



# 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](http://www.iecex.com)

Certificate No.:

IECEx CES 11.0021

issue No.:0

Certificate history:

Status:

Current

Date of Issue:

2011-09-30

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Applicant:

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

Electrical Apparatus:  
Optional accessory:

Lighting fixtures, series FLF- .. and FLFE- ..

Type of Protection:

Flameproof enclosures 'd'; increased safety "e"; Dust ignition protection "tD"

Marking:

Ex d IIC T6 or Ex de IIC T6  
Ex tD A21 IP66 T70°C+T80°C

Approved for issue on behalf of the IECEx  
Certification Body:

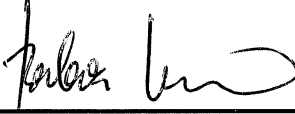
Mirko Balaz

Position:

Head of IECEx CB

Signature:  
(for printed version)

Date:

  
30-09-2011

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**  


PUBBLICATO B1024520 (PAD - 1582467)



# IECEx Certificate of Conformity

Certificate No.: IECEx CES 11.0021

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

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:

|  |  |
|--|--|
| <b>IEC 60079-0 : 2004</b><br>Edition: 4.0  | Electrical apparatus for explosive gas atmospheres - Part 0: General requirements                        |
| <b>IEC 60079-1 : 2007-04</b><br>Edition: 6 | Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"                        |
| <b>IEC 60079-7 : 2006-07</b><br>Edition: 4 | Explosive atmospheres - Part 7: Equipment protection by increased safety "e"                             |
| <b>IEC 61241-0 : 2004</b><br>Edition: 1    | Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements          |
| <b>IEC 61241-1 : 2004</b><br>Edition: 1    | Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD" |

*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/ExTR11.0024/00

Quality Assessment Report:

IT/CES/QAR06.0002/05



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

Lighting fixtures series FLF..., FLFE... are suitable for one or two fluorescent tubes.  
The fluorescent lighting fittings, series FLF and FLFE are made of aluminium alloy with sealed high quality borosilicate glass tube.  
Explosion protected luminaries series FLF... consists of the one Flameproof "d" enclosure containing the source of light, lamp holder, ballast, other electrical apparatus, and the terminals.  
Explosion protected luminaries series FLFE... consists of the two chambers: one Flameproof "d" enclosure containing the source of light, lamp holder, ballast, other electrical apparatus, and second enclosure (terminal compartment) in the type of protection Increased safety "e". The two chambers are connected through multi-core bushing.  
The luminaries series FLF and FLFE are suitable for use of tubular fluorescent lamps with bi-pin cap G13.  
The fluorescent lighting fittings are made in two versions:  
- for normal service  
- for normal service and/or emergency service

See annex for further description.

### CONDITIONS OF CERTIFICATION: NO



## IECEx Certificate of Conformity

# CESI

Prot: B1024520

**Annex to certificate:** IECEx CES 11.0021 Issue No.:0 of 2011-09-30

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

**Electrical Apparatus:** Lighting fixtures, series FLF- .. and FLFE- ..

### Description of the equipment:

The Explosion protected luminaries' series FLF... consists of the one flameproof "d" enclosure containing the source of light, lamp holder, ballast, other electrical apparatus, and the terminals.

The Explosion protected luminaries' series FLFE... consists of the two chambers: one flameproof "d" enclosure containing the source of light, lamp holder, ballast, other electrical apparatus, and second enclosure (terminal compartment) in the type of protection increased safety "e". The two chambers are connected through special multi-core bushing.

Lighting fixtures series FLF... and FLFE... are manufactured using:

- for Ex d execution (FLF ...) with one enclosures made in Aluminium Alloy and high quality borosilicate glass tube, for electrical parts and fluorescent tubes ;
- for Ex de execution (FLFE ...) with two enclosures made in Aluminium Alloy, one for connecting terminals and one with high quality borosilicate glass tube for other electrical parts and fluorescent tubes (separated by a sealing bushing) .

The equipment's are assembled by means of threaded joints. The lighting fixture is composed with a protection borosilicate glass tube sealed on two aluminium alloy end fittings using a silicon resin (Dow Corning type 816).

Lighting fixtures are equipped with the following:

- internal/external earth screws
- metallic reflector
- metallic stay bolt for assembly fixture

The fluorescent lighting fixtures are used for normal and emergency working. The batteries are assembled only with a Cortem electronic inverter, used with emergency working.

On request on lighting fixture can be externally added accessories like reflector and guard without compromise Ex characteristics

### Electrical characteristics:

Rated power: 18W, 36W, 58W  
Rated voltage: 230Vac/dc, 110/230Vac/dc, 277Vac/dc  
Frequency: 50/60Hz  
Number of lamps: 1 or 2 fluorescent tubes T8 with G13 socket  
Degree of protection: IP 66 (IEC 60529)  
NiCd battery voltage: 6V  
NiCd battery capacity: 4Ah or 7Ah  
Ambient temperature: - 20 ÷ + 45 °C or  
- 20 ÷ + 50 °C or  
- 20 ÷ + 55 °C



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**Electrical Apparatus:** Lighting fixtures, series FLF- .. and FLFE- ..

## TEMPERATURE CLASS AND MAX. SURFACE TEMP. FOR LIGHTING FIXTURES IN AMBIENT TEMPERATURE UP TO +45°C; +50°C; +55°C

Table 1:

| Model          | Fluorescent tube | N° of tube | Tamb +45°C<br>Temp. class /<br>Max surface<br>temp. | Tamb +50°C<br>Temp. class /<br>Max surface<br>temp. | Tamb +55°C<br>Temp. class /<br>Max surface<br>temp. |
|----------------|------------------|------------|---|---|---|
| FLF- * 18 ***  | 18 W             | 1 or 2     | T6/T70°C  | T6/T75°C  | T6/T80°C  |
| FLF- * 36 ***  | 36 W             | 1 or 2     | T6/T70°C  | T6/T75°C  | T6/T80°C  |
| FLF- * 58 ***  | 58 W             | 1 or 2     | T6/T70°C  | T6/T75°C  | T6/T80°C  |
| FLFE- * 18 *** | 18 W             | 1 or 2     | T6/T70°C  | T6/T75°C  | T6/T80°C  |
| FLFE- * 36 *** | 36 W             | 1 or 2     | T6/T70°C  | T6/T75°C  | T6/T80°C  |
| FLFE- * 58 *** | 58 W             | 1 or 2     | T6/T70°C  | T6/T75°C  | T6/T80°C  |

FLF...E... Ex d and FLFE...E... Ex de for emergency working, are suitable for ambient temperature up to +50°C.

### Model Identification:

|               |                      |                      |                      |                      |   |
|---------------|----------------------|----------------------|----------------------|----------------------|---|
| FLF-<br>FLFE- | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/>  |
|               |                      |                      |                      |                      | Code of the series  |
|               |                      |                      |                      |                      | Number of lamps:<br>1 for one fluorescent tube<br>2 for two fluorescent tubes mounting                              |
|               |                      |                      |                      |                      | Lamp power:<br>18 for 18W fluorescent tube<br>36 for 36W fluorescent tube<br>58 for 58W fluorescent tube            |
|               |                      |                      |                      |                      | Type of operation :<br>Blank for normal working<br>EF for normal+emergency working<br>EE for emergency working only |
|               |                      |                      |                      |                      | Battery capacity:<br>4 for 4Ah<br>7 for 7Ah   |
|               |                      |                      |                      |                      | Other suffix can be added on the code<br>for particular configurations (not<br>affecting the type of protection)    |



## IECEx Certificate of Conformity

**CESI**

Prot: B1024520

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I - 34070 Villesse (GO), Italy

**Electrical Apparatus:** Lighting fixtures, series FLF- .. and FLFE- ..

### Installation condition

The condition of the installation of the lighting fixtures is included within the safety instructions.

The accessories used for cable entries and for closing unused openings shall be suitably certified according to IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 61241-0 and IEC 61241-1 standards. A minimum degree of protection IP66 shall be guaranteed according to IEC 60529 standard.

If cylindrical threads are used, the coupling between the cable entry and the enclosure shall be provided with block to prevent loosening.

### **Warning label**

"Do not open when energized. Wait 10 minutes before opening"

For lighting with emergency unit only:

"Do not open when an explosive gas atmosphere may be present"