

# Explosion Proof lighting solutions

**Designing your lighting solutions** 

IINNO Intelligent Innovations, Ltd. "Explosion-Proof Lights Catalogue" April 2019 ALL DR. D. D.













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They can be used as fixed lighting in places with potentially explosive atmospheres, such as:

- Petrochemical plants
- Oil platforms
- Oil pump housing
- Transit stations

Gas & Dust explosive zone enviroments: Group IIA, IIB, IIC Zone 1, Zone 2, Zone 21, Zone 22

# **Characteristics**

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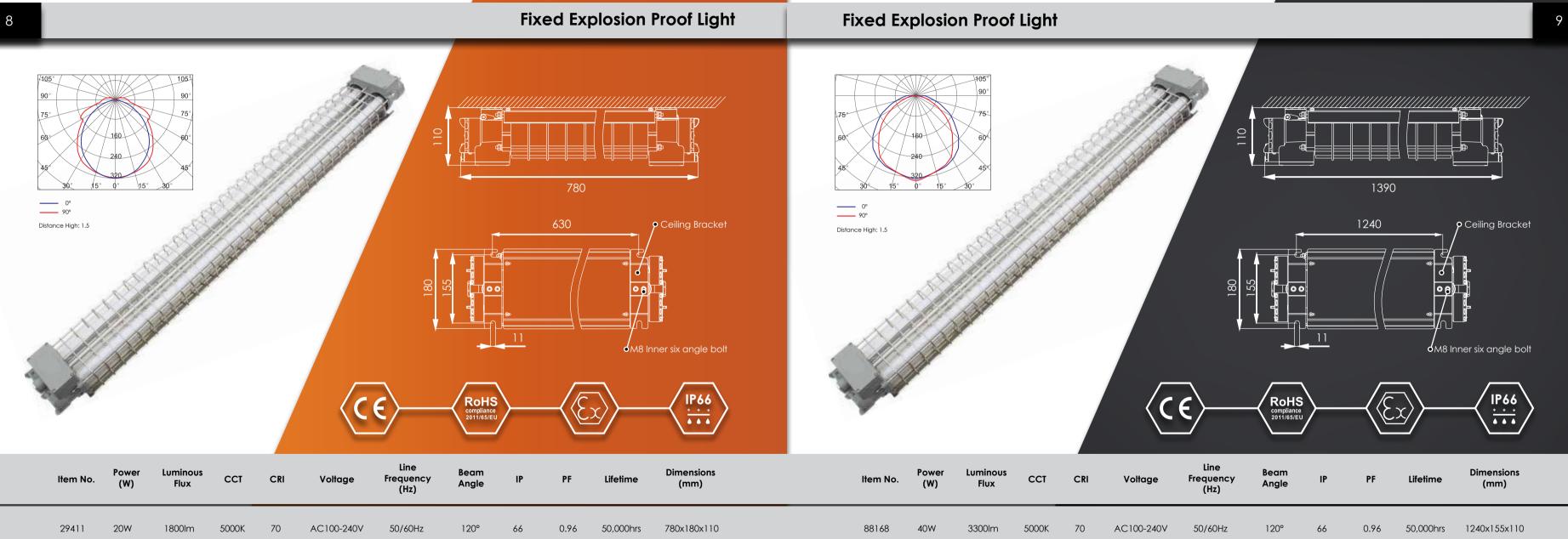
Made with a special aluminum housing, suitable for long-term exposure in the highly corrosive environment of offshore platforms, chlor-alkali, hydrogen sulfide, etc.

The derrick mounting fixtures are made of anti-corrosive aluminum and include locking angle equipment, so they can be safely used in drilling platforms and high-vibration environment.

The anti corrosion, abrasion proof, dust proof and water proof powder coated housings make these lights an excellent choice for usage in high pressure environments.

Bracket, reflector, guard and all exposed fasteners are made of type 304 stainless steel (customizable to type 316), which can effectively guarantee the durability and strong anti-corrosion performance of the lamp.

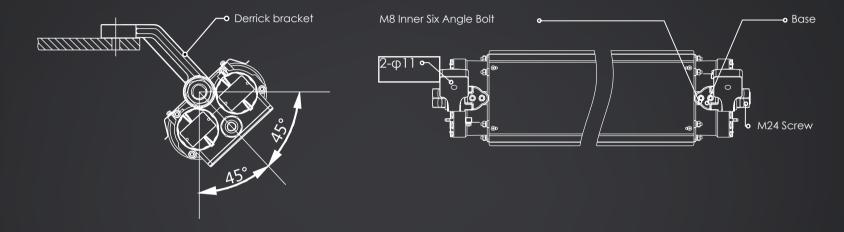
Elimination of junction boxes and installation costs. A variety of installation methods are available: ceiling, side walls, curved rods, with boom, etc.



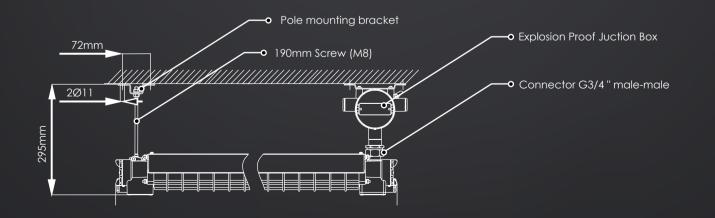
#### Fixed Explosion Proof Light / Installation types

## Fixed Explosion Proof Light / Installation Types

 $\rightarrow$  Derrick Installation



 $\rightarrow$  Pole mounting



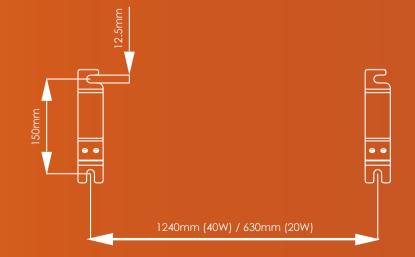


→ Sidewall Installation





- M10 Inner six angle bolt



Classification and Flammable medium	nd labelling of hazardous Hazardous locations	locations Classification	Draduat ala			_	Classifi							
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			Product group	Produc catego								1		
	Continuously, for long periods or frequently	Zone 0	II					3	Ammonia Methane Ethane Propane	Ethanol Cyclohe-xene n-Butane	Petrol Diesel fuel Fuel oil n- Hexane	Acetal - dehyde		
Gases, mists, vapours	Likely to occur	Zone 1	II	1G 2G	G	a Gb —		IIC	City gas Acrylic nitrile	Ethylene Ethylene- oxide	Ethyl-glycol Carbon hydrogen	Ethyl-ether		
	Infrequently and for short periods only	Zone 2	Ш	20	3G	Gc			Hydrogen	Acetylene				Carbon disulphide
	Continuously, for long	Zone 20							T1< 450°C		1			
	periods or frequently								T2< 300°C			1		
Dusts	Likely to occur	Zone 21	Ш	1D	D	a			T3< 200°C T4< 135°C				ł	
	Infrequently and for short periods only	Zone 22	11	2D	3D	Db Dc			T5< 100°C T6< 85°C					
Offic code number 0080	cial Institutes Institute Notified Body INERIS								max. temperat		sed surface of t shown (e.g. T80	he product. For	mperature class i r dust explosion pi	
		<mark>∕£x</mark> ∕	II 2G II 2D	Ex d e Ex o p		IIC T5	G C D				Tamb =-	40°C to +55	бС	
Prevents transmis		flameproof	↓ Ex d		1,2	EN 60079-	IIIA	+		flammable fib	res			
Prevents high temperatures and		enclosure increased safety	Exe		1,2	1 EN 60079-7	1116	B IIIC		on conductive		_	For common use	-
Low current / vol		intrinsic safety	Ex I (1) Ex iD (2)		0,1,2, 20,21,2	EN 60079-				conductive d	ust	_		
Positive pressure	device	pressurized apparatus	Ex p Ex pD	Т <u>х</u>	1,2, 21,22	EN 60079-	Code			Dust classifica	tion		For use under	
Encapsulated		moulding	Ex m (3) Ex mD (4)	1	0,1,2, 20,21,2	EN 60079-	8			long pe	riods of immersior		special conditions	Х
Parts immersed ir from explosive at		oil immersion	Ex o		1,2	EN 60079-	7	tally prot	- tected against du	the effects of	of temporary imm g jets of water			
Prevents transmis explosion outside	ision of	powder filling	Ex q	1	1,2	EN 60079- 5	5 4	dust-l	limited ingress	low pressure	e jets from all directions		This product is an Ex-certified	
As above, but for zone 2		protection "n"	Ex n		2	EN 60079- 15	3	solids	objects >2.5mm	direct spray	s up to°60 from ve s up to°15 from ve	ertical	component for use in a complete	U
Dust explosion pr	roof	protection "tD"	Ex † (5)		20,21,2		1	solids	objects >50mm	vertical fo	alling drops of wa		system	
			Code	Symbol	Zones to use in (8			Protec	tion against		n against water		Application	Code
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Protection principle						,		SOI		ation ENL (0500			Eurtheaste	formation
Protection principle	Protection principle - Type c		)79-0 General R	equiremer	nts	(zone 1,2)	mc (zone		Ingress Protec	1	20,21,22) tb	(zone 21 22)	Further in	formation



They can be used as fixed lighting in hazardous areas such as:

- Oil refineries
- Oil platforms
- Chemical tankers
- Chemical's warehouses

Gas & Dust explosive zone enviroments: Group IIC Zone 2, Zone 22

## **Characteristics**

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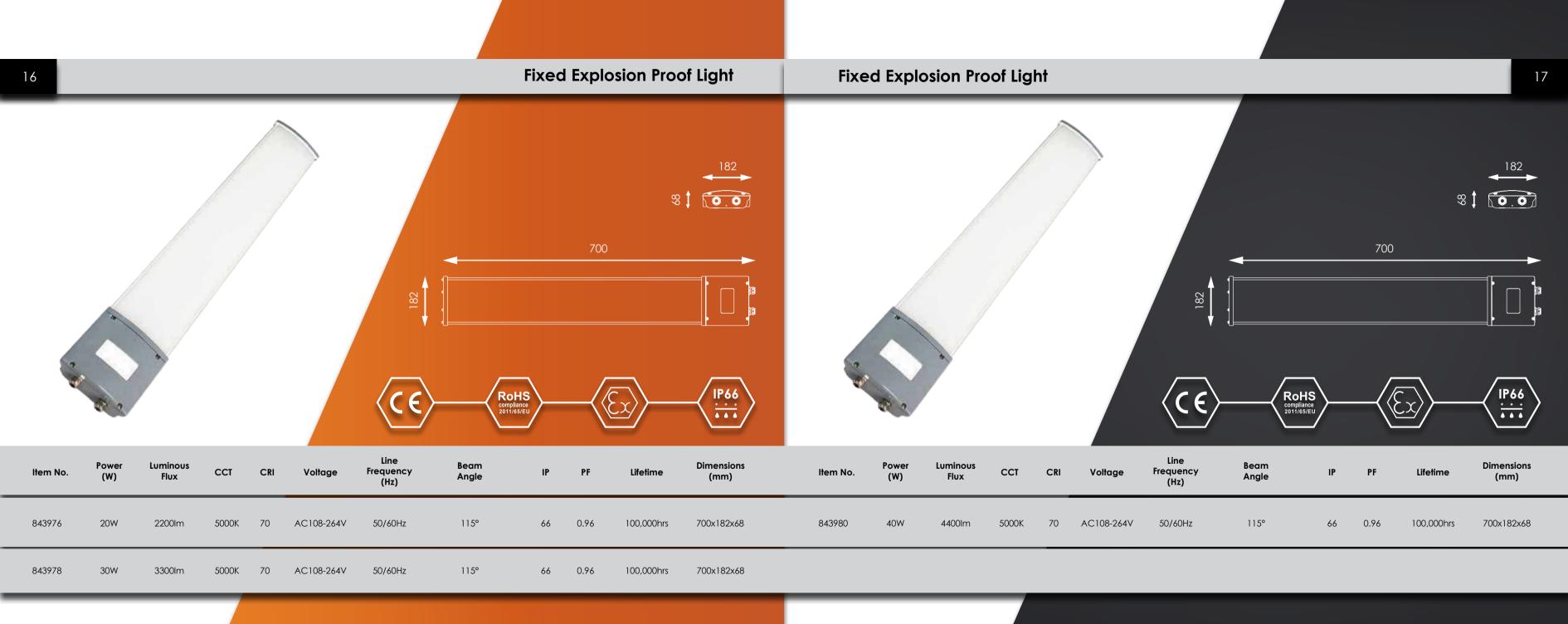
All exposed fasteners are made of type 304 stainless steel (customizable to type 316), which can effectively guarantee the durability and strong anti-corrosion performance of the luminaire.

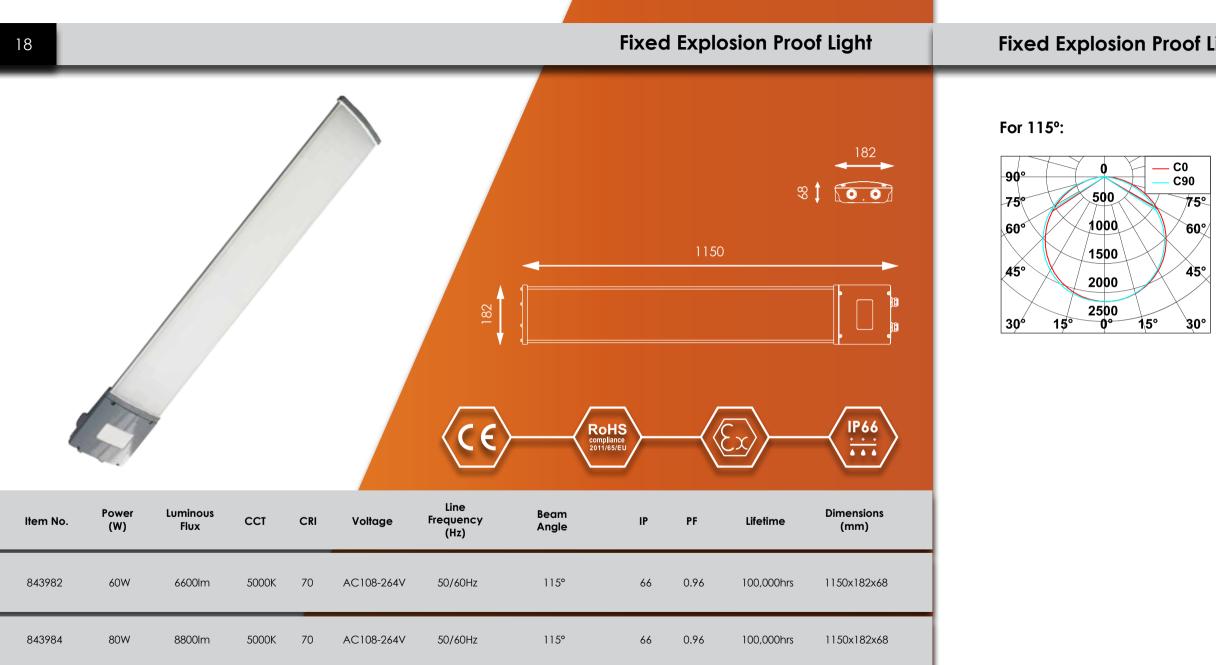
The housing is made from water and corrosion resistant anodized aluminum and includes locking angle equipment, so it can be safely used in drilling platforms and high-vibration environments.

The light has a luminous efficiency that can reach up to 110lm/W, saving up to 60% in energy costs, compared with Metal Halide lamps.

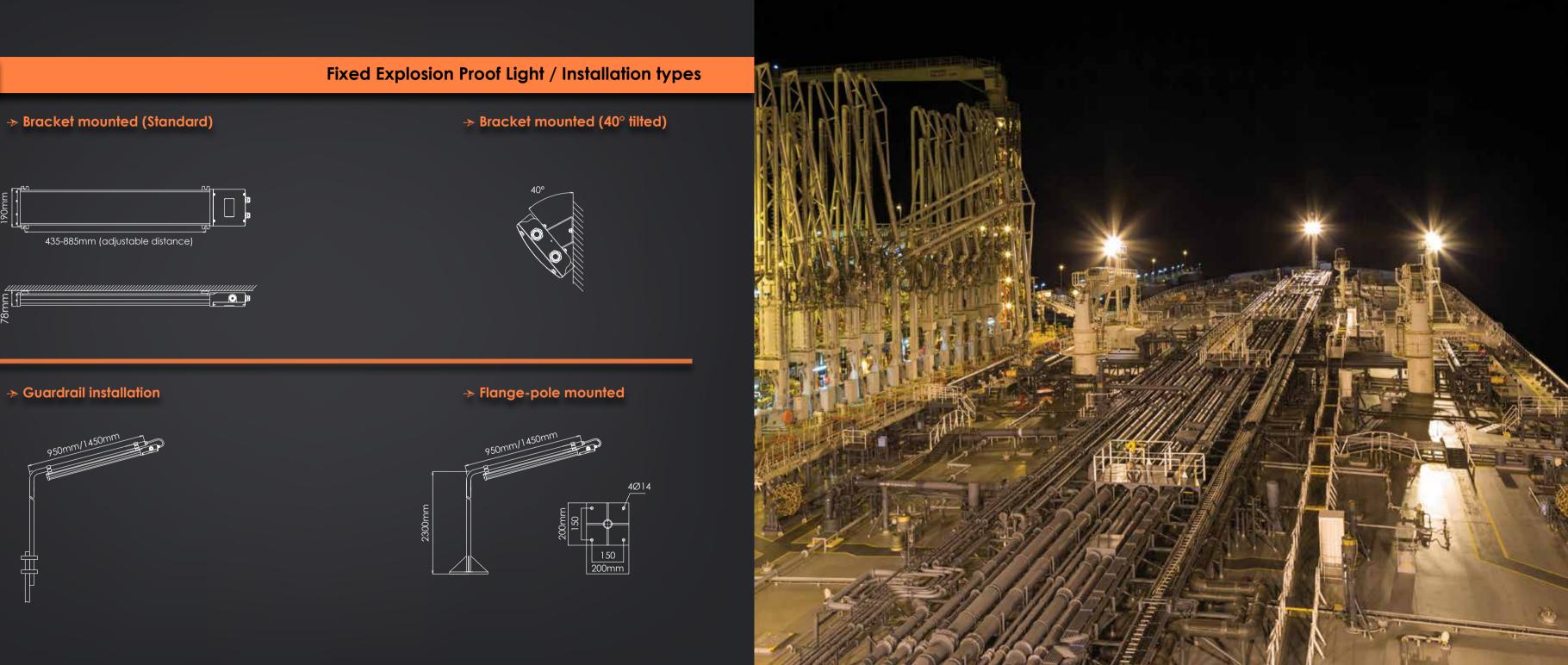
Anti-vibration tested.

Independent junction box for easy installation and maintenance.

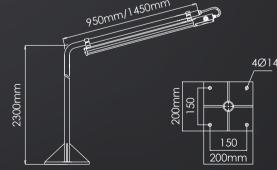




## Fixed Explosion Proof Light / Light Distribution Curve







	and labelling of hazardou:	s locatio <u>ns</u>					Clas	sificatio	on Explosion	groups <u>&amp; Ten</u>	nperat <u>ure cl</u> a	isses		
ammable edium	Hazardous locations Probability of a potentially explosive atmosphere occuring	Classification of hazardous locations	Product clo	assificatio		uipment otection level (EPL)		osion		epending or roup	-			-
			Product group	Produc catego						1	1			
	Continuously, for long periods or frequently	Zone 0	Ш				IIA	IIB	Ammonia Methane Ethane Propane	Ethanol Cyclohe-xene n-Butane	Petrol Diesel fuel Fuel oil n Hexane	Acetal - - dehyde		
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	Infrequently and for short periods only	Zone 2	Ш		3G	Gc			Hydrogen	Acetylene				Carbon disulphide
	Continuously, for long periods or frequently	Zone 20	Ш						T1< 450°C		ļ			
	pendus or requering				1				T2< 300°C			i		
usts	Likely to occur	Zone 21	Ш	1D	Da				T3< 200°C				-	
				2D		Db			T5< 100°C					
	Infrequently and for short periods only	Zone 22	Ш		3D	Dc			- T6< 85°C					
	Notified Body								surface tempe	erature is directly	/ shown (e.g. T8	0°C)		
	Eurofins Product Testing Italy	<mark>(Ex</mark>	↓ ↓ Ⅱ 3G Ⅱ 3D	Ex n				Gc Dc	surface tempe	erature is directly	Tempere	orc) ature class 40°C to +5.	5°C	
	Eurofins Product Testing Italy	figmeproof	Ⅱ 3D		c   1		°C		surface tempe		Tempero Tamb = -	ature class	5°C	
0477	Eurofins Product Testing Italy	enclosure				IIC T80				flammable fit	Tempero Tamb = - res	ature class	5°C For common use	
0477 C 226 trevents transm explosion outsic trevents high emperatures a	Eurofins Product Testing Italy	enclosure increased safety	II 3D		C	IIC T80	°C	Dc		flammable fib	Tempero Tamb = - ores e dust	ature class	For common	
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0477 C 247 C 247 revents transm xplosion outsic revents high imperatures an pow current / vo pow current / vo incapsulated arts immersed	Eurotins Product Testing Italy ission of the fe and sparks oltage supply a device in oil to isolate	enclosure increased safety intrinsic safety pressurized apparatus	II         3D           Ex d            Ex e            Ex l (1)            Ex p            Ex pD            Ex m (3)		C 1.2 1.2 0,1.2, 20,21,22 1,2, 21,22 0,1.2,	EN 60079- 1 EN 60079- 1 EN 60079- 11 EN 60079- 2 EN 60079- 2		Dc IIIB IIIC IIIC		flammable file on conductive d Dust classifica	Tempero Tamb = - res e dust ust	40°C to +5.	For common use For use under special	- X
0477 C 227 C 2	Eurotins Product Testing Italy	enclosure increased safety intrinsic safety pressurized apparatus moulding	II         3D           Ex d            Ex l (1)            Ex iD (2)            Ex pD            Ex m (3)            Ex mD (4)		c 1,2 1,2 0,1,2, 20,21,22 1,2, 21,22 0,1,2, 20,21,22	IIC 180 EN 60079- 1 EN 60079- 11 EN 60079- 2 EN 60079- 18 EN 60079- 18	*C	Dc	2 n	flammable fib on conductive conductive d Dust classifica long pe the effects at stron low pressur	Tamb = - res e dust ust tion	40°C to +5.	For common use For use under special conditions This product is on Ex-certified	- ×
0477	Eurotins Product Testing Italy	enclosure increased safety intrinsic safety pressurized apparatus moulding oil immersion	II         3D           Ex d            Ex e            Ex iD (2)            Ex pD            Ex mD (4)		1,2           1,2           0,1,2,           20,21,22           1,2,           0,1,2,           20,21,22           1,2,           1,2,           21,22           0,1,2,           1,2,           1,2,           1,2,           1,2,	IIC 180 EN 60079- 1 EN 60079- 1 EN 60079- 2 EN 60079- 18 EN 60079- 6 EN 60079- 6 EN 60079-	*C	Lec totally pro- dust solid solid	, n	flammable fib on conductive conductive d Dust classifica the effects stat low pressur sprays direct spray	Tempero Tamb = - ares e dust ust tion ariods of immersion of temporary immersion of temporary immersion of temporary immersion g jets of water e jets from all dire	40°C to +5.	For common use For use under special conditions	- X
0477	Eurotins Product Testing Italy ission of the le le lo	enclosure increased safety intrinsic safety pressurized apparatus moulding oil immersion powder filling	II         3D           Ex d            Ex l (1)            Ex pD            Ex m(3)            Ex m(4)            Ex q		1,2           1,2           0,1,2,           20,21,22           1,2           0,1,2,           20,21,22           1,2           1,2           1,2           1,2           1,2           1,2           1,2           1,2	IIC 180 EN 60079- 1 EN 60079- 1 EN 60079- 2 EN 60079- 5 EN 60079- 5 EN 60079- 5 EN 60079- 5 EN 60079- 5	*C	Locally pro-	n 	flammable fil: on conductive conductive d Dust classifica the effects stat stron low pressur sprays direct spray direct spray	Tamb = - Tamb = - res e dust ust tion riods of immersion of temporary imm g jets of water e jets from all directions s up to '60 from y	40°C to +5.	For common use For use under special conditions This product is an Ex-certified component for use in a	
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Ideal for environments with flammable gases, mists, vapors or dusts.

- Petrochemical plants
- Chemical plants
- Pharmaceutical Factories

Gas & Dust explosive zone enviroments: Class 1, Zone 1, Zone 2, Zone 21, Zone 22

## **Characteristics**

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The reflector design offers many beam angle options, which provide efficient light utilization in various cases. The glare-free and uniform luminance doesn't cause eye strain.

A range of highly conductive materials accelerate the heat convection in the cooling structure, which guarantees good performance after long-term use in high temperature environments.

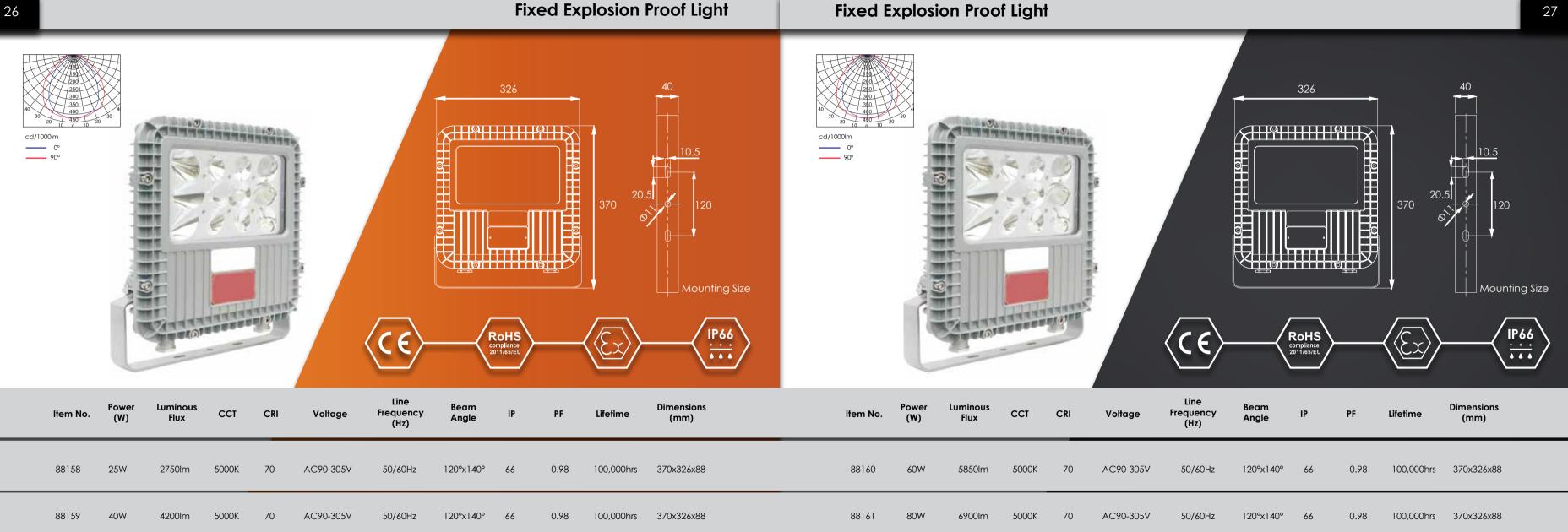
The light source provided by CREE LEDs emits no dark spots and can offer energy savings over 60%, in comparison with a Metal Halide lamp.

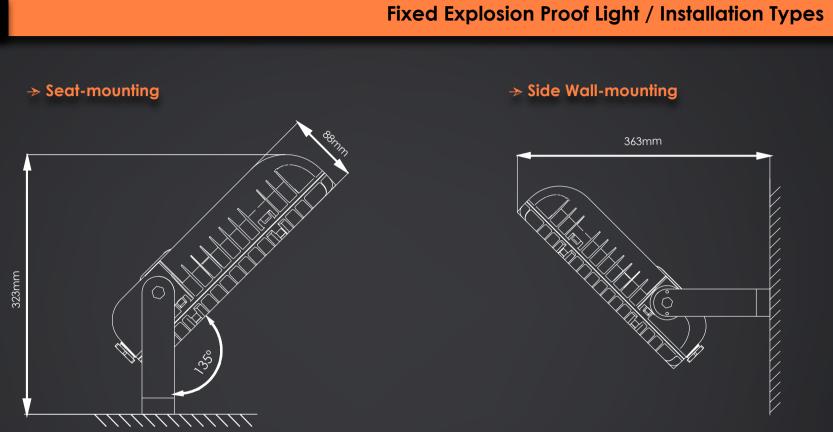
Taiwan Meanwell drivers, with power factor over 0.98, ensure a long lifespan and high reliability.

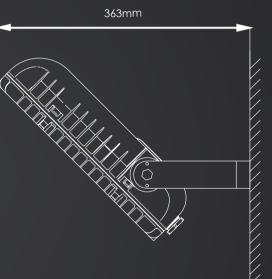
The adjustable locking device on the bracket can tightly fix the lamp to any desirable angle, making the lamp tolerant to harsh vibrations.

The aluminum housing and type 304 stainless steel fasteners are treated with a high-tech anti-corrosion technology, thus making the fixtures suitable for use in hazardous areas.

Intelligent lighting control functions are also available.









		Lat	elling of ex	kplosio	n proof	equipm	ent accord	ling to ATI	X (2014/3	4/EU)				
Classification		locations	_				Classifie	ation Explor	ion groups	Tomporature	classos	_		
	nd labelling of hazardous									Temperature	classes			
Flammable medium	Hazardous locations Probability of a potentially explosive atmosphere occuring	Classification of hazardous locations	Product cla	ssificatio	pr	uipment otection level (EPL)	Explosio group	explosi	les dependir on group rature class	ng on			-	
			Product group	Produc catego	ory									and the second
	Continuously, for long periods or frequently	Zone 0	II				IIA IIB	Ammoni Methane Ethane Propane	Cyclohe	-xene	Acetal - n- dehyde			
Gases, mists, vapours	Likely to occur	Zone 1	II	1G 2G	Ga	Gb—		IIC City gas Acrylic nitrile	Ethylene Ethylene oxide		l Ethyl-ether			
	Infrequently and for short periods only	Zone 2	Ш		3G	Gc		Hydroge	n Acetyler	ne			Carbon disulphide	
	Continuously, for long periods or frequently	Zone 20	Ш					T1< 450 T2< 300						
Dusts	Likely to occur	Zone 21	II	1D 2D	Da	Db		T3< 200 T4< 135						
	Infrequently and for short periods only	Zone 22	II.		3D	Dc		T5< 100						
Offic code number 0080	ial Institutes Institute Notified Body INERIS							max. ten	perature of the	on temperature o exposed surface directly shown (e.g	of the product. F	or dust explosion		
CE		<mark>∕€x</mark> 〉	II 2G	Ex t		IB T. IC T80	6 Gb ĴĈ Db			Tamb	=-40°C to +4	40°C		
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					050 111 (6)			solids/dust						
	Protection principle - Type c		079-0 General R	equireme	nts			Ingress	Protection EN 6	0529		Further	information	
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(2) iaD (zone 2	20,21,22) ibD (zone 21,22) i	icD (zone 2)	(4) maD	(zone 20,	21,22) mb	D (zone 21,	22) mcD (zon	e 2)	(6) Hig	ghest possible ap	plication areas			



Ideal for harsh and humid environments with flammable gases.

- Petrochemical plants
- Oilfield industry
- Chemical industry
- Ports
- Petroleum

Gas & Dust explosive zone enviroments: Zone 1, Zone 2, Zone 21, Zone 22

## **Characteristics**

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The various mounting and light distribution types offered by these luminaires are specially designed for optimal lighting performance on oil platforms.

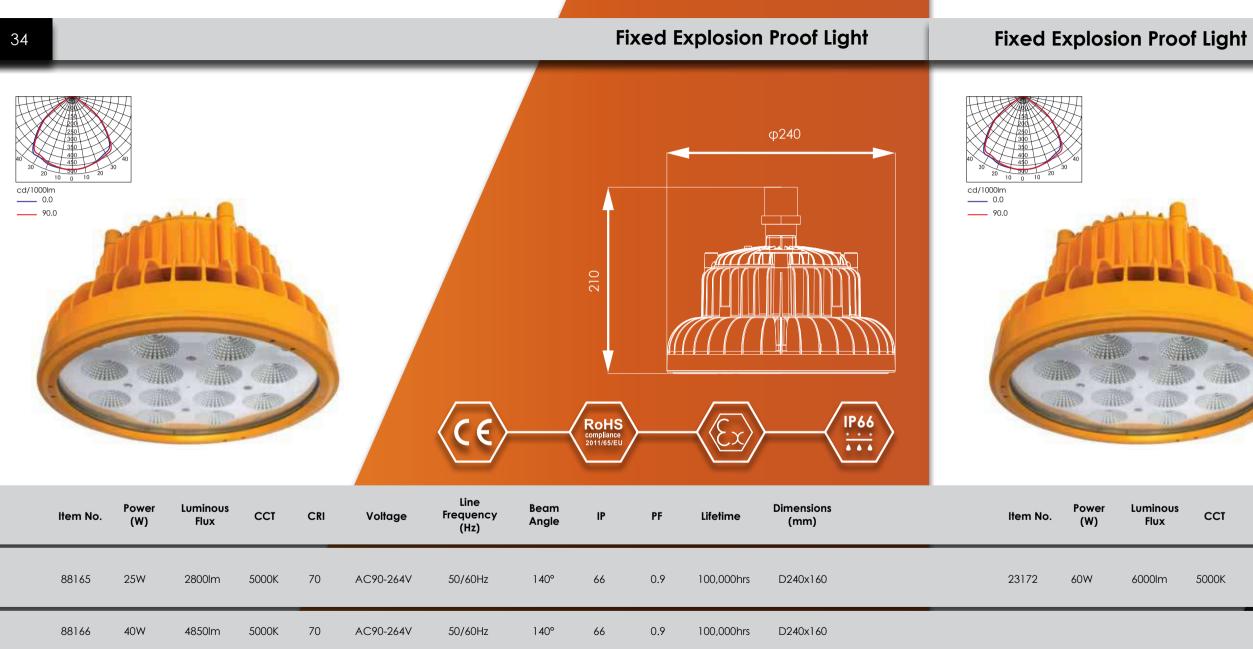
The light source provided by CREE LEDs emits no dark spots and can offer energy savings over 60%, in comparison with a Metal Halide lamp.

The housing design offers optimal heat dissipation, a factor which increases the efficiency and lifespan of the LED chips, so that a lifetime of 100,000hrs is ensured.

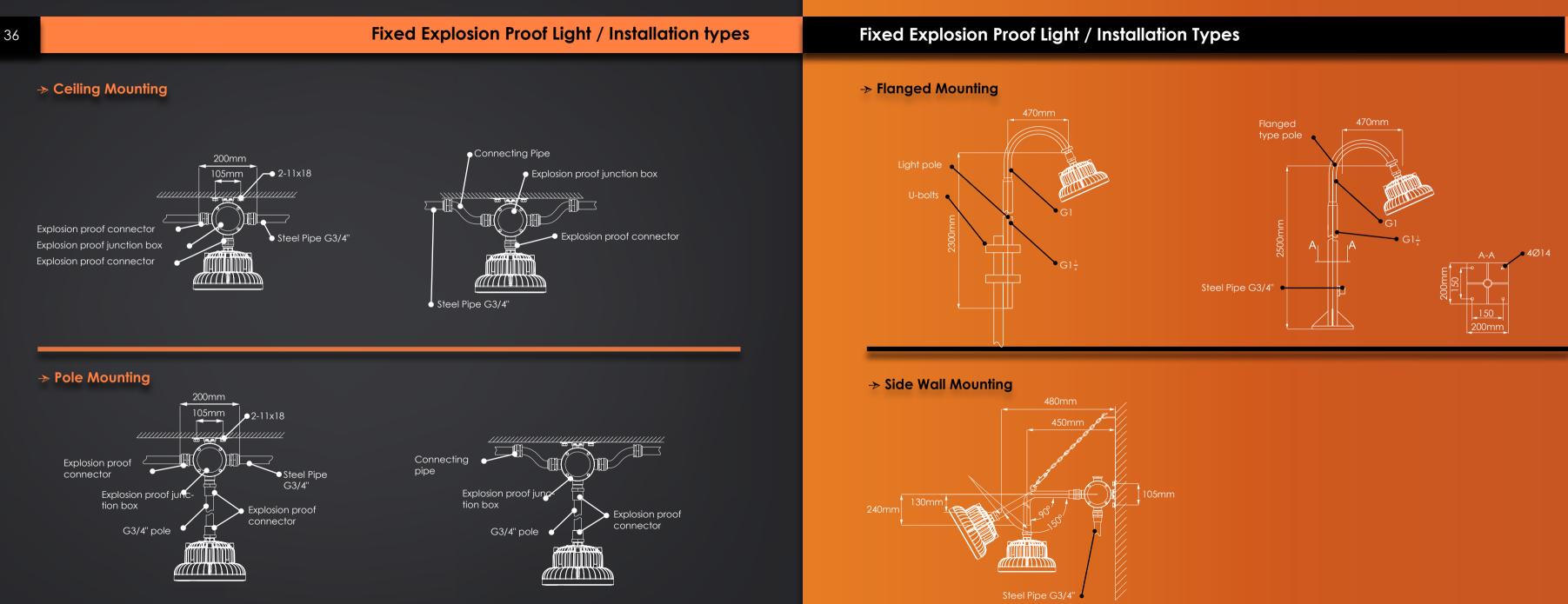
Equipped with the world's top ranking Taiwan Meanwell LED driver, with power factor over 0.98, the luminaire's high performance, efficiency and long lifespan are guaranteed.

The anti corrosion, abrasion proof, dust and water proof powder coated cover ensures the lamps excellent performance in all kinds of hazardous environments.

Alternative input voltage options such as AC18~43V or DC18~55V are available for the 25W and 40W models upon request.



#### 35 φ240 210 IP66 $\overline{}$ RoHS compliance 2011/65/EU (EX) Line Dimensions Beam CCT Frequency CRI Voltage Lifetime Anale (mm) (Hz) AC90-264V 50/60Hz 0.9 100,000hrs D240x160 5000K 70 140° 66



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Duts       Jacky to accur       Zone 21       H       10       Do       De       Tak 200°C       Tak 200°C         Integrantly on for that       Zone 22       H       De       De       Face 200°C       Tak 200°C       Tak 200°C         Integrantly on for that       Zone 22       H       De       De       Face 200°C       Face 200°C       Face 200°C         Office Hindless       Office A Institutes       Town 200°C       Face 200°C <td></td> <td></td> <td>Zone 20</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>11&lt; 430 C</td> <td></td> <td>4</td> <td>l</td> <td>i i</td> <td></td>			Zone 20									11< 430 C		4	l	i i	
Duts         lately to occur         Zone 21         III         DD         DD         DD         DD         Text: 135*C           Integrating on to out out out out out out out out out		periods or frequently										T2< 300°C			l	1	
Duts         lately to occur         Zone 21         III         DD         DD         DD         DD         Text: 135*C           Integrating on to out out out out out out out out out												T0 - 000°O			i		
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Notified Body       Interestion       Notified Body       Image: Construction       Image										_							
OBS       INERS       Temperature class         OBS       III 2G       Exd       IIB       Td       Gbs         III 2G       Exd       IIIC       180°C       Db       Tamb ==40°C to +50°C         Prevents transmission of the explosion outside       III 2D       Exclusion       Exd       III 2       Exclusion       IIII 2       Exclusion       IIIIIC       100°C       Db         Prevents transmission of the explosion outside       Itemperature class       IIIIIIC       IIIIIIC       IIIIIIC       IIIIIIIIIC       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII																dusi explosion p	ioor, me max.
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Prevents transmission of the explosion outlide       Someproof enclosure       Ex di mercessed safety       12       EX this increases dafety       Dist       Di	└ <b>─</b> ┰			II 2G	Ev	d		IR TA		G	h						
Prevents transmission of the explosion outside       Bit dameproof enclosure       Bit dimeproof				" 20		u				0	<i></i>						
Prevents transmission of the explosion outside       Bit dameproof enclosure       Bit dimeproof				II 2D	Ex	th	l II	IC T80	°C	D	h						
Prevents transmission of the explosion outside       tiamperoof enclosure       Ex d       Image: A construction outside       frammable fibres       frammable fibres         Prevents high temperatures and sporks       increased safety       Ex e       Image: A construction outside       Image: A construction outside       non conductive dust       For common use         Low current / voltage supply       intinis cafety       Ex P       Image: A construction outside       Image: A construction outside       For use under special conductive dust         Positive pressure device       pressures	$\sim$									_				Tamb = -4	40°C to +50	)°C	
explosion outside       Ex d       X       1.2 <td></td> <td>r</td>																	r
explosion outside       Ex d       X       1.2 <td></td> <td></td> <td></td> <td>Ļ</td> <td></td>				Ļ													
explosion outside       Ex d       X       1.2 <td></td> <td></td> <td>1</td> <td></td> <td>1</td> <td>- 1</td> <td>-</td> <td></td> <td></td> <td>1</td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td>1</td>			1		1	- 1	-			1		1					1
Prevents high temperatures and sparks       Ex       Ex       Image: Construction of the sparks       For common use       For common to sparks       For common use       For use under special       For use under specia				Ex d		- [ 1.	,2	EN 60079-	IIL	4			flammable fib	res			
imperatures and sparks       increased sofely       EX P       Image: Sofe sofe sofe sofe sofe sofe sofe sofe s			enciosore							- 111	В					For common	
Instruction       Instruction       Image: Construction       I		d sparks	increased safety	Ex e	$ 1\rangle$	<[] 1.	,2				IIIC	n	on conductive	e dust		Use	-
Low Culterin / Yolidge suppy       initiasic safety       Ex iD (2)       Li       20.21.22       11.0       Collective dash       For use under special conditions       <			increased salely	E 1		<u> </u>					_						
Positive pressure device       pressurized pressurized production       Ex p Ex pD       I.2 Ex pD       FN 6007- 20.21.22       FN 6007- 20.21.22       Code       Dust classification       For use under special conditions       Special conditions       For use under special conditions       X         Prositive pressure device       moulding       Ex m (3) Ex mD (4)       Image: conditions       0,1.2 20.21.22       EN 6007- 8       Image: conditions       Image: conditions       Special conditions       X         Prositive pressure device       moulding       Ex m (3) Ex mD (4)       Image: conditions       Image: conditions       Image: conditions       Image: conditions       Special conditions       X         Prositive pressure device       moulding       Ex m (3) Ex mD (4)       Image: conditions       Image	Low current / volt	age supply	1.11.1.1.1.1.1.1.1										conductive d	ust			
Positive pressure device       Discretion       Discretion       For use under special condition       X         Encapsulated       moulding       Ex m (3) Ex m (3) Ex m (3) (20.21.22       EN 60079 (20.21.22)       EN 60079 (20.21.22) </td <td></td> <td></td> <td>inimisic safety</td> <td></td> <td></td> <td></td> <td></td> <td>11</td> <td>- 6</td> <td>-</td> <td></td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td>			inimisic safety					11	- 6	-			_	_			
Image: constraint of the production of the producting the producting of the production of the production of	Positive pressure of	device							C	ode			Dust classifica	tion		For use under	
Exception of a line production       moulding       Ex mD (4)       C       20.21.22       18       6       -       long periods of immersion       Immersion       F       Conception       Immersion       F       Conception       F       F       Conception       F       F       Conception       F			apparatus		_			2									Х
Ports immersed in oil to isolate from explosive atmosphere       OI immersion oil immersion       Ex o       I.2       EN 6007-6       Code       Model at the second at	Encapsulated			Ex m (3)	17								1			conditions	
Image: Sector			moulding	EX MD (4)		20,2	1,ZZ	18		_		-					
Prevents transmission of explosion outside       powder filling powder filling       Ex q       I.2       EN doars 5       EN doars 5       I.2       I.2       EN doars 5       I.2       I.2       EN doars 5       I.2       EN doars				Ex o	11	Ξ[ L	,2					-			ersion		
explosion outside       powder filling       Ex q       1.2       Ex q       1.2       Ex q       sprays from all directions       sprays from all directions         As above, but for use in zone 2       protection "n"       Fx n       Fx       2       EN 60079-15       3       solids objects >1.0.5m       direct sprays up to'80 from vertical       component for use in a complete system       1       solids objects >12.5mm       direct sprays up to'80 from vertical       component for use in a component for use in a complete system       complete system       1       solids objects >12.5mm       direct sprays up to'18 from vertical       complete system       U         Dust explosion proof       protection "n"       Ex f (5)       Fx (5)       Fx (6)       Code       Symbol       Cones to use in (6)       CENEREC       I       solids objects >10.0mm       no protection against water       Application       Code         Protection principle       Type of protection - EN 60079-0       Gone 0,1,2       mb (zone 0,1,2)       to (zone 0,1,2)       t			oil immersion	-		<u> </u>		6		_							
As above, but for use in zone 2       portection "n"       Ex n       Image: Content in the protection "n"       Image: Content in the protection in the protection "n"       Image: Content in the protection in the protection "n"       Image: Content in the protection in the protection "n"       Image: Content in the protection in the protection "n"       Image: Content in the protection in the protection "n"       Image: Content in the protection in the protection "n"       Image: Content in the protection in the protection "n"       Image: Content in the protection in the protection in the protection "n"       Image: Content in the protection in the protection in the protection "n"       Image: Content in the protection in the protectin in the protection in the protection in the protection				Ex q	17	<u>ا</u> ا	,2			_					ctions		
As above, but for use in zone 2       protection "n"       Ex n       Image: cont of the con			powder filling					5		_							
Image: protection principle - Type of protection - EN 60079-0 General Requirements       Code       Solids objects - Solids       Code of the solids       Protection gainst solids/dust       Vertical failing drops of water       Solids objects - Solids       Solids objects - Solids       Solids objects - Solids       Vertical failing drops of water       Solids objects - Solids       Solids objects - Solids       Vertical failing drops of water       Solids objects - Solids       Solids objects - Solids       Vertical failing drops of water       Protection       No no protection       Application       Code         Image: Protection principle - Type of protection - EN 60079-0 General Requirements       Code       Solids objects - Solids       Protection against solids/dust       Protection Biologinst solids/dust       Application       Code         Image: Protection principle - Type of protection - EN 60079-0 General Requirements       Image: Protection EN 60529       Further information       Further information         Image: Protection Protection - Image: Protection - EN 60079-0 General Requirements       Image: Protection EN 60529       Image: Protection EN 60529       Further information		use in		Ex n	$ 1 \times$	<u>{[]</u> :	2			_						for use in a	U
Dust explosion proof     Ext (s)	20118 2		protection "n"			<u> </u>		15		_							
Protection principle       Type of protection       Code       Symbol       Cone       Cone       Protection against solid/s/dust       Protection against water       Protection against water       Application       Code       Protection against water       Protection against water       Application       Code         10       ia       (zone 0, 1, 2)       ib       (zone 2, 2)       (cone 2, 2, 2)       ib       (cone 2, 2, 2)       ic       (cone 2, 2)       ic       ic <td>Dust explosion pro</td> <td>oof</td> <td></td> <td>Ex † (5)</td> <td></td> <td>20,2</td> <td>21,22</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>ter</td> <td>3,510111</td> <td></td>	Dust explosion pro	oof		Ex † (5)		20,2	21,22								ter	3,510111	
Protection principle         Type of protection         Code         symbol         Use in (d)         Cenetic         IP         solids/dust         Protection dguins water         Application         Code           • Protection principle - Type of protection - EN 6007P-0 General Requirements         • Ingress Protection EN 6052P         • Further information         • Further information           (1) ia         (zone 0, 1, 2) ib         (zone 2)         (3) ma         (zone 0, 1, 2) mb         (zone 1, 2)         mc         (zone 2)         (5) ta         (zone 20, 21, 22) tb         to         cone 2)			protection "tD"		1176			31	C		_		nc	protection			
Protection principle - Type of protection - EN 60079-0 General Requirements       Image: Concern and the concern and t	Protection principle		Type of protection	Code	Symb			CENELEC	IF				Protectio	n against water		Application	Code
(1) ia (zone 0,1,2) ib (zone 1,2) ic (zone 2) (3) ma (zone 0,1,2) mb (zone 1,2) mc (zone 2) (5) ta (zone 20,21,22) tb (zone 21,22) tc (zone 2)											- 50						
	(1) is loss (			÷			nk	(2000 1 2)		1707	0.21	Ingress Prote	•	20 21 221 #-	(zono 21.00)		tormation
			. ,							-						ic (zone 2)	
		(2018 21,22) IDD (2018 21,22)		(4) HIGD	120118	20,21,22)	am	2018 21,2	22) MC	D (20	/1 <del>0</del> 2)		(a) nignest	possible applic	anon dreus		



Ideal for harsh and humid environments with flammable gases.

• Oilfield industry

- Chemical industry
- Offshore drilling platform
- Steel industry
- Petroleum

Gas & Dust explosive zone enviroments: Group IIA,IIB, IIC, Zone1, Zone2, Zone21, Zone22



## **Characteristics**

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The aluminum housing and type 304 stainless steel fasteners and brackets are treated with a high-tech anti-corrosion technology, thus making the fixtures suitable for hazardous working areas.

A range of highly conductive materials accelerate the heat convection in the cooling structure, which guarantees good performance after long-term use in high temperature environments.

The various light distribution and installation types, aim towards offering attractive and effective lighting solutions to workshops and platforms.

The shell is treated with a high-tech surface coating technology which renders it resistant to corrosion, waterproof, dust proof and therefore highly suitable for harsh environments.

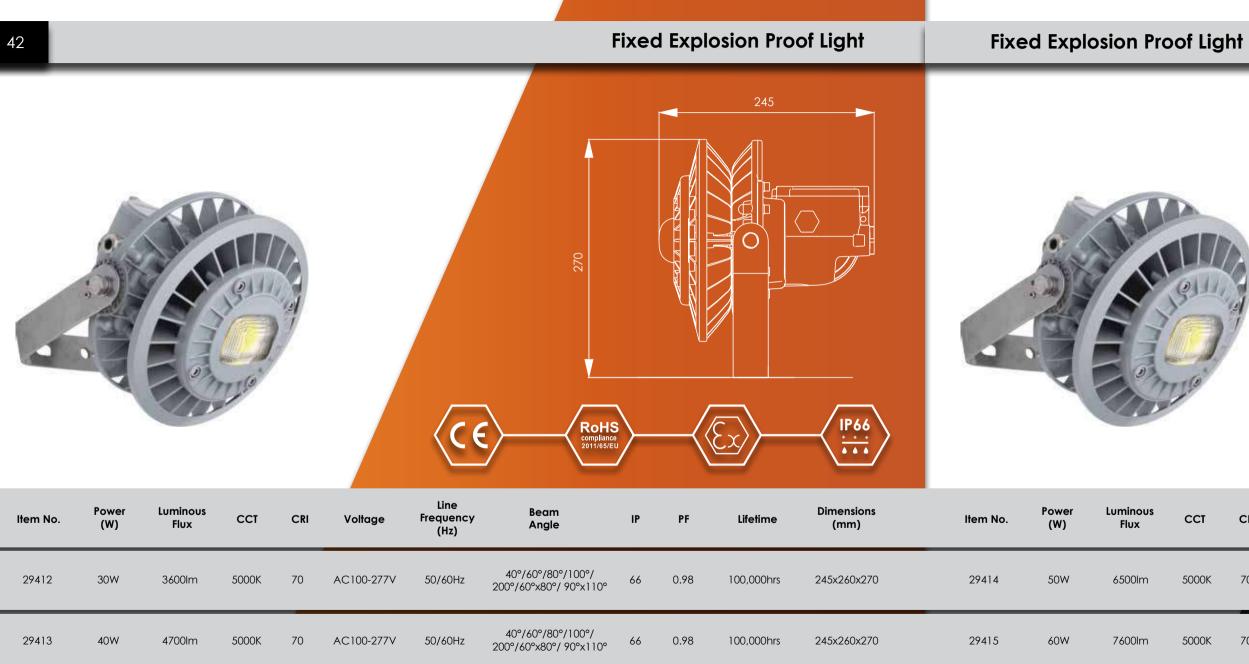
Optoelectronic technology that is dark spot free, doesn't create glare and has a luminous efficiency that can reach up to 120lm/W, saving up to 60% in energy costs, compared with Metal Halide lamps.

Taiwan Meanwell drivers, with power factor over 0.98, ensure long lifespan and high reliability.

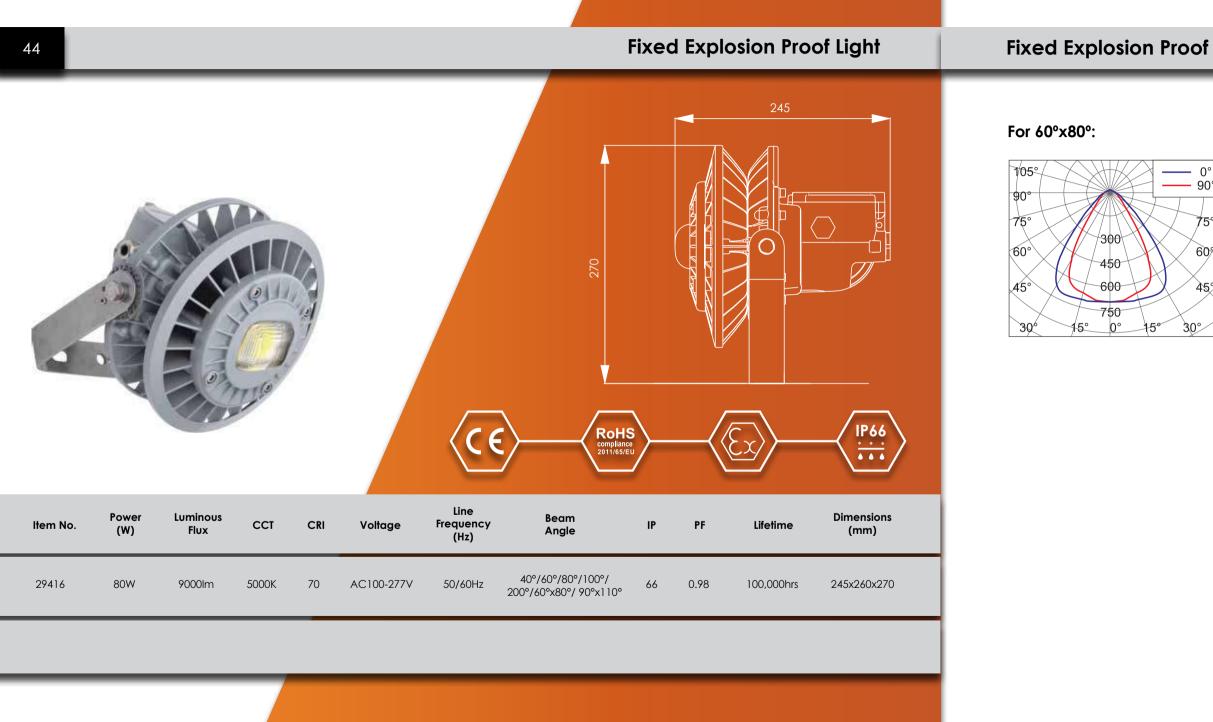
Independent wiring chamber for easy installation and maintenance.

Easy replacement of light source, without the use of any welding tools.

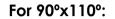
Intelligent control functions are also available. (Dimming: 1-10VDC, PWM, Carrier, DALI)

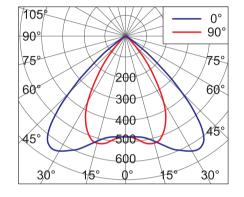


#### 43 245 IP66 $\overline{}$ RoHS compliance 2011/65/EU $\sim$ Line Beam Angle Dimensions Frequency CRI CCT Voltaae Lifetime (mm) (Hz) 40°/60°/80°/100°/ 200°/60°x80°/ 90°x110° 50/60Hz AC100-277V 245x260x270 5000K 70 66 0.98 100,000hrs 40°/60°/80°/100°/ 200°/60°x80°/ 90°x110° 50/60Hz 0.98 100,000hrs 245x260x270 5000K 70 AC100-277V 66

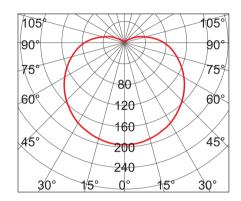






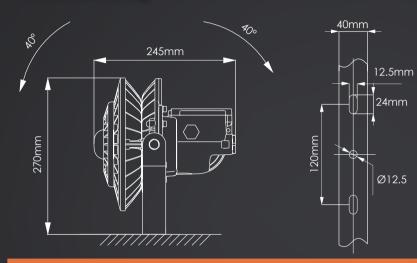


For 200°:

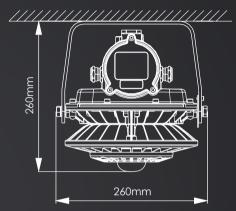


## Fixed Explosion Proof Light / Installation types

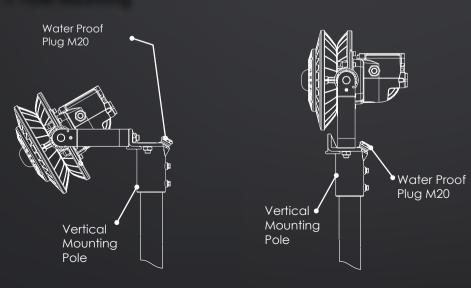
#### → Seat Mounting



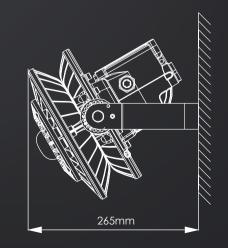
#### → Ceiling Mounting



#### $\rightarrow$ Pole Mounting



#### $\Rightarrow$ Side Wall Mounting





		Lab	elling of ex	plosio	n proo	f equipm	ent	accor	rding	to ATEX (2	2014/34/EU	I)			
	d labelling of hazardous								_	n Explosion g			isses		
Flammable medium	Hazardous locations Probability of a potentially explosive atmosphere occuring	Classification of hazardous locations	Product clas	sificatio		quipment rotection level (EPL)		Explosi group		Examples de explosion gr temperature	roup				-
			Product group	Produc catego					_						
	Continuously, for long periods or frequently	Zone 0	II					IIA		Ammonia Methane Ethane Propane	Ethanol Cyclohe-xene n-Butane	Petrol Diesel fuel Fuel oil n- Hexane	Acetal - dehyde		
Gases, mists, vapours	Likely to occur	Zone 1	II	1G	G	Gb			IIC	City gas Acrylic nitrile	Ethylene Ethylene- oxide	Ethyl-glycol Carbon hydrogen	Ethyl-ether		
	Infrequently and for short periods only	Zone 2	II		3G	Gc				Hydrogen	Acetylene				Carbon disulphide
	Continuously, for long	Zone 20	11							T1< 450°C					
	periods or frequently	20110 20								T2< 300°C				-	
Dusts	Likely to occur	Zone 21	Ш	1D	Do	Db				T3< 200°C T4< 135°C					
	Infrequently and for short periods only	Zone 22	Ш	20	3D	Dc				T5< 100°C T6< 85°C					
Offic code number 0477	al Institutes Institute Notified Body Eurofins Product Testing Italy										ure of the expo	sed surface of t shown (e.g. T80	he product. For	mperature class in dust explosion pr	
		<mark>∕€x</mark> 〉	II 2G II 2D	Ex db		IIC T6 IIIC T80° T19	C	G D				Tamb = -	-50°C to +4(	)°C/55°C	I
Prevents transmiss explosion outside	on of the	flameproof enclosure	Ex d	1	1,2	EN 60079-		IIIA		1	flammable fib	res			
Prevents high temperatures and	sparks	increased safety	Ex e	$\mathbb{X}$	1,2	EN 60079-7		E	IIIC	nc	on conductive	dust		For common use	-
Low current / volt	age supply	intrinsic safety	Ex I (1) Ex iD (2)	<b>F</b>	0,1,2, 20,21,2	EN 60079-					conductive du	ust			
Positive pressure of	levice	pressurized apparatus	Ex p Ex pD		1,2, 21,22	EN 60079- 2		Code		I	Dust classificat	ion		For use under	×
Encapsulated		moulding	Ex m (3) Ex mD (4)	≯	0,1,2, 20,21,2	2 EN 60079- 18		8			long pe	iods of immersior	1	special conditions	X
Parts immersed in from explosive atr		oil immersion	Ex o	×	1,2	EN 60079-		7 6 tot	tally prot	- ected against du		of temporary imm g jets of water	ersion		
Prevents transmiss explosion outside	on of	powder filling	Ex q	] <del>×</del> [	1,2	EN 60079- 5		5	dust-li	imited ingress objects >1mm	low pressure	e jets from all directions		This product is an Ex-certified	
As above, but for zone 2	use in	protection "n"	Ex n	$\mathbb{X}$	2	EN 60079- 15		3	solids c	bjects >2.5mm bjects >12.5mm	direct spray	up to°60 from ve up to°15 from ve	ertical	component for use in a complete	U
Dust explosion pro	of	protection "tD"	Ex † (5)		20,21,2	-		1	solids o	protection	vertical fo	alling drops of wa		system	
Protection principle		Type of protection	Code	Symbol	Zones to use in (6	CENIELEC		IP	Protec	tion against ids/dust		n against water		Application	Code
	Protection principle - Type o	f protection - EN 600	)79-0 General R	equireme						Ingress Protec	tion EN 60529			Further in	formation
(1) ia (zone 0		(zone 2)	a			(zone 1,2)	m	nc (zone	e 2)			20,21,22) tb	(zone 21,22)		
(2) iaD (zone 2	0,21,22) ibD (zone 21,22) i	cD (zone 2)	(4) maD	(zone 20,	,21,22) m	bD (zone 21,	.22)	mcD (zo	one 2)		(6) Highest p	oossible applic	cation areas		



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- Oilfield industry
- Offshore drilling platform
- Steel industry
- Petroleum

Gas & Dust explosive zone enviroments: Group IIA,IIB, IIC, Zone1, Zone2, Zone21, Zone22

## **Characteristics**

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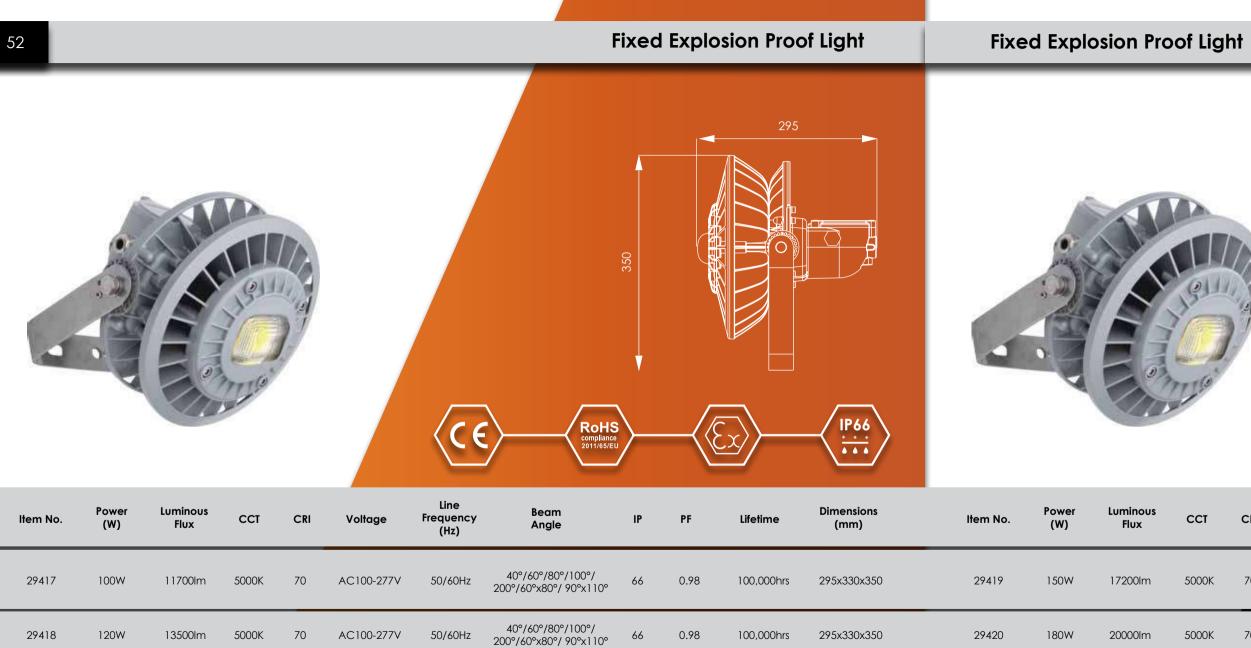
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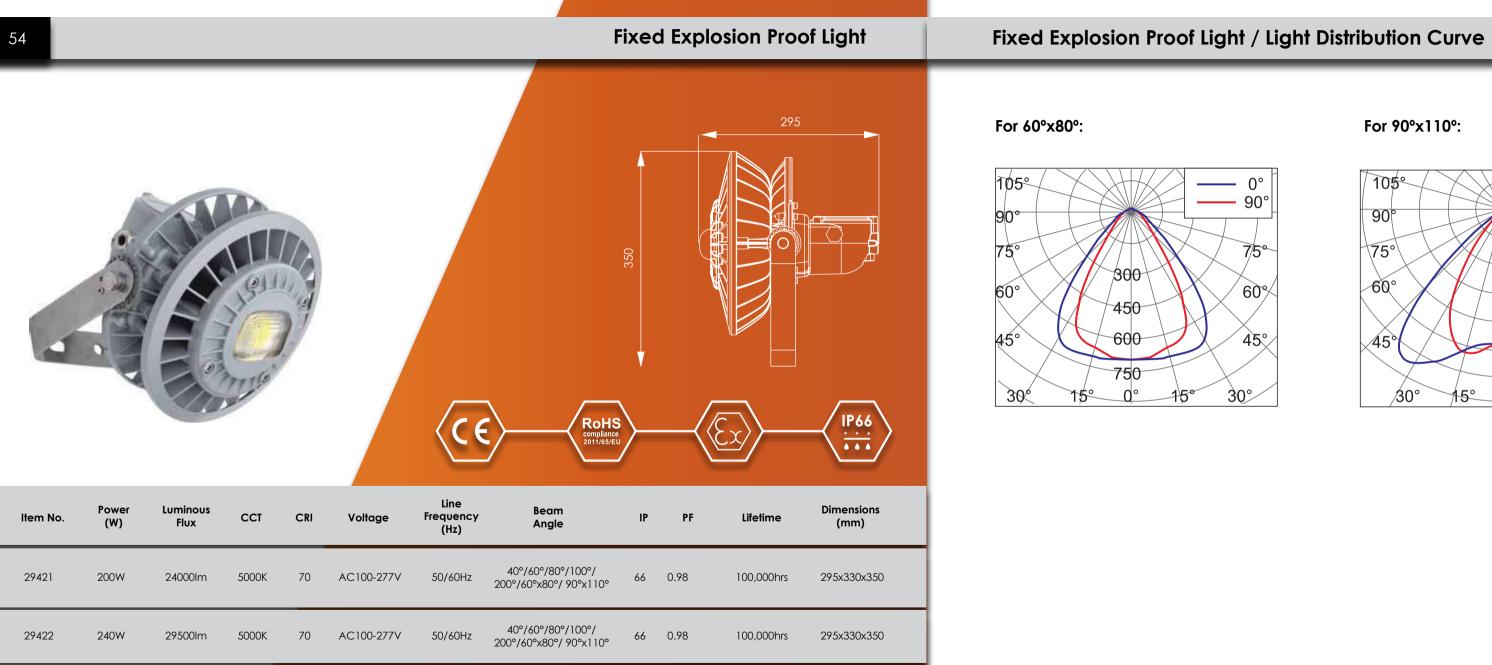


#### 53 295 IP66 $\overline{}$ RoHS compliance 2011/65/EU Line Beam Dimensions Frequency CCI CR Voltaae Lifetime (mm) Angle (Hz) 40°/60°/80°/100°/ 200°/60°x80°/ 90°x110° 5000K 70 AC100-277V 50/60Hz 66 0.98 100,000hrs 295x330x350

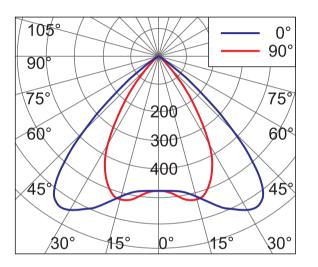
40°/60°/80°/100°/ 200°/60°x80°/ 90°x110° 50/60Hz 100,000hrs 66 0.98

295x330x350

AC100-277V

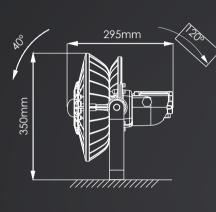


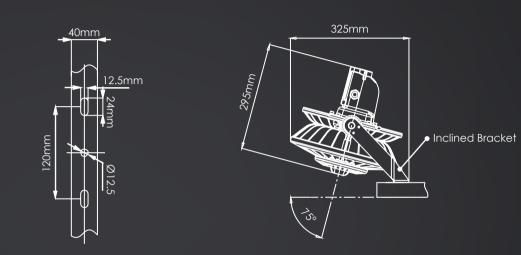
For 90°x110°:



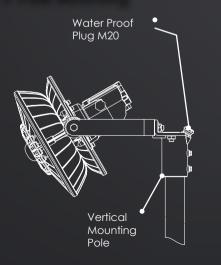
## Fixed Explosion Proof Light / Light Distribution Curve

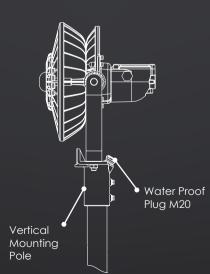
 $\rightarrow$  Seat Mounting



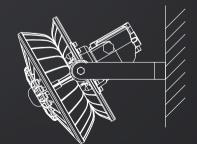


#### $\Rightarrow$ Pole Mounting





## $\Rightarrow$ Side Wall Mounting





		Lab	elling of ex	xplosion	n proo	fequipm	ent	acco	ordin	g to ATEX (	D ATEX (2014/34/EU)							
Classification an	d labelling of hazardous	locations					Classification Explosion groups & Temperature classes											
Flammable medium	Hazardous locations Probability of a potentially explosive atmosphere occuring	Classification of hazardous locations	Product cla	ssification		quipment rotection level (EPL)		Explo group	sion		lepending or proup							
			Product group	Product catego								1						
	Continuously, for long periods or frequently	Zone 0	II					IIA	IB	Ammonia Methane Ethane Propane	Ethanol Cyclohe-xene n-Butane	Petrol Diesel fuel Fuel oil n Hexane	Acetal - - dehyde					
Gases, mists, vapours	Likely to occur	Zone 1	II	1G 2G	G	Gb—			10	City gas Acrylic nitrile	Ethylene Ethylene- oxide	Ethyl-glycol Carbon hydrogen	Ethyl-ether					
	Infrequently and for short periods only	Zone 2	II		3G	Gc				Hydrogen	Acetylene				Carbon disulphide			
	Continuously, for long periods or frequently	Zone 20	П							T1< 450°C T2< 300°C		4						
Dusts	Likely to occur	Zone 21	II	1D	Do					T3< 200°C								
	Infrequently and for short periods only	Zone 22	II	2D -	3D	Db Dc				T4< 135°C T5< 100°C T6< 85°C								
Off code number 0477	icial Institutes Institute Notified Body Eurofins Product Testing Italy					 ↓	•			max. tempera		osed surface of t y shown (e.g. 18	the product. Fo	emperature class in or dust explosion pr				
		<mark>(Ex</mark> )	II 2G II 2D	Ex db		IIC T6 IIIC T80°C T195	T3 C 5°C		Gb Db			Tamb = ·	-25°C to +5	55°C	I			
Prevents transmiss	ion of the	flameproof	Ex d		1,2	EN 60079-		IIIA		r	flammable fib	pres						
explosion outside Prevents high temperatures and	sparks	enclosure increased safety	Ex e		1,2	1 EN 60079-7		I	IIB III	C n	on conductive	e dust		For common use	-			
Low current / volt	age supply	intrinsic safety	Ex I (1) Ex iD (2)	3	0,1,2, 20,21,22	EN 60079-					conductive d	lust						
Positive pressure c	levice	pressurized apparatus	Ex p Ex pD	<u>N</u>	1,2, 21,22	EN 60079- 2		Code			Dust classifica	ition		For use under special	x			
Encapsulated		moulding	Ex m (3) Ex mD (4)	<u>×</u>	0,1,2, 20,21,22			8				eriods of immersion		conditions				
Parts immersed in from explosive atr Prevents transmiss	nosphere	oil immersion	Ex o		1,2	EN 60079- 6 EN 60079-			_	rotected against d st-limited ingress	ust stror	ng jets of water e jets from all dire		This product is				
explosion outside As above, but for		powder filling	Ex q Ex n		1,2	EN 60079-		4	soli	ds objects >1mm ds objects >2.5mm	sprays	from all directions vs up to°60 from v	5	an Ex-certified component for use in a	U			
zone 2 Dust explosion pro	pof	protection "n"	Ex † (5)		20,21,22			2	soli	ls objects >12.5mm ds objects >50mm	vertical f	rs up to°15 from ve		complete system				
Protection principle		protection "tD" Type of protection	Code	Symbol	Zones to use in (6			0 IP	Prot	no protection ection against solids/dust		protection on against water	r	Application	Code			
	Protection principle - Type o	f protection - EN 40	)79-0 General R	equirement	ts					Ingress Prote	ction EN 60529			Further in	formation			
(1) ia (zone 0		(zone 2)				(zone 1,2)	m	c (zo	ne 2)			e 20,21,22) tb	(zone 21,22)					
	0,21,22) ibD (zone 21,22)	icD (zone 2)				bD (zone 21,				)		possible applic						



一般

Ideal for harsh and humid environments with flammable gases.

- Petrochemical Plant
- Chemical plant
- Coal washery
- Pharmaceutical factory

Gas & Dust explosive zone enviroments: Zone1, Zone2, Zone21, Zone22



## **Characteristics**

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A range of highly conductive materials accelerate the heat convection in the cooling structure, which guarantees good performance after long-term use in high temperature environments.

The various light distribution and installation types, aim towards offering attractive and effective lighting solutions to workshops and platforms.

The light source provided by CREE LEDs emits no dark spots and can offer energy savings over 60%, in comparison with a Metal Halide lamp.

AC-DC wide voltage driver with a power factor over 0.98, render the luminaire highly reliable.

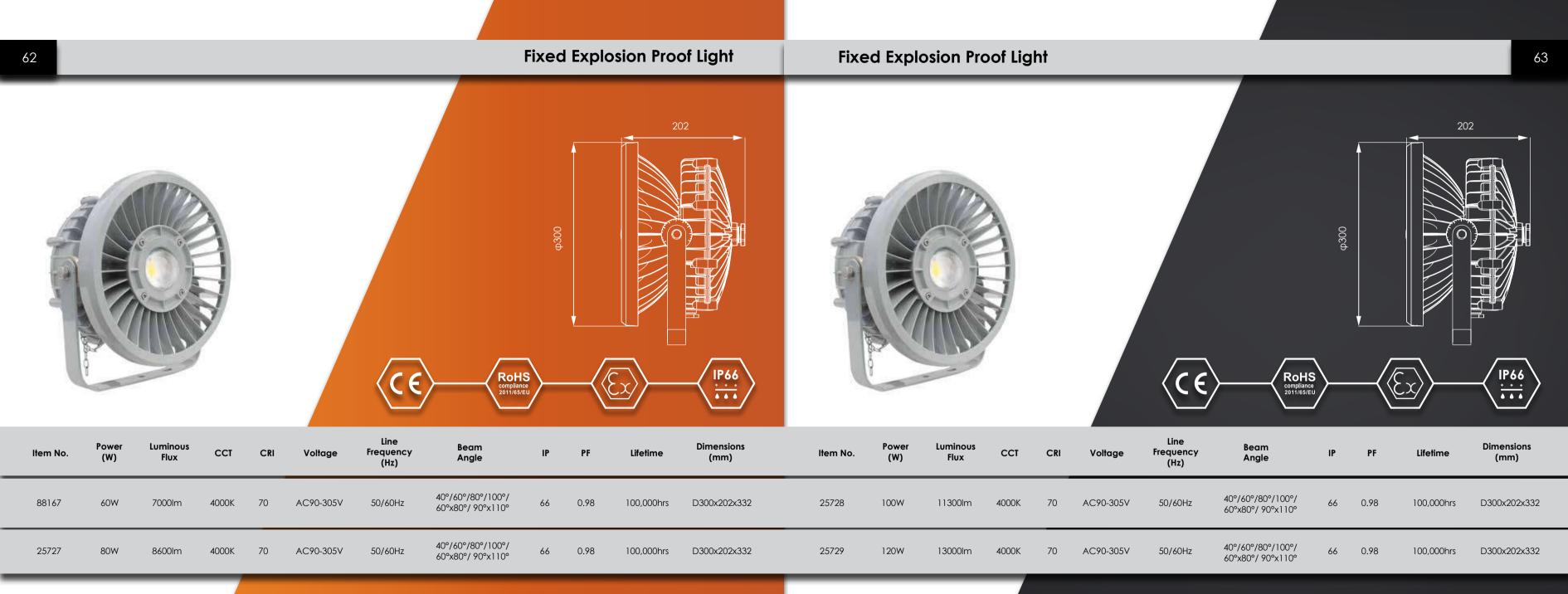
Power supply can be easily replaced without the need of any welding tools

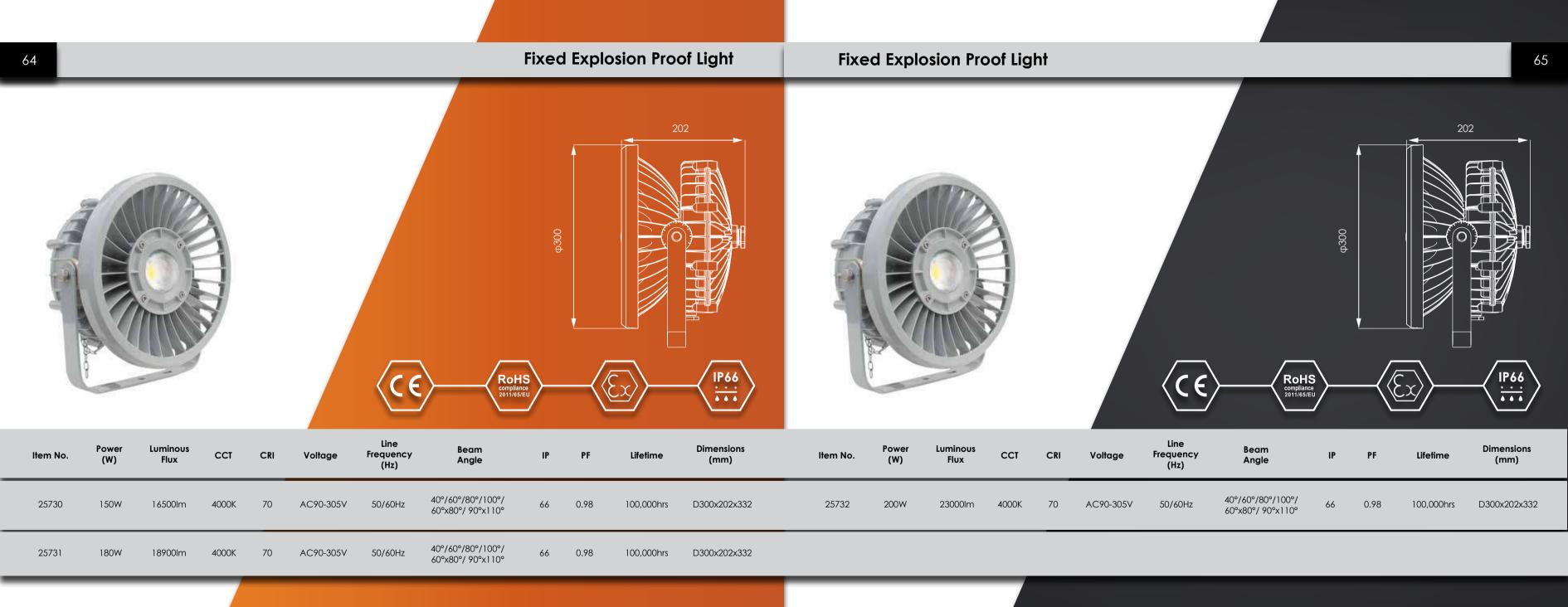
The adjustable locking device on the bracket can tightly fix the lamp to any desired angle, making the lamp resistant to harsh vibrations.

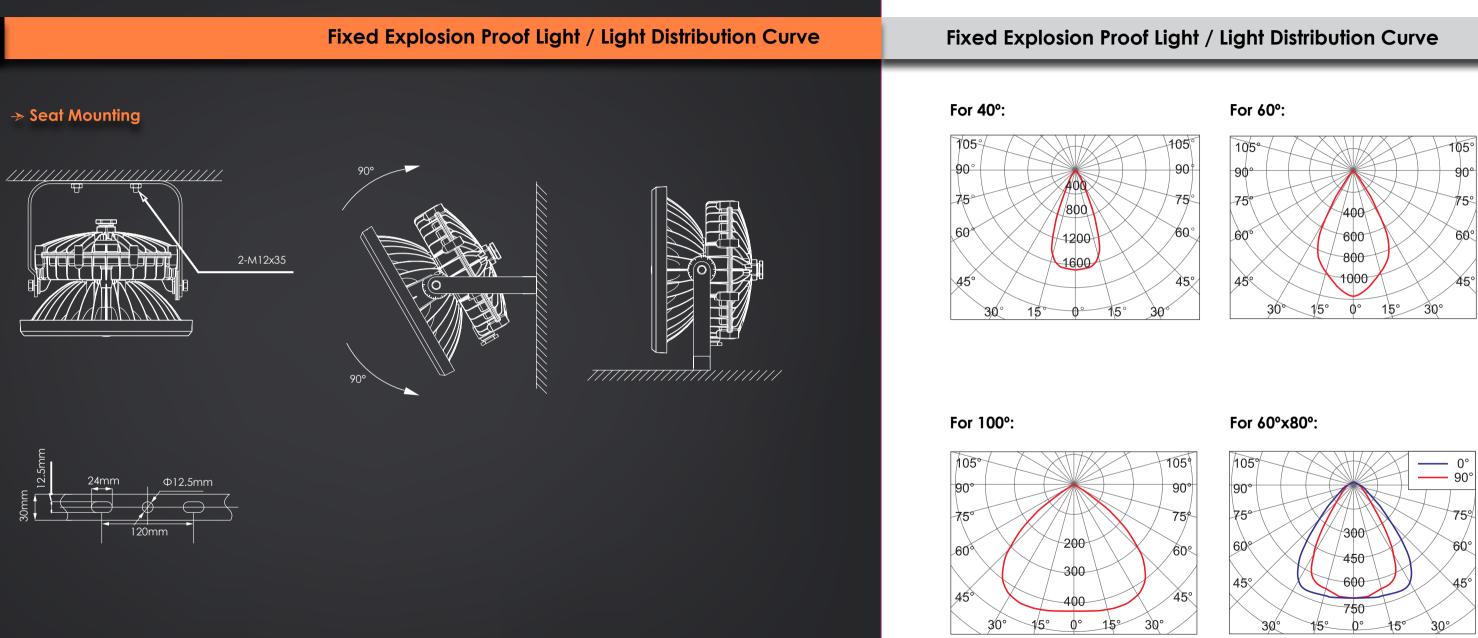
The aluminum housing and type 304 stainless steel fasteners and brackets are treated with a hightech anti-corrosion technology, thus making the fixture suitable for use in hazardous locations.

Windward area is only 30% of the size of a traditional lamp, making it extremely suitable for high altitude installation even in windy areas.

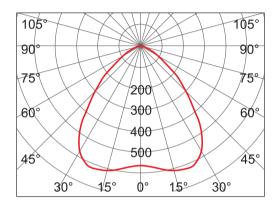
Intelligent control functions are available.



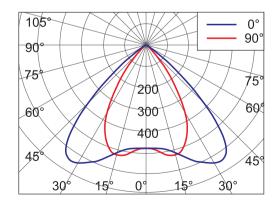








For 90°x110°:



		Lab	Labelling of explosion proof equipment according to ATEX (2014/34/EU)												
Classification ar	nd labelling of hazardous	locations	_			Classification Explosion groups & Temperature classes									
Flammable medium	Hazardous locations Probability of a potentially explosive atmosphere occuring	Classification of hazardous locations	Product clo	issification		quipment rotection level (EPL)	Exp	olosion oup		lepending or roup	-			-	
			Product group	Produc catego						1	1	1			
	Continuously, for long periods or frequently	Zone 0	II				IIA	IIB	Ammonia Methane Ethane Propane	Ethanol Cyclohe-xene n-Butane	Petrol Diesel fuel Fuel oil n Hexane	Acetal - - dehyde			
Gases, nists, vapours	Likely to occur	Zone 1	II	1G 2G	G	Gb —			City gas Acrylic nitrile	Ethylene Ethylene- oxide	Ethyl-glycol Carbon hydrogen	Ethyl-ether			
	Infrequently and for short periods only	Zone 2	II		3G	Gc			Hydrogen	Acetylene				Carbon disulphide	
	Continuously, for long periods or frequently	Zone 20							T1< 450°C		1				
	pendus or nequenny								T2< 300°C T3< 200°C			i			
Dusts	Likely to occur	Zone 21	Ш	1D 2D	Do	Db			13< 200 C T4< 135°C						
	Infrequently and for short periods only	Zone 22	П		3D	Dc			<mark>T5&lt; 100°C</mark> T6< 85°C						
Offic code number	ial Institutes Institute Notified Body							]	max. tempera		sed surface of t	he product. Fo	emperature class in r dust explosion pr		
0477	Eurofins Product Testing Italy	1									Tempero	ature class			
Prevents transmiss explosion outside	ion of the	flameproof enclosure	II 2G II 2D Fx d	Ex d		IIC T5T IIC T95°C T195 EN 60079- 1	3 °C	Gb Db		flammable fib		)°C to +40°(	C/55°C		
Prevents high temperatures and	d sparks	increased safety	Exe		1,2	EN 60079-7		L "	IC n	on conductive	dust		USE		
Low current / volt	age supply	intrinsic safety	Ex I (1) Ex iD (2)		0,1,2, 20,21,2					conductive d	ust				
Positive pressure of	device	pressurized apparatus	Ex p Ex pD		1,2, 21,22	EN 60079- 2	Co	de		Dust classifica	tion		For use under special	x	
Encapsulated		moulding	Ex m (3) Ex mD (4)		0,1,2, 20,21,2	2 18	8				riods of immersio		conditions		
Parts immersed in from explosive at	mosphere	oil immersion	Ex o		1,2	EN 60079- 6	6	-	- protected against d	ust stron	of temporary imm g jets of water				
Prevents transmiss explosion outside		powder filling	Ex q	*	1,2	EN 60079- 5	5	so	ids objects >1mm	sprays	e jets from all dire	5	This product is an Ex-certified component	U	
As above, but for zone 2	Use in	protection "n"	Ex n		2	EN 60079- 15	3	solie	ds objects >2.5mm ds objects >12.5mm dr objects >50mm	direct spray	s up to°60 from v s up to°15 from ve	ertical	for use in a complete system	0	
Dust explosion pro	pof	protection "tD"	Ex † (5)	IP66	20,21,22	31	1		ds objects >50mm no protection		alling drops of wo protection	iter	.,		
Protection principle	Protoction principle - T	Type of protection	Code	Symbol	Zones to use in (6		IP		tection against solids/dust		n against wate	r	Application	Code	
	Protection principle - Type c (),1,2) ib (zone 1,2) ic	(zone 2)	-	(zone 0,1,		( ) ()		zone 2)	ingress Prote	ction EN 60529 (5) ta (zone	20,21,22) tb		Further in	ionnation	



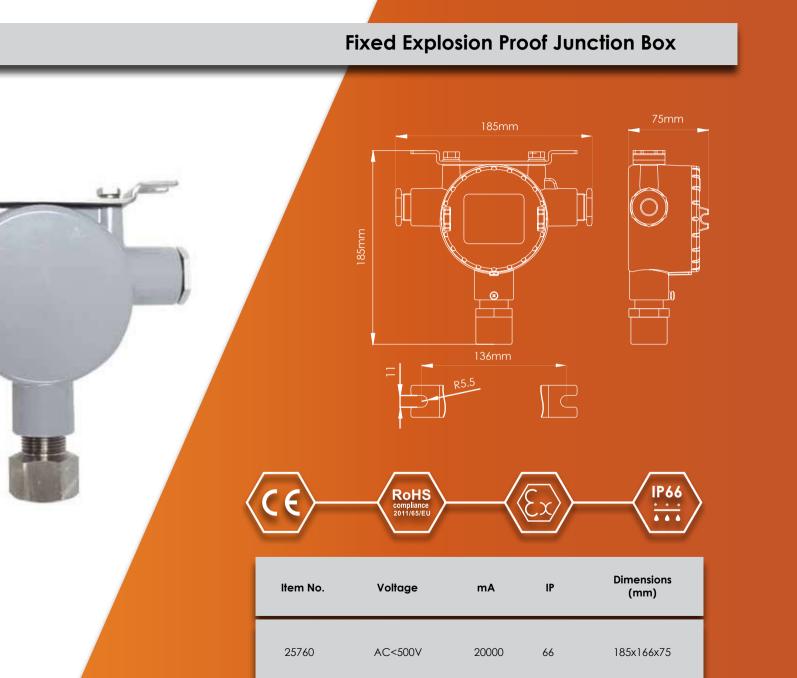
Used as a juction box and mounting element for lighting equipment installed in hazardous explosive areas like petrochemical plants, chemical plants, pharmaceutical factory, polishing plant, etc.

## **Characteristics**



Small and light weight juction box for convenient installation.

The junction box shell is treated with a high-tech anti-corrosion technology, which makes it suitable for use in hazardous locations.



Classificatio Flammable medium

Dusts

code number 0080

**(**€

Prevents transr explosion outsi Prevents high

temperatures

Positive pressu

Encapsulated

Parts immerse from explosive

Prevents trans explosion out As above, but zone 2

Dust explosion

Protection pri



		Lab	elling of ex	cplosion	proof	equipme	ent c	icco	ordin	g to ATEX (2	2014/34/EU	J)							
on ar	d labelling of hazardous	locations					0	Class	ificati	on Explosion g	groups & Tem	perature cla	sses						
	Hazardous locations Probability of a potentially explosive atmosphere occuring	Classification of hazardous locations	of hazardous locations (EP						osion O	explosion g	ixamples depending on - explosion group - emperature class								
			Product group	Product category	/														
	Continuously, for long periods or frequently	Zone 0	II				1	IIA	IIB	Ammonia Methane Ethane Propane	Ethanol Cyclohe-xene n-Butane	Petrol Diesel fuel Fuel oil n- Hexane	Acetal - dehyde						
	Likely to occur	Zone 1	Ш	1G 2G	Ga	Gb				City gas Acrylic nitrile	Ethylene Ethylene- oxide	Ethyl-glycol Carbon hydrogen	Ethyl-ether						
	Infrequently and for short periods only	Zone 2	II		ßG	Gc				Hydrogen	Acetylene				Carbon disulphide				
	Continuously, for long	Zone 20	Ш							T1< 450°C		ļ							
	periods or frequently									T2< 300°C			1						
	Likely to occur	Zone 21	Ш	1D	Da					T3< 200°C									
				2D		Db				T4< 135°C - T5< 100°C									
	Infrequently and for short periods only	Zone 22	Ш	3	BD	Dc				T6< 85°C									
Offic	ial Institutes					-								nperature class i					
	Institute Notified Body										ture of the expo erature is directly			dust explosion pr	oof, the max.				
	INERIS											Tempero	iture class						
0080 ←		<mark>⟨£x</mark> ⟩	2G    2D	Ex db		IC T80°	С		Gb Db			Tamb =	-50°C to +6	0°C					
nsmiss utside	ion of the	flameproof enclosure	Ex d	X	1,2	EN 60079- 1	I	IIA			flammable fib	res		For common					
gh es anc	l sparks	increased safety	Ex e	X	1,2	EN 60079-7			IIIC		on conductive	dust		Use	-				
t / volt	age supply	intrinsic safety	Ex I (1) Ex iD (2)	B	0,1,2, 20,21,22	EN 60079- 11					conductive d	ust							
ssure c	device	pressurized apparatus	Ex p Ex pD	T <u>i</u>	1,2, 21,22	EN 60079- 2		Code	e		Dust classifica	lion		For use under	v				
ed		moulding	Ex m (3) Ex mD (4)		0,1,2, 20,21,22	EN 60079- 18		8		-	long pe	riods of immersion		special conditions	Х				
	oil to isolate mosphere	oil immersion	Ex o	<b>≥</b>	1,2	EN 60079- 6		7 6	totally pr	- otected against du		of temporary imm g jets of water	ersion						
insmiss utside		powder filling	Ex q	×	1,2	EN 60079- 5	_	5 4		t-limited ingress ds objects >1mm		e jets from all directions	ctions	This product is an Ex-certified					
out for	use in	protection "n"	Ex n	$\overline{\mathbb{X}}$	2	EN 60079- 15		3	solid	s objects >2.5mm	direct spray	s up to°60 from ve s up to°15 from ve		component for use in a complete	U				
on pro	pof	protection "tD"	Ex † (5)		20,21,22	EN 60079- 31		1 0	solid	s objects >50mm	vertical fe	alling drops of wat		system					
nciple		Type of protection	Code	Symbol	Zones to use in (6)	CENELEC	- 6	IP	Prote	ection against olids/dust	Protectio	n against water		Application	Code				
	Protection principle - Type o (1,1,2) ib (zone 1,2) ic (0,21,22) ibD (zone 21,22) i	(zone 2)	(3) ma	(zone 0,1,2)		(zone 1,2) D (zone 21,2			ne 2) zone 2)			20,21,22) tb ( possible applic	zone 21,22) to	Further in c (zone 2)	formation				

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