DIALIGHT INDUSTRIAL LED LIGHTING

For Hydrogen Applications

AMERICAS

Dialight

WHY LIGHTING MATTERS in Hydrogen Applications

Hydrogen is gaining momentum as a clean energy solution, driving rapid investment in new production and storage facilities worldwide. But with this growth comes a critical need for safety, especially in environments where even the smallest ignition source can have serious consequences.

SAFE LIGHTING FOR A CLEANER, GREENER TOMORROW.

Hydrogen has the lowest minimum ignition energy of any fuel, just 0.02 millijoules. The U.S. Department of Energy notes that:

"Even an invisible spark or static electricity discharge from a human body (in dry conditions) may have enough energy to cause ignition.[1]"

Because of this, every component in a hydrogen facility must be designed to prevent ignition, including lighting. Lighting systems must not only deliver reliable, high-quality illumination, but also meet the most stringent safety standards for hazardous locations.

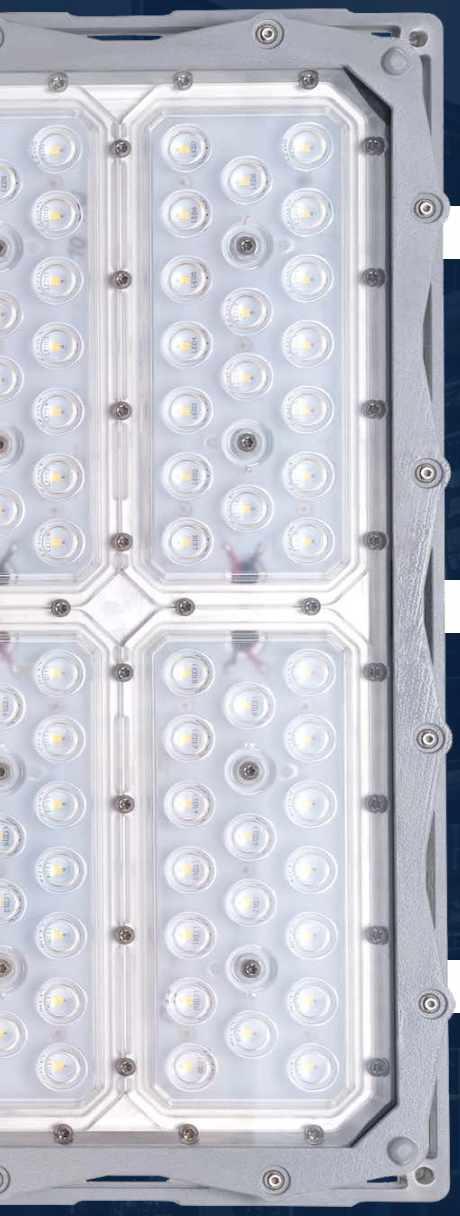
The DOE forecasts U.S. hydrogen demand could grow fivefold by 2050 as clean energy targets expand.[2] With global hydrogen adoption accelerating, the role of dependable, safety-rated lighting is more critical than ever.

- Noisy, Complex Heavy Machinery
- Physical Hazards, Such as Slips, Falls, and Moving Objects
- Chemical Vapors, Dust, and Debris
- Flammable and Explosive Environments
- High Heat and High Vibration
- Arc Flash

[1] *Hydrogen Properties (Module 1)*, U.S. Department of Energy, *Hydrogen Safety Training for First Responders.* https://www1.eere.energy.gov/hydrogenandfuelcells/tech_validation/pdfs/fcm01r0.pdf
[2] *Charting the Path: An Energy Earthshots™ Initiative Report*, U.S. Department of Energy. https://www.energy.gov/sites/default/files/2025-01/doe-energyearthshots-initiativereport.pdf

DIALIGHT LED SOLUTIONS for Hydrogen Applications

When choosing an LED Lighting partner, consider how their products are engineered, constructed and tested prior to making your decision. Dialight is the world leader in industrial LED lighting technology with millions of fixtures installed worldwide. Most Dialight products are backed by a 10-year warranty and specifically designed for harsh environments, including Hydrogen applications.



CUSTOM POWER SUPPLIES

Long-life potted drivers with optimized thermal dissipation for protection against environmental contaminants and vibration related failures.

LOW MAINTENANCE MECHANICAL DESIGN

Sealed and optimized to reduce or eliminate the need for maintenance over the life of the fixture. Easy to install and retrofit to existing infrastructure.

LATEST LEDS AND ADVANCED OPTICS

Highly efficient, crisp, low-glare illumination. Lighting where you need it, not where you don't.

BUILT FOR DEMANDING ENVIRONMENTS

Hazardous location certified. Backed by a 10-year warranty. Designed for total confidence in tough conditions.

PRODUCT PORTFOLIO for Hydrogen Applications

LED HIGH BAY
CID1

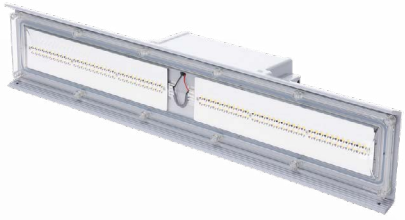
Models: HEP Series
Certification: UL844 CID1, Groups B, C, D
Voltages: 100-277 VAC, 347-480 VAC
Fixture Lumens: 11,000 - 26,000
CCT: 2700K, 4000K, 5000K
Lens: Glass
Beam Distribution: Medium, Narrow, Wide

LED HIGH BAY
CID2

Models: HED and VED Series
Certification: UL844 CID2, Groups A, B, C, D
Voltages: 100-277 VAC, 347-480 VAC
Fixture Lumens: 11,000-41,000
CCT: 2700K, 4000K, 5000K
Lens: Glass, Polycarbonate, Acrylic
Beam Distribution: Medium, Narrow, Wide, Oval, Round

LED LOW BAY
CID2

Models: LED and VED Series
Certification: UL844 CID2, Groups A, B, C, D
Voltages: 100-277 VAC, 347-480 VAC
Fixture Lumens: 4,000 - 17,000
CCT: 2700K, 4000K, 5000K
Lens: Polycarbonate
Beam Distribution: Ultra Wide



LED LINEAR
CID2

Models: LKD and LJD Series
Certification: UL844 CID2, Groups B, C, D
Voltages: 100-277 VAC
Fixture Lumens: 5,000 - 9,000
CCT: 4000K, 5000K
Lens: Polycarbonate
Beam Distribution: Medium, Wide

PRODUCT PORTFOLIO for Hydrogen Applications

LED AREA LIGHT
CID1

Models: ALC Series
Certification: UL844 CID1, Groups B, C, D
Voltages: 100-277 VAC, 347-480 VAC
Fixture Lumens: 3,000 - 9,000
CCT: 2700K, 4000K, 5000K
Lens: Glass
Beam Distribution: 180°, 360°, Wide

LED AREA LIGHT
CID2

Models: ALD Series
Certification: UL844 CID2, Groups A, B, C, D
Voltages: 100-277 VAC, 347-480 VAC
Fixture Lumens: 3,000 - 9,000
CCT: 2700K, 4000K, 5000K
Lens: Glass, Polycarbonate
Beam Distribution: 180°, 360°, Wide

LED FLOODLIGHT
CID2

Models: F1D and F2D Series
Certification: UL844 CID2, Groups A, B, C, D
Voltages: 100-277 VAC, 347-480 VAC
Fixture Lumens: 12,000 - 60,000
CCT: 2200K, 2700K, 4000K, 5000K
Lens: Glass, Polycarbonate
Beam Distribution: NEMA 4, NEMA 6, NEMA 7x6, Asymmetric

LED STREETLIGHT
CID2

Models: S1D Series
Certification: UL844 CID2, Groups A, B, C, D
Voltages: 100-277 VAC, 347-480 VAC
Fixture Lumens: 12,000 - 30,000
CCT: 2200K, 2700K, 4000K, 5000K
Lens: Glass, Polycarbonate
Beam Distribution: Type II Medium, Type III Medium, Type V

HAZARDOUS LOCATIONS RATINGS

Fixed and portable fixtures for installation and use in hazardous (classified) locations Class I, Divisions 1 and 2, Groups A, B, C, and D; Class II, Division 1, Groups E, F, and G; Class II, Division 2, Groups F and G; and Class III, Divisions 1 and 2, in accordance with the National Electrical Code, NFPA 70

Classes

The classes define the general nature of hazardous material in the surrounding atmosphere.

Class	Hazardous Material in Surrounding Atmosphere
Class I	Hazardous due to the presence of flammable gases or vapors in the air in quantities to produce explosive or ignitible mixtures
Class II	Hazardous due to the presence of combustible and/or conductive dusts
Class III	Hazardous due to the presence of easily ignitible fibers and flyings, such as wood chips, cotton, flax and nylon. Group classifications are not applied to this class

Divisions

The division defines the likelihood of hazardous substances being present in ignitible concentrations in the surrounding atmosphere.

Division	Presence of Hazardous Material
Division 1	The hazard exists during normal operating conditions
Division 2	The hazard is present only due to accidental system breakdowns or abnormal operations

Groups

The group(s) are determined by the specific hazardous materials which may be present.

Group	Hazardous Material in Surrounding Atmosphere
Class I Groups	
Group A	Acetylene
Group B	Hydrogen, fuel and combustible process gases containing more than 30% hydrogen by volume or gases of equivalent hazard such as butadiene, ethylene oxide, propylene oxide and acrolein
Group C	Carbon monoxide, methyl ether, hydrogen sulfide, methylacetylene, cyclopropane, ethyl and ethylene or gases of equivalent hazard
Group D	Gasoline, acetone, ammonia, benzene, butane, cyclopropane, ethanol, hexane, methanol, methane, vinyl chloride, natural gas, naphtha, propane or gases of equivalent hazard
Class II Groups	
Group E	Combustible metal dusts, including aluminum, magnesium and their commercial alloys or other combustible dusts whose particle size, abrasiveness and conductivity present similar hazards in connection with electrical equipment
Group F	Carbonaceous dusts that have more than 8 percent total entrapped volatiles or that have been sensitized by other materials so that they present an explosion hazard. Coal, carbon black, charcoal, and coke dusts are examples of carbonaceous dusts
Group G	Flour dust, grain dust, flour, starch, sugar, wood, plastic and chemicals

Reference
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