing and wall mounting accessories as indicated in the manufacturer documentation. There is also a sealed joint between lamp housing and ballast housing for types EW. and EWA., between lamp housing or ballast housing and related terminal box for models with protection mode Ex db eb.

Electrical characteristics

	Model			
	EV., EW., EWA	EV...-5050L...	EV...-5060L...	EV...-5060L1...
Rated voltage	110 ÷ 277 Vac	110 / 230 Vac/dc 24 Vac/dc	230 Vac/dc 24 Vac/dc	230 Vac/dc 24 Vac/dc
Rated frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Rated power	5 ÷ 500 W	8 W	13 W	19 W

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Ambient temperature ranges (all models):	- 20°C ÷ + 40°C.
EV..-50100:	- 20°C ÷ + 60°C.
EV.-5050., EV..-5060., EV..-5070, EV..-5080:	- 50°C ÷ + 40°C; - 50°C ÷ + 60°C.
EW..-5070:	- 50°C ÷ + 40°C; - 50°C ÷ + 60°C.
EWA..-5060, EWA..-5070, EWA..-5080:	- 50°C ÷ + 40°C; - 50°C ÷ + 60°C.
LED lamps with remote phosphor technology:	- 20°C ÷ + 40°C; - 20°C ÷ + 50°C.
Degree of protection (IEC 60529):	IP 66.

The temperature class and maximum surface temperature T of the units is a function of the enclosure size, of the inside maximum power dissipated and of the maximum ambient temperature as specified in the tables 1, 2 and 3 below and in the manufacturer documentation.

Cable entries

The accessories used for cable entries and plugs for not used holes shall be subject of separate certification, suitable for type of enclosure execution, according to the applicable standards.

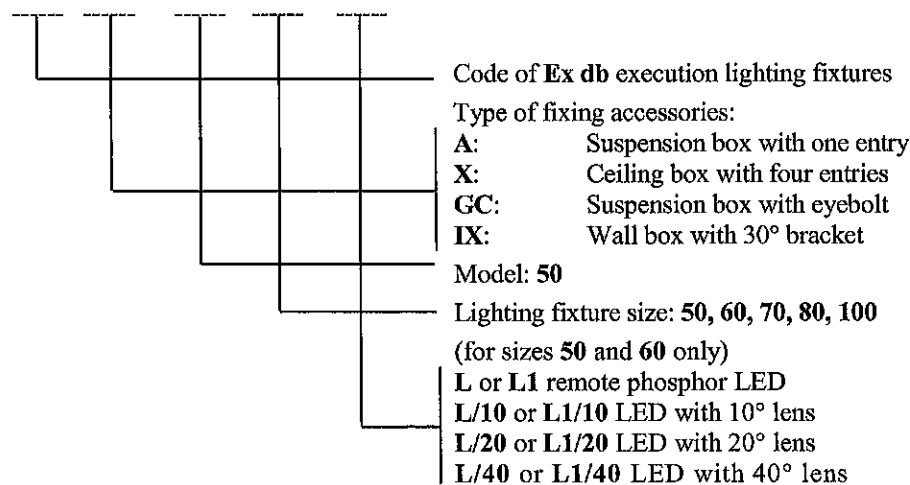
Warning label

- **"Do not open when energized. Wait 20 minutes before opening";**
- **"Use cables suitable for a minimum temperature of Tc °C"** where Tc has the value of:
 - 145 °C for the models with temperature class T3;
 - 105 °C for the models with temperature class T4;
 - 95 °C for the models with temperature class T5;
 - No warning for the lamps with temperature class T6;
 - No warning for the lamps type EL, ELS, LED.

Identification of Lighting fixtures EV., EW., EWA., EVE., EWE., EWAE., Model 50:

EV.. lamps

EV -



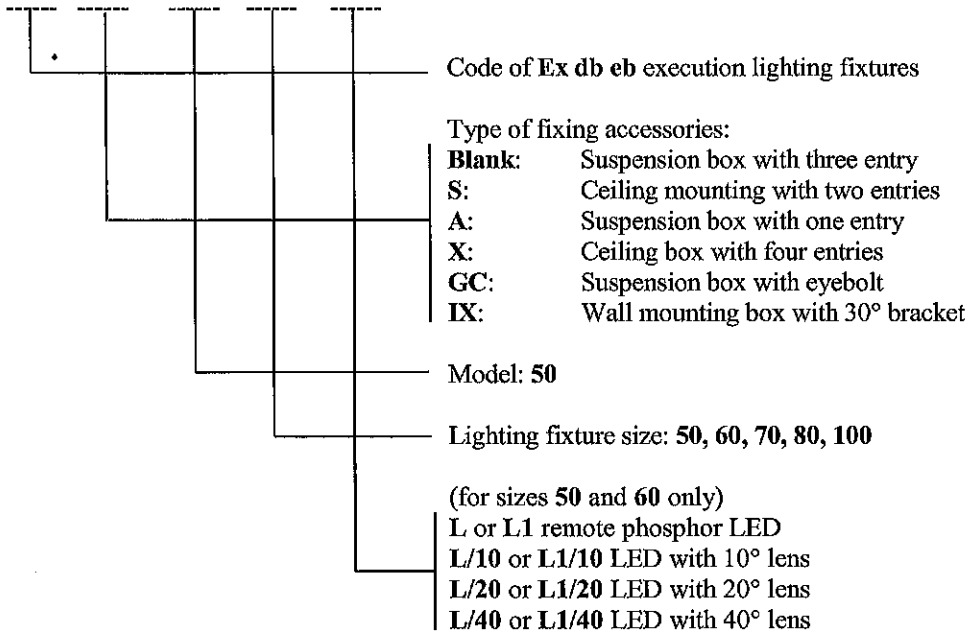
Other suffix can be added on the code for particular configurations.

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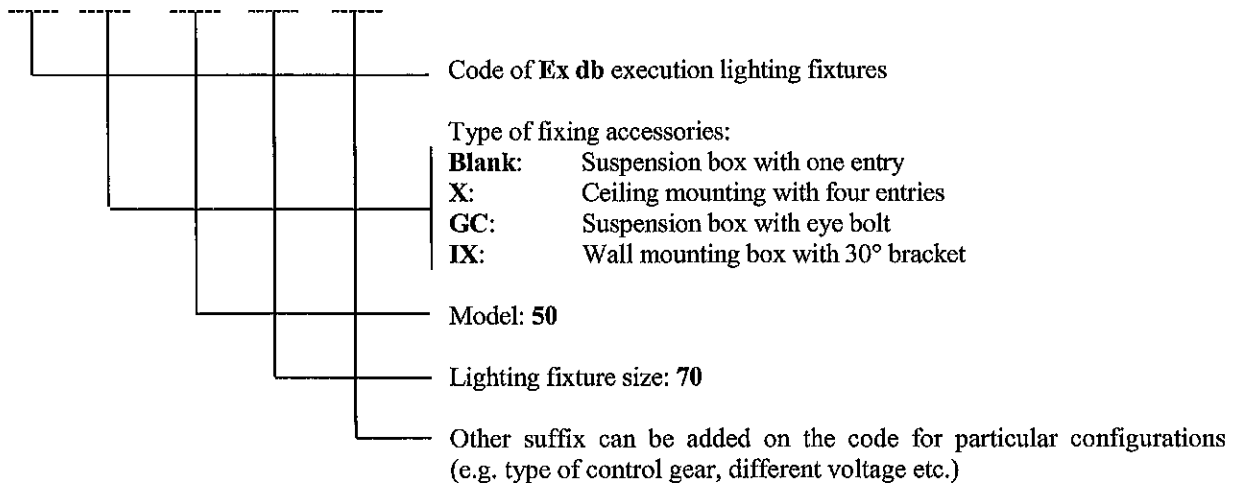
EVE -



Other suffix can be added on the code for particular configurations.

EW.. lamps

EW -

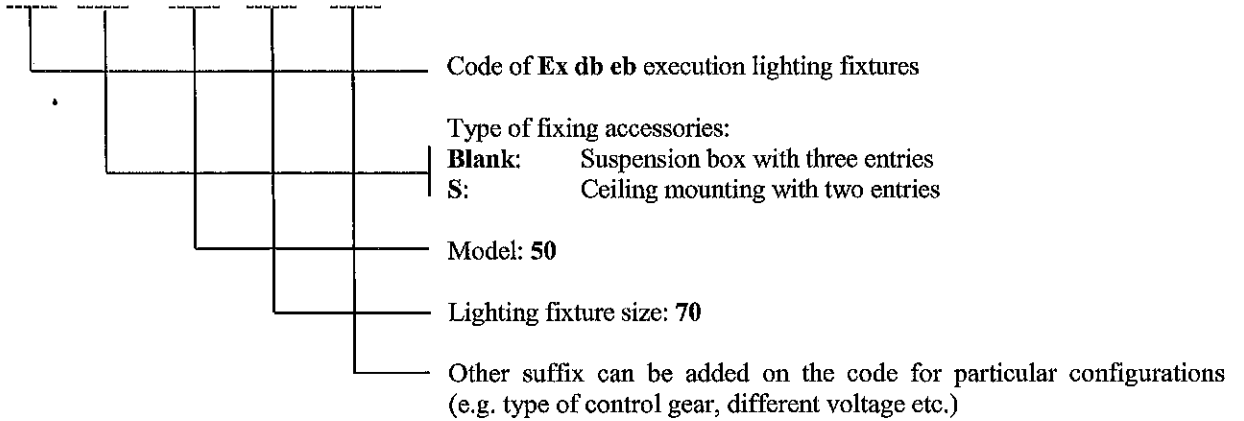


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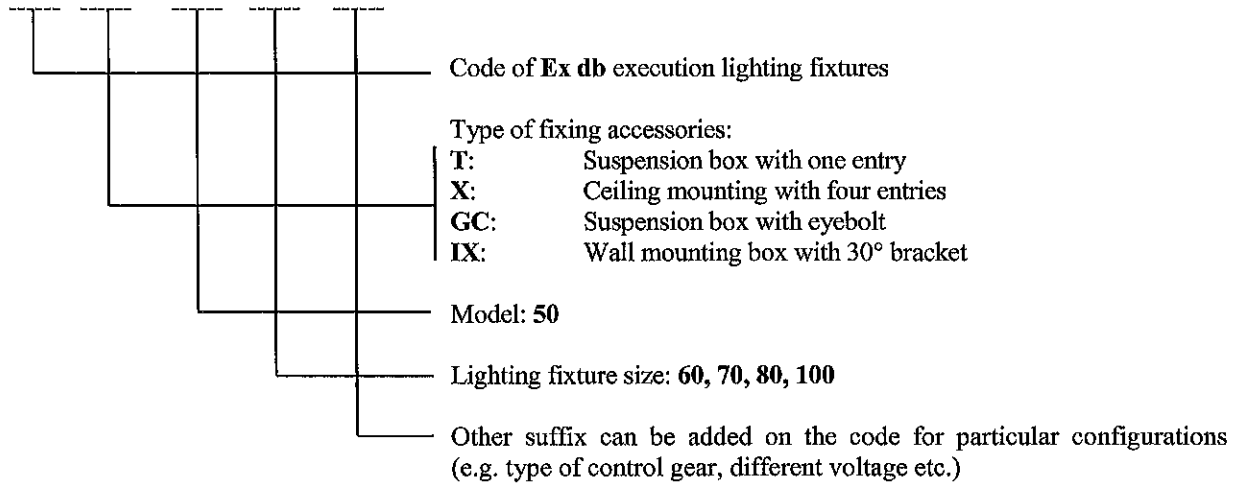
[14] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 006 /02

EWE -

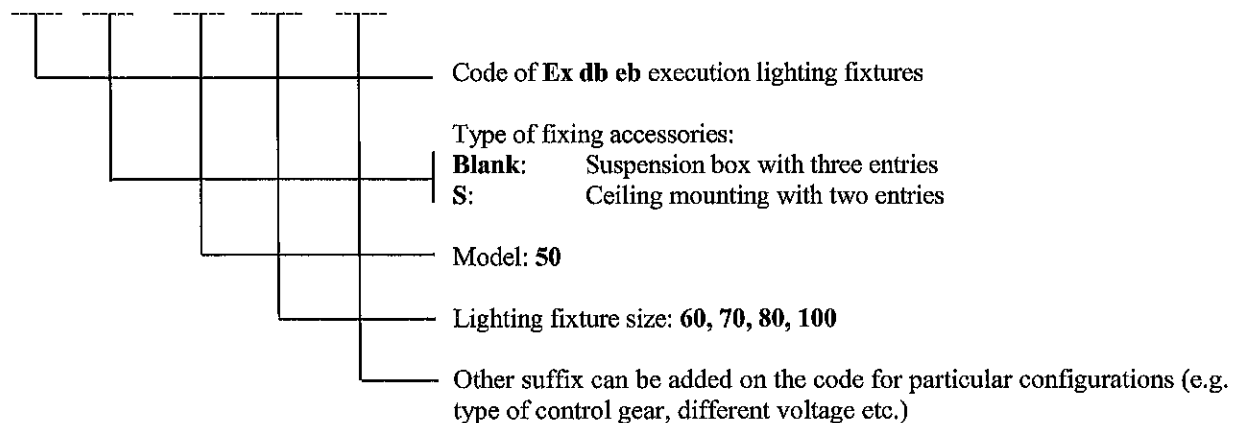


EWA.. lamps

EWA -



EWAE -



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Table 1. Temperature Class and Maximum Surface Temperature for lighting fixtures in Ambient Temperature up to + 40 °C; + 60 °C

EV.. and EVE.. Lamps

Model	Lamp	For Ambient Temperature +40°C		For Ambient Temperature +60°C	
		Temp. Class	Max Surface Temp. (°C)	Temp. Class	Max Surface Temp. (°C)
EV-5050	28/42/53/70W AL	T4	103	T4	123
	105/140W AL	T4	134	T3	154
	5/8/12/15W ELS	T6	64	T6	84
	6/7/8W LED	T6	54	T6	74
EV-5060	50/70W NA	T4	110	T4	130
	70W HA	T5	93	T4	113
	20/23W EL	T6	66	T5	86
	20/23W ELS	T6	66	T5	86
	12W LED	T6	54	T6	74
EV-5070	80/125W HG	T4	128	T3	148
	70W NA	T5	95	T4	115
	100W NA	T4	100	T4	120
	70/100W HA	T4	104	T4	124
	100/160W MIX	T4	132	T3	152
	27/33W EL	T6	63	T6	83
EV-5080	125/250W HG	T3	157	T3	177
	150/250W NA	T3	139	T3	159
	150/250W HA	T3	160	T3	180
	160/250W MIX	T3	146	T3	166
	42W ELS	T6	69	T5	89
EV-50100	400W HG	T3	157	T3	177
	400W NA	T3	144	T3	164
	400W HA	T3	143	T3	163
	500W MIX	T3	165	T3	185
	75W ELS	T6	68	T5	88
	105W ELS	T6	71	T5	91

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Table 2. Temperature Class and Maximum Surface Temperature for lighting fixtures in Ambient Temperature up to + 40 °C; + 60 °C

EW..., EWA..., EWE..., EWAE.. Lamps

Model	Lamp	For Ambient Temperature +40°C		For Ambient Temperature +60°C	
		Temp. Class	Max Surface Temp. (°C)	Temp. Class	Max Surface Temp. (°C)
EW-5070	50/80W HG	T4	109	T4	129
	125W HG	T4	126	T3	146
	50/70W NA	T4	110	T4	130
	100W NA	T4	106	T4	126
	70/100W HA	T4	108	T4	128
	150W HA	T3	141	T3	161
EWA-5060	50/70W NA	T4	110	T4	130
	70W HA	T5	93	T4	113
EWA-5070	80/125W HG	T4	128	T3	148
	70W NA	T5	95	T4	115
	100W NA	T4	100	T4	120
	70/100W HA	T4	104	T4	124
EWA-5080	125/250W HG	T3	157	T3	177
	100/150W NA	T4	112	T4	132
	250W NA	T3	139	T3	159
	100/150W HA	T4	110	T4	130
	250W HA	T3	160	T3	180
EWA-50100	250W HG	T4	128	T3	148
	250W NA	T4	122	T3	142
	250W HA	T3	136	T3	156
	400W HG	T3	157	T3	177
	400W NA	T3	144	T3	164
	400W HA	T3	143	T3	163

Lamp types:

HG mercury vapours lamp;
 NA high pressure sodium lamp;
 HA metal halide lamp;
 MIX blended lamp;

EL compact electronic lamp;
 ELS compact electronic lamp spiralled type;
 AL halogen lamp;
 LED LED bulb lamp.

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Table 3. Temperature Class and Maximum Surface Temperature for lighting fixtures in Ambient Temperature up to + 40 °C; + 50 °C

EV.. Lamps with Remote Phosphor LED technology

Model	Lamp	For Ambient Temperature +40°C		For Ambient Temperature +50°C	
		T6	55	T6	65
EV- 5050L..	8W 3 LEDs	T6	55	T6	65
EV- 5060L..	13W 7 LEDs	T6	60	T6	70
EV- 5060L1..	19W 7 LEDs	T6	65		

[16] Report n. EX- B7006315.

Routine tests

The manufacturer shall carry out the routine tests below.

The routine dielectric test on the Ex db eb luminaries with applied voltage shall be performed at $2U + 1000V$ with a minimum value of 1500V (U = rated voltage of the lamp).

The routine overpressure test shall be carried out on the flameproof enclosure with the static method (Clause 15.2.3.2 of EN 60079-1 Standard) at the pressure indicated in the table below:

Overpressure values for routine tests:

For minimum ambient temperature -20°C	
Model	Pressure values (bar)
EV..	15.0
EW..-5070	15.0 on the lamp compartment. 11.6 on the terminal block or ballast compartment.
EWA..	15.0 on the lamp compartment. 13.0 on the terminal block or ballast compartment.

Overpressure values for routine tests, follow:

For minimum ambient temperature -50°C	
Model	Pressure values (bar)
EV..	16.7
EW..-5070	16.7 on the lamp compartment. 15.2 on the terminal block or ballast compartment.
EWA..	16.7 on the lamp compartment. 20.0 on the terminal block or ballast compartment.

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[17] **Special conditions for safe use (X)**

None.

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

Compliance with the Essential Health and Safety Requirements has been assured by compliance to the following standards:

- EN 60079-0: 2012 Explosive atmospheres – Part 0: Equipment - General requirements;
- EN 60079-0/A11: 2013 Explosive atmospheres – Part 0: Equipment - General requirements;
- EN 60079-1: 2014 Explosive atmospheres – Part 1: Equipment protection by flameproof enclosure “d”;
- EN 60079-7: 2015 Explosive atmospheres – Part 7: Equipment protection by increased safety “e”;
- EN 60079-31: 2014 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure “t”.

[19] **Descriptive documents (prot. EX- B7006318).**

- | | | | |
|---|-------|-------|------------|
| - Technical note A4-6679 (15 pg.) | rev.0 | dated | 2017.04.06 |
| - Safety, maintenance and mounting instructions F360 (13 pg.) | rev.2 | dated | 2017.04.06 |
| - EU Declaration of Conformity FACSIMILE no. 0113 (1 pg.) | | dated | 2017.04.06 |
| - Drawing A3-5743 (3 sheets) | rev.1 | dated | 2017.04.06 |
| - Drawing A1-5532 (7 sheets) | rev.1 | dated | 2017.04.06 |

One copy of all documents is kept in CESI files.

Certificate history

Issue nr	Issue Date	Summary description of variation
02	2017.04.28	Updating to standards EN60079-1:2014, EN60079-7:2015, EN60079-31:2014.
01	2013.04.18	Updating to standards EN 60079-0:2012 for all series of lighting fixtures. New models of LED lamps with remote phosphor technology or with lens. New 24 / 110 / 230 Vac/dc power supplies available for models with LED lamps.
00	2012.04.13	First Issue of the Certificate.

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