Directory

Dialight

How LED Lighting Prevents Common Industrial Accidents

Upgrading to Modern Industrial LED Lighting Improves Plant Safety & Saves Money

Safety is the number one priority in facilities across all segments of the manufacturing industry. Every year, companies invest millions of dollars in equipment upgrades and safety programmes aimed at preventing injuries and lost time accidents by increasing awareness of risks and incentivising safe work practices.

Yet still, an average of over 477,000 injuries and 328 fatalities occur in manufacturing plants across the US each year[i]. These incidents not only have a devastating impact on employees and their families, but also on the company's reputation, recruiting/hiring efforts and profitability. In fact, workplace injuries and deaths have cost US manufacturers 170.4 billion USD over the last 10 years.[i]

Aiming to improve plant safety, many companies have found that upgrading facility lighting to modern, high-efficiency industrial LED fixtures can have a major impact on lowering the risk and incidents of workplace accidents. Here's how state-of-the-art LED lighting can improve safety:

- **A brighter work environment improves visibility.** Poor visibility is the leading cause of slip, trip and fall hazards and contact with moving objects – some of the biggest risks in any facility[ii]. With so many distractions, like excessive noise that forces workers to rely on visual information, it's hard to keep an eye out for these kinds of risks. Adding to the problem, conventional high-pressure sodium fixtures create a dark, drab atmosphere that makes it difficult for workers to spot hazards around them. LED fixtures, on the other hand, produce bright, white, uniform light that improves visibility, helps workers spot hazards and stay out of harm's way.

- **LEDs can combat fatigue and improve alertness.** Fatigue is a major risk for workers, especially those who work night shifts or a rotating schedule. When workers are tired, they're less perceptive and have slower reaction time, which makes them less able to spot and avoid hazards on the job. The bright daylight-like quality of LED lighting has proven to encourage alertness and reduce fatigue by 5x compared to HPS[iii], to help staff feel more awake and aware of their surroundings. In fact, the American National Standards Institute (ANSI) recommends bright white lighting[iv] to combat worker fatigue and reduce accident risk.

- **Improved colour rendering reduces risk.** The inability to distinguish colours clearly is a huge safety risk. For example, warning placards and signs often rely on colour-coding to communicate danger, and electrical wiring is colour-coded so that crews may work safely. But, the low colour rendering of HPS lights creates an unnatural orange glow that makes it very difficult to distinguish colours, which puts workers at risk of misinterpreting colour cues. Unlike HPS, LED lighting produces near-daylight-quality

white light that makes colours appear natural and easily distinguishable. That means workers can interpret signage clearly, and there's much less risk that an electrician will cut the wrong wire.

- **LEDs dramatically reduce lighting maintenance.** By its very nature, changing lightbulbs is dangerous work in an industrial facility. Not only must crews work at high elevation, they often must do so overtop production equipment. The risk of a catastrophic fall is very real. And because conventional fixtures fail frequently under high-vibration and high-heat environments, lighting maintenance is an ongoing chore. By contrast, industrial LED fixtures are built to last. Because they don't rely on a delicate filament, they're much more resistant to shock and vibration, and some of the best products on the market can last up to 100,000 hours. This long-life performance could essentially mean the end of lighting maintenance and an end to the risk of performing this dangerous job.

- **LED fixtures contain no hazardous materials.** Did you know that a single HPS bulb contains enough mercury to poison an entire classroom of children?[v] Even fluorescent bulbs contain toxic levels of mercury, phosphorous and other rare-earth minerals. And, of course, when HPS or fluorescent bulbs are broken (which happens frequently, especially during maintenance), those hazardous materials are released into the air, exposing everyone in the vicinity. Switching to LED lighting fixtures is a much safer alternative because LEDs contain zero hazardous materials. This not only makes for a safer environment inside the facility by eliminating the risk of exposure, but outside as well by eliminating these pollutants from the Earth's atmosphere.

Improving facility safety should be a top priority for every industrial manufacturer, and making do with mediocre, antiquated lighting could be putting employees at unnecessary risk. Upgrading to modern, high-efficiency, industrial-grade LED lighting is a worthwhile investment that can lower the risk of accidents, injuries and even fatalities inside the plant, and save money in the long run.

References

[i] U.S. Bureau of Labor Statistics, National Safety Council, ECG Analysis

[ii] U.S. Dept. of Labor, Census of Fatal Occupational Injuries Summary, 2016; Occupational Health and Safety Administration, Mine Safety and Health Administration

[iii] Falchi, "Limiting the impact of light pollution on human health, environment and stellar visibility"

[iv] ANSI/API RP 755: Fatigue Risk Management System

[v] U.S. Dept. of Labor, Occupational Safety and Health Administration 29 CFR 1910.1000, Table Z-2; ECG analysis

PROSITE LED FLOODLIGHT

The ProSite series is currently available in 12,000 – 65,000 lumen models, reaching up to 165 LPW, for mounting heights of up to 30 meters (100 ft), providing superior visibility to worksites with crisp, near daylight illumination to keep their operations safe and secure.

10 year warranty

CE / RCM

UL 1598/A, CSA C22.2 No. 250.0

UL 844, CID2, CIID1, CIID2, CIII

IP66/67, NEMA 4X

IK10 (PC optic/lens/lens cover), IK08 (glass lens cover)

Up to 165 lm/W

Up to 65,000 lumens

VIGILANT & SAFESITE LED BULKHEAD

Ideal for illuminating walkways, stairwells, platforms, tunnels, subways and exit routes, the Dialight LED Bulkhead fixture is designed to enhance facility safety with reliable, maintenance-free pathway lighting. Offering a low-profile, rugged design for maximum durability and shock/vibration resistance.

10 year warranty

CE, RCM, ENEC

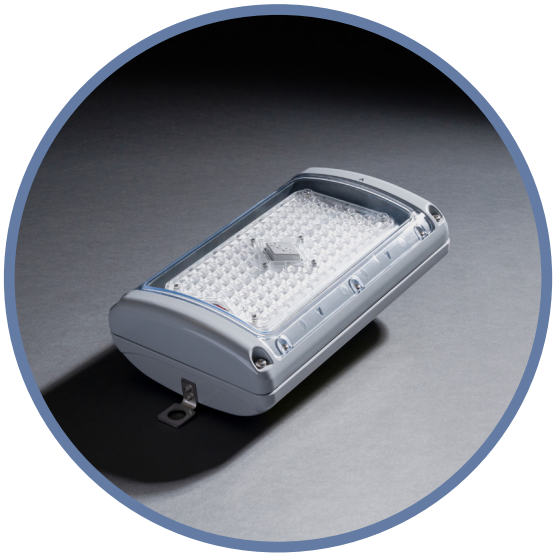
IECEx/ATEX (Zone 1, 21, Zone 2, 22)

IP66/67

IK10

Up to 149 lm/W

3,000 & 6,500 lumens



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