

UV Disinfection Systems: Assessing the Technology

As ultraviolet (UV) disinfection systems for water and air become more prevalent, efforts are under way to evaluate the effectiveness and efficiency of lamps and ballasts used in these systems and to improve UV technology for future applications.

UV lamp performance testing at water treatment sites

Troy, New York

The LRC has partnered with Carollo Engineers, P.C., and the City of Troy drinking water treatment plant to assess commercial UV lamp/ballast assemblies. LRC researchers are evaluating:

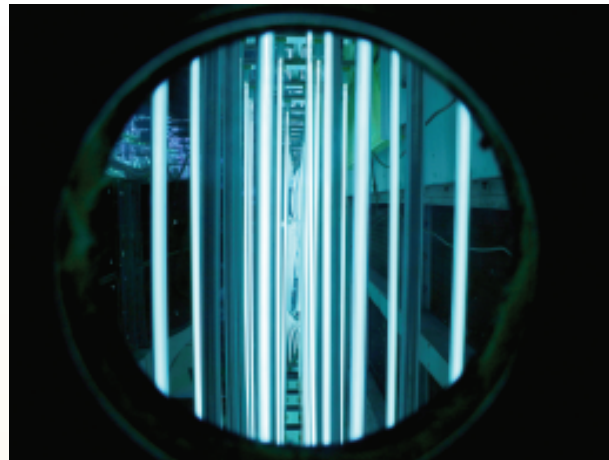
- Spectral output of the lamps
- Effects of power settings on lamp output
- UV output degradation

Carollo Engineers will use the data to develop selection and operation parameters for improved design and application of UV disinfection systems.

New York City

The LRC is participating in UV system validation testing for the New York City Department of Environmental Protection. Contracted by HydroQual, Inc., evaluation manager for the project, LRC researchers are determining the water temperature/lamp output relationship for several UV prototypes.

LRC's data will be used to support UV system design and equipment selection for the Catskill and Delaware UV Disinfection Facility serving the water supply of New York City.



Air is filtered through a disinfection chamber, where it is treated by vertically mounted ultraviolet lamps, before it is released into a public space.

Understanding UV air sterilization

The LRC has partnered with St. Vincent's Hospital in New York City and the Harvard School of Public Health to document the performance of UV germicidal systems used for air sterilization. The LRC is conducting UV lamp testing and analyzing:

- Electrical power consumption of UV apparatus
- Radiation levels and the relationship to pathogen reduction
- How radiation levels vary within an air duct

The information will be incorporated into a publication designed to provide guidance for improving future applications of UV air sterilization technology.

Sponsors

New York State Energy Research and Development Authority

New York City Department of Environmental Protection