

Jellyfish Keep Cool with SynJet Technology



Project Statistics:

End User: Mystic Aquarium

Location: Mystic, CT

Application: Lighting scheme for aquarium's jellyfish exhibit

Products: Five Philips Lexel DLMs

Partners: Pathway Lighting, Mystic Aquarium



MYSTIC AQUARIUM

INSTITUTE FOR EXPLORATION

Situation:

In January of 2010, the Mystic Aquarium in Mystic, CT approached lighting specialist, Pathway Lighting, to create a unique lighting scheme for the aquarium's new jellyfish exhibit.

An industry expert in designing, developing and manufacturing lighting fixtures, Pathway Lighting knew LEDs would be the perfect solution to light up and enhance the aquarium's jellyfish exhibit. LED fixtures can be tuned to any color in the spectrum and are completely programmable – a definite plus for highlighting the aquarium's six different species of jellyfish. Additionally, LED lighting has the added benefits of better energy efficiency, longer life and more lumens-per-watt than its CFL and incandescent counterparts.

Pathway Lighting outfitted the jellyfish exhibit with five Lexel LED DLMs totaling 160 watts of power.

As with any exhibit with live animals, the lighting and the resulting heat from the light engines had to be minimal on the jellyfish's controlled environment. Pathway Lighting needed a thermal management solution for the LED fixtures that was durable enough to run effectively in the aquarium's hot and humid environment and reliable enough to ensure the heat emanating from the LEDs would not impact the tanks' inhabitants. The solution came in the form of SynJet thermal management technology from Nuventix.

"SynJet's effective cooling adds color consistency over time and ensures the life of the LED. Reliability is key." – Don Simmons, director of solid state development, Pathway Lighting

For more information about Nuventix and SynJet® Technology visit www.nuventix.com

Solution:

Delivering targeted pulses of air directly to the LED system's heat sinks through its patented oscillating diaphragm design, SynJet represented the perfect choice for the aquarium's harsh environment and need for consistent, reliable cooling.

The SynJet's high-momentum pulses of turbulent air pull cooler air behind the pulses, while expelling warmer air for a more efficient and effective cooling system. Its frictionless design takes less energy to operate and creates less heat, resulting in a cooling solution that is energy efficient, quiet and, most importantly, durable. With no ball bearings or joints to wear out, the SynJet module outlasts all other active cooling solutions and the LED light engines they support.

Says Pathway Lighting director of solid state development, Don Simmons, "The cost of the SynJet has come down so much that it is now at the point where the benefits of the SynJet are on-par with its costs." He continued, "SynJet's effective cooling adds color consistency over time and ensures the life of the LED. Reliability is key."

The response to the installation of the LED lights in the Mystic Aquarium's Jellyfish exhibit has been impressive. Not only has the jellyfish display delighted the hundreds of visitors who tour the aquarium daily, the aquarium has also seen a decrease in energy costs as a direct result of the LED lighting and SynJet technology.

The aquarium has since tapped Pathway Lighting to update the lighting in its touch tank. Pathway Lighting plans to use SynJet technology for the project.

