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Lights Out Distribution Centre

Trends in automation and data management often talk about the ideal of the 'Lights Out' factory – one that is autonomous, intelligent and requires minimal human intervention.

Lighting is the backbone of the Internet of Things (IoT). But implementing smart solutions within warehouses, factories and distribution centres should be preceded with an understanding of specific business drivers and the objectives that the facility and wider business are trying to achieve.

Here, we examine some common business drivers and considerations required to achieve them.

Ensuring compliance

Emergency lighting is an often overlooked, but critical, component in the modern factory or warehouse. To remain compliant, Facilities Managers must carry out different levels of testing daily, monthly and annually.

In an attempt to keep productivity levels as high as possible, these tests are sometimes neglected. This neglect risks workforce health and safety and, could lead to further downtime. Smarter facilities find ways to reduce or remove the burden of testing emergency lighting, through automatic, centralised self-testing.

Critically, these systems rely on the installation of LEDs, which can help to achieve compliance in other ways too, for example by boosting green credentials to meet increasingly stringent emissions targets and improving overall energy efficiency.

Enhancing well-being

A well-lit factory floor has an impact on the well-being and satisfaction of employees. The need to move from incandescent to LED is well-established, but how widespread is this change?

LED should be the standard in new facilities. Established facilities should be looking to make the switchover soon, for reasons far beyond the energy and cost savings LEDs offer. LED lighting can significantly enhance workforce wellbeing and boost productivity because it emits a better quality of light than traditional halogen lamps. The LED spectrum mimics that of natural sunlight, offering physical, cognitive and psychological benefits for the workforce.

In logistics, where shift work is prevalent, this proactive approach to employee well-being and sensitivity to the need to create a more 'naturally' lit environment is particularly important. The optimum lighting system will carefully balance the need for high bay illumination with the comfort of operators.
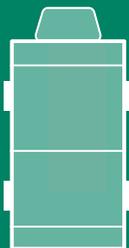
Optimising Pick Rate

By integrating smart lighting with sensors in distribution centres, there is an opportunity for Facilities Managers to better understand both space utilisation and the popularity of products.

Fitting sensors over stock lines allows insight into how often specific products are chosen for delivery. Not only does this effectively inform stock taking, it allows for optimisation of space: the more frequently 'picked' products can be brought forward, meaning staff can access them more quickly. Over time, these efficiencies can really mount up.
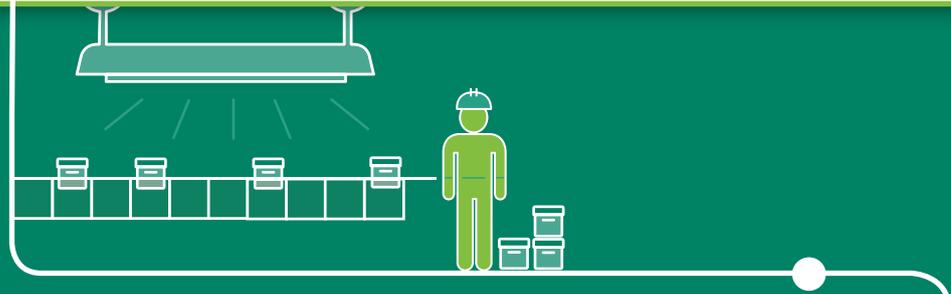
Reducing maintenance time

Maintenance is an inconvenient, but necessary, part of life in any factory, warehouse or distribution centre. Analysts have found that downtime costs the average factory between 5 and 20% of its productive capacity. Reducing time spent on maintenance – as long as it is done safely – is a clear path to improved uptime and productivity.

While LEDs will last for the long term, their 50,000 hours lifetime equates to less than seven years for a 24/7 operation. Maintenance is key, but can be difficult for the high bay lighting native to warehouses, factories and distribution centres. Managing maintenance remotely through LEDs and centralised control systems reduces the need for zonal shut down, reducing downtime and giving operators more effective insight into the performance of the solution.

Smart lighting systems can help Facilities Managers to optimise their maintenance schedules. For example, by using occupancy detection to control whether lights need to be switched on or not, reducing usage and extending lifetimes.

Sylproof Superia LED provided exactly the right low maintenance solution that Blackpool Hospital needed in its car park. The luminaire, which the customer credits with excellent build quality and light output, was used for all the indoor fittings and has reduced the energy costs and maintenance burden usually experienced with fluorescent fittings.

Saving energy

The Carbon Trust says lighting typically consumes 20% of the electricity used in commercial and industrial buildings. As energy costs increase, businesses should look for opportunities to reduce OPEX costs by saving energy.

There are huge opportunities to reduce energy usage by, firstly, taking a more efficient approach to lighting and, secondly, by extending lighting lifecycles.

The first step towards saving energy through lighting is to understand how and where it is used, and where the facility is inefficient. Undertaking an Energy Audit of your facility is critical to determine where output is needed and where it is wasted. Following this audit, it is possible to determine potential ROI from the changes that need to be made.

Once LED systems are in place, Smarter use should be made of their capabilities. For example, occupancy sensors can be used to switch off areas that are not in use, reducing energy output and improving efficiency.
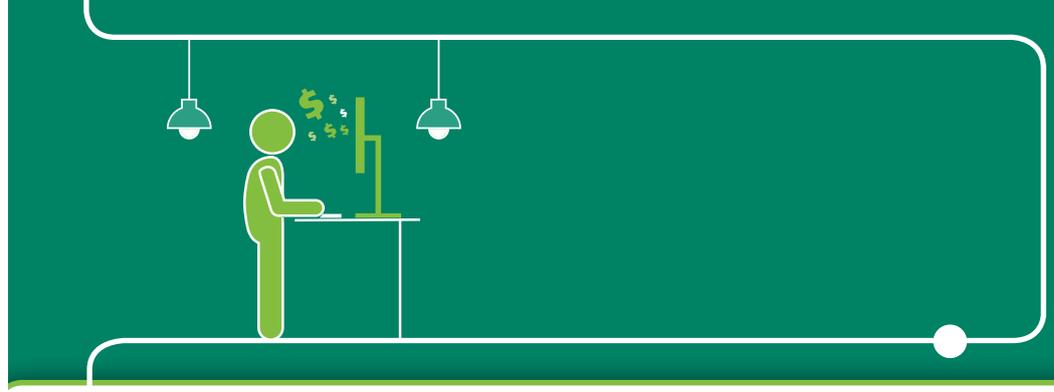
Saving money

A switchover to LED, an evolution to Smarter technologies, or a combination of both, can reap considerable financial rewards for factories, warehouses and distribution centres.

So can more innovative approaches to financing.

Lighting solutions should be re-examined with a focus on maximising the gap between payback and end of warranty. Sylvania can assist with intelligent, efficient lighting solutions, and help you to afford the upgrades with our new financing models. We'll provide a Free Energy Audit of your premises, estimate your potential ROI, show you what you could save and then show you how you can afford it.

Taking control

Smart controls such as Sylvania's SylSmart use the very latest technology to continuously detect human presence and natural light levels, adjusting the levels of artificial lighting to match the needs of each facility in real time. Busy areas will stay bright and well lit, whereas quieter areas will automatically dim gradually over time to save energy.

Ease of installation of LED combined with solutions that lower maintenance and replacement, plus Smart solutions that offer control, connectivity, digitisation and monitoring also further contribute to cost optimisation and operational efficiencies through greater control of the factory floor.

Safety & Efficiency

Lighting your loading bay is a necessity, not an option. As one of the congested and dangerous areas of a warehouse or distribution centre, having an effective lighting installation can be mission critical. With employees picking, loading, stacking and fulfilling thousands of orders every day, the risk of accidents and damage to stock is significant and often costly. Couple those risks with the prevalence of heavy goods vehicles and forklifts, it's clear that good night and day visibility is business critical.

Lighting in the logistics space plays a very important role in the management of continuous production, efficient supply of goods and effective on-site safety. Lighting technologies are becoming more of an asset in the successful deployment of a logistics set-up. Solutions such as 'Stop and Go' lighting, beacons and guide lights help minimise risk, while also helping to generate a more efficient working environment. With the right lighting scheme in place, traffic flows can be better managed, loading cycles improved and wait times for drivers lowered.

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