



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.: 1 Certificate history:
Issue No. 1 (2013-6-19)
Issue No. 0 (2010-12-30)
Status: Current
Date of Issue: 2013-06-19 Page 1 of 4

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...**
Optional accessory:

Type of Protection: **Flameproof enclosures 'd'; increased safety 'e'; Dust ignition protection 't'**

Marking: **Ex d IIC T6 to T3 Gb or
Ex de IIC T6 to T3 Gb or
Ex tb IIIC T54°C to T185°C
IP66**

Approved for issue on behalf of the IECEx
Certification Body:

Mirko Balaz

Position:

Head of IECEx CB

Signature:
(for printed version)

[Signature]
19-06-2013

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
Responsible
[Signature]
Mirko Balaz



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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 : 2007-04 Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-31 : 2008 Edition: 1	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2006-07 Edition: 4	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

Quality Assessment Report:

IT/CES/QAR06.0002/07



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Luminaries (pendant Lighting fixtures) series **EV..**, **EW..**, **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. 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...** 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..**, **EW..**, **EWAE..**. The cable passage between lighting fixture and Ex-e housing is made by a special sealed bushing.

For further information see Annex.

CONDITIONS OF CERTIFICATION: NO



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

Variation 1.1

The pendant Lighting fixtures type EV..., EW..., EWA..., EVE..., EWE..., EWAE.. Model 50 originally assessed in compliance with IEC 60079-0: 2004, IEC 60079-1:2007, IEC 60079-7:2006, IEC 61241-0:2004 and IEC 61241-1:2004, have been re-assessed on the basis of the Standards:

- IEC 60079-0: 2011 - Electrical apparatus for explosive atmospheres - Part 0: general requirements.
- IEC 60079-31: 2008 - Electrical apparatus for use in the presence of combustible dust - Part 31: protection by enclosures "t".

Upgrade the marking of the equipment in compliance to the new Standards assessed, including the equipment protection level (EPL) "Gb" or "Db".

Variation 1.2

Upgrade of power supply (complete range of available voltage), upgrade of table of temperatures and constructional modifications.

Variation 1.3

Deleted Model 40 because out of production.

Variation 1.4

New models of LED lamps with remote phosphor technology or with lens added for EV...-5050 and EV...-5060 types. The new codes became EV...-5050L..., EV...-5050L/..., EV...-5060L1.. and EV...-5060L1/...



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Prot. B3019659

Annex to certificate:

IECEx CES 07.0004 Issue No.:1 of 2013-06-19

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...**

Description of the equipment:

Luminaries (pendant Lighting fixtures) series **EV...**, **EW...**, **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... 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 sealed 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.

Lighting fixtures wall mounting types EVIX..., EWIX..., 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-de.

Model 40 has been deleted because out of production.

Electrical characteristics

Rated voltage:	from 110 up to 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.

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, 3 and 4 below and in the manufacturer documentation.



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Fig. B3019659

Annex to certificate:

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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...

New models of LED lamps with remote phosphor technology or with lens

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 and relative driver are installed by relevant mounting plate using same fixing hole. 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 shall be added the letter "L" on the end of code.

The types of LED lamps and the composition of devices used are listed below.

Electrical characteristics of new models

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
LEDs input current	700 mA	500 mA	700 mA
Degree of protection (IEC 60529): IP 66			

Ambient temperature

For EV...-5050L..., EV...-5060L..., EV...-5060L1.. models:

- 20 ÷ + 40°C ; - 20 ÷ + 50°C

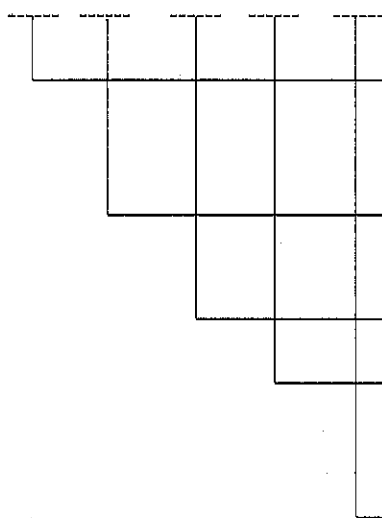
The temperature class and maximum surface temperature T of the EV...-5050L..., EV...-5060L.. and EV...-5060L1.. models is a function of the enclosure size, of the maximum power dissipated in the inside and of the maximum ambient temperature as specified in the tables 1 and 2 below and in the manufacturer documentation.

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

EV lamps

EV

-



Code of **Ex d** 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



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Applicant:

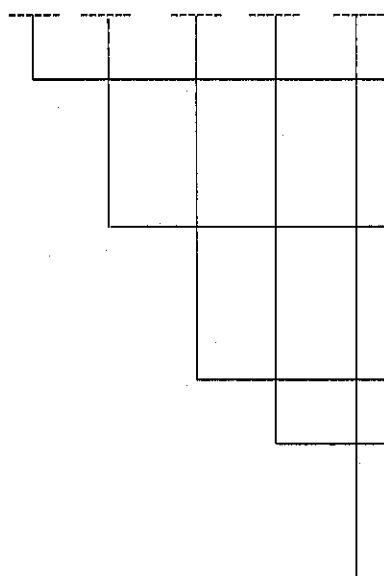
CORTEM S.p.A., Via Aquileia 10,
I - 34070 Villesse (GO), Italy

Electrical Apparatus:

Luminaries (Pendant lighting fixture) series EV..., EW..., EWA...,
EVE..., EWE..., EWAE...

Identification of Lighting fixtures (follows):

EVE



Code of **Ex de** 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**

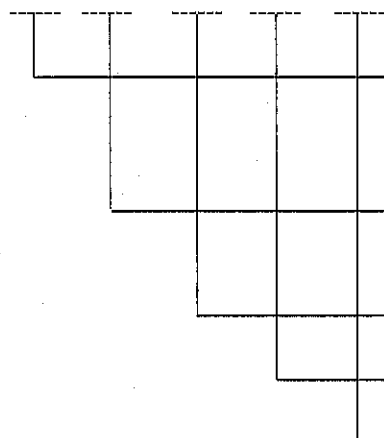
(for sizes **50** and **60** only)

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.

EW lamps

EW



Code of **Ex d** 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.)



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Applicant:

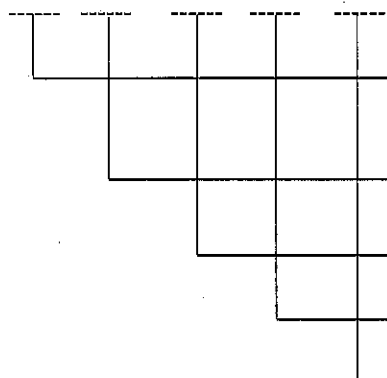
CORTEM S.p.A., Via Aquileia 10,
I - 34070 Villesse (GO), Italy

Electrical Apparatus:

Luminaries (Pendant lighting fixture) series EV..., EW..., EWA...,
EVE..., EWE..., EWAE...

Identification of Lighting fixtures (follows):

EWE -



Code of **Ex de** execution lighting fixtures

Type of fixing accessories:

Blank: Suspension box with three entries

S: Ceiling mounting with two entries

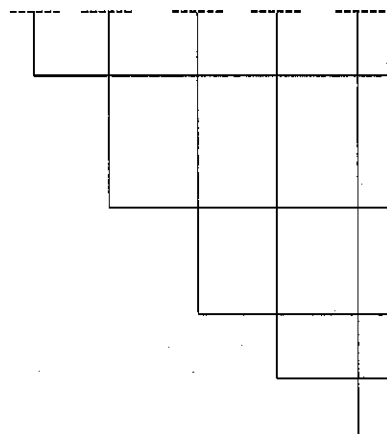
Model: **50**

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 d** execution lighting fixtures

Type of fixing accessories:

T: Suspension box with one entry

X: Ceiling mounting with four entries

GC: Suspension box with eyebolt

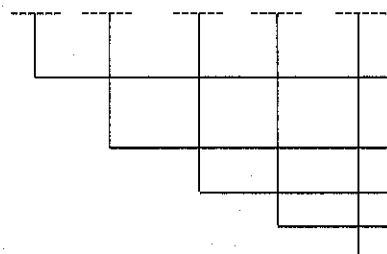
IX: Wall mounting box with 30° bracket

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.)

EWAE -



Code of **Ex de** 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.)



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I - 34070 Villesse (GO), Italy

Electrical Apparatus:

Luminaries (Pendant lighting fixture) series EV..., EW..., EWA...,
EVE..., EWE..., EWAE...

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

**Table 1. Temperature Class and Maximum Surface Temperature (°C) 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	
			(°C)		(°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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Electrical Apparatus:

Luminaries (Pendant lighting fixture) series EV..., EW..., EWA...,
EVE..., EWE..., EWAE...

**Table 2. Temperature Class and Maximum Surface Temperature (°C) 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	
			(°C)		(°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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Electrical Apparatus:

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

**Table 3. Temperature Class and Maximum Surface Temperature (°C) 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	
			(°C)		(°C)
EV- 5050L..	8W	T6	55	T6	65
EV- 5060L..	13W	T6	60	T6	70
EV- 5060L1..	19W	T6	65		

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 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.