

Donjon Shipbuilding Replaces 250+ HIDs with just 79 Dialight LEDs to Achieve “Night & Day” Lighting Improvement & Eliminate Lighting

At the Donjon Shipbuilding and Repair production, fabrication and assembly facilities, lighting maintenance was a constant battle. Located on the Lake Erie shore in Erie, Pa., the over 200,000 sq. ft. facility boasts a 92-foot ceiling height on the main floor, plus a 125-foot high ceiling over a portion of the massive graving dock. Longer than four football fields, the Donjon graving dock is one of only two on the Great Lakes able to accommodate 1,000-foot self-unloading vessels for construction, repair, conversion, repowering and maintenance.

The Challenge: Failure at Soaring Heights

Even with a whopping 266 1,000W metal halide fixtures in place, fewer than 60 were typically in operation at any given time. In addition to the notoriously short life of the metal halide lamps, the damp, harsh, high-vibration environment inside the open air facility took a major toll on both bulbs and ballasts. Of course, the exceptional ceiling height made getting up there to change bulbs and fixtures a huge obstacle.

Not to mention, the sheer size of Donjon’s facilities made them appear cavernous and dark even on the brightest, sunny days, without proper lighting. The lackluster color rendering of the metal halides did very little to solve the problem, in fact, even contributing to visibility issues with their unnatural orange glow. And, when it came time to turn on the lights at the start of their 24-hour, 5 day-a-week operation, the metal halides took nearly 20 minutes to come up to full output.

“The lighting was not sufficient enough to fully light the facility. There were places in the building where we had to use a flashlight, even when we weren’t inside a ballast tank,” said Caleb Hoffman, Electrical Lead Man. “A flashlight was on everyone’s required tool list. It was difficult to read a tape measure without one, and accuracy in measurement is very important in our work.”

The Solution: Dialight’s 60,000 Lumen LED

Aiming to end their lighting woes with an upgrade, Donjon began entertaining vendor proposals. It didn’t take long to realize that LED was the way to go.

“We assumed LED is the latest and greatest technology, giving us the best bang for the buck,” Hoffman said. “We chose Dialight because it best suited our application, and the warranty was a huge factor.”

Donjon chose Dialight’s groundbreaking 60,000 lumen Vigilant High Bay, the first LED fixture of its kind to offer a true one-to-one replacement for conventional 1,000W high output fixtures. Delivering 115 lumens per watt with the 480v top hat transformer at half the power consumption

of the existing metal halides, the high-output Vigilant provided more than enough light to suit Donjon's needs while also drastically reducing per-fixture electricity costs.

In fact, the new Vigilants were so bright, Donjon was able to eliminate two-thirds of the fixtures in the facility, replacing 266 metal halides with just 79 Dialight 60,000 lumen Vigilants. At roughly half the weight of conventional fixtures, the Dialight Vigilants were easy to install on the existing circuits for Donjon's in-house electrical crew. Plus, with an ambient temperature rating of -40°F to + 149°F and high-durability fixture design, the new Vigilants can easily tolerate the harsh Lake Erie weather.

With the entire fixture backed by Dialight's 10-year, full-performance warranty, Donjon is now guaranteed to have ample lighting with zero maintenance for a decade or more.

The Result: Superior Visibility, Outstanding Warranty, Zero Worries

With the new lights in place, visibility is now like "night and day" compared to the old fixtures, according to Donjon staff, and workers are very pleased with the clear, bright white output of the Dialight LEDs. Flashlights are no longer required on the shop floor, even in the graving dock where the lights are 125-feet off the ground. The high-performance optics deliver directional light exactly where it's needed, with no dark spots or harsh glare.

"We compared three different manufacturers, and Dialight was hands-down the best fit for our application," Hoffman said. "One other company promised more hours on the fixtures, but couldn't back it with a warranty. The 10-year warranty, ease of installation and energy efficiency—Dialight offered the whole package that was better for our situation."

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