

Lab Comparison Proves NCC Most Effective Technology For Air & Surface Purification

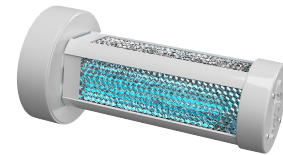
TECHNOLOGY PUT TO THE TEST

An independent laboratory conducted testing on HVAC air and surface disinfection systems to evaluate their ability to reduce pathogens. The FDA-compliant lab compared products from three different companies using three different technology strategies. The units were all brand new and have had widespread use in businesses for a number of years:

- Two (2) natural catalytic conversion (NCC) CASPR Technologies units
 - CASPR PRO 2500
 - CASPR MEDIK 14"
- One (1) photocatalytic unit (Competitor A)
- One (1) bipolar ionization unit (Competitor B)



CASPR PRO



CASPR MEDIK



**PHOTOCATALYTIC
UNIT**



**BIPOLAR
IONIZATION UNIT**

The idea with each competing method is the same: to oxidate portions of, or the whole pathogen, rendering it as ineffective or killing it altogether. However, the chemical mechanism is different for each:

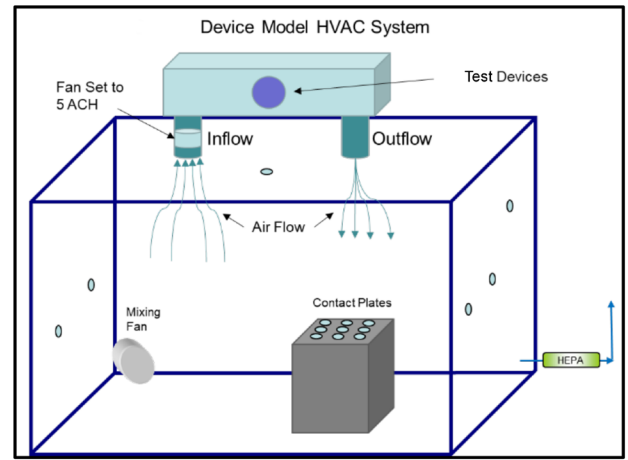
- NCC is a proprietary process invented by CASPR Technologies which uses a UV-C bulb and a catalytic membrane to produce dry gaseous hydrogen peroxide, thus reducing surface contaminants.
- Competitor A's photocatalytic system functions similarly. It also produces hydrogen peroxide, but it uses different catalytic coatings and light frequencies which may produce inconsistent chemical outputs and products.
- Competitor B's utilizes bipolar ionization which oxidizes using an electrical field to generate positive and negative ions.

Testing is the only way to truly know what works. The value proposition of NCC technology continues to prove it's the best path forward.

The CASPR Medik and CASPR Pro products more than doubled the efficacy rate of its closest competitors. In the end, our customers win.

LAB TESTING DETAILS

All four units were tested in a 16m³ stainless steel bioaerosol chamber using a partial duct HVAC system and were designed to operate in spaces of ~2000 square feet. Each unit was placed in the chamber and given 16 hours to reduce pathogens in the air and on surfaces. The pathogen was the same for all tests: methicillin-resistant staphylococcus epidermidis (MRSE), a common gram-positive bacterium that serves as a surrogate for several different bacteria, including methicillin resistant staphylococcus aureus (MRSA).

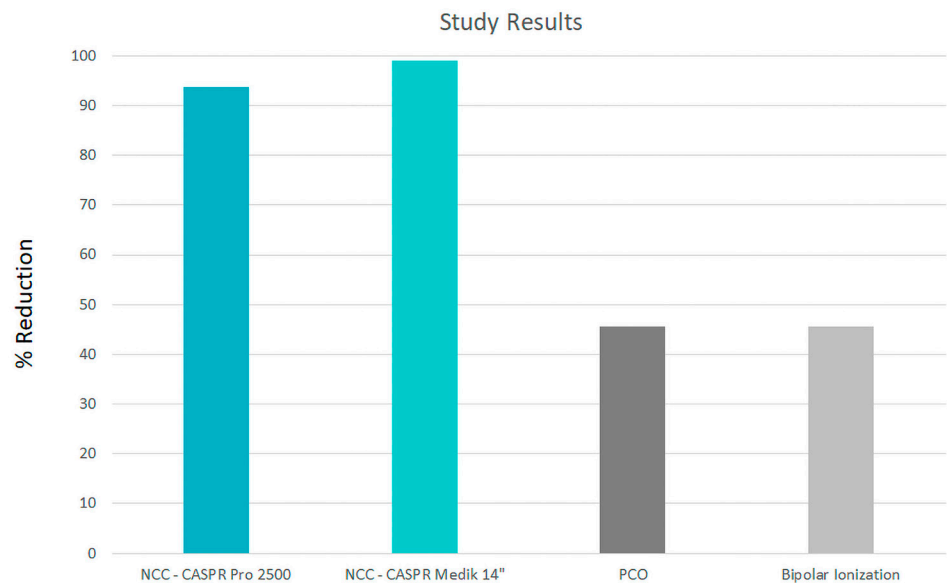


THE RESULTS

The tests covered a wide range of results from the four units. The study concluded that the CASPR units proved to have a much higher efficacy of reducing contamination. The specific results are as follows:

- CASPR Pro 2500 reduced pathogens by 93.6%
- CASPR MEDIK 14" unit reduced pathogens by 99.0%
- Competitor A's photocatalytic unit reduced 45.5% pathogens
- Competitor B's bipolar ionization reduced 45.6% pathogens

CASPR Technologies has been involved in several third-party studies, in labs as well as in real-world settings such as hospitals and schools. The results for NCC technology consistently ranks as much more effective compared to its closest competitors in the air purification market.



NOTE ABOUT OZONE IN COMPETITOR A'S UNIT: Two versions Competitor A's photocatalytic technology units are available on the market from the same manufacturer, one with ozone and one without. The ozone producing version was initially tested but was stopped in process after it exceeded OSHA limits for ozone production by within the first 100 minutes (0.1ppm limit vs. 0.9ppm detected). For this reason, the bulb was replaced with one that was non-ozone producing and testing started over.

Sources

"Efficacy of air and Surface Disinfection Units For Reducing Surface and Airborne Staphylococcus epidermidis" ARE Labs 2021

"OSHA Occupational Safety and Health Department. Permissible Exposure Limits. United States Department of Labor. " <https://www.osha.gov/annotated-pels>" Accessed Jan. 8, 2022