

Air Disinfection

EMC Headquarters

Case Study



LEADING THE FUTURE OF
LIGHTING + TECHNOLOGY

Air Disinfection Case Study

EMC has long used its corporate headquarters as both a showcase and test site for the technologies included in its Lighting + Technology solutions. With the global pandemic elevating the need for safer environments, EMC continued with this strategy by expanding its UV-C Surface Lighting offering to include UV-C Air Disinfection Solutions for its employees and customers.

Project Details



756,000

cubic foot office building



10

complete air cycle
exchanges daily



88%

first pass reduction of
COVID-19



100%

daily reduction with MERV-10
air filters and 10 cycles

The Project

EMC's Specialty Lighting application engineers researched several available technologies and the best approach to ensuring the most effective and safest solution for its employees.

As a result, the company added Ultraviolet Germicidal Irradiation (UVGI) to its technology portfolio. UVGI is a mature disinfection technology used for decades in hospitals, food handling and laboratory settings.

This project also provided EMC the opportunity to perfect our CleanMAXX™ turnkey project management process to properly audit, design, install and service UVGI disinfecting solutions to further support the health and safety of our customers, their customers and employees.

The Solution

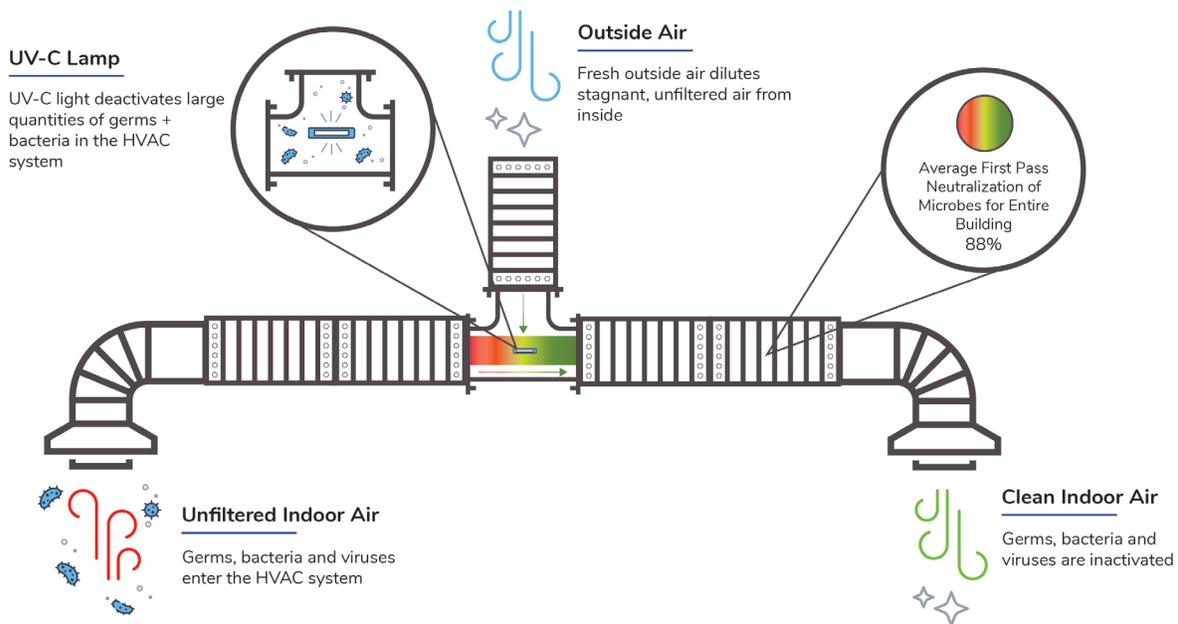
Consistent with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Pandemic Building Readiness Guide, EMC installed Ultraviolet-C (UV-C) air purifiers in the supply ducts for EMC's rooftop unit (RTU) air handlers. These purifiers use low pressure UV-C lamps to neutralize infectious microbes, including COVID-19, from the air as it circulates through the HVAC system.

In its corporate headquarters, EMC took facility-wide measurements of airflow and calculated the performance data to assess air circulation. This revealed that the building's HVAC system cycled 756,000 cubic feet of air (the facility's total interior air volume) 10 times per day. Nineteen UV-C air purifiers were installed to provide a target 100% reduction in COVID-19 as quickly as possible within the existing system.

The Results

EMC confirmed the efficacy of its newly installed system using a proprietary mathematical model, specific to in-the-field HVAC performance, that predicts microbe neutralization. These calculations addressed: Duct size and air flow rate, UV-C lamp irradiance levels and microbial resistance to UV-C.

UVGI Installed for Air Cleansing



The diagram above depicts how the UV-C lamps are installed in the air ducts at EMC's headquarters. The UVGI units, in combination with the HVAC system's MERV-10 filters, are capable of achieving an 88% reduction in airborne COVID-19 during each building air exchange cycle. Based on that performance, a calculated 100% reduction in COVID-19 can be achieved in 1.36 building air exchange cycles.

This means the air surrounding a standard work station at EMC will be replaced with clean air as quickly as every 10 seconds depending on the location of the nearest air duct!

Comprehensive Air and Surface Disinfection Solutions at Your Facilities

This project provided EMC the opportunity to develop and validate an analytical approach to assess and specify effective solutions for reducing COVID-19 and other harmful microbes in any facility, providing safer environments where people live and work. Let EMC help you implement the best solution for your indoor disinfection needs. We can assist with:

• Turnkey disinfection solutions.

EMC provides expert, turnkey disinfection solutions to meet your needs. Whether it's air disinfection, surface disinfection or a combination of both, EMC can analyze, specify, install and service site-wide or room-by-room solutions tailored to your requirements.

• Measuring the effectiveness of UV-C air purification solutions.

EMC applies different methods to model and demonstrate microbe reduction for air and surface disinfection using various proven technologies.

• Delivering peace of mind.

Along with turnkey disinfection solutions, EMC helps you deliver information to your facilities team, employees and customers. Custom designed monitoring systems can be developed to assist your facilities team with maintaining your disinfection system at its optimum performance. Systems can link to display signage and messaging to help inform your employees and customers about your organization's commitment to a safe environment.

MAXXimize Your Air Disinfection System

EMC's turnkey disinfection approach, CleanMAXX™, helps customers maximize the results of each project phase—from purification analysis to maximizing the long-term value of the disinfection system—bringing an immediate and positive impact to health and safety.



The CleanMAXX™ Process ensures your disinfection system's success by maximizing results in each project phase:

Prioritize

Formulate an effective disinfection strategy for your business

Audit

Ensure accurate baseline to develop an effective solution and executable proposal

Design

Select the best fit and performance for your existing equipment and application

Logistics

Coordinate turnkey services to support daily business and project needs

Installation

Complete on time with a comprehensive and clear scope

Service

Maintain long-term safety, value and effectiveness of your new disinfection solution



LEADING THE FUTURE OF
LIGHTING + TECHNOLOGY