

ZEMPER

THE EMERGENCY LIGHTING SPECIALIST

Lighting in ATEX Zones



ClassNK

The background of the entire page is a photograph of an industrial facility, likely a refinery or chemical plant, at night. A large, intense fire is burning in the center of the facility, with bright orange and yellow flames and thick black smoke rising into the dark sky. The industrial structures, including tall distillation columns and complex piping, are silhouetted against the fire. The entire scene is reflected in a body of water in the foreground, creating a symmetrical image.

SATURNO

Zone 1/21 - 2/22

Explosion Proof Fittings ATEX

Zone 1/21 - 2/22



ClassNK





WORLD STANDARDS



IECEX (International Scheme)

The IECEX scheme is an international certificate of conformance for products used in a hazardous area.

This scheme provides:

- A single certification of conformity for manufacturers to comply that includes:
 - Testing and assessment of products to a standard including a full test report.
 - Ongoing surveillance of manufacturers premises.
- A fast-track process for countries where regulations still require the issuing of national Ex certificates or approvals.

ClassNK

Class NK works to ensure maritime safety and protect the marine environment.

It provides classification and technical services to roughly 20% of the world's commercial fleet.

Body: Marine grade Aluminium (LM6).



The ATEX European Directives 94/9/EC

ATEX requires employers to eliminate or control risks from dangerous substances and to classify areas where explosive atmospheres may occur into zones, as laid down in regulations. ATEX Directives are designed to protect employees, the public and the environment from accidents owing to explosive atmospheres and since July 1st 2006 all existing sites, as well as new sites, must be fully ATEX compliant.

The ATEX directive 2014/34/EU applies to end users. These directives compliment each other, but have different purposes. ATEX100A covers both electrical and non-electrical products intended for use in hazardous areas, including mechanical equipment.

Any product sold within the European Union designed for use in explosive atmospheres must be ATEX certified and bear the ATEX marking in conjunction with CE marking. The objective is to facilitate the movement of goods within the EU.

SATURNO



Ex db IIC T6 Gb
Ex tb IIIC T85°C Db

APPLICATION AREAS EQUIPMENT CATEGORIES EQUIPMENT PROTECTION LEVEL

The following chart shows the designated areas of use of equipment and components according to equipment group and equipment category/equipment protection level.

HAZARDOUS AREA

Conditions and subdivisions			Required marking on the usable equipment			
Flammable materials	Temporary behaviour of explosive atmosphere	Classification of hazardous areas	Equipment group as defined in directive 2014/34/EC	Equipment category as defined in directive 2014/34/EC	Equipment group as defined in IEC/EN 60079-0	Equipment protection level (EPL) as defined in IEC/EN 60079-0
Gases Vapours	Is present continuously or for long periods or frequently	Zone 0	II	1G	II	Ga
	Arises in normal operation occasionally	Zone 1	II	2G or 1G	II	Gb or Ga
	Is not likely to arise in normal operation, or if it does, will persist for a short time only	Zone 2	II	3G or 2G or 1G	II	Gc or Gb or Ga
Dusts	Is present in the form of a cloud continuously, or for long periods or frequently	Zone 20	II	1D	III	Da
	Occasionally develops into a cloud during normal operation	Zone 21	II	2D or 1D	III	Db or Da
	Is not likely to develop into a cloud during normal operation, or if it does, for a short time only	Zone 22	II	3D or 2D or 1D	III	Dc or Db or Da
Methane Carbon dust	Operation where there is a risk of explosion	-	II	M1	I	Ma
	Disconnection where there is a risk of explosion	-	I	M2 or M1	I	Mb or Ma



EMERGENCY LIGHTING - GENERAL DATA

- Led driver with AutoTest function as per IEC32034
- High temperature LiFePO₄ cells
- 20 hours charging to obtain the nominal duration
- Electronic multi-level charge system
- Deep discharge protection
- Switch ON / OFF connection is available for maintained luminaires.
- Status indication bi-colour LED: Green Ok - Red: Fault

Testing

- Commissioning test is carried out automatically after permanent connection of the supply for 5 days.
- Functional test is carried out for 5 seconds on a weekly basis.
- Duration test is carried out yearly to check the capacity of the batteries



SATURNO EXPLOSIONPROOF FEATURES

Approvals and Certifications

- Zone 1/2 / Zone 21/22
- Ex db IIC T6 Gb
- Ex tb IIIC T85 °C Db
- IK protection degree
- PC E1, E2, E3 :IK10
- Glass E1, E2: IK07 / E3: IK09
- IP66
- Class: I

Technical information

- Electronic driver: 220 - 240 V 50/60 Hz
- Power factor: 0.95
- Set of LED modules with opal cover diffuser:
- Color temperature 4000 °K (6500 °K under request)
- CRI > 80

Operation temperature:

- Glass diffuser (E1, E2, E3):
- Lighting working temperature: -20 °C to +55 °C
- Emergency working temperature: 0°C to +50°C

Polycarbonate diffuser (E1, E2, E3):

- Lighting working temperature: -20 °C to +50 °C
- Emergency working temperature: 0 °C to +50 °C

Standards

- Approved to:**
- EN 60079-0: (General requirements)
 - EN 60079-1: (Flameproof enclosure "d")
 - EN 60079-31: (Enclosure "t")

- EC Type examination:**
- Directive: 2014/34/EU

- Certificated:**
- Notified Body: INERIS n°0080
 - 21ATEX0012X
 - IECEx INE: 21.0022X-01

Enclosure general data

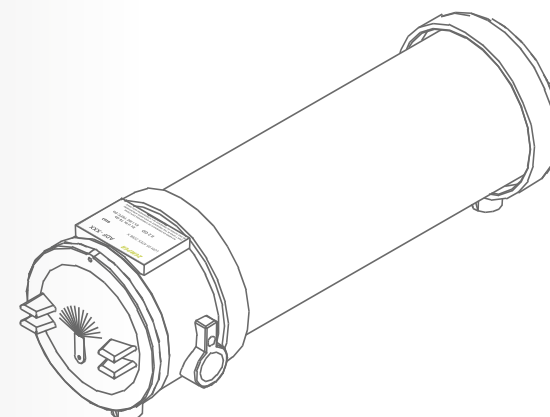
- Tubular diffuser:**
- Borosilicate glass, E1: 7 mm E2/ E3 9 mm
 - Polycarbonate, UV protected. 3 mm thick

Casting & connections:

- Marine Grade Aluminium (LM6)
- Yellow RAL-1003 / Polyurethane paint
- Explosion proof O-ring
- 2 entries 3/4" NPT for cable glands (not included)
- 1 ATEX plug supplied
- Electric connection through 5P+T 2.5 mm² terminal block
- Suitable for installation on flammable surfaces

SATURNO

MARKING EXAMPLE IN ACCORDANCE WITH DIRECTIVE 2014/34/EU, EN AND IEC STANDARDS (IEC/EN 60079-0 ET SEQ.)



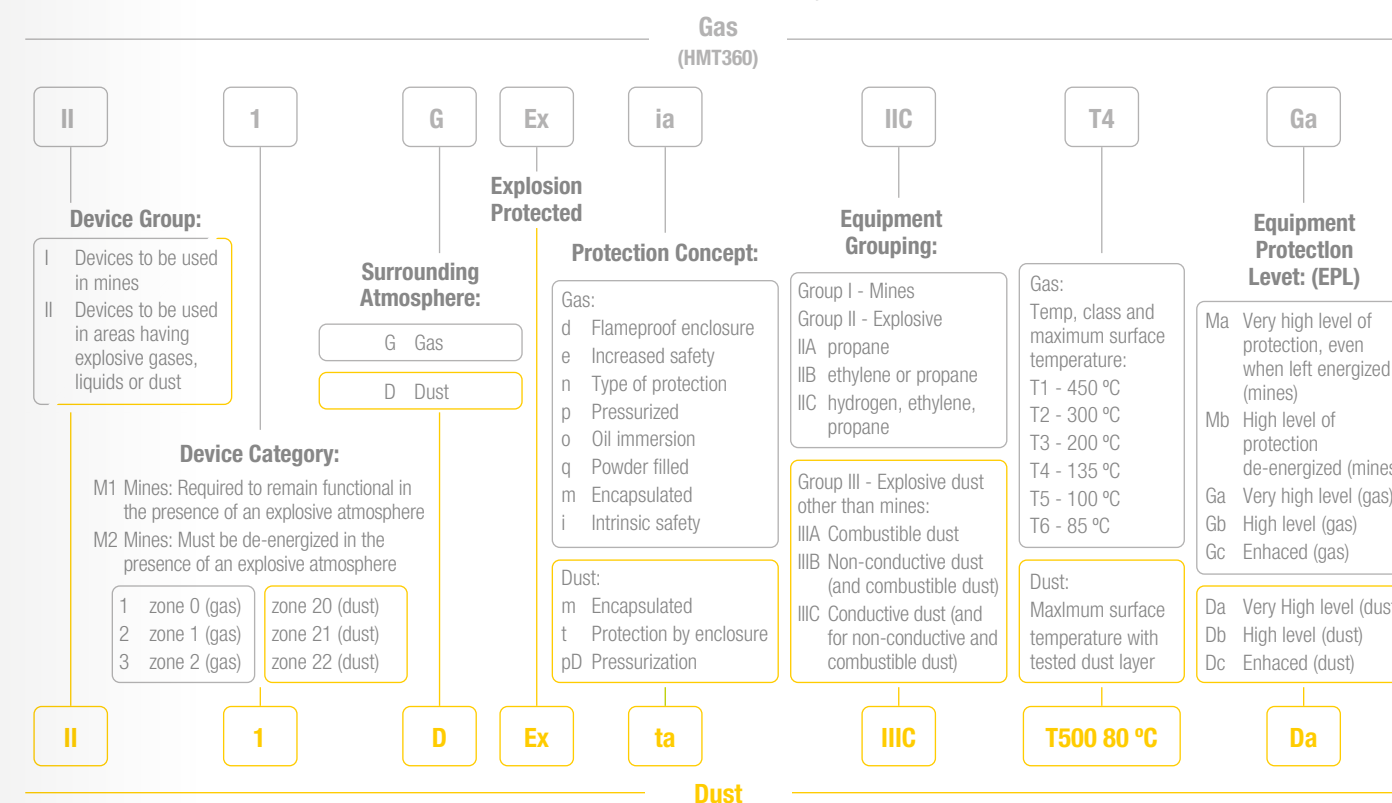
INFORMATION SPECIFIC TO EXPLOSION PROTECTION (MARKING)

ATEX directive/EN standards

- 1 Conformity mark (CE)
- 2 Identification number of the notified body which -where required- certified the QA system or examined the products (Category 1 and 2)
- 3 Ex mark
- 4 EC-type examination certification
- 5 Equipment group II - other areas (non-mining)
- 6 Equipment category 2 - gases/vapours G, suitable for Zones 1 and 2 - dusts D, suitable for Zones 21 and 22
- 7 Certificate of conformity (*)
- IP Protection degree
- TEMP: Temperature Range

IEC standards

* Certificate of Conformity





SATURNO



Ex db IIC T6 Gb
Ex tb IIIC T85°C Db

IP66 IK07 - IK10

SPECIFICATION

Wall	Surface	✓
Ceiling	Surface	✓

Envelope:
Marine Grade Aluminium (LM6)

Diffuser: Borosilicate glass / Polycarbonate

IP66

IK protection degree

- PC E1, E2, E3: IK10
- Glass E1, E2: IK07 / E3: IK09

Lighting Luminous range: 1 300 lm - 14 100 lm
Emergency Luminous range: 45 lm - 1 020 lm

Duration: 1 - 3 h · Battery: LiFePO₄

Charging time: 20 h

Supply: 220 - 240 V 50/60 Hz

LED temperature: 4000 °K (6500 °K under request)

Glass diffuser:

- Lighting working temperature -20 °C to +55 °C
- Emergency working temperature: 0 °C to +50 °C

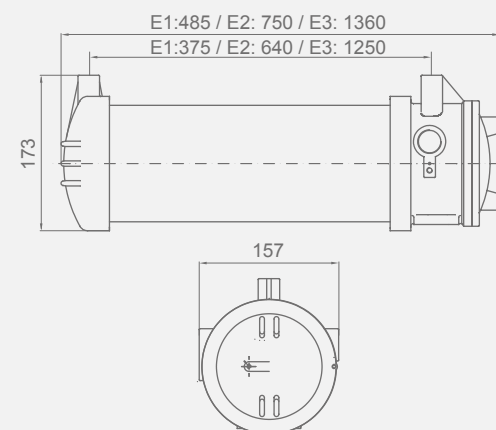
Polycarbonate diffuser:

- Lighting working temperature: -20 °C to +50 °C
- Emergency working temperature: 0 °C to +50 °C

AutoTest



DIMENSIONS (mm)



STANDARDS COMPLIANCE

EN-60598-2-22
AutoTest: EN-62034
DALI-2: EN 62386

CERTIFICATIONS



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RANGE

LIGHTING

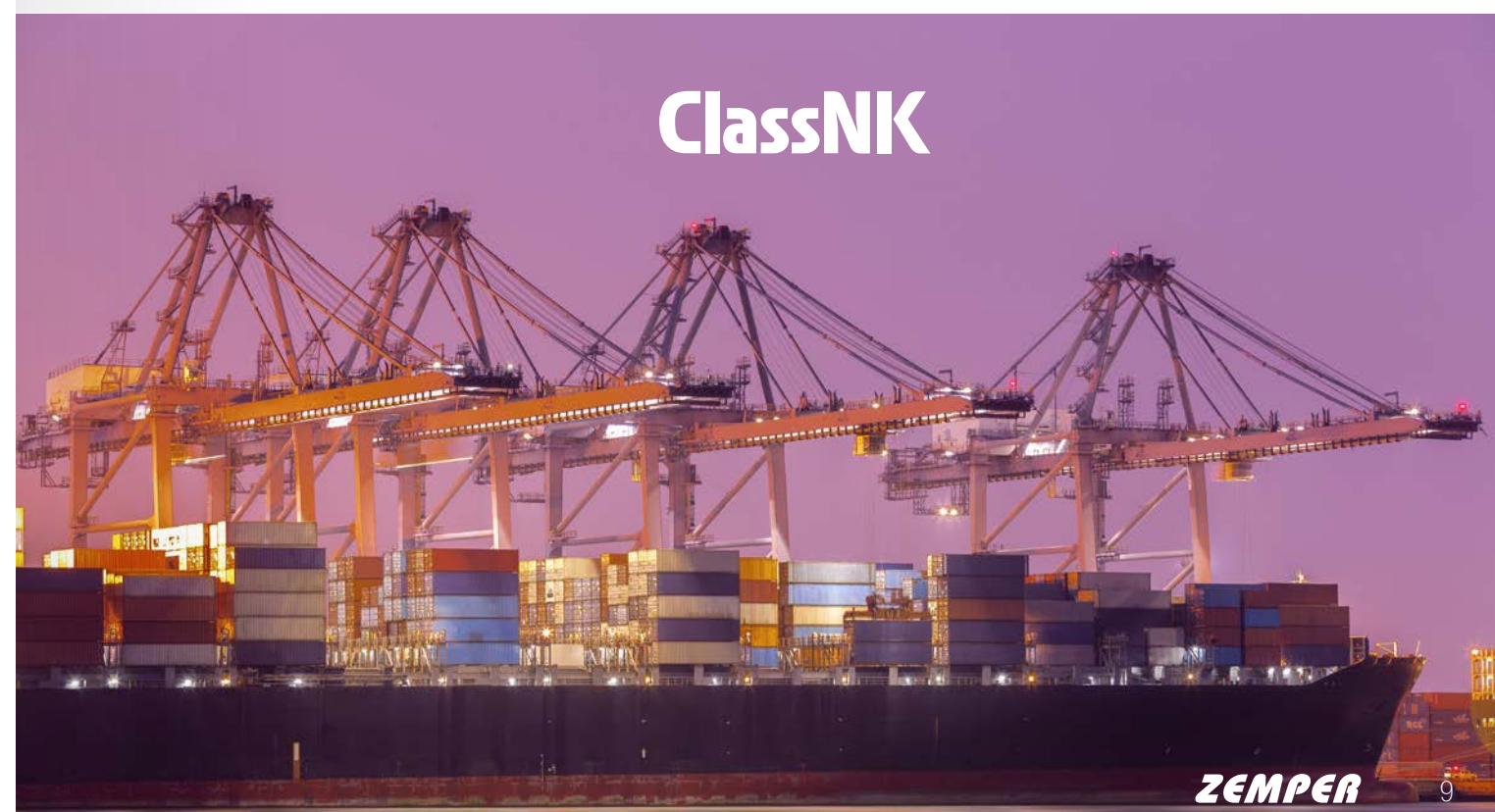
Dimensions	Polycarbonate Enclosure	Lighting	Communication
E1	LSIPC1100	1 300 lm	
E1	LSIPC1200	2 400 lm	
E2	LSIPC2200	2 600 lm	
E2	LSIPC22005	2 600 lm	
E2	LSIPC2200A	2 500 lm	DALI-2
E2	LSIPC2400	5 100 lm	
E3	LSIPC3110	13 600 lm	
E3	LSIPC3110A	13 600 lm	DALI-2
E3	LSIPC3400	5 500 lm	
E3	LSIPC34005	5 500 lm	
E3	LSIPC3400A	5 500 lm	DALI-2

Dimensions	Glass Enclosure	Lighting	Communication
E1	LSIVC1100	1 400 lm	
E1	LSIVC1200	2 500 lm	
E2	LSIVC2200	2 750 lm	
E2	LSIVC22005	2 750 lm	
E2	LSIVC2200A	2 850 lm	DALI-2
E2	LSIVC2400	5 350 lm	
E3	LSIVC3110	14 100 lm	
E3	LSIVC3110A	14 100 lm	DALI-2
E3	LSIVC3400	5 750 lm	
E3	LSIVC34005	5 750 lm	
E3	LSIVC3400A	5 750 lm	DALI-2

References ending in 5 are for through-wiring.

CASAMBI
(under request)

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EMERGENCY - Polycarbonate Enclosure							
Dimensions	Type*	Enclosure	Emergency	Lighting	Battery	Duration	Communication
E1	NM	LSPC3045LX	45 lm		3.2V 0.5Ah LiFePO ₄	1h	AUTOTEST (SATI NF)
E1	NM	LSPC3400LX	430 lm		3.2V 1.8Ah LiFePO ₄	1h	AUTOTEST (SATI NF)
E1	M/NM	LSPC1700LXP	840 lm	2400 lm	3.2V 3.0Ah LiFePO ₄	1h	AUTOTEST
E2	M/NM	LSPC2400LXP	870 lm	2600 lm	3.2V 3.0Ah LiFePO ₄	1h	AUTOTEST
E2	M/NM	LSPC2400LAP	870 lm	2600 lm	3.2V 3.0Ah LiFePO ₄	1h	DALI-2
E2	NM	LSPC2700LX	890 lm		3.2V 3.0Ah LiFePO ₄	1h	AUTOTEST
E2	M/NM	LSPC2700LXP	890 lm	5100 lm	3.2V 3.0Ah LiFePO ₄	1h	AUTOTEST
E2	M/NM	LSPC2700LAP	830 lm	5100 lm	3.2V 3.0Ah LiFePO ₄	1h	DALI-2
E3	M/NM	LSPC3700LXP	980 lm	5550 lm	3.2V 3.0Ah LiFePO ₄	1h	AUTOTEST
E3	M/NM	LSPC3700LAP	980 lm	5550 lm	3.2V 3.0Ah LiFePO ₄	1h	DALI-2
E1	NM	LSPC1400LX3	460 lm		3.2V 6.0Ah LiFePO ₄	3h	AUTOTEST
E1	NM	LSPC1700LX3	840 lm		3.2 V 9.0Ah LiFePO ₄	3h	AUTOTEST
E2	M/NM	LSPC2400LXP3	870 lm	2600 lm	3.2 V 9.0Ah LiFePO ₄	3h	AUTOTEST
E2	M/NM	LSPC2400LAP3	870 lm	2600 lm	3.2 V 9.0Ah LiFePO ₄	3h	DALI-2
E2	NM	LSPC2700LX3	890 lm		3.2 V 9.0Ah LiFePO ₄	3h	AUTOTEST
E2	M/NM	LSPC2700LXP3	890 lm	5100 lm	3.2 V 9.0Ah LiFePO ₄	3h	AUTOTEST
E2	M/NM	LSPC2700LAP3	830 lm	5100 lm	3.2 V 9.0Ah LiFePO ₄	3h	DALI-2
E3	M/NM	LSPC3700LXP3	980 lm	5550 lm	3.2 V 9.0Ah LiFePO ₄	3h	AUTOTEST
E3	M/NM	LSPC3700LAP3	980 lm	5550 lm	3.2 V 9.0Ah LiFePO ₄	3h	DALI-2

EMERGENCY - Glass Enclosure							
Dimensions	Type*	Enclosure	Emergency	Lighting	Battery	Duration	Communication
E1	NM	LSVC3045LX	45 lm		3.2V 0.5Ah LiFePO ₄	1h	AUTOTEST (SATI NF)
E1	NM	LSVC3400LX	430 lm		3.2V 1.8Ah LiFePO ₄	1h	AUTOTEST (SATI NF)
E1	M/NM	LSVC1700LXP	880 lm	2750 lm	3.2V 3.0Ah LiFePO ₄	1h	AUTOTEST
E2	M/NM	LSVC2400LXP	920 lm	2750 lm	3.2V 3.0Ah LiFePO ₄	1h	AUTOTEST
E2	M/NM	LSVC2400LAP	920 lm	2850 lm	3.2V 3.0Ah LiFePO ₄	1h	DALI-2
E2	NM	LSVC2700LX	930 lm		3.2V 3.0Ah LiFePO ₄	1h	AUTOTEST
E2	M/NM	LSVC2700LXP	930 lm	5350 lm	3.2V 3.0Ah LiFePO ₄	1h	AUTOTEST
E2	M/NM	LSVC2700LAP	870 lm	5350 lm	3.2V 3.0Ah LiFePO ₄	1h	DALI-2
E3	M/NM	LSVC3700LXP	1020 lm	5750 lm	3.2V 3.0Ah LiFePO ₄	1h	AUTOTEST
E3	M/NM	LSVC3700LAP	1020 lm	5750 lm	3.2V 3.0Ah LiFePO ₄	1h	DALI-2
E1	NM	LSVC1400LX3	480 lm		3.2V 6.0Ah LiFePO ₄	3h	AUTOTEST
E1	NM	LSVC1700LX3	880 lm		3.2 V 9.0Ah LiFePO ₄	3h	AUTOTEST
E2	M/NM	LSVC2400LXP3	920 lm	2750 lm	3.2 V 9.0Ah LiFePO ₄	3h	AUTOTEST
E2	M/NM	LSVC2400LAP3	920 lm	2850 lm	3.2 V 9.0Ah LiFePO ₄	3h	DALI-2
E2	NM	LSVC2700LX3	930 lm		3.2 V 9.0Ah LiFePO ₄	3h	AUTOTEST
E2	M/NM	LSVC2700LXP3	930 lm	5350 lm	3.2 V 9.0Ah LiFePO ₄	3h	AUTOTEST
E2	M/NM	LSVC2700LAP3	870 lm	5350 lm	3.2 V 9.0Ah LiFePO ₄	3h	DALI-2
E3	M/NM	LSVC3700LXP3	1020 lm	5750 lm	3.2 V 9.0Ah LiFePO ₄	3h	AUTOTEST
E3	M/NM	LSVC3700LAP3	1020 lm	5750 lm	3.2 V 9.0Ah LiFePO ₄	3h	DALI-2

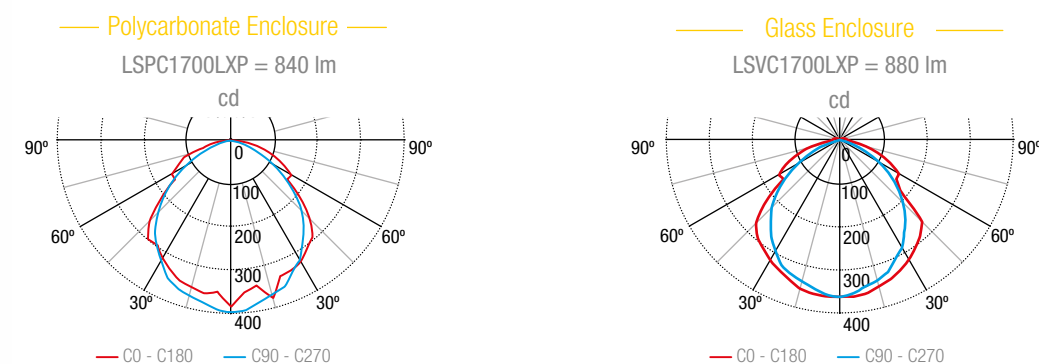
*NM: Non-maintained. The luminaire operates from emergency supply only upon failure of the normal mains supply.
 *M/NM: Maintained/Non-maintained. With a third terminal which allows to switch off/on the Maintained mode when connected to mains supply.

SPACING TABLE

EMERGENCY (Polycarbonate Enclosure)									
LSPC1700LXP = 840 lm									
Mounting Height	0.5 lux				1 lux				
									
	2.0 m	4.35 m	10.71 m	8.92 m	3.77 m	4.35 m	10.71 m	8.92 m	3.77 m
	2.5 m	5.43 m	13.39 m	11.15 m	4.72 m	5.43 m	13.39 m	11.15 m	4.72 m
	3.0 m	6.52 m	16.07 m	13.38 m	5.66 m	6.31 m	15.56 m	13.16 m	5.56 m
	3.5 m	7.61 m	18.75 m	15.61 m	6.61 m	6.71 m	16.54 m	14.34 m	6.02 m
	4.0 m	8.68 m	21.42 m	17.84 m	7.55 m	7.05 m	17.42 m	15.41 m	6.43 m
4.5 m	9.10 m	22.47 m	19.23 m	8.11 m	7.15 m	18.24 m	16.38 m	6.78 m	

EMERGENCY (Glass Enclosure)									
LSVC1700LXP = 880 lm									
Mounting Height	0.5 lux				1 lux				
									
	2.0 m	4.36 m	10.77 m	9.05 m	3.81 m	4.36 m	10.77 m	9.05 m	3.81 m
	2.5 m	5.45 m	13.46 m	11.31 m	4.76 m	5.45 m	13.46 m	11.31 m	4.76 m
	3.0 m	6.55 m	16.16 m	13.58 m	5.72 m	6.32 m	15.61 m	13.21 m	5.55 m
	3.5 m	7.64 m	18.85 m	15.84 m	6.67 m	6.74 m	16.70 m	14.37 m	5.99 m
	4.0 m	8.68 m	21.47 m	18.09 m	7.61 m	7.10 m	17.67m	15.43 m	6.38 m
	4.5 m	9.12 m	22.62 m	19.29 m	8.09 m	7.27 m	18.53 m	16.39 m	6.72 m

PHOTOMETRIC GUIDE



For further photometric data or spacing tables, please contact us.

ACCESSORIES *



CAM001
Ringbolt for
suspended mounting



APS600
(under request)



BRD001
Flange for surface
ceiling mounting



PSA001
Cable gland

(*) not included with the luminaires



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manufactured in **Spain**



The Zemper Way to a Better World

We use recycled paper in the production of our catalogues, thus contributing to the conservation of forests and biodiversity. This paper requires up to 50% less energy and 90% less water, which significantly reduces environmental impact, reduces carbon dioxide emissions and promotes the circular economy. The ink we use is free of mineral oils, cobalt salts and VOCs (volatile organic compounds) so we contribute to limiting the environmental impact. We make more sustainable decisions and help protect our Planet.

ZEMPER

THE EMERGENCY LIGHTING SPECIALIST

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