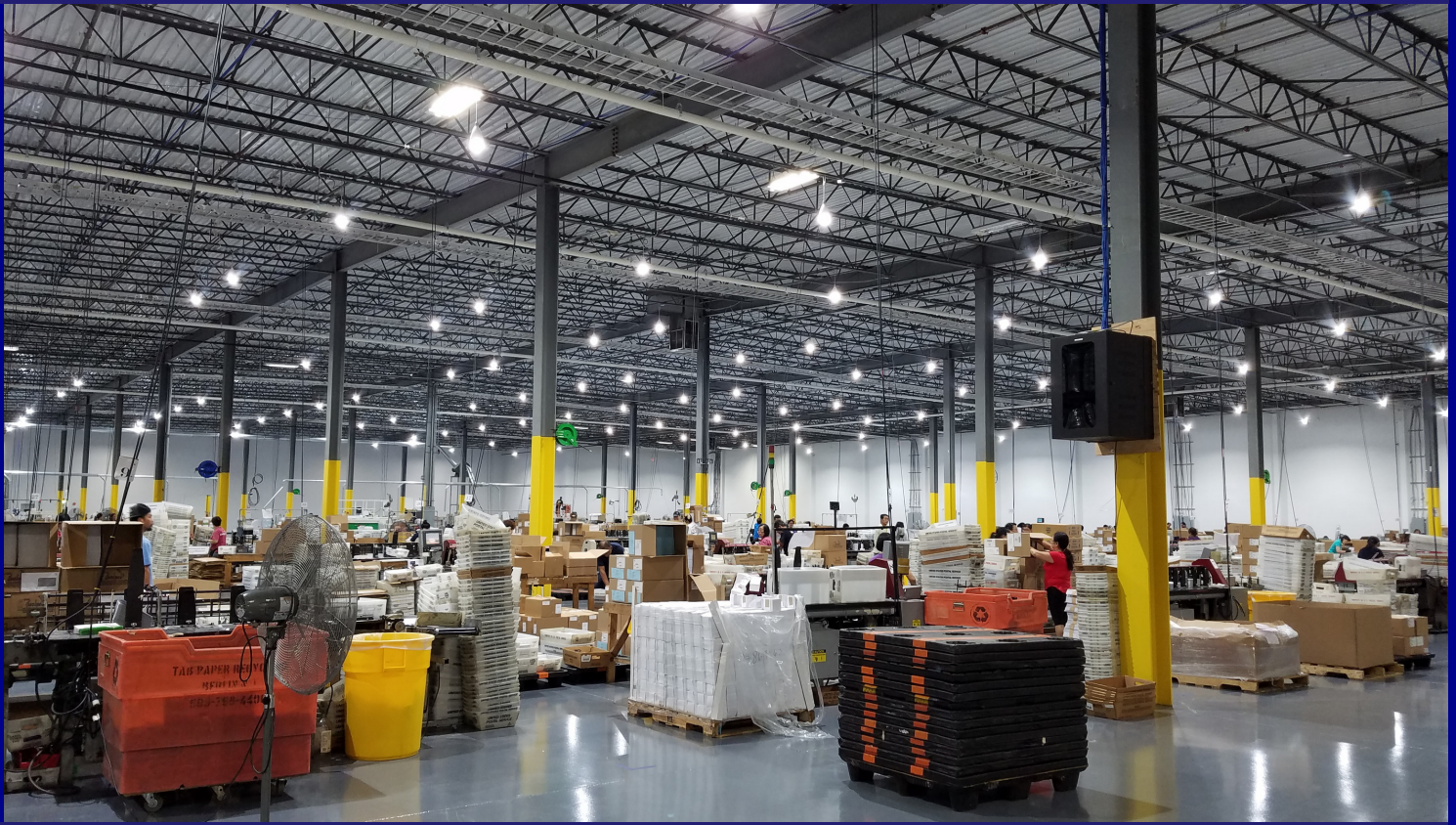


LED'S OFFER A CLEARER LOOK AT SAFETY, COST SAVINGS



While they don't attract as many headlines for their role in improving plant safety, enhancing operational productivity, keeping costs down or enhancing facility appeal, the impact of LED lighting in U.S. manufacturing continues to grow. Some of these connections are obvious, as a better lit facility is obviously safer, but others, including the manner in which they can improve the bottom line in the increasingly cost-sensitive manufacturing sector, deserve a closer look.

This report will offer insight on the ways in which upgrading to LED lighting from metal halide lamps or high-pressure sodium bulbs can help manufacturing, distribution and front-office environments achieve all of these goals.

SEEING IS BELIEVING

Green benefits are not exclusively related to the environment. According to engineers at OEO Energy Solutions, in addition to reducing a plant's carbon footprint, LEDs can reduce a plant's energy consumption by up to 68 percent. Additionally, because LED lights run cooler and operate at a lower temperature, air conditioning load is reduced by approximately 17 percent. Using figures from the Energy Information Administration, this could equate to over \$50,000 in annual savings.

The implementation of LED lighting can impact the bottom line in a number of ways. On average, traditional MHL bulbs will last a maximum of 20,000 hours and HPS bulbs are only slightly better at 24,000. LEDs last more than twice that long. This means the labor and equipment costs associated with light replacement are cut in half, with additional labor/maintenance savings coming from the reduced use of the air conditioning system.

The nature of these lights also means they are easier and safer to change. According to OEO, the average facility can change-out lights in a matter of days, as opposed to the weeks it may take with legacy systems. The use of motion sensors, which integrate more easily with LEDs, can extend their lifespan even more.

The final cost-savings benefit stems from a factor outside of the plant. Because MHLs contain mercury, and HPS lighting burns so hot, they represent significant fire hazards to insurance companies. This drives up premiums that could be lowered if these same insurers are made aware that LED lighting is in place.

BEING JUDGED BY THE COVER

While the precautionary clichés about judging anything or anyone by an outward appearance are numerous, the reality is that the quality of lighting in your facility will go a long way in creating either positive or negative sentiments about its working conditions. Regardless of the quality of work being done inside it, poor lighting can simply make it more difficult to do a good job. This can lead to discontent and poor workmanship.

The brighter, clearer light produced by LEDs can play a key role in addressing these concerns. Not only will LEDs provide a better lit environment that makes performing daily tasks easier, it also provides greater levels of safety. And a safer, more comfortable environment makes it significantly easier to retain and recruit quality employees.

As the manufacturing sector continues to contend with a skills gap, the ability to “keep up appearances” can go a long way in dispelling many of long-standing myths about manufacturing work being dark and dirty. Enhanced lighting systems can also help create a positive first impression when customers visit, or the OSHA inspector is making his or her rounds. Bright LED lighting helps reinforce a commitment to internal investments focused on quality and employee well-being.

Finally, let’s talk about the environmental benefits, because LEDs do offer many of them. In addition to eliminating the mercury vapor emissions associated with MHL systems, the lower energy consumption rates of LEDs mean a company can significantly decrease their carbon footprint.

According to calculations supplied by the U.S. Environmental Protection Agency, each 400-watt metal halide bulb that is removed from an industrial facility correlates to a 96,000-pound reduction in CO2 emissions.

THE SAFE BET

Wrapping up a look at the most significant benefits of transitioning to LEDs is a topic that everyone puts at the top of their priorities, but doesn't always draw enough real attention ... until something bad happens. The role that LED lighting can play in improving or preserving your facility's safety record cannot be understated.

First, LEDs are made from the same material used in most safety glasses – polycarbonate. Unlike traditional bulbs and fixtures, there is no glass that can fall from the ceiling if a light breaks or is dropped during maintenance activities. And one of the primary reasons a light gets dropped during bulb changes is because of the heat they can generate while in use.

MHLs can reach temperatures of up to 2,200 degrees Fahrenheit. In comparison LEDs can rise to a maximum of 150 degrees Fahrenheit. Additionally, the HID ballast used with LEDs serves as a defacto surge protector to help prolong LED and life and reduce electrocution risks.

All of these factors help contribute to a safer work environment. This provides workers with peace of mind in knowing that their company not only wants to provide a more attractive and better lit workplace that supports a focus on quality, but that safety initiatives go beyond plans and signage to include real-world investments.

While terms like “advanced manufacturing”, “Industry 4.0” and “smart factories” tend to focus on new and developing technologies like 3D printing, automation, connected devices and robotics, the next-generation benefits of LEDs are worthy of the same attention. By investing in safer, greener, better-performing and cost-cutting lighting technologies, manufacturers will be better positioned to leverage the benefits of new equipment and technical advancements.

This is because investments in lighting are really about investments in people, their work environment and a long-term commitment to keeping their company financially secure.