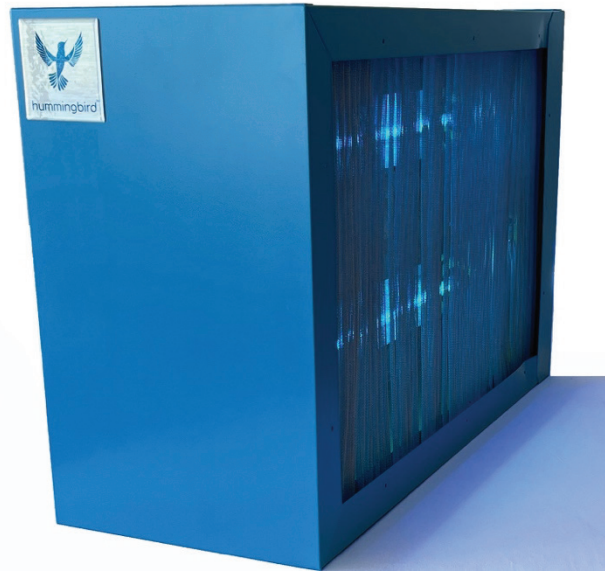




Deactivates 99.5%+
of COVID-19
on First Pass*

hummingbird™ EQ



With **Air Vaccine™**



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*Tested at Keck School of Medicine at the University of Southern California BSL Level 3 Biosafety Lab. single-pass tests of hummingbird models: EQ30000 / AP30000 / EQ10000 / AP10000 / CP800 Portable / EL / WC HDAZ models



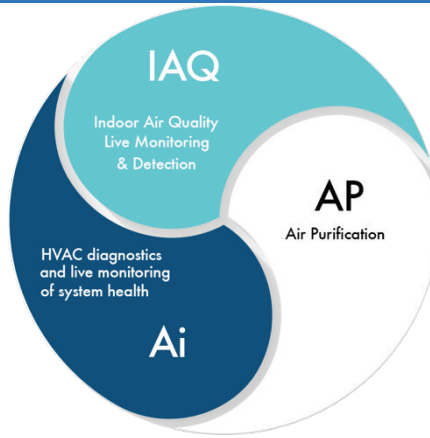
hummingbird™ EQ

HVAC in Perfect Balance™

The Ultimate Commercial HVAC Management & Air Purification System

The hummingbird™ EQ (Equilibrium) is a complete HVAC management and air purification system which helps engineering, facility directors and asset managers manage their HVAC systems to deliver heating, cooling and superior air quality while saving energy and extending the life of the equipment investment. EQ keeps your HVAC and air environment in perfect equilibrium.

Hummingbird™ EQ utilizes Ai, IOT and real-time data collection along with the latest in indoor air quality monitoring and air purification technology including **Air Vaccine™** and **Deep Fiber™**. Scales to any size HVAC system.



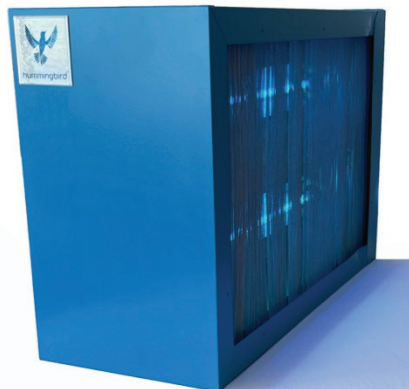
INDOOR AIR QUALITY

AIR PURIFICATION

HVAC MANAGEMENT



Indoor Air Quality Live Monitoring
Continual Air Certification
VOC's, Particulates, CO₂



Premium Air Purification
Photocatalytic Oxidation
Kills Viruses, VOCs, Particulates



HVAC Remote Monitoring
Cloud enabled. View on any
computer / smart device





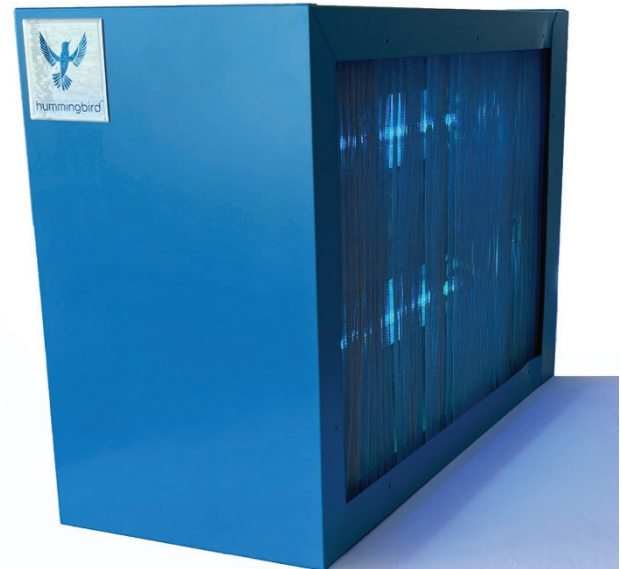
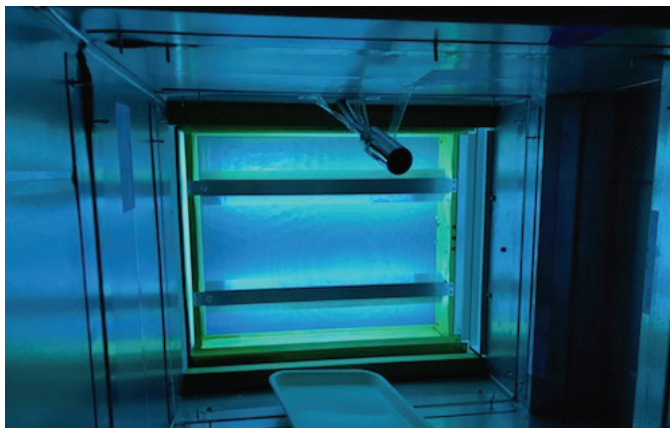
hummingbird™ EQ

AIR PURIFICATION

Hummingbird™ EQ includes the most advanced air purification on the market. Initially used in high end labs and clean rooms, Energy Cloud® is bringing the technology to the general commercial market.

Hummingbird Air Vaccine™ technology has been tested and proven at USC's BSL Level 3 lab / Keck School of Medicine to deactivate COVID-19 on the first pass through the system. As opposed to other systems that claim to deactivate in 30 minutes or 60 minutes, hummingbird™ instantly eradicates the virus as it passes through the system. Testing was done in one of the most comprehensive bio-aerosol tests ever performed with real-life airflows in a 5-ton Air Handler HVAC system.

Air Purification Features
Deactivates COVID-19 99.5%+ on first pass
Deactivates COVID-19 Variants**
99.9% Particle Reduction (>=3.0 Microns)(1st Pass)
97.2.% Particle Reduction (.3 Micron) in (1st Pass)
VOC Reduction down to 1 ppb
Viral, Bacterial & Allergan Reduction
Destroys Ozone, CO and Formaldehydes
Reduces Odors



Hummingbird™ with Air Vaccine™



Eradicates 99.5%+
COVID-19
on First Pass*

Installation
In-Duct: within return ducts
Requires 120v power
Easy Install with slim 10" depth profile
Door access to remove lamps / media



*Tested at Keck School of Medicine at the University of Southern California BSL Level 3 Biosafety Lab.
single-pass tests of hummingbird models: EQ30000 AP30000 EQ10000 AP10000 CP800 Portable / EL / WC HDAZ models
** Tested against the South African COVID-19 BETA variant

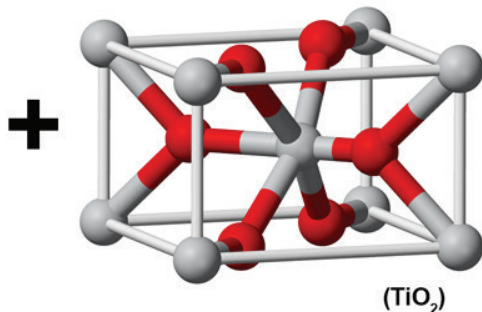
AIR PURIFICATION TECHNOLOGIES

AIR VACCINE™ with Photocatalytic Oxidation

hummingbird™ Air Vaccine technology utilizes its own blend of photocatalytic oxidation which includes UVC light at a specific wavelength saturating a matrix of Titanium Dioxide. This technology is extremely effective against vaccines as proven by deactivating a 3,000x infectious dose of aerosolized COVID-19 in USC's BSL Level 3 lab and also decomposes VOC's (Volatile Organic Compounds) including Ozone, Carbon Monoxide and Formaldehyde.



UV Light



Titanium Dioxide Molecules

Rutile mineral, the most common natural form of TiO₂

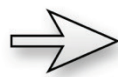
= Photocatalytic Oxidation

©Dmytro Lopatin (IUV)

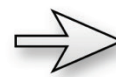
VOC's



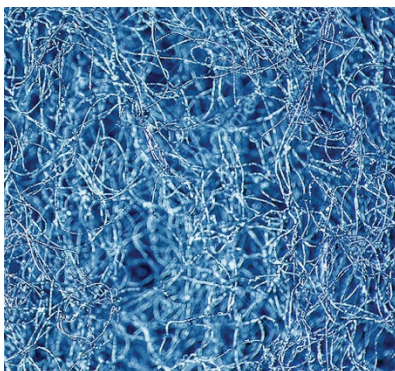
Harmful / Dangerous



Air Vaccine™ Matrix



Harmless / Safe



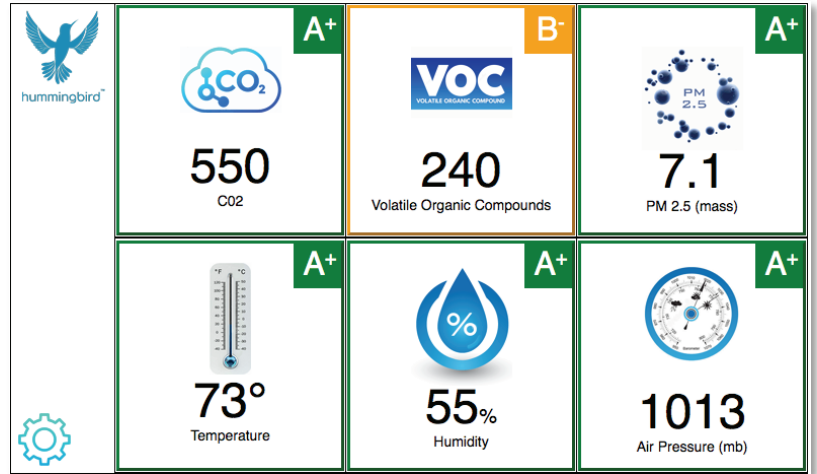
Hummingbird™ Deep Fiber™

Hummingbird™ EQ Filtration uses Deep Fiber™ technology which includes a special filter material construction that traps up to 4X more fine particles as compared to a conventional filter. This provides for improved particulate capture performance and also lengthens the life of the filter, saving on overall life cycle replacement costs and labor.



INDOOR AIR QUALITY MONITORING

hummingbird™ EQ comes with an Indoor Air Quality visual monitor. One is included per EQ which monitors one HVAC zone. Additional IAQ monitors can be added on a per room basis, ie. one for each school room, hospital room, etc. The hummingbird™ IAQ monitor gives immediate feedback to occupants in the indoor environment as to the air quality with comprehensive coverage of VOC, particulate and CO2 levels as well as temperature, humidity and pressure. The system is also cloud based and sends data up to Energy Cloud for air quality certification and long-term analysis of the environment.



IAQ Sensors
VOC'S
Particulates 1PM, 2.5PM, 4PM, 10 PM
Particulates Average Size
CO2
Temperature +-2°C
Humidity +-2%RH
Barometric Air Pressure
Features
Live Data
Historical Trending Charts
Frequency Reporting: 30 sec/1,2,5,10,15 min
Built-in Data Storage: 5+ Years
Touch screen
Auto dim screen
Connectivity Options
• Wifi • Ethernet (POE) • Cellular

Wall mount example powered over POE





hummingbird™ EQ

INDOOR AIR QUALITY CERTIFICATION

Hummingbird™ EQ Indoor Air Quality Monitoring and Certification comes standard with all EQ models. Businesses can showcase their investment in customer and employee health with Hummingbird EQ certification features. These include a scannable QR code, the A+ Air Quality seal on their front entry doors and a dedicated web URL for their buildings showcasing the air quality.

The QR Code links directly to the customer's certified air quality webpage on Energy Cloud®. Businesses can publish the website URL in their marketing and public relations efforts to enhance public trust of a well-

maintained building providing the cleanest indoor air possible, supported by live data readings.

The most important aspect of this feature is that Energy Cloud can certify that the air is continually kept clean and pure by live collected data from the hummingbird IAQ Monitor. This reinforces that the building is safe for customers and employees.

All certification grades are linked to data for these core IAQ areas: VOC's (volatile organic compounds, particulates, CO₂ levels, humidity, temperature, and pressure.)



A webpage with live certification is provided for each customer.





hummingbird™ EQ

SPECIFICATIONS



hummingbird™ Specifications	EQ 30000	EQ 10000	EQ 8000	AP 30000	AP 10000	AP 8000
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AIR PURIFICATION

Photocatalytic Oxidation Chambers	3	1	1	3	1	1
Tonnage Range (per Unit)	2.5-5	2.5-5	1.5 - 3	2.5-5	2.5-5	1.5 - 3
UVC germicidal lamps	6	2	2	6	2	2
Air Vaccine™ technology deactivates COVID-19	✓	✓	✓	✓	✓	✓
MERV13 High Performance w. Deep Fiber™ Filter	✓	✓	✓	✓	✓	✓
In-Duct Install	✓	✓	✓	✓	✓	✓
Neutralizes Viruses	✓	✓	✓	✓	✓	✓
Neutralizes Bacteria	✓	✓	✓	✓	✓	✓
Neutralizes Fungi	✓	✓	✓	✓	✓	✓
Eliminates VOC's	✓	✓	✓	✓	✓	✓
Eliminates Ozone (O ₃)	✓	✓	✓	✓	✓	✓
Eliminates Carbon Monoxide (CO)	✓	✓	✓	✓	✓	✓
Eliminates Formaldehydes	✓	✓	✓	✓	✓	✓
Reduces Particulates (PM .3 / PM1 / PM 2.5+)	✓	✓	✓	✓	✓	✓
Reduces Allergens: Pollen	✓	✓	✓	✓	✓	✓
Reduces Allergens: Dust Mites & Residue	✓	✓	✓	✓	✓	✓
Reduces Allergens: Tobacco Smoke	✓	✓	✓	✓	✓	✓
Reduces Allergens: Lung Damaging Dust	✓	✓	✓	✓	✓	✓
Does not produce Ozone	✓	✓	✓	✓	✓	✓

INDOOR AIR QUALITY MONITORING

Live TVOC monitoring / data collection	✓	✓	✓			
Live Particulate monitoring / data collection	✓	✓	✓			
Live CO ₂ monitoring / data collection	✓	✓	✓			
In-room Monitor w. LED touchscreen	✓	✓	✓			
Air Quality Certification based on data	✓	✓	✓			
Air Quality Certification (Live / Up to Minute)	✓	✓	✓			
Air Quality Certification web page	✓	✓	✓			
Air Quality Certification QR code	✓	✓	✓			
WiFi, Cell & POE connectivity options	✓	✓	✓			

REMOTE MANAGEMENT & AI

Remote Diagnostics Detect Issues Real-time	✓	✓	✓			
Energy Savings (Average 5 - 20%)*	✓	✓	✓			
HVAC Performance Scoring	✓	✓	✓			
Text & Email Alerts	✓	✓	✓			
Monitor Return Air Temperature (dry bulb)	✓	✓	✓			
Monitor Return Air Temperature (wet bulb)	✓	✓	✓			
Monitor Return Air Humidity	✓	✓	✓			
Monitor Supply Air Temperature (dry bulb)	✓	✓	✓			
Monitor Supply Air Humidity	✓	✓	✓			
Monitor Refrigerant Liquid Line Pressure	✓	✓	✓			
Monitor Refrigerant Liquid Line Temperature	✓	✓	✓			
Monitor Refrigerant Suction Line Pressure	✓	✓	✓			
Monitor Refrigerant Suction Line Temp.	✓	✓	✓			
Monitor Total Static Pressure	✓	✓	✓			
Monitor Filter Status	✓	✓	✓			

ADDITIONAL SPECIFICATIONS

	5 years	5 years	5 years	5 years	5 years	5 years
	1 Year	1 Year	1 Year	1 Year	1 Year	1 Year
Warranty (Main Air Purification Unit)						
Warranty (UVC Lamps)						
Dimensions (Inches)	23H x 31W x 29D	21H x 25W x 10D	17H x 25W x 10D	23H x 31W x 29D	21H x 25W x 10D	17H x 25W x 10D
Weight	92 lbs. / 41.7 kg	26 lbs / 11.8 kg	23 lbs / 10.4 kg	92 lbs. / 41.7 kg	26 lbs / 11.8 kg	23 lbs / 10.4 kg
Static Pressure Performance	.26WC @ 1600 cfm	.32WC @ 1600 cfm	.30WC @ 1200 cfm	.26WC @ 1600 cfm	.32WC @ 1600 cfm	.30WC @ 1200 cfm
Power (Main Air Purification Unit)	120V / 150 watts	120V / 50 watts	120V / 50 watts	120V / 150 watts	120V / 50 watts	120V / 50 watts
Country of Origin	USA	USA	USA	USA	USA	USA

*Based on average of two or more systems.