

**Includes NEW  
LinkEx LED**



**Wolf Safety Lamp Company**



**The widest range of portable 'ATEX' lighting approved for use in explosive atmospheres**

Wolf Safety have Ex lighting products for all purposes, the correct apparatus for every hazardous area application. Wolf Safety Lamps have proven quality and reliability in their wide use in many industry sectors including firefighting, oil, gas, petrochemicals, aviation, marine, offshore, pharmaceuticals, food processing and water treatment.



**ATEX**

1180

**WINDSOR MARINE PTE LTD**  
28 Joo Koon Circle, Singapore 629057 Tel: (65) 6349 1930  
Website: [www.windsormarine.com.sg](http://www.windsormarine.com.sg) E-mail: [wolfite@windsormarine.com.sg](mailto:wolfite@windsormarine.com.sg)



**Agent and Distributor of Wolf Safety Lamps in Singapore, Malaysia,  
Indonesia, China (Marine/Offshore) & Australia (Marine/Offshore).**



## About The Wolf Safety Lamp Company

Since the establishment of The Wolf Safety Lamp Company in 1912, the Company has continued to go from strength to strength. The Wolf Safety Lamp Company is now the world's largest manufacturer of portable and temporary intrinsically safe and explosion protected lighting, designed and developed in the United Kingdom for safe use in potentially explosive atmospheres.

Wolf Safety is the market leader in the supply of handheld lamps and torches, lighting systems and portable worklights, including the renowned Wolfite Handlamp, all ATEX certified for use in hazardous areas and extreme environments worldwide.

The range includes small handheld halogen or xenon bulb and LED torches, flashlights, handlamps and lanterns for use with either primary cell or rechargeable batteries, mains and low voltage powered portable luminaires, ATEX approved transformers and compressed air operated pneumatic lamps.

Wherever an explosive gas, vapour or dust is present, creating a risk of explosion, there is a Wolf Safety Lamp with the concept of protection for Zone 0, Zone 1 and 2 to ensure safety.

Applications for explosion proof lights are in offshore oil and gas, marine vessels, refining and petrochemical industries, food processing, pharmaceuticals, breweries and distilleries as well as firefighting, water treatment and gas distribution.





# WOLF MINI & MICRO TORCHES



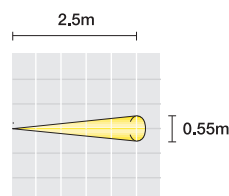
## Primary Cell Mini Safety Torches

- Ultra small size
- ATEX Approved for explosive gas and dust atmospheres
- T4 and T5 temperature class versions
- Zone 0 certified LED models
- Simple, robust design with integral clip
- Single handed switching
- Ingress protection to IP67
- Group I Mining Approval

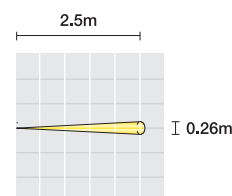


Ref	M-10	M-20	M-40	M-60
	I M1/II 1 GD Ex ia I/IC T5 tD A20 IP67 T80°C	I M2/II 2 GD Ex ib I/IC T4 tD A21 IP67 T80°C	I M1/II 1 GD Ex ia I/IC T4 tD A20 IP67 T80°C	I M1/II 1 GD Ex ia I/IC T4 tD A20 IP67 T80°C
	Baseefa06ATEX0084			
<b>G</b>	Zones 0, 1 & 2	Zones 1 & 2	Zones 0, 1 & 2	Zones 0, 1 & 2
<b>D</b>	Zones 20, 21, 22	Zones 21, & 22	Zones 20, 21, 22	Zones 20, 21, 22
	25g	60g		
	22 x 70mm	22 x 146mm		
	4 x LR44	2 x LR03 (AAA)	3 x LR1 (N)	
	1x5mm LED	1.05W Xenon	3x5mm LED	1W LED
	≈2hrs	≈2.3hrs	≈10hrs	≈10hrs
	IP67			

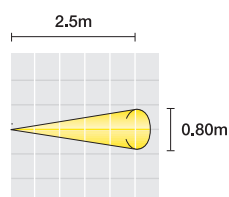
M-10 8 lux (13°) @ 2.5m



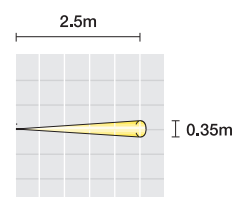
M-20 100 lux (6°) @ 2.5m



M-40 15 lux (18°) @ 2.5m



M-60 275 lux (8°) @ 2.5m



# WOLF 4AA MIDI TORCH



## Primary Cell Midi Safety Torch

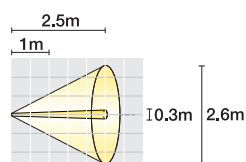
- ATEX Approved and IECEx Certified for use in Zone 1 hazardous areas
- 120 lumen high output LED light source
- T3/T4 temperature class
- IIB Gas Group
- Midi compact size
- Compact & robust ergonomic design
- Single handed switch with switch protection shroud
- IP67 water and dust tight
- Group I M2 Mining approval



Ref	M80
	IM2/II2G Ex ib I Mb/IIB T3/T4 Gb IP67
	Baseefa11ATEX0236
<b>G</b>	Zones 1 & 2, Gas Groups IIA, IIB
<b>D</b>	—
	0.190 kg
	45 x 170mm
	4 x LR6 (AA) Cells
	High power LED
	≈7hrs
	IP67

M-80

6500 lux (7°) @ 1m  
1235 lux (7°) @ 2.5m










# WOLF ATEX SAFETY TORCH



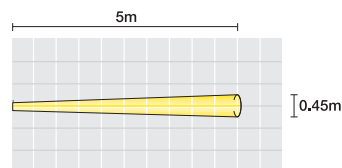
## Primary Cell Safety Torch

- ATEX & IECEx Approved for Zones 1 & 2 explosive Gas and Dust atmospheres
- T6 and T4 models
- Simple, robust design
- Optimum Halogen light output
- High energy, long life alkaline cell approval
- Low battery power indicator option
- Convert T4 models to LED using the approved TP-300 Module



Ref	TS-26/TR-26	TS-24/TR-24	TS-24+/TR-24+
  <b>G</b>  <b>D</b>	II 2 GD EEx e ib IIC T6 IP67 T65°C	II 2 GD EEx e ib IIC T4 (Ta=40°/55°C) Ex tD A21 IP67 T95°C Db (Ta=55°C)	
	BAS02ATEX2220X		
	Zones 1 & 2		
	Zones 21 & 22		
	0.350kg/0.390kg	0.450kg/0.490kg	
	60 x 60 x 200/60 x 80 x 195mm		
	2 x R20 (D)	2 x LR20 (D)	
	1.2W	1.7W Xenon	2.0W Halogen
	≈5hrs	≈12hrs	≈10hrs
	IP67		

TS-26/TR-26 170 lux (5°) @ 5m  
 TS-24/TR-24 230 lux (5°) @ 5m  
 TS-24+/TR-24+ 280 lux (5°) @ 5m



# WOLF SAFETY TORCH with LED



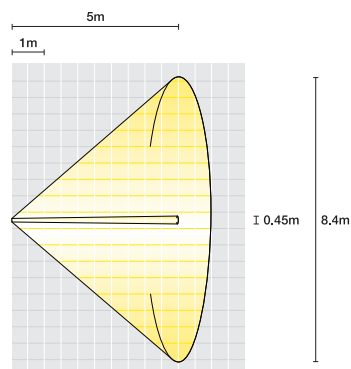
## Primary Cell LED Safety Torch

- ATEX & IECEx Approved for Zones 1 & 2 explosive Gas and Dust atmospheres
- T4 temperature class
- High power LED light source
- Simple, robust design
- High energy, long life alkaline cell approval
- Low battery power indicator
- Also available, an LED retrofit (TP-300) into existing Wolf T4 bulb torches



Ref	TS-30+/TR-30+
	II 2 GD Ex e ib IIC T4 Gb (Ta=40/55°C) Ex tb IIIC T95°C Db (Ta=55°C)
<b>G</b>	BAS02ATEX2220X
<b>D</b>	Zones 1 & 2
	Zones 21 & 22
	0.475Kg/0.500Kg
	60 x 60 x 200/60 x 80 x 195mm
	2 x LR20 (D)
	High Power LED
	≈27 hrs
	IP67

TR-30+ & TS-30+  
 8600 lux (5°) @ 1m  
 291 lux (5°) @ 5m













# WOLF ATEX LED TORCH



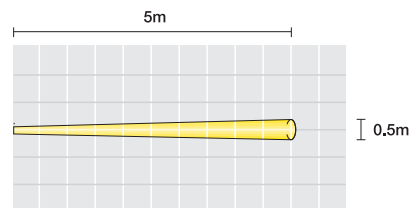
## High Power LED Safety Torch

- ATEX & IECEx Approved for Zones 0, 1 & 2 explosive Gas and Dust atmospheres
- LED light source 'fitted for life', no bulb replacement required
- High output focussed spot beam with flood of lower level fringe light
- Over 7.5 hours high power output from 4 x AA alkaline primary cells
- Compact and lightweight torch design
- Low battery indicator fitted on TR-40+ model
- Zone 0 version available
- All models with Group I Mining Approval



Ref	TR-40 & TR-40+	TR-45
  <b>G</b>  <b>D</b>	II 2GD Ex Ib IIC T4/T3 tD A21 IP67 T85°C	II 1G Ex Ia IIC T4/T3 IP67
	Baseefa07ATEX0091	Baseefa07ATEX0091
	Zones 1 & 2	Zones 0, 1 & 2
	Zones 21 & 22	–
 + 	0.350Kg	
	60 x 80 x 195mm	
	4 x LR6 (AA)	
	1.4W LED	
  	≈7.5hrs	
	IP67	

**TR-40/TR-40+/TR-45**  
1.4W LED beam (approx 6°)  
**550 lux (6°) @ 5m**













# WOLF RECHARGEABLE TORCH



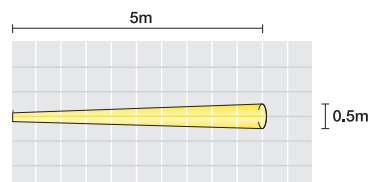
## Rechargeable Safety Torch

- ATEX & IECEx Approved for Zones 0, 1 & 2 explosive Gas and Dust atmospheres
- Outstanding light output from LED or Halogen bulb versions
- Compact and lightweight ergonomic torch design
- Up to 6.5 hours duration using latest battery technology
- Battery state-of-charge indicator
- Mains and vehicle quick charge option
- Zone 0 version available



Ref	R-30	R-50	R-55
  <b>G</b>  <b>D</b>	II 2 GD T85°C Ex eib IIC T4 tD A21 IP67 T85°C	II 2 GD T85°C Ex ib IIC T4 tD A21 IP67 T85°C	II 1G Ex ia IIC T4 IP67
	Baseefa05ATEX0068		Baseefa05ATEX0069
	Zones 1 & 2		Zones 0, 1 & 2
	Zones 21 & 22		–
	0.340kg	0.375kg	
	60 x 80 x 195mm		
	7.4V 2.4Ah Li-Ion		
	4W Halogen	3W LED 	
	≈3.5/6.5hrs		
	IP67		
	<b>R-30L/R-50L</b> 12-24Vdc <b>R-30H/R-50H</b> 100-254Vac		
	≈3.0 hrs		

R-30 340 lux (6°) @ 5m  
R-50 630 lux (6°) @ 5m





# WOLF ATEX LED HEADTORCHES



## Primary Cell LED Safety Headtorch









- ATEX & IECEx Approved for Zones 0, 1 & 2 explosive Gas atmospheres
- T3/T4 temperature class
- High power LED light source
- Lightweight, ergonomic design
- Single handed switching
- IP66 water and dust tight
- Supplied with helmet clips for hard hat use



HT-400



HT-650

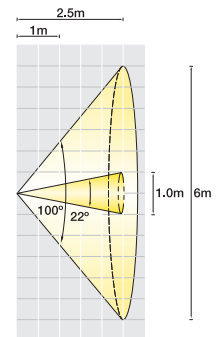
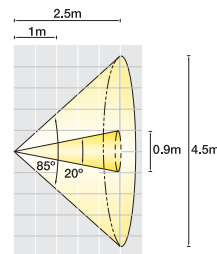
Ref	HT-400	HT-600	HT-650
<div><div>Industrial</div><div>Mining</div><div><div>G</div><div>D</div></div></div>	II 2 G Ex ib IIC T4 Gb IP66	II 2 G Ex ib IIC T4/T3 Gb IP66	II 1 G Ex ia IIC T4/T3 Ga IP66
	I M2 Ex ib I Mb IP66	I M2 Ex ib I Mb IP66	I M1 Ex ia I Ma IP66
	Zones 1 and 2, Gas groups IIA, IIB, IIC	Zones 1 and 2, Gas groups IIA, IIB, IIC	Zones 0, 1 and 2, Gas groups IIA, IIB, IIC
	—	—	—
	Baseefa10ATEX0067		
<div><div>+</div></div>	0.090Kg	0.180Kg	
<div></div>	44 x 75mm	56 x 84mm	
<div></div>	3 x LR03 (AAA)	3 x LR6 (AA)	
<div></div>	High power LED		
<div></div>	≈6hrs	≈14hrs	
<div></div>	IP66		

### HT-400

381 lux (20°) @ 1m  
52 lux (20°) @ 2.5m

### HT-600/HT-650

493 lux (22°) @ 1m  
67 lux (22°) @ 2.5m



# WOLFLITE HANDLAMP H-4DCA



## Primary Cell Safety Handlamp

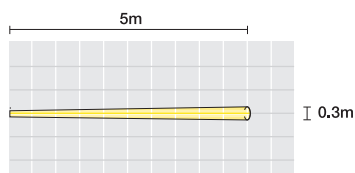
- ATEX & IECEx Approved for Zones 1 & 2 explosive Gas and Dust atmospheres
- Dust ignition protected for Zones 21 and 22
- Alkaline primary cell approval giving 20 hours duration
- Increased light output from halogen bulb
- Robust anti-static thermoplastic lamp enclosure
- Ingress protection to IP66



Ref	H-4DCA
	II 2 GD EEx e ib IIC T4 IP66 T135°C
	BAS00ATEX2203
<b>G</b>	Zones 1 & 2
	Zones 21 & 22
<b>D</b>	
<b>Kg</b>	1.45kg
	130 x 140 x 185mm
	4 x LR20 (D)
	2.4W Halogen
	≈20hrs
	IP66

### H-4DCA

960 lux (3.5°) @ 5m



# WOLFLITE XT HANDLAMP



## High Power LED Safety Rechargeable Handlamp

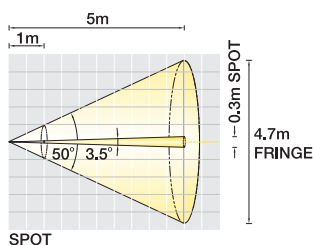
- ATEX & IECEx Approved for Zones 0, 1 & 2 explosive Gas atmospheres
- Ultra bright high power LED light
- Spot and flood switchable beam options
- Up to 9 hours duration on full power
- IP67 dust tight and water resistant
- Quick charge, from 2 hours



Ref	XT-50	XT-70	XT-90	XT-75
	II 2G Ex ib IIC T4 Gb			II 1G Ex ia IIC T4 Ga
	Baseefa09ATEX0326			
<b>G</b>	Zones 1 & 2			Zones 0, 1 & 2
<b>D</b>	-			-
	1.2 Kg			
	120 x 136 x 190mm			
	Rechargeable, Li-Ion			
	1 x 350lm LED	2 x 350lm LED	4 x 350lm LED	2 x 350lm LED
	3/6 hrs	6/12 hrs	9/18 hrs	6/12 hrs
	IP67			
	XT-200H 100-254Vac XT-200L 12-24Vdc			
	2.0 hrs	3.5 hrs	4.5 hrs	3.5 hrs

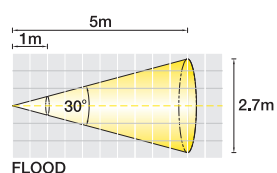
### XT-50, XT-70, XT-90 Spot

13130 lux (3.5°) @ 1m  
620 lux (3.5°) @ 5m



### XT-70, XT-90 Flood

260 lux (30°) @ 1m  
14 lux (30°) @ 5m



# WOLFLITE HANDLAMP



## Rechargeable Safety Handlamp

- ATEX & IECEx Approved for Zones 1 & 2 explosive Gas and Dust atmospheres
- LED or Halogen light source
- LED Bulb retrofit option available
- 50% more light from LED light source
- Electronic current limited battery with deep discharge protection
- Robust anti-static thermoplastic lamp enclosure
- For use with Wolf mains and vehicle chargers

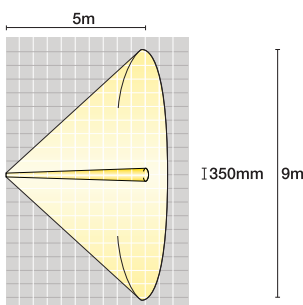
LED Version Available Now!



Ref	H-251A	H-251ALED
	II 2 GD EEx e ib IIC T4 IP66 T135°C	
	BAS00ATEX2176	
<b>G</b>	Zones 1 & 2	
<b>D</b>	Zones 21 & 22	
	1.75kg	
	130 x 140 x 185mm	
	4.0V 5.0Ah Pb	
	2.8W Halogen	1W LED
	≈7hrs	≈24hrs
	IP66	
	C-251LV 12-32Vdc C-251HV 230/110Vac	
	≈10hrs	

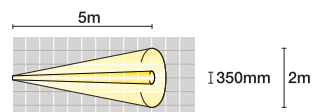
### H-251ALED

60 lumen LED beam (approx 4°)  
with wide angle fringe light



### H-251A

39 lumen spot beam (approx 4°)  
with fringe light



# WOLF ATEX TURBOLITE



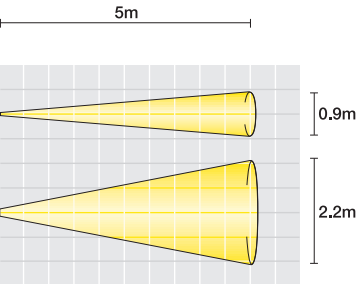
### High-power compressed air Safety Lamp

- For use in Zones 1 and 2 hazardous areas
- Aluminium super-lightweight construction
- 250 watt Halogen light output
- Safe compressed air power source
- Dust ignition protected for Zones 21 and 22 using remote exhaust
- Group 1 Mining approval with alternative brass construction



Ref	A-TL44A	A-TL45A
	II 2 GD II T4 (Tamb = 55°C) T135°C SIRA02ATEX5099X	
<b>G</b>	Zones 1 & 2	
<b>D</b>	Zones 21 & 22	
	5.5kg	7.1kg
	170 x 180 x 280mm	220 x 180 x 240mm
	0.75m³/min @ 5-8bar	
	250W Halogen	
	IP40	IP68

A-TL44A 70lux @ 2.5m  
A-TL45A 2000lux (10°) @ 5m  
A-TL45A 950lux (25°) @ 5m



# WOLF ATEX WORKLITE



### Rechargeable high output LED floodlight

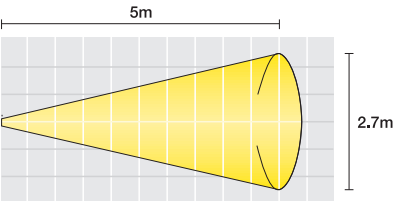
- ATEX Approved for Zone 1 explosive Gas and Dust atmospheres
- High power white LED beam with flood of lower level fringe light
- LED light source 'fitted for life', no bulb replacement required
- Long duration, up to 12 hours full power, 24 hours half power
- Locking pivot head
- Toughened glass lens with optional disposable lens guard



Ref	WL-85	WL-70	WL-80
	II 2 GD Ex e ib mb IIC T4 Ex tD A21 IP65 T135°C Sira07ATEX3027		
<b>G</b>	Zones 1 & 2		
<b>D</b>	Zones 21 & 22		
	23kg	16kg	16.6kg
	550 x 240 x 230mm	470 x 230 x 230mm	
	12/24hrs		6/12hrs
	12 x 3W LED	6 x 3W LED	12 x 3W LED
	IP67		
	100 – 254VAC		
	12hrs	8hrs	

WL-70  
120 lux (30°) @ 5m (18 Watt)

WL-85 & WL-80  
210 lux (30°) @ 5m (36 Watt)





# WOLF TANK LIGHTING KITS

YOUR BESPOKE 24V LIGHTING SOLUTION

## WOLF LinkEx™ LED



- ≈29W
- 3250 lumens light output
- Array of ultra bright high power LEDs
- 3.0kg (excluding cable)

## WOLF LinkEx™ FLUORESCENT

- 2 x 36W
- 5800 lumens light output
- Uses standard compact fluorescent lamps for ease of maintenance
- ≈4kg (excluding cable)



## WOLF LED FLOODLITE

- 58W
- 48 ultra bright high power LEDs
- 3300 lumens light output
- Very low maintenance
- 9kg (excluding cable)



## WOLF FLAMEPROOF LEADLAMP

- 70W Halogen
- High output halogen light
- 2.5kg (excluding cable)
- Integral operation switch
- Lightweight alloy construction



**HAVE YOU  
SEEN THE LIGHT?**

### Key Features:

- The option to 'Mix & Match' with fluorescent and LED lights allows users to develop bespoke temporary lighting solutions
- Designed for quick and easy maintenance – saving time and money
- Compact robust design
- Wide range of accessories available

### Markets & Applications:

- Vessel entry
- Tank cleaning and routine inspection work
- Programmed preventative maintenance shutdowns in potentially dangerous confined spaces
- All frequently encountered in the aircraft industry, oil & gas, petrochemical and utility markets

### Wide range of accessories available:

- Magnet fixing kit
- Protective films
- Scaffold bracket
- Tripods/Stands
- Universal bracket
- Hanging straps
- Extension cables



# WOLF LinkEx™ LED TEMPORARY LUMINAIRE



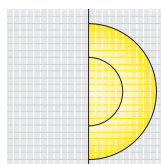
## Temporary LED Luminaire

- ATEX & IECEx Approved for Zone 1 explosive Gas and Dust atmospheres
- Ultra bright high power LED light output
- Available with plugs and sockets to link in series
- 'Fitted for Life' LED light source
- Compact and robust design
- Low power consumption
- Safe Operation Voltage Indicator (SOVI™)
- 180° and 360° versions available



Ref	LX-400
	II 2 GD Ex emb IIC T3 Gb (-20°C to +40°C) Ex t IIIC T170°C Db IP66/67
	SIRA12ATEX3177X
	Zones 1 & 2
<b>G</b>	Zones 21 & 22
<b>D</b>	
	≈3.5Kg
	128ø x 706mm
	19-28V AC/DC 85-264V AC
	Hi Power LED (3250lm)
	IP66/67

**LX-400**  
109 lux (180°) @ 2.5m  
30 lux (180°) @ 5m



# WOLF FLUORESCENT LEADLAMP



## Portable Fluorescent Luminaire

- ATEX & IECEx Approved for Zone 1 explosive Gas and Dust atmospheres
- Fitted with plugs and sockets to link in series
- Uses standard compact fluorescent lamps for ease of maintenance
- Twin or Quad lamp configuration
- Compact and robust design
- Integrated Unistrut compatible mounting points
- Emergency Version Available
- 110/254VAC

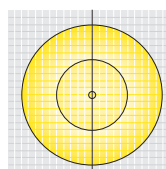


Ref	LL-500
	II 2 GD Ex emb II T3/T4 Ex tD A21 T100°C IP66/67/68
	SIRA08ATEX3098
	Zones 1 & 2
<b>G</b>	Zones 21 & 22
<b>D</b>	
	≈4Kg
	190ø x 580mm
	24/42/110/230V AC/DC
	2 x 36W
	IP66/67/68

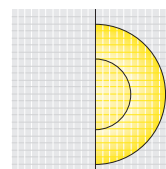
The specifications above are for 2 x 36W version, 18W & 55W versions are available.

**LL-500**  
2x 36W CFL (approx 180°)  
4x 36W CFL (approx 360°)  
190 lux at 2.5m  
50 lux at 5m







4 x 36W/360°



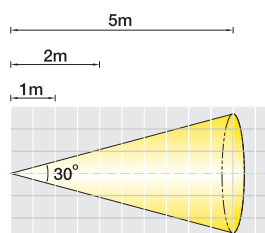
2 x 36W/180°



- ATEX Directive compliant and IECEx Scheme certified
- Ultra bright high power LED light output
- Medium or wide angle flood beams
- Small, lightweight floodlamp construction
- Supplied with stand and integral bridle
- Very low maintenance
- T4 temperature class

Ref	WF-300
  <b>G</b>  <b>D</b>	II 2 GD Ex emb IIC T4 Gb Ex t IIIC T103°C Db IP66/67 (Tamb= 50°C)
	SIRA10ATEX5117X
	Zones 1 & 2
	Zones 21 & 22
	9.0kg (excluding cable)
	292 x 451 x 345mm
	48 x Hi Power LED (3300lm)
	IP66/67
	24V AC/DC 100-254V AC

7800 lux (30°) @ 1m  
1927 lux (30°) @ 2m  
341 lux (30°) @ 5m



- Complies with ATEX Directive 94/9/EC
- High output Halogen light, up to 70 watts
- Lightweight alloy construction for single handed portability
- Zone 1 & 2, Gas group IIC T3/T4 certified
- Designed for quick and easy relamping and maintenance 12 or 24 Volts models available
- Ideal for cleaning, grit blasting and painting operations



- ATEX Approved for Zone 1 & 2 explosive Gas and Dust atmospheres
- 'Fitted for Life' LED light source
- Even white light ideal for inspection
- Compact and lightweight design
- Anti roll & hook feature
- Fitted with cable and ATX plug
- Wide mains voltage range  
110v – 254 V AC
- Low voltage model available







# Wolf Safety Lamp Company ATEX Explained

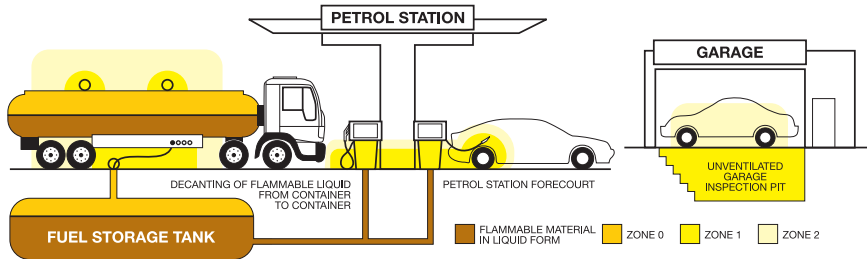
www.wolf-safety.co.uk

## Ex Equipment



### EXAMPLE OF HAZARDOUS AREA ZONES

This diagram shows how hazardous area zones may occur in typical circumstances.

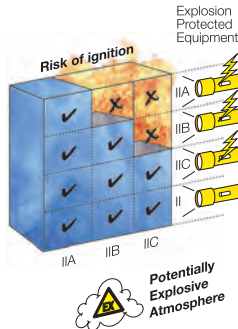


## Ex Environment

GAS GROUP				
Group	Typical Hazard	Maximum Safe Sparking Energy Intrinsic Safety Ex ia/ib	Maximum Safe Gap Flameproof Ex d	Applicable Concepts
I	Methane	more energy required to ignite gas	wide flameproof gap size	all concepts
IIA	Propane			
IIB	Ethylene			Ex d, Ex i
IIC	Hydrogen /Acetylene	less energy required to ignite gas	narrow flameproof gap size	
II	All Gases			Ex e, Ex m, Ex p, Ex o, Ex q, Ex n

Equipment sub-grouping segregates gases according to ease of ignitability by sparks or flames. These apply to flameproof Ex d and intrinsically safe Ex ia/ib equipment only.

### GROUP II GAS SUBDIVISION



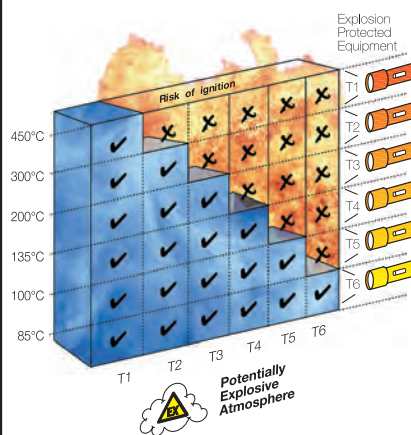
### PROTECTION CONCEPTS FOR ELECTRICAL APPARATUS

Concept	Symbol	Icon	Description	Category	EN Standard
General req.	—		General requirements	—	EN 60079-0
Flameproof	Ex d		ignition within the apparatus enclosure is contained and will not ignite surrounding explosive atmosphere	2	EN 60079-1
Pressurised	Ex p		explosive gas excluded by surrounding ignition source with pressurised inert gas	2	EN 60079-2
Powder filled	Ex q		explosive gas excluded by immersing ignition source in sand	2	EN 60079-5
Oil immersion	Ex o		explosive gas excluded by immersing ignition source in oil	2	EN 60079-6
Increased safety	Ex e		design excludes the possibility of incendive arcs, sparks or hot surfaces	2	EN 60079-7
Intrinsic safety	Ex ia Ex ib Ex ic		energy in circuit and temperature on components reduced to a safe level	1 2 3	EN 60079-11
Non-incendive	Ex nA Ex nL Ex nR Ex nC		will not ignite explosive gas in normal operation, faults unlikely to occur	3	EN 60079-15
Encapsulation	Ex ma Ex mb Ex mc		flammable gas excluded by encapsulating the ignition source in resin	1 2 3	EN 60079-18

Protection concept identifies the means by which explosion protection is achieved.

### TEMPERATURE CLASS

Temperature class relates to the hot surface ignition temperature of a particular explosive atmosphere. It must not be exceeded by the temperature classification of the equipment intended to be used in that atmosphere.  
**Hot surfaces can ignite explosive atmospheres**



### INGRESS PROTECTION (IP) CODE to EN 60529

Ex equipment selection for use in gases, vapours, mists or dusts must take into consideration the environmental conditions of the area in which it is to be used. Apparatus resistance to ingress of both solid bodies and water is identified by use of an "IP rating".

1st Numeral Protection Against Solid Bodies		2nd Numeral Protection Against Water	
no protection	0	no protection	0
> 50mm	1	> 15°	1
> 12.5mm	2	> 60°	2
> 2.5mm	3	> 360°	3
> 1mm	4		4
	5		5
	6		6
	7		7
	8		8

1st numeral and 2nd numeral combined to identify level of ingress protection, e.g. dust tight, protected from high power water jets/heavy seas:—

Ingress Protection rating: **IP66**

### APPARATUS GROUPS AND TEMPERATURE CLASSES FOR COMMON EXPLOSIVE GASES AND VAPOURS

Gas/Vapour Temperature	Gas Group	Temperature Class
Acetic acid	IIA	T1
Acetone	IIA	T1
Acetylene	IIC	T2
Ammonia	IIA	T1
Benzene	IIA	T1
Butane	IIA	T2
Cumene	IIA	T2
Cyclohexane	IIA	T3
Ethanol (ethyl alcohol)	IIA	T2
Ethylene	IIB	T2
Hydrogen	IIC	T1
Methane (industrial)	IIA	T1
Methanol	IIA	T1
Petroleum	IIA	T1
Propane	IIA	T1
Toulene	IIA	T1
Turpentine	IIA	T3
Xylene	IIA	T1

A more comprehensive list of gases and vapours is provided in IEC 60079-20

### IGNITION TEMPERATURES FOR COMMON COMBUSTIBLE DUSTS

Dust type	Dust Layer – minimum ignition temperature (°C)	Dust Cloud – minimum ignition temperature (°C)
Aluminium	280	530
Coal	270	590
Flour	470	410
Grain	290	420
Iron	300	310
PVC	430	680
Rubber	220	460
Sawdust (Wood)	300	400
Soot	385	620
Starch	530	380
Sugar	360	450

A database of 'Combustion and Explosion Characteristics of Dusts' is available at [www.hvbg.de/e/bia/fac/expl/](http://www.hvbg.de/e/bia/fac/expl/)

This condensed guide is provided to aid in the selection of Wolf lighting products for use in potentially explosive atmospheres. Information given is based on practice within the EU as specified in the requirements of the 94/9/EC ATEX (Equipment) Directive and the 99/92/EC ATEX (Workplace) Directive. A complete 'ATEX Explained' poster is available upon request.



WINDSOR MARINE PTE LTD  
28 Joo Koon Circle, Singapore 629057  
Tel: (65) 6349 1930 Website: [www.windsormarine.com.sg](http://www.windsormarine.com.sg) E-mail: [wolfite@windsormarine.com.sg](mailto:wolfite@windsormarine.com.sg)

SL010 issue 9 MMD/11.13

