

# Retrofit Considerations When Switching to LEDs

Frustrated by frequent maintenance, poorly lit areas, and high-energy consumption, you've decided to upgrade your facility's lighting.

You've gotten your manager's approval for the retrofit and are eager to begin the switch to LEDs. But, before you purchase your fixtures and start the installation, consider these 10 factors.

1. **Request sample fixtures:** Have you evaluated a sample fixture? Always request a sample prior to settling on a fixture design. Nothing compares to seeing a fixture hung in the actual application, and most manufacturers have a sample program to "try out" a fixture prior to making a large investment.

Enhancements in color rendering, and a variety of choices in color temperatures, optics, and brightness levels allow you to truly customize your lighting design to meet the needs of your specific application.

2. **Research rebates and incentives:** Are there rebates available in your area? Do the fixtures you're considering appear on the Designlights™ Consortium's Qualified Products List (DLC QPL)? Most agencies require a luminaire to appear on this list in order to be considered eligible for state and utility energy efficiency program incentives.

The Database of State Incentives for Renewables & Efficiency® (DSIRE®) is another great resource tool for finding incentives in the United States.

3. **Consider fixture reliability and luminaire lifespan:** How long do you plan on keeping your fixtures? How often are you willing to perform maintenance tasks, such as driver replacement? For many, the ultimate objective is to upgrade their lighting — reducing maintenance and manpower requirements while maintaining or increasing levels of uniformity and comfort. When evaluating new lighting systems, consider both the total system power consumption and the expected luminaire life in order to evaluate energy and maintenance costs and savings.



4. **Don't forget about color temperature options:** Do you have a color temperature preference for your facility? What type of work is being performed and what are the mounting heights of the fixtures? It's important to remember different color temperatures create different effects. Cool white has a crisp, bluish appearance, with the highest perceived brightness. It is a great choice for floodlights, especially at higher mounting heights. However, a warmer or neutral color temperature LED luminaire produces a softer glow and might be a better choice for lower mounted task lights.
5. **Double check the power system requirements for your facilities lighting:** What voltages are your lights running on? Is your power clean, or is it affected by surges and dips from nearby equipment? New IEEE standards recommend a minimum of 6 kV of surge protection for outdoor solid-state lighting, with a recommendation of 10 kV for high-risk areas.

- 6. Research true 1-for-1 retrofit solutions:** Is the LED solution you're considering a true 1-for-1 retrofit for your facility? If not, do you have enough circuits available to add additional fixtures? Labor costs are a major factor in any retrofit project. Being able to mount directly to the existing mounting hoods can save a significant amount of labor time and cost. Ideal retrofit LED solutions allow facilities to utilize existing mounting hoods and conduit/wiring systems, helping to reduce new fixture installation labor costs. Retrofit adapters are often available, allowing fixtures to mate with a wide range of mounting hoods, letting your facility consolidate with a single luminaire.
- 7. Reconsider facility obstructions:** Are there any obstructions in the ceiling that might block light or prevent fixtures from access? Consider alternate mounting means for the fixture, such as pendant mount. For example, Emerson task luminaires have five different mounting hoods to ensure the fixture is installed in the ideal location to properly light the area.
- 8. Review light levels (IES, RP540):** What illumination level are you targeting? Are you following a standard such as IES RP7 for industrial lighting, or API RP540 for petroleum applications? Make sure your layout provides the appropriate illumination level. Most fixture manufacturers have a variety of lumen outputs, so choose the right illumination level to meet the needs of the area. Too much light can be just as debilitating as not enough. Also remember LEDs are directional, which means you can achieve required light levels

with much fewer lumens and watts. For example, a 5,000 lumen LED task light can replace a fixture with a 150W HPS lamp (which generates about 15,000 lumens of light).

- 9. Evaluate mounting heights:** How high do you intend to hang your fixtures?

For higher mounting heights, high lumen floodlights are a great choice. When mounted higher up on a structure, these floodlights can be used to "wash light" over lower areas, providing uniform general illumination, while minimizing the need for task lighting.

Additionally manufacturers that offer field replaceable globes for their fixtures will allow you to retrofit a variety of mounting heights using just one fixture. Globe assemblies can be quickly removed and changed, depending on the application.

- 10. Assess area locations:** Do the locations of your retrofit have hazardous or environmental ratings? What are the area classifications for your retrofit? Are there other certifications or environmental considerations, such as damp locations, marine ratings, or elevated ambient temperatures that your fixtures need to address?

When you purchase lighting for a harsh or hazardous industrial location, you need to know that your lights are going to hold up against the environment. Products should be rugged and durable, in addition to meeting all of the certifications and requirements appropriate to your environment, whether it be wet location, marine, hazardous, or harsh industrial.

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