

Dialight Vigilant™ Series LED Obstruction Lighting

Century Aluminum Saves Thousands on Annual Maintenance and Energy Costs with Upgrade to Dialight Vigilant™ Series LED Obstruction Lights

With an operating capacity of 244,000 tonnes per year, Century Aluminum’s Hawesville, KY primary aluminum smelter has been in operation since 1969. The original 400-foot chimney stack featured an incandescent beacon lighting system installed in the 1970s. Looking to upgrade its antiquated technology, the company replaced its vintage beacons with a new, high-efficiency Dialight Vigilant Series L-864 LED red beacon system to gain incredible savings in energy consumption and cost and dramatically cut maintenance expenses.

Antiquated System Saps Maintenance, Operating Budget

The 42-year-old Century Aluminum chimney stack had become a drain on the company’s energy and financial resources. With two sets of four 1400W incandescent beacons and two sets of four 116W sidelights (total of 16 units) operating night and day, the company was spending about \$6,000 annually just to keep the lights on. In addition to the operational costs, maintenance was becoming a burden, requiring a minimum of two bulb replacements per year for each of the dozen beacons to safeguard against failure.

With the cost to mobilize a tower-climb team at about \$1,800 for each outing, plus at least \$80 for each bulb, maintenance costs racked up to nearly \$4,000 a year—valuable capital that could be put to better use in the company. In the event of a bulb failure, NOTEM filings and FAA fines could easily push the cost liability into the tens of thousands of dollars.

Dialight Delivers Fast ROI

At the recommendation of Jason Jennett, obstruction lighting engineer with Fuellgraf Chimney & Tower, a leading tower and stack lighting specialist, Century chose Dialight’s ultra-high efficiency, low-maintenance and low-profile Vigilant Series LED beacon system to upgrade its tower lighting.

“We calculated an ROI for them that showed these units would pay for themselves in less than 1 year and even a ROI of just over 4 years based on a complete new lighting system including new conduit, cabling and all necessary installation.”



FAA Recommendations for Chimneys, Flare Stacks, and Similar Solid Structures

Typical structure exceeding 20ft diameter at the top, not more than 100ft diameter:

Lighting Requirements:

- (4) lights per level L-864 Red Beacon
- (4) lights per level L-810 Red Side Marker



Vigilant™ Series L-864 LED Based Red Medium Intensity Beacon



Vigilant™ Series L-810 RTO Red LED Obstruction Lights

- ▷ Over 90% more efficient than traditional beacons
- ▷ Resistant to shock and vibration
- ▷ 5 year warranty
- ▷ 20W LED replaces 1400W incan.



- ▷ Simple retro-fit using existing wiring and housing
- ▷ Uses 95% less energy than incandescent
- ▷ 5 year warranty
- ▷ Resistant to shock and vibration



Fuellgraf installed a complete new system consisting of four red L-864 20W LED Dialight beacons on both the top and mid-levels and four steady-burning L-810 red RTO 6.5W LED marker lights between the top and mid-levels and on the bottom. New conduit, cable supports and junction boxes completed the upgrade. The fact that the new units weigh just 20 pounds—one-fourth the size of the incandescents—and the ability to jump straight into the terminal block off the LED beacon without the added terminal block required for traditional beacons, made for easier installation. And, the lower profile design reduces wind load on the units and the tower.

Direct Bottom-Line Savings

The new beacons reduce operating expenses because they consume less than 10% of the power required for the incandescent units, providing a direct positive impact on the company's bottom line.

“Dialight’s proven products offer the lowest wattage on the market, giving my customers more bang for their buck, plus you get the ‘green’ advantage of reduced consumption all in one package,” Jennett said. “Century is now realizing a CO2 emission reduction of 38 metric tones annually, or the equivalent of removing 7 cars off of the road per year.”

Vigilant™ Series LED Based Obstruction Lights



L-864 Red Medium Intensity Beacon



L-865 / L-864 Dual Red / White Beacon



L-810 Obstruction Lights



L-866 / L-885 Dual Red / White Catenary Strobe

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www.dialight.com/news/details/Century_case_study