HazLoc
Series

A Collection of **Hazardous Location** LED Lights.

ikio
LED LIGHTING

HazLoc
Series
A Collection of **Hazardous Location** LED Lights.

About
IKIO

One of the fastest growing LED lighting brands in the US, IKIO is ideally positioned to offer the right solutions for all of your LED lighting requirements because of our holistic approach and vertically integrated infrastructure.

Commercial to residential and industrial to areas with harsh and hazardous environments, we have a range of exclusively designed LED lights to cater to your lighting needs in all such areas.

Industrial areas with harsh & hazardous environments are prone to greater risk of explosion due to the emission of harmful, explosive gases and vapors in such areas. This calls for the need to install a special form of lightings to prevent any sort of explosion due to spark within the housing.

Holds a successful track record of being a trusted and reliable LED lights partner.

Strives to deliver maximum value to our customers.

Consistently focuses on R&D and operational excellence.

A one-stop destination for all your LED lighting requirements.

Why Are
We Unique?

IKIO being a leading manufacturer of LED lighting solutions in the US has a wide-ranging portfolio of hazardous location lightings, collectively known as the Hazloc Series. IKIO's explosion-proof lightings ensure the safety of not only the workers working in the industries but also the businesses. With our range of hazardous location lighting, we promise to deliver products that are:

Explosion Proof

Durable & Tough

Highly Efficient

Allows Greater **Mobility**

Flexible

FORZA

High Bays

Ratings & Certificates

Rating (UL844)

Class I, Division 2, Groups A, B, C, D
Class II, Division 1, Groups E, F, G
Class II, Division 2, Groups F, G
Class III

Marine Rating

UL 1598, UL1598A ABS

Rating (ATEX)

II 3 G Ex ec IIC T3C Gc
Il 2 D Ex op is tb IIIC T160°C Db
EX IIC EX mb eb IIC T3C GB
II2 EX op is tb IIC T3C DB

Rating (IECEX)

Ex ec IIB T3C Gc
Ex op is tb IIIC T160°C Db
EX mb eb IIC T3C Gb
EX op is tb IIC T3C Db

Application Areas

| Oil and gas industry
| Chemical industry
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry

Electrical

Power	20 W | 40 W | 60 W | 80 W | 100 W 150 W | 180 W | 200 W | 250 W | 300 W
Voltage	100-277 V

Lighting Performance

Lumens	2800 lm | 5600 lm | 8400 lm | 11200 lm | 14000 lm 21000 lm | 25200 lm | 28000 lm | 35000 lm | 42000 lm
Efficacy	140 lm/W
Color Temperature (CCT)	4000 K | 5000 K
Color Rendering (CRI)	80
Beam Angle	40° | 60° | 90° | 120°
Dimmable Lighting Control	0-10 V Dimming

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	5

Environment

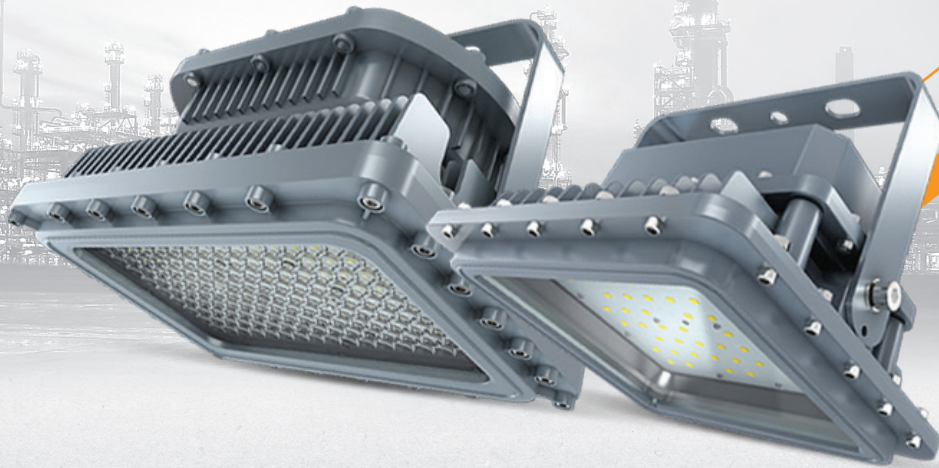|	
Operating Temperature	-40 °F ~ +131°F
Suitable Location	DUSTY & WET
Ingress Protection Rating (IP)	IP66
Impact Protection (IK)	IK08

Construction

Housing	Aluminum
Cover Material / Lens	Toughened Glass
Finish	Grey

*Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

DOMINUS

High Bays

Ratings & Certificates

Rating (UL844)

Class I, Div. 1, Groups C, D
Class I, Div. 2, Groups A, B, C, D
Class II, Div. 1, Groups E, F, G
Class II, Div. 2, Groups F, G
Class III

Marine Rating

UL 1598, ABS

Application Areas

| Oil and gas industry
| Chemical industry
| Ocean
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry

Electrical

Power	20 W	40 W	60 W	80 W	100 W	150 W	200 W
Voltage	100-277 V

Lighting Performance

Lumens	2800 lm	5600 lm	8400 lm	11200 lm	14000 lm 21000 lm	28000 lm
Efficacy	140 lm/W
Color Temperature (CCT)	4000 K	5000 K
Color Rendering (CRI)	80
Beam Angle	40°	60°	90°	120°
Dimmable Lighting Control	0-10 V Dimming

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	**5**

Environment

Operating Temperature	-40 °F ~ +131°F
Suitable Location	**DUSTY & WET**
Ingress Protection Rating (IP)	IP66
Impact Protection (IK)	IK10

Construction

Housing	Aluminum
Cover Material / Lens	Toughened Glass
Base / Power Supply	Three connection cable entry points.
Finish	Grey

*Specifications, Warranty, and Qualifications can vary per item/SKU. See technical data sheets (TDS) for specific information.

VIGOR

High Bays

Ratings & Certificates

Rating (UL844)

Class I, Division 2, Groups A, B, C, D
Class II, Division 1, Groups E, F, G
Class II, Division 2, Groups F, G
Class III

Marine Rating

UL1598, UL1598A, ABS

Rating (ATEX)

IIe3 cG tEixo enc IIC T3C Gc
II2 Ex tb IIIC T135°C Db IP66
EX IIC EX mb eb IIC T4 GB
II2 EX op is tb IIC T4 DB

Rating (IECEX)

Ex ec IIC T3C Gc
Ex tb IIIC T135°C Db IP66
EX mb eb IIC T4 Gb
EX op is tb IIC T4 Db

Application Areas

| Oil and gas industry
| Chemical industry
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry

Electrical

Power	20 W │ 40 W │ 60 W │ 80 W │ 100 W │ 120 W │ 150 W 200 W │ 250 W │ 300 W │ 350 W │ 400 W
Voltage	100-277 V

Lighting Performance

Lumens	2800 lm │ 5600 lm │ 8400 lm │ 11200 lm │ 14000 lm │ 16800 lm 28000 lm │ 35000 lm │ 42000 lm │ 49000 lm │ 56000 lm
Efficacy	140 lm/W
Color Temperature (CCT)	4000 K │ 5000 K
Color Rendering (CRI)	80
Beam Angle	40° │ 60° │ 90° │ 120°
Dimmable Lighting Control	0-10 V Dimming

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	5

Environment

|	
Operating Temperature	-40 °F ~ +131°F
Suitable Location	DUSTY & WET
Ingress Protection Rating (IP)	IP66
Impact Protection (IK)	IK08

Construction

Housing	Aluminum
Cover Material / Lens	Toughened Glass
Base / Power Supply	Three connection cable entry points
Finish	Grey

*Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

EXOPLUS

High Bays
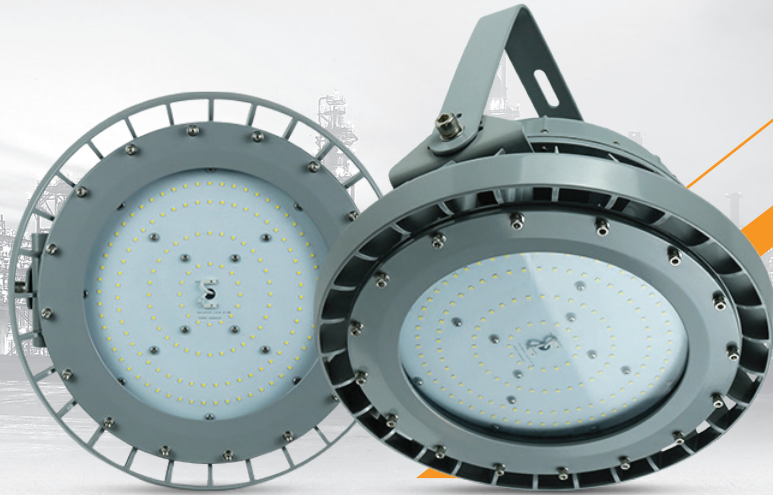
Ratings & Certificates

Application Areas

| Oil and gas industry
| Chemical industry
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry

Rating (UL844)

Class I, Division 1, Groups C, D
Class I, Division 2, Groups A, B, C, D
Class II, Division 1, Groups E, F, G
Class II, Division 2, Groups F, G
Class III

Marine Rating

UL 1598A ABS

Rating (ATEX)

Il2 G Ex db op is IIB T5/T6 Gb
Il2 D Ex op is tb IIIC T80/90C Db IP66

Rating (IECEX)

Ex db op is IIB T5/T6 Gb
Model C2 Ex op is tb IIIC T80/90C Db IP66

Electrical

Power	20 W | 60 W | 80 W | 100 W | 150 W | 200 W | 250 W | 280 W
Voltage	100-277 V

Lighting Performance

Lumens	2800 lm | 8400 lm | 11200 lm | 14000 lm | 21000 lm 28000 lm | 35000 lm | 39200 lm
Efficacy	140 lm/W
Color Temperature (CCT)	4000 K | 5000 K
Color Rendering (CRI)	80
Beam Angle	40° | 60° | 90° | 120°
Dimmable Lighting Control	0-10 V Dimming

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	5

Environment

Operating Temperature	-40 °F ~ +140 °F
Suitable Location	**DUSTY & WET**
Ingress Protection Rating (IP)	IP66
Impact Protection (IK)	IK10

Construction

Housing	Aluminum
Cover Material / Lens	PC
Base / Power Supply	Three connection cable entry points
Finish	Grey

*Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

MONTAR

High Bays

Ratings & Certificates

Rating (ATEX)

II 2 G Ex db IIC T6 Gb
II 2 D Ex tb IIIC T80 Db IP66

Rating (IECEX)

Ex db IIC T6 Gb
Ex db IIIC T80 Db IP66

Application Areas

| Oil and gas industry
| Chemical industry
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry

Electrical

Power	20 W	40 W	60 W	80 W	100 W	150 W	200 W
Voltage	100-277 V

Lighting Performance

Lumens	2800 lm	5600 lm	8400 lm	11200 lm 14000 lm	21000 lm	28000 lm
Efficacy	140 lm/W
Color Temperature (CCT)	4000 K	5000 K
Color Rendering (CRI)	80
Beam Angle	40°	60°	90°	120°
Dimmable Lighting Control	0-10 V Dimming

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	**5**

Environment

Operating Temperature	-40 °F ~ +140 °F
Suitable Location	**DUSTY & WET**
Ingress Protection Rating (IP)	IP66
Impact Protection (IK)	IK10

Construction

Housing	Aluminum
Cover Material / Lens	Toughened Glass
Base / Power Supply	Three connection cable entry points
Finish	Grey

*Specifications, Warranty, and Qualifications can vary per item/SKU. See technical data sheets (TDS) for specific information.

VOLTA

Low Bay Lights

Ratings & Certificates

Rating (ATEX)

II 2 G Ex nr IIC T6 GC
ll 2 D Ex tb IIIC T80 Db IP66

Rating (IECEX)

Ex nr IIC T6 GC
Ex tb IIIC T80 Db IP66

Application Areas

| Oil and gas industry
| Chemical industry
| Ocean
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry

Electrical

Power	20 W | 40 W | 60 W | 80 W | 100 W | 120 W | 150 W | 200 W
Voltage	100-277 V

Lighting Performance

Lumens	2800 lm | 5600 lm | 8400 lm | 11200 lm 14000 lm | 16800 lm | 21000 lm | 28000 lm
Efficacy	140 lm/W
Color Temperature (CCT)	4000 K | 5000 K
Color Rendering (CRI)	80
Beam Angle	40° | 60° | 90° | 120°
Dimmable Lighting Control	0-10 V Dimming

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	**5**

Environment

Operating Temperature	-40 °F ~ +140 °F
Suitable Location	**DUSTY & WET**
Ingress Protection Rating (IP)	IP66
Impact Protection (IK)	IK08

Construction

Housing	Aluminum
Cover Material / Lens	Toughened Glass
Base / Power Supply	Three connection cable entry points
Finish	Grey

*Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

ERGO

Linear High Bays

Ratings & Certificates

Rating (UL844)

Class I, Div. 1, Groups C, D
Class I, Div. 2, Groups A, B, C, D
Class II, Div. 1, Groups E, F, G
Class II, Div. 2, Groups F, G
Class III

Marine Rating

UL 1598A ABS

Rating (ATEX)

Il2 G Ex db op is IIB T5/T6 Gb
Il2 D Ex op is tb IIIC T80/90C Db IP66

Rating (IECEX)

Ex db op is IIB T5/T6 Gb
Ex op is tb IIIC T80/90C Db IP66

Application Areas

| Oil and gas industry
| Chemical industry
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry

Electrical

Power	20 W	40 W	60 W	80 W	100 W	120 W
Voltage	100-277 V

Lighting Performance

Lumens	2800 lm	5600 lm	8400 lm	11200 lm	14000 lm	16800 lm
Efficacy	140 lm/W
Color Temperature (CCT)	4000 K	5000 K
Color Rendering (CRI)	82
Beam Angle	40°	60°	90°	120°
Dimmable Lighting Control	0-10 V Dimming

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	5

Environment

|	
Operating Temperature	-40 °F ~ +140 °F
Suitable Location	**DUSTY & WET**
Ingress Protection Rating (IP)	IP66
Impact Protection (IK)	IK10

Construction

Housing	Aluminum
Cover Material / Lens	Toughened Glass
Base / Power Supply	Three connection cable entry points
Finish	Grey

*Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

ZALE

Linear Lights
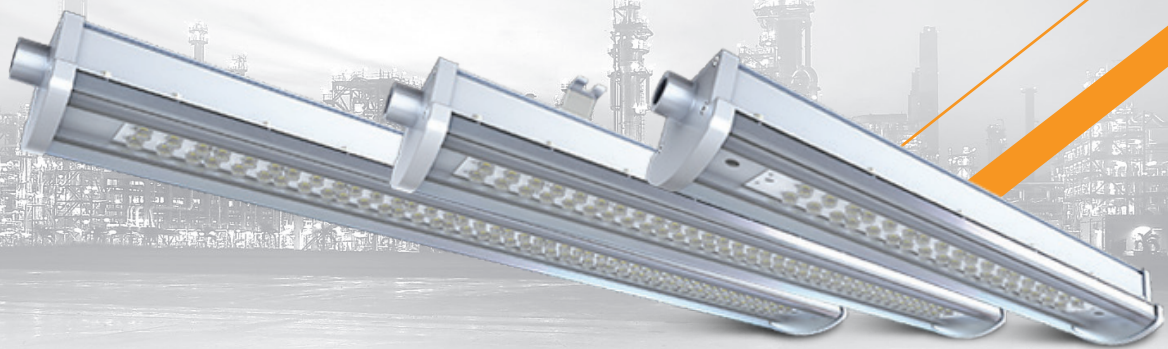
Ratings & Certificates

Rating (UL844)

Class 1, Division 2, Groups A, B, C, & D

Application Areas

| Oil and gas industry
| Chemical industry
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry

Electrical

Power	10 W	20 W	30 W	40 W	50 W	60 W	70 W	80 W
Voltage	100-277 V

Lighting Performance

Lumens	1300 lm	2600 lm	3900 lm	5200 lm	6500 lm 7800 lm	9100 lm	10400 lm
Efficacy	130 lm/W
Color Temperature (CCT)	4000 K	5000 K
Color Rendering (CRI)	80
Beam Angle	40°	60°	90°	120°
Dimmable Lighting Control	0-10 V Dimming

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	**5**

Environment

Operating Temperature	-40 °F ~ +140 °F
Suitable Location	**DUSTY & WET**
Ingress Protection Rating (IP)	IP66
Impact Protection (IK)	IK09

Construction

Housing	ADC12 Aluminum
Cover Material / Lens	Toughened Glass
Base / Power Supply	Three connection cable entry points
Finish	Grey

*Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

BERNARD

Linear Lights

Ratings & Certificates

Rating (ATEX)

II2 G Ex op is eb mb IIC T5/T6 Gb
II2 D Ex op is tb IIIC T95/80 °C Db

Application Areas

| Oil and gas industry
| Chemical industry
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry

Electrical

Power	10 W	20 W	30 W	40 W	50 W	60 W	70 W	80 W
Voltage	100-277 V

Lighting Performance

Lumens	1300 lm	2600 lm	3900 lm	5200 lm	6500 lm 7800 lm	9100 lm	10400 lm
Efficacy	130 lm/W
Color Temperature (CCT)	4000 K	5000 K
Color Rendering (CRI)	80
Beam Angle	40°	60°	90°	120°
Dimmable Lighting Control	0-10V Dimming

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	5

Environment

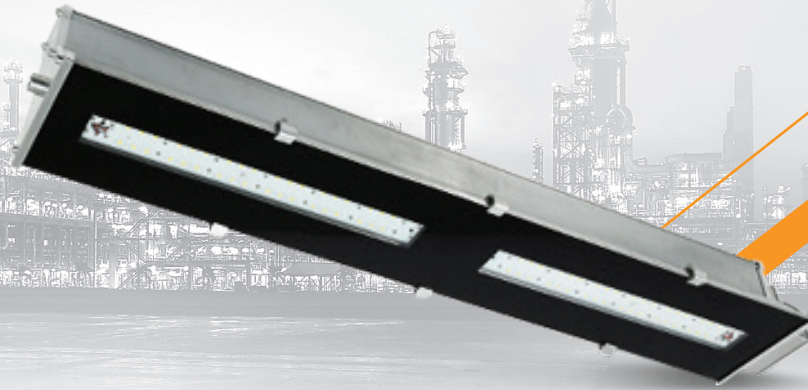|	
Operating Temperature	-40 °F ~ +140 °F
Suitable Location	DUSTY & WET
Ingress Protection Rating (IP)	IP66/ IP67
Impact Protection (IK)	IK10

Construction

Housing	Die-cast Aluminum
Cover Material / Lens	Fireproof transparent PC
Finish	Silver

*Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

ANGUS

Linear Lights

Ratings & Certificates

Rating (ATEX)

II2 G Ex op is eb mb IIC T5/T6 Gb
II2 D Ex op is tb IIIC T95/80 °C Db

Application Areas

| Oil and gas industry
| Chemical industry
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry

Electrical

Power	10 W ǀ 20 W ǀ 30 W ǀ 40 W ǀ 50 W ǀ 60 W ǀ 70 W ǀ 80 W
Voltage	100-277 V

Lighting Performance

Lumens	1300 lm ǀ 2600 lm ǀ 3900 lm ǀ 5200 lm ǀ 6500 lm 7800 lm ǀ 9100 lm ǀ 10400 lm
Efficacy	130 lm/W
Color Temperature (CCT)	4000 K ǀ 5000 K
Color Rendering (CRI)	80
Beam Angle	40° ǀ 60° ǀ 90° ǀ 120°
Dimmable Lighting Control	0-10 V Dimming

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	5

Environment

Operating Temperature	-40 °F ~ +140 °F
Suitable Location	**DUSTY & WET**
Ingress Protection Rating (IP)	IP66 / IP67
Impact Protection (IK)	IK10

Construction

Housing	Die-Cast Aluminum
Cover Material / Lens	Toughened Glass
Finish	Grey

*Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

CONALL

Linear Area Lights

Ratings & Certificates

Rating (UL844)

Class I, Division 2, Groups A, B, C, D
Class II, Division 1, Groups E, F, G
Class II, Division 2, Groups F, G
Class III

Rating (ATEX)

II 2GD Ex db eb mb IIC T5/T6 Gb
Ex tb is IIIC T95/T80 Db IP66

Marine Rating

UL 1598, UL 844

Rating (IECEX)

Ex db eb mb IIC T5/T6 Gb
Ex tb IIIC T95/T80 Db

Application Areas

| Oil and gas industry
| Chemical industry
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry

Electrical

Power	20 W | 30 W | 40 W | 60 W | 80 W
Voltage	100-277 V

Lighting Performance

Lumens	2800 lm | 4200 lm | 5600 lm | 8400 lm | 11200 lm
Efficacy	140 lm/W
Color Temperature (CCT)	4000 K | 5000 K
Color Rendering (CRI)	80
Beam Angle	40° | 60° | 90° | 120°
Dimmable Lighting Control	0-10 V Dimming

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	**5**

Environment

Operating Temperature	-40 °F ~ +140 °F
Suitable Location	**DUSTY & WET**
Ingress Protection Rating (IP)	IP66
Impact Protection (IK)	IK09

Construction

Housing	Stainless Steel
Cover Material / Lens	PC
Base / Power Supply	Three connection cable entry points
Finish	Gray

★Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

NERON

Area Lights

Ratings & Certificates

Rating (ATEX)

II 2 G Ex nr IIC T6 GC
Il 2 D Ex tb IIIC T80 Db IP66

Rating (IECEX)

Ex nr IIC T6 GC
Ex tb IIIC T80 Db IP66

Application Areas

| Oil and gas industry
| Chemical industry
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry

Electrical

Power	20 W	40 W	60 W	80 W	100 W	120 W	150 W	200 W
Voltage	100-277 V

Lighting Performance

Lumens	2800 lm	5600 lm	8400 lm	11200 lm 14000 lm	16800 lm	21000 lm	28000 lm
Efficacy	140 lm/W
Color Temperature (CCT)	4000 K	5000 K
Color Rendering (CRI)	80
Beam Angle	40°	60°	90°	120°
Dimmable Lighting Control	0-10 V Dimming

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	**5**

Environment

Operating Temperature	-40 °F ~ +140 °F
Suitable Location	**DUSTY & WET**
Ingress Protection Rating (IP)	IP66
Impact Protection (IK)	IK09

Construction

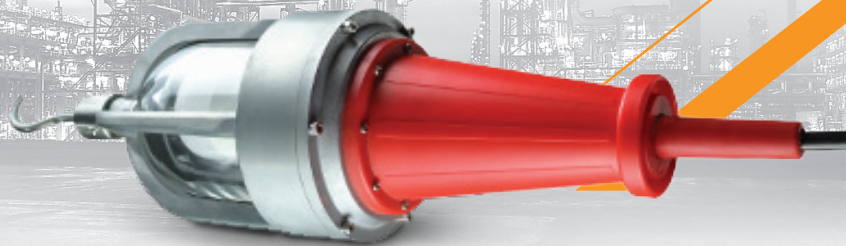| Housing	Aluminum
Cover Material / Lens	Tempered Glass
Base / Power Supply	Three connection cable entry points
Finish	Grey

*Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

LANTORCH

Drop Lights

Ratings & Certificates

Rating (UL844)

Class I, Division 1 Groups B, C, D
Class II, Division 1 Groups F, G
Class II, Division 2 Groups F, G
Class III

Rating (ATEX)

II 2 G Ex db op is IIC T4/T5 Gb
Il 2 D Ex op is tb IIIC T135° CT Db
Ex op is tb IIIC T135° CT Db

Rating (IECEX)

Ex db op is IIC T4/T5 GB

Application Areas

| Oil and gas industry
| Chemical industry
| Ocean
| Marine and aerospace field
| Metal treatment
| Food and alcohol industry
| Other high humidity, high dust,
    high temperature & vapor locations

Electrical

Power	5 W | 7 W | 9 W | 10 W | 15 W | 20 W | 30 W
Voltage	100-277 V

Lighting Performance

Lumens	650 lm | 910 lm | 1170 lm | 1300 lm | 1950 lm | 2600 lm | 3900 lm
Efficacy	130 lm/W
Color Temperature (CCT)	4000 K | 5000 K
Color Rendering (CRI)	80

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	**5**

Environment

|	
Operating Temperature	-40 °F ~ +140 °F
Suitable Location	**DUSTY & WET**
Ingress Protection Rating (IP)	IP67
Impact Protection (IK)	IK10

Construction

Housing	Copper Free Aluminum
Cover Material / Lens	Glass
Base / Power Supply	Direct Wire
Finish	Metallic Gray

＊Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

AXEL

Exit Lights
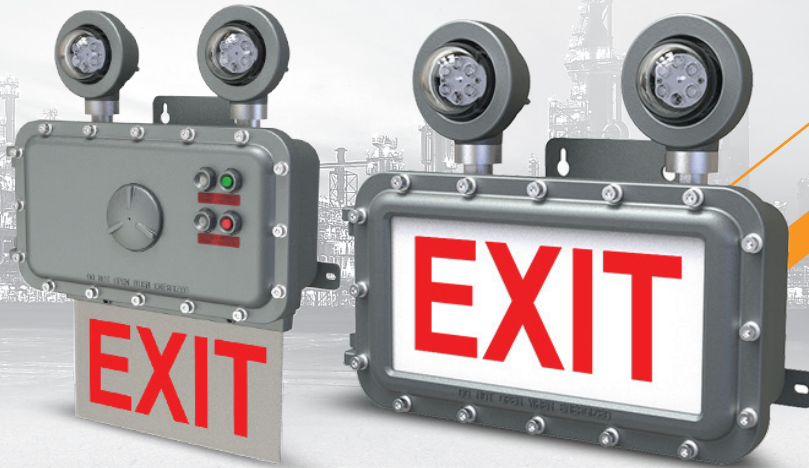
Ratings & Certificates

Application Areas

Rating (UL844)

Class I, Division 1, Groups C, D
Class I, Division 2, Groups A, B, C,D
Class II, Division 1, Groups E, F, G
Class II, Division 2, Groups F, G
Class III

Rating (ATEX)

II2 G Ex db op is IIB T5/T6 Gb
II2 D Ex op is tb IIIC T80/90C Db IP66

Rating (IECEX)

Ex db op is IIB T5/T6 Gb
Ex op is tb IIIC T80/90C Db IP66

| Oil and gas industry
| Chemical industry
| Metal treatment
| Food and alcohol industry
| Other high humidity, high dust,
  high temperature, vapor locations.

Marine Rating

UL1203 and UL50

Electrical

Power	6 W
Voltage	100-277 V

Lighting Performance

Color	Red

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	**5**

Environment

Operating Temperature	-40 °F ~ +140 °F
Suitable Location	**DUSTY & WET**
Ingress Protection Rating (IP)	IP66

Construction

Housing	Die-casting Aluminum
Indicator	Tempered Glass
Bolts & Mounting Sling	Stainless Steel
Sign Panel	Resistant Acrylic

*Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

EXO

Exit Lights

Ratings & Certificates

Rating (UL844)

Class I, Division 2, Groups A, B, C, D
Class II, Division 1, Groups E, F, G
Class II, Division 2, Groups E, F, G
Class III

Marine Rating

UL1598 and UL1598A

Application Areas

| All petroleum production and refinery
| Petroleum loading and transportation
| Military space conditions
| Ocean vessel operations
| Other high humidity, high dust,
 high temperature, vapor locations.

Electrical

Power	5 W
Voltage	100-277 V

Lighting Performance

Color	Red

Lifespan

Average Life (Hours)	50,000
Warranty (Years)	**5**

Environment

Operating Temperature	-40 °F ~ +140 °F
Suitable Location	**DUSTY & WET**
Ingress Protection Rating (IP)	IP66

Construction

Housing	Die-casting Aluminum
Indicator	Tempered Glass
Bolts & Mounting Sling	Stainless Steel
Sign Panel	Resistant Acrylic

＊Specifications, Warranty, and Qualifications can vary per item/SKU.
See technical data sheets (TDS) for specific information.

HazLoc Series
User Guide

Hazloc LED lights come with various certifications according to rigid industry standards. They can be divided into various Class, categories and divisions on the basis of risk involved.

LED lighting is perhaps one of the most energy efficient contributions to the lighting and electrical equipment industry that has transformed the way we perceive the concept of illumination. Its steady acceptance can be witnessed in various industries owing to its efficiency and versatility. The innovative technology has also been a ground-breaking addition to different sectors, and is gradually becoming the most sought-after lighting option in hazardous locations as well.

Hazardous locations can be defined as highly industrialized areas with harsh & hazardous environments that may contain explosive vapors & gases, and as a result, have specialized lighting requirements. According to OSHA (Occupational Safety and Health Administration), Hazardous locations are those areas "where fire or explosion hazards may exist due to flammable gases or vapors, flammable liquids, combustible dust, or ignitable fibers or flyings."

Hazardous locations or areas are usually classified by specialists in the field, such as electrical inspectors, engineers, owners, area experts, and insurance companies. They may divide extreme locations into either ordinary (shocks & fires) or hazardous (explosion prone) areas.

Classification of Hazardous Locations

OSHA says that hazardous locations can be divided into three different classes and their respective divisions; division 1 is for presence of flammable or ignitable substances under normal operations or machinery malfunction, while division 2 is for presence of ignitable or flammable substances under unusual operating conditions.

Class I
Gas & Vapor

Division 1   Division 2

Class II
Dust

Division 1   Division 2

Class III
Fibers Flying

Division 1   Division 2

Class I Locations

Class I hazardous locations are defined by the presence of sufficient flammable vapors or gases present in the air that can cause harm by potential explosion or ignition caused by an electrical issue or any other source that can cause fire. LEDs like Forza UFO High Bay have a rugged explosion-proof construction that makes them ideal for rough industrial environment, and certified for use in Class I, Division 2, Groups A, B, C, D.

Following can be considered Class I hazardous locations:

- Petroleum refineries
- Gasoline storage and dispensing areas
- Utility gas plants
- Places for storage and handling of liquefied petroleum gas or natural gas

Class II Locations

These locations are defined as those locations that have enough presence of combustible dust in the air that could cause explosion or are ignitable. For such areas, LEDs like Ergo Linear High Bay for Class II, Division 1 & 2, Groups E, F, G can be a valuable addition as its compact design makes an excellent replacement for bulky, high maintenance fixtures in dusty locations.

Some locations that can be classified under this category are as follows:

- Grain elevators
- Flour & feed mills
- Industrial plants that deal with magnesium or aluminum powders

Class III Locations

Class III hazardous locations are defined as places that contain easily ignitable fibers and flyings, which even though are not suspended in the air, can be found near machinery or lighting fixture, and may get ignited from heat or electric spark. LEDs like Conall Outdoor Area Light are excellent for Class III hazardous locations as they provide wide & narrow optics for uniform illumination, leading to better visibility and making flyings easily noticeable.

Following locations can be classified under this category:

- Textile mills, cotton gins (engine)
- Cotton seed mills
- Industrial plants involved in wood-based construction, creating sawdust or flying

Hazardous Location Lighting

Lighting for hazardous locations are often termed as HazLoc lights and are designed to minimize the risk of explosions caused by any sparks within its housing or any other accidental events. Such lights are explosion-proof, and are meant to ensure overall well-being of not just workers, but businesses as well.

When you add LEDs to the mix, it further makes sure that you save on energy costs as well without compromising on safety. HazLoc LEDs are put through rigorous tests and safety procedures, go through stringent quality checks, and are certified before being sold for use.

Let us go through different industry standards and certifications for HazLoc LEDs and how they make sure that you find the right product based on your needs.

HazLoc LED Industry Standards

NFPA: The National Fire Protection Association (NFPA) is a global non-profit organization that publishes information about different codes and standards that are relevant to various industries and their practices. It also delivers information and knowledge on hazard assessment via NFPA 497 (explosive gas) and NFPA 499 (dust). The NFPA 70® is for National Electrical Code (NEC), which will be discussed next.

NEC: The National Electrical Code (NEC) under NFPA 70® is "the benchmark for safe electrical design, installation, and inspection to protect people and property from electrical hazards". It covers electrical installations/removal, electrical conductors, equipment, and raceways among others in locations like public & private premises, industrial substations, etc.

Ratings: Ingress Protection or International Protection rating is a set of codes implemented to rate and classify the degree of protection provided by mechanical casings and electrical enclosures against different elements. Some of these elements include dust and water, intrusion, accidental contact, etc.

IK Rating: Impact protection rating, according to UL, is defined "as IKXX, where "XX" is a number from 00 to 10 indicating the degrees of protection provided by electrical enclosures (including luminaires) against external mechanical impacts". It determines the ability of electrical or lighting enclosures to withstand high energy impacts, how it should be mounted, atmospheric conditions, among other criteria.

NEMA: The National Electrical Manufacturers Association (NEMA) defines different heavy-duty electrical enclosures for various categories of lighting depending on access to hazardous parts and additional type-dependent designated environmental conditions. Such LED products are usually seen in industrial as well as hazardous locations.

ATEX: The Atmosphères Explosibles (ATEX) is a certification standard by the European Union that "covers equipment and protective systems intended for use in potentially explosive atmospheres". According to UL, HazLoc and explosion-proof equipment that are 'intended for installation' in the EU region should be compliant with ATEX Directive 2014/34/EU.

Benefits of
HazLoc LEDs

There are several advantages of using LEDs designed specifically for hazardous locations. Let us discuss some of them.

Explosion-proof design: Standard light fixtures are usually composed of a design that exposes the bulb, contacts, wiring, and switches to external atmosphere. In such cases, spark from a loose contact, movement of the switch, or even heat from the bulb is enough to ignite and lead to a flammable environment. However, in case of explosion-proof LED lights, the components are encased to prevent potential sparks or flames from escaping the internal housing.

Allow greater mobility: Explosion-proof LED lights are built with a sturdy frame and thicker tempered glass lenses, making them highly resistant to vibrations. This durable design allows the easy transportation of these lights from one place to another by forklifts or other machines without the risk of damage or malfunction, thus making them more portable. This feature also makes them an ideal choice for operators who require mobile illumination.

Durable & tough: Given the rugged build of the explosion-proof light fixtures with sturdier materials, they offer a high degree of durability in comparison to standard light fixtures as they can withstand harsher working environments. This makes them a better choice for operators as it will not be easily damaged like standard light fixtures, and would reduce maintenance & furbishing costs.

3/4" NPT Pendant

Cast Aluminum Corrosion-Resistant Explosion Proof Housing

High Intensity LED Light Source

Light Diffuser

Protective Glass Dome

High efficiency: Explosion-proof HazLoc LED lights are extremely energy efficient. They put to use more than 90% of the energy to produce light and have near-zero heat or conversion loss to account for, which means that they use a lot less power to function. Additionally, organizations save on-site energy from portable generators and other in situ sources, providing more sustainable and profitable operations. In other words, you can save more money from explosion-proof LEDs in comparison to standard non-LED explosion-proof luminaires.

Flexible options: Modern explosion-proof LED lights come in modular designs and multiple mounting options to allow multitudes of options in their application. They allow light output to be easily adjusted to match your required light levels or adapt to existing access points, all while saving energy and money.

Mercury-free: Apart from the above-mentioned benefits, another aspect that sets apart HazLoc LEDs from other HazLoc luminaires is that the former is mercury-free and environment-friendly. It reduces disposal costs and is a sustainable alternative to your lighting requirements.

In terms of market reach, Mordor Intelligence predicts that the Hazardous Location LED Lighting sector is "expected to reach USD 636.6 million by 2025, registering a CAGR of 8.86%, during the period of 2020 – 2025". The report further suggests that the largest market for HazLoc LEDs is North America. It also adds that the industrial & manufacturing industry in the United States accounts for 32% of the country's energy usage. If such encouraging projections are to be believed, it might lead to greater adoption of LEDs in hazardous locations. Establishments in hazardous locations create some of the most extreme work environments in the world, and as it has been established, can be prone to explosions and other accidents, impacting those who work in such dangerous circumstances. Therefore, it is apparent that ensuring the safety of workers and establishments in such locations should be prioritized, and explosion-proof LEDs can help you achieve that goal with an improved ROI as a bonus.

When you think about safety, think explosion-proof HazLoc LEDs!
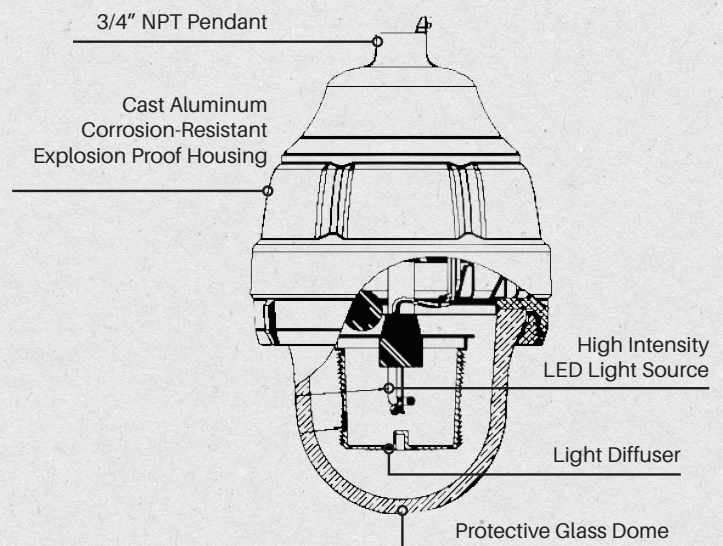
Types of HazLoc LED Lights and Their Application Areas

Now let us explore some common types of HazLoc LEDs available for different lighting requirements.

UFO High Bays

High Bay LEDs are used for illuminating spaces with high ceilings. Such luminaires are an excellent option for units/buildings in hazardous locations as they allow for clear visibility through even light distribution. The placement of such LED fixtures makes them ideal for commercial and industrial use in areas like marine and aerospace fields, pumping stations and spaces with high humidity, high dust, or high temperature.

Linear High Bays

Linear High Bay LEDs are used for lighting hazardous facilities as a powerful & efficient alternative to traditional hazardous luminaries. Thanks to their copper-free, aluminum-alloy body and compact, durable design, operators use this fixture to upgrade their bulky & high maintenance fixtures efficiently. Ideal for both commercial and industrial use, they allow for clear visibility through even light distribution. Best choices for spaces like marine and aerospace fields, pumping stations and spaces with high humidity, high dust, or high temperature.

Exit Signs

LED emergency exit signs are suitable for hazardous locations, especially those that have flammable vapors and gases or combustible dust present in the air. They provide distinct, highly visible exit marking to indicate safe egress areas during power outages and other emergencies. Some common application areas are manufacturing & chemical plants, paint shops, oil refineries, gas stations, industrial facilities, warehouses, processing plants, and other Class I, Division 2 hazardous locations.

HazLoc
Series

A Collection of **Hazardous Location** LED Lights.

IKIO
LED LIGHTING

Scan To Explore Our
Exciting Product Range