

**CESI****CERTIFICATE****ISITES****IPH**  
BERLIN**FGH**

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**[1] EC-TYPE EXAMINATION CERTIFICATE**

**[2] Equipment or Protective System intended for use  
in potentially explosive atmospheres  
Directive 94/9/EC**

**[3] EC-Type Examination Certificate number:**

**CESI 12 ATEX 006**

**[4] Equipment: 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 equipment or protective system and any acceptable variation thereto is specified in the  
schedule to this certificate and the documents therein referred to.**

**[8] CESI, notified body n. 0722 in accordance with Article 9 of the Council Directive 94/9/EC of  
23 March 1994, 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- B2002625.**

**[9] Compliance with the Essential Health and Safety Requirements has been assured by  
compliance with:**

**EN 60079-0: 2009 EN 60079-1: 2007 EN 60079-7: 2007 EN 60079-31: 2009**

**[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 EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and  
tests of the specified equipment or protective system in accordance to the Directive 94/9/EC.  
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:**

**2GD Ex d IIC T6 to T3 Gb and  
Ex tb IIIC T54°C to T185 °C Db, IP66 or**

**2GD Ex de IIC T6 to T3 Gb and  
Ex tb IIIC T54°C to T185 °C Db, IP66**

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

Date 13.04.2012 - Translation issued the 13.04.2012

**Prepared**  
Sergio Mezzetti

**Verified**  
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**Approved**  
Fiorenzo Bregani

**CESI S.p.A.**  
Testing & Certification Division  
Business Area Certification  
Il Responsabile  
Fiorenzo Bregani

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Schema di certificazione

**CESI-ATEX**

**ACCREDIA**  
LENTE ITALIANO DI ACCREDITAMENTO

PRD N. 018B  
Membro degli Accordi di Mutuo  
Riconoscimento EA, IAF e ILAC  
Signatory of EA, IAF and ILAC  
Mutual Recognition Agreements

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## Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 006**

[15] **Description of equipment**

Luminaries (pendant lighting fixtures) series EV..., EW..., EWA..., are used in hazardous area, indoor and/or outdoor, where inflammable or explosive vapours gas or dust are present.

The luminaries are assembled in two main executions:

One single explosion proof housing that contains the lamp holder with lamp and the electrical apparatus (if necessary) or two separate explosion proof housings: one contains lamp holder, and lamp and 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 inserting and locking. Reflector and guard are external and not influence for Explosion proof protection.

The EV... lighting fixtures (execution Ex-d) are assembled in one Ex d housing that contains lamp holder and lamp.

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

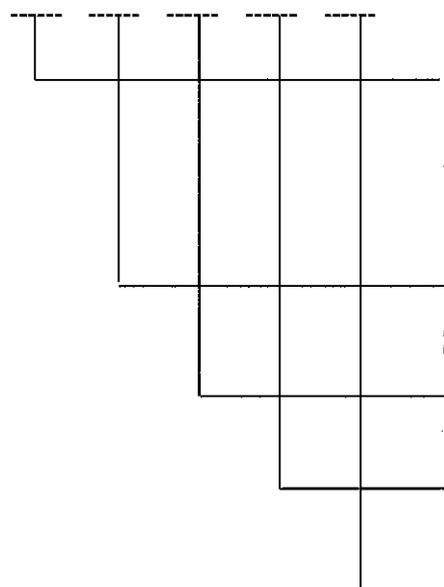
The execution Ex-de for EV..EW.. EWA... are made by means of a Ex-e housing added on top of lighting fixture with internal terminals; the code became EVE... EWE... EWAE... .The cable passage between lighting fixture and Ex-e housing is made by a special bushing.

For fixing the EV..EW... 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.

### Identification of lighting fixtures

#### EV lamp

EVE..



Type of lamp: **EV** (Ex d) or **EVE** (Ex de)

#### TYPE OF ACCESSORIES FOR MOUNTING

**Blank** : Suspension box with three entry (for EVE only)

**S** : Ceiling mounting with two entries (for EVE only)

**A** : Suspension box with one entry

**X** : Ceiling box with four entries

**GC** : Suspension box with eyebolt

**IX** : Wall box with 30° bracket

Model: **50**

Lighting fixture size:

**50, 60, 70, 80, 100**

Other suffix can be added on the code for particular configurations

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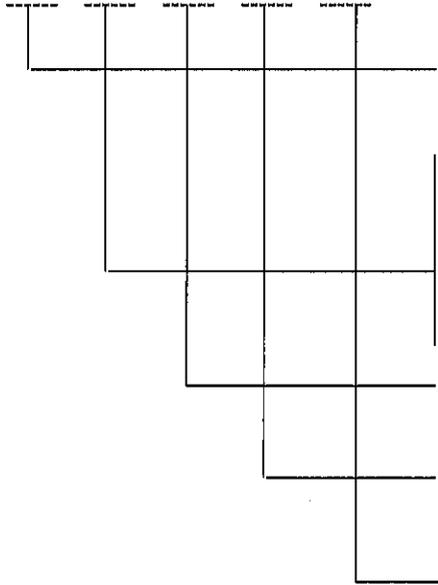
[13]

## Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 006

### EW Lamp

**EWE ..**



Type of lamp: **EW** (Ex d) or **EWE** (Ex de)

#### TYPE OF ACCESSORIES FOR MOUNTING

**Blank (EW):** Suspension box with one entry

**X (EW):** Ceiling mounting with four entries

**GC (EW):** Suspension box with eyebolt

**IX (EW):** Wall box with 30° bracket

**Blank (for EWE):** Suspension box with three entries

**S (for EWE):** Ceiling mounting with two entries

Model: **50**

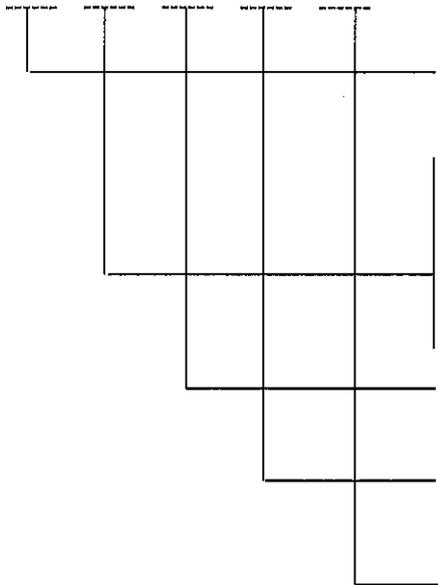
Lighting fixture size:

**70**

Other suffix can be added on the code for particular configurations (e.g. type of control gear, different voltage etc.)

### EWA Lamp

**EWAE ..**



Type of lamp: **EWA** (Ex d) or **EWAE** (Ex de)

#### TYPE OF ACCESSORIES FOR MOUNTING

**T (EWA):** Suspension box with one entry

**X (EWA):** Ceiling mounting with four entries

**GC (EWA):** Suspension box with eyebolt

**IX (EWA):** Wall box with 30° bracket

**Blank (for EWAE):** Suspension box with three entries

**S (for EWAE):** Ceiling mounting with two entries

Model: **50**

Lighting fixture size:

**60, 70, 80, 100**

Other suffix can be added on the code for particular configurations (e.g. type of control gear, different voltage etc.)

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## Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 006

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### Electrical characteristics

Rated voltage	110/120/208/220/230/240/250/277 V
Rated frequency	50 ÷ 60 Hz
Rated power	5 ÷ 500 W
Degree of protection (IEC 60529)	IP 66

Ambient temperature (for all models) - 20 ÷ + 40°C ; - 20 ÷ + 60°C

Some types of lighting fixtures can be also used for minimum ambient temperature -50°C

In particular the sizes suitable for ambient temperature -50°C are:

EV...-5050, EV...-5060, EV...-5070, EV...-5080;

EW...-5070;

EWA...-5060, EWA...-5070, EWA...-5080.

Lighting fixtures wall mounting type EVIX..., EWIX..., EWAIX... for ambient temperature -50°C must have sealed joint between lamp housing and wall mounting accessories as indicated in the manufacturer documentation.

For type EWA... there is also an sealed joint between lamp housing and ballast housing.

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

### 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. .

### Condition of installation

The conditions of the installation of the lighting fixtures are included within the safety instructions.

In any case, the accessories used for cable entries into enclosures shall be subject of separate certification, suitable for type of protection Ex-d or Ex-e and Ex-tb and guarantee a minimum degree of protection IP 66 in compliance with the IEC 60529 Standard.

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## Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 006

**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. (T...°C)	Temp. Class	Max Surface Temp. (T...°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

NOTE:

- 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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## Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 006

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

EW, EWA, Lamps

EWE, EWAE

Model	Lamp	For Ambient Temperature +40°C		For Ambient Temperature +60°C	
		Temp. Class	Max Surface Temp. (T...°C)	Temp. Class	Max Surface Temp. (T...°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

NOTE:

HG mercury vapours lamp  
 NA high pressure sodium lamp  
 HA metal halide lamp

[16] Report n. EX- B2002625

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## Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 006

### Routine tests

The manufacturer shall carry out the routine tests prescribed at paragraph 27 of the IEC 60079-0 Standard, at par. 24 of the IEC 61241-0 Standard, at paragraph 16 of the IEC 60079-1 Standard and at paragraph 7 of the IEC 60079-7 Standard.

The routine overpressure test shall be carried out on the flameproof enclosure with the static method (clause 15.1.3.1 of IEC 60079-1 standard) at the pressure indicated in the table below.

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

For minimum ambient temperature -20°C		
Model	Pressure values (bar)	
EV...-5050 EV...-5060 EV...-5070 EV...-5080 EV...-50100	15,6	
EW...-5070	15,6	on the lamp compartment
	13	on the terminal block or ballast compartment
	See note 1	
EWA...-5060 EWA...-5070 EWA...-5080 EWA...-50100	15,6	on the lamp compartment
	13	on the terminal block or ballast compartment

For minimum ambient temperature -50°C EVIX..., EWIX..., EWAIX... must have sealed joint between lamp housing and wall mounting bracket		
Model	Pressure values (bar)	
EV...-5050 EV...-5060 EV...-5070 EV...-5080	23,9	
EW...-5070	23,9	on the lamp compartment
	20	on the terminal block or ballast compartment
EWA...-5060 EWA...-5070 EWA...-5080	23,9	on the lamp compartment
	20	on the terminal block or ballast compartment

Note 1: in case of wall mounting lighting fixtures EWIX..., the pressure indicated is valid for lighting fixture with sealed joint between lamp housing and mounting bracket.

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## Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 006**

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### **Descriptive documents (prot. EX- B2002640)**

Technical Note n. A4-5533 Rev. 0 (11 pg.)	dated	22.03.2011
Drawing n. A1-5532 Rev. 0 (7 sheets)	dated	22.03.2011
Safety, maintenance and mounting instructions F-360 Rev. 0 (12 pg.)	dated	22.03.2011
Mounting and resins instructions F-361 Rev. 0 (2 pg.)	dated	22.03.2011
Declaration of conformity N°0113	dated	22.03.2011
Annex (Datasheets of materials) Rev. 0 (37 pg.)	dated	22.03.2011

One copy of all documents is kept in CESI files.

[17] **Special conditions for safe use**

None.

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

The Health and Safety Requirements are assured by compliance with the following Standards:

- EN 60079-0 : 2009 Electrical apparatus for explosive gas atmospheres. General requirements
- EN 60079-1 : 2007 Type of protection "d"
- EN 60079-7 : 2007 Type of protection "e"
- EN 60079-31: 2009 Equipment dust ignition protection by enclosure "t"

**EXTENSION n. 01/13**

to EC-Type Examination Certificate CESI 12 ATEX 006

**Equipment:** Luminaries (Pendant lighting fixture) series EV., EW., EWA., EVE., EWE., EWAE.. model 50

**Manufacturer:** CORTEM S.p.A.

**Address:** Via Aquileia 10, I - 34070 Villesse (GO), Italy

**Admitted variation**

- Upgrade to the new edition of the harmonized European Standard EN 60079-0 : 2012 for all series of lighting fixtures.
- Upgrade of power supply (complete range of available voltage for all series previously certified)
- New models of LED lamps with remote phosphor technology or with lens.

**Conformity to new edition of the harmonized European Standard**

The equipments subject of the certificate CESI 12 ATEX 006 and annexed extension are conforming to the standards:

EN 60079-0: 2012 EN 60079-1: 2007 EN 60079-7: 2007 EN 60079-31: 2009

The equipment shall be marked as follows:

 II2GD Ex d IIC T6 to T3 Gb *(for models EV.. EW.. EWA..)*  
 Ex tb IIC T54°C to T185 °C Db,  
 IP66

or

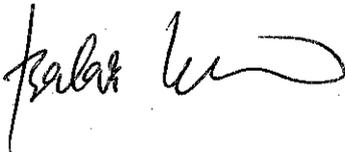
 II2GD Ex de IIC T6 to T3 Gb *(for models EVE.. EWE.. EWAE..)*  
 Ex tb IIC T54°C to T185 °C Db  
 IP66

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 12 ATEX 006.

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**Date** 30 May 2013 - translation issued the 30<sup>th</sup> May 2013

**Prepared**  
Mirko Balaz


**Approved**

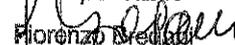
Fiorenzo Bregani



Testing &amp; Certification Division

Business Area Certification

Responsible



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## EXTENSION n. 01/13

to EC-Type Examination Certificate CESI 12 ATEX 006

### Identification and description of the equipment

The Luminaries (Pendant lighting fixture) series EV..., EW..., EWA..., EVE..., EWE..., EWAE... model 50 have identification and constructional characteristics conform to those indicated in the certificate CESI 12 ATEX 006 with addition of new characteristics and admitted variation as indicated in this extension.

### Upgrade of electrical characteristics

Power supply: from 110V up to 277V, 50Hz or 60Hz

Valid for all series of lighting fixture, for LED lamps with remote phosphor technology, see electrical characteristics indicated on the table below.

### Description of new models and admitted constructional modifications

On lighting fixtures sizes EV...-5050, EV...-5060 execution Ex d and sizes EVE...-5050, EVE...-5060 execution Ex de, can be installed two new types of LED lamps. The existent lamp-holder E27 is removed and the new LED lamp is installed by relevant mounting plate using same fixing holes. All other characteristics of lighting fixture are unchanged.

LED lamps can be supplied:

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

For lighting fixtures supplied by the new LED lamps should be added the letter "L" on the end of code and the new codes became EV...-5050L, EV...-5050L/10, EV...-5050L/20, EV...-5050L/40, EV...-5060L, EV...-5060L/10, EV...-5060L/20, EV...-5060L/40, EV...-5060L1, EV...-5060L1/10, EV...-5060L1/20 and EV...-5060L1/40.

### Electrical characteristics

Model	EV...-5050L...	EV...-5060L...	EV...-5060L1...
Rated voltage	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
Rated power	8 W	13 W	19 W

Degree of protection (IEC 60529):

IP 66.

### Ambient temperature

Ambient temperature for EV...-5050L..., EV...-5060L..., EV...-5060L1.. models:

- 20 ÷ + 40°C ; - 20 ÷ + 50°C;

Ambient temperature for all other Lighting fixtures models:

unchanged.

### 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.

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## EXTENSION n. 01/13

to EC-Type Examination Certificate CESI 12 ATEX 006

**Temperature Class and Maximum Surface Temperature for Lighting fixtures models**  
**EV...-5050L..., EV...-5060L..., EV...-5060L1.. in Ambient Temperature up to + 40 °C; + 50 °C**

Model	Lamp	For Ambient Temperature +40°C		For Ambient Temperature +50°C	
		Temp. Class	Max Surface Temp. (T...°C)	Temp. Class	Max Surface Temp. (T...°C)
EV...-5050L..	8W	T6	55	T6	65
EV...-5060L..	13W	T6	60	T6	70
EV...-5060L1	19W	T6	65		

**Warning label**

Unchanged respect to the certificate.

**Report n. EX- B3010717**

**Routine tests**

The manufacturer shall carry out the routine tests prescribed at paragraph 27 of EN 60079-0 standard, at paragraph 16 of the EN 60079-1 standard, at paragraph 7 of the EN 60079-7 standard and paragraph 6 of EN 60079-31 standard.

The routine overpressure test shall be carried out on the flameproof enclosure with the static method (clause 15.1.3.1 of EN 60079-1 standard) at the pressure indicated in the table below.

For minimum ambient temperature -20°C	
Model	Pressure values (bar)
EV...-5050 EV...-5060 EV...-5070 EV...-5080 EV...-50100	15,0
EW...-5070	15,0 on the lamp compartment 11,6 on the terminal block or ballast compartment
EWA...-5060 EWA...-5070 EWA...-5080 EWA...-50100	15,0 on the lamp compartment 13,0 on the terminal block or ballast compartment

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## EXTENSION n. 01/13

to EC-Type Examination Certificate CESI 12 ATEX 006

Routine tests (follows) :

For minimum ambient temperature -50°C		
Model	Pressure values (bar)	
EV...-5050 EV...-5060 EV...-5070 EV...-5080	16,7	
EW...-5070	16,7	on the lamp compartment
	15,2	on the terminal block or ballast compartment
EWA...-5060 EWA...-5070 EWA...-5080	16,7	on the lamp compartment
	20	on the terminal block or ballast compartment

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

### Descriptive documents (prot. EX- B3010721)

- Technical note A4-5742 (pg. 5)	rev.0	dated	05.11.2012
- EC Declaration of Conformity no. 0113 (pg. 1)		dated	05.11.2012
- Safety, maintenance and mounting instructions F-360 (pg. 13)	rev.1	dated	05.11.2012
- Drawing A3-5743 (pg. 3)	rev.0	dated	05.11.2012
- Annex of Datasheets of materials (pg. 18)	rev.0	dated	05.11.2012

One copy of all documents is kept in CESI files.

### Special conditions for safe use (X)

None.

### Essential Health and Safety Requirements

The Essential Health and Safety Requirements are assured by compliance to the following standards:

EN 60079-0: 2012	Explosive atmospheres – Part 0: Equipment - General requirements;
EN 60079-1: 2007	Explosive atmospheres – Part 1: Equipment protection by flameproof enclosure “d”;
EN 60079-7: 2007	Explosive atmospheres – Part 7: Equipment protection by increased safety “e”;
EN 60079-31: 2009	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure “t”.