

# Health and Safety First: Smart Design Is Smart Business

**MRD introduces innovative new intelligent sanitization solutions that promise to usher the cruise industry into a new era.**

Like most companies offering transportation and hospitality services, those in the marine and cruise ship industries will be forever altered by the impact of the Covid-19 pandemic. With uncertainty about how and when the devastating effects of the pandemic will come to an end, the captains of these corporations have been forced to rethink the future of their businesses, and suppliers like MRD have risen to the challenge to support them in the transition.

Known for its innovative lighting solutions, New York-based MRD, a full-service international lighting company and major vendor to the cruise ship industry, is a leader in solving environmental, technological, and design issues particular to the corporate, entertainment, retail, and hospitality industries. Founded in 2005 by Michael Riotta, MRD is recognized not only for its pioneering research, design, and systems development but also for the turnkey integration of its solutions—including the handling of budgeting, procurement, logistics, and project management—in ground-up construction and retrofit projects alike. And, the development of its newest science-based lighting solutions promises to be a game-changer for the cruise ship industry in the years ahead.

## Innovative Solutions for Today's Challenges

With an emphasis on health and safety now more paramount than ever before, MRD's designers and builders applied their ingenuity and the latest technologies to develop a new range of intelligent germicidal lighting and ultraviolet

solutions that are sure to elevate the cruise industry's ability to navigate through today's health and economic crises. These tools will also give industry executives, managers, and employees as well as customers the assurance they need to safely engage in cruise experiences and guide them toward embracing new rigorous standards for health and environmental safety on cruise ships and other maritime vessels in the future.

"We always design and engineer our way out of the complex and logistical situations we encounter for the industries we serve," says MRD's CEO Michael Riotta, whose team has tapped decades-old germicidal lighting and UV applications with proven antimicrobial effects for its latest solutions. These innovations incorporate different forms of germicidal light and ultraviolet designed to combat airborne and surface-transmitted pathogens aboard ships.

Working with subject matter experts to provide rapid-response capabilities as Covid-19 increasingly impacted the cruise industry, MRD focused its efforts on developing prototypes using UV radiation, which has an established track record of hands-free surface decontamination, thus minimizing the human contact, risk, and effort required to sanitize environments within seafaring vessels. "This approach to countering shipboard viruses sprang from our ongoing work to introduce greater health and wellness offerings aboard commercial vessels," says Riotta. "We are committed to providing flexible and integrated solutions for our clients, especially during times of urgent need."

## How Intelligent Sanitization Solutions Work

Research has shown that UVC radiation (200-280 nanometers) efficiently eliminates both airborne and surface pathogens, such as bacteria, viruses, mold, and fungi, because ultraviolet at this wavelength causes photochemical reactions in DNA and RNA that result in the inactivation of microbes by triggering mutations that prevent them from reproducing properly.

Relying on a variety of tested forms of ultraviolet and antimicrobial blue light, MRD's newest solutions provide a proven path toward clearing pathogens in various types of spaces for different capacities of crowds. These customized solutions are capable of eliminating up to 99.99 percent of bacteria, parasites, viruses, and other known pathogens in both occupied and unoccupied spaces. MRD also incorporates data analytics mechanisms to assist in interpreting and tracking results and managing safety protocols.

"Since the advent of data analytics, which more recently has been applied to the process of contact tracing, we continue to use lighting fixtures and other devices as data collection points, which can in turn be processed through machine learning and ultimately provide the type of data our customers and clients require," says Riotta. "And since lighting is in just about every space, it provides us with a 'high-resolution' platform when it comes to generating accurate and subsequently predictable data."

In addition to their critical functional attributes, MRD's custom disinfection solutions for cruise ships are also designed to aesthetically complement the architectural character of any space.

## Building Consumer Confidence and Increasing Business

By applying customized, pragmatic, and innovative tools like these to create and analyze pathogen-free environments, Riotta says that his team at MRD can help cruise ship manufacturers, owners, and operators to build consumer confidence, increase business, drive revenue, and move the industry forward. The company's intelligent sanitization solutions are well suited for safe use in most every type of space in a cruise ship—from dining halls and casinos to movie theaters, lounges, and passenger cabins—and can be tailored to address the specific programmatic needs of different spaces.

"Given the experience of our well-rounded team of talented professionals, I believe we are poised to help make everyone's lives safer and more enjoyable," Riotta states. "These specific solutions have been designed with the goal of helping our clients gain back their customers' trust by delivering and ensuring safe, decontaminated spaces that we all have a right to enjoy. They'll also bolster the industry's ability to stay ahead of the curve and thrive."

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## Benefits of Intelligent Sanitization Solutions

Ultraviolet technology has long been used to neutralize bacteria and viruses in various settings, including hospitals, water treatment plants, and food preparation facilities, yet its application thus far has been limited because some direct irradiation may be harmful to humans. With recent advancements in UV technology, however, combined with onboard safety sensors and data feedback, ship owners will be able to mitigate safety concerns while analyzing the duration and location of sanitization with MRD's personalized solutions. While certain precautions should be observed to manage some challenging side effects of ultraviolet, such as harm to human skin and eyes if handled improperly or the deterioration of physical materials and dyes, the benefits of the ultraviolet solutions, which can be deployed cost effectively, include the following:

- + Ultraviolet energy is a naturally occurring part of the electromagnetic spectrum.
- + Various germicidal solutions, including antimicrobial blue light, UVA, and UVC, can neutralize viruses, bacteria, parasites, and other pathogens.
- + UV has been used as a powerful sanitization tool since the early 20<sup>th</sup> century.
- + It can be used to disinfect surfaces and equipment, sanitize the air, and cleanse water.
- + UV does not require the use of harmful chemicals.
- + Its recurring costs are minimal compared to other disinfection solutions.
- + Fixture applications include upper room, direct-to-surface, and mobile units.