

# Catching Lightening in a Bottle

## CIMR® Technology Air Defense System Introduction



### Key Facts

- Ø CIMR® Technology low level (0.02 ppm) gaseous hydrogen peroxide is FDA approved for protection against viruses, bacteria, mold, and other pathogens.
- Ø 0.02 ppm of hydrogen peroxide is 50-times lower than the OSHA 1.0 ppm maximum exposure limit.
- Ø GHP is safe for people, pets and plants.
- Ø CIMR® Tech is no-touch power on and forget with only a 3-year converter cell change.
- Ø Shared air is the leading cause of infection from viruses, pathogens, and allergens.
- Ø WHO (World Health Organization) reports contaminated indoor air is the single most important risk to public health.
- Ø CDC states making breathable air clean and free of viruses, pathogens and allergens can help stop the spread of diseases.
- Ø H<sub>2</sub>O<sub>2</sub> gas particles are charged so they preemptively seek out, deactivate, then destroy pathogens everywhere air goes.
- Ø Charged hydrogen peroxide gas molecules function as a scavenger, reaching every nook and cranny that traditional methods simply cannot reach. It even works behind walls. It cleans HVAC systems and keeps them clean. Devices work around the clock, continuously scrubbing the air and surfaces before pathogens have the chance to affect any living thing.

### Key features of Low Level GHP

- Ø Preemptively seeks and destroys infectious microbes.
- Ø Scientifically proven to kill specific virus and bacteria.
- Ø Safe – produces .02 ppm H<sub>2</sub>O<sub>2</sub> molecules which is 1/50th of OSHA safe limit.
- Ø Kills even the smallest known micro-organic pathogens (viruses, bacteria, mold, volatile organic compounds “VOC”).
- Ø Kills germs in the air and on every surface
- Ø Kills fungi/mold.
- Ø Through oxidation, microbial pathogens are

**Fig. 1: To Catch Lightning in a Bottle** means to accomplish a nearly impossible task, to trap something elusive or fleeting. The phrase is used to explain the difficulty of accomplishing something, in the simile like trying to catch lightning in a bottle. An origin is Benjamin Franklin's electricity experiment. He flew a kite in a thunderstorm in the hopes that lightning would strike it, to collect electricity in a Leyden jar.

**Fig. 2: “Mother Nature’s Sanitizer”** is formed when the fortuitous combination of lightning, water, and sun increases hydrogen peroxide in the air to the cleaning level of 0.1-0.3 parts per million. GHP (gaseous hydrogen peroxide) at this level is recognized by the EPA as an effective infection control and microbial treatment agent. GHP molecules are one micron apart at this level. Microbes readily encounter them. Both are charged particles so viruses, bacteria, mold, allergens, and odor causing VOCs are attracted to them to be deactivated and destroyed. CIMR patent holder, Alton Holt, caught lightning in a bottle when he invented his GHP generator to add Mother Nature’s Sanitizer to indoor shared spaces. His invention uses ultraviolet light emitting in the sunlight spectrum, a titanium dioxide catalyst and the moisture and oxygen in the ambient air to manufacture a constant supply of GHP so the indoor air is maintained at 0.2 – 0.3 ppm. Once the device is switched on, all that is needed is the keep the intake clear of dust and replace the catalyst each 3-years.

### Fig. 3: COVID-19 Infection

The CDC latest advisory warns transmission of COVID-19 from inhalation of virus in the air can occur at distances greater than six feet. Particles from an infected person can move throughout an entire room or any indoor space. The particles can also linger in the air after a person has left the room – they can remain airborne for hours in some cases. Studies found the virus on fabric up to two days and on plastic and metal up to 7-days.

- decomposed and rendered harmless.
- Ø Filtrates everywhere air can travel.
- Ø Odorless - Eliminates odors.
- Ø No residuals – returns to air and water.
- Ø Easily installed into HVAC systems.
- Ø Minimal maintenance.
- Ø Does not produce ozone. (CARB-certified)
- Ø Works as a continuous infection microbial reduction purification device

### Key Statements

- Ø Directly fights viruses, including the coronavirus COVID-19, and bacteria in the air and on all surfaces.
- Ø Advanced air purification emerging technology emits hydrogen peroxide H<sub>2</sub>O<sub>2</sub> in a gaseous state and safely eliminates pathogens.
- Ø The US Air Force recommends low emission H<sub>2</sub>O<sub>2</sub> in gas for indoor facilities. It was highlighted with operational priority for use in hospitals to reduce the spread of coronavirus COVID-19, inside the facilities.
- Ø It is also safe for animals and plants.
- Ø Technology works by releasing self-regulating volumes of molecules of H<sub>2</sub>O<sub>2</sub> (.02 ppm “parts per million”), up to fifty times less than the level approved by the Federal Environmental Protection Agency (EPA). Low level hydrogen peroxide gas destroys bacteria, fungi, and viruses, including COVID 19, throughout the entire environment, including all surfaces, spaces, and materials.
- Ø The effectivity of low-level hydrogen peroxide gas is supported by clinical evidence in the protection of pregnant women, neonates, children, elderly adults, and pets from pathogens. Among those known pathogens are HIV, Hepatitis, Influenza A H1N1, Influenza B, Acinetobacter, Streptococcus, MRSA, Escherichia Coli, Klebsiella, and Salmonella, among others.

AIR CLEANING DEVICES	CIMR®	OZONE	UV LIGHT	HEPA FILTER
Comparison Factors				
24/7/365 Sanitization	x	x		
Safe for People - Pets - Plants	x		x	x
No Environmental Hazards	x		x	
No By-Products	x		x	x
Continuous Air Sanitization	x			
Continuous All Surface Cleaning	x			
HVAC Cleanup - Keep Clean	x			
Airborne Deployment	x			
Airborne Deployment	x			
No Labor	x			
Air Filter Replacement Needed				x

### Alternatives

#### Air Filtration, Electronic Air Filters/Plasma.

- Ø Passive-relying on pathogens to travel to the filter.
- Ø Generally, fails to kill smaller particulates.
- Ø Surfaces are not decontaminated.
- Ø Recurring costs with filter replacement and/or maintenance.
- Ø No HVAC decontamination feature.

#### Hydrogen Peroxide Misting Systems, Chemical Misting Systems, and Ozone Systems.

- Ø Overly aggressive.
- Ø Not safe in areas occupied by humans or other life forms.
- Ø Not continuous.
- Ø No HVAC decontamination feature.
- Ø Relies on human programming and deployment.
- Ø Labor costs.
- Ø Recurring costs of chemicals.
- Ø Ozone does not self-regulate and is banned from use in many locations.

#### Ionic Technologies.

- Ø Does not kill pathogens.
- Ø No HVAC decontamination feature.
- Ø Surfaces are not decontaminated.
- Ø Air is not decontaminated.

### Ultraviolet Lights.

- Ø Limited effect on moving air.
- Ø Only line of sight protection.
- Ø Distances decrease effectiveness.
- Ø May cause skin and eye damage upon extended exposure.

### Chemical Disinfectants (Janitorial)

- Ø Not continuous.
- Ø No HVAC decontamination feature.
- Ø Subject to human error.
- Ø Chemical dilution issues.
- Ø Protocol compliance issues.
- Ø Labor costs.
- Ø Ongoing costs of chemicals and application supplies.

### Proof of Performance

USAF Strategic White Paper Deactivation of COVID-19, bacteria, fungi, mildew, allergens, and viruses on all surfaces and in shared air.

Restore Better - Faster - Cheaper CIMR® generated gaseous hydrogen peroxide goes everywhere air goes. Contaminated, fire and water damaged sites get 24-7-365 attention without the shortcomings of every other approach.

HAI Reduction On any given day, about one in thirty-one hospital patients has at least one healthcare-associated infection (HAI). Click for the report on the CIMR® impact on this problem presented at Fifth Decennial International Conference on Healthcare-Associated Infections. HAI was reduced 48% and VRE was reduced 56% (Antibiotics resistant bacteria.)

KSU Research Report - H1N1 Deactivation CIMR® deactivates of Influenza A - H1N1. After 6 hours of treatment, levels of the H1N1 virus on inoculated stainless-steel coupons were below the detection limit. No recovery was observed at 8, 12, or 24 hours.

Sick Building Cure CIMR® generated dry hydrogen peroxide (DHP) reaches all air and surfaces to address lapses in cleaning routines and unreachable surfaces to end Sick Building Syndrome.

### CIMR® Performance Recognition

- Ø Installation of over 4,000 units at Military bases
- Ø 13 Commendations from the Army Corp of Engineers
- Ø Three patents pending in Food Safety, Infection Control & Bioterrorism
- Ø Successfully Killing Canker in Citrus Orchard
- Ø Successfully Killing and Controlling DDT resistant Aphids in China
- Ø Successfully working in Ghana in controlling plant-based disease and improving crop production and nutrition values in plants.
- Ø Successfully killing and controlling a wide range of pest and diseases in orchards and crops.
- Ø Published Worldwide - DPW for work at Ft. Hood in Killeen, TX
- Ø University of Pittsburgh Medical Center write up for CDC, SHEA, and APIC
- Ø Recognized by the University of Texas Educational System, FEMA and the National Historical Society for work done at Spindletop Museum/Lamar University in Beaumont, TX in the wake of Hurricane Rita
- Ø 1/50<sup>th</sup> of long-term exposure limits set by OSHA - NIOSH/CDC - ACGIH
- Ø CARB-certified air cleaning device - on 21 June 2021 - covered all units by meeting ozone limits with the highest output unit, CIMR 414 - for details:
- Ø <https://ww2.arb.ca.gov/list-carb-certified-air-cleaning-devices>

### For Full Proof of Performance Reports



<https://www.greensafeworldwide.com/copy-of-cimr-products>