EU Type Examination Certificate CML 20ATEX3018X Issue 2

1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

2 Equipment **LifEx-ME, LifEx-MN and LifEx-MT series of linear lighting fixtures**

3 Manufacturer **Cortem S.p.A.**

4 Address **Via Aquileia 10**
34070 Villesse
(GO), Italy

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 Eurofins CML B.V., Chamber of Commerce No 67386717, Koopvaardijweg 32, 4906CV Oosterhout, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 12.

7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.

8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-1:2014 EN IEC 60079-7:2015+A1:2018

EN 60079-18:2015+A1:2017 EN 60079-31:2024

10 The equipment shall be marked with the following:

LifEx-ME

Ex II 2 G D

Ex db eb mb IIC T.. Gb

Ex eb mb IIC T.. Gb
(when Ex mb LED drivers are used)

Ex tb IIIC T...°C Db

Ta= refer to product description

LifEx-MN and LifEx-MT

Ex II 2 D

Ex tb IIIC T...°C Db

Ta= refer to product description

11 Description

The LifEx is a range of linear LED lighting fixtures that are available in three different configurations for different applications, designated as the LifEx-ME, LifEx-MT and LifEx-MN.

LifEx-ME

The LifEx-ME version has an Equipment Protection Level of EPL Gb and Db and utilises types of protection increased safety (eb) and dust protection by enclosure (tb), along with encapsulation (mb) for the light source and flameproof (db) for the driver.

It is constructed from an aluminium enclosure, with either a glass or polycarbonate lens and with optional polycarbonate diffuser.

LifEx-MN

The LifEx-MN version has an Equipment Protection Level of EPL Db and utilises type of protection dust protection by enclosure (tb).

It is constructed from an aluminium enclosure, with polycarbonate diffuser and/or with optional glass or polycarbonate lens.

LifEx-MT

The LifEx-MT versions has an Equipment Protection Level of EPL Db and utilises types of protection dust protection by enclosure (tb).

It is constructed from an aluminium enclosure, with polycarbonate diffuser and/or with optional glass or polycarbonate lens.

Design Options

Every configuration is available in lengths ranging from 300 mm to 1500 mm, and power ratings up to a maximum of 105W of nominal power.

The LifEx can be used in only normal service, in only emergency service or in normal and emergency service.

The minimum ambient temperature for the range is:

- -60°C for versions without battery
- -60°C for versions with the battery heater
- -20°C for versions with battery

The range is available with the following maximum ambient temperatures:

MODEL	With glass lens and with/without polycarbonate diffuser	With Polycarbonate lens and with/without polycarbonate diffuser	Without lens polycarbonate diffuser only
LifEx-M...0310	+60°C	+60°C	+60°C
LifEx-M...0315	+60°C	+60°C	+60°C
LifEx-M...0330	+60°C	Configuration not available	Configuration not available
LifEx-M...0615	+60°C	+60°C	+60°C
LifEx-M...0630	+60°C	+50°C	+60°C
LifEx-M...0645	+57°C	+47°C	+60°C
LifEx-M...0660	+47°C	Configuration not available	+58°C
LifEx-M...1230	+60°C	+60°C	+60°C
LifEx-M...1260	+60°C	+50°C	+60°C
LifEx-M...1290	+60°C	+40°C	+60°C
LifEx-M...12120	+54°C	Configuration not available	+60°C
LifEx-M...1590	+60°C	+40°C	+60°C

Table 1: Maximum Ambient Temperatures

The following tables provide the Temperature Class (EPL Gb) and Maximum Surface Temperature (EPL Db) for each LifEx type, with the following notes:

- The Temperature Class (EPL Gb) and Maximum Surface Temperature (EPL Db) in the tables below are not applicable when the ambient temperature is not permitted in the above maximum ambient temperature range table.
  (For example, the LifEx-M...0660 is not permitted with polycarbonate lens, therefore the Temperature Class (EPL Gb) and Maximum Surface Temperature (EPL Db) for this version in tables 2 and 3 are not applicable)

MODEL	Temperature Class (EPL Gb) and Maximum Surface Temperature (EPL Db) Based on ambient temperature													
	40°C		45°C		47°C		50°C		54°C		57°C		60°C	
	EPL Db	EPL Gb	EPL Db	EPL Gb	EPL Db	EPL Gb	EPL Db	EPL Gb	EPL Db	EPL Gb	EPL Db	EPL Gb	EPL Db	EPL Gb
LifEx-M...0310	T51°C	T6	T56°C	T6	T58°C	T6	T61°C	T6	T65°C	T6	T68°C	T6	T71°C	T6
LifEx-M...0315	T51°C	T6	T56°C	T6	T58°C	T6	T61°C	T6	T65°C	T6	T68°C	T6	T71°C	T6
LifEx-M...0615	T51°C	T6	T56°C	T6	T58°C	T6	T61°C	T6	T65°C	T6	T68°C	T6	T71°C	T6
LifEx-M...0630	T64°C	T6	T69°C	T5	T71°C	T5	T74°C	T5	T78°C	T5	T81°C	T4	T84°C	T4
LifEx-M...0645	T67°C	T5	T72°C	T5	T74°C	T5	T77°C	T5	T81°C	T4	T84°C	T4	T87°C	T4
LifEx-M...0660	T72°C	T5	T77°C	T4	T79°C	T4	T82°C	T4	T86°C	T4	T89°C	T4	T92°C	T4
LifEx-M...1230	T53°C	T6	T58°C	T6	T60°C	T6	T63°C	T6	T67°C	T6	T70°C	T6	T73°C	T6
LifEx-M...1260	T62°C	T6	T67°C	T5	T69°C	T5	T72°C	T5	T76°C	T5	T79°C	T4	T82°C	T4
LifEx-M...1290	T67°C	T5	T72°C	T5	T74°C	T4	T77°C	T4	T81°C	T4	T84°C	T4	T87°C	T4
LifEx-M...12120	T70°C	T5	T75°C	T4	T77°C	T4	T80°C	T4	T84°C	T4	T87°C	T4	T90°C	T4
LifEx-M...1590	T67°C	T5	T72°C	T5	T74°C	T4	T77°C	T4	T81°C	T4	T84°C	T4	T87°C	T4

Table 2: Temperature Class (EPL Gb) and Maximum Surface Temperature (EPL Db) for LifEx types with glass/polycarbonate lens and with polycarbonate diffuser

MODEL	Temperature Class (EPL Gb) and Maximum Surface Temperature (EPL Db) Based on ambient temperature		
	40°C	55°C	60°C
	EPL Db	EPL Db	EPL Db
LifEx-ME-0330	T58°C	T73°C	T78°C
LifEx-MN-0330	T58°C	T73°C	T78°C
LifEx-MT-0330	T58°C	T73°C	T78°C

Table 3: Temperature Class (EPL Gb) and Maximum Surface Temperature (EPL Db) for LifEx-M...-0330 types with glass/polycarbonate window and without polycarbonate diffuser

MODEL	Temperature Class (EPL Gb) and Maximum Surface Temperature (EPL Db) Based on ambient temperature													
	40°C		45°C		47°C		50°C		54°C		57°C		60°C	
	EPL Db	EPL Gb	EPL Db	EPL Gb	EPL Db	EPL Gb	EPL Db	EPL Gb	EPL Db	EPL Gb	EPL Db	EPL Gb	EPL Db	EPL Gb
LifEx-M...0310	T57°C	T6	T62°C	T6	T64°C	T6	T67°C	T6	T71°C	T6	T74°C	T6	T77°C	T6
LifEx-M...0315	T57°C	T6	T62°C	T6	T64°C	T6	T67°C	T6	T71°C	T6	T74°C	T6	T77°C	T6
LifEx-M...0615	T57°C	T6	T62°C	T6	T64°C	T6	T67°C	T6	T71°C	T6	T74°C	T6	T77°C	T6
LifEx-M...0630	T80°C	T6	T85°C	T5	T87°C	T5	T90°C	T5	T94°C	T5	T97°C	T4	T100°C	T4
LifEx-M...0645	T83°C	T5	T88°C	T5	T90°C	T5	T93°C	T5	T97°C	T4	T100°C	T4	T103°C	T4
LifEx-M...0660	T95°C	T5	T100°C	T4	T102°C	T4	T105°C	T4	T109°C	T4	T112°C	T4	T115°C	T4
LifEx-M...1230	T60°C	T6	T65°C	T6	T67°C	T6	T70°C	T6	T74°C	T6	T77°C	T6	T80°C	T6
LifEx-M...1260	T80°C	T6	T85°C	T5	T87°C	T5	T90°C	T5	T94°C	T5	T97°C	T4	T100°C	T4
LifEx-M...1290	T89°C	T5	T94°C	T5	T96°C	T4	T99°C	T4	T103°C	T4	T106°C	T4	T109°C	T4
LifEx-M...12120	T91°C	T5	T96°C	T4	T98°C	T4	T101°C	T4	T105°C	T4	T108°C	T4	T111°C	T4
LifEx-M...1590	T89°C	T5	T94°C	T5	T96°C	T4	T99°C	T4	T103°C	T4	T106°C	T4	T109°C	T4

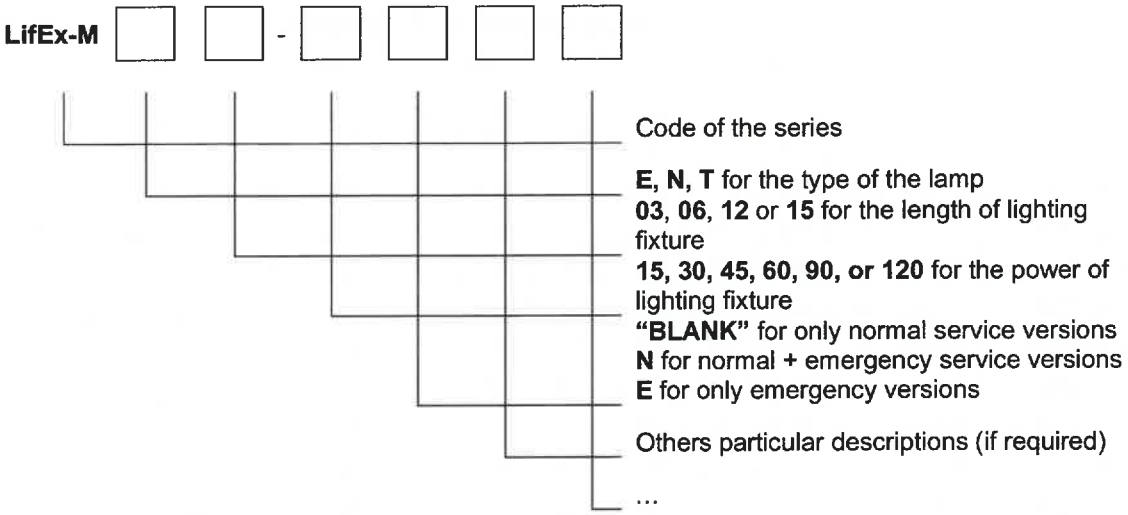
Table 4: Temperature Class (EPL Gb) and Maximum Surface Temperature (EPL Db) for LifEx types with glass/polycarbonate lens and without polycarbonate diffuser

MODEL	Maximum Surface Temperature (EPL Db) Based on ambient temperature						
	40°C	45°C	47°C	50°C	54°C	57°C	60°C
LifEx-M...0310	T51°C	T56°C	T58°C	T61°C	T65°C	T68°C	T71°C
LifEx-M...0315	T51°C	T56°C	T58°C	T61°C	T65°C	T68°C	T71°C
LifEx-M...0615	T51°C	T56°C	T58°C	T61°C	T65°C	T68°C	T71°C
LifEx-M...0630	T64°C	T69°C	T71°C	T74°C	T78°C	T81°C	T84°C
LifEx-M...0645	T67°C	T72°C	T74°C	T77°C	T81°C	T84°C	T87°C
LifEx-M...0660	T72°C	T77°C	T79°C	T82°C	T86°C	T89°C	T92°C
LifEx-M...1230	T53°C	T58°C	T60°C	T63°C	T67°C	T70°C	T73°C
LifEx-M...1260	T62°C	T67°C	T69°C	T72°C	T76°C	T79°C	T82°C
LifEx-M...1290	T67°C	T72°C	T74°C	T77°C	T81°C	T84°C	T87°C
LifEx-M...12120	T70°C	T75°C	T77°C	T80°C	T84°C	T87°C	T90°C
LifEx-M...1590	T67°C	T72°C	T74°C	T77°C	T81°C	T84°C	T87°C

Table 5: (Applicable to EPL Db only) Maximum Surface Temperature for LifEx types without glass/polycarbonate lens and with polycarbonate diffuser

The equipment has been separately tested against the requirements of IEC 60529 and it meets IP66. The gaskets on the caps provide the degree of protection.

The equipment uses the following nomenclature:



Variation 1:

This variation introduced the following modifications:

i. Addition of an optional new removable cover for "easy installation" (which use the new aluminium extrusion);
ii. Addition of an optional external battery box;
iii. minimum ambient temperature extended to -60°C when Ex mb heater is used;
iv. Additional optional Ex mb EBM LED driver as an alternative to EBL3040 / EBL4040 Ex db series LED drivers;
v. added 30W model for size 300mm (LifEx-M..-0330).

Variation 2

This variation introduced the following modifications:

i. To introduce a new terminal block type TBEx-...V (for EPL Gb versions)
ii. To update and review the product against the latest standard EN IEC 60079-31:2024.
iii. To recognise corrections to product description

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	06 May 2020	R13027A/00	Prime Issue
1	01 Jul 2022	R14875A/00	Introduction of Variation 1
2	11 Feb 2025	R18226B/00	Introduction of variation 2

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

ii. The LifEx series lighting fixtures are to be designed in accordance with general electrical safety standards.

iii. Each unit of LifEx-ME luminaires shall be subjected to a routine dielectric strength test in accordance with the requirements of EN IEC 60079-7:2015+A1:2018. The test shall be conducted at a voltage of at least 2U + 1000V with a minimum value of 1560V (U = maximum rated voltage of the lamp). There shall be no breakdown or flashover observed as a result of the test.

iv. A routine visual inspection of the encapsulated parts is required, as per Clause 9.1 of EN 60079-18. There shall be no visible damage or deformation to the encapsulant.

v. Where the removable battery pack is used with phoenix contacts, if used with a T6 version of the equipment, the maximum ambient shall be limited to +40°C.

14 Specific Conditions of Use (Special Conditions)

The following conditions relate to safe installation and/or use of the equipment.

i. Cable entries are provided which have less than 5 threads engaged. Care must be taken to ensure the correct gaskets and washers are sued with the cable gland to maintain IP66.

ii. The equipment uses an external part that is constructed from non-metallic materials, and as such care is to be taken to prevent an electro-static charging hazard. See instruction manual for details.

iii. For versions with glass window of 4mm thickness without cover, the luminaire must be installed in a location with a low risk of mechanical danger

iv. The temperature at the entry point may reach up to 75°C. Suitably rated cable glands must be used.

Certificate Annex

Certificate Number	**CML 20ATEX3018X**
Equipment	**LifEx-ME, LifEx-MN and LifEx-MT series of linear lighting fixtures**
Manufacturer	**Cortem S.p.A.**

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
A3-7466	1 to 6	0	06 May 2020	LifEx-M Luminaires
A4-7467	1 to 6	0	06 May 2020	Technical Note

Issue 1

Drawing No.	Sheets	Rev	Approved date	Title
A3-7466	1 of 6	1	01 Jul 2022	LifEx-M Luminaires Assembly and External Dimensions
A3-7466	2 of 6	1	01 Jul 2022	LifEx-M Luminaires Detail of sealing and op is protection
A3-7466	3 of 6	1	01 Jul 2022	LifEx-M Luminaires Detail of driver and inverter for LifEx-ME version
A3-7466	4 of 6	1	01 Jul 2022	LifEx-M Luminaires Circuit diagram for LifeEx-ME version
A3-7466	5 of 6	1	01 Jul 2022	LifEx-M Luminaires Circuit diagram LifEx-MN and LifEx-MT version
A3-7466	6 of 6	1	01 Jul 2022	LifEx-M Luminaires Detail of battery pack
A3-7729	1 to 3	0	01 Jul 2022	Battery heater for -60°C/-40°C applications Assembly and External Dimensions
A4-7727	1 to 8	0	01 Jul 2022	Technical Note

Issue 2

Drawing No	Sheets	Rev	Approved date	Title
A3-7466	1 of 6	2	11 Feb 2025	LifEx-M Luminaires Assembly and External Dimensions
A3-7466	2 of 6	2	11 Feb 2025	LifEx-M Luminaires Detail of sealing and op is protection
A3-7466	3 of 6	2	11 Feb 2025	LifEx-M Luminaires Detail of driver and inverter for LifEx-ME version
A3-7466	4 of 6	2	11 Feb 2025	LifEx-M Luminaires Circuit diagram for LifeEx-ME version
A3-7466	5 of 6	2	11 Feb 2025	LifEx-M Luminaires Circuit diagram LifEx-MN and LifEx-MT version
A3-7466	6 of 6	2	11 Feb 2025	LifEx-M Luminaires Detail of battery pack
A4-7727	1 to 9	1	11 Feb 2025	Technical Note