

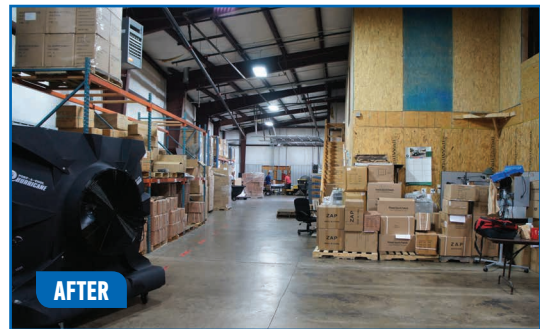
# SMALL WAREHOUSE LIGHTING RETROFIT

## PERSONAL SECURITY PRODUCTS

*Little Rock, Arkansas*

With just **\$3,100 in annual lighting energy costs**, many business owners might not think a retrofit of 11,800 sq. ft. of warehouse space would be worth considering. We thought differently. By upgrading the lighting in two warehouses and adding advanced lighting controls, we were able to **cut lighting energy usage by 66%**, at the same time as average **light levels increased by nearly 300%**.

**Energy rebates covered 66%** of the project's initial cost, and with **maintenance and energy savings of \$3,410** per year, the project **paid for itself in less than 13 months**.



## ENERGY EFFICIENCY

	PRE-RETROFIT	POST-RETROFIT
ANNUAL LIGHTING ENERGY CONSUMPTION	41,305 KWH	14,208 KWH
ANNUAL LIGHTING ENERGY COST	\$3,166	\$1,089



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# COSTS & SAVINGS

## ANNUAL ENERGY SAVINGS

**\$2,077**

## ANNUAL MAINTENANCE SAVINGS

**\$1,333**

## ANNUAL SAVINGS

**\$3,410**

## PROJECT COST

**\$10,259**

## REBATES RECEIVED

**\$6,803**

## NET CUSTOMER COST

**\$3,456**

## PAYBACK PERIOD

**1 Year  
& 5 Days**



### LIGHTING FIXTURE RETROFIT

Personal Security Products had two warehouses with a total 11,800 sq. ft. of space. The warehouses were primarily lit with 28 metal halide fixtures, each using about 456 watts of electricity, as well as 6 T12 fluorescent fixtures.

LumaTech chose 6-lamp T5 high bay fluorescent fixtures to replace both the metal halide and T12 fixtures. The new fixtures use 351 watts, and LumaTech was able to use just 20 of the new fixtures to replace both the original 28 metal halide fixtures and the 6 T12 fluorescent fixtures. LumaTech also replaced the warehouse's exit signs and wall floods with energy-efficient LED alternatives.

Even before adding lighting controls, the new lighting used 49% less energy than the original system. With lifespans that are on average more than 15,000 hours longer than the originals, the new fixtures deliver over \$1,300 in annual lighting maintenance cost savings.



### LIGHT LEVEL IMPROVEMENTS

The warehouses' original lighting system only delivered an average of 7.6 foot-candles, well below the IES light-level recommendations for warehouse operations. LumaTech's retrofit nearly tripled the delivered light in the warehouse, increasing the average to 21.7 foot-candles.

The retrofit also eliminated under-illuminated areas in the warehouses. Prior to the retrofit, some areas were illuminated with as few as 2.6 foot-candles. After the retrofit, the lowest light levels anywhere in the warehouse were 18.6 foot-candles.



### LIGHTING CONTROLS IMPLEMENTATION

The original system relied on manual operation. Since an entire warehouse is rarely filled with activity, this meant that significant amounts of energy were being wasted on lighting areas without any workers in them.

LumaTech installed occupancy sensors on the new T5 fluorescent fixtures, so that they'll automatically turn on when someone comes into the area, and turn off when the area is empty. As a result, the annual burn hours of the primary lighting system decreased by 30%.



### ENERGY EFFICIENCY REBATES

The warehouses' retrofit was eligible for a \$0.21 rebate for every kWh reduced, through Entergy Arkansas. Our lighting retrofit reduced lighting energy consumption by more than 27,000 kWh, and the project received more than \$6,800 in rebates.



### RESULTS

Thanks to the retrofit's improved light levels, the Personal Security Products warehouses are now a safer, more pleasant and more productive place to work. With the help of occupancy sensors, the lighting system is providing proper lighting to areas where workers are active, and saving energy in areas where they're not.

Perhaps most importantly, the company is already seeing the results of the energy and maintenance savings on its energy and lighting service bills. The new system is on track to deliver over \$3,400 every year in positive cash flow, for years to come.