

A Study In...

Warehouse Lighting

FBF

Fluorescent High Bay

LOGISTIX Pro™

Day-Brite Lighting

WattWatcher™ EB

 **Day-Brite® Lighting**

Lighting Renovation at a Large Distribution Center in California Provides Facility Manager with a Half Million Dollar Annual Energy Savings

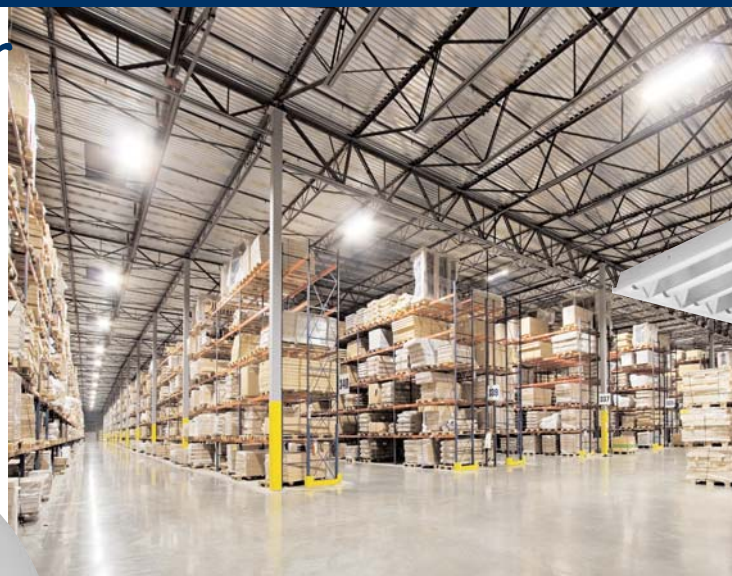
The distribution center in California resides in an 80-acre industrial complex and employs approximately 300 people for warehousing, packaging, labeling, quality control, repair, and distribution of home furnishings and accessories. When the 1.8 million square-foot facility was completely renovated with state-of-the-art lighting equipment, including energy controls, it became one of the largest retrofit projects on the local utility company system, Pacific Gas & Electric (PG&E).

The low-bay areas, previously equipped with 1370 400W HID systems, feature 31-foot clear height with conventional manual-pick forklift racking in the warehouse aisles. The high bay areas, previously illuminated with 576 1000W HID systems have 50-70-foot clear height required for automatic retrieval crane conveyer systems. By retrofitting the 400W and 1000W HID systems and removing (288) 1000W HID systems from the original high bay layout, a reduction in demand of 818kW and an elimination of 4.3 million kWh load in lighting were accomplished.



before

after



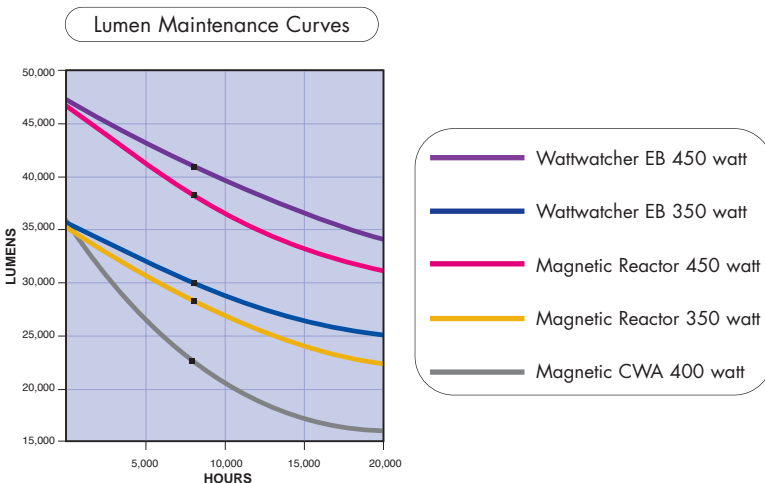
The consultant who implemented the lighting retrofit, **Ken Patterson of Advanced Energy Innovations (AEI)**, took into consideration every aspect of the latest lighting technology available to address the application needs. *“Dimming Electronic Metal Halide ballasts (E-HID) can change the entire operational paradigm for high intensity discharge (HID) lighting as they bring significant performance enhancements to virtually every aspect of HID lighting systems,”* stated Patterson. *“Additionally, an E-HID system can minimize, if not totally eliminate, many of the delimiters (lumen depreciation, color shift, starts per day, hot re-strike times, and lack of control) that have plagued HID.”*

Day-Brite Lighting WattWatcher™ EB

Day-Brite Lighting & LogistixPro Technology

The HBO400 LogistixPro Aisle Lighting Luminaire has an open, hydroformed faceted aluminum reflector with asymmetric distribution, delivering light more effectively vertically and horizontally and thus reducing overall luminaire count. It is the choice for aisle/warehouse applications in commercial and industrial facilities.

With the enhanced optics achieved by the LogistixPro reflector coupled with the improved performance associated with electronic ballasts and Pulse-Start technology (see WattWatcher chart), the luminaire layout was reduced by half while maintain-



ing the required light levels of 25 foot-candles. On a one-for-one replacement, it **reduced the system wattage load from 1080 down to 465**. When motion sensors are added, electronic ballasts that can dim the system down to 35% of the full light levels achieve additional energy savings. Maintenance costs are reduced due to longer lamp life.

Day-Brite Lighting & FBF Fluorescent High Bay Technology

Multi-lamp Fluorescent T5s matched with efficient electronic ballasts can now provide similar lumen packages to conventional HID standard systems due to their High Output (54W HO) performance and improved lumen maintenance over lamp life. Additionally, fluorescent lamps are instant on - a feature not possible with HID sources. The FBF Fluorescent High Bay Luminaire features Miro 4 reflectors and a solid enclosure design for an efficient alternative in warehouse/industrial lighting applications. In the warehouse, (1370) 400W HID systems were replaced with 4-lamp T5HO luminaires with electronic ballasts and controls, **reducing the wattage consumption by 50%** down to 234W per FBF luminaire.



The warehouse qualified for a **\$278,000** utility rebate and was able to realize **50-60% energy cost savings** compared to last year (as confirmed by the PG&E monitoring charts), despite the higher electric demand experienced from adding office infrastructure to handle their Call Center activities.

energy savings

&

better performance

Total Project Cost:	\$741,439
Estimated Incentive:	\$278,332
Net Cost:	\$463,106
Yearly Energy Savings:	\$447,857
Project Payback:	1.03 yrs

The resultant energy savings, at 11 cents per kWh, translated into nearly \$450,000 of cost savings while improving the quality of the space, light levels, and visibility throughout the area. Additionally, the utility company rebate reduced the three-quarter million dollar lighting investment to a payback of just one year.

INVOLVED PARTIES...

Sales Agent/Distributor: Prudential/Wesco Compton

Lighting Specifier (Engineer/Architect/Designer): Advanced Energy Innovations - Ken & Cindy Patterson

Installing Contractor: Sun Energy Solutions/ABI

Utility Company (applicable rebates): Pacific Gas & Electric (PG&E)