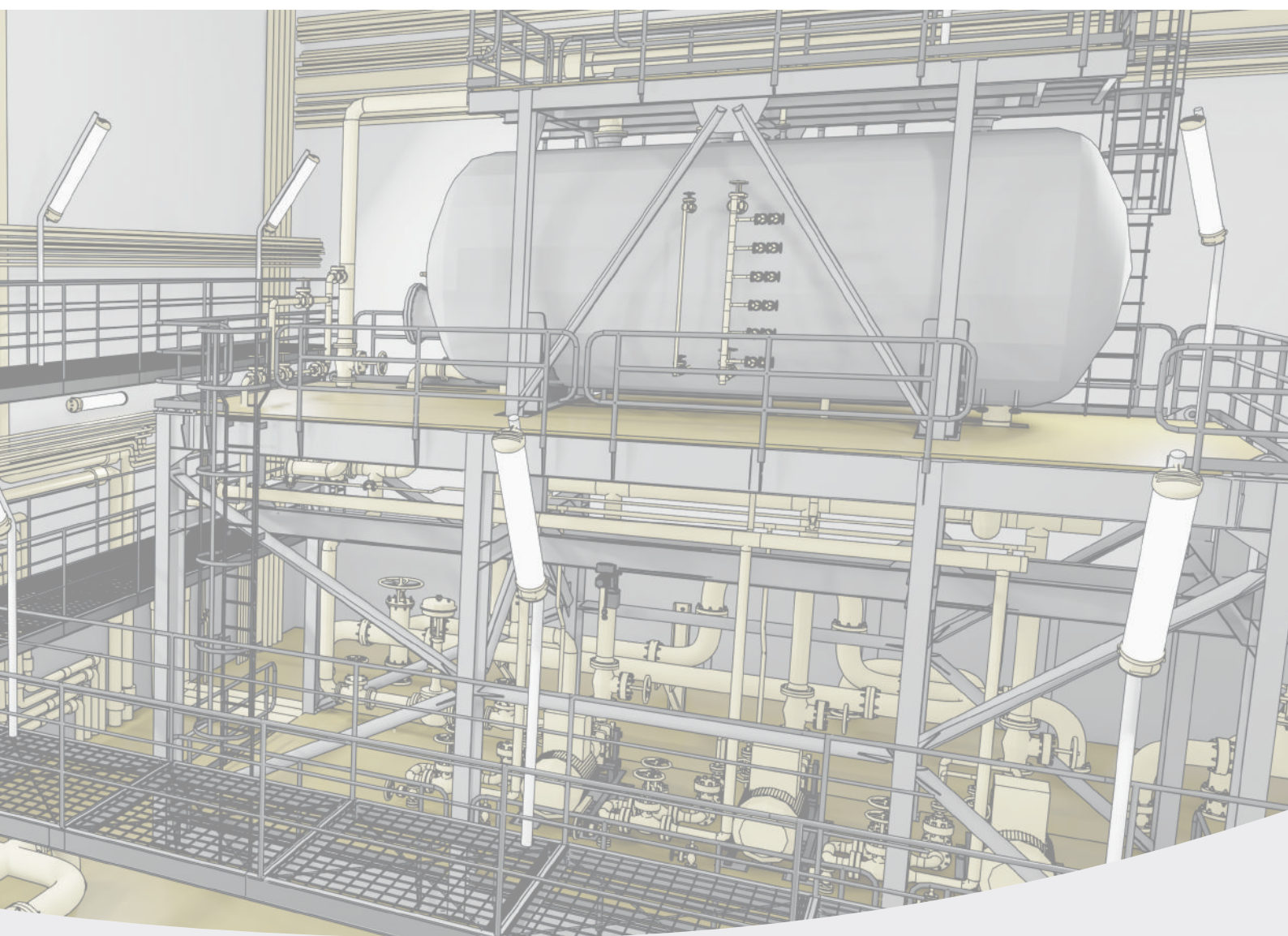




EXPLOSION PROOF luminaires for hazardous areas

CATALOGUE

ATEX - IECEX certified



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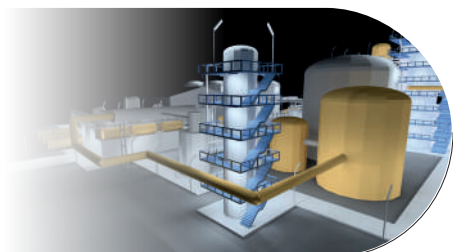
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1980 Foundation

3.5M Luminaires manufactured per year

360 Employees

75 Countries with market presence

zalux

AENOR

ENVIRONMENTAL
MANAGEMENT

ISO 14001

AENOR

QUALITY
MANAGEMENT

ISO 9001



ZALUX is your reliable partner for safe luminaires suitable for Ex-zones.

Specialised in the development and manufacturing of reliable explosion proof luminaires for hazardous areas and extreme conditions such as high temperatures, dust, humidity or chemicals.

Bespoke solutions



OEM development and manufacturing of customised lighting products for special needs.

EX luminaires



Explosion proof LED luminaires certified for use in EX-Zones according to ATEX and IECEx standards.

Protected luminaires



Efficient and quality luminaires specific for industrial applications, with a wide range of options.

Components



Luminaire parts and accessories for your protected luminaires.



- Headquarters in Zaragoza, Spain
- 3 manufacturing plants in Alhama de Aragón
- Quality Made in Spain



ALHAMA I

- Plastic injection
- Compression press
- Extrusion



ALHAMA II

- Metal workshop
- ATEX workshop
- Automated wiring robots
- 20 assembly lines for LED
- Electronic components assembling



ALHAMA III

- New assembling area
- 1500m² premises
- 13 production lines



LABORATORY

- Thermal and endurance tests
- IPX5 – X6 humidity tests
- Impact tests
- Product safety tests



WAREHOUSE

- 10,000m² storage
- For 5,800 Europallets
- With advanced computer systems

OUR COMMITMENT TO SUSTAINABILITY

We contribute to the Sustainable Development Goals by focusing our sustainability strategy on the following areas:

- Research new environmentally friendly materials for our luminaires and reduce packaging.
- Incorporate smart technologies in our solutions, to contribute to the efficiency of installations.
- Design efficient production processes, with photovoltaic self-consumption systems in our plants to reduce our environmental impact.



Hazardous areas and explosive atmospheres

What is an explosive atmosphere?

An explosive atmosphere (ATEX) is defined as the mixture of air, under normal atmospheric conditions, with flammable substances in the form of gases, vapors, mists or dusts, in which, after an ignition, the combustion spreads to the entire unburned mixture.

Where can an explosive atmosphere be formed?

An explosive atmosphere can be formed in environments where processes involve handling, processing or storing flammable liquids or combustible dusts, as well as in areas where gases are formed or accumulated which, because of their temperature or condition, can cause explosions.

Why ZALUX?



SAFETY

It is our priority. Electrical safety tests and completely sealed products guarantee that ZALUX luminaires are the right solution for hazardous areas where strict ATEX specifications must be met.

RELIABILITY

ZALUX is the European leader for luminaires with high protection ratings, specialized in the development and manufacturing of protected luminaries for more than 40 years.

LOW MAINTENANCE

Low failure rate of LED electrical components (< 0.2%/year) and good thermal management of ZALUX luminaires (allowing up to L80 100,000 h lifetime), implies nearly zero maintenance, keeping lighting quality during the product life.



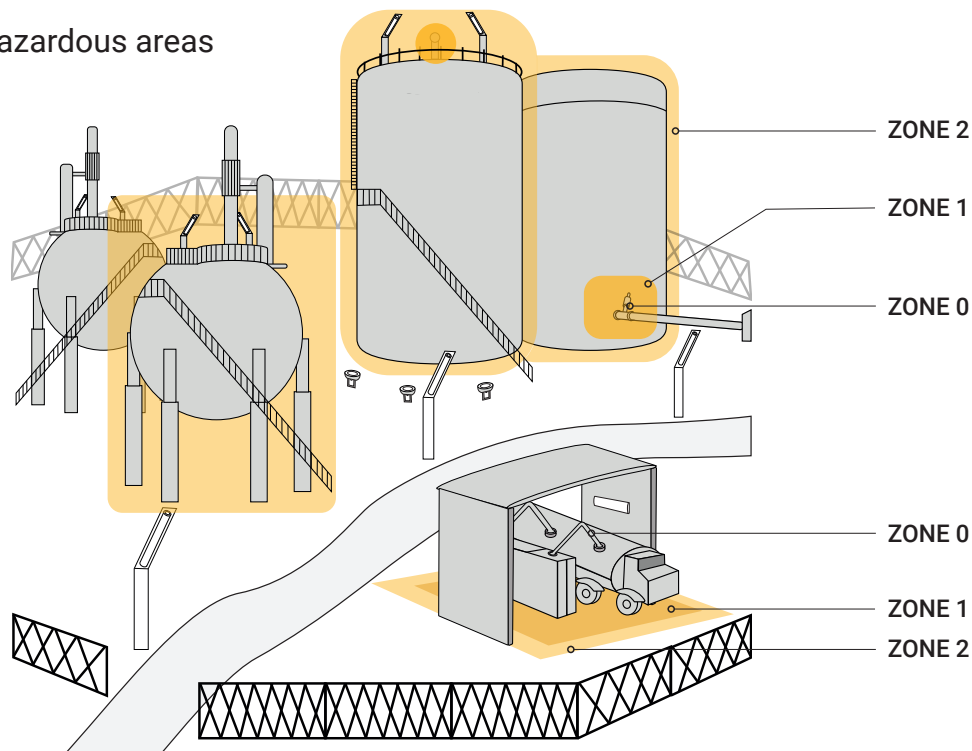
ATEX - IECEX Directives



Regulations within the explosive atmosphere sector describe what type of protection must be used in the installed equipment and by the employees working in these environments. The most important are:








- **Directive 2014/34/UE:** harmonization of the laws of the European member states relating to equipment and protective systems intended for use in potentially explosive atmospheres.
- **Directive 1999/92/CE:** minimum requirements for improving safety and health protection of workers potentially at risk from explosive atmospheres.

Classification of hazardous areas



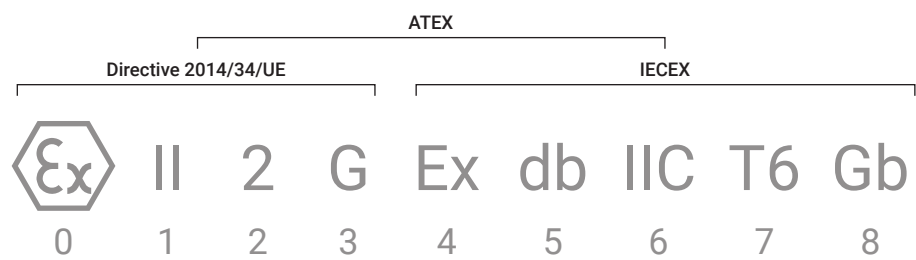
Zones	Description	Duration of hazardous atmosphere
0 / 20	Area in which an explosive atmosphere consisting of a mixture with air of flammable substances in the shape of gas, vapour or mist, is continuously present, or it is foreseen to be present during long periods.	Constant
1 / 21	Area in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is likely to occur in normal operation.	Likely
2 / 22	Area in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.	Seldom

Summary

Product	ATEX marking	Zone	Temperature range	Emergency kit
STRONGEx1 G2	 ⚠ II 2G Ex eb mb IIC T4 Gb ⚠ II 2D Ex tb IIIC 85°C Db	1, 21	-35°C to +55°C	✓
STRONGEx2 G2	 ⚠ II 3G Ex ec IIC T6...T4 Gc ⚠ II 3D Ex tc IIIC 85°C Dc	2, 22	-36°C to +55°C	✓
STRONGEx 2	 ⚠ II 3G Ex ec IIC T6...T5 Gc ⚠ II 3D Ex tc IIIC T85°C...T100°C Dc	2, 22	-35°C to +55°C	
OREx 1	 ⚠ II 2G Ex eb ib mb op is IIC T5...T4 Gb ⚠ II 2D Ex tb op is IIIC T95°C...T121°C Db	1, 21	-32°C to +75°C	
OREx 2	 ⚠ II 3G Ex ec op is IIC T5...T4 Gc	2, 22	-32°C to +75°C	
ACQUEx	 ⚠ II 3G Ex ec IIC T6 Gc ⚠ II 3D Ex tc IIIC T85°C Dc	2, 22	-20°C to +50°C	✓
KRATEx	 ⚠ II 2G Ex db IIC T6 Gb ⚠ II 2D Ex tb IIIC T85°C Db	1, 21	-20°C to +55°C	✓

ATEX - IECEx marking

Example



0. EU explosive atmosphere symbol called Epsilon-x

1. Group selection

- Group I: underground coal mines
- Group II: other facilities / mining, except underground coal mines

2. Category selection

Depends on the area where the equipment might be placed.

3. Hazard type

- Gases and vapours: G
- Dust: D

4. Mark for ATEX devices

5. Protection mode

Refers to the method of protection used during the production of the equipment to be installed in explosive atmospheres. There are different modes depending on whether the component or equipment will be used in areas classified for gases for or dust, and whether the material is electrical or not, among other variables.

FOR GASES AND VAPOURS:

Protection mode	Description	Explanation	Zones	
			1	2
d	Flameproof enclosures	Components that may ignite an explosive atmosphere are completely enclosed to resist the pressure emitted by the explosion and prevent that this explosion is transmitted to the outside of the device.	✓	✓
e	Increased safety	Measures to avoid the possibility of arcs or sparks appearance or excessive temperatures inside or in the surface of the equipment that do not occur in normal operation.	✓	✓
i	Intrinsically safe	In this kind of protection, sparks and thermal effects are produced under the conditions prescribed by the directive, and the equipment must not be capable of igniting an explosive atmosphere.	✓	✓
m	Encapsulation	Components that may ignite a surrounding atmosphere due to sparks or overheating are particularly enclosed to the explosive atmosphere could not be ignited.	✓	✓
n	Non-incendiary	Protection applied to devices so that in standard operation and under certain conditions described in the regulation, cannot ignite an explosive atmosphere. Five different categories are described in this way: nA, nC, nR, nL and nP.		✓
o	Oil or liquid immersion	Electrical equipment immersed in oil to avoid igniting an explosive atmosphere.	✓	✓
p	Pressurized enclosures	Thanks to a protective gas, the internal pressure is maintained in relation with the air pressure.	✓	✓
o	Oil or liquid immersion	Electrical equipment immersed in oil to avoid igniting an explosive atmosphere.	✓	✓

FOR DUST:

Protection mode	Description		Zones	
			21	22
t	Protection by enclosures	Sealed enclosure. Combustible dust cannot access to the inside of the luminaire. Surface temperature is limited.	✓	✓
m	Encapsulation	Components that may ignite a surrounding atmosphere due to sparks or overheating are particularly enclosed to the explosive atmosphere could not be ignited.	✓	✓
i	Intrinsically safe	In this kind of protection, sparks and thermal effects are produced under the conditions prescribed by the directive, and the equipment must not be capable of igniting an explosive atmosphere.	✓	✓

6. Gas or dust group, according to the hazard type

GAS GROUPS:

Explosive parameters

Gases can be classified into different groups according to the explosive parameters, which are:

- **Maximum safety experimental interstitial (MESG):** represents the propagation capacity through interstitials. This value is capable of cooling and drowning the flame of an explosion produced by it.
- **Minimum ignition energy (MIE):** minimum energy to be applied to an explosive mixture for ignition to occur.

DUST GROUPS:

Explosive parameters

The parameters associated to dust, such as the minimum explosive concentration or the ignition sensitivity do not affect the group to which they belong.

Dust groups

It is taken into account whether the powder is conductive or not, and its particle size, resulting in the following groups:

Dust group	Conductivity	Size (µm)
IIIA	Combustible powders or fibres with granulometry	> 500
IIIB	Non-conductive	< 500
IIIC	Conductive	< 500

7. Temperature class

According to the ignition temperature of the substances, the device may reach or not a certain temperature in order to be installed in one zone or another.

Ignition temperature

It is used for both gases and vapours and indicates the lowest temperature of a hot surface at which ignition of a flammable substance occurs in the form of a mixture of gas or vapour with air, or of dust or suspended particles. Depending on this temperature, gases and powders can be grouped:

Temperature class	Minimum ignition temperature for gas or dust	Maximum component temperature (surface temperature)
T1	> 450°C	450°C
T2	> 300°C	300°C
T3	> 200°C	200°C
T4	> 135°C	135°C
T5	> 100°C	100°C
T6	> 85°C	85°C

8. Equipment protection level

EPL	Description	Level of protection
Ga	Gas protection for zone 0	Very high safety level
Gb	Gas protection for zone 1	High safety level
Gc	Gas protection for zone 2	Normal safety level
Da	Dust protection for zone 0	Very high safety level
Db	Dust protection for zone 1	High safety level
Dc	Dust protection for zone 2	Normal safety level

Gas groups

Gases are classified according to these parameters:

Gas group	MESG (mm)	MIE (µJ)
IIIA	> 0.9	> 250
IIIB	0.5 < MESG < 0.9	250 < MIE < 96
IIIC	< 0.5	< 96

Gas groups in the ATEX marking

Certified device	Compliant with groups
IIIC	IIA, IIB, IIC
IIIB	IIA, IIB
IIIA	IIA

Dust groups in the ATEX marking

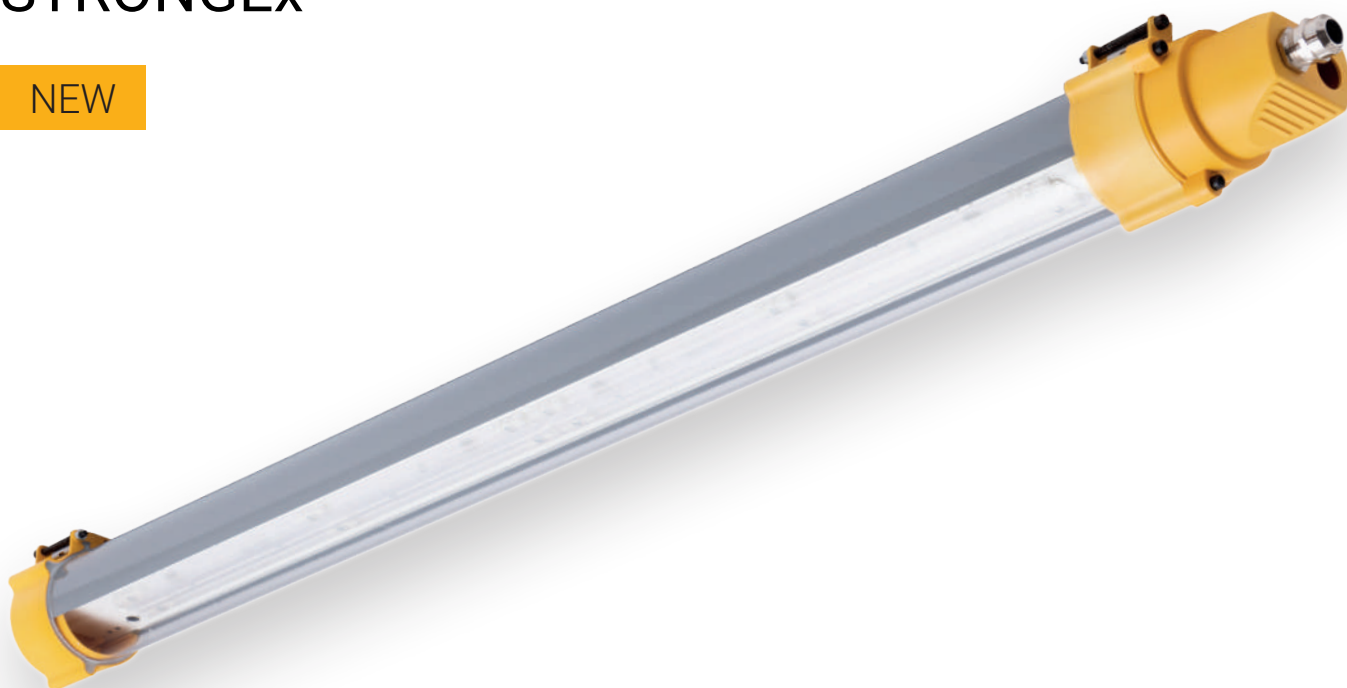
Certified device	Compliant with groups
IIIC	IIIA, IIIB, IIIC
IIIB	IIIA, IIIB
IIIA	IIIA





STRONGEx

NEW



Extreme robust and chemical resistant luminaire with increased safety protection, suitable for outdoor

STRONGEx G2

Zones 1, 21



OIL & GAS



PETROCHEMICAL



OIL REFINERY

Zones 2, 22



PETROCHEMICAL



OIL & GAS



THERMAL

STRONGEx 2

Zones 2, 22



OIL REFINERY



OFF-SHORE



POWER PLANT

STRONGEx G2



ZONE 1, 21
ZONE 2, 22

Openable, with easy access to the interior to facilitate maintenance and connection in all installations



Integrated emergency kit with up to 3 hours autonomy

Suitable for outdoor up to 55°C

Optional **wireless control**, DALI dimming and presence and daylight sensors

zone 1  II 2G Ex eb mb IIC T4 Gb
 II 2D Ex tb IIIC T85°C Db

ATEX certificate No: INERIS 22ATEX0035X
IECEX certificate No: IECEX INE 22.0059X

zone 2  II 3G Ex ec IIC T6..T4 Gc
 II 3D Ex tc IIIC T85°C Dc

ATEX certificate No: INERIS 22ATEX3012X
IECEX certificate No: IECEX INE 22.0060X

5 YEARS warranty

+55°C

-36°C

    RoHS REACH



CHARACTERISTICS

Mechanical

	STRONGEx1 G2	STRONGEx2 G2
Profile	High chemical and impacts resistance PMMA with UV protection	
End caps	PA66 + fibreglass	
Gasket	High-temperature resistant MVQ silicone	
Gear tray	White lacquered steel plate + internal aluminum heatsink	
Cable entry	EX nickel-brass cable gland	
Fixing clips	Stainless steel	

IP66/69K IK10

Functional

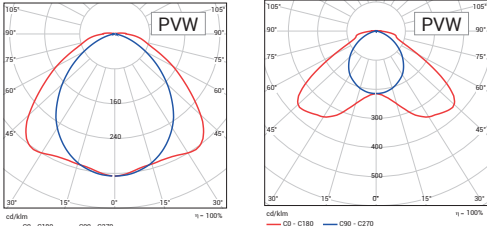
Lifetime	L80 100,000 hours at 35°C	
Fire protection	Flammability (UL94):	V2
	Glow wire test (EN 60595-2-11):	650°C

Electrical

Connection	Ex-certified push-wire connectors, up to 8 poles	
Power factor	>0.95 full load	
THD	<10% full load	
Flicker factor	<1%	

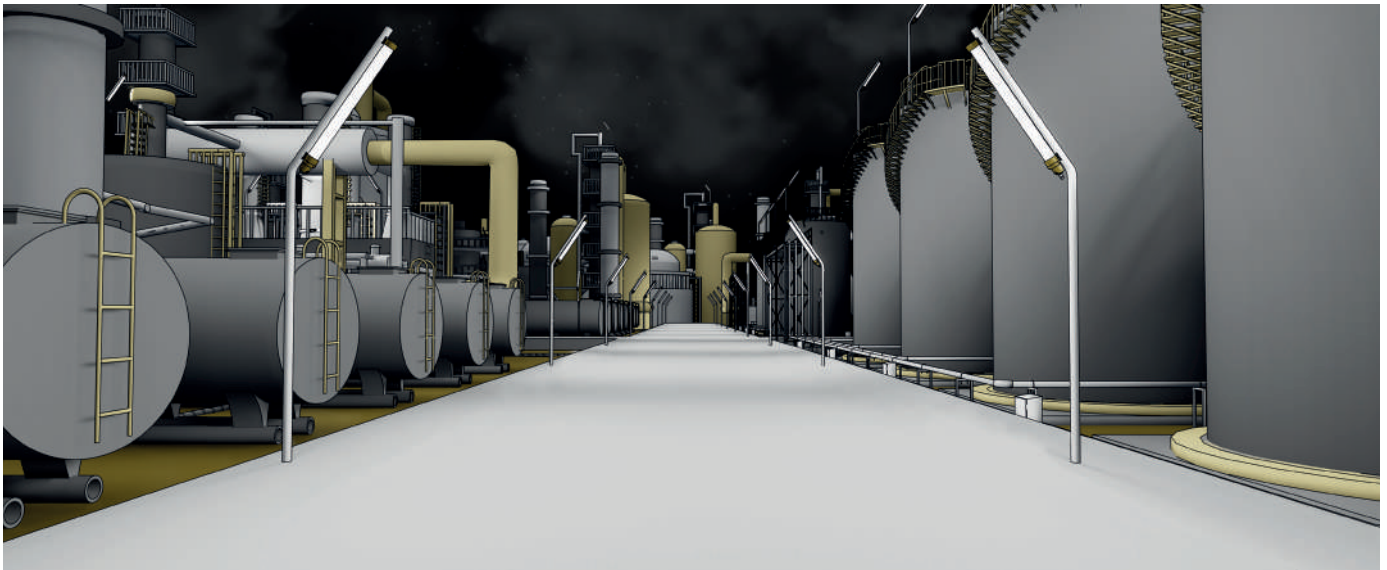
 Frequency 50/60Hz Rated Voltage 220-240V NON-SELV

Photometrical

Luminous flux	Up to 5,600lm	Up to 8,500lm
Efficiency	Up to 165lm/W	Up to 182lm/W
SDCM	< 3	
Polar diagram		

APPLICATIONS

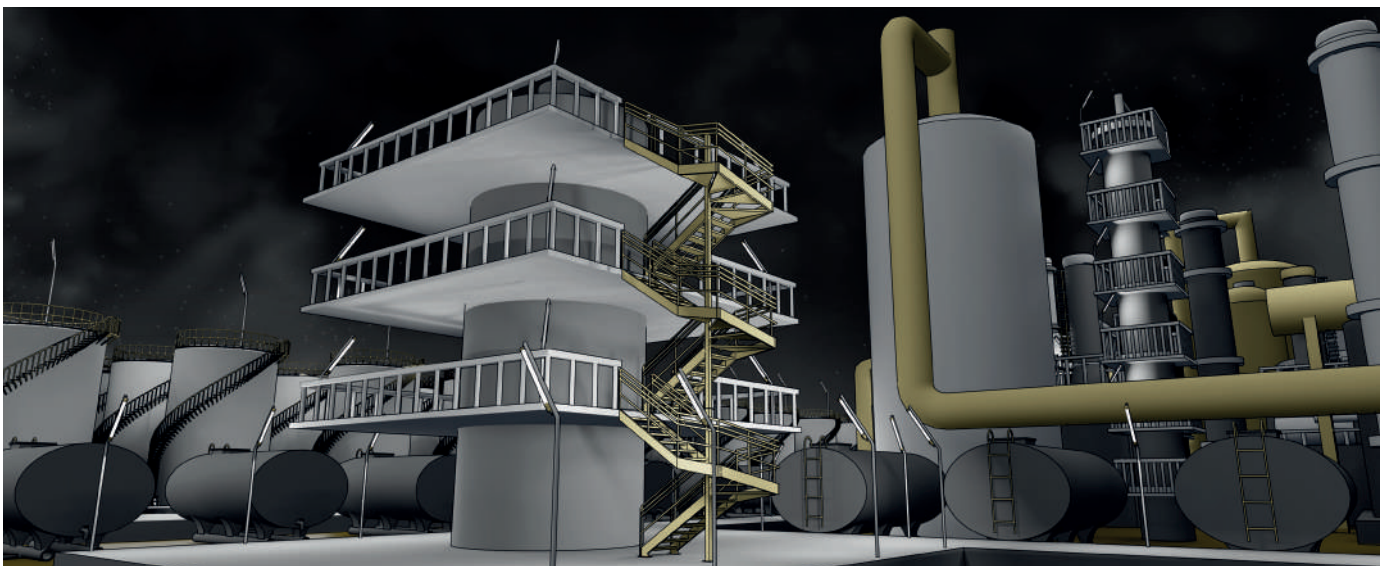
STRONGEx1 G2



Chemicals are usually present in refineries, so STRONGEx1 G2 incorporates a **high resistance PMMA profile**, suitable even for refineries close to the sea with salty environments. Its **wide temperature range** allows its installation in plants all over the world.

It incorporates 4 cable entries and an internal Ex-certified connector for up to 8 x 4mm² cables and through wiring, for connecting up to 40 luminaires in series, **to suit the needs of any installation.**

STRONGEx2 G2



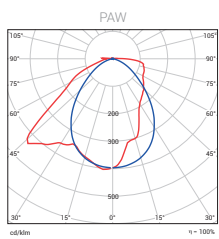
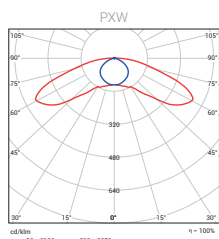
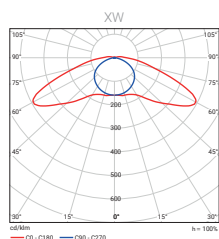
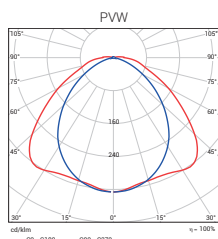
Structures around tanks and pipelines need versatile products. STRONGEx2 G2 offers different lengths and a light output from 2,000 to 11,000lm, with **high efficiency**. DALI dimmable version and optional emergency kit help to further optimize consumption **to save energy.**

It is **designed to last**, with 100,000 hours lifetime and zero maintenance.

OPTIONS Special options in grey under request.

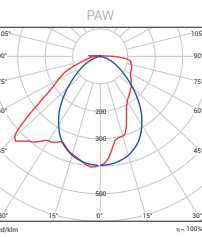
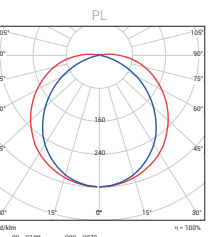
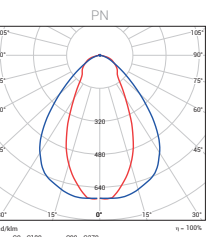
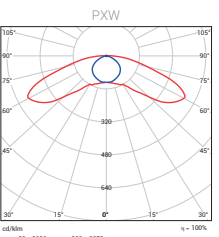
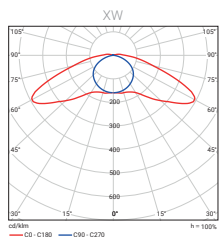
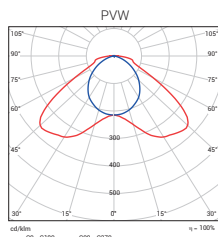
STRONGEx1 G2

LENGTH (mm)	OPTICS	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	DRIVER	THROUGH WIRING	EMERGENCY KIT
6: 600 12: 1200	PVW XW PXW PAW	28: 2800 56: 5600	8: >80 9: >90	40: 4000 30: 3000 50: 5000 65: 6500	ET: non dimmable ETDD: DALI dimmable	LV: 3x2.5mm ² (for ET versions) / 5x2.5mm ² (for ETDD versions)	EB3: 3 hours EB1: 1 hour



STRONGEx2 G2

LENGTH (mm)	OPTICS	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	DRIVER	TEMPERATURE RANGE	THROUGH WIRING	EMERGENCY KIT
6: 600 12: 1200 15: 1500	PVW XW PXW PN PL PAW	25: 2500 35: 3500 46: 4600 56: 5600 60: 6000 68: 6800 70: 7000 78: 7800 85: 8500	8: >80 9: >90	40: 4000 30: 3000 50: 5000 65: 6500	ET: non dimmable ETDD: DALI dimmable ETCS: Casambi dimmable ETIP: wireless dimmable	HT: up to +55°C ^a	LV: 3x2.5mm ² (for ET versions) / 5x2.5mm ² (for ETDD versions)	EB3: 3 hours EB1: 1 hour

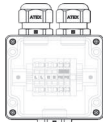





Versatile connection: 4 cable entries and up to 8 poles ready for DALI dimming and emergency.

It also allows through wiring in the same luminaire end cap to minimize the operations in difficult to reach locations.




ACCESSORIES



Description	Reference	Description	Reference
 ATEX junction box 2 122x120x90mm	10225340	 Accessories bag STRONGER G2 SCRW ¹	10174901
 ATEX junction box 80x75x75mm	10230425	¹ Only for indoor installation	
 Connector bag PNCX	10235494		

OPERATIONAL DATA

STRONGEx1 G2







Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Luminous flux emergency (lm)	Temperature range
S1 6 PVW 28-840 ET	10269625	2800	18	156	-	-35°C - +55°C
S1 6 PVW 28-840 ET LV	10269629	2800	18	156	-	-35°C - +45°C
S1 12 PVW 56-840 ET	10269631	5600	35	160	-	-35°C - +55°C
S1 12 PVW 56-840 ET LV	10269635	5600	35	160	-	-35°C - +50°C
 EMERGENCY KIT						
S1 6 PVW 28-840 ET EB3	10269627	2800	17	165	280	-20°C - +35°C
S1 12 PVW 56-840 ET EB3	10269633	5600	35	160	560	-20°C - +35°C

STRONGEx2 G2

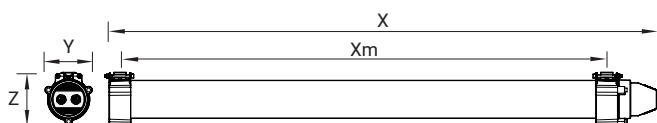
Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Luminous flux emergency (lm)	Temperature range
S2 12 PVW 60-840 ET	10260019	6000	37	162	-	-35°C - +50°C
S2 12 PVW 68-840 ET	10269644	6800	42	162	-	-35°C - +45°C
S2 15 PVW 60-840 ETDD	10268561	6000	37	162	-	-36°C - +55°C
S2 15 PVW 85-840 ETDD	10269651	8500	53	160	-	-36°C - +45°C
 EMERGENCY KIT¹						
S2 6 PVW 25-840 ET HT EB3	10268557	2500	16	156	250	-20°C - +55°C
S2 12 PVW 46-840 ET HT EB3	10269649	4600	27	170	460	-20°C - +55°C
S2 15 PVW 56-840 ET HT EB3	10269655	5600	33	170	560	-20°C - +55°C
S2 15 PVW 70-840 ET HT EB3	10268554	7000	41	171	700	-20°C - +55°C
 HIGH TEMPERATURE						
S2 6 PVW 35-840 ET HT	10268555	3500	20	175	-	-35°C - +45°C
S2 6 PVW 35-840 ET HT LV	10269641	3500	20	175	-	-35°C - +40°C
S2 12 PVW 60-840 ET HT	10269646	6000	34	176	-	-35°C - +50°C
S2 12 PVW 60-840 ET HT LV	10268550	6000	34	176	-	-35°C - +45°C
S2 12 PVW 78-840 ET HT	10268547	7800	46	170	-	-35°C - +45°C
S2 15 PVW 60-840 ET HT	10269648	6000	33	182	-	-36°C - +55°C
S2 15 PVW 60-840 ET HT LV	10269653	6000	33	182	-	-36°C - +45°C
S2 15 PVW 85-840 ET HT	10268551	8500	47	181	-	-36°C - +45°C
S2 15 PVW 85-840 ET HT LV	10268553	8500	47	181	-	-36°C - +40°C

¹ Available version with temperature range 0°C - 50°C under request

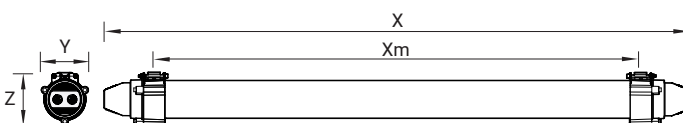
DIMENSIONS AND LOGISTICS

Description	X (mm)	Xm (mm)	Y (mm)	Z (mm)	 L x W x H (mm)	 Item	 Pcs./Box	 Box	 Groupage Pcs./pallet	 FTL/container Pcs./Double pallet
S1 6... / S2 6...	888	725	125	138	1010 x 160 x 140	3.9 / 3	1	4.5 / 3.6	50	30 + 30
S1 6... LV / S2 6... LV...	991	725	125	138	1010 x 160 x 140	4.5 / 3.3	1	5.1 / 3.9	50	30 + 30
S1 12... / S2 12...	1451	1287	125	138	1600 x 160 x 140	5.7 / 4.5	1	6.5 / 5.3	50	30 + 30
S1 12... LV / S2 12... LV	1553	1287	125	138	1600 x 160 x 140	6.1 / 4.9	1	6.9 / 5.7	50	30 + 30
S2 15...	1732	1569	125	138	1900 x 160 x 140	5.3	1	6.2	50	30 + 30
S2 15... LV	1835	1569	125	138	1900 x 160 x 140	5.8	1	6.7	50	30 + 30

STANDARD VERSION



THROUGH WIRING VERSION



STRONGEx 2

ZONE 2, 22

Specific **gas tight potting** to avoid the ingress and condensation of gases and to resist to acids and sulphur vapours

Optional external cable up to 10m to facilitate connection



Optional **wireless control**, DALI dimming and presence and daylight sensors

Suitable for **outdoor** applications

II 3G Ex ec IIC T6...T5 Gc
II 3D Ex tc IIIC T85°C...T100°C Dc

ATEX certificate No: OBAC 20 ATEX 0334X

5 YEARS warranty

+55°C
-35°C



CHARACTERISTICS

STRONGEx 2

Mechanical

IP66/69K IK10

Profile	High chemical and impacts resistance PMMA with UV protection
End caps	PA66 + fibreglass
Gasket	Polyurethane
Gear tray	White lacquered steel plate
Cable entry	EX nickel-brass cable gland or EX quick connector 3m external cable connected to the luminaire, with resistant outer sheat
Fixing clips	Special V4A 316 stainless steel fixing brackets, which allow luminaire rotation

Functional

Lifetime	L80 100,000 hours at 35°C
Fire protection	Flammability (UL94): V2
	Glow wire test (EN 60595-2-11): 650°C

Electrical

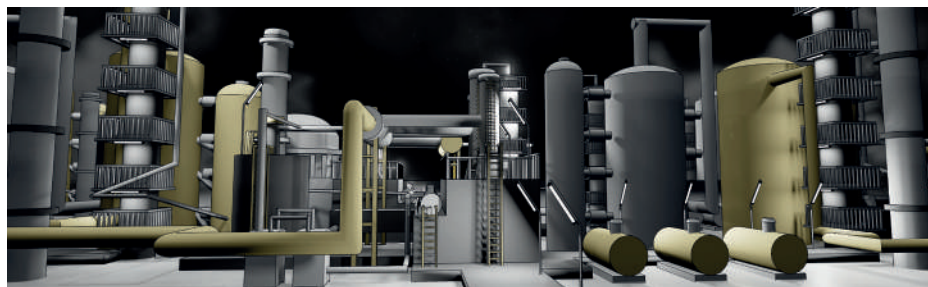


Connection	1m external cable, or EX quick connector
Power factor	>0.95 full load
THD	<10% full load
Flicker factor	<1%

Photometrical

Luminous flux	Up to 6,200lm
Efficiency	150lm/W
SDCM	< 3
Polar diagram	

APPLICATIONS



Durable solutions provide peace of mind to integrators. STRONGEx 2 incorporates a PMMA profile with robust end caps, for an **extraordinary chemical resistance**.

Its **gas tight potting** avoids the income of gases in the luminaire, making it suitable for outdoor. With EX quick connectors for plug and play, it is **design to fit and forget**.

OPTIONS

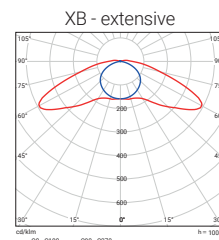
Special options in grey under request.

LENGTH (mm)	OPTICS	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	DRIVER	CONNECTION
600 1200	B: wide TB: narrow XB: extensive	30: 3000 62: 6200 2000 to 8000	8: >80	40: 4000 30: 3000 65: 6500 827-865: tunable white	ET: non dimmable ETDD: DALI dimmable ETDD CS: Casambi dimmable ETD: 1-10V dimmable ETDD CLO: Constant Lumen Output	CG: EX nickel brass cable gland PNCX: EX quick connector

More options available: - High frequency sensor (HFS)
- Through wiring: 3x1.5mm², 3x2.5mm², 5x1.5mm², 5x2.5mm²

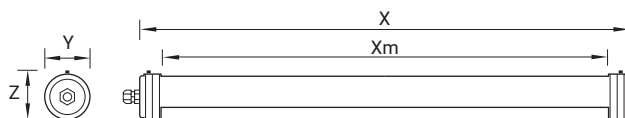
OPERATIONAL DATA

Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Temperature range
CABLE GLAND					
STRONGEX2 600 B 30-840 ET CG	10225388	3000	20	150	-35°C - +55°C
STRONGEX2 600 B 30-840 ETDD CG	10225389	3000	20	150	-35°C - +55°C
STRONGEX2 600 TB 30-840 ET CG	10225396	3000	20	150	-35°C - +55°C
STRONGEX2 600 TB 30-840 ETDD CG	10225405	3000	20	150	-35°C - +55°C
STRONGEX2 1200 B 62-840 ET CG	10225185	6200	43	150	-35°C - +55°C
STRONGEX2 1200 B 62-840 ETDD CG	10225187	6200	43	150	-35°C - +55°C
STRONGEX2 1200 TB 62-840 ET CG	10225193	6200	43	150	-35°C - +55°C
STRONGEX2 1200 TB 62-840 ETDD CG	10225195	6200	43	150	-35°C - +55°C
QUICK CONNECTOR					
STRONGEX2 600 B 30-840 ET PNCX	10225190	3000	20	150	-20°C - +55°C
STRONGEX2 600 B 30-840 ETDD PNCX	10225191	3000	20	150	-20°C - +55°C
STRONGEX2 600 TB 30-840 ET PNCX	10225397	3000	20	150	-20°C - +55°C
STRONGEX2 1200 B 62-840 ET PNCX	10225390	6200	43	150	-20°C - +55°C
STRONGEX2 1200 B 62-840 ETDD PNCX	10225391	6200	43	150	-20°C - +55°C
STRONGEX2 1200 TB 62-840 ET PNCX	10225394	6200	43	150	-20°C - +55°C
STRONGEX2 1200 TB 62-840 ETDD PNCX	10225395	6200	43	150	-20°C - +55°C



DIMENSIONS AND LOGISTICS

Description	X (mm)	Xm (mm)	Y (mm)	Z (mm)	L x W x H (mm)	KG Item	Pcs./Box	KG Box ¹	Groupage Pcs./pallet	FTL/container Pcs./Double pallet
STRONGEX2 600...	795	660	126.5	113	800 x 130 x 130	2.8	1	3	54	42 + 42
STRONGEX2 1200...	1345	1205	126.5	113	1500 x 130 x 130	4.6	1	4.8	54	42 + 42



ACCESSORIES

Description	Reference	Description	Reference
ATEX junction box 2 122x120x90mm	10225340	Connector bag PNCX	10235494
ATEX junction box 80x75x75mm	10230425	Fixing omegas, 2 units	10078102
Accessories bag STRONGER G2 SCRW ¹	10174901	Pipe clamp for 1.5 inch pole mounting	10284127
¹ Only for indoor installation			



OREx
Zone 1, 21
Zone 2



High bay lighting specific for hazardous areas

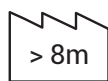
OREx
1



PETROCHEMICAL

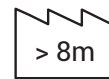


PETROL STATION



HIGH BAY

OREx
2



HIGH BAY

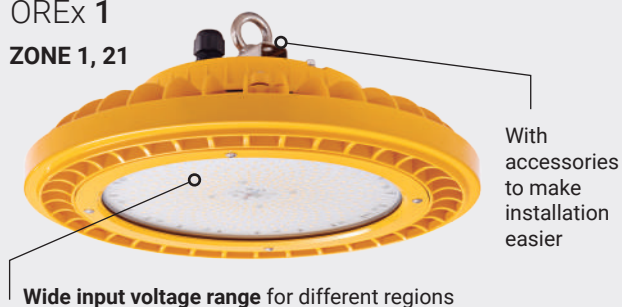


AVIATION



MARITIME

OREx 1 ZONE 1, 21



OREx 2 ZONE 2



II 2G Ex eb ib mb op is IIC T5...T4 Gb
II 2D Ex tb op is IIIC T95°C...T121°C Db

ATEX certificate No: OBAC 21 ATEX 0135X
IECEX certificate No: IECEX OBAC 21.0003X

II 3G Ex ec op is IIC T5...T4 Gc

5 YEARS
warranty



RoHS REACH



CHARACTERISTICS

OREx 1

Includes product families OREX 1 Ex and OREX 1 IECEX

OREx 2

Includes product families OREX 2 Ex and OREX 2 IECEX

Mechanical

IP66 IK10

IP66 / IP67 IK10

Housing	Copper-free aluminium alloy casing with surface protected against impacts and corrosive environments, in yellow RAL 1003 Grey RAL 7035 optional	
Diffuser	Hardened glass	
Cable entry	Cable gland 2xM20x1.5 (M25 optional)	External cable included
Eyebolt	Stainless steel	

Functional

Lifetime	L80 90,000 hours	
Fire protection	Flammability (UL94):	V2
	Glow wire test (EN 60595-2-11):	850°C

Electrical



Frequency
0-50/60Hz

NON-SELV

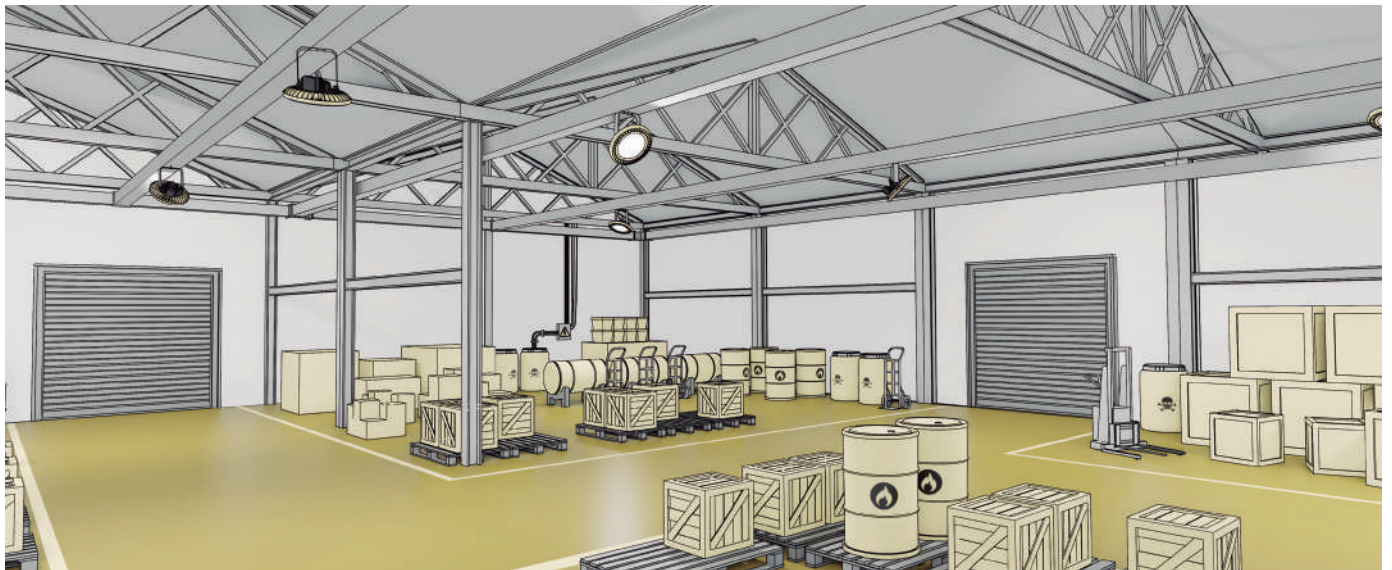
Connection	3/5 pole screwless connector	Cable gland with 0.25M external cable 3/5 poles Cable gland with external junction box
Power factor	>0.95 full load	
THD	<20% full load	
Inrush current	Cold start 65A (twidh=550µs measured at 50% Ipeak) at 230VAC	75A 230VAC, full load
Rated voltage	90-250VAC 140-250VDC	90-305VAC 140-250VDC

Photometrical

Luminous flux	Up to 24,000lm	Up to 40,500lm
Efficiency	150lm/W	
SDCM	< 3	
Polar diagram	<p>cd/klm — C0 - C180 — C90 - C270 η = 100%</p>	

APPLICATIONS

OREx 1



Ammonia is generated during oil processing and may therefore also be present in storage areas. OREx 1 housing is made of **copper-free aluminum alloy**, which resists corrosion from ammonia or hydrogen sulphide.

Location of luminaires can be challenging. Its **complete range of accessories** helps installers to choose the best mounting on the ceiling (on surface or suspended), in walls or in tubes; even in **outdoor** areas.

OREx 2



High bay applications require **easy to install** luminaires with good lighting levels, and also high ceilings can accumulate a lot of heat. OREx 2 offers **up to 40,000lm** and **up to 75°C** operating temperature, to fit to any warehouse.

Its **universal wide input range** makes it suitable for different industries and regions worldwide.

OPTIONS Special options in grey under request












OREx 1

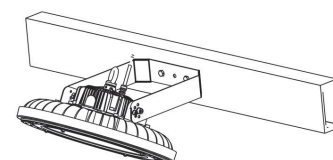
DIFFUSER	DIAMETER (mm)	LUMINOUS FLUX (lm)	CRI + LIGHT COLOUR	DRIVER	EXTERNAL CONNECTION	TEMPERATURE RANGE
└: standard glass G1: milky glass	39: ø390 x 140	60: 6000 90: 9000 120: 12000 150: 15000 180: 18000 210: 21000 240: 24000 225: 22500	840: CRI>80 4000K 850: CRI>80 5000K 830: CRI>80 3000K 865: CRI>80 6500K	ET: non dimmable ETDD: DALI dimmable ETD: 1-10V dimmable	CG: polyamide cable gland NiCG: nickel-plated cable gland NiACG: nickel-plated cable gland for armoured cable BCG: brass cable-gland H: no cable gland	HT: high temperature version

OREx 2

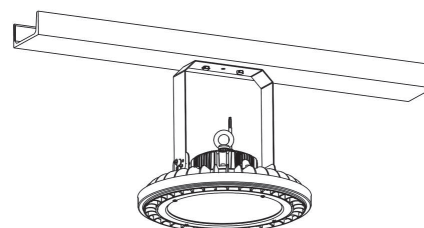
DIFFUSER	DIAMETER (mm)	LUMINOUS FLUX (lm)	CRI + LIGHT COLOUR	DRIVER	EXTERNAL CONNECTION	TEMPERATURE RANGE
└: standard glass G1: milky glass	39: ø390 x 140 46: ø460 x 140	60: 6000 90: 9000 120: 12000 150: 15000 180: 18000 210: 21000 240: 24000 300: 30000 360: 36000 405: 40500 225: 22500 270: 27000 330: 33000 390: 39000	840: CRI>80 4000K 850: CRI>80 5000K 830: CRI>80 3000K 865: CRI>80 6500K	ET P/P: non dimmable ETDD P: DALI dimmable ETD: 1-10V dimmable	P 0.25M: with 0.25M external cable P: watertight cap NiCG: nickel-plated brass cable gland NiACG: nickel-plated cable gland for armoured cable with special housing ²	HT: high temperature version up to 75°C with an additional heat sink

ACCESSORIES

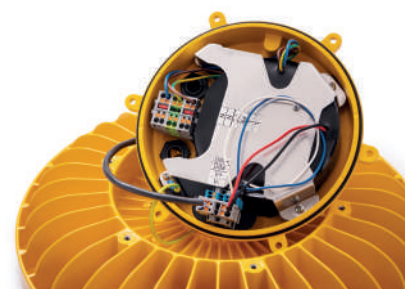
	Description	Reference	OREx 1	OREx 2
	Bracket for wall mounting for OREx 1	10226289	✓	-
	Bracket for wall mounting for OREx 2 (up to 160W)	10225339	-	✓
	Bracket for wall mounting for OREx 2 (>160W)	10235495	-	✓
	Bracket for tube mounting for OREx 1	10230400	✓	-
	Bracket for tube mounting for OREx 2 (up to 160W)	10230424	-	✓
	Bracket for tube mounting for OREx 2 (>160W)	10235496	-	✓
	Connector bag PNCX	10235494	✓	✓
	ATEX junction box 122x120x90mm	10225340	✓	✓
	ATEX junction box 80x75x75mm	10230425	✓	✓
	Nickel brass EX cable gland, M20, 1 unit	10227129	✓	-
	Nickel brass EX cable gland, M25, 1 unit	10212763	✓	-



Wall mounting



Ceiling mounting with bracket



Easy connection and mounting

OPERATIONAL DATA

OREx 1

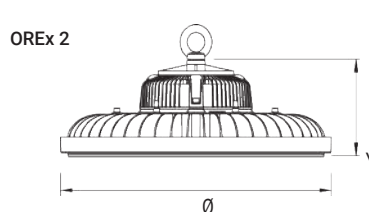
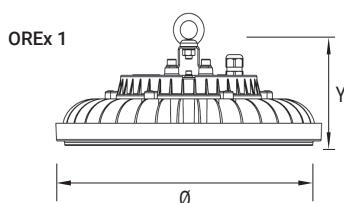
Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Temperature range
OREX 1 Ex 39 60-840 ET CG	10260621	6000	40	150	-32°C - +60°C
OREX 1 Ex 39 90-840 ET CG	10237737	9000	60	150	-32°C - +60°C
OREX 1 Ex 39 120-840 ET CG	10260622	12000	80	150	-32°C - +60°C
OREX 1 Ex 39 150-840 ET CG	10237738	15000	100	150	-32°C - +55°C
OREX 1 Ex 39 180-840 ET CG	10260623	18000	120	150	-32°C - +55°C
OREX 1 Ex 39 210-840 ET CG	10260624	21000	140	150	-32°C - +50°C
OREX 1 Ex 39 240-840 ET CG	10214983	24000	160	150	-32°C - +50°C
OREX 1 Ex 39 240-840 ET NiCG	10238073	24000	160	150	-32°C - +50°C
OREX 1 Ex 39 240-840 ET NIACG	10238074	24000	160	150	-32°C - +50°C
OREX 1 Ex 39 240-840 ETDD CG	10242163	24000	160	150	-32°C - +50°C
HIGH TEMPERATURE					
OREX 1 Ex 39 60-840 ET NiCG HT	10260625	6000	40	150	-32°C - +60°C
OREX 1 Ex 39 60-840 ET CG HT	10260625	6000	40	150	-32°C - +75°C
OREX 1 Ex 39 90-840 ET NiCG HT	10260626	9000	60	150	-32°C - +60°C
OREX 1 Ex 39 90-840 ET CG HT	10260626	9000	60	150	-32°C - +70°C
OREX 1 Ex 39 120-840 ET NiCG HT	10260627	12000	80	150	-32°C - +60°C
OREX 1 Ex 39 120-840 ET CG HT	10260627	12000	80	150	-32°C - +65°C

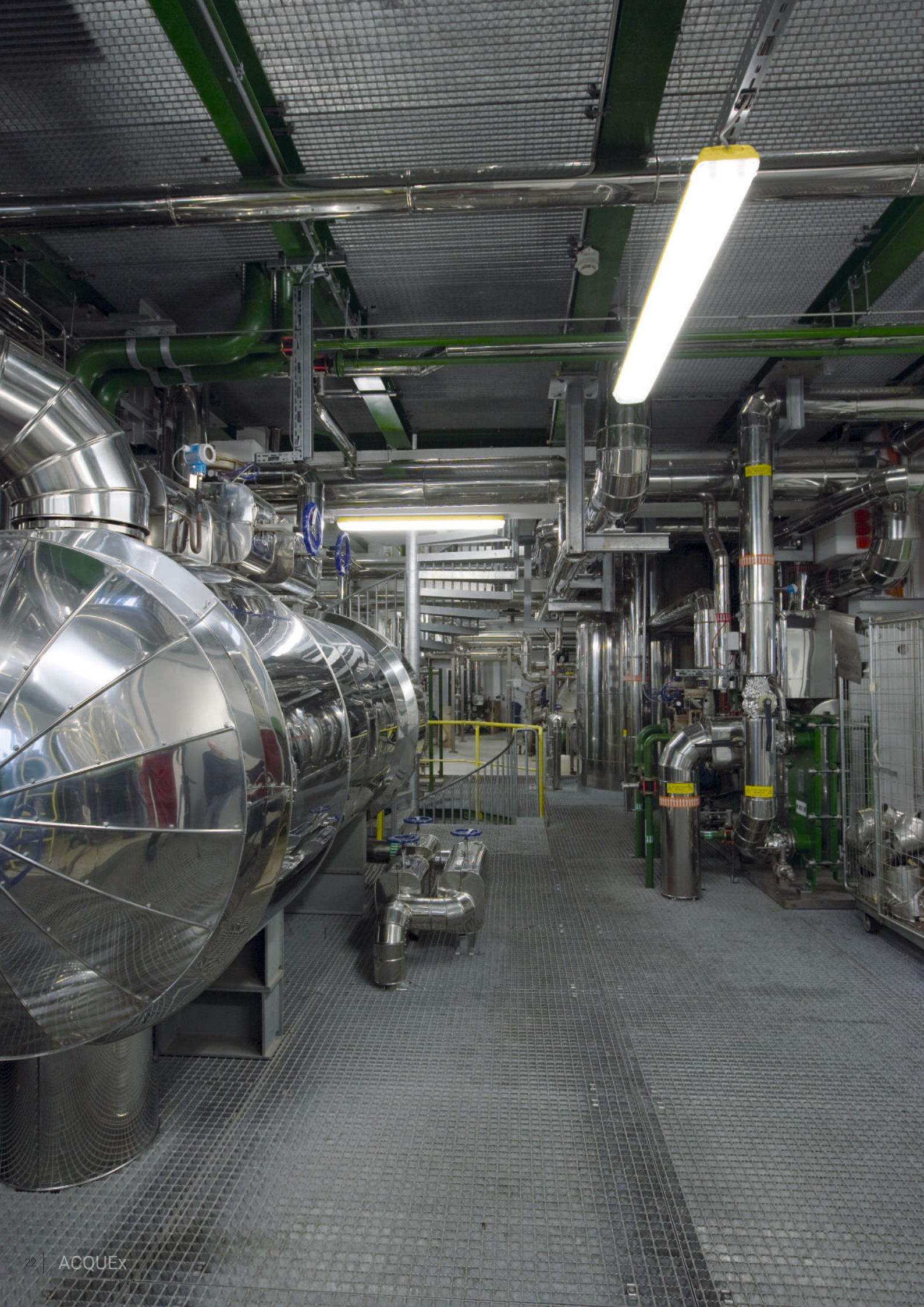
OREx 2

Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Temperature range
OREX 2 Ex 39 60-840 P 0.25M	10260352	6000	40	150	-32°C - +60°C
OREX 2 Ex 39 90-840 P 0.25M	10237739	9000	60	150	-32°C - +60°C
OREX 2 Ex 39 120-840 P 0.25M	10237740	12000	80	150	-32°C - +60°C
OREX 2 Ex 39 150-840 P 0.25M	10239093	15000	100	150	-32°C - +55°C
OREX 2 Ex 39 180-840 P 0.25M	10237741	18000	120	150	-32°C - +55°C
OREX 2 Ex 39 210-840 P 0.25M	10260353	21000	140	150	-32°C - +55°C
OREX 2 Ex 39 240-840 P 0.25M	10214982	24000	160	150	-32°C - +55°C
OREX 2 Ex 39 240-840 ETDD 0.25M	10257404	24000	160	150	-32°C - +55°C
OREX 2 Ex 46 300-840 P 0.25M	10260354	30000	200	150	-32°C - +55°C
OREX 2 Ex 46 330-840 P 0.25M	10260355	33000	220	150	-32°C - +55°C
OREX 2 Ex 46 360-840 P 0.25M	10260356	36000	240	150	-32°C - +55°C
OREX 2 Ex 46 405-840 P 0.25M	10230685	40500	270	150	-32°C - +50°C
HIGH TEMPERATURE					
OREX 2 Ex 39 60-840 P HT 0.25M	10260349	6000	40	150	-32°C - +75°C
OREX 2 Ex 39 90-840 P HT 0.25M	10260350	9000	60	150	-32°C - +75°C
OREX 2 Ex 39 120-840 P HT 0.25M	10260351	12000	80	150	-32°C - +75°C

DIMENSIONS AND LOGISTICS

Description	Ø (mm)	Y (mm)	L x W x H (mm)	KG Item	Pcs./Box	KG Box	Groupage Pcs./pallet	FTL/container Pcs./Double pallet
OREX 1 Ex...	390	140	440 x 440 x 190	7.5	1	8	27	36
OREX 2 Ex 39...	390	140	440 x 440 x 190	6.5	1	7.5	27	36
OREX 2 Ex 46...	460	150	510 x 510 x 190	9	1	10.5	24	32





ACQUEx

Zone 2, 22






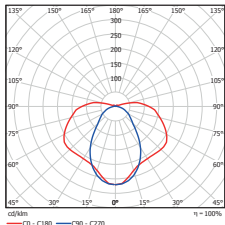
Extremely simply, safe and reliable for explosive atmospheres



ACQUEx
ZONE 2, 22



CHARACTERISTICS

		ACQUEx	
		IP66	IK10
Mechanical			
Housing		Compressed fibreglass reinforced polyester (GRP) in yellow RAL 1003 Grey RAL 7035 optional	
Diffuser		Injected polycarbonate transparent diffuser with UV protection Prismatic design for an optimum light distribution	
Closing clips		Stainless steel	
Gasket		Polyurethane	
Grear tray		White lacquered steel plate	
Cable entry		EX cable gland M20 (M25 available)	
Fixing clips		Stainless steel	
Functional			
Lifetime		L80 70,000 hours	
Fire protection	Flammability (UL94):	HB	
	Glow wire test (EN 60595-2-11):	650°C	
Electrical			
		<div><div>Frequency 0-50/60Hz</div><div>Rated Voltage 220-240V</div><div>NON-SELV</div></div>	
Connection		3/5 pole push wire terminal block	
Power factor		>0.95 full load	
THD		<10% full load	
Flicker factor		<1%	
Photometrical			
Luminous flux		Up to 8,000lm	
Efficiency		Up to 155lm/W	
SDCM		< 3	
Polar diagram			

APPLICATIONS



POWER PLANT



PHARMA



WORKSHOP



LABORATORY



FOOD



TRANSPORT



OIL REFINERY



For auxiliary areas, like battery rooms, ACQUEx offers **high efficiency** up to 150lm/W and long lifetime 100,000 hours.

It is suitable for locations up to 50°C and has been **certified ec** by a notified body.

OPTIONS

Special options in grey under request.

LENGTH (mm)	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	DRIVER	DIFFUSER	EMERGENCY KIT
0.6: 600	20: 2000	8: 80	40: 4000	ET: non dimmable	PC: polycarbonate	EB3: 3 hours
1.2: 1200	40: 4000	9: 90	30: 3000	ETDD: DALI dimmable		
1.5: 1500	60: 6000		50: 5000			
	80: 8000		65: 6500			

More options available: - Versions for T8 and T5 fluorescence tube

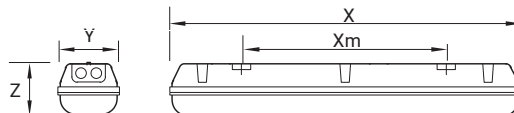
OPERATIONAL DATA

Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Luminous flux emergency	Temperature range
ACQUEx LED-M 0.6 20-840 ET PC	10239012	2000	15	135	-	-20°C - +50°C
ACQUEx LED-M 0.6 20-840 ETDD PC	10239013	2000	15	135	-	-20°C - +50°C
ACQUEx LED-M 1.2 40-840 ET PC	10239015	4000	27	150	-	-20°C - +50°C
ACQUEx LED-M 1.2 40-840 ETDD PC	10239016	4000	27	150	-	-20°C - +50°C
ACQUEx LED-M 1.2 60-840 ET PC	10239018	6000	42	140	-	-20°C - +50°C
ACQUEx LED-M 1.2 60-840 ETDD PC	10239019	6000	42	140	-	-20°C - +50°C
ACQUEx LED-M 1.5 60-840 ET PC	10239021	6000	39	155	-	-20°C - +50°C
ACQUEx LED-M 1.5 60-840 ETDD PC	10239022	6000	39	155	-	-20°C - +50°C
ACQUEx LED-M 1.5 80-840 ET PC	10239024	8000	55	145	-	-20°C - +50°C
ACQUEx LED-M 1.5 80-840 ETDD PC	10239025	8000	55	145	-	-20°C - +50°C
EMERGENCY KIT						
ACQUEx LED-M 0.6 20-840 ET PC EB3	10239014	2000	20	100	200	0°C - +40°C
ACQUEx LED-M 1.2 40-840 ET PC EB3	10239017	4000	32	125	350	0°C - +40°C
ACQUEx LED-M 1.2 60-840 ET PC EB3	10239020	6000	47	125	470	0°C - +40°C
ACQUEx LED-M 1.5 60-840 ET PC EB3	10239023	6000	44	135	470	0°C - +40°C
ACQUEx LED-M 1.5 80-840 ET PC EB3	10239026	8000	60	135	650	0°C - +40°C

DIMENSIONS AND LOGISTICS

Description	X	Xm	Y	Z	L x W x H mm	Item ²	Pcs./Box	Box ²	Groupage Pcs./pallet	FTL/container Pcs./Double pallet
ACQUEx LED-M 0.6...	665	390	145	101	675 x 151 x 105	2.0	1	2.0	150	90 + 90
ACQUEx LED-M 1.2...	1282	800	145	101	1289 x 151 x 105	3.3	1	3.3	75	45 + 45
ACQUEx LED-M 1.5...	1578	1100	145	101	1589 x 151 x 105	4.0	1	4.0	75	45 + 45

² Weight in EB3 versions: +0.2KG



ACCESSORIES

Description	Reference	Description	Reference
Bag with 2 suspension triangles for ACQUEx	10237125	Pipe clamp for 1.5 inch pole mounting	10284127
Fixing clips in stainless steel 316L, 2 units	10256809		



KRATEx

Zone 1, 21



Connected explosion proof luminaire with flameproof protection and a wide range of options



OIL & GAS



PETROCHEMICAL



POWER PLANT



TRANSPORT

KRATEx
ZONE 1, 21

Emergency kit, DALI and Bluetooth
dimming to integrate sensors and optimize
energy consumption




CHARACTERISTICS

	KRATEx GLASS	KRATEx PC
Mechanical	IP66 IK07/IK09	IP66 IK10
Profile	9 mm borosilicate glass	UV resistant polycarbonate
End caps	Aluminium alloy in yellow RAL 1003 Grey RAL 7035 under request	
Gasket	NBR (Nitrile Butadiene Rubber)-oil resistant gasket to protect internal elements	
Gear tray	White lacquered steel plate	
Cable entry	2 entries of 3/4 NPT for cable gland (not included)	

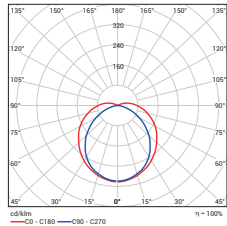
Functional

Lifetime	L80 50,000 hours
Fire protection	Flammability (UL94): V2
	Glow wire test (EN 60595-2-11): 850°C

Electrical

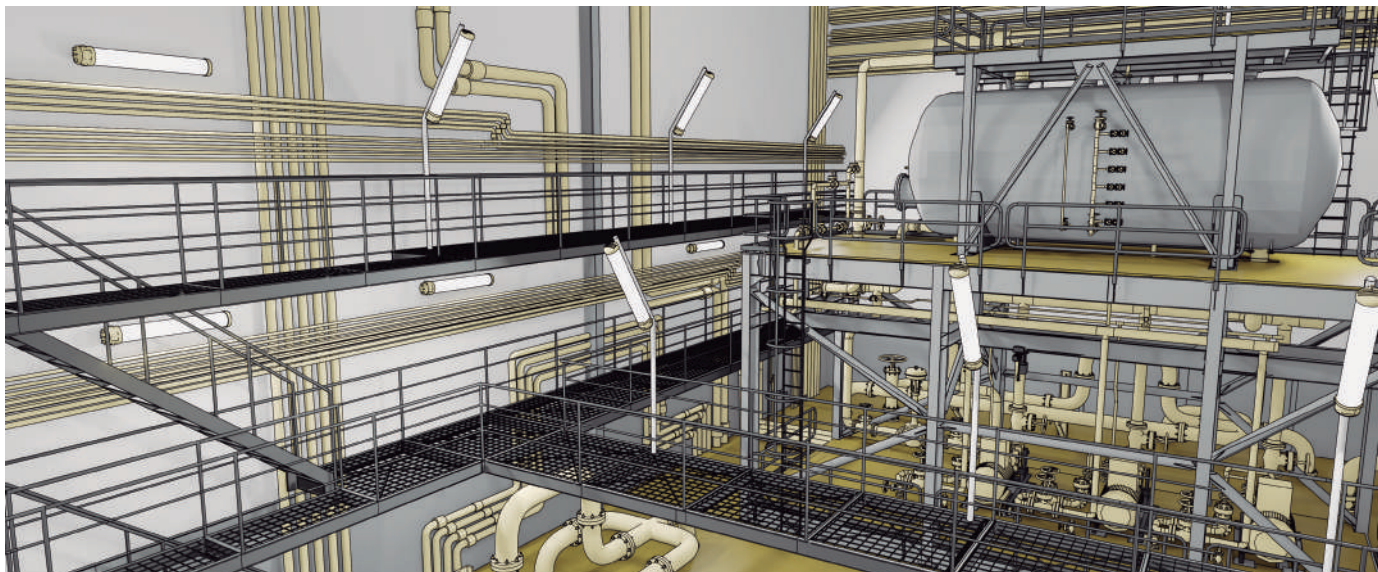
	 Frequency 0-50/60Hz Rated Voltage 220-240V NON-SELV
Connection	3/5 pole push wire terminal block
Power factor	>0.95 full load
THD	<10% full load
Flicker factor	5%

Photometrical

Luminous flux	Up to 11,750lm
Efficiency	Up to 150lm/W
SDCM	< 3
Photobiological risk	RG0
Polar diagram	

APPLICATIONS

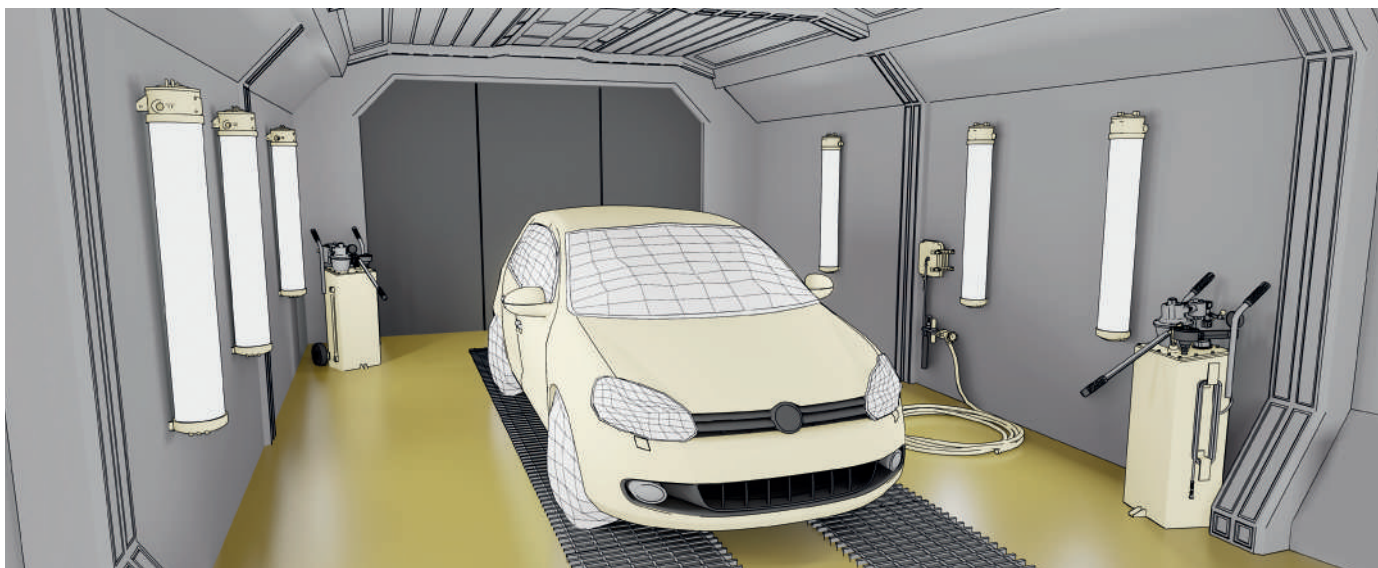
KRATEx GLASS



Petrochemical industries require high resistance products. KRATEx offers **Ex d protection mode** and is suitable for areas with up to 55°C ambient temperature, which means **long durability and safety** for the workers.

There are models with **permanent and non-permanent emergency kit** to suit to different locations.

KRATEx PC



KRATEx can be installed in a wide range of applications, such as paint tunnels in the automotive industry.

Its compliance with gas groups IIA, IIB, IIC, with a reduced MESH, means it is appropriate for environments where gases are present.

OPTIONS

LENGTH (mm)	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	DRIVER	PROFILE	THROUGH WIRING	EMERGENCY KIT
600 1200	20: ~2500 40: ~5000 100: ~11000	8: >80	40: 4000 65: 6500	ET: non dimmable ETDD: DALI dimmable ETDD_CAS: Casambi dimmable	GLASS: borosilicate glass PC: polycarbonate	3x2.5mm ²	EB1: 1 hour EB3: 3 hours





KRATEx has **Ex d type of protection**, and it includes an explosion-proof joint. If an explosion occur, it would be contained within its enclosure. In addition, its construction features prevent the propagation of the internal explosion to the surrounding explosive atmosphere.

The luminaire also **complies with gas groups IIA, IIB, IIC**, with a reduced MESG (very deep thread so that if a spark is created inside the luminaire, it does not escape and cause an explosion).

This means KRATEx is **suitable for environments where gases are present**.



ACCESSORIES

Description	Reference	Description	Reference
 Eye bolts, 2 units	10078101	 Brass double-sealed EX cable gland with silicone seals for armoured cable 3/4 NPT, 1 unit	10078104
 Fixing omegas, 2 units	10078102	 Pipe clamp for 1.5 inch pole mounting	10284127



OPERATIONAL DATA

Description ¹	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Luminous flux emergency	Temperature range ²
GLASS						
KRATEx HE 600 20-840 ET GLASS	10169102	2650	20	135	-	-20°C - +50°C
KRATEx HE 600 20-840 ET GLASS 3x2.5	10203323	2650	20	135	-	-20°C - +50°C
KRATEx HE 600 20-840 ETDD GLASS	10203324	2650	20	135	-	-20°C - +50°C
KRATEx HE 600 20-840 ETDD GLASS CAS	10203325	2650	20	135	-	-20°C - +50°C
KRATEx HE 1200 40-840 ET GLASS	10169108	5000	40	125	-	-20°C - +50°C
KRATEx HE 1200 40-840 ET GLASS 3x2.5	10203321	5000	40	125	-	-20°C - +50°C
KRATEx HE 1200 40-840 ETDD GLASS	10203322	5000	40	125	-	-20°C - +50°C
KRATEx HE 1200 40-840 ETDD GLASS CAS	10203332	5000	40	125	-	-20°C - +50°C
KRATEx HE 1200 100-840 ET GLASS	10223633	11750	80	150	-	-20°C - +50°C
KRATEx HE 1200 100-840 ETDD GLASS	10223634	11750	80	150	-	-20°C - +50°C
EMERGENCY KIT ³						
KRATEx HE 600 20-840 ET GLASS EB1	10203312	2650	25	105	800	0°C - +40°C
KRATEx HE 600 20-840 ET GLASS EB3	10203313	2650	25	105	800	0°C - +40°C
KRATEx HE 600 20-840 ETDD GLASS EB1	10203328	2650	25	105	800	0°C - +40°C
KRATEx HE 600 20-840 ETDD GLASS EB3	10203329	2650	25	105	800	0°C - +40°C
KRATEx HE 1200 40-840 ET GLASS EB1	10169110	5000	45	110	800	0°C - +40°C
KRATEx HE 1200 40-840 ET GLASS EB3	10169112	5000	45	110	800	0°C - +40°C
KRATEx HE 1200 40-840 ETDD GLASS EB1	10203319	5000	45	110	800	0°C - +40°C
KRATEx HE 1200 40-840 ETDD GLASS EB3	10203320	5000	45	110	800	0°C - +40°C
NON PERMANENT EMERGENCY ³						
KRATEx NS HE 600 2000-840 ET GLASS EB1	10169104	-	5	-	800	0°C - +40°C
KRATEx NS HE 600 2000-840 ET GLASS EB3	10169106	-	5	-	800	0°C - +40°C
PC						
KRATEx HE 600 20-840 ET PC	10169101	2500	20	125	-	-20°C - +50°C
KRATEx HE 600 20-840 ET PC 3x2.5	10203309	2500	20	125	-	-20°C - +50°C
KRATEx HE 600 20-840 ETDD PC	10203310	2500	20	125	-	-20°C - +50°C
KRATEx HE 600 20-840 ETDD PC CAS	10203311	2500	20	125	-	-20°C - +50°C
KRATEx HE 1200 40-840 ET PC	10169107	4750	40	120	-	-20°C - +50°C
KRATEx HE 1200 40-840 ET PC 3x2.5	10203316	4750	40	120	-	-20°C - +50°C
KRATEx HE 1200 40-840 ETDD PC	10203317	4750	40	120	-	-20°C - +50°C
KRATEx HE 1200 40-840 ETDD PC CAS	10203318	4750	40	120	-	-20°C - +50°C
KRATEx HE 1200 100-840 ET PC	10203335	11000	80	140	-	-20°C - +50°C
KRATEx HE 1200 100-840 ETDD PC	10203336	11000	80	140	-	-20°C - +50°C
EMERGENCY KIT ³						
KRATEx HE 600 20-840 ET PC EB1	10203326	2500	25	100	750	0°C - +40°C
KRATEx HE 600 20-840 ET PC EB3	10203327	2500	25	100	750	0°C - +40°C
KRATEx HE 600 20-840 ETDD PC EB1	10203314	2500	25	100	750	0°C - +40°C
KRATEx HE 600 20-840 ETDD PC EB3	10203315	2500	25	100	750	0°C - +40°C
KRATEx HE 1200 40-840 ET PC EB1	10169109	4750	45	110	750	0°C - +40°C
KRATEx HE 1200 40-840 ET PC EB3	10169111	4750	45	110	750	0°C - +40°C
KRATEx HE 1200 40-840 ETDD PC EB1	10203333	4750	45	110	750	0°C - +40°C
KRATEx HE 1200 40-840 ETDD PC EB3	10203334	4750	45	110	750	0°C - +40°C
NON PERMANENT EMERGENCY ³						
KRATEx NS HE 600 2000-840 ET PC EB1	10169103	-	5	-	750	0°C - +40°C
KRATEx NS HE 600 2000-840 ET PC EB3	10169105	-	5	-	750	0°C - +40°C

¹ KRATEx 300 available under request

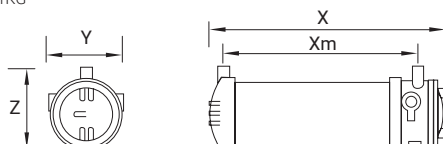
² Up to +55°C under request (for versions without emergency)

³ Emergency pictogram available under request

DIMENSIONS AND LOGISTICS

Description	X mm	Xm mm	Y mm	Z mm	L x W x H mm	KG Item ⁴	Pcs./Box	KG Box ⁴	Groupage Pcs./pallet	FTL/container Pcs./Double pallet
GLASS										
KRATEx HE 600...	750	640	157	197	780 x 240 x 180	6.3	1	6.6	48	32 + 32
KRATEx HE 1200...	1360	1250	157	197	1390 x 240 x 180	11.2	1	11.6	24	16 + 16
PC										
KRATEx HE 600...	750	640	157	197	780 x 240 x 180	5.6	1	5.9	48	32 + 32
KRATEx HE 1200...	1360	1250	157	197	1390 x 240 x 180	10.3	1	11.2	24	16 + 16

⁴ Weight in EB versions: +0.6KG, and in 3x2.5 versions: +0.1KG



Connected lighting for hazardous areas

ZALUX explosion proof luminaires can incorporate wireless lighting control for improved facility management and energy savings.

ADVANCED WIRELESS LIGHTING CONTROL SYSTEM



- Connected
- Flexible
- Safe
- Easy to use
- Profitable

Our products are ready for digital applications, to integrate them to digital systems.



What are the benefits?

A reliable system for both Ex and non-Ex workplaces

- **Guarantee** safety in projects with hazardous areas thanks to the real time monitoring of the lighting installation.
- **Reduce energy consumption** and contribute to environment sustainability.
- **Save installation costs** with a simpler, more flexible and faster commissioning.
- **Increase profitability** in refurbishment as there is no need to rewire to add new dimmable luminaires and sensors (only 3 wires are required).
- **Reduce maintenance costs** by optimizing luminaires lifetime and anticipating maintenance works.
- Know the real use and conditions of spaces to **make better decisions**.



How does it work?

Wireless connection between luminaires through Low Energy Bluetooth



Mesh connection

- All devices connected.
- Always communicated in all directions.
- Fully interconnected and flexible.
- Every device is a signal amplifier.

High protected system

- Encrypted data.
- Inhibitor and hackers proof.

Central controller, wiring or devices out of the luminaire are not needed

Free App for mobile devices

- Monitor and access data remotely.



Check compatible models in the product catalogue or in the datasheets available at www.zalux.com.



What can you do with our wireless control system?

Ex and non-Ex luminaires can be included **in the same network** to monitor them in the same way, including making groups or connecting them to sensors.

This control can be made from any area of the facilities, making maintenance works easier.

Dimming

Adapt the luminous flux of the luminaire to the needs of space and people.

Scenes control

Define and choose the most efficient lighting configuration at all times.

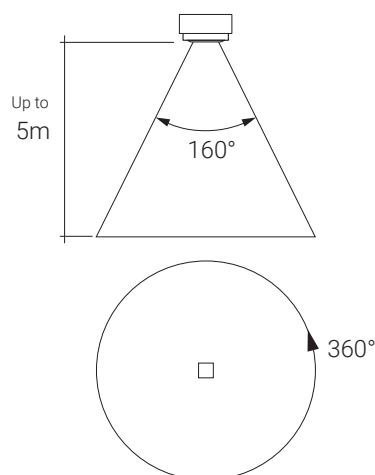
Management and monitoring

Obtain data to optimize the installation.

Presence and daylight sensor

Wireless control can be connected to sensors, which are able to activate scenes or single luminaires.

- Optimize the lighting configuration around the clock to get **up to 45% savings** during business hours.
- Daylight sensor take advantage of the natural light to provide the needed lighting level with **up to 60% savings**.






Adjustable functions

Sensitivity	Continuously between 20 and 100%
Time setting	30 sec. - 30 min.
Brightness setting	2-2,000 lux
Hold time	Continuously between 10 and 300s (2s test mode)

Bluetooth device features

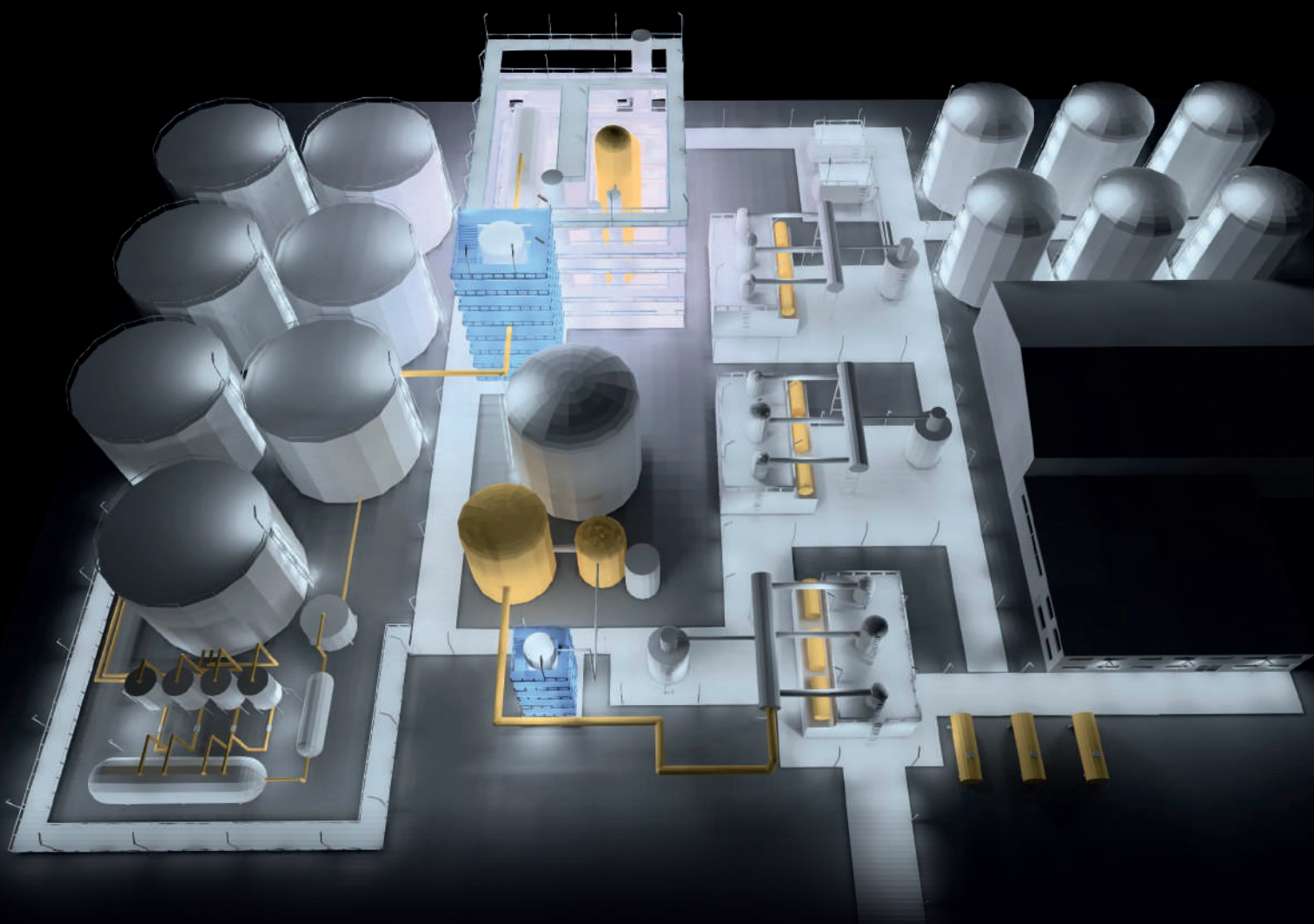
Maximum range (open field)	50 m
Maximum range (indoor)	30 m
Operating radio frequencies	2.4 ... 2.483 Ghz
Maximum radio output power	+4 dBm

Product	Wireless control system
 STRONGEx G2	✓
 STRONGEx 2	✓
 KRATEx	✓

Oil refinery

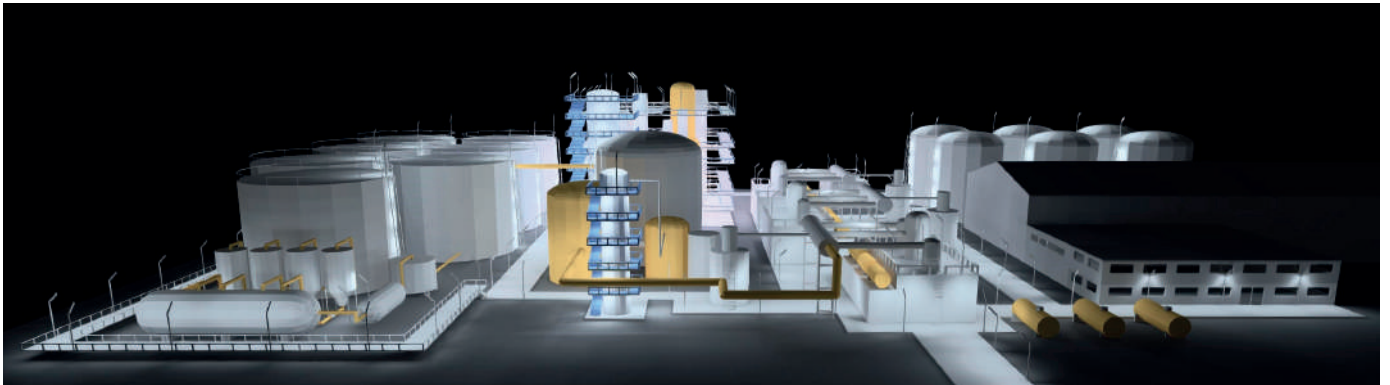


Outdoor and indoor spaces illuminated with explosion proof and protected LED luminaires and smart controls



OBJECTIVE

- Oil&gas industries are **one of the most dangerous industrial areas**, because an explosion can happen at any time or place.
- On the other hand, energy is a key resource for our society, so **security** cannot be compromised.
- Oil refineries need to guarantee **safety and optimal visual conditions** for its workers.



CHALLENGES

1. The risk of explosion is the greatest challenge, so **any equipment must contribute to the safety of the area**. Therefore, products are required that, in the event of an explosion, will not spread the explosion or cause a fire.



Comply with strict safety standards for hazardous areas with risk of explosion: ATEX and IECEx

2. Only the best quality equipment can be installed in **demanding areas with guarantee**.



Products designed and manufactured in Europe under the most exigent quality standards

3. Suppliers of products to the oil and gas industry must go through an **approval process** and their products must meet **strict end-user specifications**.



Registered vendor in major EPC companies and oil and gas end users globally

4. Refineries operate 24 hours a day, 7 days a week, so **energy consumption can be enormous** if energy saving measures are not taken.



Highly efficient solutions, dimming, advanced wireless control and integrated sensors allow for reasonable energy use

5. In refineries, there are a lot of different places such as walkways, staircases, storages, or platforms, **both indoor and outdoor**.



Difficult to reach locations in hazardous areas require easy maintenance equipment

6. Outdoor areas are exposed to **weather conditions** such as wind or rain, or even saline environments in offshore locations or if the refinery is close to the sea.



Robust industrial luminaires must offer high resistance against water, gases, chemicals and corrosion

7. Surfaces and equipment may suffer from **environmental vibrations or extreme soiling** due to the presence of dirt, grime or oils.



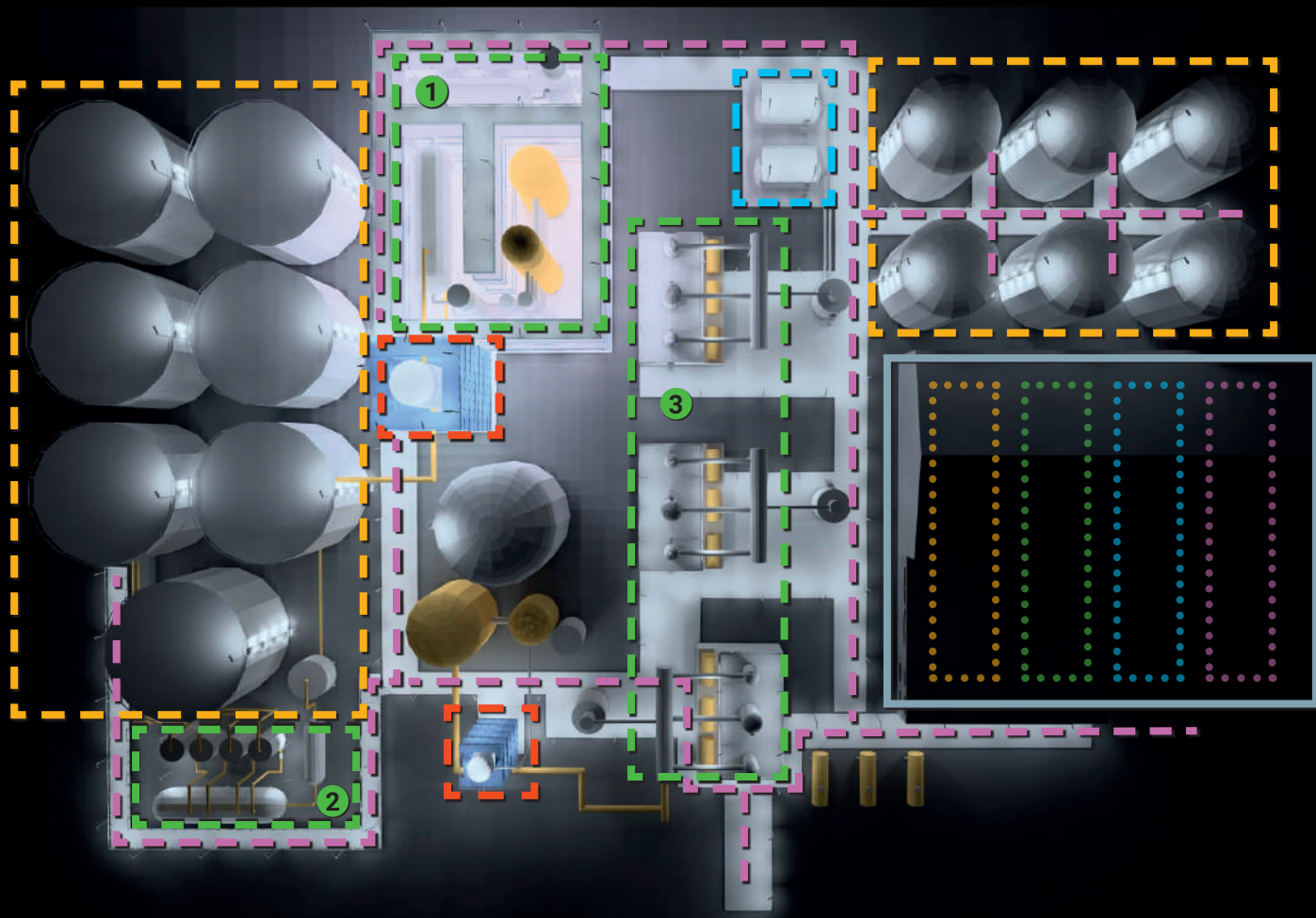
Extreme dust and impact protection combined with robust mounting guarantees quality lighting over long periods of time

8. In some places, i.e., Middle East, **very high ambient temperatures** can lead to premature degradation of electrical equipment.



Wide temperature range, long lifetime and UV protection provide peace of mind to integrators

CASE STUDY



OUTDOOR AREAS

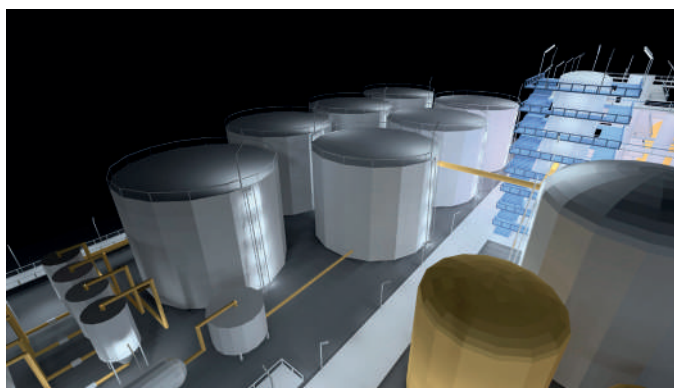
- TANKS AREA
- OIL STORAGE
- PROCESSING AREA

- PEDESTRIAN AREA
- STAIRS

INDOOR WAREHOUSE

- ... MAINTENANCE AREA
- ... OIL STORAGE
- ... OPEN AREA WAREHOUSE
- ... SHELVING WAREHOUSE

Tanks area Ex zone 1



Requirements

- Resistance to salty environments, in refineries close to the sea.
- Low maintenance even in difficult to reach locations.

STRONGEx1 G2 S1 12 PVW 56-840 ET

E_{med} : 100lux | U_o : 0.5

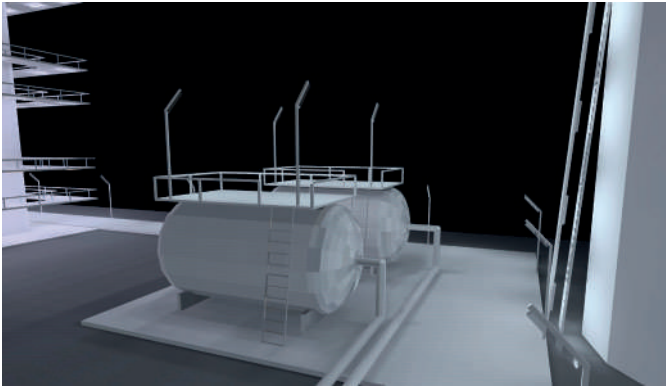


- ⊗ II 2G Ex eb mb IIC T4 Gb
- ⊗ II 2D Ex tb IIIC T85°C Db

Key characteristics

- Profile made of PMMA with a great chemical resistance and UV protection and robust aluminium end caps.
- Easy installation with a high durability up to 100,000 hours.

Oil Storage **Ex zone 1**



Requirements

- Suitable for outdoor, with high temperatures and direct exposure to sunlight. Protected against rain and wind.
- Compliant with gas groups IIA, IIB, IIC, with a reduced MESH, for environments where gases are present.

KRATEx HE 1200 100-840 ET GLASS

E_{med} : 150lux | U_o : 0.5

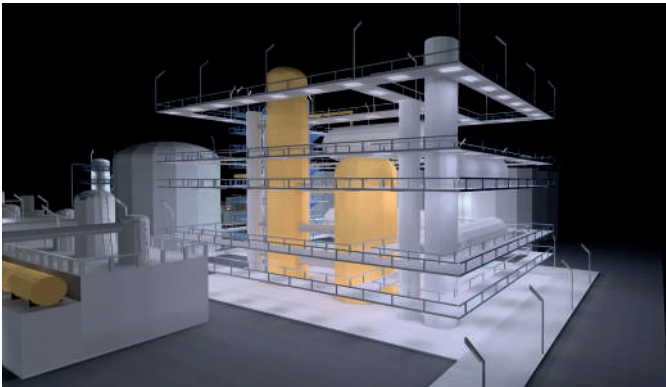


- Ex II 2G Ex db IIC T6 Gb
- Ex II 2D Ex tb IIIC T85°C Db

Key characteristics

- Profile made of borosilicate glass with a great impact resistance IK09 and robust aluminium end caps.
- NBR-oil resistant gasket to protect internal elements from the dirt on the tanks.

Processing area 1 **Ex zone 2**

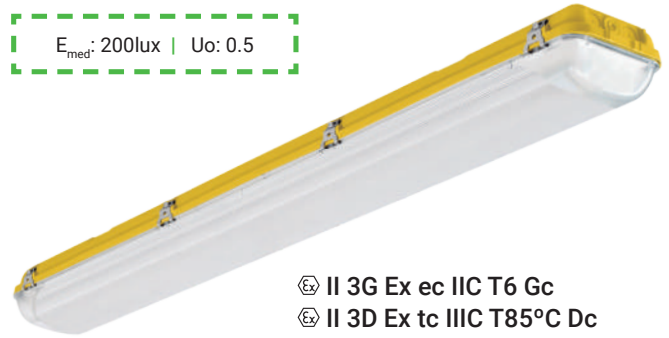


Requirements

- Versatile explosion proof luminaire suitable for outdoor under shelter installations.
- High energy efficiency due to the intense use of the area.

ACQUEX LED-M 1500 ETDD CS PC INOX

E_{med} : 200lux | U_o : 0.5

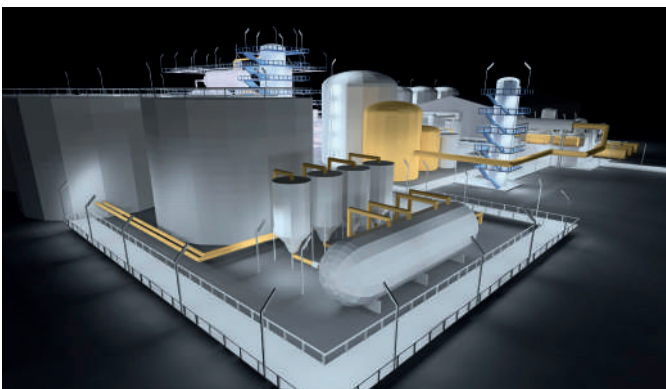


- Ex II 3G Ex ec IIC T6 Gc
- Ex II 3D Ex tc IIIC T85°C Dc

Key characteristics

- Compressed fibreglass reinforced polyester housing and PC diffuser, resistant to all working conditions.
- Emergency kit available.

Processing area 2 **Ex zone 1**

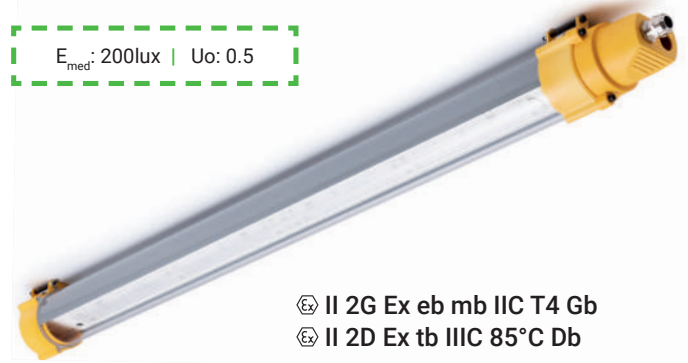


Requirements

- Versatile and easy connection, also in junction boxes.
- Wireless connection to control the installation remotely.

STRONGEx1 G2 S1 12 PVW 56-840 ET EB3

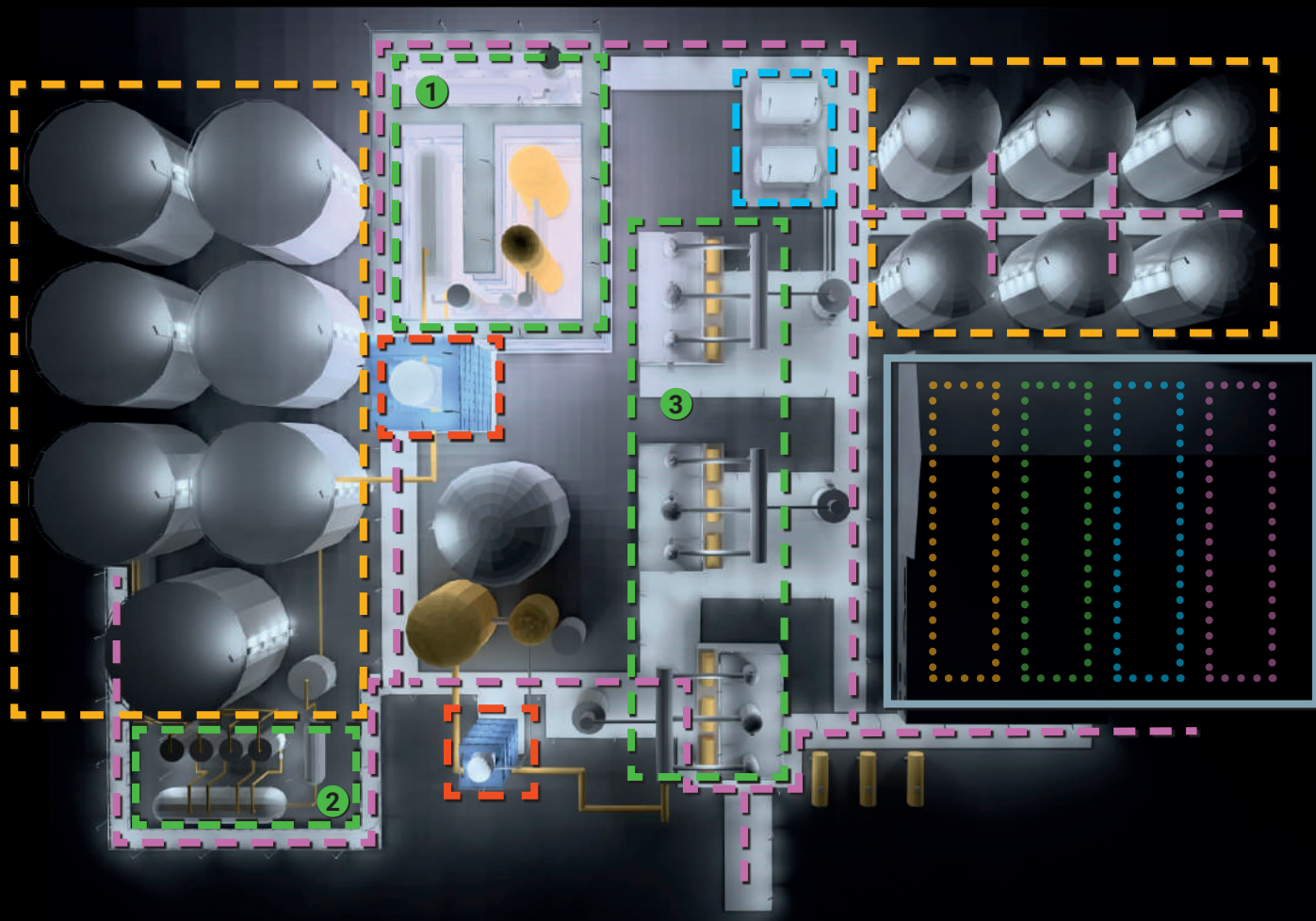
E_{med} : 200lux | U_o : 0.5



- Ex II 2G Ex eb mb IIC T4 Gb
- Ex II 2D Ex tb IIIC 85°C Db

Key characteristics

- 4 cable entries and up to 8 poles ready for DALI dimming or emergency, with through wiring optional.
- Presence and daylight sensor optional, so that light is only used when and where it is needed.



OUTDOOR AREAS

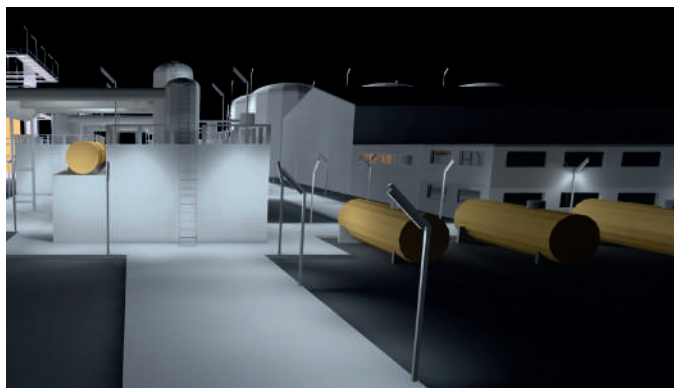
- TANKS AREA
- OIL STORAGE
- PROCESSING AREA

- PEDESTRIAN AREA
- STAIRS

INDOOR WAREHOUSE

- ... MAINTENANCE AREA
- ... OIL STORAGE
- ... OPEN AREA WAREHOUSE
- ... SHELVING WAREHOUSE

Processing area 3 Ex zone 2

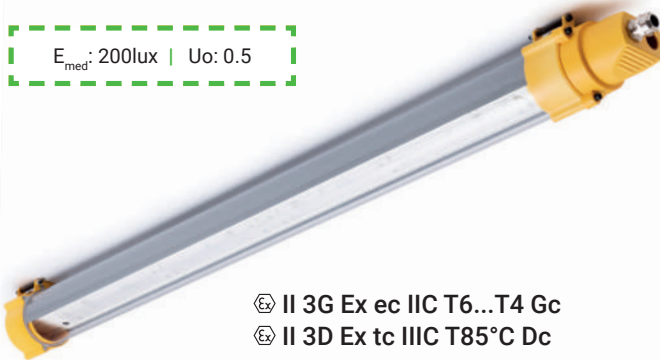


Requirements

- Appropriate for outdoor, with high protection against dust, rain or wind, and suitable for hot environments.
- Easy mounting in poles.

STRONGEx2 G2 S2 12 PVW 60-840 ET HT

E_{med} : 200lux | U_o : 0.5



- ⊗ II 3G Ex ec IIC T6...T4 Gc
- ⊗ II 3D Ex tc IIIC T85°C Dc

Key characteristics

- Wide temperature range up to +55°C, for outdoor environments.
- With different optics to reduce the number of needed luminaires, so less investment is required.

Pedestrian area Ex zone 2



Requirements

- Suitable for outdoor, with high temperatures and direct exposure to sunlight.
- Versatile mounting with stainless steel robust accessories, such as supporting brackets.

STRONGEx 2 1200 TB 65-840 ETDD CS CG HFS

E_{med} : 25lux | U_o : 0.4

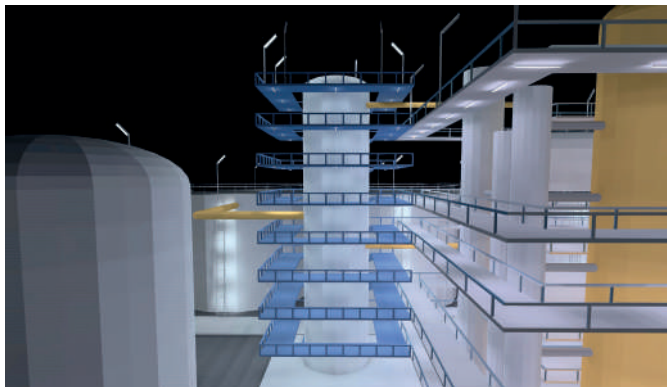
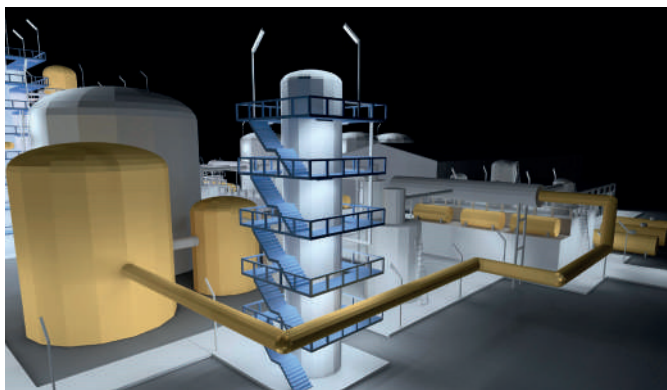


II 3G Ex ec IIC T6...T5 Gc
II 3D Ex tc IIIC T85°C...T100°C Dc

Key characteristics

- Profile made in PMMA with extreme resistance to withstand impacts and chemical agents.
- Ready for installation in poles. With an external cable up to 10m to facilitate connection to a junction box.

Stairs Ex zone 2



Requirements

- High resistance to chemicals, also in outdoor applications.
- Efficient lighting only when and where it is needed.

STRONGEx 2 1200 TB 65-840 ETDD CS CG HFS

E_{med} : 200lux | U_o : 0.5



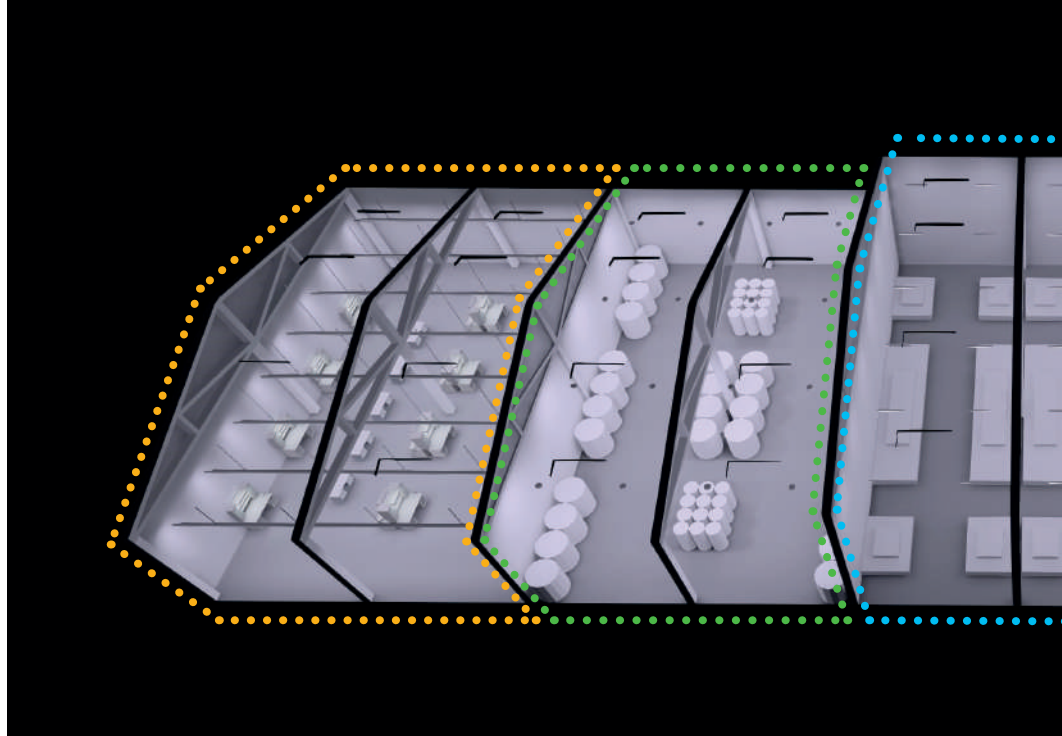
II 3G Ex ec IIC T6...T5 Gc
II 3D Ex tc IIIC T85°C...T100°C Dc

Key characteristics

- Gas tight luminaire, to avoid the entrance of any gases that could damage the luminaire electrical components.
- With wireless control, DALI dimming and presence and daylight sensors, for remote monitoring and easier maintenance.

INDOOR WAREHOUSE

- MAINTENANCE AREA
- OIL STORAGE
- OPEN AREA WAREHOUSE
- SHELVING WAREHOUSE



Maintenance area Ex zone 2

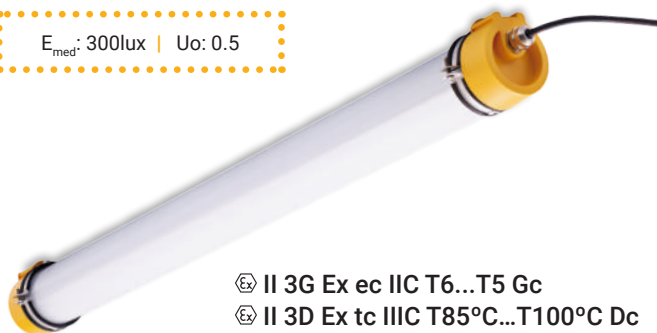


Requirements

- High resistance to chemicals.
- Different optics adapt the light to each area.

STRONGex 2 1200 TB 65-840 ETDD CS CG HFS

E_{med} : 300lux | U_o : 0.5



II 3G Ex ec IIC T6...T5 Gc

II 3D Ex tc IIIC T85°C...T100°C Dc

Key characteristics

- Robust profile made in PMMA and gas tight, resistant to impacts and chemical agents.
- Diffuse and intensive photometries available.

Chemical products storage Ex zone 2



Requirements

- Suspended installation with eyebolts and chain, or surface mounted on walls or tubes with brackets to reinforce light where it is needed.
- High resistance to chemicals.

OREx 2 39 233-840 ET AL CG 0.25M

E_{med} : 300lux | U_o : 0.5



II 3G Ex ec op is IIC T5...T4 Gc

Key characteristics

- Copper-free aluminium alloy housing, which withstands corrosion from ammonia or hydrogen sulphide.
- Accessories to make installation easier: eyebolt, brackets for wall and tube mounting, PNCX connector, junction boxes or EX cable glands.



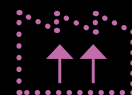
6m height



7.5m height



10m height



10m height

Open area warehouse



Requirements

- Efficient light to contribute to workers safety and productivity, with good visual comfort.
- Easy maintenance and installation in out of reach locations in high ceilings.

DUNA FLEX HE HIGH BAY

1.5 TB 100-840 ET SMC DPM IX CG 5x2.5

E_{med} : 150lux | U_o : 0.4



Key characteristics

- Flicker-free, with intensive and diffuse optics for a good uniform horizontal and vertical light level.
- Quick installation, long lifetime and robust materials with IP66.

Shelving warehouse



Requirements

- Continuous line connection.
- Presence and daylight sensors to optimize light, take advantage of the daylight and reduce consumption.

KE 1.5 TB 100-840 ET TC HFS

E_{med} : 150lux | U_o : 0.4



Key characteristics

- Up to 15 lighting units connected in one line, with through wiring and a quick locking system between profiles.
- With wireless control and sensors to save maintenance costs and increase profitability.



Explosionproof certified luminaires, suitable for use in places where there is an atmosphere with risk of explosion.



The product complies with the dispositions of the European Community. Luminaires must comply with 2004/108/EC for Electromagnetic Compatibility, 2006/95/EC for the production of the luminaires and 2009/125/EC for ecodesign.



Marking common to luminaires, associated equipments and information technology equipments, that indicates the conformity with European standards. The complying of the norms by the manufacturers is tested by external official bodies (AENOR, VDE...).



Luminaires comply with the specifications of foodstuff legislation in accordance with Regulation (EU) No. 852/2004 (HACCP) Appendix II Section I No. 2 a, b, Section II No. 1c for luminaires, and can be used in applications where foodstuffs are processed, handled and packed.

REACH

Luminaires comply with the related requirements of the European Union Regulation (EC) 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).



Class I luminaires are earthed.

Technical Information

Specifications

- Luminaires are specified for indoor use and under shelter for outdoor use, unless otherwise noted.
- Net luminaire data at 25°C ambient temperature, unless otherwise specified.
- Outside the recommended ambient temperature range, luminaire lifetime will be reduced.
- Data tolerance must be considered between +/- 5 %.
- Our luminaires comply with the EU Declaration of Conformity and are Made in Europe.
- General guarantee terms apply: see the updated document in our website.
- All information is subject to change without notice due to development. Please, refer to www.zalux.com for current versions of product documentation.



Operational temperature range under which the luminaire have to be installed. Out of this interval, its electronic components could be affected as well as the lifetime of the luminaire.



Luminaires with emergency kit

- ZALUX luminaires can be equipped with emergency kit.
- Kit transforms a LED luminaire into an emergency luminaire when necessary.
- It includes a long lasting LiFePO4 battery and an emergency converter.
- Unless otherwise specified, emergency kits are non-permanent, thus, they only work in case of mains failure. The rest of the time the battery is being charged or is at rest.

Icons



Luminaires intended for use in potentially explosive atmosphere in compliance with the health and safety requirements specified in Directive 2014/34 UE (ATEX). The fulfillment of this compliance is stated in EU declaration of conformity with or without EU-type examination certificate, according to specific category.



Luminaires intended for use in potentially explosive atmosphere in compliance the voluntary IECEx Equipment Certification Scheme to facilitate acceptance around the world. The fulfillment of this compliance is stated in issued Certificate of Conformity by an ExNB.



The product complies with the dispositions of the European Community. Luminaires must comply with 2004/108/EC for Electromagnetic Compatibility, 2006/95/EC for the production of the luminaires and 2009/125/EC for ecodesign.



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RoHS

The RoHS Directive restricts the use of six hazardous materials in the manufacture of electronic and electrical equipment: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE).

REACH

Luminaires comply with the related requirements of European Union Regulation (EC) 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).



Class I luminaires are earthed.

Applications



AVIATION



CHEMICAL



FACTORY



FOOD



LABORATORY



MARITIME



OFF-SHORE



OIL & GAS



OIL REFINERY



PETROCHEMICAL



PETROL STATION



PHARMA



POWER PLANT



THERMAL



TRANSPORT



WORKSHOP

Resistance to chemical agents

Chemical agents	Polyester	Polycarbonate	Aluminium	PMMA	Stainless steel
Acetic acid 10%	✓	✓	✓	✓	✓
Acetone	Ø	X	✓	X	✓
Alcoholic beverages	✓	✓	✓	Ø	✓
Aluminium sulphate	✓	✓	✓	✓	Ø
Ammonia 5%	Ø	X	✓	✓	✓
Aniline	Ø	X	✓	X	✓
Arsenic acid 20%	Ø	✓	✓	✓	✓
Benzene	X	X	✓	X	Ø
Bencylic alcohol	X	X	Ø	X	Ø
Bromine	X	X	X	X	X
Calcium Chloride	✓	✓	✓	✓	Ø
Calcium nitrate	✓	✓	✓	✓	Ø
Carbon tetrachloride	X	X	✓	X	Ø
Carbonic acid	✓	X	✓	X	✓
Caustic potash 5%	X	X	X	✓	Ø
Cement	✓	✓	✓	✓	Ø
Hydrochloric acid 1-5%	Ø	✓	X	✓	X
Chlorine liquids (vapours)	X	X	X	X	Ø
Chloroform	X	X	✓	X	✓
Chromic acid	X	Ø	X	Ø	Ø
Citric acid 20%	✓	✓	✓	✓	Ø
Copper sulphate	✓	✓	X	✓	Ø
Diesel-naphta oil	✓	Ø	✓	✓	✓
Ethyl alcohol 30%	✓	✓	✓	Ø	✓
Ethyl chloride	X	X	Ø	X	✓
Ethyl ether	✓	X	✓	X	Ø
Food oils and fats	✓	X	✓	✓	✓
Formic acid 10%	Ø	✓	X	✓	Ø
Glycerine	✓	✓	✓	✓	✓
Hexane	Ø	✓	✓	✓	✓
Iodine	✓	X	Ø	✓	X
Isopropyl alcohol	✓	Ø	✓	Ø	Ø
Lubricating oil	✓	✓	✓	✓	✓
Magnesium sulphate	✓	✓	✓	✓	✓
Methanol	✓	X	✓	Ø	✓
Mineral oils	✓	✓	✓	✓	✓
Nitric acid 20%	X	Ø	X	✓	✓
Oxygen	✓	✓	✓	✓	✓
Ozone	✓	✓	✓	✓	Ø
Perchloric acid 10%	X	✓	X	✓	X
Petrol	✓	X	✓	✓	✓
Phenol	Ø	X	✓	X	Ø
Potassium bromide	✓	✓	Ø	✓	Ø
Potassium nitrate	✓	✓	✓	✓	Ø
Potassium permanganate	✓	✓	✓	✓	Ø
Sea climate	✓	✓	Ø	✓	Ø
Silicon oils	✓	✓	✓	Ø	✓
Soda bleach 15%	✓	X	Ø	✓	Ø
Sodium chloride	✓	✓	Ø	✓	Ø
Sodium hydroxide 5%	✓	X	X	✓	Ø
Sodium sulphate	✓	✓	✓	✓	Ø
Sugar	✓	✓	✓	✓	✓
Sulphur	✓	✓	✓	✓	Ø
Sulphuric acid 30%	X	✓	X	✓	X
Toluene	X	X	✓	X	✓
Trichloroethylene	X	X	✓	X	Ø
Zinc sulphate	✓	✓	Ø	✓	Ø

- ✓ Resistant
- Ø Relatively resistant
- X Non-resistant

This is a recommendation about the compatibility of equivalent or similar chemical agents included in the composition of the cleaning products with the polymers present in the luminaires. It is based on information from material suppliers, available documentation, tests and our experience in different applications.

Materials resistance can be also affected by concentration, temperature, presence of various chemicals, solvent evaporation and other factors, so this table must be considered as a general reference. Product compliance must be determined by the customer for each specific use.

Ingress protection: IP

The protection of luminaires against the penetration of dust, solid matter and dampness is in accordance with UNE-EN 60529:2018 standard.

↓ IP66

Protection against the penetration of solid matter and dust.

0	Unprotected
1	Protected against solid matter greater than 50 mm
2	Protected against solid matter greater than 12 mm
3	Protected against solid matter greater than 2.5 mm
4	Protected against solid matter greater than 1 mm (e.g. small tools, small cables, etc.)
5	Protected against dust (without damaging sediment)
6	Protected against dust

↓ IP66

Protection against the penetration of liquids.

0	Unprotected
1	Protected against vertical water splashes (condensation)
2	Protected against water splashes of up to 15° of the vertical
3	Protected against water splashes of up to 60° of the vertical
4	Protected against water projections in all directions
5	Protected against water assault in all directions
6	Protected against water assault similar to heavy seas
7	Protected against immersion
8	Protected against prolonged effects of underwater immersion
9K ¹	Protected against high-pressure / steam-jet cleaning ¹ .

¹The third figure K is in accordance with ISO 20653:2013 standard, related to the protection of electrical equipment against foreign objects, water and access.

Impact protection: IK

↓↓ IK08

00	Unprotected
01	Impact Energy 0.15 Joules
02	Impact Energy 0.20 Joules
03	Impact Energy 0.35 Joules
04	Impact Energy 0.50 Joules
05	Impact Energy 0.70 Joules
06	Impact Energy 1 Joule
07	Impact Energy 2 Joules
08	Impact Energy 5 Joules
09	Impact Energy 10 Joules
10	Impact Energy 20 Joules



General sale conditions

Our acceptance of an order entails, in any event, that the buyer accepts the following general conditions of sale and supply:

1. Source of supply

ZALUX luminaires can be obtained through our established network of distributors in the different countries.

2. Offers

The written, oral and telephone offers are without compromise. The delivery of offers does not oblige us to accept the order. All orders and compromises are only valid if we have expressly ratified them in writing.

3. Prices

The prices of the Price List in force are understood to be for materials in stock. We reserve the right to modify the prices; if it is possible, said variation will be communicated in the best possible time.

4. Delivery time

Delivery time will be confirmed individually once the order is accepted. Delivery time set by ZALUX, S.A., will be respected and only modified due to production or force majeure. Delay will be communicated to the customer in advance, for his approval. Delivery delays will not allow the buyer to neither cancel the order nor to apply any penalty nor indemnifications for it, except for the case that it has been specifically agreed in advance.

5. Orders

ZALUX, S.A., can unilaterally annul current orders, if the circumstances of a main force that impede their completion should occur. Understood as circumstances of a main force: industrial disputes, labour disruptions, shortage of raw materials, etc. The buyer cannot annul orders for specially made materials without our written agreement. In case of acceptance on our part the expenses incurred up to the moment of cancellation will be charged to the buyer.

6. Packaging

The products are sold in their original cardboard package. Under certain circumstances or the buyer indicates to us to use another package, it will be charged to the buyer at its cost price.

7. Transport

With the delivery of the merchandise to the transport agency the delivery is considered to have been correctly made. The risks of transport of the consignment of our products are on the buyers' account. They can only reclaim from the transport agency for the damages incurred during transport. We will with the utmost pleasure collaborate and support their reclamation with details, etc.

8. Measurements

The measurements are given in millimetres in the descriptions of the models. We reserve the right to introduce small deviations in the measurements as well as modifications due to improvements to the models. The price would be susceptible to variation in this case.

9. Reclamations

ZALUX acknowledges any warranty claim. The acceptance decision is based on the analysis of the cause of the faulty devices. The warranty covers material, design and/or manufacturing defects and applies to the entire product.

Defects caused by insufficient maintenance and/or normal wear and tear according to the nominal service life stated in the technical documentation of the product are excluded from the warranty.

Reclamations regarding numerous faults and defects will only be valid if the proper reclamation if the corresponding complaint is submitted within seven days as from the reception of the goods. If the reclamation is founded and the goods are in its original state, a corresponding acceptance will be sent.

For more information about our warranty conditions, please visit www.zalux.com/downloads/

10. Return of material

Return of material will not be accepted for reasons of mistaken instructions, shapes, quantities or material to be repaired, if we have not previously given our written authorisation. Those returns must be sent DDP ZALUX and 30% demerit of the original value will be applied. We do not accept the return of specially made products.

For more information about our return policy, please visit www.zalux.com/downloads/

11. Property rights

In all cases and even against a third party, ZALUX, S.A., conserves full ownership of all the supplied materials, in the case that the agreed payment has not been settled.

12. Patent rights

All the models in this catalogue are protected by law. Legal action with right to redemption will be taken against anyone making imitations.

13. Reprints

Total or partial reproduction of this catalogue is forbidden without the corresponding written authorisation of ZALUX, S.A.

14. Payment

The form of payment will be established at the time of making a firm order for the merchandise, in accordance with the usual standards in ZALUX, S.A.

15. Jurisdiction

For any question that could arise in the completion or interpretation of these general rules, the contracting parties, with expressly renouncing any local law code that could correspond to them, will be submitted expressly to the Magistrate Law Courts of Zaragoza.

16. Modifications

ZALUX, S.A. in its continuous improvement process, reserves the right to modify its technical specifications without any previous notice.

The buyer is responsible that the product purchased in components, once fully wired, meets the requirements of the respective country.

The partner you can trust

The partner you can trust



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