

Obtaining Facility-Wide Energy Intelligence is Easier Than You Think

Allison Parker



Recognizing the ever-increasing impact high energy usage has on facility budgets and corporate sustainability agendas, facility managers and engineers are focusing on facility-wide energy management. The challenge they face is to ensure that the buildings that house their highly optimized manufacturing operations are just as sophisticated and efficient as their production processes.

Regardless of the size of the facility, the first hurdle most plant managers and engineers encounter in meeting this challenge is the absence of detailed data about how energy is being used within their facilities — beyond the metered usage. In fact, for most manufacturing facilities, utility bills typically provide the only accurate window into energy use but, as a tool for driving efficiency, the view is murky at best. Yet, in facility after facility, detailed usage and comparison metrics have proven to be the single most important driver of energy efficiency success.

The question is how to secure comprehensive usage data, quickly and cost-effectively, without having to invest in a disparate assortment of third-party sensors and monitoring systems that make facility-wide rollups of data difficult. For a growing number of leading manufacturers who have struggled with this dilemma, the answer, surprisingly, is lighting. Specifically, intelligent LED lighting, which incorporates a suite of integrated sensors.

Given the persistent and pervasive nature of lighting within a facility, intelligent LEDs, unlike any other solution on the market today, solve three critical energy efficiency challenges for manufacturers. Namely, they:

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- (1) Provide an intelligence-driven platform for saving massive amounts of energy — up to 90 percent — on lighting, providing an immediate, high visibility project success early in the search for savings.
- (2) Offer a highly integrated and scalable platform that can be used to monitor non-lighting-related loads, such as HVAC systems and production machinery, without the need to duplicate existing infrastructure investments (e.g. wired or wireless networks, data collection systems...).
- (3) Leverage familiar reporting and analysis tools, such as integrated, facility-specific maps that visually depict data (kWh used, occupancy rates...) in an easily digestible form, to provide drill down visibility into how energy is being used throughout a facility.

From energy load management to lighting delivery and optimization, the value accessible, detailed data provides to energy efficiency agendas is undeniable. Examples of intelligence-driven insights and efficiency savings at leading manufacturers using intelligent LEDs include:

- A Connecticut-based contract manufacturer, Creed Monarch, increased lighting-related energy savings from 75 percent at installation to 90 percent within the first year through intelligence-driven optimization and fine-tuning.
- A German manufacturer of universal and high-capacity carding machines, DiloSpinnbau, achieved a 91 percent reduction in lighting-related energy use, a 1.7 year unaided payback and years of maintenance-free lighting by replacing its “high efficiency” T8 fluorescent fixtures.
- A Massachusetts-based manufacturing and distribution company, Atlas Box & Crating, tracked the movement of goods within its facility using occupancy data, resulting in the consolidation of high usage spaces to improve space utilization, while also reducing lighting-related energy usage from 1.3 million kilowatt-hours (kWh) to just under 250,000 kWh annually.
- Numerous manufacturing facilities are optimizing production and maintenance schedules by tracking machinery utilization rates using occupancy data, collected by integrated sensors located in every lighting fixture, while others track and manage energy loads based on data collected for any system or piece of equipment connected to the system.
- A California-based microbrewery, Stone Brewing, saved 86 percent and 79 percent of the annual energy costs associated with T8 fluorescent and basic LED fixtures, respectively, specified in the initial design for its bottling and kegging addition, while securing a major win for its sustainability agenda.

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The common denominator in these and more than 1,000 other intelligent LED successes is actionable data, which provides the visibility — by-system or facility-wide — that managers need to rethink the energy use equation. Without exception, they view energy use as a valuable lens that can be used to view organizational productivity, while saving massive amounts of energy. In other words, they expect more from their building infrastructure investments and elevate the importance of energy efficiency to the same level placed on improving business processes and production methods.

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