



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 CES 07.0004	Issue No: 2	<u>Certificate history:</u>
Status:	Current		Issue No. 2 (2017-05-19)
Date of Issue:	2017-05-19	Page 1 of 4	Issue No. 1 (2013-06-19)
Applicant:	CORTEM S.p.A. Via Aquileia 10 I - 34070 Villesse (GO) Italy		Issue No. 0 (2010-12-30)
Equipment:	Luminaries (Pendant lighting fixture) series EV., EW., EWA., EVE., EWE., EWAE., Model 50		
Optional accessory:			
Type of Protection:	Flameproof enclosures 'd'; Increased safety 'e'; Dust Ignition protection 't'		
Marking:	Ex db IIC T6 to T3 Gb or Ex db eb IIC T6 to T3 Gb or Ex tb IIIC T54°C to T185°C Db IP66		


Approved for issue on behalf of the IECEx
Certification Body:

Mirko Balaz

Position:

Head of IECEx CB

Signature:
(for printed version)



19-5-2017

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:

CESI
Centro Elettrotecnico
Sperimentale Italiano S.p.A.
Via Rubattino 54
20134 Milano
Italy

CESI
CESI S.p.A.
Testing & Certification Division
Business Area Certification
Il Responsabile
(Roberto Piccini)



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Manufacturer: **CORTEM S.p.A.**
Via Aquileia 10
I - 34070 Villesse (GO)
Italy

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 electrical 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 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2015 Edition:5.0	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*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:

IT/CES/ExTR07.0005/00

IT/CES/ExTR13.0004/00

IT/CES/ExTR13.0004/01

Quality Assessment Report:

IT/CES/QAR06.0002/11



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

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.

For further information see Annex.

SPECIFIC CONDITIONS OF USE: NO



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 2

Pendant Lighting fixtures EV**, EW** and EWA** Model 50 series originally assessed in compliance to IEC 60079-1:2007, IEC 60079-7:2006 and IEC 60079-31:2008 have been re-assessed on the basis of the Standards IEC 60079-1:2014, IEC 60079-7:2015 and IEC 60079-31:2013.

Unchanged the electrical and constructional characteristics of Pendant Lighting fixtures EV**, EW** and EWA** Model 50 series.

Annex:

IECEX CES 07.0004 Issue 2 ANNEX- Luminaries EV_EW_EWA.pdf



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Prot: B7013539

Annex to certificate: IECEx CES 07.0004 Issue No.:2 of 2017-05-19

Applicant: CORTEM S.p.A., Via Aquileia 10,
I - 34070 Villesse (GO), Italy

Electrical Apparatus: Luminaries (Pendant lighting fixture) series **EV****, **EW****, **EWA****, **EVE****, **EWE****, **EWAE****, Model 50

Description of the 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**** model 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

Degree of protection (IEC 60529):

IP 66.

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Electrical Apparatus: Luminaries (Pendant lighting fixture) series EV**, EW**, EWA**,
EVE**, EWE**, EWAE**, Model 50

Electrical characteristics follows)

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.

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 2, 3 and 4 below and in the manufacturer documentation.

Power rating Temperature Class and Maximum Surface Temperature for Lighting fixtures:

Table 1. Power rating for different type of lamps:

Lamps Types	Fluorescent electronic or Incandescent	Halogen or LED bulb	Remote phosphor LED	Hg Vapours	High Na Vapours	Metal Halide	Mixte
EV**- 5050**	15W - 100W	70W-6W-8W	8W				
EV**-**5060**	23W – 200W	140W – 12W	13W – 19W	80W	70W		
EV**-** 5070	42W – 200W			125W	70W - 100W 150W	100W 150W	160W
EV**- 5080	60W – 300W			250W	100W - 150W 250W	250W	250W
EV**- 50100	75W – 500W			250W-400W	250W-400W	250W-400W	500W
EW**- 5070	200W			80W – 125W	70W - 100W 150W	70W - 100W 150W	
EWA**- 5060				80W	70W	70W	
EWA**- 5070				125W	70W - 100W	70W - 100W	
EWA**- 5080				250W	100W - 150W 250W	100W - 150W 250W	
EWA**- 50100				250W-400W	250W-400W	250W-400W	

Table 2. 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		



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Electrical Apparatus: Luminaries (Pendant lighting fixture) series EV**, EW**, EWA**, EVE**, EWE**, EWAE**, Model 50

Table 3. 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	
		Temperature Class	Max Surface Temp (°C)	Temperature 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

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.

ge



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Electrical Apparatus: Luminaries (Pendant lighting fixture) series EV**, EW**, EWA**,
EVE**, EWE**, EWAE**, Model 50

**Table 4. 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	
		Temperature Class	Max. Surface Temp (°C)	Temperature 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

NOTE:

- HG mercury vapours lamp;
- NA high pressure sodium lamp;
- HA metal halide lamp.



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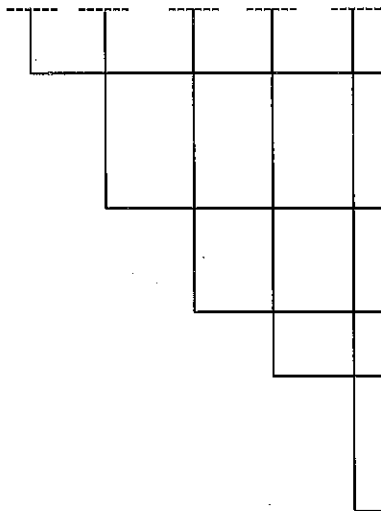
Applicant: CORTEM S.p.A., Via Aquileia 10,
I - 34070 Villesse (GO), Italy

Electrical Apparatus: Luminaries (Pendant lighting fixture) series EV**, EW**, EWA**,
EVE**, EWE**, EWAE**, Model 50

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

EV** lamps

EV -



Code of **Ex db** execution lighting fixtures

Type of fixing accessories:

- 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**

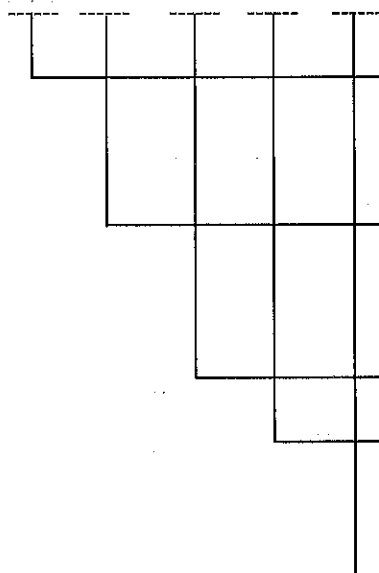
Lighting fixture size: **50, 60, 70, 80, 100**

(for sizes **50** and **60** only)

- L** or **L1** remote phosphor LED
- L/10** or **L1/10** LED with 10° lens
- L/20** or **L1/20** LED with 20° lens
- L/40** or **L1/40** LED with 40° lens

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

EVE -



Code of **Ex db eb** execution lighting fixtures

Type of fixing accessories:

- Blank :** Suspension box with three entry
- S:** Ceiling mounting with two entries
- A:** Suspension box with one entry
- X:** Ceiling box with four entries
- GC:** Suspension box with eyebolt
- IX:** Wall mounting box with 30° bracket

Model: **50**

Lighting fixture size: **50, 60, 70, 80, 100**

(for sizes **50** and **60** only)

- L** or **L1** remote phosphor LED
- L/10** or **L1/10** LED with 10° lens
- L/20** or **L1/20** LED with 20° lens
- L/40** or **L1/40** LED with 40° lens

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

2e



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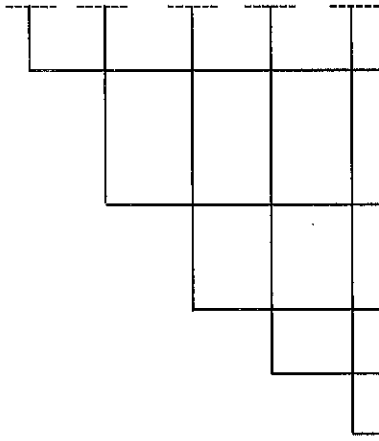
Applicant: CORTEM S.p.A., Via Aquileia 10,
I - 34070 Villesse (GO), Italy

Electrical Apparatus: Luminaries (Pendant lighting fixture) series EV**, EW**, EWA**,
EVE**, EWE**, EWAE**, Model 50

Identification of Lighting fixtures (follows):

EW** lamps

EW -



Code of **Ex db** execution lighting fixtures

Type of fixing accessories:

Blank: Suspension box with one entry

X: Ceiling mounting with four entries

GC: Suspension box with eye bolt

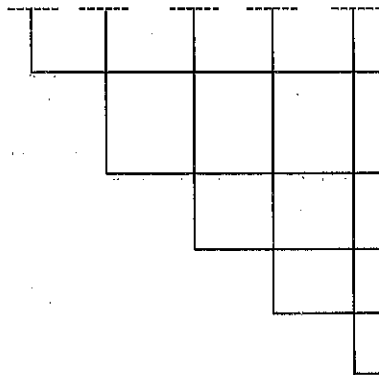
IX: Wall mounting box with 30° bracket

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.)

EWE -



Code of **Ex db eb** execution lighting fixtures

Type of fixing accessories:

Blank: Suspension box with three entries

S: Ceiling mounting with two entries

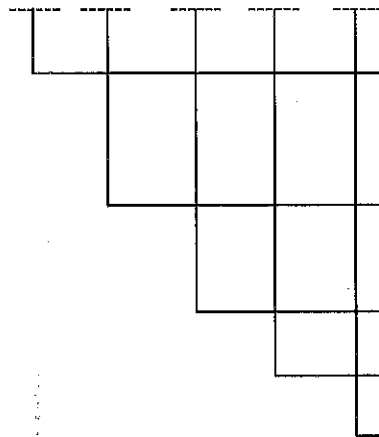
Model: **50**

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** lamps

EWA -



Code of **Ex db** execution lighting fixtures

Type of fixing accessories:

T: Suspension box with one entry

X: Ceiling mounting with four entries

GC: Suspension box with eyebolt

IX: Wall mounting box with 30° bracket

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.)

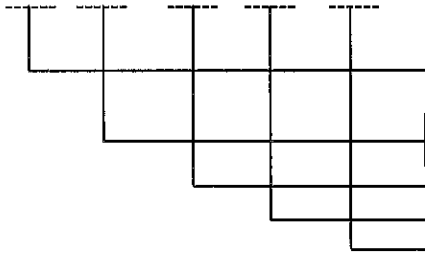
ge

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 I - 34070 Villesse (GO), Italy
Electrical Apparatus: Luminaries (Pendant lighting fixture) series EV**, EW**, EWA**,
 EVE**, EWE**, EWAE**, Model 50

Identification of Lighting fixtures (follows):

EWAE -



Code of **Ex db eb** execution lighting fixtures
 Type of fixing accessories:
Blank: Suspension box with three entries
S: 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.)

Condition of installation

The condition 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.

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

