Application Note

UV-Technik's MLC-Rack

Power Supplies for Ballast Water Treatment Systems that Save Space and Energy

Since the International Maritime Organization (IMO) Ballast Water Management (BWM) Convention has specified the requirements for ballast water treatment, much engineering effort has been initiated. The establishment of BWM systems on existing and new vessels has been a major challenge.

For marine applications, a Ballast Water System must be a sophisticate with the smallest possible footprint. A compact design of all components is absolutely necessary to fit into the available environment, such as a power supply cabinet.

To optimize the electric power supply and to minimize its footprint, UV-Technik has developed its Multi-Lamp-Controller MLC-Rack (see photo). This modular electronic ballast is powered by a three-phase mains supply and is designed to operate up to 60 UVC low-pressure lamps.

The unit is equipped with an integral PFC stage to guarantee energy-saving and highly efficient operation of the UVC lamps with a power factor of more than 96%. Thanks to an Ethernet interface and its GL-approval, the MLC-Rack is perfectly made for Ballast Water Treatment Systems and can monitor all relevant operational conditions of the UV installation.

In addition to electronic ballasts, UV-Technik is specialized in the production of suitable low and medium pressure UV lamps for water treatment purposes. Quartz sleeves, as well as UV sensors, are also available.

For more details regarding the different components, please refer to www.hoenlegroup.com.

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Makers Of Ultraviolet 'Disinfectant' Devices Penalized $1.3M for Making False Germ-Killing Claims (http://bit.ly/1QGXO9N). A bit of advice to gadget-makers out there: If you're going to claim that your ultraviolet light product can "kill 99.9% of germs and bacteria in 10 seconds or less" or eradicate disease-spreading fungus and drug-resistant MRSA, then you should have the science to back these claims up. The Federal Trade Commission has announced settlements, totaling around $1.29 million, against two companies that marketed ultraviolet lights as "disinfectant" devices that could kill various pathogens. Angels Sales, Inc., are the folks behind the shUVee, an ultraviolet light device that, as far back as 2011, was advertised as a germ-killing shoe deodorizer.

UV System Helps St. Mary's Protect Patients against infection (http://bit.ly/1ii62cC). As drug-resistant strains of bacteria and viruses continue to arise, St. Mary's Health Care System is taking steps to help protect patients from infection. The Athens hospital is the first in northeast Georgia to use powerful ultraviolet radiation to sterilize surgical suites, isolation rooms and other areas of the hospital. Ultraviolet light is the same kind of light that causes sunburns and skin cancer. Just as UV damages the DNA inside human cells, it also damages the DNA inside germs. This damage makes it impossible for germs to reproduce. By combining the Clorox OptimumUV system with traditional deep cleaning and disinfection, St. Mary's is able to eliminate more than 99.9% of drug-resistant organisms on surfaces, says Doug Blomberg, RN, infection prevention and control manager.

Proposed Testing Protocol for Measurement of UV-C LED Lamp Output

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Abstract

For many years the measurement of UV Low Pressure mercury-based lamps was not standardized, resulting in an inability to benchmark lamp performance within the industry. The International Ultraviolet Association, operating through a working group of the Manufacturers Council, published a testing protocol for the measurement of low-pressure lamp output intensity. This protocol has enabled agreement on lamp testing methods and reporting that enables greater transparency to system designers, regulators,

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researchers and end users. UV-C Light Emitting Diode (LED) technology has developed over the past decade to the point of commercialization for water ~~and air measurement and~~ disinfection applications. However, much like the former situation with Low Pressure lamps, there are no commonly agreed upon or accepted methods for the determination of UV-C LED output.

This paper will describe a new IUVA initiative, undertaken by a working group of the IUVA Manufacturers Council to present a consistent methodology for the determination and benchmarking of UV-C output from LEDs. The protocol can be used for testing and comparing different UV-C LED lamps, to compare testing results from different laboratories and to compare operation under different ambient conditions. The protocol will accommodate both single device and multiple device lamps, showing emission spectra (i.e. power and wavelength) as well as absolute optical output power. The testing protocol will not cover angular distribution, aging, or mounting configuration. It is not intended for general manufacturing quality control or quality assurance testing.

The testing protocol will be in a similar format to the IUVA low pressure lamp method and, as such, will include descriptions of the following areas:

a. Safety
b. Measurement equipment
c. Measurement conditions
d. Measurement procedure
e. Calibration
f. Reporting

The mechanism used to refine and validate the protocol will also follow the precedent set by the IUVA low pressure lamp method, i.e. round robin testing will occur at various industry laboratories (~~expected to be UV LED manufacturers or UV LED system designers~~), using the same UV LED lamp, same UV radiometer and sensor and each laboratories internal spectral measurement equipment. The results will be compiled by a third party and anonymously reported. After each complete round of testing, the results will be evaluated to seek an understanding for any variations between laboratories. As such, the protocol will be refined before final IUVA approval and publication. ■