

**CESI****CERTIFICATE****ISMES****IPH**  
BERLIN**FGH**

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Schema di certificazione

**CESI-ATEX****[1] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE**

**[2] Equipment or Protective System intended for use  
in potentially explosive atmospheres  
Directive 2014/34/EU**

**[3] Supplementary EU-Type Examination Certificate number:**

**CESI 09 ATEX 008 /05**

**[4] Product:** Fluorescent lighting fixtures series FLF... and FLFE...

**[5] Manufacturer:** **COR.TEM S.p.A.**

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

**[7] This supplementary certificate extends EC-Type Examination Certificate CESI 09 ATEX 008 to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.**

**[8] CESI, notified body n. 0722 in accordance with Article 17 of the Directive 2014/34/EU of the Parliament and Council of 26 February 2014, 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.4  
The examination and test results are recorded in confidential report n. EX- B8012822**

**[9] In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016**

**[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 EU-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. 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:**

**Ex II 2G Ex db IIC T6 Gb ; or II 2G Ex db eb IIC T6 Gb  
II 2G Ex db op is IIC T6 Gb or II 2G Ex db eb op is IIC T6 Gb  
II 2D Ex tb IIIC T71°C, T80°C Db or II 2D Ex tb op is IIIC T71°C, T80°C Db**

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Date 19/06/2018 - Translation issued the 19/06/2018

Prepared  
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**CESI S.p.A.**

Testing & Certification Division  
Business Area Certification  
II Responsabile

**(Roberto Piccin)****ACCREDIA**  
L'ENTE 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] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 09 ATEX 008/05

[15] **Description of the variation**

- New model of lighting fixture for normal and/or emergency operation with LED modules strips
- New type of protection "Ex op is" for lighting fixtures with LED tube and strips.
- Use of heater mat on battery group for Ambient Temperature -20°C +40°C
- Upgrade of marking label
- Upgrade to 2014/34 EU Directive.
- Upgrade to new standards Editions EN 60079-0:2012 +A11:2013 and EN 60079-7: 2015; EN 60079-28: 2015.

**Description of the equipment**

Lighting fixtures series FLF... and FLFE... are suitable for fluorescent tubes T8 G13, compact tubes 4 pins G11 or for LED tubes T8 G13 and LED strips..

The FLF series are manufactured with "Ex d" type of protection, by one enclosures containing the electrical parts and fluorescent tubes or LED tubes or LED strips;

The FLFE series are manufactured with type of protection "Ex de" by two enclosures, one with type of protection "Ex e" for terminals connection and another one with type of protection "Ex d" for other electrical parts and fluorescent tubes or LED tubes;

The lighting fixtures are composed with a protection glass tube sealed on two aluminium end fittings using a silicone resin.

The lighting fixtures series "FLF...and FLFE..." can be made in three different types:

- lighting fixtures equipped with fluorescent tubes (1 or 2 fluorescent tubes, 18W, 36W, 58W)
- lighting fixtures equipped with LED tubes (1 or 2 LED tubes 11W, 23W, 31W)
- lighting fixtures equipped with LED module strips (1 or 2 rows of LED strips 15W, 30W, 45W, 60W, 90W)

The new lighting fixtures with LED modules strips are installed directly on the mounting plate.

On the short size of lighting fixture can be installed one or two LED strips, the code this size is named "...01L".

On the middle size of lighting fixture can be installed two LED strips on one row, or four LED strips on two rows, the code this size is named "...02L".

On the long size of lighting fixture can be installed three LED strips on one row, or six LED strips on two rows, the code this size is named "...03L".

All types of lighting fixtures have the same mechanical characteristics and be used for normal and/or emergency working; lighting fixtures emergency version use a certified rechargeable Battery group of 4Ah or 7Ah, 6V are used.

On lighting fixtures for emergency service and low temperature can be installed on request an Silicon Heater Mat on the battery group to guarantee to maintain an temperature upper than the -20°C and to preserve the characteristics of cells during normal operation and during charge;

- for battery of 4Ah can be used heater mat with power rating 5W,
- for battery of 7Ah can be used a heater mat with power rating 7,5W.
- Each mats have supply voltage 12Vdc and resist at peak temperature of +300°C.

An thermostat can be added to switch off the heater mat when the temperature rises.

The heater mat can be installed on the mounting plate by self-adhesive part or directly on the battery pack.

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[14] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 09 ATEX 008/05

The fluorescent lighting fixtures series FLF... or series FLFE... shall be marked as follows:

With fluorescent tubes

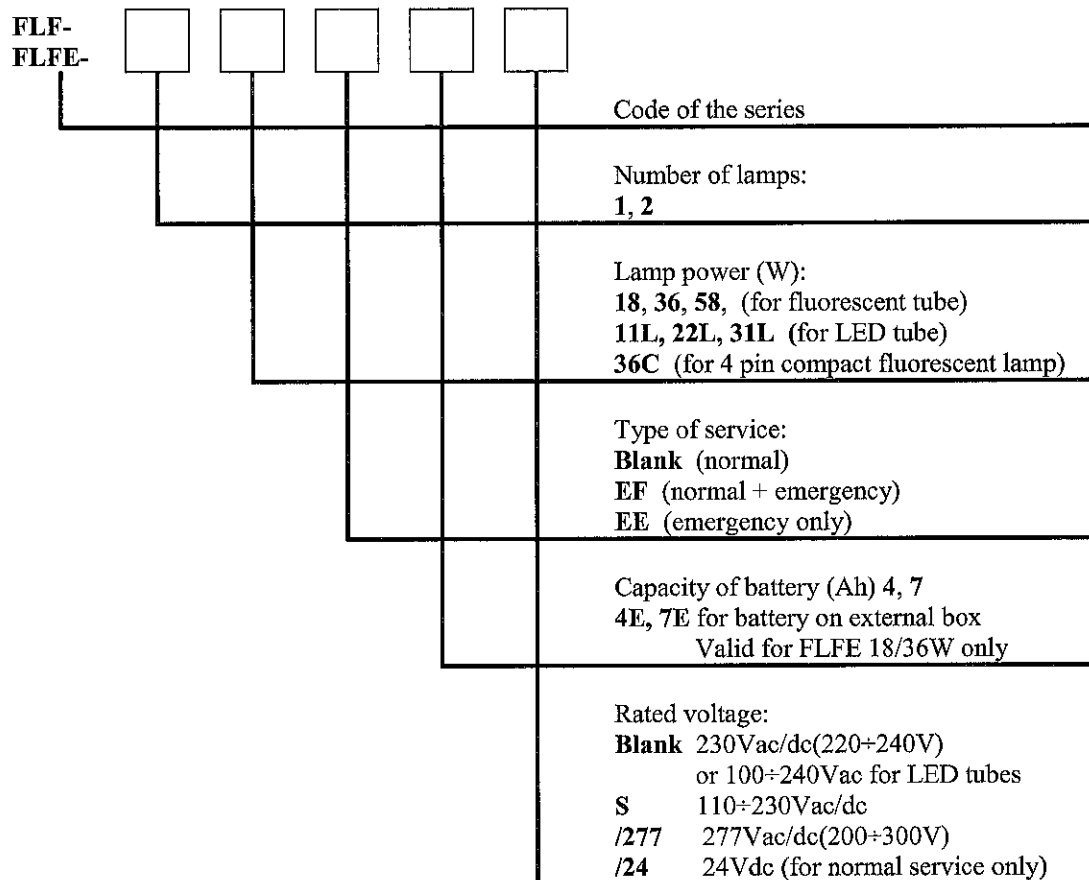
**Ex** II 2GD  
 Ex db IIC T6 Gb or Ex db eb IIC T6 Gb  
 Ex tb IIIC T71°C+T80°C Db

With LED tube or module LED strip

**Ex** II 2GD  
 Ex db op is IIC T6 Gb or Ex db eb op is IIC T6 Gb  
 Ex tb op is IIIC T71°C+T80°C Db

### Equipment identification codes

Lighting fixtures with fluorescent and LED tubes



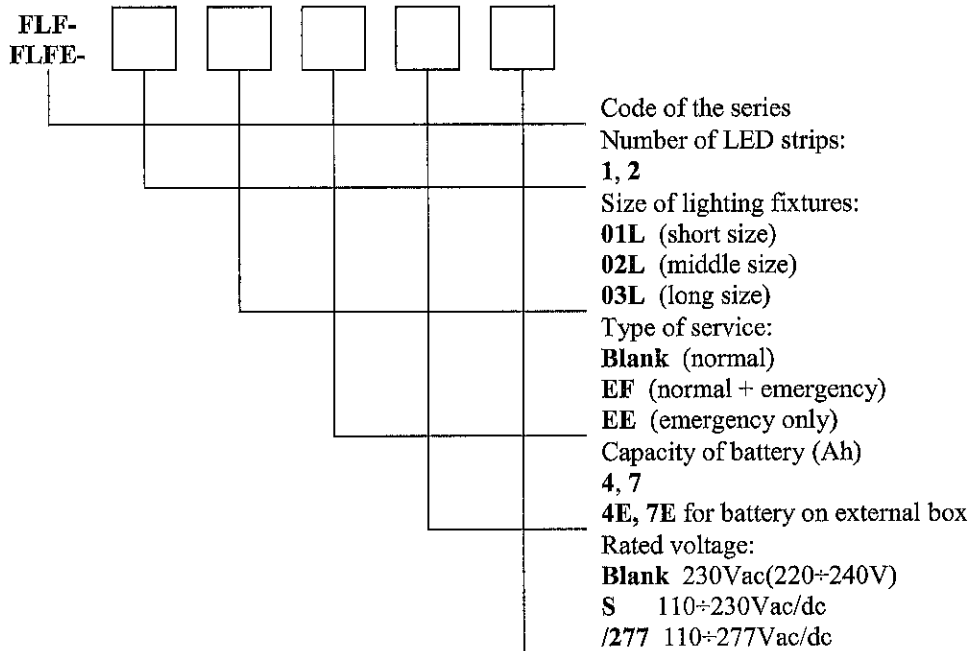
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[14] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 09 ATEX 008/05

### Lighting fixtures with LED module strips



### Electrical characteristics

Nominal wattage:	18W, 36W, 58W (fluorescent tubes) 11W, 23W, 31W (max wattage for LED tubes) 36W (4 pin compact fluorescent lamps) 15W, 30W, 45W, 60W, 90W (max. for LED module strips)
Nominal voltage:	230Vac/dc (220÷240V) 110÷230Vac/dc (110÷240V) 277Vac/dc (200÷300V) 24Vdc
Nominal voltage for LED tubes:	220÷240Vac or 100÷240Vac/dc
Nominal voltage for LED modules:	230Vac/dc (220÷240V) 110÷240Vac/dc 110÷277Vac/dc
Frequency:	50/60Hz
NiCd battery voltage:	6V
NiCd battery capacity:	4Ah, 7Ah
Voltage range:	110÷230V      100 ÷ 264Vac, 110 ÷ 254Vdc 230V            198 ÷ 264Vac, 198 ÷ 254Vdc 277V            200 ÷ 300Vac, 200 ÷ 300Vdc 24V              22 ÷ 26Vdc 100÷240V      90 ÷ 264Vac; 100 ÷ 121Vdc 110÷277V      99 ÷ 305Vac; 99 ÷ 305Vdc
Ambient temperature:	-20°C ÷ +55°C -20°C ÷ +50°C (only with battery pack installed inside)
Degree of protection:	IP 66

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[14] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 09 ATEX 008/05

### Temperature Class and Max. Surface Temperature

Model		Service	Tamb +50°C Temp. class / Max surface temp.	Tamb +55°C Temp. class / Max surface temp.
Ex d version	Ex de version			
FLF-...18... FLF-...36... FLF-...58...	FLFE-...18... FLFE-...36... FLFE-...58...	Normal (Fluorescent)	T6/T75°C	T6/T80°C
FLF-...18E... FLF-...36E... FLF-...58E...	FLFE-...18E... FLFE-...36E... FLFE-...58E...	Emergency, Normal+ Emergency (Fluorescent)	T6/T75°C	n.a.
n.a.	FLFE-...18E...E... FLFE-...36E...E...	Emergency, Normal+ Emergency (Fluorescent)	n.a.	T6/T80°C (*)
FLF-...11L FLF-...22L FLF-...31L	FLFE-...11L FLFE-...22L FLFE-...31L	Normal (LED)	T6/T71°C	T6/T71°C
FLF-...11LE... FLF-...22LE...	FLFE-...11LE... FLFE-...22LE...	Emergency, Normal+ Emergency (LED)	T6/T75°C	n.a.
n.a.	FLFE-...11LE...E... FLFE-...22LE...E...	Emergency, Normal+ Emergency (LED)	n.a.	T6/T80°C (*)
FLF-...36C	FLFE-...36C	Normal (Fluorescent compact)	T6/T77°C	T6/T77°C
FLF-...01L FLF-...02L FLF-...03L	FLFE-...01L FLFE-...02L FLFE-...03L	Normal (LED module strips)	T6/T71°C	T6/T71°C
FLF-...01LE... FLF-...02LE... FLF-...03LE...	FLFE-...01LE... FLFE-...02LE... FLFE-...03LE...	Emergency, Normal+ Emergency (LED module strips)	T6/T75°C	n.a.
n.a.	FLFE-...01LE...E... FLFE-...02LE...E...	Emergency, Normal+ Emergency (LED module strips)	n.a.	T6/T80°C (*)

#### Note (\*)

Lighting fixture for fluorescent tubes 18W or 36W with batteries installed on separate box. The battery pack (CORTEM type G-0309, II 2G Ex e II CESI 00 ATEX 032U) shall be installed on separate junction box made in aluminium code SA141410 already certified CESI 03 ATEX 333, connected to lighting fixture by a plug PLG2I certified CESI 02 ATEX 049X and gaskets to keep the degree of protection as per drawing A3-5565. This configuration is identified by suffix "E"

For examples:

FLFE-236EF4E for No.2 fluorescent tubes 36W normal+ emergency service, external battery group 4Ah

FLFE-222EF7E for No.2 LED tubes 23W normal+ emergency service, external battery group 7Ah

For max ambient temperature +50°C and +55°C, all the electrical devices (ballast in particular) shall be with adequate electrical characteristics refer to the ambient temperature.

The temperature of the ambient in which the battery is installed shall not be higher than +70°C.

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[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 09 ATEX 008/05**

### Installation conditions

- The accessories used for cable entries and for closing unused openings shall be certified according to EN 60079-0, EN 60079-1, EN 60079-31 standards for "Ex d" version and according to EN 60079-0, EN 60079-7, EN 60079-31 for "Ex de" version.
- In any case a degree of protection IP66 shall be guaranteed according to EN 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"
- "Do not open when an explosive gas atmosphere may be present"

[16] **Report n. EX - B8012822**

### **Routine tests**

The routine overpressure test on the empty enclosures of fluorescent lighting fixtures type FLF - FLFE shall be carried out at:

- 12 bar on FLF/FLFE 18 and FLF/FLFE 11L,
  - 11 bar on FLF/FLFE 36, FLF/FLFE 22L, FLF/FLFE 58 and FLF/FLFE 31L,
- with the static method according to clause 15.2.3.2 of the IEC 60079-1 standard.

For the lighting fixtures in execution Ex de the dielectric test with applied voltage shall be performed (according to clause 7.1 of the IEC 60079-7) at  $2U + 1000$  V with a minimum value of 1500 V between the supply terminals and earth ( $U$  = rated voltage of the lamp).

[17] **Special conditions for safe use**  
None

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

The Essential Health and Safety Requirements are covered by compliance to the Directive 2014/UE and to the following standards:

- EN 60079-0:2012 + A11: 2013 - Explosive atmospheres Part 0: Equipment – General requirements
- EN 60079-1: 2014- Equipment protection by Flameproof enclosures "d"
- EN 60079-7: 2015- Equipment protection by increased safety "e"
- EN 60079-28: 2015- Protection by optical radiation
- EN 60079-31: 2014- Equipment dust ignition protection by enclosure "t"

[19] **Descriptive documents (prot. EX-B8012834)**

- |  |        |        |            |
|--|--------|--------|------------|
| - Technical Note Nr. A4-6709 (13 sh.)                          | Rev. 0 | dated  | 16/05/2017 |
| - Drawing A1-4902 (2 sh)                                       | Rev. 3 | dated  | 16/05/2017 |
| - Drawing A3-5565  | Rev. 3 | dated  | 16/05/2017 |
| - Drawing A3-5802  | Rev. 1 | dated  | 16.05.2017 |
| - Drawing A3-6313  | Rev. 1 | dated  | 16.05.2017 |
| - Drawing A3-6710 (2 sh)                                       | Rev. 0 | dated  | 16.05.2017 |
| - EU Declaration of Conformity N°0056                          |        | dated. | 16.05.2017 |
| - Safety, maintenance and mounting Instructions F-302 (11 sh.) | Rev. 5 | dated  | 16/05/2017 |
| - Data sheets of materials (67 sh)                             |        |        | 16/05/2017 |

One copy of all documents is kept in CESI files.

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## Schedule

[14] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 09 ATEX 008/05

### Certificate history

Issue n.	Issue Date	Summary description of variation
05	2018/06/19	<ul style="list-style-type: none"> <li>- New model of lighting fixture for normal and/or emergency operation with LED modules strips.</li> <li>- New type of protection "Ex op is" for lighting fixtures with LED tube and strips.</li> <li>- Use of heater mat on battery group for Ambient Temperature -20°C +40°C- - -</li> <li>- Upgrade of marking label</li> <li>- Upgrade to 2014/34 EU Directive.</li> <li>- Upgrade to new standards Editions EN 60079-0:2012 +A11:2013 and EN 60079-7: 2015.</li> </ul>
04	2015/04/27	<ul style="list-style-type: none"> <li>- Lighting fixtures with 11W or 23W LED tubes using battery group and charger for emergency working</li> <li>- Updating to EN 60079-1: 2014 and EN 60079-31: 2014 Standards</li> </ul>
03	2015/01/16	- New LED tubes models
02	2013/09/10	<ul style="list-style-type: none"> <li>- Changed position of cable entries</li> <li>- New normal working version with rated voltage 24 Vdc</li> <li>- New normal working version with LED tubes</li> <li>- New normal working model with 4 pin 36W compact fluorescent lamp</li> <li>- Updating to EN 60079-0:2012, EN 60079-1: 2007, EN 60079-7: 2007 and EN 60079-31:2009</li> <li>- Upgrade of marking label</li> </ul>
01	2011/09/23	- New model FLFE for emergency with rechargeable batteries assembled in external box "Ex e"
00	2009/02/19	First issue of certificate CESI 09 ATEX 008