



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX SEV 19.0043X** Page 1 of 4 [Certificate history](#)

Status: **Current** Issue No: 0

Date of Issue: **2019-09-26**

Applicant: **CORTEM S.p.A.  
Via Aquileia n° 10  
34070 Villesse (GO)  
Italy**

Equipment: **Luminaire series EVL**

Optional accessory:

Type of Protection: **d, e, op is, t**

Marking: **Ex db eb op is IIC T4 / T5 / T6 Gb [1], or  
Ex db eb op is IIB + H2 T4 / T5 / T6 Gb [2] and  
Ex tb op is IIIC T135 °C / T100 °C / T 85 °C Db**  
 [1] Applicable for models type:  
 - EVL 060 / 070 with flat glass and models type EVL 060 / 070 / 080 and 100 with globe (hemispheric) shaped glass with ambient temperature range  $-60\text{ °C} \leq T_a \leq +60\text{ °C}$ ;  
 - EVL 080 / 100 with flat glass of 18 mm thickness with ambient temperature range  $-40\text{ °C} \leq T_a \leq +60\text{ °C}$ ;  
 - EVL 080 / 100 with flat glass of 15 mm thickness with ambient temperature range  $-20\text{ °C} \leq T_a \leq +60\text{ °C}$ .  
 [2] Applicable for models type:  
 - EVL 080 / 100 with flat glass of 18 mm thickness with ambient temperature range  $-60\text{ °C} \leq T_a \leq +60\text{ °C}$ ;  
 - EVL 080 / 100 with flat glass of 15 mm thickness with ambient temperature range  $-40\text{ °C} \leq T_a \leq +60\text{ °C}$ .  
 Temperature classes and maximum surface temperatures are detailed in table A.2

Approved for issue on behalf of the IECEx  
Certification Body:

**Martin Plüss**

Position:

**Manager Product Certification**

Signature:  
(for printed version)

Date:

2019-06-26

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Switzerland**

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Date of Issue: **2019-09-26**

Issue No: 0

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

Additional  
manufacturing  
locations:

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 equipment 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 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

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

**IEC 60079-28:2015** Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation  
Edition:2

**IEC 60079-31:2013** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

**IEC 60079-7:2015** Explosive atmospheres – Part 7: Equipment protection by increased safety "e"  
Edition:5.0

This Certificate **does not** indicate compliance with 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:

CH/SEV/EXTR19.0045/01

Quality Assessment Report:

IT/CES/QAR06.0002/13



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**EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

Luminaire series EVL

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

- Flameproof joints cannot be repaired
- Potential electrostatic charging hazard, see instructions.





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## Equipment (continued):

The luminaires series EVL are electrical equipment protected by Ex d, Ex e, Ex t enclosures, designed in compliance with Ex op is requirements and suitable for use in presence of gas or dust explosive atmospheres.

The luminaires are composed of a flameproof enclosure with a window manufactured in tempered glass, plane or semispherical, secured to a threaded metallic ring by a cemented joint.

The glass window is assembled to main body of the luminaire by a threaded joint.

An increased safety terminal box is present and separated from the flameproof enclosure by means of a cemented bushing.

The metallic parts of Ex d enclosure and terminal box are manufactured in aluminum alloy.

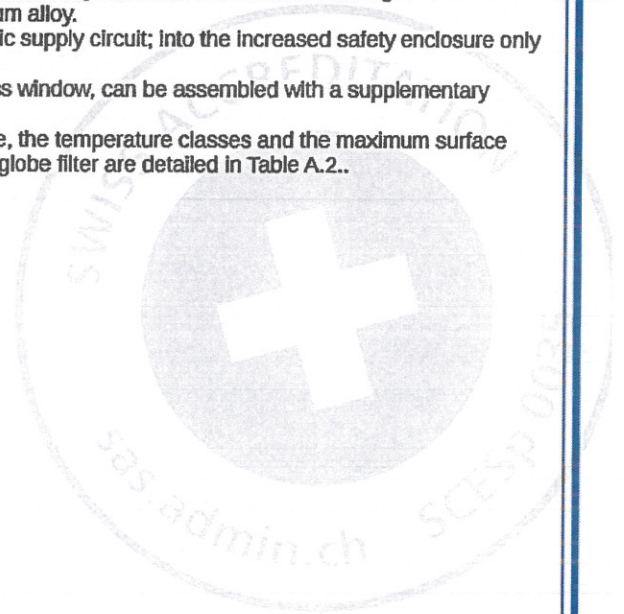
The flameproof enclosure contains the LED board or a LED array and the electronic supply circuit; into the increased safety enclosure only the connection terminals are present.

The luminaires model type EVL-060 and EVL-070, manufactured with a plane glass window, can be assembled with a supplementary globe made in colored polycarbonate, that have a light filter function.

The permitted maximum power values in relation to the ambient temperature range, the temperature classes and the maximum surface temperatures, of the luminaires assembled with the supplementary polycarbonate globe filter are detailed in Table A.2..

## Annex:

Annex to IECEx SEV19.0043X-issue-0.pdf





## IECEx Certificate of Conformity

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Annex to certificate: IECEx SEV 19.0043X Issue 0. 0 of 2019-10-07

### General product information

The luminaires series EVL are electrical equipment protected by Ex d, Ex e, Ex t enclosures, designed in compliance with Ex op is requirements and suitable for use in presence of gas or dust explosive atmospheres.

The luminaires are composed of a flameproof enclosure with a window manufactured in tempered glass, plane or semispherical, secured to a threaded metallic ring by a cemented joint.

The glass window is assembled to main body of the luminaire by a threaded joint.

An increased safety terminal box is present and separated from the flameproof enclosure by means of a cemented bushing.

The metallic parts of Ex d enclosure and terminal box are manufactured in aluminum alloy.

The flameproof enclosure contains the LED board or a LED array and the electronic supply circuit; into the increased safety enclosure only the connection terminals are present.

The luminaires model type EVL-060 and EVL-070, manufactured with a plane glass window, can be assembled with a supplementary globe made in colored polycarbonate, that have a light filter function.

The permitted maximum power values in relation to the ambient temperature range, the temperature classes and the maximum surface temperatures, of the luminaires assembled with the supplementary polycarbonate globe filter are detailed in Table A.2.

### Ex Code

Ex db eb op is IIC T4 / T5 / T6 Gb <sup>[1]</sup>, or

Ex db eb op is IIB + H<sub>2</sub> T4 / T5 / T6 Gb <sup>[2]</sup> and

Ex tb op is IIIC T135 °C / T100 °C / T85 °C Db

<sup>[1]</sup> Applicable for models type:

- EVL 060 / 070 with flat glass and models type EVL 060 / 070 / 080 and 100 with globe (hemispheric) shaped glass with ambient temperature range  $-60\text{ °C} \leq T_a \leq +60\text{ °C}$ ;
- EVL 080 / 100 with flat glass of 18 mm thickness with ambient temperature range  $-40\text{ °C} \leq T_a \leq +60\text{ °C}$ ;
- EVL 080 / 100 with flat glass of 15 mm thickness with ambient temperature range  $-20\text{ °C} \leq T_a \leq +60\text{ °C}$ .

<sup>[2]</sup> Applicable for models type:

- EVL 080 / 100 with flat glass of 18 mm thickness with ambient temperature range  $-60\text{ °C} \leq T_a \leq +60\text{ °C}$ ;
- EVL 080 / 100 with flat glass of 15 mm thickness with ambient temperature range  $-40\text{ °C} \leq T_a \leq +60\text{ °C}$ .

Temperature classes and maximum surface temperatures are detailed in table A.2

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**Annex to certificate:** IECEx SEV 19.0043X Issue 0. 0 of 2019-10-07

**Identification**

The characteristics of the apparatus are codified according to the following schema:

|     |     |     |        |
|-----|-----|-----|--------|
| [a] | [b] | [c] | [d]    |
| ■■■ | ■■■ | ■■■ | - ■■■■ |

Number of digits (■)

**Model Reference**

|                                |  |
|--------------------------------|--|
| [a] Equipment Type:            | <b>EVL</b> : Explosion proof lighting fixtures   |
| [b] Luminaires dimension:      | <b>060</b> : Lighting fixtures type 060  |
|                                | <b>070</b> : Lighting fixtures type 070  |
|                                | <b>080</b> : Lighting fixtures type 080  |
|                                | <b>100</b> : Lighting fixtures type 100  |
| [c] Maximum power supply value | <b>020 ÷ 220</b> This value is related to the maximum permitted power that can be absorbed by the lighting fixtures as detailed in table A.1.  |
| [d] Constructional variants    | .... The meaning of this field is detailed in the technical documentation.<br>The information regarding electrical parameters and configurations, defined by this part of key code are present in the marking label of the device. |

**Rated characteristics**

Supply voltage: 12 ÷ 277 V dc or 12 ÷ 277 V ac 50/60 Hz

Maximum dissipated power: See table A.1

**Power supply details (Table A.1)**

| Model reference | Maximum permitted power value |
|-----------------|-------------------------------|
| EVL-060020...   | 25 W                          |
| EVL-060030...   | 35 W                          |
| EVL-060040...   | 45 W                          |
| EVL-060050...   | 55 W                          |
| EVL-060060...   | 60 W                          |
| EVL-070030...   | 35 W                          |
| EVL-070040...   | 45 W                          |
| EVL-070050...   | 55 W                          |
| EVL-070060...   | 60 W                          |
| EVL-070070...   | 75 W                          |
| EVL-070080...   | 85 W                          |
| EVL-070090...   | 90 W                          |
| EVL-080080...   | 85 W                          |
| EVL-080090...   | 95 W                          |
| EVL-080100...   | 105 W                         |
| EVL-080110...   | 115 W                         |
| EVL-080120...   | 125 W                         |

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Power supply details (Table A.1)  
(continue)

| Model reference | Maximum permitted power value |
|-----------------|-------------------------------|
| EVL-100120...   | 125 W                         |
| EVL-100130...   | 135 W                         |
| EVL-100140...   | 145 W                         |
| EVL-100150...   | 155 W                         |
| EVL-100160...   | 162 W                         |
| EVL-100 170...  | 175 W                         |
| EVL-100 180...  | 185 W                         |
| EVL-100 190...  | 195 W                         |
| EVL-100 200...  | 205 W                         |
| EVL-100 210...  | 215 W                         |
| EVL-100 220...  | 225 W                         |

Temperature classes and maximum surface temperatures (Table A.2)

| Model      | Power absorption                      | Maximum ambient temperature value |                                 |                                 |
|------------|---------------------------------------|-----------------------------------|---------------------------------|---------------------------------|
|            |                                       | +40°C                             | +50°C                           | +60°C                           |
| EVL-060... | $P \leq 45 \text{ W}$ [1]             | T6 (T85 °C) or<br>T4 (135 °C) [1] | T5 (T100 °C)<br>T4 (135 °C) [1] | T5 (T100 °C)<br>T4 (135 °C) [1] |
|            | $45 \text{ W} < P \leq 60 \text{ W}$  | T5 (T100 °C)                      | T5 (T100 °C)                    | T4 (T135 °C)                    |
| EVL-070... | $P \leq 45 \text{ W}$ [1]             | T6 (T85 °C) or<br>T4 (135 °C) [1] | T5 (T100 °C)<br>T4 (135 °C) [1] | T5 (T100 °C)<br>T4 (135 °C) [1] |
|            | $45 \text{ W} < P \leq 90 \text{ W}$  | T5 (T100 °C)                      | T5 (T100 °C)                    | T4 (T135 °C)                    |
| EVL-080... | $P \leq 90 \text{ W}$                 | T5 (T100 °C)                      | T5 (T100 °C)                    | T4 (T135 °C)                    |
|            | $90 \text{ W} < P \leq 125 \text{ W}$ | T4 (T135 °C)                      | T4 (T135 °C)                    | T4 (T135 °C)                    |
| EVL-100... | $P \leq 225 \text{ W}$                | T4 (T135 °C)                      | T4 (T135 °C)                    | T4 (T135 °C)                    |

**NOTE 1:** Maximum power level, temperature class and maximum surface temperature for luminaires assembled with a supplementary globe, made in colored polycarbonate.



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### Ambient temperature range

**-60 °C ≤ Ta ≤ +60 °C**

Applicable to: models type **EVL 060 / 070** with flat glass and models type **EVL 060 / 070 / 080** and **100** with globe (hemispheric) shaped glass, suitable for use in gas group **IIC**;

and

models type **EVL 080 / 100** with flat glass of 18 mm thickness, suitable for use in gas group **IIB + H<sub>2</sub>**.

**-40 °C ≤ Ta ≤ +60 °C**

Applicable to: models type **EVL 060 / 070** with flat glass and models type **EVL 080 / 100** with flat glass of 18 mm thickness suitable for use in gas group **IIC**;

and

models type **EVL 080 / 100** with flat glass of 15 mm thickness, suitable for use in gas group **IIB + H<sub>2</sub>**.

**-20 °C ≤ Ta ≤ +60 °C**

Applicable to: models type **EVL 080 / 100** with flat glass of 15 mm thickness, suitable for use in gas group **IIC**.

Temperature classes and maximum surface temperatures are detailed in table **A.2**

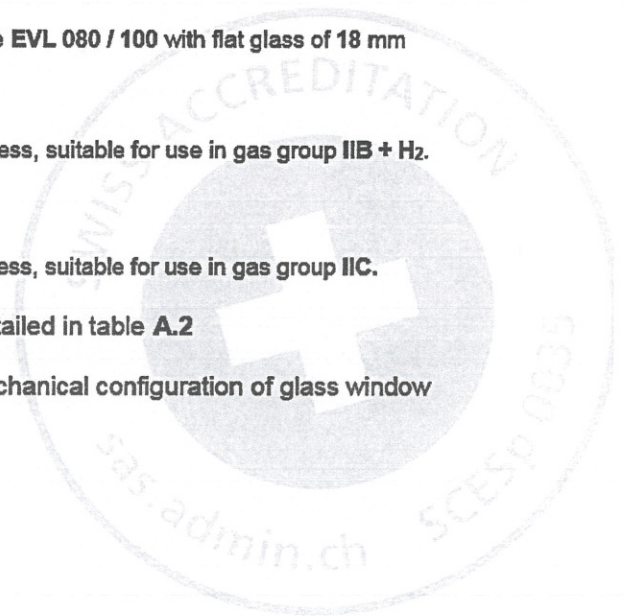
The minimum ambient temperature permitted is related to the mechanical configuration of glass window and it is detailed in the technical documentation.

### Specific Conditions of Use:

- Flameproof joints cannot be repaired;
- Potential electrostatic charging hazard, see instructions.

### Warning label:

- WARNING – “DO NOT OPEN WHEN ENERGIZED”
- WARNING – “DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT”
- WARNING – “POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS”







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### Routine tests

The equipment shall be submitted to the overpressure routine test as prescribed at § 16.1.2 of the EN 60079-1 standard, for at least 10 s at the pressure value of:

- **1860 kPa**, for devices intended for use in minimum ambient temperature of **-60 °C**, applicable for models type **EVL 060 / 070** with flat glass and models type **EVL 060 / 070 / 080** and **100** with globe (hemispheric) shaped glass, suitable for use in gas group **IIC**; or
- **1665 kPa**, for devices intended for use in minimum ambient temperature of **-40 °C**, applicable for models type **EVL 060 / 070** with flat glass and models type **EVL 080 / 100** with flat glass of **18 mm** thickness, suitable for use in gas group **IIC**; or
- **1545 kPa**, for devices intended for use in minimum ambient temperature of **-60 °C** (applicable for models type **EVL 080 / 100** with flat glass of **18 mm** thickness, suitable for use in gas group **IIB + H<sub>2</sub>**; or
- **1395 kPa** for devices intended for use in minimum ambient temperature of:
- **-20 °C** (applicable for models type **EVL 080 / 100** with flat glass of **15 mm** thickness, suitable for use in gas group **IIC**);
- and
- **-40 °C** (applicable for models type **EVL 080 / 100** with flat glass of **15 mm** thickness, suitable for use in gas group **IIB + H<sub>2</sub>**).

The equipment shall be submitted to the dielectric test with applied voltage (according to clause 7.1 of the IEC 60079-7) of  $2U+1000 V_{ac}$  with a minimum value of  $1500 V_{ac}$  between the supply terminals and earth.

