

The Fabulous
Lighting Maven
Unexpectedly Illuminating

ACTION-ORIENTED PEARLS OF WISDOM FOR INDUSTRIAL MANAGERS AND CONTRACTORS
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Dear Reader:

Most manufacturing and food processing plants include some spaces that are classified by the [National Electrical Code \(NEC\)](#) as hazardous locations, “where fire or explosion hazards may exist due to flammable gases or vapors, flammable liquids, combustible dust, or ignitable fibers or flyings.” The Occupational Safety and Health Administration (OSHA) has written a concise, 10-page version of the standards inherent to the three classes of Hazardous Locations, and a prudent Facilities Manager would be smart (and you’re all smart ..) to reference this here: [Hazardous Locations](#).

HAZARDOUS LIGHTING

In a nutshell, a space is ‘Hazardous’ if one or more of the following is present:

<u>Class I</u> Gas or Vapors	<u>Class II</u> Dust	<u>Class III</u> Fibers and Flyings
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In addition to the types of hazardous locations, the National Electrical Code also concerns itself with the kinds of conditions in which these hazards can be found, and divides them into ‘Normal’ versus ‘Abnormal’. Quick definitions of each follow:

- Division 1 – Normal. The hazard would be expected to be present in everyday production operations or during frequent repair and maintenance activity.
- Division 2 – Abnormal. When the hazardous material is expected to be confined within closed containers or closed systems and will be present only through accidental rupture, breakage or unusual faulty operation.

The nature of the hazardous substance is grouped by NEC as well, into Groups A, B, C, and D in Class I locations, and, in Class II locations: Groups E, F, and G.

And finally, the sources of ignition is important. From the OSHA write-up: “Arcs and sparks produced by the normal operation of equipment, can ignite a hazardous location atmosphere. The high temperatures of some heat producing equipment, such as lamps and lighting fixtures, can ignite flammable atmospheres if they exceed the ignition temperature of the hazardous material. The National Electric Code requires special marking of heat producing equipment with temperatures above 100 C (212aP). Electrical equipment failure is another way an explosion could be set off. A burn out of a lamp socket or shorting of a terminal could spark a real disaster in a hazardous location.”

You’ll want to make sure the LED lighting fixtures you are considering are rated for the spaces you plan to put them in, and the specification sheets for those fixtures will tell that story.



U.S. Power is an industrial energy services company that specializes in the reduction of energy consumption across a broad array of manufacturing and food processing facilities located in Michigan, Ohio, Indiana, Illinois and Wisconsin. In addition, the company publishes a useful curation of lighting-oriented information from the marketplace, and consolidates it into this concise, twice per month letter known as The Fabulous Lighting Maven, distributed to Facilities Managers throughout the nation.

While the company prides itself in its diversity, it owns and operates a niche lighting contracting firm as well, known as U.S. Power Vision, LLC. With a core business in and around industrial LED lighting, it keeps itself and its clients at the cutting edge of illuminating technologies, all aimed at providing – from the eyes to the fingertips – exceptional illumination, superb control and intuitive simplicity.

YOUR MORNING GRIN

Everybody loves a game.
Ours is whacking electrons.

Game on.

Ron Motsch
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*Building and Managing a Suite of
The Most Productive and Admired
LED Lighting Systems on Earth*

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