

ENERGY EFFICIENCY

Manufacturing facility drives down operating costs and energy consumption.

Savings Payback

Mechanical Component

Approximate Building Size: 112,790 sq. ft.	kW Saved (average):	6.0
Project Costs: \$210,978	Therms Saved:	24,848
Energy Savings: \$35,538	Incentive Awarded:	\$40,266
Energy Savings kWh: 45,586	Payback:	4.8 yr.

Lighting Component

Approximate Building Size: 112,790 sq. ft.	kW Saved (average):	59.98
Project Costs: \$288,189	Incentive Awarded:	\$57,894
Energy Savings: \$48,374	Payback:	4.8 yr.
Energy Savings kWh: 268,746		

Client

Lytron Inc. specializes in custom liquid cooling solutions. They design and manufacture cold plates, chassis, chillers, cooling systems, and heat exchangers for some of the most demanding thermal management applications. Headquartered in Woburn, MA, the Lytron Inc. manufacturing facility operates (2), 9-hour shifts Monday through Friday, and a 6-hour shift on Saturday. The building uses electricity for lighting, cooling, and various plug loads, and natural gas for space and domestic hot water heating.



Opportunity

The energy division of Horizon Solutions conducted an engineering assessment of the mechanical processes and electrical systems in the manufacturing facility. The audit found opportunities that would lower business operating expenses and bottom line. Horizon Solutions worked with the utility representatives from Eversource and National Grid to confirm a guaranteed incentive, even negotiating a higher incentive amount than originally proposed from both utilities. Project type: Makeup Air Unit (MAU), VFD and motor replacements, and LED lighting upgrade.

CASE STUDY

Solution

Horizon Solutions implemented the following upgrades:

- Installed 80/20 MAU in place of 100% OA MAU, resulting in significant natural gas savings
- Installed 15 HP Premium Efficiency Motor on existing exhaust fan
- Installed 15 HP VFD to control exhaust fan motor speed
- Installed (11) shutoff butterfly dampers in weld station exhaust ducts
- Installed static pressure sensors to provide control variable to above 15 HP VFD
- Installed controls to ensure adequate fume removal from weld stations
- Installed suitable motors, VFDs and controls on (6) existing rooftop exhaust fans to ensure satisfactory space air pressure levels are maintained
- Removed 8 ft. linear fluorescent industrial shades and replaced with Lithonia 6000 Lumen LED shades
- Task lighting changed to 4 ft. Lithonia ZL LED shades
- All existing 2x4 ft. and 2x2 ft. T8 Recess Prismatic Troffers changed to Lithonia GTL Acrylic 30L LED Troffers
- Existing 2x4 ft. and 2x2 ft. 2 lamp T5 office fixtures replaced with Lithonia FSL 30L LED troffers
- Installed exit signs with emergency bug eyes (select locations)
- Exterior fixtures replaced with RAB wall pack and Lithonia

* The project was completed in two phases - phase one April 2016 & phase two July 2016

Benefit

The energy upgrades outlined above resulted in significant energy cost savings for Lytron Inc. Additionally, the project had substantial positive impact on the environment.

The mechanical and lighting components of Lytron's energy upgrade project helped to decrease air pollution and environmental damage by significant amounts. Combined, the projects removed 583,594 lbs. of carbon dioxide, 817,836 grams of sulfur dioxide, and 3,431,169 grams of nitrogen oxide from the atmosphere.

Each of these pollutants cause significant environmental damage. Global warming is caused by carbon dioxide, sulfur dioxide and nitrogen dioxide cause acid rain, and nitrogen dioxide also produces smog. By removing these pollutants from the air, Lytron Inc.'s combined mechanical and lighting projects had the same impact on the environment as:

- Planting 66 acres of trees
- Removing 67 cars from the road each year or saving 43,061 gallons of gasoline

“ Everyone is very happy with the lighting and it makes the facility look better. The machine operators were skeptical in the beginning with the VFDs being put on the welding stations but they are very happy and surprised at how well they work. We're also expected to save significantly on our natural gas next winter, something that has us very excited.

— Jason Stokes, Maintenance Supervisor

Horizon Solutions helps improve our customers efficiency, productivity and safety through expertise in Electrical, Automation, Industrial, Energy, and Safety products and services. We seek to understand your needs and apply solutions that solve your most demanding challenges.

Locations:

Albany

Northeastern Industrial Park
Guilderland Center, NY 12085
(518) 452-6904

Bangor

1114 Hammond Street
Bangor, ME 04401
(207) 942-7357

Elmira

1300 College Avenue
Elmira, NY 14901
(607) 733-6591

Holyoke

701 Kelly Way
Holyoke, MA 01040
(413) 533-3933

Manchester

1070 Holt Avenue, Unit 10
Manchester, NH 03109
(603) 669-5060

Portland

32 Haigis Parkway
Scarborough, ME 04074
(207) 797-9466

Rochester

175 Josons Drive
Rochester, NY 14623
(585) 424-7376

Taunton

Energy Services Division
705 Myles Standish Blvd
Taunton, MA 02780
(508) 837-6549

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