



# Explosion proof luminaires

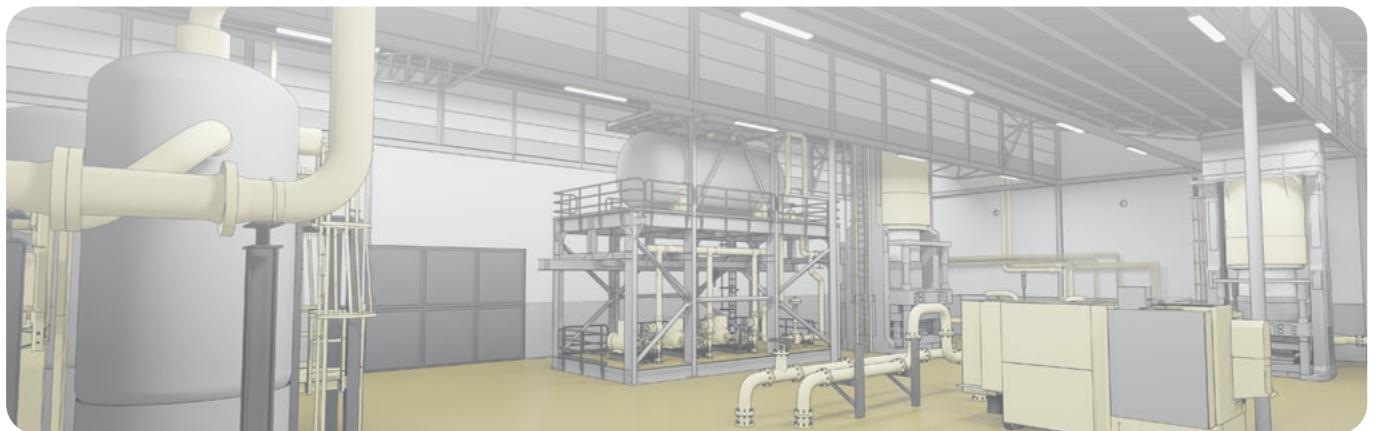
Catalogue







The partner you can trust



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1980 Foundation

3.5M Luminaires manufactured per year

360 Employees

75 Countries with market presence



zalux



# We are the European leader for luminaires with high protection ratings

Specialised in the development and manufacturing of reliable and durable luminaires for extreme conditions such as tough temperatures, dust, humidity and chemicals

## ● 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.

## ● Farming luminaires

Customer-oriented lighting solutions for the agricultural and horticultural market.

## ● Components

Luminaire parts and accessories for your protected luminaires.

## ● OEM services

OEM development and manufacturing of customised lighting products for your specific needs.



- 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
- 1500m<sup>2</sup> premises
- 13 production lines



### Laboratory

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



### Warehouse

- 10,000m<sup>2</sup> 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 luminaires 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

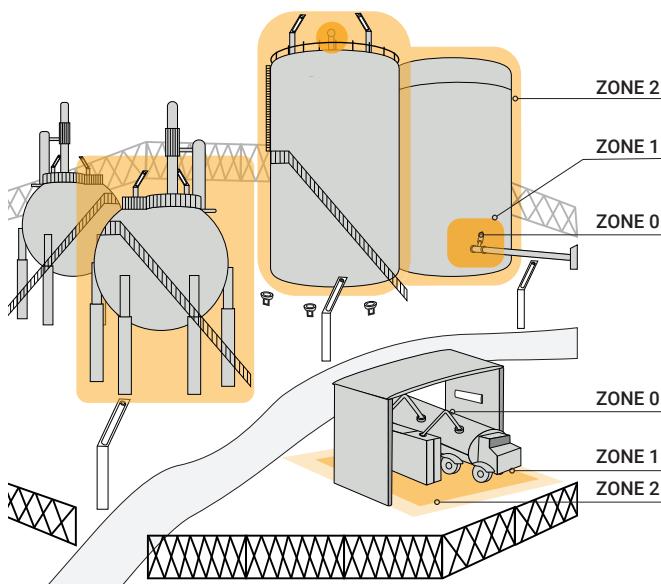


Regulations within the explosive atmosphere sector describe what type of protection must be used in the installed equipment and by the employees working in these environments. The most important are:



- The mandatory **ATEX Directive 2014/34/UE** is stated in EU declaration of conformity with or without EU-type examination certificate, according to a specific category.
- **IECEx** is a series of regulations and standards recognized by countries belonging to the IEC, which facilitates acceptance around the world. The fulfillment of this compliance is stated in the Certificate of Conformity issued by an ExNB.

## Classification of hazardous areas



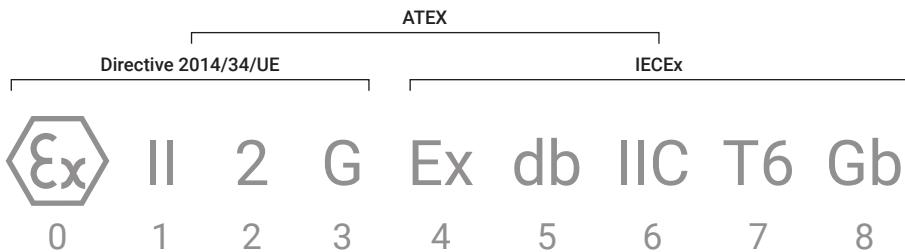
Zones	Description	Duration of hazardous atmosphere
0 / 20	Area in which an explosive atmosphere consisting of a mixture with air of flammable substances in the shape of gas, vapour or mist, is continuously present, or it is foreseen to be present during long periods.	Constant
1 / 21	Area in which an 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	Ex II 2G Ex eb mb IIC T4 Gb Ex II 2D Ex tb IIIC 85°C Db	1, 21	-30°C to +55°C	✓
 STRONGEx2 G2	Ex II 3G Ex ec IIC T6..T4 Gc Ex II 3D Ex tc IIIC T85°C Dc	1, 21 2, 22	-30°C to +55°C	✓
 OREx1 G2 increased safety	Ex II 2G Ex eb ib mb op is IIC T5 Gb Ex II 2D Ex tb op is IIIC T95°C Db			
 OREx1 G2 increased safety / high temperature	Ex II 2G Ex eb ib mb op is IIC T4 Gb Ex II 2D Ex tb op is IIIC T121°C Db	1, 21 2, 22	-32°C to +75°C	
 OREx1 G2 flameproof	Ex II 2G Ex db eb ib mb op is IIC T5 Gb Ex II 2D Ex tb op is IIIC T95°C Db			
 OREx2 G2	Ex II 3G Ex ec op is IIC T5...T4 Gc Ex II 3D Ex tc op is IIIC T80°C...T115°C Dc	2, 22	-32°C to +75°C	
 ACQUEx TA	Ex II 2G Ex eb ib mb IIC T6/T5 Gb Ex II 2D Ex tb IIIC T85°C Db	1, 21 2, 22	-20°C to +50°C	
 ACQUEx LED-M	Ex II 3G Ex ec IIC T6 Gc Ex II 3D Ex tc IIIC T85°C Dc	2, 22	-20°C to +50°C	✓
 ACQUEx LED-T8	Ex II 3G Ex ec IIC T6 Gc Ex II 3D Ex tc IIIC T85°C Dc	2, 22	-20°C to +40°C	
 KRATEx	Ex II 2G Ex db IIC T6 Gb Ex II 2D Ex tb IIIC T85°C Db	1, 21	-20°C to +55°C	✓
 KRATEx 300 Suitable for French emergency lighting regulations	Ex II 2G Ex db IIC T6 Gb Ex II 2D Ex tb IIIC T85°C Db	1, 21	0°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.

Zone	Category (group II)	Protection rating
Zone 0 / 20	1	Very high safety level
Zone 1 / 21	2	High safety level
Zone 2 / 22	3	Normal safety level

### 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 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	<b>Ex db eb enclosures</b>	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	<b>Increased safety</b>	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	<b>Intrinsically safe</b>	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	<b>Encapsulation</b>	Components that may ignite a surrounding atmosphere due to sparks or overheating are particularly enclosed to the explosive atmosphere could not be ignited.	✓	✓
n	<b>Non-incendiary</b>	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	<b>Oil or liquid immersion</b>	Electrical equipment immersed in oil to avoid igniting an explosive atmosphere.	✓	✓
p	<b>Pressurized enclosures</b>	Thanks to a protective gas, the internal pressure is maintained in relation with the air pressure.	✓	✓
o	<b>Oil or liquid immersion</b>	Electrical equipment immersed in oil to avoid igniting an explosive atmosphere.	✓	✓

FOR DUST:

Protection mode	Description	Zones		
		21	22	
t	<b>Protection by enclosures</b>	Sealed enclosure. Combustible dust cannot access to the inside of the luminaire. Surface temperature is limited.	✓	✓
m	<b>Encapsulation</b>	Components that may ignite a surrounding atmosphere due to sparks or overheating are particularly enclosed to the explosive atmosphere could not be ignited.	✓	✓
i	<b>Intrinsically safe</b>	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.

### 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:

#### 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

### Dust groups in the ATEX marking

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

## 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



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

Usual applications:

STRONGEx1 G2  
Zone 1, 21



Oil gas



Petrochemical



Oil refinery

STRONGEx2 G2  
Zone 1, 21  
Zone 2, 22



Petrochemical



Oil gas



Thermal

LUMIN



Zone 1, 21

Zone 2, 22



# HAIRIE STRONGEx G2



## STRONGEx G2

ZONE 1, 21  
ZONE 2, 22



## Characteristics

### STRONGEx1 G2

### IP66/69(80) IK10

### STRONGEx2 G2

#### Mechanical

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	Polyamide Ex cable gland with long thread, M25, RAL 9005 Nickel-brass Ex cable gland, under request
Fixing clips	V2A Stainless steel

#### Functional

Lifetime	L80 100,000 hours at 35°C
Fire protection	Flammability (UL94): V2
protection	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%

#### 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

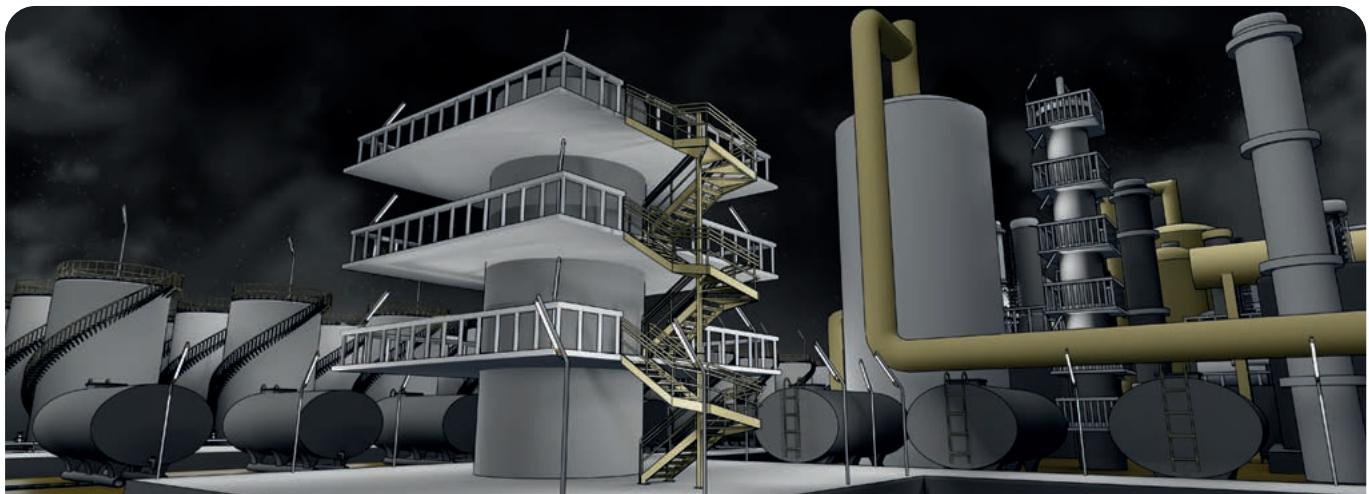
### STRONGEx1 G2



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 4mm<sup>2</sup> 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 2,500 to 8,500lm, with **high efficiency**. DALI dimmable version and optional emergency kit help to further optimize consumption to **save energy**.

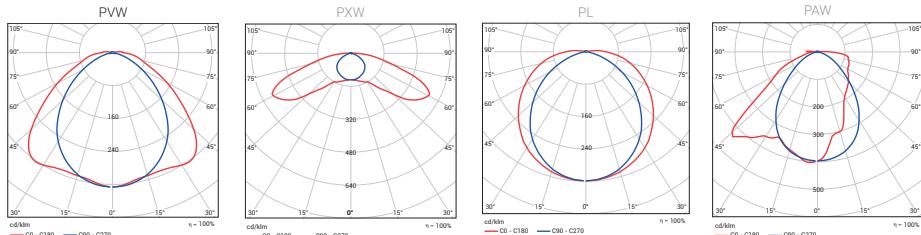
It is **designed to last**, with 100,000 hours lifetime and zero maintenance.

## Options

Special options in grey under request.

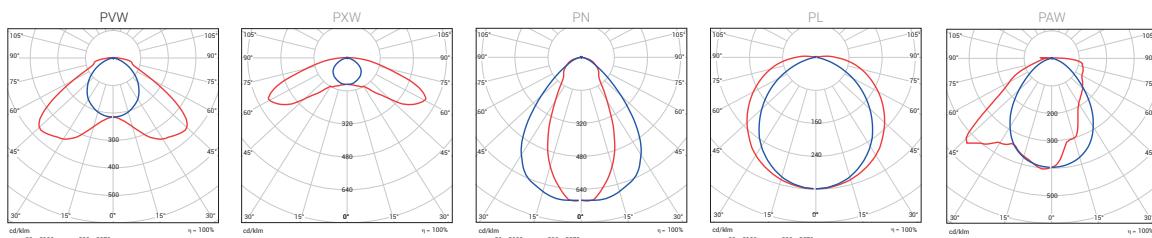
### STRONGEx1 G2

LENGTH (mm)	OPTICS	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	DRIVER	THROUGH WIRING	EMERGENCY KIT
6: 600	PVW	28: 2800	8: >80	40: 4000	ET: non dimmable	LV: 3x2.5mm <sup>2</sup> (for ET versions) / 5x2.5mm <sup>2</sup> (for ETDD versions)	EB3: 3 hours
12: 1200	PXW	56: 5600		30: 3000	ETDD: DALI dimmable		EB1: 1 hour
	PL			50: 5000			
	PAW			57: 5700			



### STRONGEx2 G2

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



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

It also allows through wiring (loop-in, loop out) in the same luminaire end cap to minimize the operations in difficult to reach locations.

## Accessories

Description	Reference	Description	Reference
	10225340		10376687
	10230425		10380891
	10376675		10185019
	10376674		Please, consult
	10235494		

<sup>1</sup> Only for indoor installation

<sup>2</sup> 2 units required for through wiring versions

<sup>3</sup> Please consult our Sales team if you require an additional customised pole or mounting accessory

## Operational data

### STRONGEx1 G2

Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Luminous flux emergency (lm)	Temperature range <sup>2</sup>
S1 6 PVW 28-840 ET	10269625	2800	18	156	-	-30°C - +55°C
S1 6 PVW 28-840 ET LV	10269629	2800	18	156	-	-30°C - +55°C
S1 12 PVW 56-840 ET	10269631	5600	35	160	-	-30°C - +55°C
S1 12 PVW 56-840 ET LV	10269635	5600	35	160	-	-30°C - +55°C
 <b>EMERGENCY KIT</b>						
S1 6 PVW 28-840 ET EB3 <sup>3</sup>	10269627	2800	17	165	280	-20°C - +35°C
S1 12 PVW 56-840 ET EB3 <sup>3</sup>	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 <sup>2</sup>
S2 12 PVW 60-840 ET	10260019	6000	37	162	-	-30°C - +50°C
S2 12 PVW 68-840 ET	10269644	6800	42	162	-	-30°C - +45°C
S2 15 PVW 60-840 ETDD	10268561	6000	37	162	-	-30°C - +55°C
S2 15 PVW 85-840 ETDD	10269651	8500	53	160	-	-30°C - +45°C
 <b>EMERGENCY KIT<sup>1</sup></b>						
S2 6 PVW 25-840 ET HT EB3 <sup>3</sup>	10268557	2500	16	156	250	-20°C - +55°C
S2 12 PVW 46-840 ET HT EB3 <sup>3</sup>	10269649	4600	27	170	460	-20°C - +55°C
S2 15 PVW 56-840 ET HT EB3 <sup>3</sup>	10269655	5600	33	170	560	-20°C - +55°C
S2 15 PVW 70-840 ET HT EB3 <sup>3</sup>	10268554	7000	41	171	700	-20°C - +55°C
 <b>HIGH TEMPERATURE</b>						
S2 6 PVW 35-840 ET HT	10268555	3500	20	175	-	-30°C - +45°C
S2 6 PVW 35-840 ET HT LV	10269641	3500	20	175	-	-30°C - +40°C
S2 12 PVW 60-840 ET HT	10269646	6000	34	176	-	-30°C - +50°C
S2 12 PVW 60-840 ET HT LV	10268550	6000	34	176	-	-30°C - +45°C
S2 12 PVW 78-840 ET HT	10268547	7800	46	170	-	-30°C - +45°C
S2 15 PVW 60-840 ET HT	10269648	6000	33	182	-	-30°C - +55°C
S2 15 PVW 60-840 ET HT LV	10269653	6000	33	182	-	-30°C - +45°C
S2 15 PVW 85-840 ET HT	10268551	8500	47	181	-	-30°C - +45°C
S2 15 PVW 85-840 ET HT LV	10268553	8500	47	181	-	-30°C - +40°C

<sup>1</sup> Available version with temperature range 0°C - 50°C under request

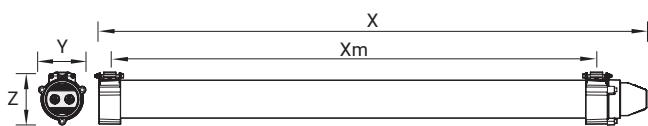
<sup>2</sup> Maximum operating ambient temperature depends on input power and luminaire configuration, please consult assembly instructions manual.

<sup>3</sup> In emergency versions maximum power consumption increases in 4W during battery charging, which is approximately 5% of the time that luminaire is on. The rest of the time power consumption is as indicated.

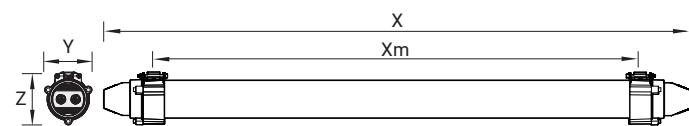
## Dimensions and logistics

Description	X (mm)	Xm (mm)	Y (mm)	Z (mm)	L x W x H (mm)	KG Item	Pcs./Box	KG 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



# High bay lighting specific for hazardous areas

Usual applications:

OREx1 G2  
**increased safety**  
**Zone 1, 21**  
**Zone 2, 22**



OREx1 G2  
**flameproof**  
**Zone 1, 21**  
**Zone 2, 22**



OREx2 G2  
**Zone 2, 22**



NEW

Zone 1, 21

Zone 2, 22



# AIPE OREX G2



## OREx1 G2 increased safety / flameproof

ZONE 1, 21

ZONE 2, 22



OREx1 G2 increased safety

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

OREx1 G2 increased safety / high temperature

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

OREx1 G2 flameproof

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

5 YEARS warranty



ATEX certificate No: OBAC 21 ATEX 0135X | IECEx certificate No: IECEx OBAC 21.0003X



## Characteristics

### OREx1 G2 increased safety

### OREx1 G2 flameproof

Includes product families OREx1 G2 Ex and OREx1 G2 IECEx

## Mechanical

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 and stopping plug, M20 Other sizes, under request
Eyebolt	Stainless steel

## Functional

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



Connection	3 pole screwless connector
Power factor	>0.95 full load
THD	<20% full load
Inrush current	75A full load

## Photometrical

Luminous flux	Up to 25,600lm
Efficiency	160lm/W
SDCM	< 3
Polar diagram	

## Applications

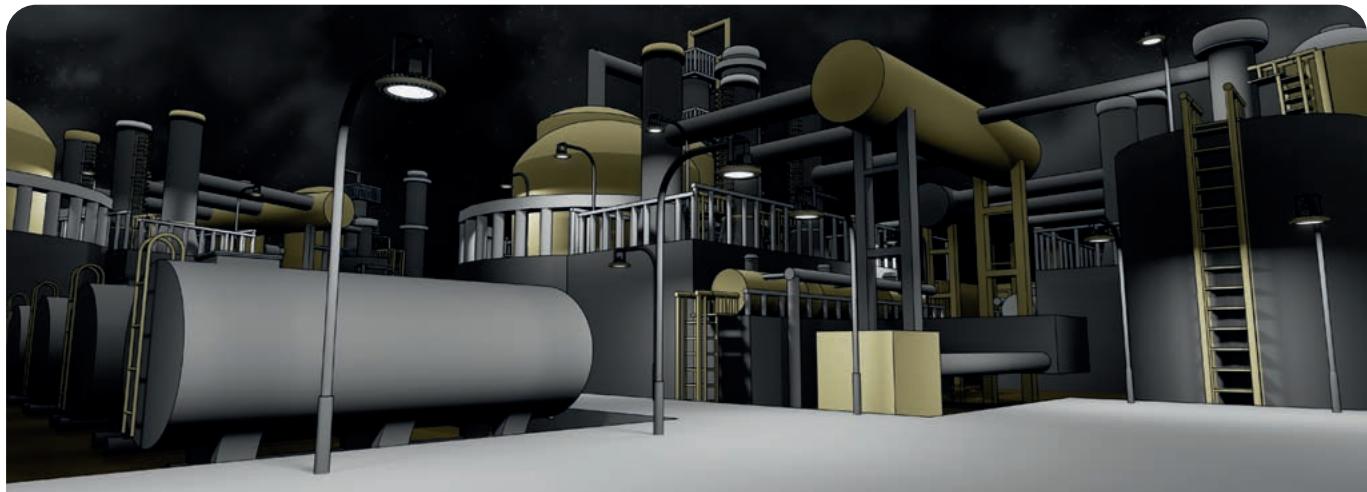
### OREx1 G2 increased safety



Ammonia is generated during oil processing and may therefore also be present in storage areas. OREx1 G2 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.

### OREx1 G2 flameproof



The large corridor spaces between oil or gas tanks in the oil and gas plants require luminaires capable of illuminating even from **outdoor poles**.

OREx1 G2 flameproof also incorporates a **safety protection mode device** that guarantees its Ex db eb protection mode.

## Options

Special options in grey under request.

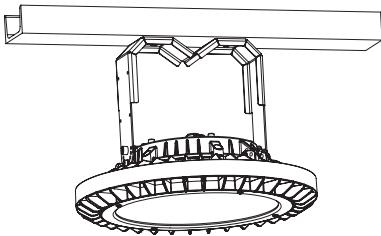
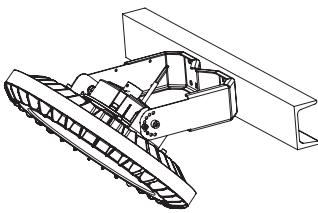
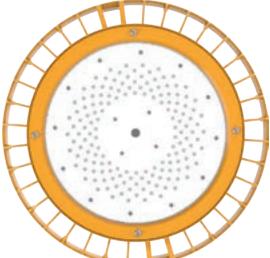
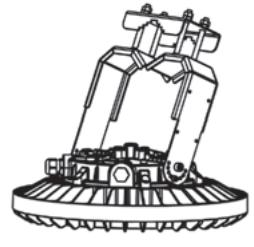
### OREx1 G2 increased safety

DIAMETER (MM)	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	EXTERNAL CONNECTION	TEMPERATURE RANGE
38: ø380	64: 6400 96: 9600 128: 12800 160: 16000 192: 19200 224: 22400 240: 24000 256: 25600	8: > 80	40: 4000 30: 3000 50: 5000 65: 6500	CG: polyamide cable gland NiCG: nickel-plated cable gland BCG: brass cable gland ACG: cable gland for armoured cable H: housing with hole for cable gland	HT: high temperature version up to 75°C with an additional heat sink

### OREx1 G2 flameproof

DIAMETER (MM)	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	PROTECTION MODE Exd	EXTERNAL CONNECTION
38: ø380	64: 6400 96: 9600 128: 12800 160: 16000 192: 19200 224: 22400 240: 24000 256: 25600	8: > 80	40: 4000 30: 3000 50: 5000 65: 6500	SPD: with safety protection device	CG: polyamide cable gland NiCG: nickel-plated cable gland BCG: brass cable gland ACG: cable gland for armoured cable H: housing with hole for cable gland

## Accessories

	Description	Reference	
	Bracket for surface mounting for OREx G2	10348753	 Ceiling mounting with bracket
	Bracket for tube mounting for OREx G2	10348752	 Wall mounting with bracket
	ATEX junction box 122x120x90mm	10225340	
	ATEX junction box 80x75x75mm	10230425	
	Nickel brass Ex cable gland, M20, with nut and ring, 1 unit	10376675	 Top side view
	Nickel brass Ex cable gland, M25, with nut and ring, 1 unit	10376674	 Light engine view
			 Tube mounting with bracket

## Operational data

### OREx1 G2 increased safety

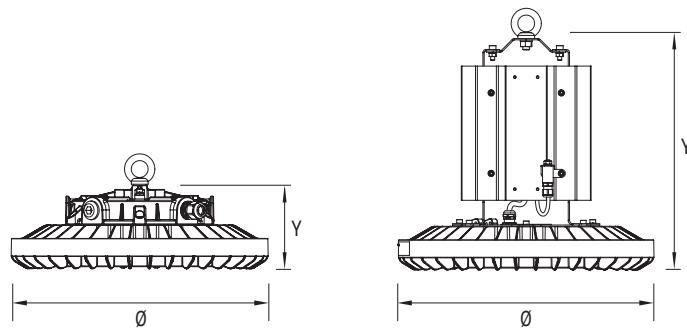
Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Temperature range
OREx1 G2 38 64-840 CG	10348734	6400	40	160	-32°C - +60°C
OREx1 G2 38 96-840 CG	10348735	9600	60	160	-32°C - +60°C
OREx1 G2 38 128-840 CG	10348736	12800	80	160	-32°C - +60°C
OREx1 G2 38 160-840 CG	10348737	16000	100	160	-32°C - +55°C
OREx1 G2 38 192-840 CG	10348738	19200	120	160	-32°C - +55°C
OREx1 G2 38 224-840 CG	10348739	22400	140	160	-32°C - +50°C
OREx1 G2 38 240-840 CG	10348740	24000	150	160	-32°C - +50°C
OREx1 G2 38 256-840 CG	10348741	25600	160	160	-32°C - +50°C
<b>HIGH TEMPERATURE (HT)</b>					
OREx1 G2 38 64-840 NiCG HT	10348754	6400	40	160	-32°C - +75°C
OREx1 G2 38 96-840 NiCG HT	10348755	9600	60	160	-32°C - +70°C
OREx1 G2 38 128-840 NiCG HT	10348756	12800	80	160	-32°C - +65°C

### OREx1 G2 flameproof

Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Temperature range
OREx1 G2 38 64-840 SPD CG	10348742	6400	40	160	-32°C - +60°C
OREx1 G2 38 96-840 SPD CG	10348743	9600	60	160	-32°C - +60°C
OREx1 G2 38 128-840 SPD CG	10348744	12800	80	160	-32°C - +60°C
OREx1 G2 38 160-840 SPD CG	10348745	16000	100	160	-32°C - +55°C
OREx1 G2 38 192-840 SPD CG	10348746	19200	120	160	-32°C - +55°C
OREx1 G2 38 224-840 SPD CG	10348747	22400	140	160	-32°C - +50°C
OREx1 G2 38 240-840 SPD CG	10348748	24000	150	160	-32°C - +50°C
OREx1 G2 38 256-840 SPD CG	10348749	25600	160	160	-32°C - +50°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
OREx1 G2 increased safety...	380	125	390 x 390 x 200	6.3	1	7.3	48	48
OREx1 G2 increased safety... HT	380	390	390 x 390 x 200	6.4	1	7.4	48	48
OREx1 G2 flameproof...	380	125	390 x 390 x 200	6.5	1	7.5	48	48



OREx1 G2...

OREx1 G2... HT



II 3G Ex ec op is IIC T5..T4 Gc  
II 3D Ex tc op is IIIC T80°C..T115°C Dc

ATEX certificate No: OBAC 21 ATEX0135X  
IECEx certificate No: IECEx OBAC 21.0003X

5 YEARS warranty



CE Ex RoHS REACH



## Characteristics

### OREx2 G2

Includes product families OREx2 Ex and OREx2 IECEx

#### Mechanical

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	External cable included (3x1.0mm <sup>2</sup> ) ICB version: cable gland and stopping plug, M20 Other sizes, under request
Eyebolt	Stainless steel

#### Functional

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



#### Electrical

Connection	3-wire cable coming from the lamp ICB version: 3-pole screwless connector
Power factor	>0.97
THD	<15%
Inrush current	75A full load
Rated voltage	90-305VAC 140-250VDC

#### Photometrical

Luminous flux	Up to 41,850lm
Efficiency	155lm/W
SDCM	< 3
Polar diagram	

# Applications



Food



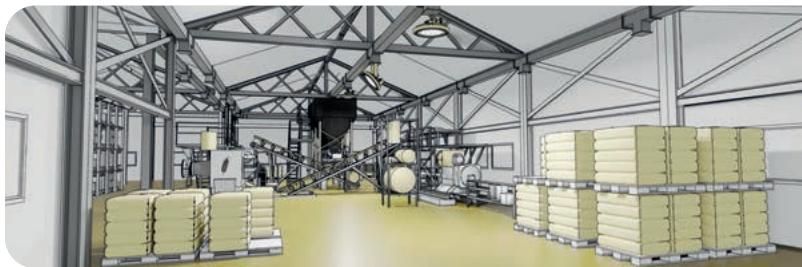
Factory



Maritime



>8m



High bay plants require **easy to install** luminaires with good lighting levels, while high ceilings can accumulate a lot of heat. OREx2 G2 offers **up to 41,850lm** and up to **75°C** operating temperature.

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

## Options

Special options in grey under request.

DIAMETER (MM)	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	EXTERNAL CONNECTION	TEMPERATURE RANGE
38: ø380	62: 6200 93: 9300 124: 12400 155: 15500 186: 18600 217: 21700 232: 23200 248: 24800 279: 27900 310: 31000 341: 34100 372: 37200 403: 40300 418: 41850	8: > 80	40: 4000 30: 3000 50: 5000 65: 6500	0.25M: with 0.25M external cable CG ICB: polyamide cable gland, with OREx1 housing	HT: high temperature version up to 75°C with an additional heat sink



OREx2 G2... 0.25M

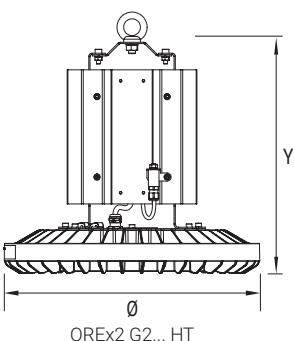
## Operational data

Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Temperature range <sup>1</sup>
OREx2 G2 38 62-840 0.25M	10348760	6200	40	155	-32°C - +60°C
OREx2 G2 38 93-840 0.25M	10348761	9300	60	155	-32°C - +60°C
OREx2 G2 38 124-840 0.25M	10348762	12400	80	155	-32°C - +60°C
OREx2 G2 38 155-840 0.25M	10348763	15500	100	155	-32°C - +60°C
OREx2 G2 38 186-840 0.25M	10348764	18600	120	155	-32°C - +60°C
OREx2 G2 38 217-840 0.25M	10348765	21700	140	155	-32°C - +55°C
OREx2 G2 38 232-840 0.25M	10348766	23250	150	155	-32°C - +55°C
OREx2 G2 38 248-840 0.25M	10348767	24800	160	155	-32°C - +55°C
OREx2 G2 38 279-840 0.25M	10348768	27900	180	155	-32°C - +55°C
OREx2 G2 38 310-840 0.25M	10348769	31000	200	155	-32°C - +55°C
OREx2 G2 38 341-840 0.25M	10348770	34100	220	155	-32°C - +55°C
OREx2 G2 38 372-840 0.25M	10348771	37200	240	155	-32°C - +55°C
OREx2 G2 38 403-840 0.25M	10348772	40300	260	155	-32°C - +50°C
OREx2 G2 38 418-840 0.25M	10348773	41850	270	155	-32°C - +50°C
<b>WITH CABLE GLAND (ICB)</b>					
OREx2 G2 38 155-840 CG ICB	10348774	15500	100	155	-32°C - +60°C
OREx2 G2 38 186-840 CG ICB	10348775	18600	120	155	-32°C - +60°C
OREx2 G2 38 248-840 CG ICB	10348776	24800	160	155	-32°C - +55°C
OREx2 G2 38 310-840 CG ICB	10348777	31000	200	155	-32°C - +55°C
OREx2 G2 38 403-840 CG ICB	10348778	40300	260	155	-32°C - +50°C
<b>HIGH TEMPERATURE (HT)</b>					
OREx2 G2 38 62-840 0.25M HT	10348757	6200	40	155	-32°C - +75°C
OREx2 G2 38 93-840 0.25M HT	10348758	9300	60	155	-32°C - +75°C
OREx2 G2 38 124-840 0.25M HT	10348759	12400	80	155	-32°C - +75°C

<sup>1</sup> Maximum ambient temperature depends on required temperature class, refer to certificate and instructions

## 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
OREx2 G2...	380	150	390 x 390 x 200	6.8	1	7.8	48	48
OREx2 G2... ICB	380	125	390 x 390 x 200	7.2	1	8.2	48	48
OREx2 G2... HT	380	390	440 x 440 x 410	8.3	1	9.3	48	48



## Accessories

See OREx G2 range accessories on page 22.

Extremely simply, safe and reliable for explosive atmospheres

Usual applications:

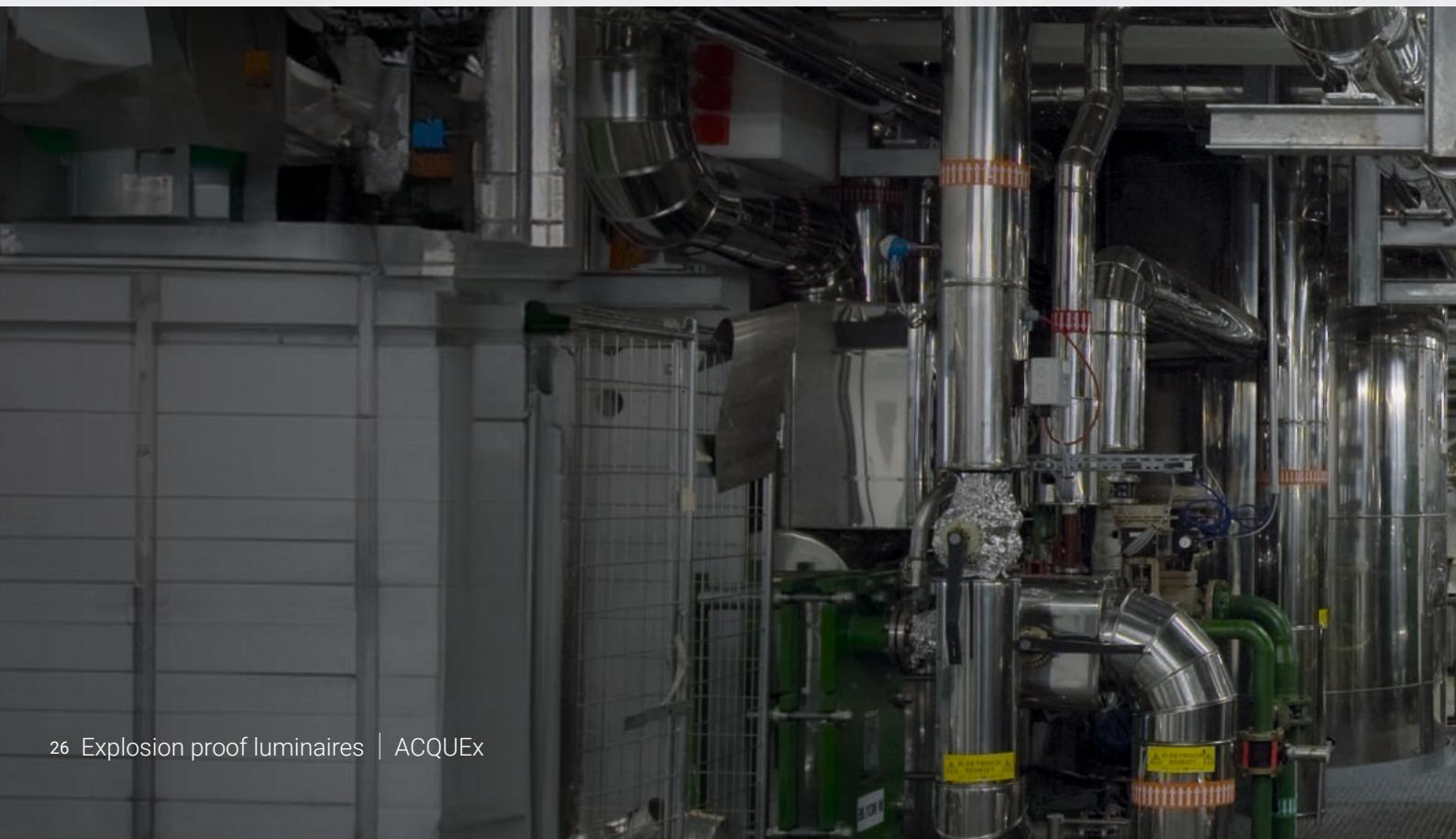
ACQUEEx TA  
**Zone 1, 21**  
**Zone 2, 22**



ACQUEEx LED-M  
**Zone 2, 22**



ACQUEEx LED-T8  
**Zone 2, 22**

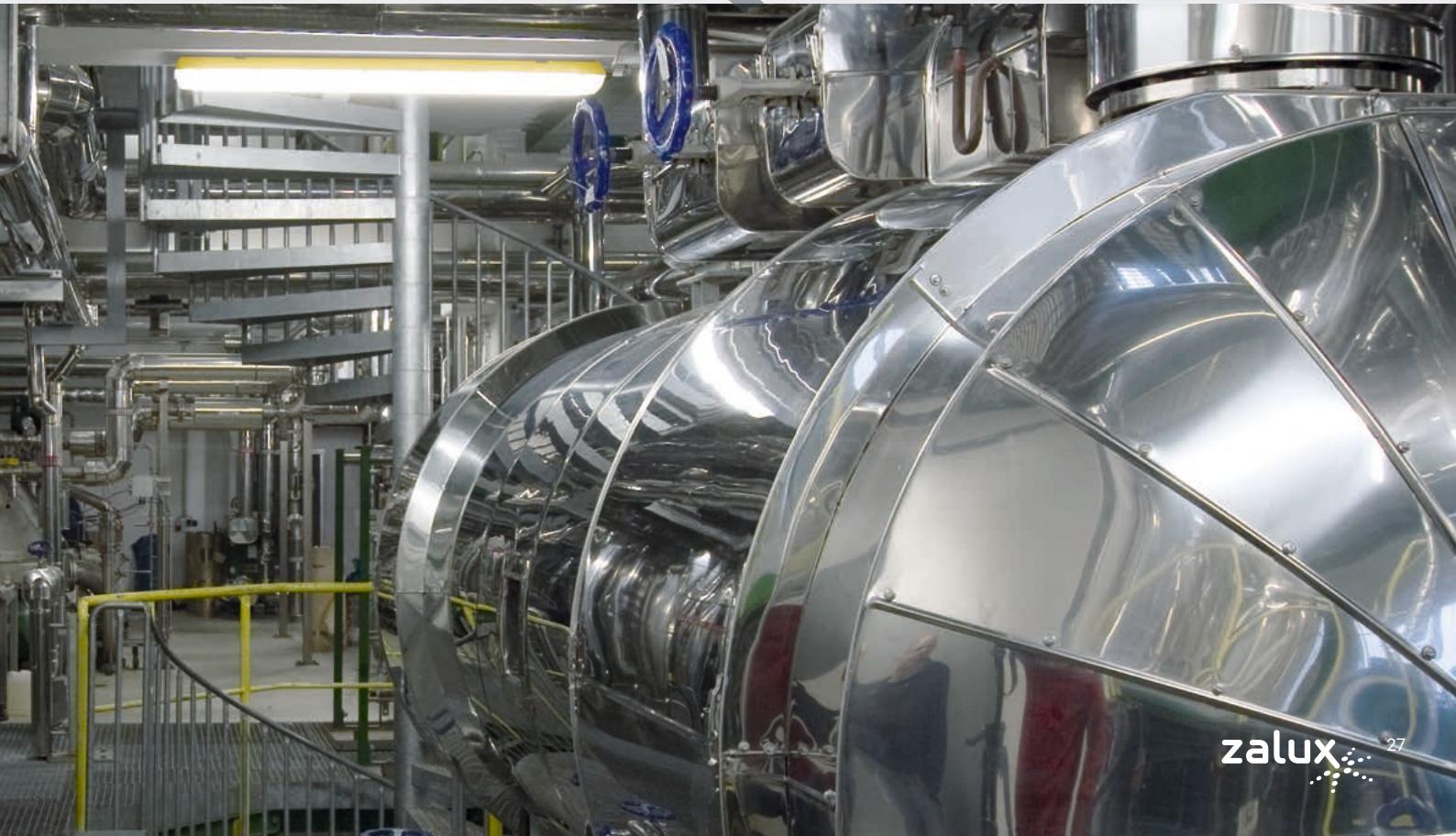


Zone 1, 21

Zone 2, 22



# HAIRE ACQUEX



## ACQUEEx TA

ZONE 1, 21

ZONE 2, 22

**Traditional aesthetics**  
luminaire for Ex zone 1



## Characteristics

### ACQUEEx TA

#### Mechanical

IP66/67 IK10	
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
Gear tray	White lacquered steel plate
Cable entry	With two holes on both sides and through wiring 2 cable glands and 1 stopping plug 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

	Frequency 0-50/60Hz	198-277 VAC	100-250 VDC	NON-SELV
Connection	3 pole push wire terminal block Through wiring 3x2.5			
Power factor	>0.95 full load			
THD	<10% full load			
Flicker factor	<1%			

#### Photometrical

Luminous flux	Up to 7,800lm
Efficiency	Up to 139lm/W
SDCM	3
Polar diagram	

# Applications



Oil refinery



Thermal



Petrochemical



Among the typical Ex zone 1 spaces of a refinery, piping and tank areas are located throughout the plant. A luminaire that can be **quickly installed on the ceiling and wall**, such as AQUEx TA, facilitates installation and maintenance in difficult to reach locations.

With **IK10 resistance**, it is a very reliable solution.

## Options

Special options in grey under request..

LENGTH (mm)	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	DIFFUSER
0.6: 600	28: 2800	8: 80	40: 4000	PC: polycarbonate
1.2: 1200	60: 6000	9: 90	50: 5000	
1.5: 1500	78: 7800		30: 3000	
			65: 6500	

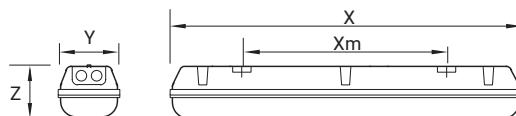
## Operational data

Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Temperature range <sup>1</sup>
ACQUEx TA Ex 0.6 28-840 PC	10349131	2800	23	122	-20°C - +50°C
ACQUEx TA Ex 0.6 28-850 PC	10349134	2800	23	122	-20°C - +50°C
ACQUEx TA Ex 1.2 60-840 PC	10349132	6000	45	133	-20°C - +50°C
ACQUEx TA Ex 1.2 60-850 PC	10349135	6000	45	133	-20°C - +50°C
ACQUEx TA Ex 1.5 78-840 PC	10349133	7800	56	139	-20°C - +50°C
ACQUEx TA Ex 1.5 78-850 PC	10349136	7800	56	139	-20°C - +50°C

<sup>1</sup> Maximum ambient temperature depends on required temperature class, refer to certificate and instructions

## Dimensions and logistics

Description	X	Xm	Y	Z	L x W x H mm	Item	KG	KG	Box	Groupage Pcs./pallet	FTL/container Pcs./Double pallet
	mm	mm	mm	mm							
ACQUEx TA Ex 06...	665	390	145	101	675 x 149 x 102	2.0	1	2.1	150	90 + 90	
ACQUEx TA Ex 1.2...	1282	800	145	101	1305 x 149 x 102	3.3	1	3.9	75	45 + 45	
ACQUEx TA Ex 1.5...	1578	1100	145	101	1605 x 149 x 102	4.0	1	4.5	75	45 + 45	



## Accessories

Description	Reference	Description	Reference
	10237125		10376675
Bag with 2 suspension triangles for ACQUEx		Nickel brass Ex cable gland, M20, with nut and ring, 1 unit	
	10256809		10376674
Fixing clips in stainless steel 316L, 2 units		Nickel brass Ex cable gland, M25, with nut and ring, 1 unit	

# ACQUEEx LED-M

ZONE 2, 22



## Characteristics

### ACQUEEx LED-M

#### Mechanical

	IP66 IK10
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
Gear tray	White lacquered steel plate
Cable entry	PA Ex cable gland M20 (M25 available)
Fixing clips	Stainless steel

#### Functional

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

#### Electrical

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 150lm/W
SDCM	3
Polar diagram	

# Applications



Power plant



Pharma



Workshop



Transport



Food



For auxiliary areas, like battery rooms, ACQUEEx offers **high efficiency** up to 173lm/W and long lifetime 70,000 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

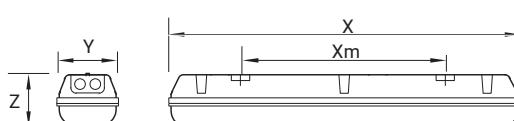
## Operational data

Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Luminous flux emergency	Temperature range
ACQUEEx LED-M 0.6 20-840 ET PC	10239012	2000	16	135	-	-20°C - +50°C
ACQUEEx LED-M 0.6 20-840 ETDD PC	10239013	2000	16	135	-	-20°C - +50°C
ACQUEEx LED-M 1.2 40-840 ET PC	10239015	4000	27	150	-	-20°C - +50°C
ACQUEEx LED-M 1.2 40-840 ETDD PC	10239016	4000	27	150	-	-20°C - +50°C
ACQUEEx LED-M 1.2 60-840 ET PC	10239018	6000	39	140	-	-20°C - +50°C
ACQUEEx LED-M 1.2 60-840 ETDD PC	10239019	6000	39	140	-	-20°C - +50°C
ACQUEEx LED-M 1.5 60-840 ET PC	10239021	6000	39	140	-	-20°C - +50°C
ACQUEEx LED-M 1.5 60-840 ETDD PC	10239022	6000	39	140	-	-20°C - +50°C
ACQUEEx LED-M 1.5 80-840 ET PC	10239024	8000	55	145	-	-20°C - +50°C
ACQUEEx LED-M 1.5 80-840 ETDD PC	10239025	8000	55	145	-	-20°C - +50°C
<b>EMERGENCY KIT</b>						
ACQUEEx LED-M 0.6 20-840 ET PC EB3	10239014	2000	21	100	200	0°C - +40°C
ACQUEEx LED-M 1.2 40-840 ET PC EB3	10239017	4000	32	125	350	0°C - +40°C
ACQUEEx LED-M 1.2 60-840 ET PC EB3	10239020	6000	45	125	470	0°C - +40°C
ACQUEEx LED-M 1.5 60-840 ET PC EB3	10239023	6000	44	135	470	0°C - +40°C
ACQUEEx 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	KG Item <sup>1</sup>	KG Pcs./Box	KG Box <sup>1</sup>	Groupage Pcs./pallet	FTL/container Pcs./Double pallet
	mm	mm	mm	mm						
ACQUEEx LED-M 0.6...	665	390	145	101	675 x 151 x 105	2.0	1	2.0	150	90 + 90
ACQUEEx LED-M 1.2...	1282	800	145	101	1289 x 151 x 105	3.3	1	3.3	75	45 + 45
ACQUEEx LED-M 1.5...	1578	1100	145	101	1589 x 151 x 105	4.0	1	4.0	75	45 + 45

<sup>1</sup> Weight in EB3 versions: +0.2KG



## Accessories

Description	Reference	Description	Reference
Bag with 2 suspension triangles for ACQUEEx	10237125	Nickel brass EX cable gland, M20, with nut and ring, 1 unit	10376675
Fixing clips in stainless steel 316L, 2 units	10256809	Nickel brass EX cable gland, M25, with nut and ring, 1 unit	10376674

## ACQUEEx LED-T8

ZONE 2, 22



## Characteristics

### ACQUEEx LED-T8

#### 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
Gear tray	White lacquered steel plate
Cable entry	PA Ex cable gland M20 (M25 available)
Fixing clips	Stainless steel

#### Functional

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

#### Electrical

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 6,000lm
Efficiency	Up to 122lm/W
SDCM	3
Polar diagram	

## Applications



Transport



Factory



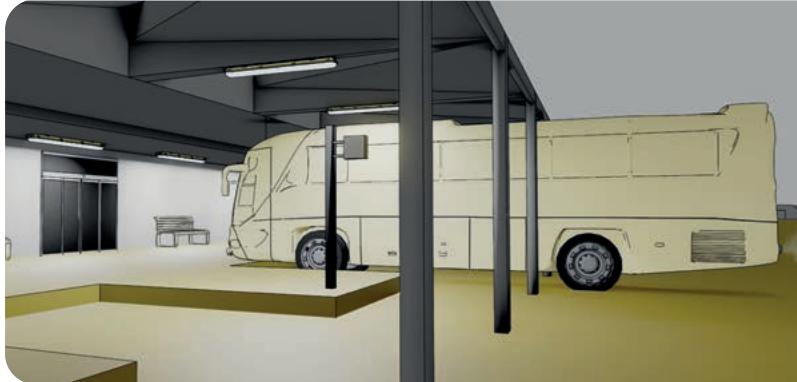
Workshop



Food



Laboratory



For Ex zone 2, ACQUEEx LED-T8 is an **openable** luminaire that incorporates a **high quality LED tube**.

Its versatility allows 1:1 replacement of traditional luminaires, **optimizing the installation work**.

## Options

Special options in grey under request..

LENGTH (mm)	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	DRIVER	THROUGH WIRING
1.2: 1200	22: 2200	8: 80	40: 4000	ET: non dimmable	LV5: 5x2,5mm <sup>2</sup> power lines
1.5: 1500	31: 3100		65: 6500	ETDD: DALI dimmable	LV3: 3x2,5mm <sup>2</sup> power lines + 2 DALI lines
	42: 4200				
	60: 6000				

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

## Operational data

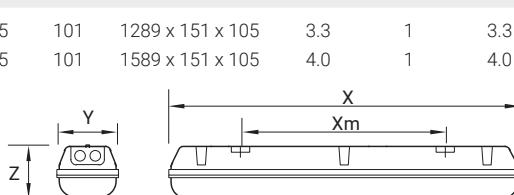
Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Temperature range
ACQUEEx LED-T8 1.2 22-840 ET	10343237	2200	18	122	-20°C - +40°C
ACQUEEx LED-T8 1.2 22-840 ETDD	10343238	2200	18	122	-20°C - +40°C
ACQUEEx LED-T8 1.2 42-840 ET	10330383	4200	35	120	-20°C - +30°C
ACQUEEx LED-T8 1.2 42-840 ETDD	10343241	4200	35	120	-20°C - +30°C
ACQUEEx LED-T8 1.5 31-840 ET	10343244	3100	26	119	-20°C - +30°C
ACQUEEx LED-T8 1.5 31-840 ETDD	10343245	3100	26	119	-20°C - +30°C
ACQUEEx LED-T8 1.5 60-840 ET	10343248	6000	50	120	-20°C - +25°C
ACQUEEx LED-T8 1.5 60-840 ETDD	10343249	6000	50	120	-20°C - +25°C
THROUGH WIRING					
ACQUEEx LED-T8 1.2 22-840 ET LV5	10343239	2200	18	122	-20°C - +40°C
ACQUEEx LED-T8 1.2 22-840 ETDD LV3	10343240	2200	18	122	-20°C - +40°C
ACQUEEx LED-T8 1.2 42-840 ET LV5	10343242	4200	35	120	-20°C - +30°C
ACQUEEx LED-T8 1.2 42-840 ETDD LV3	10343243	4200	35	120	-20°C - +30°C
ACQUEEx LED-T8 1.5 31-840 ET LV5	10343246	3100	26	119	-20°C - +30°C
ACQUEEx LED-T8 1.5 31-840 ETDD LV3	10343247	3100	26	119	-20°C - +30°C
ACQUEEx LED-T8 1.5 60-840 ET LV5	10343250	6000	50	120	-20°C - +25°C
ACQUEEx LED-T8 1.5 60-840 ETDD LV3	10343251	6000	50	120	-20°C - +25°C

2200 and 3100lm versions: 1 LED tube.

4200 and 6000lm versions: 2 LED tubes.

## Dimensions and logistics

Description	X	Xm	Y	Z	L x W x H mm	KG	KG	Box	Groupage Pcs./pallet	FTL/container Pcs./Double pallet
	mm	mm	mm	mm						
ACQUEEx LED-T8 1.2...	1282	800	145	101	1289 x 151 x 105	3.3	1	3.3	75	45 + 45
ACQUEEx LED-T8 1.5...	1578	1100	145	101	1589 x 151 x 105	4.0	1	4.0	75	45 + 45



## Accessories

Description	Reference	Description	Reference
 Bag with 2 suspension triangles for ACQUEEx	10237125	 Nickel brass EX cable gland, M20, with nut and ring, 1 unit	10376675
 Fixing clips in stainless steel 316L, 2 units	10256809	 Nickel brass EX cable gland, M25, with nut and ring, 1 unit	10376674

Connected explosion proof luminaire with Ex db eb protection and a wide range of options

Usual applications:

KRATEx  
Zone 1, 21



Oil gas



Petrochemical



Power plant

KRATEx 300  
Zone 1, 21



Power plant



Factory



Laboratory



Zone 1, 21



KRATEX



zalux

KRATEEx

ZONE 1, 21

Wireless & monitoring optional, for  
predictive maintenance and monitoring  
for non-easy access luminaires

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



Through wiring available

Flame-proof, with  
protection mode Ex db

5 YEARS  
warranty



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

ATEX certificate No: INERIS 20ATEX0006X  
IECEx certificate No: IECEx INE 20.0005X



RoHS REACH



## Characteristics

### Mechanical

#### KRATEEx GLASS

#### KRATEEx PC

#### 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): Glow wire test (EN 60595-2-11):	V2 850°C	

### Electrical



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

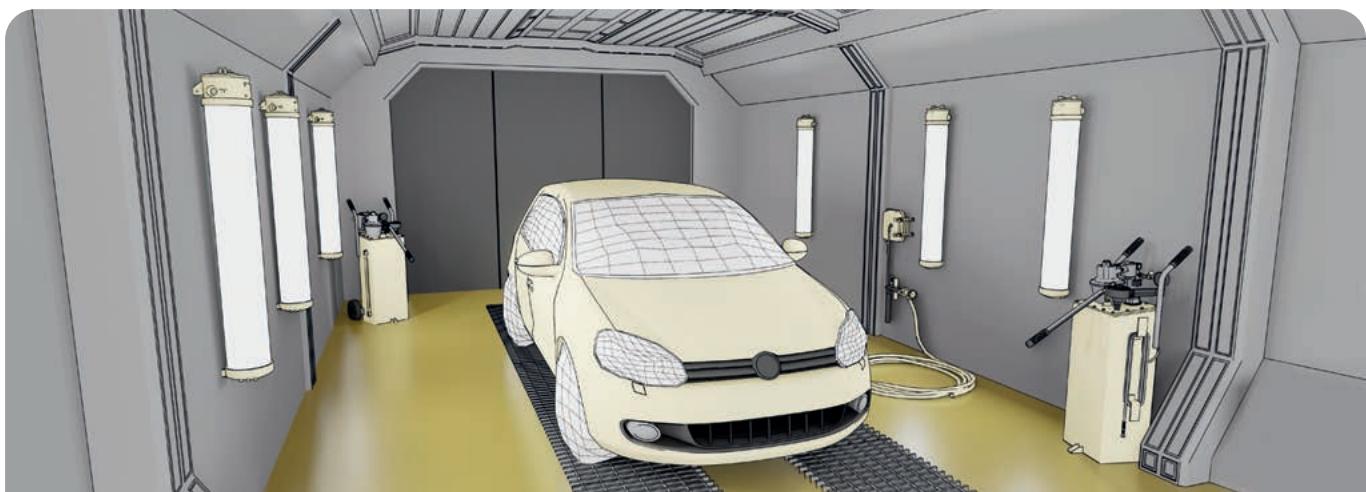
## KRATEEx GLASS



Petrochemical industries require high resistance products. KRATEEx 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.

## KRATEEx PC



KRATEEx 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 MESG**, means it is appropriate for environments where gases are present.

## Options

Special options in grey under request..

LENGTH (mm)	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	DRIVER	PROFILE	THROUGH WIRING	EMERGENCY KIT
300 / 0.3: 300	20: ~2500	8: >80	40: 4000	ET: non dimmable	GLASS: borosilicate glass	3x2.5mm <sup>2</sup>	NiCd
600 / 0.6: 600	40: ~5000		65: 6500	ETDD: DALI dimmable	PC: polycarbonate		EB1: 1 hour
1200	100: ~11000			ETDD_CS: Casambi dimmable			EB3: 3 hours
				ETWD: wireless monitoring system			EB1.: 1 hours + autotest
							EB3.: 3 hours + autotest
							LFP or NiMh under request

KRATEEx 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).

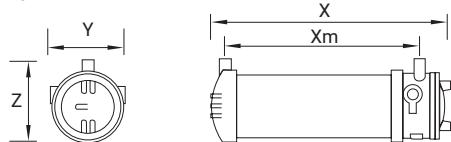
This means KRATEEx is **suitable for environments where gases are present**.



## Dimensions and logistics

Description	X mm	Xm mm	Y mm	Z mm	L x W x H mm	KG Item <sup>1</sup>	Pcs./Box	KG Box	Groupage Pcs./pallet	FTL/container Pcs./Double pallet
<b>GLASS</b>										
KRATEEx ... 300 / 0.3...	485	375	157	173	510 x 170 x 220	6.3	1	4.6	4.8	32 + 32
KRATEEx ... 600 / 0.6...	750	640	157	173	780 x 170 x 220	6.3	1	6.6	48	32 + 32
KRATEEx HE 1200...	1360	1250	157	173	1390 x 170 x 220	11.2	1	11.6	24	16 + 16
<b>PC</b>										
KRATEEx ... 300 / 0.3...	485	375	157	173	510 x 170 x 220	4.1	1	4.4	48	32 + 32
KRATEEx ... 600 / 0.6...	750	640	157	173	780 x 170 x 220	5.6	1	5.9	48	32 + 32
KRATEEx HE 1200...	1360	1250	157	173	1390 x 170 x 220	10.3	1	11.2	24	16 + 16

<sup>1</sup> Weight in EB versions: +0.6KG, and in 3x2.5 versions: +0.1KG



## Operational data

Description	Reference	Luminous flux (lm)	Power (W)	Efficiency (lm/W)	Luminous flux emergency	Temperature range <sup>3</sup>
<b>GLASS</b>						
KRATEx HE 300 13-840 ET Glass	10287645	1300	11	120	-	-20°C - +55°C
KRATEx HE 300 25-840 ET Glass	10287647	2500	20	125	-	-20°C - +55°C
KRATEx HE 600 27-840 ET Glass	10169102	2650	20	135	-	-20°C - +55°C
KRATEx HE 600 27-840 ET Glass 3x2.5	10203323	2650	20	135	-	-20°C - +55°C
KRATEx HE 600 27-840 ETDD Glass	10203324	2650	20	135	-	-20°C - +55°C
KRATEx HE 600 27-840 ETDD Glass CS <sup>2</sup>	10203325	2650	20	135	-	-20°C - +55°C
KRATEx HE 1200 50-840 ET Glass	10169108	5000	40	125	-	-20°C - +55°C
KRATEx HE 1200 50-840 ET Glass 3x2.5	10203321	5000	40	125	-	-20°C - +55°C
KRATEx HE 1200 50-840 ETDD Glass	10203322	5000	40	125	-	-20°C - +55°C
KRATEx HE 1200 50-840 ETDD Glass CS <sup>2</sup>	10203323	5000	40	125	-	-20°C - +55°C
KRATEx HE 1200 118-840 ET Glass	10223633	11750	80	150	-	-20°C - +55°C
KRATEx HE 1200 118-840 ETDD Glass	10223634	11750	80	150	-	-20°C - +55°C
<b>EMERGENCY KIT<sup>1</sup></b>						
KRATEx HE 300 25-840 ET Glass EB1.	10287644	2500	24	110	800	0°C - +55°C
KRATEx HE 600 27-840 ET Glass EB1.	10203312	2650	30	88	800	0°C - +55°C
KRATEx HE 600 27-840 ET Glass EB3.	10203313	2650	30	105	800	0°C - +55°C
KRATEx HE 600 27-840 ETDD Glass EB1	10203328	2650	24	105	800	0°C - +55°C
KRATEx HE 1200 50-840 ET Glass EB1.	10169110	5000	45	110	800	0°C - +55°C
KRATEx HE 1200 50-840 ET Glass EB3.	10169112	5000	45	110	800	0°C - +55°C
KRATEx HE 1200 50-840 ETDD Glass EB1	10203319	5000	40	125	800	0°C - +55°C
KRATEx HE 1200 50-840 ETDD Glass EB3	10203320	5000	45	110	800	0°C - +55°C
<b>NON PERMANENT EMERGENCY<sup>1</sup></b>						
KRATEx NS HE 0.3 4-840 ET Glass EB1.	10287640	-	4	-	400	0°C - +55°C
KRATEx NS HE 0.3 4-840 ET Glass EB3.	10287641	-	4	-	400	0°C - +55°C
KRATEx NS HE 0.3 8-840 ET Glass EB3.	10287643	-	5	-	800	0°C - +55°C
KRATEx NS HE 0.6 8-840 ET Glass EB1.	10169104	-	4	-	800	0°C - +55°C
KRATEx NS HE 0.6 8-840 ET Glass EB3.	10169106	-	5	-	800	0°C - +55°C
<b>PC</b>						
KRATEx HE 300 13-840 ET PC	10287649	1250	11	115	-	-20°C - +50°C
KRATEx HE 300 22-840 ET PC	10287651	2150	20	110	-	-20°C - +50°C
KRATEx HE 600 25-840 ET PC	10169101	2500	20	125	-	-20°C - +50°C
KRATEx HE 600 25-840 ET PC 3x2.5	10203309	2500	20	125	-	-20°C - +50°C
KRATEx HE 600 25-840 ETDD PC	10203310	2500	20	125	-	-20°C - +50°C
KRATEx HE 600 25-840 ETDD PC CS <sup>2</sup>	10203311	2500	20	125	-	-20°C - +50°C
KRATEx HE 1200 48-840 ET PC	10169107	4750	40	120	-	-20°C - +50°C
KRATEx HE 1200 48-840 ET PC 3x2.5	10203316	4750	40	120	-	-20°C - +50°C
KRATEx HE 1200 48-840 ETDD PC	10203317	4750	40	120	-	-20°C - +50°C
KRATEx HE 1200 48-840 ETDD PC CS <sup>2</sup>	10203318	4750	40	120	-	-20°C - +50°C
KRATEx HE 1200 110-840 ET PC	10203335	11000	80	140	-	-20°C - +50°C
KRATEx HE 1200 110-840 ETDD PC	10203336	11000	80	140	-	-20°C - +50°C
<b>EMERGENCY KIT<sup>1</sup></b>						
KRATEx HE 300 22-840 ET PC EB1.	10287636	2150	24	90	750	0°C - +55°C
KRATEx HE 600 25-840 ET PC EB1.	10203326	2500	24	100	750	0°C - +55°C
KRATEx HE 600 25-840 ET PC EB3.	10203327	2500	30	83	750	0°C - +55°C
KRATEx HE 600 25-840 ETDD PC EB1	10203314	2500	24	104	750	0°C - +55°C
KRATEx HE 600 25-840 ETDD PC EB3	10203315	2500	30	83	750	0°C - +55°C
KRATEx HE 1200 48-840 ET PC EB1.	10169109	4750	40	118	750	0°C - +55°C
KRATEx HE 1200 48-840 ET PC EB3.	10169111	4750	45	110	750	0°C - +55°C
KRATEx HE 1200 48-840 ETDD PC EB1	10203333	4750	40	120	750	0°C - +55°C
KRATEx HE 1200 48-840 ETDD PC EB3	10203334	4750	45	110	750	0°C - +55°C
KRATEx HE 1200 110-840 ET PC EB3	10381502	11000	80	137	750	0°C - +50°C
<b>NON PERMANENT EMERGENCY<sup>1</sup></b>						
KRATEx NS HE 0.3 4-840 ET PC EB3.	10287633	-	5	-	350	0°C - +50°C
KRATEx NS HE 0.3 8-840 ET PC EB3.	10287635	-	5	-	750	0°C - +50°C
KRATEx NS HE 0.6 8-840 ET PC EB1.	10169103	-	5	-	750	0°C - +50°C
KRATEx NS HE 0.6 8-840 ET PC EB3.	10169105	-	5	-	750	0°C - +50°C

<sup>1</sup> Emergency luminaires have a special voltage and frequency range because they do not admit Vdc, therefore it is: 220-240V 50-60Hz.

<sup>2</sup> The luminaires with Casambi CS module, do not admit Vdc or 60Hz, therefore it is: 220-240V 50Hz.

<sup>3</sup> Up to +55°C under request (for versions without emergency)

## Accessories

See KRATEx range accessories on page 40.

# KRATEx 300

Complies with French emergency lighting regulations

## ZONE 1, 21



## Characteristics

### Mechanical

#### KRATEx 300 GLASS

#### KRATEx 300 PC

#### 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): Glow wire test (EN 60595-2-11):	V2 850°C	

### Electrical



Connection	3 pole push wire terminal block		
Power factor		>0.95 full load	
THD		<10% full load	

## 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	Special V4A 316 stainless steel fixing bracket, 1 unit <sup>1</sup>	10141679
Pictogram KRATEx 300 Kit Exit+Arrow	10335715	Screw V4A 316 stainless steel for fixing bracket, 1 unit <sup>1</sup>	10141680

<sup>1</sup> 2 pieces required per luminaire

# Applications



In data centers, efficiency is especially important, as is **security**. In emergency situations, KRATEx is a reliable luminaire that responds to the light needs of these spaces.

It incorporates a **specific pictogram** internationally recognized for this objective.

## Options

VERSION <sup>1</sup>	LENGTH (mm)	LUMINOUS FLUX (lm)	CRI	LIGHT COLOUR (K)	DRIVER	PROFILE	EMERGENCY KIT	PICTOGRAM	BATTERY <sup>2</sup>	AUTOTEST
NS: non-maintained emergency	0.3/300: 300	10: 430 0.45: 70	8: 80	40: 4000	ET: non dimmable	PC: polycarbonate GLASS: borosilicate glass	EB1: 1 hour	PICT: with EXIT pictogram	LFP: LiFePO4	Bi-colour LED D+: wired to unit control DW: unit control wireless connection

<sup>1</sup> All versions are non-maintained.

<sup>2</sup> All versions include LiFePO4 battery.

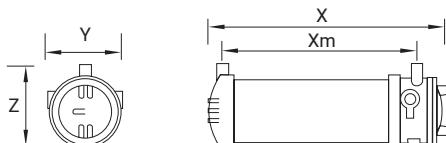
## Operational data

Description	Reference	Luminous flux emergency	Temperature range
<b>WITHOUT EXIT PICTOGRAM<sup>1</sup></b>			
KRATEEx NS HE 0.3 10-840 ET PC EB1 LFP	10287710	430	0°C +55°C
KRATEEx NS HE 0.3 10-840 ET PC EB1 LFP D+	10287711	430	0°C +55°C
KRATEEx NS HE 0.3 10-840 ET PC EB1 LFP DW	10287712	430	0°C +55°C
KRATEEx NS HE 0.3 10-840 ET GLASS EB1 LFP	10287713	470	0°C +55°C
KRATEEx NS HE 0.3 10-840 ET GLASS EB1 LFP D+	10287714	470	0°C +55°C
KRATEEx NS HE 0.3 10-840 ET GLASS EB1 LFP DW	10287715	470	0°C +55°C
<b>WITH EXIT PICTOGRAM</b>			
KRATEEx HE 300 0.45-840 ET PC EB1 PICT	10287704	70	0°C +55°C
KRATEEx HE 300 0.45-840 ET PC EB1 PICT D+	10287705	70	0°C +55°C
KRATEEx HE 300 0.45-840 ET PC EB1 PICT DW	10287706	70	0°C +55°C
KRATEEx HE 300 0.45-840 ET GLASS EB1 PICT	10287707	70	0°C +55°C
KRATEEx HE 300 0.45-840 ET GLASS EB1 PICT D+	10287708	70	0°C +55°C
KRATEEx HE 300 0.45-840 ET GLASS EB1 PICT DW	10287709	70	0°C +55°C

<sup>1</sup> Pictogram can be ordered separately as an accessory, see previous page

## Dimensions and logistics

Description	X mm	Xm mm	Y mm	Z mm	L x W x H mm	KG Item	Pcs./Box	KG Box	Groupage Pcs./pallet	FTL/container Pcs./Double pallet
<b>GLASS</b>										
KRATEEx ... 0.3 / 300...	485	375	157	173	510 x 170 x 220	4.6	1	4.8	48	32 + 32
<b>PC</b>										
KRATEEx ... 0.3 / 300...	485	375	157	173	780 x 240 x 180	4.1	1	4.4	48	32 + 32



# 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



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



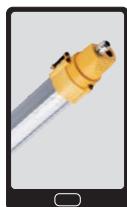
#### Mesh connection

- 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](http://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.

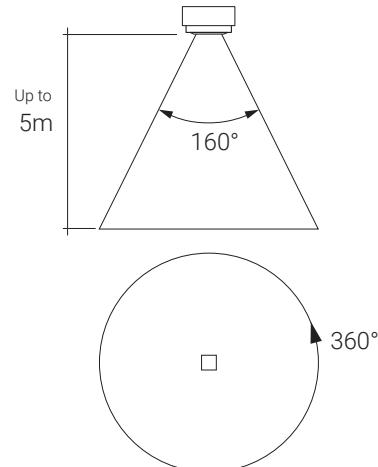
- Optimize the lighting configuration around the clock to get **up to 45% savings** during business hours.
- Daylight sensor take advantage of the natural light to provide the needed lighting level with **up to 60% savings**.

### 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
---------	-------------------------

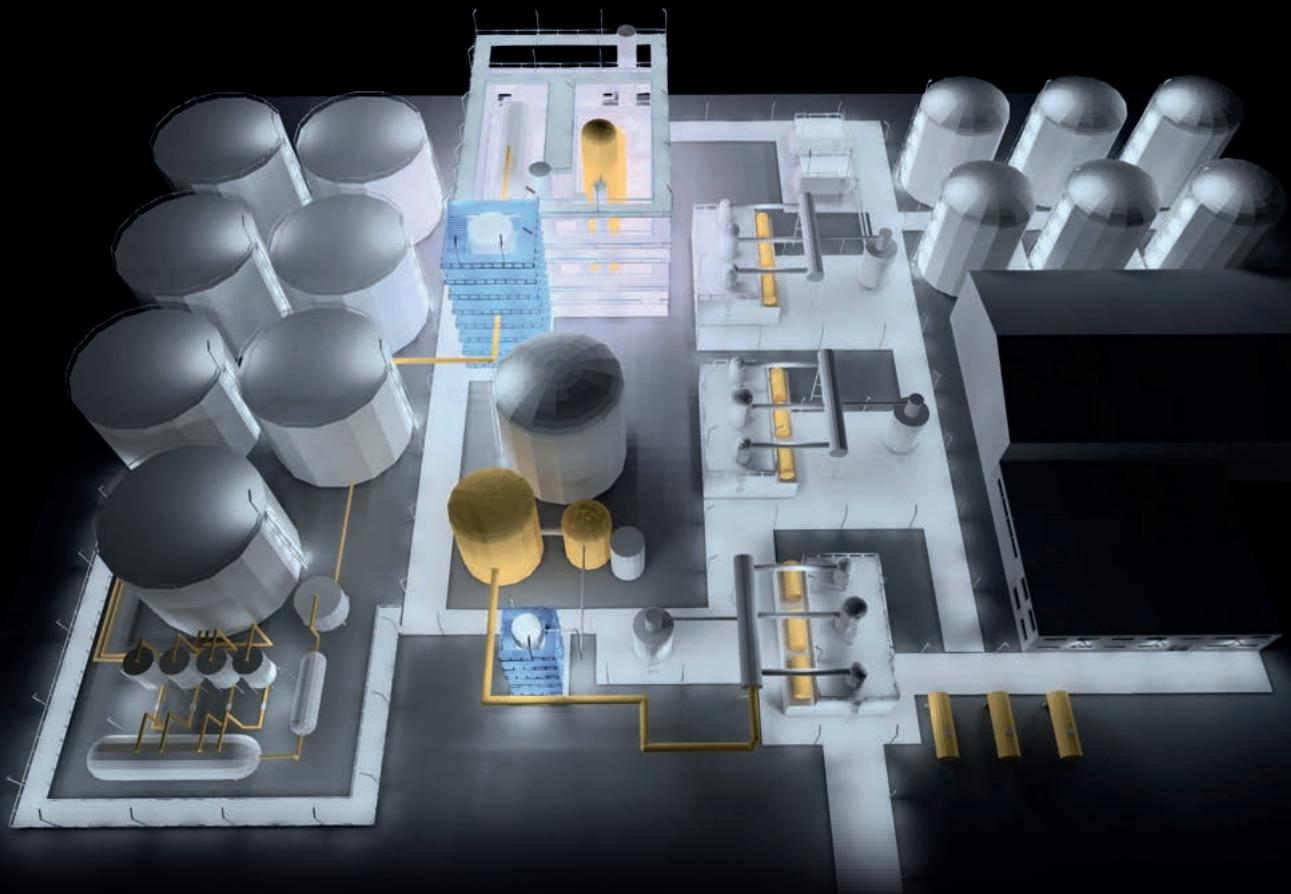
	STRONGEx G2	
	KRATEx	

# Case study

## OIL REFINERY



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



OUTDOOR AREAS

INDOOR WAREHOUSE

# 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.

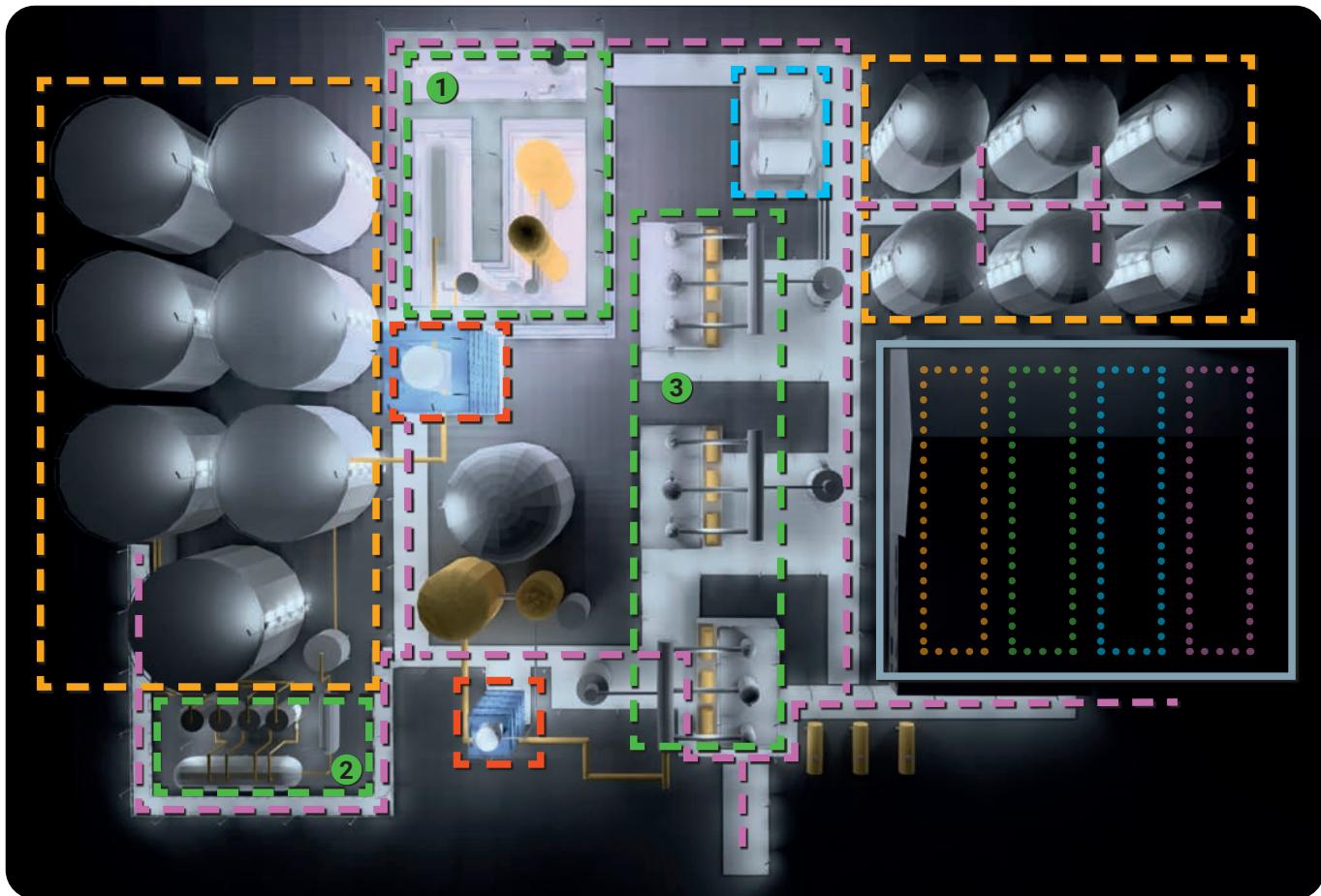


Extreme dust and impact protection combined with robust mounting guarantees quality lighting over long periods of time

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

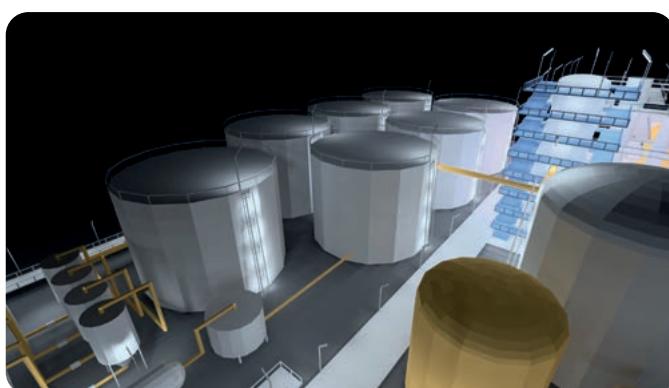


## OUTDOOR AREAS

— TANKS AREA	— PEDESTRIAN AREA	····· MAINTENANCE AREA	····· OPEN AREA WAREHOUSE
— OIL STORAGE	— STAIRS	····· OIL STORAGE	····· SHELVING WAREHOUSE
— PROCESSING AREA			

## INDOOR WAREHOUSE

### Tanks area Ex zone 1



### STRONGEx1 G2 S1 12 PVW 56-840 ET



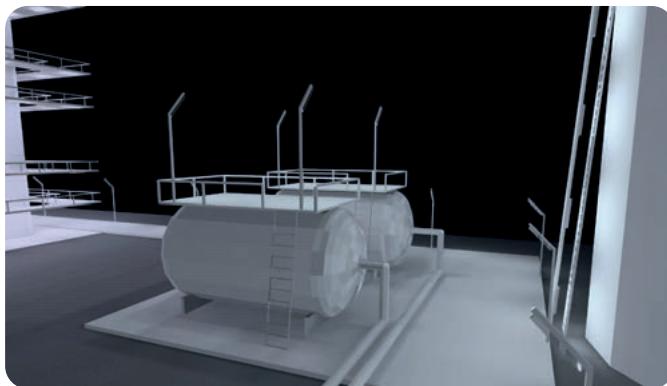
#### Requirements

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

#### 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 MESG, for environments where gases are present.

## 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.

## Processing area 2 Ex zone 1



### Requirements

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

## KRATEx HE 1200 118-840 ET Glass

$E_{med}$ : 150lux |  $Uo$ : 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.

## ACQUEEx LED-M 1.5 80-840 ETDD PC

$E_{med}$ : 200lux |  $Uo$ : 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.

## STRONGEx1 G2 S1 12 PVW 56-840 ET EB3

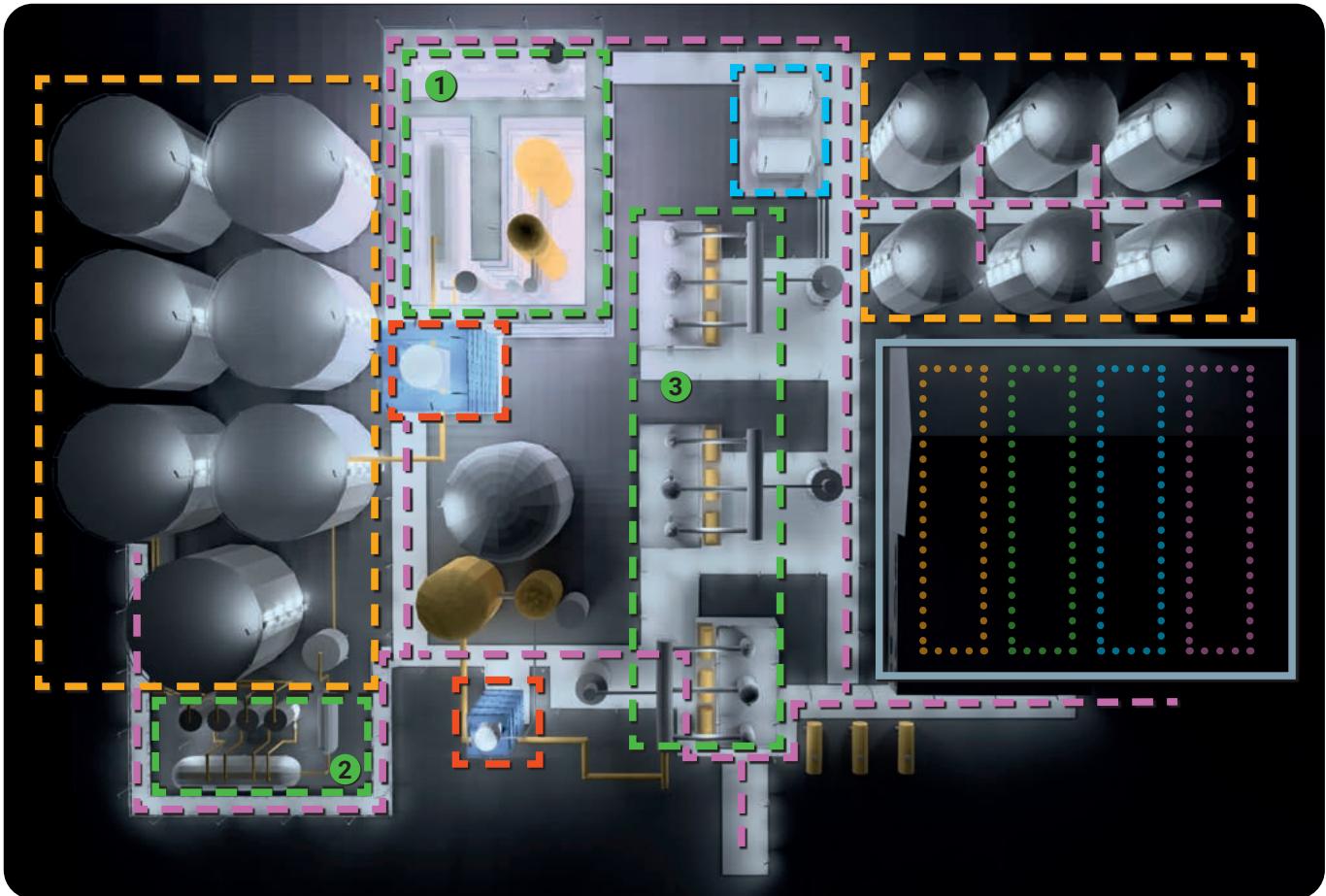
$E_{med}$ : 200lux |  $Uo$ : 0.5



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

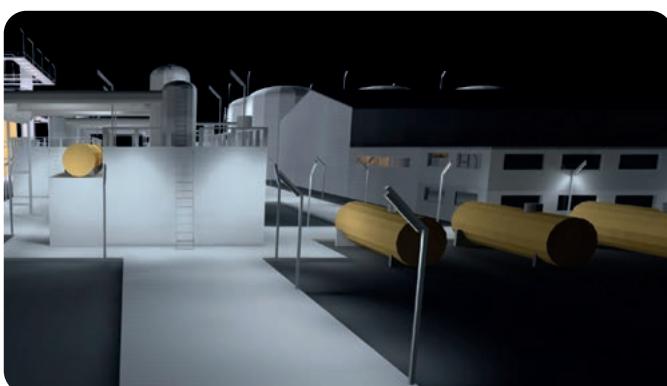
— TANKS AREA  
— OIL STORAGE  
— PROCESSING AREA

### 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



### Key Characteristics

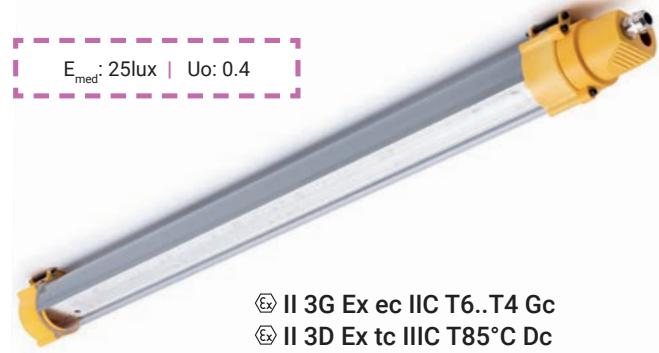
- Wide temperature range up to +55°C, for outdoor environments.
- With different optics to reduce the number of needed luminaires, so less investment is required.

## Pedestrian area Ex zone 2



### STRONGEx2 G2 S2 12 PN 60-840 ET

E<sub>med</sub>: 25lux | Uo: 0.4



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

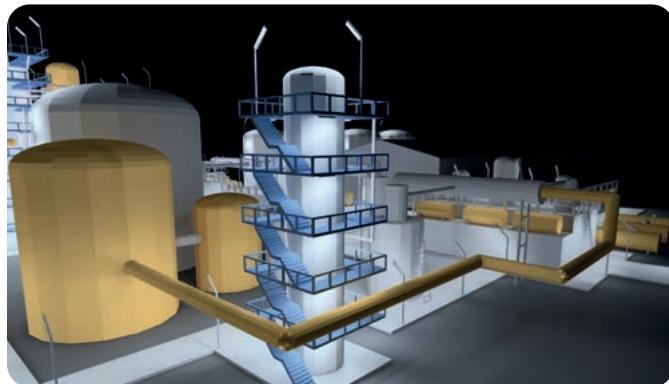
#### Requirements

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

#### Key Characteristics

- Profile made in PMMA with extreme resistance to withstand impacts and chemical agents.
- Ready for high temperature environments up to 55°C.

## Stairs Ex zone 2

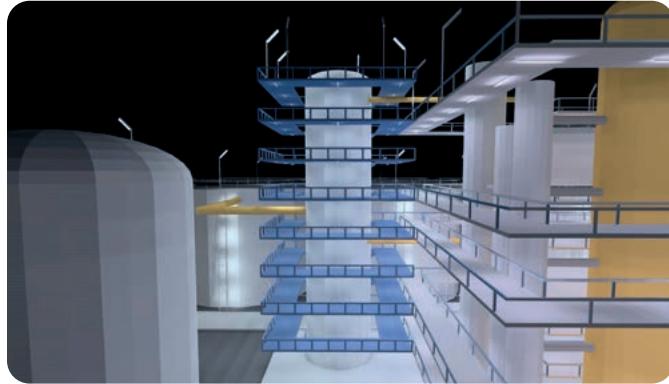


### STRONGEx2 G2 S2 12 PN 60-840 ETCS LV

E<sub>med</sub>: 200lux | Uo: 0.5



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



#### Key Characteristics

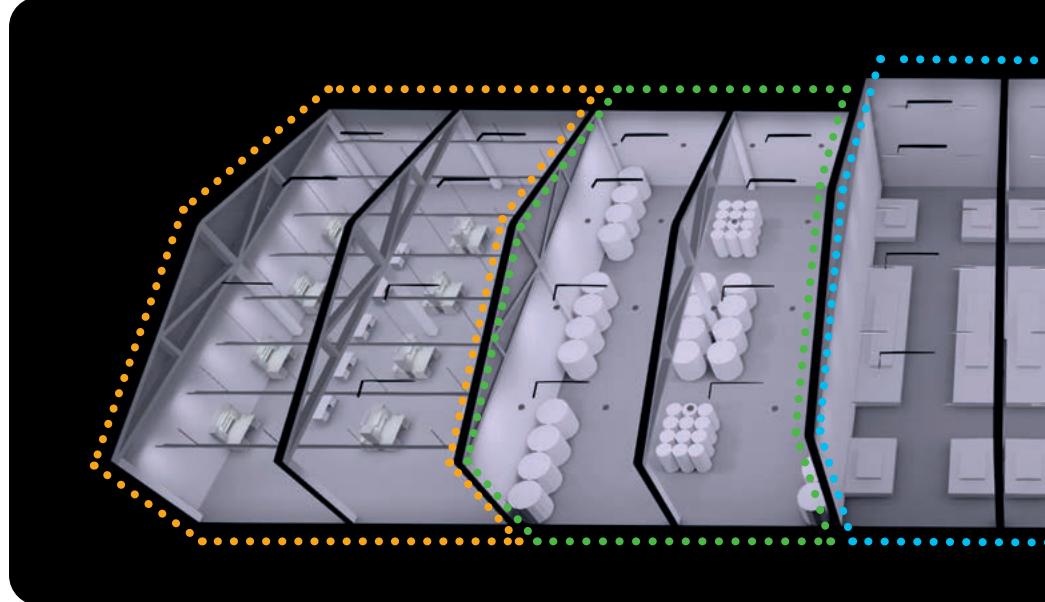
- With narrow optics to direct the light where it is needed..
- Wireless control for remote monitoring and easier maintenance, specially for luminaires installed in difficult to reach locations..

#### Requirements

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

## 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.

#### STRONGEx2 G2 S2 12 PN 60-840 ETCS LV



#### Key Characteristics

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

### Chemical products storage Ex zone 2



#### Requirements

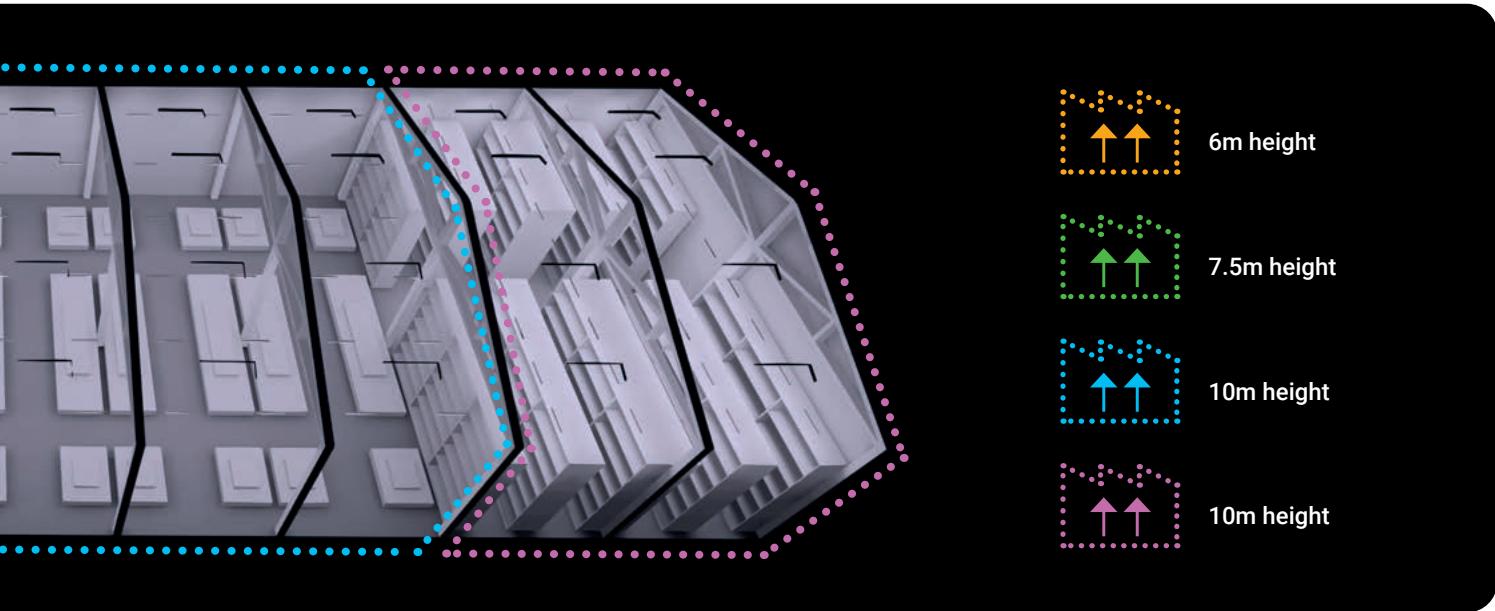
- Suspended installation with eyebolts and chain, or surface mounted on walls or tubes with brackets to reinforce light where it is needed.
- High resistance to chemicals.

#### OREx2 G2 38 232-840 0.25M



#### Key Characteristics

- Copper-free aluminium alloy housing, which withstands corrosion from ammonia or hydrogen sulphide.
- Accessories to make installation easier.



## 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 |  $Uo$ : 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 |  $Uo$ : 0.4



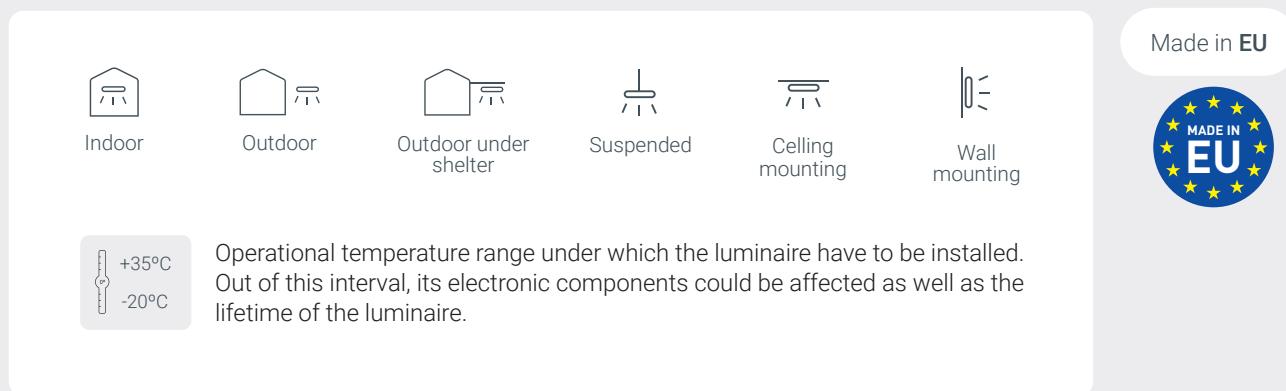
### Key Characteristics

- 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.

# 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](http://www.zalux.com) for current versions of product documentation.



## 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.



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.



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).



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



Automotive



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
Isopropylic 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
Pothassium bromide	✓	✓	Ø	✓	Ø
Pothassium nitrate	✓	✓	✓	✓	Ø
Pothassium 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 605929 and UNE-EN 60598-1 standards.

↓  
**IP66**

Protection against the penetration of solid matter and dust.

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

↓  
**IP66**

Protection against the penetration of liquids.

<b>0</b>	Unprotected
<b>1</b>	Protected against vertical water splashes (condensation)
<b>2</b>	Protected against water splashes of up to 15° of the vertical
<b>3</b>	Protected against water splashes of up to 60° of the vertical
<b>4</b>	Protected against water projections in all directions
<b>5</b>	Protected against water assault in all directions
<b>6</b>	Protected against water assault similar to heavy seas
<b>7</b>	Protected against immersion
<b>8</b>	Protected against prolonged effects of underwater immersion
<b>9(80)1</b>	Protected against high-pressure and temperature water jet.

<sup>1</sup> IPX9(80) degree taken from EN 60529, not applying to ATEX electrical equipment.

## Impact protection: IK

↓↓  
**IK08**

<b>00</b>	Unprotected
<b>01</b>	Impact Energy 0.15 Joules
<b>02</b>	Impact Energy 0.20 Joules
<b>03</b>	Impact Energy 0.35 Joules
<b>04</b>	Impact Energy 0.50 Joules
<b>05</b>	Impact Energy 0.70 Joules
<b>06</b>	Impact Energy 1 Joule
<b>07</b>	Impact Energy 2 Joules
<b>08</b>	Impact Energy 5 Joules
<b>09</b>	Impact Energy 10 Joules
<b>10</b>	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/](http://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/](http://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

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