



# Lighting Retrofit Guidelines for Industrial Facilities

## Facility Information Checklist

Legal Business Name \_\_\_\_\_

Facility Address \_\_\_\_\_

Hours of Operation \_\_\_\_\_

Facility Type \_\_\_\_\_

Sq. Ft./Ceiling Ht. \_\_\_\_\_

HVAC Type/Fuel \_\_\_\_\_

Utility/Acct # \_\_\_\_\_

### Walkthrough Tools Checklist

- Pen & Audit Sheets
- Ballast Discriminator
- Digital Camera
- Light Meter
- Counter
- Monocular (Binocular)

*Don't forget to include necessary safety equipment!*

## Consider the Space

Industrial facilities often have high hours of operation and illumination throughout large areas which make them ideal for an efficient lighting and controls retrofit. They can also be more labor intensive when it comes to both auditing and retrofitting the space. In some cases it may be necessary to “break-up” the audit process into separate phases.

Most industrial facilities will also require an escort for the walkthrough, so plan for this. Safety training and/or additional safety equipment may also be mandatory (example: steel toe boots, fully enclosed safety glasses, hardhat). Typical fixture mounting at industrial sites can make it difficult for some common retrofit options. Also, new fixtures may not always be possible based on type of mounting, existing site obstructions and cost of replacement.

## Consider the Space



**Hazardous Location/Heavy Duty Enclosed Fixtures:** These fixtures are typically an HID source and can be costly to maintain. The existing wattage can be difficult to determine if you cannot see the label and/or if the customer does not know. If this is the case then you can estimate the wattage by the size of the housing. Consider the location and access for these fixtures when determining proper replacement (example: tight spaces may not allow for linear fluorescent). LED and electronic or pulse metal halide (extended life lamp) or non-linear fluorescent should be considered in these cases.



**Channel/Strip Fixtures:** You will commonly see these fixtures on site in multiple wattages if they are using 8' lamps, but it can be hard to identify specific models because of high mounting heights. Nonetheless, due to their low cost and versatility, they are common in industrial facilities and are also added as task lighting. It is critical to verify the lamp wattage. You can do this with a monocular (look for part number on lamps). This type of product is typically more cost-effective to retrofit with 4' T8 fixtures with accessories added (lens/reflector/sensors). Also, consider de-lamping and low ballast factor options.



**High Bay Enclosed Fixtures:** These fixtures are an HID source and come in multiple sizes. Remember that HID sources depreciate considerably within the first two years. The existing wattage can be difficult to determine if you cannot see the label, and you cannot always use the reflector diameter as a guide. Consider the location and access for these fixtures when determining proper replacement. For example, is it installed over a piece of equipment that makes it costly to replace the lamp? Linear fluorescent (T5HO, T8), LED, electronic HID and pulse start metal halide are options to be considered.



**Wallpack Fixtures:** These fixtures are an HID source and come in multiple sizes. They are typically utilized in interior and exterior locations at industrial sites. Location and access to fixtures can make it difficult to determine existing wattage. The size cannot always be used to determine wattage because of smaller size/high wattage mogul and medium-base lamps. It is important to determine wattage before deciding on replacement options. New LED fixtures are now an embraceable technology for these applications and can be cost-effective. CFL's are being utilized as a retrofit option, but consider their lower lamp life versus HID sources.



**Lighting Controls:** Some industrial facilities can have large areas with low levels of activity in the space, making it ideal for lighting controls. As you conduct your walkthrough, be sure to document these opportunities, including occupancy and daylight sensors. Occupancy sensors are available to replace a wall switch or as a ceiling mount. Wireless ceiling mount technology is available that does not require hard-wiring for areas that may be difficult to re-wire. Many industrial facilities have skylights, so be sure to consider daylight sensors on fixtures to dim or switch off during times when daylight provides enough foot-candles.

## Final Thoughts

- Industrial facilities can have huge savings opportunities. Breaking the project up into phases is one way to help your customer schedule a retrofit without interrupting the pace of business and to manage budget concerns.
- Ask about and understand your customers' internal requirements such as payback period. Then try to offer options that work within their criteria.
- Installing mock-up fixtures is the best way to sell a project—seeing is believing.
- How about adding some of your typical sales tips that help them get beyond simple payback? Talk about the benefits beyond simple payback – such as a better visual environment for employees resulting in safer for productive environment?