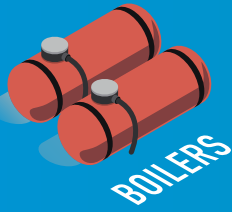


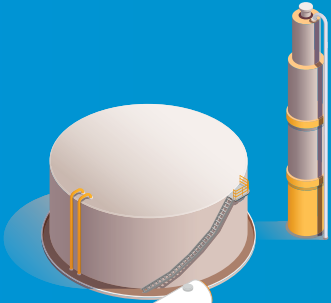
# CONFINED SPACE AND HAZARDOUS LOCATIONS

Application Guide





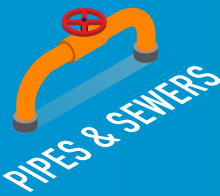
BOILERS



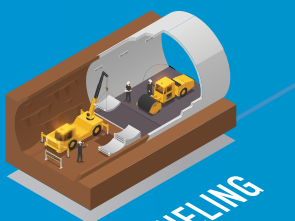
TANKS AND SILOS



SHIP BUILDING



PIPES & SEWERS



TUNNELING

## WHAT IS A CONFINED SPACE?

A confined space is any space that is large enough for an employee to enter fully and perform assigned work, that is not designed for continuous occupancy by people, and that has a limited or restricted means of entry or exit. These spaces may include underground vaults, tanks, storage bins, pits, diked areas, vessels, silos, and other similar areas.

An entry permit may or may not be required from the owner of the property containing the confined space, according to Occupational Safety and Health Administration (OSHA) rules, for an employee to enter. This depends primarily on the nature of the atmosphere and other potential hazards inside.

OSHA regulates confined spaces with rules written in the Code of Federal Regulation (CFR)- standard 1910.146 and in several other places in the CFR referenced in 1910.146.

The following pages contain products that are popular for confined space entry operations. It is the user's responsibility to determine which products are suitable for their specific application. Please contact your safety manager to identify the requirements for confined spaces and hazardous environments in your facility.

## CONFINED SPACE PRODUCTS



1239 LED  
Egress Lighting



XG2-12-2TT  
Industrial GFCI

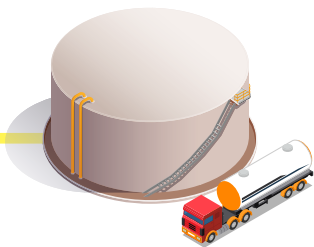


LED Linear Tube  
String Light



910 LED Linear  
Hand Lamp

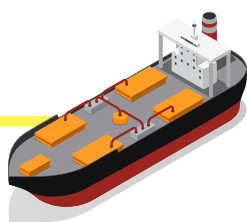
## CONFINED SPACE CLASSIFICATIONS



### PERMIT-REQUIRED

A confined space requires a permit if it has one of the following characteristics below:

- Contains or has the potential to contain a hazardous atmosphere
- Contains a material with the potential to engulf someone who enters the space
- Has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section



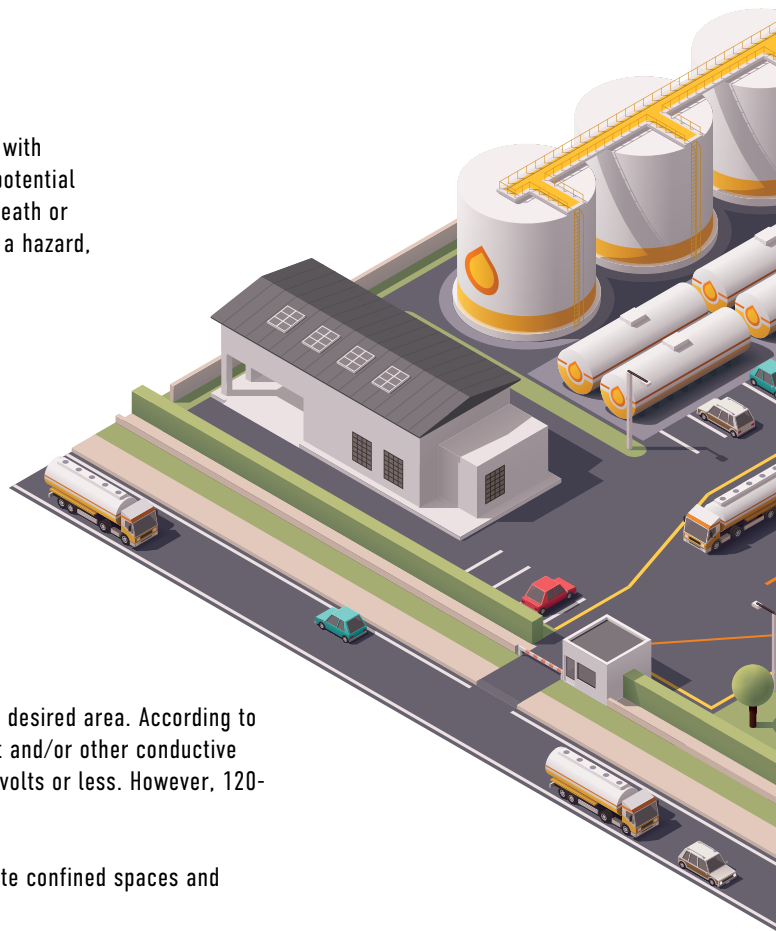
### NON-PERMIT REQUIRED

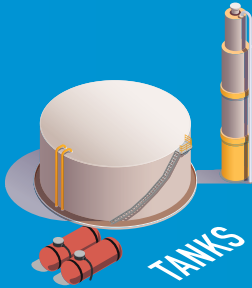
A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm. If a place is free of a hazard, then an entry permit isn't required.

## LIGHTING CONFINED SPACES

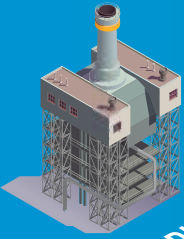
One challenging aspect of working in confined spaces is safely lighting the desired area. According to OSHA regulation 1926.405(a)(2)(ii)(G), portable electric lighting used in wet and/or other conductive locations, for example, drums, tanks, and vessels, shall be operated at 12 volts or less. However, 120-volt lights may be used if protected by a ground-fault circuit interrupter.

Ericson has worked to create a line of low voltage solutions to accommodate confined spaces and other hazardous locations.





TANKS



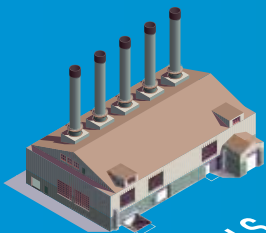
POWER PLANTS



BLAST FURNACES



PETROLEUM REFINING



MILLS

## HAZARDOUS LOCATION CLASSIFICATION

OSHA uses the phrase “hazardous atmospheres” in a general sense to refer to any dangerous condition in the air in a confined space. These conditions may include but are not limited to, toxic fumes, corrosive fumes, insufficient oxygen levels, excessive oxygen levels, flammable fumes or flammable dusts, and similar dangers.

In the United States, the National Electrical Code, NFPA70, tightly defines and regulates explosive atmospheres, which the NEC refers to as hazardous locations and also refers to as classified locations. NEC Articles 500 through 510 define several different explosion danger levels through the use of their system of Classes, Divisions, and Zones. These classifications define hazardous locations per the NEC, and they determine what kind of electrical equipment is permitted in those areas.

An OSHA hazardous atmosphere may or may not be an NEC hazardous location or NEC classified location depending on the nature of the hazard in the confined space. So, explosion-proof equipment may or may not be required depending on the nature of the hazard in the confined space.

The following pages contain products that are popular for confined space entry operations. It is the user’s responsibility to determine which products are suitable for their specific application. Please contact your safety manager to identify the requirements for confined spaces and hazardous environments in your facility.

## HAZARDOUS LOCATION PRODUCTS



1009-HAZ Hazardous Location Light



Vapor-Gard® Low Voltage Hand Lamp

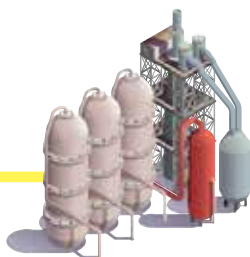


2600 Explosion Proof Hand Lamp & String Lights



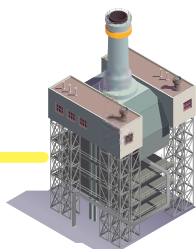
1007-XP Explosion Proof High Bay Light

## HAZARDOUS LOCATION CLASS STRUCTURE PER THE NEC



### CLASS I DIVISION 1

Class I hazardous locations are those in which flammable gases or vapors are, or may be, present in the air in quantities sufficient to produce explosive or ignitable mixtures. Division 1 means the presence of explosive gases or vapors is a normal condition, where the hazard would be expected to be present in everyday production operations or during frequent repair and maintenance activity.



### CLASS I DIVISION 2

While the Class stays the same, Division 2 means the presence of explosive gases or vapors only occurs during abnormal conditions. For example, when the hazardous material is expected to be confined within closed containers or closed systems and will be present in the atmosphere only through accidental rupture, breakage, or unusual faulty operation.



### CLASS II DIVISION 1

Class II describes a location in which combustible dusts may be present in the air, and may collect on surfaces. A Class II Division 1 location has combustible dusts present under normal conditions.



### CLASS II DIVISION 2

While the Class remains the same, Division 2 means that the presence of combustible dusts only occurs during abnormal conditions. For example, when the hazardous material is expected to be confined within closed containers or closed systems and will be present in the atmosphere only through accidental rupture, breakage, or unusual faulty operation.



# CONFINED SPACE PRODUCTS

## LINEAR LED TUBE STRING LIGHT

- Low profile, streamlined design for easy insertion/extraction
- Industrial grade, LED string light designed for rugged environments
- NEMA 3R, 4X, and 6P rated
- Feed-thru connectivity
- Available in 200 and 360 degree beam angles
- Color temperature = 5700K, color rendition > 80
- Unique LED bulb provides theft deterrence
- Easily attaches to scaffolding
- Patent pending
- Product customizations are available upon request



**INDUSTRY EXCLUSIVE DESIGN!**

## 910 LED SERIES

- cULus listing pending
- Industrial grade, LED hand lamp designed for rugged environments
- Environmental ratings: NEMA 3R (IP24), 4X (IP56), & 6P (IP67)
- High output LED light engine providing 1440 lumens at 10 watts for a luminous efficacy of 144 lumens/watt
- Available in 200 and 360 degree beam angles
- Unique LED bulb provides theft deterrence
- 50,000-hour lamp life
- 120V and 12V models available
- Patent pending
- Product customizations are available upon request



910-50S-LED-DLV

## XG2 SERIES GFCI

- cULus listed
- Meets NEC & OSHA construction site requirements
- Automatic & manual power-up models are available
- Works on 2-wire or 3-wire circuits
- Available in 15A and 20A models
- Up to 1.5 horsepower switch rating
- NEMA type 6P polycarbonate enclosure is watertight and corrosion, impact, and UV light resistant
- Available with factory-wired and molded-on device
- Class A with open neutral protection



XG2-12-2W



XG2-12-2BW



XG2-14-2TT

## 1140 SERIES LED HEAVY DUTY WORK LIGHTING

- Outdoor and wet location rated
- Feed-thru connectivity option
- Low power utilization and consumption
- Lightweight, heavy duty and impact resistant material
- Fixture can be mounted horizontally overhead or vertically on the ground
- 50,000-hour lamp life
- Battery backup available with -EL part numbers



1140-25-LED



Vertical Light Stand



1140-25F-LED

## 1948 VAPOR-GARD® INDUSTRIAL DUTY, LOW VOLTAGE HAND LAMPS

- Molded handle impervious to impact and resistant to work site chemical
- Glass globe is heat and impact resistant and threads into handle sealing bulb and socket
- Guard is constructed out of heavy-gauge steel wire and finished with a Zinc-Chromate plating to resist corrosion
- Quick latch 703 guard makes bulb changes easy
- Nut and grommet system provides both cord strain relief and protection from moisture/dirt
- Pre-wired models come with 14/3 SOW cord and a watertight plug
- Combine with portable transformer for a complete low voltage solution
- Product customizations are available upon request



1948-12

## 70-N VAPOR-GARD® HAND LAMP & STRING LIGHT

- cETLus listed for U.S. and Canada
- Molded handle impervious to impact and resistant to job site chemicals
- Glass globe is heat and impact resistant and threads into handle sealing bulb and socket
- Guard is constructed out of heavy-gauge steel wire and finished with a Zinc-Chromate plating to resist corrosion
- Quick latch wire guard for easy bulb changes
- Nut and grommet system provides both cord strain relief and protection from moisture/dirt
- Pre-wired models come with 16/3 SOW cord and a watertight molded plug
- Product customizations are available upon request



70-NGQL25

## PORTABLE TRANSFORMER UNIT

- Transformers convert 120 VAC/60Hz line voltage to 12 VAC
- Corrosion resistant enclosures are made from non-conductive resin that is resistant to impact and job site chemicals
- Outlets operate independently of each other—4 x 100VA outputs
- Circuit breakers wired individually to each receptacle and operate independently of each other – if one circuit opens the others continue to operate



1941-12

## 1239 SERIES LED EMERGENCY EGRESS LIGHTING

- 90 Minute battery backup maintains lighting during loss of power
- Indoor and outdoor wet location rated
- Lightweight, heavy duty and impact resistant materials reduce maintenance and replacement costs
- Feed-thru capability available on all models
- 25,000-hour lamp life
- Low power utilization and consumption
- Non-conductive base with cord egress
- Optional magnetic mount



1239-6-LED



## 1000 SERIES LED WIDE AREA WORK LIGHTING

- cULus listed for U.S. and Canada
- Outdoor and wet location rated
- Strong integral mounting magnet
- LED efficient lighting technology
- 50,000-hour lamp life expectancy
- Standard models come wired with NEMA 5-15 plugs
- Optional feed-thru connectivity via secondary cable or receptacle with flip cover
- Driver located in main body
- Low temperature start at -30°C
- Color temperature 5000 Kelvin
- Product customizations are available upon request



## BOILER LIGHTING

- Boiler lights can fit through a sight hole of 1.8" in diameter and larger
- 500 watt tungsten light at 8800 lumens
- Curved handle is optional for greater mobility
- 120 volt operation
- Welded steel cage protects bulb
- Grounded metal tube handle
- Not recommended for hazardous locations
- Couple with in-line GFCI for confined space use
- Custom LED options available



## 7 AND 9 SERIES INDUSTRIAL GRADE HAND LAMPS

- cETLus listed for U.S. and Canada
- Use with LED, incandescent, or CFL bulbs
- Molded flexible rubber handle impervious to impact and resistant to work site chemicals
- Standard NEMA 5-15 side outlet (9-series)
- Optional switch is available
- Low temperature performance
- Wide selection of pre-wired hand lamps and replacement parts
- 120V and 12V options
- Accommodates cord sizes up to 14/3 SOW
- Product customizations are available upon request





## 1000F-EMBT SERIES EMERGENCY EGRESS LIGHTING

- Battery backup provides 90 minutes of illumination upon power failure
- Battery automatically charges when fixture is connected to power
- 3600 lumens on AC power, 1800 lumens on battery backup
- Dual 26W fluorescent bulbs
- Switch operates for testing and main on/off
- Internal battery/ballast combo
- Impact resistant, high-temperature lens with inner surface prisms for optimal light diffusion
- 4000K color temperature, 82 CRI
- Mounts with magnet base
- Includes safety hook for tethering



1000F-EMBT

## 1917, 1918, & 1950 SERIES LOW VOLTAGE SPOT & FLOOD LIGHTING

- Impact resistant, non-glass lens for food & beverage processing environments
- Large rubberized cushion will not mar or scratch surfaces
- Optional weather-proof switch
- Spot light or flood light models available
- Optional 120V to 12V rubberized in-line transformer
- Nylon, non-metallic body
- Can be mounted to a cable reel as an accessory



1917 Spot Light



1950-12 Spot Light

GNC-B  
Gooseneck Clamp

# HAZARDOUS LOCATION PRODUCTS

## 1009-HAZ HAZARDOUS LOCATION LIGHT

- cETLus certified for U.S. and Canada
- NEMA 4X (IP66) / Wet Location Listed
- T4 Temperature Rating
- Copper free aluminum
- High vibration resistance
- LED Energy Efficient Lighting Technology
- Durable, Rugged Indoor/Outdoor Construction
- 5 year warranty



1009-HAZ

## 1007-XP EXPLOSION PROOF HIGH BAY LIGHT

- cETLus certified for U.S. and Canada
- Class I Div. 1 & 2 rated
- Class II Div. 1 & 2 rated
- NEMA 4X (IP66) / Wet Location Listed
- T3 Temperature Rating
- Copper free aluminum
- High vibration resistance
- LED Energy Efficient Lighting Technology
- Durable, Rugged Indoor/Outdoor Construction
- 5 year warranty



1007-XP

## 2600 SERIES EXPLOSION PROOF LED HAND LAMP & STRING LIGHT

- cETLus listed for U.S. and Canada
- Class I & II, Div 1 & 2, Groups C, D, F & G
- 120VAC or 12VAC lamp with NEMA plug or XP plug
- Lightweight construction
- Aluminum anti-spark guard
- Non-conductive, high-impact glass reinforced handle
- Accommodates 16/3 to 14/3 types SOOW, STW, STOW cable
- High-impact tempered glass globe threads directly into special designed guard assembly
- Handle construction provides superior strength and high insulation properties
- Heavy duty aluminum guard features swivel hook



Hand lamp style  
2625-LED



String light style  
123100LEDXPI-1

## PORTABLE TRANSFORMER UNIT

- cETLus listed for U.S. and Canada
- Class I, Div 2, non-incendive
- NEMA 3R polycarbonate enclosure with convenient carry handle
- 120VAC 60Hz to 12VAC step down, rated at 400VA
- Quad secondaries provide 12VAC power to 4 receptacles
- Each receptacle can supply power to 10-drop LED string light
- Class I, Div 1 rated decontactor-style receptacle
- Product customizations are available upon request



1941-12-C1D2-16

## ABOUT ERICSON

For over 100 years, Ericson has engineered and manufactured the safest portable power distribution and temporary lighting products on the market. Designed for superior durability and convenience, our engineered solutions offer customers the best tailor-made products to fit their specific needs.

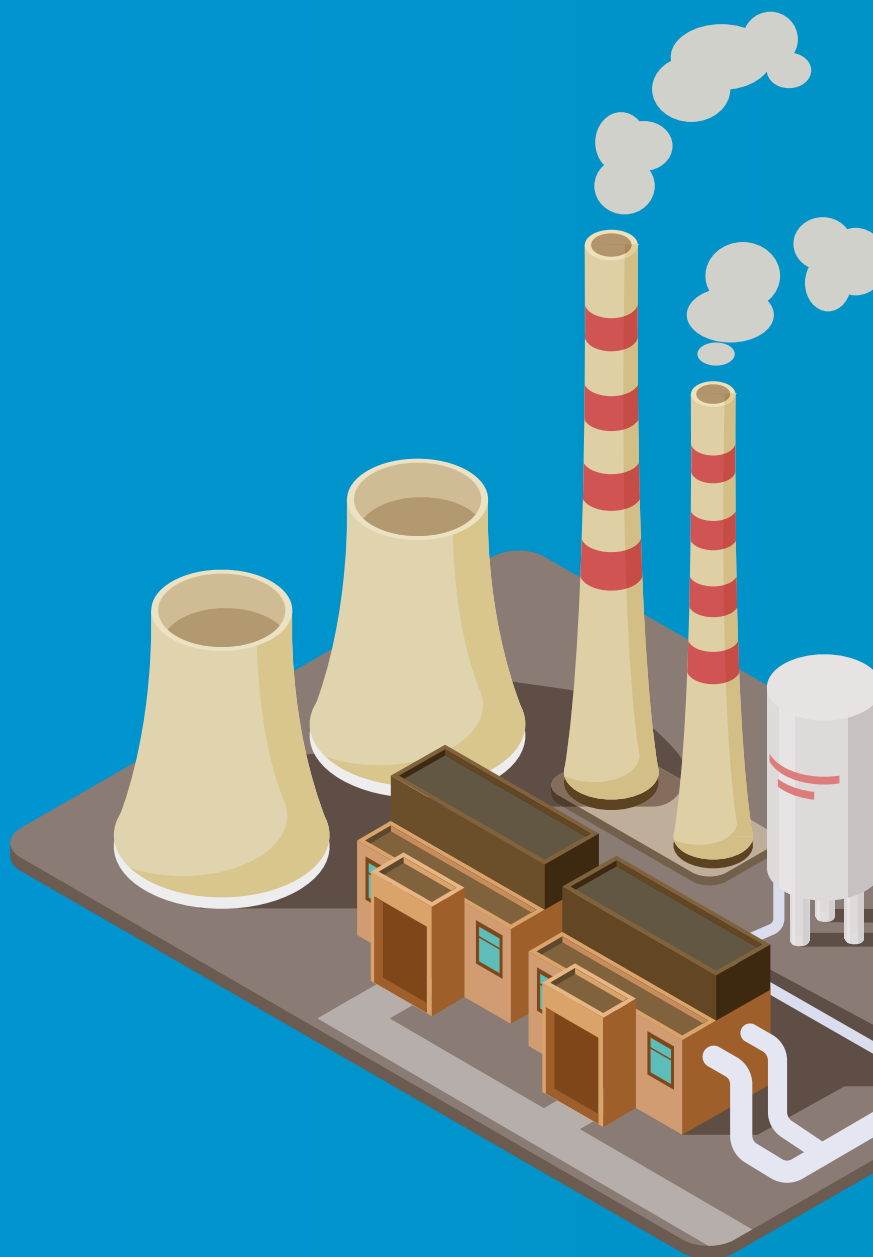
## NO ONE DOES IT BETTER.

We pride ourselves on providing distributor partners, industrial end users, and OEM customers all over the world with durable, industrial-grade products that protect the workforce from work site hazards, increase productivity, and have a lower cost of ownership than other options on the market.

Our unique array of products allows Ericson to offer our customers a comprehensive line of portable power and lighting solutions all in one place. Ericson is a customer-driven organization focused on high quality and continual improvement and we strive to meet or exceed our customer's expectations. From initial application consultation, to design and manufacturing, to product performance in the field, we aim to consistently impress.

Thank you for considering Ericson products for your company.

## SAFETY IS OUR STANDARD.



CONNECT WITH US!





**MANUFACTURING ELECTRICAL SAFETY  
PRODUCTS FOR OVER 100 YEARS**

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