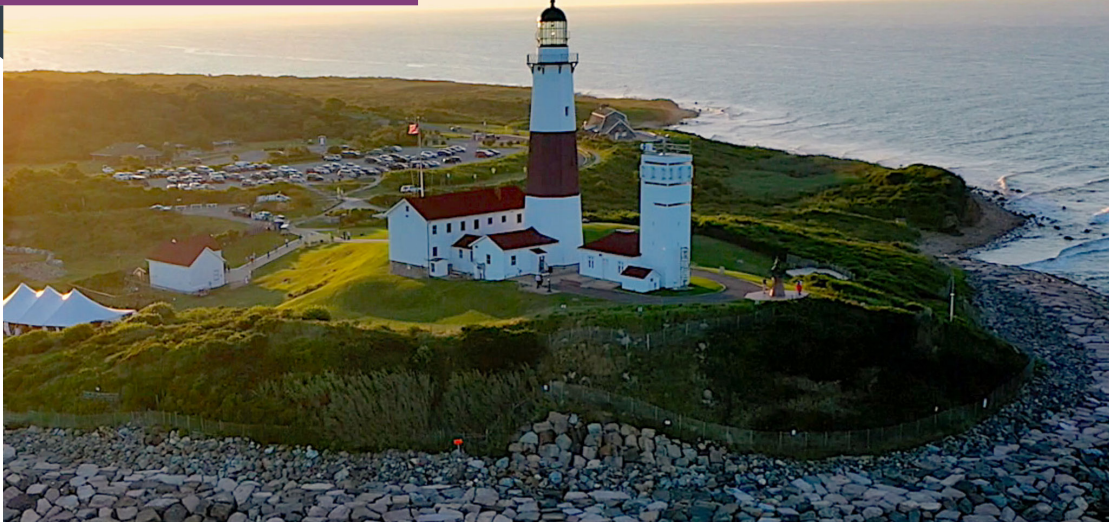


HISTORIC MONTAUK POINT LIGHTHOUSE ONCE AGAIN HOME TO FRESNEL LENS AFTER RF INDUSTRIES OVERCOMES HUMIDITY CHALLENGES

A fully monitored environmental control system optimizes airflow, keeps salt and moisture out



CASE STUDY



The Fresnel lens that once guided mariners around Montauk Point has been returned to active service in the lantern room.



Photos courtesy of the Montauk Historical Society, MontaukDroneStar.com and Jason and Monica Walter.

THE CHALLENGE: PROTECTING A SEASIDE LANDMARK FROM HARMFUL HUMIDITY

As one of the oldest lighthouses in the United States, Montauk Point Lighthouse has been weathering the harsh, seaside conditions at the tip of Long Island, New York, since it was completed in 1796.

Despite constant maintenance of the Lighthouse tower over the years, by 2019, increasing condensation was causing significant issues. Corrosive salt moisture was becoming trapped in the Lighthouse and collecting in the lantern room, where it then seeped downward, creating risks to the tower structure. To protect against moisture ingress and condensation build-up, the Montauk Historical Society had the underlying masonry issues and leaks repaired, then installed a commercial-grade dehumidifier and monitoring system.

As restoration of the tower neared completion, the possibility arose to allow the 3-1/2 order antique Fresnel lens that served the lighthouse between 1903 and 1987 to be reinstalled in the lantern room as part of a unique pilot project by the Coast Guard. Unfortunately, the off-the-shelf dehumidifier and monitoring system couldn't deliver the reliable performance needed to adequately protect the 110.5-foot-tall Lighthouse and allow the Fresnel lens to be reinstalled.

A ventilation system that had been very effectively operating at a nearby telecommunications site for several years inspired the Lighthouse maintenance team to contact the solution provider — Schrofftech, a division of RF Industries.

MONTAUK HISTORICAL SOCIETY: PRESERVING AND SHARING LOCAL HISTORY SINCE 1962

The Montauk Historical Society collects, preserves and provides public access to buildings, objects and writings that are significant to the history of the Montauk, NY, area and its peoples. The privately-funded, non-profit organization, which operates under the leadership of Executive Director, Mia Certic, owns Montauk Point Lighthouse, but the Coast Guard is responsible for maintaining the navigation aids.

Watch the video: [Before & After the Fresnel Lens](#)

THE SOLUTION:

DIRECT AIR VENTILATION AND REAL-TIME ENVIRONMENTAL MONITORING

To resolve the humidity challenges at Montauk Point Lighthouse, the Schrofftech team combined its Direct Air Cooling (DAC) environmental control system with AVTECH's Room Alert environmental monitoring solution.

The DAC system features a compact, minimal-footprint design, which allowed the team to install the air intake components in an existing window at the base of the tower with no modifications to the window opening or hardware. A specialized filter that complies with strict telecom requirements for salt fog filtration ensures contaminant-free ventilation and low maintenance.

The system works with the natural air flows in the Lighthouse tower using strategically placed fans and electric heaters to force positive air flow from the base to the top of the tower. This significantly improves ventilation and reduces humidity levels. Air flow is optimized by a control unit installed on an interior tower wall, and varies depending on

wind, temperature and humidity conditions – a critical capability as seasons change.

Room Alert collects real time temperature and humidity data from sensors installed throughout the Lighthouse tower. Schrofftech partnered with AVTECH to develop a custom virtual sensor to track critical environmental conditions in the Lighthouse with a single click. The resulting data allows the Montauk Historical Society to verify the DAC system is maintaining environmental conditions that meet Coast Guard requirements for protecting the Fresnel lens from condensation. If conditions exceed the configured temperature and humidity limits, the software can automatically send an email or text message to immediately alert Lighthouse staff.



THE RESULTS:

A BRIGHT AND FAMILIAR BEACON SHINES AGAIN

In November 2023, the Montauk Historical Society and the U.S. Coast Guard announced that the antique lens that once guided mariners around Montauk Point had been returned to active service in a two-year pilot program, after spending more than three decades in the Lighthouse Museum. The program will help the Coast Guard develop protocols for maintenance and environmental controls in lighthouses where other Fresnel lenses still operate.

The Coast Guard approved the pilot program only after environmental data collected by Room Alert confirmed that RF Industries' DAC ventilation system could reliably maintain the required environmental

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"We are very appreciative of Schrofftech's contributions to the success of the Fresnel lens restoration project."

Jason Walter, Site and Maintenance Manager at Montauk Point Lighthouse

.....
 conditions in a cost-effective way.

Despite the tower's seaside location, corrosive salt and harmful humidity are no longer threats to the antique lens, and the tower interior is protected against further degradation. Because the DAC system blends seamlessly into the lighthouse structure, aesthetics at the historic landmark are fully maintained and visitors are virtually unaware of its presence.

[Link to the Environmental Monitoring Results](#)

"Together, the modern and reliable Direct Air Cooling ventilation system and meaningful Room Alert data gave us the confidence and reassurances we needed to return the historic Fresnel lens to daily operation at Montauk Point Lighthouse."

Dan May, Rear Admiral, U.S. Coast Guard (ret) Technical Assistant, Montauk Lens Project

RF Industries' Schrofftech division offers energy-efficient cooling, temperature control and air filtration systems for telecom shelters, outdoor enclosures and structures, and battery/power rooms. The Schrofftech team also retrofits existing communications equipment infrastructure for capacity upgrades and thermal efficiencies that deliver compelling capital and energy cost savings.

AVTECH Software (AVTECH), a private corporation founded in 1988, is a computer hardware and software developer and manufacturer. Our Room Alert® products monitor computer rooms, data centers and other facilities for conditions such as temperature, humidity, power, flood / water leakage, smoke / fire, air flow, room entry, motion, cameras and more.



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DIRECT AIR COOLING IS WIDELY PROVEN TO BE RELIABLE AND COST-EFFECTIVE

Thousands of DAC environmental control systems are already providing automated thermal management in telecom shelters, cabinets and edge data centers nationwide. Carriers choose the next-gen, made-in-the USA systems because they use fresh, filtered air and variable-speed fans to reliably control airflow and temperature in a far more energy-efficient and environmentally friendly way than traditional HVAC systems.

[Learn more about Direct Air Cooling](#)

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