



INTRINSICALLY SAFE LIGHTING




















A comprehensive guide to safe illumination in hazardous environments

PELI | SAFETY TORCHES





For use in hazardous areas; where special precautions are required when using electrical equipment due to the presence or chance of explosive atmospheres.

MODEL NUMBER	Battery Type	Key Features	Light Output (Lumens)	Beam Distance (Metres)	Beam Intensity (Candelas)	Run Time	Length (mm)	Weight with batteries (g)	Approvals	Colours
1930Z0 	4 x LR 44 coin cell		12	17	70	4hrs 15m	67	30	II 1 G Ex ia op is IIC T6/T4 Ga	
1975Z0 	2 x AAA Alkaline		117	24	141	2hrs 15m	146	54	II 1 G Ex ia op is IIC T4 Ga	
1975Z1 	2 x AAA Alkaline		94	22	122	8hrs 15m	146	54	II 2 G Ex ib op is IIB T4 Gb	
2410Z0 	4 x AA Alkaline		153	165	6837	5hrs 45m	178	210	II 1 G Ex ia IIC T4 Ga, II 1 D Ex ia IIIC T135°C Da	
2220Z1 	2 x CR2032 3V coin cell		9	12	38	34hrs	89	30	II 2 G Ex ib op is IIC T6 Gb	
2460Z1 	4 x AA NiMH	 	181	181	8235	5hrs	178	221	II 2 G Ex ib IIC T3 Gb	
3315Z0 	3 x AA Alkaline	 	138	146	5350	19hrs	156	180	II 1 G Ex ia IIC T4 Ga, II 1 D Ex ia IIIC T130°C Da	
3415Z0 	3 x AA Alkaline		Spot 185 Flood 174 Spot/Flood 329	Spot 134 Flood 38 Spot/Flood 133	Spot 4517 Flood 354 Spot/Flood 4425	Spot 14hrs Flood 15hrs Spot/Flood 6hrs	189	255	II 1 G Ex ia op is IIC T4 Ga	
3610Z0 	4 x AA Alkaline		153	165	6837	5hrs 45m	191	300	II 1 G Ex ia IIC T4 Ga, II 1 D Ex ia IIIC T135°C Da	
3715Z0 	4 x AA Alkaline		Downcast 23 Low 90 High 189	Downcast 24 Low 157 High 249	Downcast 150 Low 6150 High 15552	Downcast 31 Low 7 High 4	136	410	II 1 G Ex ia IIC T4 Ga, II 1 D Ex ia IIIC T130 degreesc Da	
3765Z0 	4 x NiMH	 	Downcast 24 Low 92 High 194	Downcast 24 Low 161 High 256	Downcast 146 Low 6454 High 16392	Downcast 2.5 Low 6.75 High 3.5	136	410	II 1G Ex ia op is IIC T3 Ga	
9415Z0 	4 x D NiMH	 	Low 202 High 530	166 272	6914 18480	11hrs 30m 4hrs 30m	222	1650	II 1 G Ex ia IIC T4 Ga	

PELI | SAFETY HEAD TORCHES

MODEL NUMBER	Battery Type	Key Features	Light Output (Lumens)	Beam Distance (Metres)	Beam Intensity (Candelas)	Run Time	Length (mm)	Weight with batteries (g)	Approvals	Colours
2610Z0 	3 x AAA Alkaline		Low 14 High 30	19 28	91 194	47hrs 19hrs	38	91	II 1 G Ex ia op is IIC T4 Ga	
2690Z0 	3 x AAA Alkaline	 	74	92	2124	11hrs	71	120	I M1 Ex ia I Ma, II 1 G Ex ia IIC T4 Ga, II 1D Ex ia IIC T65°C Da	
2745Z0 	3 x AAA Alkaline		Low 17 High 33	25 35	155 309	40hrs 20hrs	57	94	II 1 G Ex ia IIC T4 Ga	 
2755Z0 	3 x AAA Alkaline		Low 58 High 115	43 61	455 925	16hrs 8hrs	57	96	II 1 G Ex ia op is IIC T4 Ga	 
2765Z0 	3 x AAA Alkaline		Downcast 33 Low 65 Med 104 High 105	9 63 93 107	18 978 2163 2876	9hrs 30m 6hrs 30m 4hrs 15m 4hrs 15m	57	96	II 1 G Ex ia IIC T4 Ga	 

PELI | AREA LIGHTING SYSTEM

MODEL NUMBER	Battery Type	Key Features	Light Output (Lumens)	Run Time	Dimensions L x W x D (cm)	Light Source	Beam Spread	Max. Charge Time	Weight (kg)	IP Rating	Approvals	Colour
9455Z0 	NiMH	 	Low 800 High 1600	10hrs 5hrs	39 x 20 x 23 Extended Height 80	10 LEDs	125°	8hrs	7.3	54	II 1 G Ex ia op is IIC T4 Ga	

 Batteries included |  Waterproof to 1 metre (IPX7) |  Waterproof beyond 1 metre (IPX8) |  Rechargeable

For full guarantee information please see: peliproducts.co.uk/returns

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PELI | ATEX EXPLAINED

ELECTRICAL ATEX & IECEx MARKING

CE Complies with European Directive*

0359 Notified Body Number*

Ex Specific Marking for Explosion Protection*

II Equipment Group*

2 Equipment Category*

G Environment*

Ex Explosion Protection

op Optically

is Inherently Safe

db Protection Type

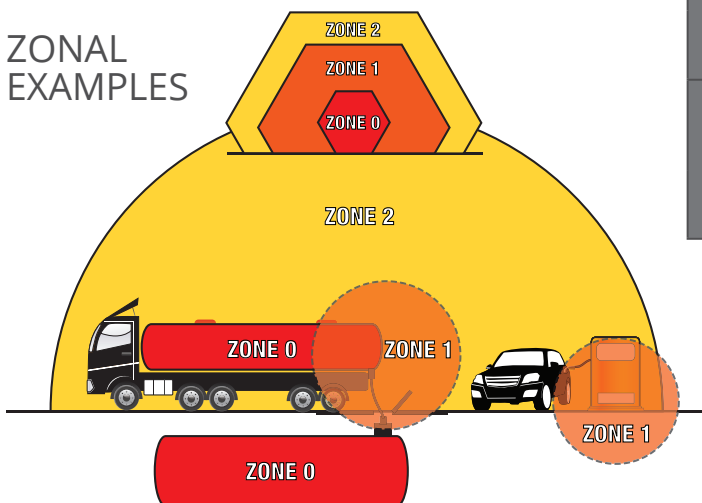
IIC Gas Group

T4 Temperature Class

Gb Equipment Protection Level (EPL)

*ATEX only

ZONAL EXAMPLES



EXAMPLES OF ZONES - Hazardous areas are further divided into Categories & Zones.

Equipment Categories & Protection Levels¹⁰

ATEX Category	Equipment Protection Level	Typical Equipment Zone Suitability
1 G	Ga	Zones 0/1/2
1 D	Da	Zones 20/21/22
2 G	Gb	Zones 1/2
2 D	Db	Zones 21/22
3 G	Gc	Zone 2
3 D	Dc	Zone 22
M1	Ma	Very high level of protection for mines
M2	Mb	High level of protection for mines

ATEX Categories vs. Zones of Use¹⁰

Equipment Category ATEX 2014/34/EU	Zone of Use	
	Gas/Vapours/Mist	Dust
Category 1	Zones 0/1/2	Zones 20/21/22
Category 2	Zones 1/2	Zones 21/22
Category 3	Zone 2	Zone 22

NOTE 10: Unless the explosion protection risk assessment states otherwise.

Protection Concepts (ATEX and IECEx)

Type of Protection	Ex Code	EPL	Zone(s)	IEC/EN Standard	Basic Concept of Protection
Electrical Equipment					
General Requirements	-	All ¹²	0/1/2/20/21/22	60079-0	General requirements for all Ex equipment
Intrinsic Safety	ic	Ga Da Ma	0/20	60079-11	Limit energy of sparks & surface temperature
	ib	Gb Db Mb	1/21		
	ic	Gc Dc	2/22		
Increased Safety	eb	Gb Db Mb	1/21	60079-7	No arcs, sparks or hot surfaces
	ec	Gc Dc	2/22		

TEMPERATURE CLASSIFICATION

The auto-ignition temperature is the temperature in °C at which a gas will ignite spontaneously without another source of ignition.

As these temperatures do not correspond directly with the gas groupings, a 'temperature classification' was established. The temperature classification of the equipment to be used must not exceed that of the explosive atmosphere. i.e. the maximum temperature at the lens of a T4 rated torch will not exceed 135°C.

The gas groupings and the temperature codes are reflected in the markings that appear on our torches. These markings identify to the user the type of explosive atmosphere in which it can be safely used.

Temperature Class	Maximum Temperature Limit
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

RELEVANT GROUPS (ATEX & IECEx)

Atmosphere Groups (ATEX & IECEx)			
Group	Environment	Location	Typical Substance
I	Gases, Vapours and Mists	Coal Mining	Methane (Firedamp)
IIA		Surface & Other Locations	Methane Propane, etc.
IIB			Ethylene
IIC			Hydrogen, Acetylene, etc.
IIIA	Combustible Dusts		Combustible Flyings
IIIB			Non-Conductive
IIIC			Conductive

Equipment Groups (ATEX)				
Equipment Group	ATEX Equipment Category	Atmosphere	Equipment Protection Level (EPL)	Required Protection Performance & Operation
I (Mines with Firedamp)	M1	Methane & Dust	Very High Ma	Two faults, Remain energised and functioning
I (Mines with Firedamp)	M2	Methane & Dust	High Mb	Severe normal operation, De-energise in exp. atm.
II (All Other Areas)	1G/1D	Gas/Vapour/Mist/Dust	Very High	Two faults
II (All Other Areas)	2G/2D	Gas/Vapour/Mist/Dust	High	One fault
II (All Other Areas)	3G/3D	Gas/Vapour/Mist/Dust	Low	Normal operation

PELI | ANSI EXPLAINED

The American National Standards Institute (ANSI) with input from the light industry, has developed performance standards and symbols to effectively communicate a light's features and benefits. The organisation coordinates US standards with international standards so American products can be used globally.

ANSI/NEMA FL 1 STANDARDS



LIGHT OUTPUT

Light Output is the total luminous flux. It is the total quantity of emitted overall light energy as measured by integrating the entire angular output of the portable light source. Light output in this standard is expressed in units of lumens.



BEAM DISTANCE

Beam Distance is defined as the distance from the device at which the light beam is 0.25 lux (0.25 lux is approximately the equivalent of the light emitted from the full moon "on a clear night in an open field").



PEAK BEAM INTENSITY

Peak Beam Intensity is the maximum luminous intensity typically along the central axis of a cone of light. The value is reported in candela and does not change with distance.



RUN TIME

Run Time is defined as the duration of time from the initial light output value – defined as 30 seconds after the point the device is first turned on – using fresh batteries, until the light output reaches 10% of the initial value.



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