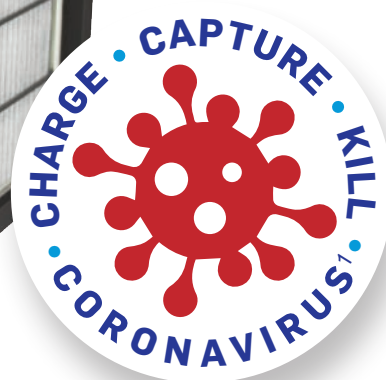




Turn to the experts

# IMPROVING INDOOR AIR JUST GOT EASIER





## Contents

3	Introduction Letter
4	Why Healthy Homes Matter
5	Indoor Air Quality Products
6	Filtration
11	Humidity Management
12	Ventilation
13	Air Quality
14	FAQs
19	Selling Tips: Healthier Profits from Healthy Home Air
21	IAQ Terms
23	Where to Go for More Information



Turn to the experts

October 2020

Dear Carrier Indoor Air Quality Products Customer:

During a time when healthy home air matters more than ever, we are extremely excited to re-introduce our complete line of Indoor Air Quality (IAQ) products.

Of course, the star of the show continues to be our Infinity® air purifier that kills over 99% of airborne coronavirus trapped by the Infinity filter.<sup>1</sup> While no amount of technology can guarantee against the spread of infections, our IAQ products can provide homeowners peace of mind that comes with proven effectiveness against various pollutants and irritants. Whether it's filtration, humidity management, or ventilation, Carrier has a solution for you.

#### For the Dealer:

- An opportunity to increase average tickets by offering IAQ to every homeowner since almost every home has at least one IAQ issue<sup>2</sup>
- Several IAQ products require replacement parts or media each year, creating recurring sales over time
- Turn a homeowner's perspective of IAQ products from a secondary accessory to a necessary element of a full system solution
- Increased customer satisfaction by discussing and providing remedies for IAQ issues the homeowner may have overlooked

#### For the Homeowner:

- The Infinity air purifier with Captures & Kills® technology captures 95% of particles as small as 1.0 micron and provides a 99% inactivation rate against select viruses and bacteria **INCLUDING coronavirus**<sup>1</sup>
- The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) recommends enhanced fresh-air ventilation and indoor air filtration as part of a comprehensive plan to slow the potential for airborne virus transmission<sup>3</sup>
- Peace of mind knowing their HVAC system is helping manage humidity, allergens, dust and other airborne particles in their home

Of course, we can't be successful without you! This kit, located in the Marketing Launch Kit Section on HVACpartners, is complete with several resources to help get you up to speed, including:

- Selling Tips for Dealers
- Products Overview
- IAQ Did You Know Facts
- Competitive Comparison
- Consumer Brochures
- FAQs
- Consumer Video
- Technical Literature

Our IAQ products give you another powerful set of tools for generating sales of complete Carrier comfort systems and real homeowner satisfaction. Thank you in advance for your support in making this launch an unparalleled success!

Holly Rhodes  
Associate Director, Indoor Air Quality Products



## Why Healthy Homes Matter

As we spend more time at home than ever before, it is imperative that we work together toward healthier living and working spaces. Our homes have become the new office, classroom, gym and restaurant, elevating the importance of indoor air quality (IAQ). Carrier offers a full arsenal of IAQ products that provide solutions to help improve the air we breathe.

### Did You Know...

- Americans spend an average of 90% of their time indoors where concentrations of some pollutants are often 2 to 5 times higher than outside air.<sup>4</sup>
- According to AirAdvice, more than 90% of all homes have at least one indoor air quality problem.<sup>2</sup>
- The Environmental Protection Agency (EPA) has recognized that indoor air pollution is a very real problem and ranked it among the top environmental dangers facing the public.<sup>5</sup>
- Air pollution, whether indoors or outdoors, is associated with several human health effects, including heart attacks, asthma attacks, bronchitis, hospital and emergency room visits, work and school days lost, restricted activity days, respiratory symptoms, and premature mortality.<sup>6</sup>
- Volatile organic compounds (VOCs), such as air fresheners and cleaning supplies, irritate the eyes, nose and throat, and cause headaches, nausea, and can even damage the liver, kidneys and central nervous system.<sup>7</sup>
- Molds are living things that produce spores that float in the air, land on damp surfaces and grow. Inhaling or touching molds can cause sneezing, runny nose, red eyes and skin rashes. Molds can also trigger asthma attacks.<sup>7</sup>
- The average person takes between 17,280 and 23,040 breaths a day – healthier air in the home is a necessity.<sup>8</sup>

### Carrier Offers Solutions

Carrier offers a suite of indoor air quality products that provide healthy home solutions for you and your family.

# Indoor Air Quality Products Offering Healthy Home Solutions

## Ventilation

Today's tightly constructed homes can trap stale air inside your home, creating higher dust and humidity levels. A **Carrier heat recovery ventilator (HRV)** or **energy recovery ventilator (ERV)** helps keep fresh air circulating through your home for improved air quality comfort year-round.

A **Carrier fresh air vent** is an affordable and compact whole-home ventilation solution. The fresh air vent provides a controlled solution for fresh, indoor air without the heat exchange or humidity transfer of an ERV or HRV.

## Humidity Management

A **Carrier humidifier** evenly distributes moisture throughout your home to help with irritated sinuses, itchy skin, static electricity, and other problems associated with dry, heated air.

A **Carrier dehumidifier**, with its ability to pull moisture from indoor air, can help you feel more comfortable without dialing down the thermostat to potentially save money on your cooling costs.

## Filtration

The **Infinity® air purifier** offers extremely high air filtration efficiency and patented germicidal technology so effective it **Captures & Kills®** select airborne pathogens and viruses flowing through your HVAC system and trapped by the filter, such as coronavirus, human influenza, common cold surrogate, and *Streptococcus pyogenes*.<sup>1</sup>

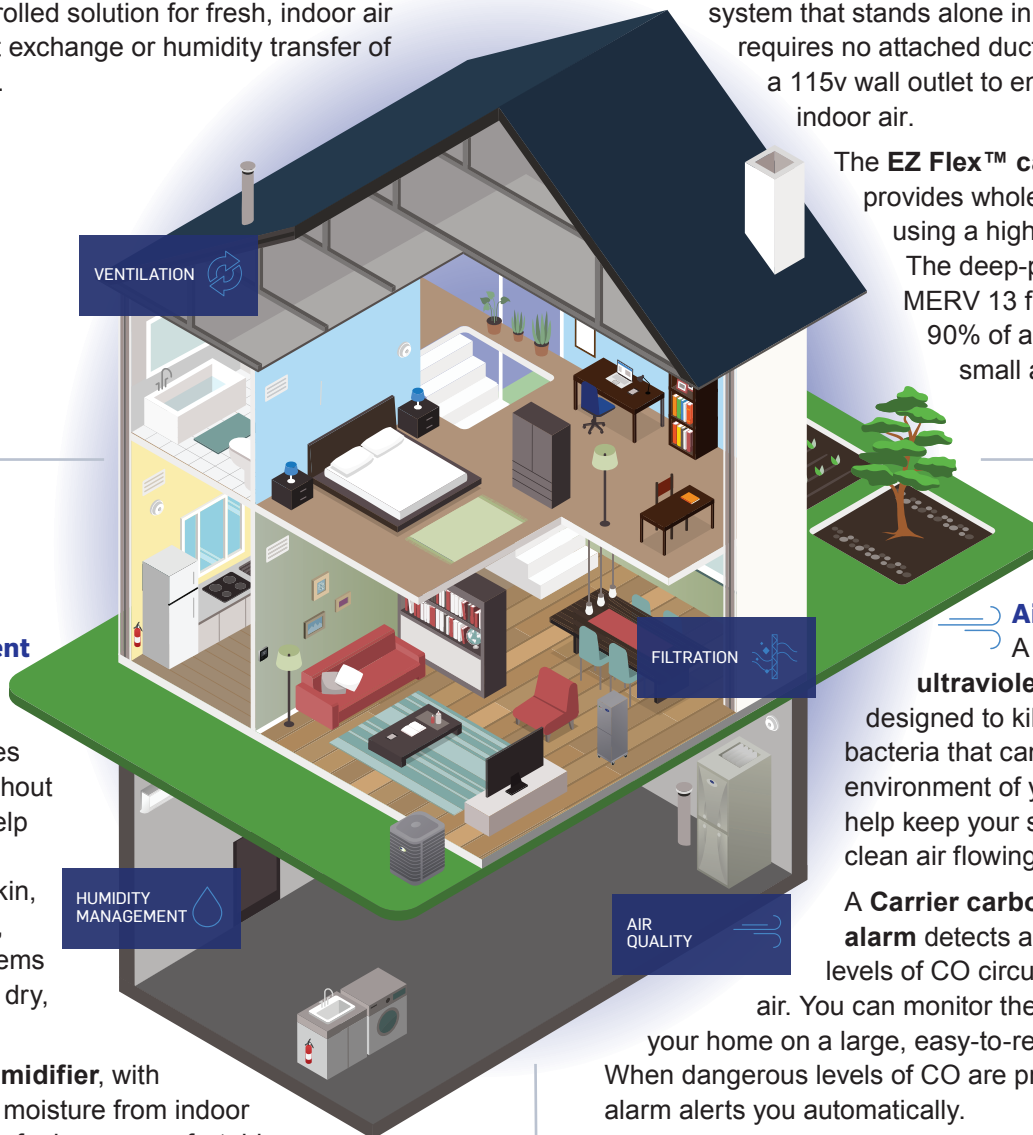
The **OptiClean™ air scrubber** is a portable filtration system that stands alone in the room and requires no attached ducting. All you need is a 115v wall outlet to enjoy cleaner, fresher indoor air.

The **EZ Flex™ cabinet with filter** provides whole home air filtration using a high-efficiency filter. The deep-pleated optional MERV 13 filter removes up to 90% of airborne particles as small as 1.0 micron.<sup>9</sup>

## Air Quality

A **Carrier germicidal ultraviolet (UV) lamp** is designed to kill the mold and bacteria that can grow in the moist environment of your indoor coil to help keep your system efficient and clean air flowing.

A **Carrier carbon monoxide (CO) alarm** detects and records the levels of CO circulating in your indoor air. You can monitor the current CO level in your home on a large, easy-to-read digital display. When dangerous levels of CO are present an audible alarm alerts you automatically.





# Infinity® Air Purifier

## The Infinity Air Purifier Captures & Kills® Coronavirus<sup>1</sup> from Filtered Air to Help Create a Healthier Home

### Why the Carrier Infinity Air Purifier Matters

As part of a strategy for slowing the spread of infectious disease in your home, the Infinity air purifier should be considered essential. Featuring our patented Captures & Kills technology, the Infinity air purifier offers proven, third-party tested effectiveness with a 99% inactivation of captured viruses and germs when used as instructed,<sup>1</sup> including:

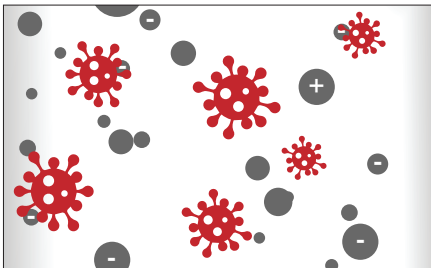
- Coronavirus
- Common cold surrogate
- Bacteria that causes strep throat
- Human influenza



Model DGAPA

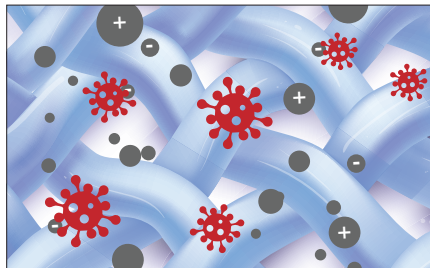
### Here's How it Works

Our Infinity air purifier treats the air flowing through your HVAC system's air handler using a three-step, charge/capture/kill process:



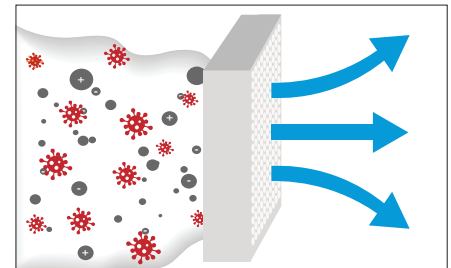
#### Charge

The purifier creates a “cloud” of electrically charged ions that attach themselves to airborne dust, pollen, viruses, germs and other particles as they pass through.



#### Capture

The ionized particles are pulled toward an oppositely charged, pleated MERV 15 rated filter and captured at an extremely high rate, similar to how a magnet attracts metal shavings.<sup>10</sup>



#### Kill

Captured airborne microbes remain on the pleated filter instead of recirculating back into the home and are subjected to an intense electric field. There, 99% of select viruses and bacteria are inactivated.<sup>1</sup>

### Independent Testing at the University of Colorado

Our confidence with the performance of our Infinity air purifier capturing and killing coronavirus from filtered air<sup>1</sup> is based upon third-party testing at a university environmental engineering laboratory that specializes in disinfection science.

- Tests were conducted with a murine coronavirus that is closely related to the human coronavirus SARS-CoV-2, which causes COVID-19
- The murine pathogen surrogate allowed testing to be completed safely<sup>11</sup>

Controlled environment tests showed that the Infinity air purifier inactivated 99% of coronavirus on its filter.



# Infinity<sup>®</sup> Air Purifier

## Defending Your Home Takes a Comprehensive Approach

Viruses spread from infected individuals when they breathe, speak, sneeze or cough. The viral particles are contained in aerosols, the largest of which quickly settle on indoor surfaces, while the smaller ones can remain airborne.<sup>12</sup> And while the SARS-CoV-2 virus itself is extremely small (about 0.1 microns in diameter),<sup>13</sup> the larger respiratory droplets or aerosols that can transmit viruses are large enough to be captured when passing through enhanced air filtration.

Filtration technology does not prevent person-to-person or surface transmission; rather, it helps eliminate particles in the air when they flow through your HVAC system and make contact with the filter. That's why controlling airborne pathogens with Carrier indoor air quality products like the Infinity air purifier makes sense. In addition, following CDC guidelines for personal hygiene and managing surface-based pathogens are important for a comprehensive defense strategy.<sup>14</sup> This includes:



Vigorous hand washing with soap and water for 20 seconds



Cleaning and disinfecting "high-touch" household and personal items such as counter tops, door handles and cell phones



Physical distancing both at home and when away

# Competitive Comparison

Not all whole-home air purification systems are created equal. See how the Infinity® air purifier with its Captures & Kills® technology stacks up against the competition.

Infinity® Air Purifier		
	Infinity Air Purifier	Trane® Clean Effects™
<b>Filtration Efficiency</b>	MERV 15	<ul style="list-style-type: none"> <li>No published MERV rating</li> <li>Uses Clean Air Delivery Rate (CADR)</li> </ul>
<b>Coronavirus</b>	Inactivates coronavirus from filtered air <sup>1</sup>	No claim
<b>Germicidal Capability</b>	Yes	No
<b>Cleaning and Maintenance</b>	<ul style="list-style-type: none"> <li>Brush off any build-up on the grid with a clean, dry paint brush</li> </ul>	<ul style="list-style-type: none"> <li>Pre-filter: Factory recommends every two months</li> <li>Collection Cells: Factory recommends every six months</li> <li>Cleaning Pre-filter and Collection Cells: User's Guide recommends vacuuming outside and to wear appropriate respiratory protection for sensitive persons; do not clean by immersion or with soap. Must be completely dry before reinstalling</li> </ul>
<b>Filter Replacement</b>	<ul style="list-style-type: none"> <li>"Clean and Replace Filter" notification is displayed on the Infinity® system control</li> <li>Simply pull out the old filter and replace it</li> <li>Captured particles are removed with the filter</li> <li>Filter typically lasts 8-12 months</li> </ul>	<ul style="list-style-type: none"> <li>Does not get replaced</li> <li>Requires multi-step vacuuming/washing process described above</li> </ul>
<b>Application</b>	<ul style="list-style-type: none"> <li>Custom fits to any Carrier gas furnace or fan coil, five sizes available</li> </ul>	<ul style="list-style-type: none"> <li>Can be installed either as part of a Trane communicating heating and air conditioning system or as part of any traditional 24-volt system</li> </ul>
<b>Limited Warranty</b>	<p style="text-align: center;"><b>10-Year<sup>†</sup></b> (Excludes replacement filters)</p>	<p style="text-align: center;">10-Year - electronics Five-Year - other parts</p>

\* Competitive information obtained from each manufacturer's public website as of August 2020. Third-party trademarks are the property of their respective owners.

† The limited warranty period is five years if not registered within 90 days of installation except in jurisdictions where warranty benefits cannot be conditioned upon registration.



# Competitive Comparison

## vs. Competitors\*

<b>Lennox® Pureaire™ S</b>	<b>Aprilaire® 5000</b>	<b>Honeywell® F300</b>	<b>Rheem® Exact Fit Media Air Cleaner</b>	<b>Goodman® Clean Comfort® AE14</b>
MERV 16	MERV 15	MERV 12-16	MERV 8	MERV 14
No claim	No claim	No claim	No claim	No claim
No	No	No	No	No
<ul style="list-style-type: none"> <li>Requires annual replacement of catalyst plate and UV lamps</li> </ul>	<ul style="list-style-type: none"> <li>Cleaning of the control electrode every 6-12 months. Requires a nine-step process</li> </ul>	<ul style="list-style-type: none"> <li>Wash the cells in your dishwasher or sink when needed</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Requires cleaning of pre-filters and collecting cells with air cleaner detergent</li> </ul>
<ul style="list-style-type: none"> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>Periodic replacement</li> </ul>	<ul style="list-style-type: none"> <li>Does not get replaced; requires periodic cleaning</li> </ul>	<ul style="list-style-type: none"> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>Replace carbon filters every four to six months</li> </ul>
<ul style="list-style-type: none"> <li>Works with Lennox communicating systems</li> </ul>	<ul style="list-style-type: none"> <li>Works with all gas, oil and electric forced air furnaces and air conditioning systems</li> </ul>	<ul style="list-style-type: none"> <li>Works with all gas, oil and electric forced air furnaces and air conditioning systems</li> </ul>	<ul style="list-style-type: none"> <li>Exact-fit system solution to Rheem residential air handlers and gas furnaces</li> </ul>	<ul style="list-style-type: none"> <li>Works with all gas, oil and electric forced air furnaces and air conditioning systems</li> </ul>
10-Year	Five-Year	Five-Year	Five-Year	Five-Year



# OptiClean™ Air Scrubber

The OptiClean air scrubber rolls easily into any room and plugs into a standard electrical outlet to quickly help improve indoor air quality in your home.

## How It Works

### 1

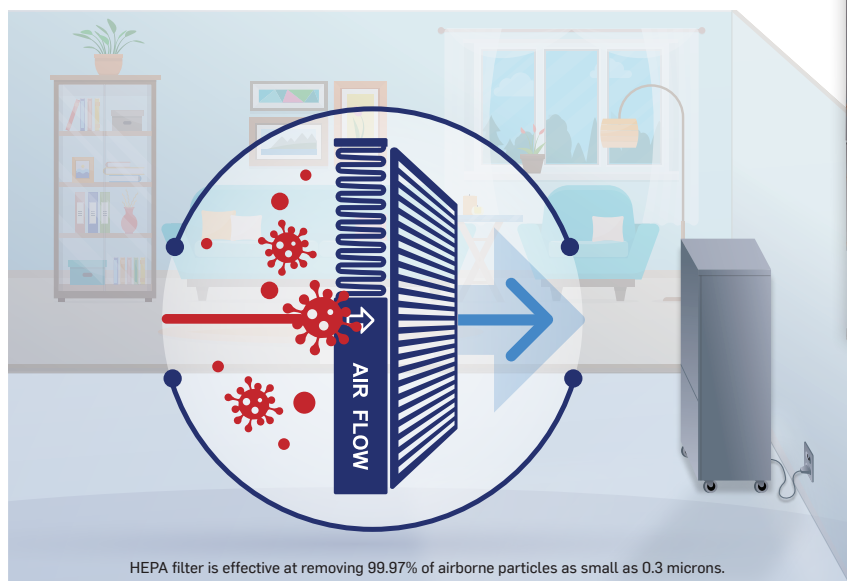
The unit pulls air in from the surrounding area.

### 2

The air passes through a series of filters to remove many contaminants.

### 3

The cleaner, fresher filtered air is then recirculated back into the room.



Model FN1AAF

## Product Highlights

- Standard MERV 7 or higher pre-filter, 99.97% efficient, long-life HEPA filter removes particles as small as 0.3 microns
- Two sizes available, 600 CFM or 1500 CFM
- Meets the ASHRAE Standard 170: Ventilation of Health Care Facilities
- HEPA filter rack and sealing design meet air leakage requirement
- Heavy-duty, lockable casters for easy transport
- Three-speed selector switch for various air flow ranges
- Red filter indicator light alerts user when it's time to replace a filter
- Green on/off switch illuminates when the unit is on and operating
- Ten-foot long power cord with strain relief
- 115V, UL® listed
- One-year limited warranty

# EZ Flex™ Expandable Air Filter with Cabinet



Model EZXCAB

Today's homes are more energy-efficient than ever – sealed tighter and better insulated to keep heated or cooled air on the inside. The unfortunate side effect is that these same homes also do a better job retaining dust, dirt, pollen and more, trapping them inside to circulate and recirculate throughout your living spaces. These particles settle on furnishings, pollute the indoor air and rob your comfort system of efficiency by restricting airflow and making it work a little harder. The Carrier EZ Flex expandable filter with cabinet can help alleviate those issues.

## Product Highlights

- Can be used in upflow, downflow and horizontal applications
- Sturdy 20-gauge powder coat painted cabinet that can withstand the weight of a 400 lb. (181 kg) furnace
- Rated at MERV 10 with a MERV 13 filter replacement available
- Equipped with a month indicator to remind the homeowner when to change the filter
- High dust holding capacity increases the time between filter changes
- Ten-year limited warranty on cabinet<sup>15</sup>





# Humidity Management

## Carrier Humidifiers

A Carrier humidifier can “moisturize” dry, heated winter air, making your home feel more comfortable. Properly humidified air can help relieve the discomfort of dry nasal passages, itchy skin and static shocks. A comfortably humidified home can help save energy, too. Because you are less likely to turn up the heat, you could potentially save money on your heating costs. With five distinctly different models, there’s a Carrier humidifier that is just right for your home.



### Product Highlights

Model	STM	LBP	SBP	WBP	LFP
<b>Unit Type</b>	Steam	Large bypass	Small bypass	Water saver bypass	Large fan-powered
<b>Capacity (gallons/day)</b>	34*	17	12	17	18
<b>Water Vapor Delivery</b>	Dispersion tube in duct	Expanded aluminum evaporator pad	Expanded aluminum evaporator pad	Wicking paper evaporator pad	Expanded aluminum evaporator pad
<b>Square Feet</b>	Up to 6,200	Up to 4,000	Up to 3,000	Up to 3,000	Up to 4,200
<b>Dimensions</b>	71 x 10.1 x 20.9	10.2 x 15.4 x 15.8	10.2 x 15.6 x 13	10.2 x 15.6 x 13	10.3 x 15.9 x 18
<b>Weight (lbs)</b>	24.5	8.7	9.25	9.25	15.5
<b>Limited Warranty**</b>	10-Year	10-Year	10-Year	10-Year	10-Year

\* Varies based on voltage and amperage.

\*\* The limited warranty period is five years if not registered within 90 days of installation except in jurisdictions where warranty benefits cannot be conditioned upon registration.

## Carrier Dehumidifiers

As summer temperatures and humidity rise, your air conditioner or heat pump dehumidifies your home during the cooling process. To achieve desired humidity levels, the system often operates with greater frequency. By adding a Carrier whole-home dehumidifier, your system can more effectively pull excess moisture from the air circulating throughout your home. You’ll feel more comfortable without over cooling, meaning you can turn the thermostat up a few degrees to help save on energy costs.



Model DEHCR

### Product Highlights

- Available in 70 or 95 pint sizes
- Easy, on-board LCD control
- Built-in clean filter reminder
- Access doors on both sides of cabinet allows for easy filter removal
- Washable, ½” MERV 8 Filter
- Multiple application configurations for installation in locations such as closets, basement, attic or crawlspace
- Five-year limited warranty<sup>15</sup>



# Ventilation

## Carrier Whole-Home Ventilators

Carrier fresh air ventilation offers a controlled solution for bringing fresh outdoor air into your home. It's efficient because it ventilates without the energy loss you would experience through an open window or screen door. Whole-home ventilation is more important than ever with today's more tightly sealed, energy-efficient homes that tend to trap airborne pollutants to circulate throughout your home.

## Comfort and Efficiency

Our energy and heat recovery ventilators can maintain your comfort with minimal heat loss.

Here's how:

- Fresh, outdoor air and stale, indoor air enter our high-efficiency heat recovery core
- Up to 70% of heat (or energy) from the indoor air is transferred to the clean, outdoor air for circulation throughout your home using the sensible recovery energy model SVU
- Energy recovery ventilators (ERVs) also remove excess humidity to enhance comfort and save energy
- The outgoing and incoming air never mix, so you have a continuous flow of fresh air
- Ten-year limited warranty on ERVs and HRVs<sup>15</sup>
- Five-year limited warranty on fresh air vent<sup>15</sup>

## Which One is Right for Me?



Models  
HRVCRSHB, HRVCRSVB,  
HRVCRLHB, HRVCRSVU

**HRV:** An HRV, or heat recovery ventilator, is a great choice for comfort and efficiency in colder climates with longer heating seasons, such as Canada or the northern United States.



Models  
ERVCRSHB, ERVCRSVB,  
ERVCRHLB

**ERV:** An ERV, or energy recovery ventilator, is the right choice in the Midwest and southern states, where removing humidity from incoming air is vital to efficient, comfortable performance.



Model FAVCR

**Fresh Air Vent:** Our most affordable and compact whole-home ventilation solution, the Carrier fresh air vent provides a controlled solution for fresh, indoor air without the heat exchange or humidity transfer of an ERV or HRV.



Model ERVCRNVA

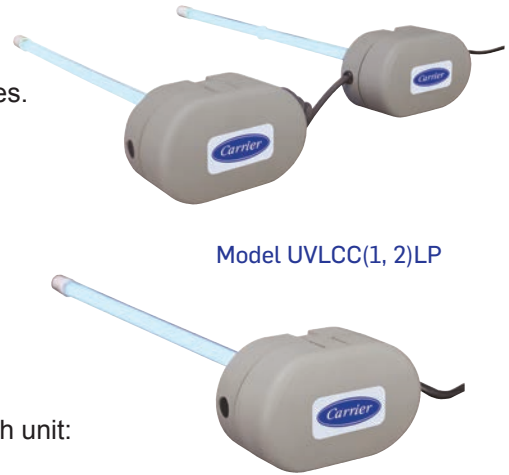
**Add-On ERV:** For installations with space limitations, the add-on ERV offers a more compact solution that fits while still providing the needed ventilation and efficient performance.



# Air Quality

## Carrier Germicidal Ultraviolet (UV) Lamps

Your heating and cooling system is the unsung hero of your home, constantly running in the background to keep you cozy and comfortable. As air passes through the cooling coil, mold spores, bacteria and fungi stick to its damp surfaces. Buildup of these contaminants can reduce system performance and lead to the release of harmful mold spores and unpleasant odors into your home. To help alleviate these issues, the Carrier germicidal UV lamp is mounted near the cooling coil where fungus and microbes can grow. The intense UV light is designed to kill bacteria and mold growing on and around the indoor coil, enhancing system efficiency and improving the quality of your indoor air.



Model UVLCC(1, 2)LP

## Product Highlights

- Available in both single and dual lamp models in both 115-V and 208/230-V
- Easy maintenance, replace the lamp(s) annually
- Bulb life expectancy: 9,000 hours
- Dimensions of each unit: 21.375" x 5.5"
- Ten-year limited warranty, 90-day limited warranty for bulb<sup>15</sup>



## Carrier Carbon Monoxide (CO) Alarm

Carbon monoxide is a colorless, odorless gas produced by incomplete combustion of fuels such as natural and LP gas, kerosene, coal, wood and charcoal. Exposure can cause fatigue, chest pains, impaired vision and coordination, headaches, dizziness, confusion and nausea.\* The Carrier CO alarm can put you at ease with its sophisticated electronics and sensor technology that detects and records the levels of CO circulating in your indoor air. You can monitor the current CO level in your home on a large, easy-to-read digital display. When dangerous levels of CO are present, a loud, audible alarm alerts you and your family automatically.

Model COALM

## Product Highlights

- Monitors CO levels updating every 15 seconds
- Detects and stores CO levels as low as 11 and as high as 999 parts per million (ppm)
- Loud, 85 decibel pulsing alarm
- Peak level button displays the highest CO level recorded since alarm was last reset or unplugged
- Power outage backup battery protection
- Lithium-ion battery does not require replacement
- Plugs into any standard electrical outlet
- Ten-year limited warranty<sup>15</sup>

## AirAdvice for Homes™ Analyzer

Ready to Clean the Air?

With the AirAdvice for Homes analyzer, it takes just 30 minutes to give your customers a detailed analysis of their indoor air, along with recommended solutions. Naturally, those solutions include efficient air quality solutions from Carrier.



\* <https://www.epa.gov/indoor-air-quality-iaq/carbon-monoxides-impact-indoor-air-quality>

# FAQs

## General FAQs

### What is “indoor air quality”?

Indoor air quality refers to how inside air can affect a person's health and comfort. It can include temperature, humidity, lack of outside air (poor ventilation) as well as pollutants that enter the home.

### What are the most common causes of IAQ problems?

Common causes of IAQ problems in homes are:

- Not enough ventilation, lack of fresh outdoor air or contaminated air being brought into the home
- Poor upkeep of ventilation, heating and air-conditioning systems
- Moisture damage due to leaks, flooding or high humidity
- Activities, such as construction or remodeling
- Indoor and outdoor contaminated air

### How can I tell if there is an IAQ problem in my home?

Homeowners with poor IAQ may notice unpleasant or musty odors or may feel that the home is hot and stuffy. They may experience symptoms such as irritation of the eyes, nose, throat and skin, headaches, fatigue, shortness of breath, hypersensitivity and allergies, coughing and sneezing as well as dizziness.

### Is there a test that can find an IAQ problem?

Although indoor air quality isn't always something you can see, the AirAdvice for Homes™ air analyzer can help detect IAQ issues in the home. Using the indoor air analyzer, you can provide an IAQ test result in about 30 minutes, then get right to work addressing the home's air quality issues by recommending and installing an indoor air quality product designed to solve the problem.

## Infinity® Air Purifier

### What is the Infinity air purifier technology?

The Infinity air purifier is a hybrid between an electronic air cleaner and media filter that offers the benefits of a high-voltage electrostatic precipitator and the ease of maintenance of a media filter.

### How does the Infinity air purifier technology work?

The Captures & Kill® technology that the Infinity air purifier uses is a three-step process that inactivates 99% of select germs and viruses:<sup>1</sup>

#### Charge

The purifier creates a “cloud” of electrically charged ions that attach themselves to airborne dust, pollen, viruses, germs and other particles as they pass through.

#### Capture

The ionized particles are pulled toward an oppositely charged, pleated filter and captured at an extremely high rate, similar to how a magnet attracts metal shavings.

#### Kill

Captured airborne microbes remain on the pleated filter instead of recirculating back into the home and are subjected to an intense electric field.

### How efficient is this unit's filtration?

The Infinity air purifier meets Minimum Efficiency Reporting Value (MERV) 15. The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has established a rating standard designated as 52.2, which created the MERV so that various filters can be evaluated consistently. MERV ratings are designated with numbers from 1 to 16. The higher the MERV rating, the better the filter's performance (percent efficiency) for smaller particles. A MERV rating of 15 requires 85-95% efficiency for the smallest particles tested down to 0.3 microns.

### How long will the filter last?

Filter life varies from home to home and is based on several factors. Most homeowners find that the filter lasts for six to nine months.

### Can I use another brand of filter in the Infinity air purifier?

No. The filter used in the Infinity air purifier is patented and uses a design that carries an electrical charge through the filter where select captured organisms are killed. Other filters do not have this technology and will not work in this unit.

### How do I know when to change my filter?

If your Infinity air purifier is used in conjunction with the Carrier Infinity® system control, the control will notify you when it is time to change the filter. Other thermostats may have a timer or reminder built in.

### Does the Infinity air purifier make any sounds while operating?

No. Unlike traditional electronic air cleaners, the purifier creates no zapping noises.

### Is there a benefit to using ultraviolet (UV) lamps in conjunction with the purifier?

Yes. Carrier UV lamps installed at the coil and drain pan helps prevent the build-up of contaminants on your air coil.

### How does the Infinity air purifier compare to a HEPA filter?

True HEPA (High-Efficiency Particulate Air) filters are slightly more efficient at capturing the tiniest particles. However, HEPA filters do not have the Captures & Kills® technology of the Infinity air purifier. In addition, HEPA filters have a very high resistance for airflow (pressure drop), and therefore, generally incorporate an additional fan.

# FAQs

## Can you install the Infinity air purifier with non-Infinity gas models?

Yes, the Infinity air purifier can be installed with any Carrier gas furnace or fan coil.

## OptiClean™ Air Scrubber

### What is the OptiClean air scrubber?

The OptiClean air scrubber is a portable room unit that plugs into a standard electrical outlet to quickly help improve indoor air quality in the room. It uses a 99.97% efficient HEPA filter to remove particles as small as 0.3 microns, then discharges cleaner air back into the room.

### How often should the pre-installed filters be replaced?

The Carrier OptiClean air scrubber ships with two filters pre-installed for your convenience: a minimum MERV 7 pre-filter and a HEPA filter. The minimum MERV 7 pre-filter recommended replacement is 60-90 days and is available through Totaline.

### In what size room will the OptiClean air scrubber work?

Great for helping to improve IAQ in various rooms in your home, the OptiClean air scrubber is available in two sizes. A 600-CFM unit for moderate-sized rooms (600 square feet) and a 1500-CFM unit for larger-sized rooms (1,500 square feet). Units can be combined for even larger open spaces, so no matter what sized room in the home, Carrier has a solution for you.

## Media Filters/Cabinets

### Is it okay to install the filter cabinet near a humidifier?

If you own a Carrier humidifier the answer is a very simple, yes. The humidifier will not have an adverse effect on the media filter since the humidity being created is vapor. If you do not own a Carrier humidifier, we recommend that you contact the manufacturer of your humidifier for specific application information.

### Will a Carrier media filter cabinet help enhance the life of my heating and cooling equipment?

Yes. By removing dust that would normally accumulate in the blower compartment or on the air conditioning coil, the Carrier media filter cabinet will reduce the amount of wear and tear on your equipment, extending its life span.

### How often do I need to replace the filter in the Carrier media filter cabinet?

The answer depends on how dirty the air is. Periodic inspection of the filter is recommended. Typical replacement is about every six months.

## Ultraviolet Lamps

### What is Ultraviolet?

Ultraviolet (UV) light is one form of electromagnetic energy produced naturally by the sun. UV is a spectrum of light just below the visible light and it is split into four distinct spectral areas – Vacuum UV or UVV (100 to 200 nm), UVC (200 to 280 nm), UVB (280 to 315 nm) and UVA (315 to 400 nm).

### What is Ultraviolet C (UVC)?

The entire UV spectrum can kill or inactivate many microorganism species, preventing them from replicating. UVC energy at 253.7 nanometers provides the most germicidal effect. The application of UVC energy to inactivate microorganisms is also known as Germicidal Irradiation or UVGI. UVC exposure inactivates microbial organisms by altering the structure and the molecular bonds of their DNA (Deoxyribonucleic acid). DNA is a “blueprint” these organisms use to develop, function and reproduce. By destroying the organism’s ability to reproduce, it becomes harmless since it cannot colonize. After UVC exposure, the organism dies off leaving no offspring, and the population of the microorganism diminishes rapidly. Ultraviolet germicidal lamps provide a much more powerful and concentrated effect of ultraviolet energy than can be found naturally.

### Do the Carrier Germicidal UV lamps produce ozone?

The longer (253.7 nanometers) wavelength of UVC light used in the Carrier germicidal UV lamp prohibits mold and bacteria growth on the surface of the indoor coil and drain pan while only producing a trace amount (0.001 PPM) of ozone.

### What is HVAC bio-film?

Some people call it dirt others call it mud, slime or sludge. This gluey matrix growing on heating, ventilating and air conditioning (HVAC) evaporator coils and drain pans is, in fact, bio-film. Bio-film is an active, complex microbial mix that adheres to the fins of the coil and protects the organisms from biocides. The bio-films themselves give off products of metabolism known as volatile organic compounds (VOCs) which may range in effects from eye, nose and throat irritation to headaches and nausea.

### How does HVAC bio-film impact HVAC energy use?

Biological fouling of evaporator fin and tube heat exchangers is a key contributor to decreased HVAC capacity. The biological fouling acts as an insulator, increasing air flow resistance and decreasing heat transfer. The fans run longer to maintain the home or building at the desired temperature, increasing kW draw with reduced cooling tonnage capacity.

### How often should I replace the UV bulbs?

Change out should be performed after about 9,000 hours or 12 months.

# FAQs

## Humidifiers

### How do I know when my Carrier humidifier is operating?

If the humidity in your home is 45% or higher your Carrier humidifier will not run. This is because it's the highest humidity level our humidifiers will attempt to attain. If you turn your humidistat from 15% to 45% and the humidifier does not run this is verification the humidity in your home is above 45%. Once the humidity level drops below 45% your Carrier humidifier should operate anytime the furnace is producing heat and the indoor relative humidity is less than the humidification set point on your humidistat.

### Why does Carrier offer an automatic and a manual humidifier control for Carrier humidifiers?

Carrier feels it is important to offer a humidifier control option for all applications. The automatic digital humidifier control is highly advanced technology. An outdoor temperature sensor continuously reports changes in the outdoor temperature to the automatic digital humidifier control located on the cold air return duct. The automatic digital humidifier control uses this information to determine if the home requires additional humidity to balance humidification levels. However, we realize there are some applications where it is impractical or impossible to run an outdoor temperature sensor to the outside. This is the reason we provide a high-quality manual humidifier control for such applications. The automatic digital humidifier control also includes the option of operating in manual mode. Manual operation requires the homeowner to manually adjust the humidity level on the humidifier control as the outdoor temperature changes. Having these options allows flexibility to meet various customer's humidification needs.

### Should my Carrier bypass humidifier be installed on the supply plenum or the return air duct?

Carrier bypass humidifiers get their air movement through the water panel by the differential pressure between the supply (hot air) plenum and the return (cold air) duct. The supply plenum is under positive pressure and the return duct is under negative pressure. One of the advantages of a bypass humidifier is that it can be installed either on the supply plenum or on the return duct. No matter which duct the humidifier is mounted on, the air flows from the supply to the return through the humidifier. A bypass humidifier is designed to have no adverse effect on any component in the furnace, air cleaner or filter. Carrier humidifiers put "water vapor" into the air, not raw water. This is nature's way of getting relative humidity into the air.

### Do I replace or clean the water panel in my Carrier humidifier?

The water panels are designed to be used for the humidifier season and replaced. The Water Saver Bypass model (HUMCRWBP2417) requires replacing the water panel every three months during the humidifier season. The Large Bypass

(HUMCRLBP2417), Small Bypass (HUMCRSBP2412), Fan-Powered Bypass (HUMCRLF1518) models require replacement every humidifier season. In some applications the water panels may require additional replacement. Reduced humidification levels can occur if the water panel is not replaced as described above. This is because some of the minerals left behind from the evaporation process are permanently trapped in the water panel. The water panel will eventually become clogged with these minerals so less evaporation takes place. The result is less humidification.

### Will a UV lamp affect my Carrier humidifier?

A UV lamp may dry out the material used in the components of our Carrier humidifiers. The base of the humidifier along with the scale control insert (the three-sided component which the evaporative water panel slides into) can become powdery resulting in their requiring replacement. Carrier recommends locating the humidifier on the opposite side of the HVAC system from where the UV lamps are located or out of the direct line of the UV lamps to prevent this from occurring. Components requiring replacement due to UV affects are not covered under the Carrier warranty.

### What capacity (11.5, 20.5 or 23.3 gallons per day) should my Carrier steam humidifier be set up?

The Carrier steam humidifier can operate with 110-volt power (11.5 gallon per day capacity), 208-volt power (20.5 gallon per day capacity) or 240-volt power (23.3 gallon per day capacity). While 240-volt power is preferred to allow for the most capacity, the humidification requirement for a home is determined by the HVAC installer and will dictate which power supply to utilize.

## Dehumidifiers

### What is the desired level of humidity to set the Carrier dehumidifiers for?

Your comfort is the best measure of where to set the humidity level. Maintaining humidity levels below 60% can help prohibit mold growth.\* When first installed, a Carrier dehumidifier is designed to remove all the moisture in your home's air. Your home acts like a sponge so the moisture in the materials of your home is at the same level as the air. After drying the air, the materials of the home will release moisture back into the air until they are again at the same level. As a result, it is not uncommon for the dehumidifier to operate for an extended time when first installed.

### What is the MERV rating of the air filter in Carrier dehumidifiers?

The air filter is a MERV 8.

### How loud are Carrier dehumidifiers?

Carrier dehumidifiers are extremely quiet and average less than 50 dB (when ducted).

\* <https://www.cdc.gov/niosh/topics/indoorenv/temperature.html>



# FAQs

## What are the electrical needs of the dehumidifier?

All Carrier dehumidifiers are 110–120 VAC. The DEHCRADB1070 draws 6.3 amps, the DEHCRADB1095 draws 8 amps.

## Do dehumidifiers dehumidify in the winter?

Carrier dehumidifiers are designed to control airborne moisture in areas where the ambient indoor temperatures are 65° F – 80° F. If the ambient air temperatures are lower than 65° F, there is less moisture in the air because colder air doesn't hold as much moisture as warmer air. As a result, our dehumidifier's will remove less moisture at lower temperatures.

Dehumidifiers, including Carrier dehumidifiers are not designed to pull moisture off a surface. This includes windows, walls and floors. For a dehumidifier to attempt to remove moisture, the moisture needs to be in the air.

During the summertime, our Carrier dehumidifiers are designed to maintain an indoor relative humidity of 45% at an indoor ambient temperature of 75° F (52° F dew point). Typical wintertime conditions in a home are 70° F indoor ambient temperature with a relative humidity of 35% (41° F dew point). The lowest dew point Carrier dehumidifiers will attempt to achieve is 40° F dew point. As a result, our Carrier dehumidifiers usually will not operate in the wintertime.

Moisture will form on windows anytime the surface temperature of the window is lower than the dew point temperature of the ambient air. For example, indoor ambient conditions of 70° F and, 40% Relative Humidity have a dew point temperature of 44° F. When the outside temperature is 0° F and the surface temperature of the glass at 43° F, condensation will form on the windows because the glass surface temperature is below dew point temperature. In comparison, indoor ambient conditions of 70° F and 30% Relative Humidity has a dew point temperature of 37° F. When the outside temperature is 0° F and the glass surface temperature is 43° F no condensation will form on the windows because glass surface temperature is above the dew point temperature.

To remove moisture from windows during the wintertime, a ventilation product is recommended.

## Ventilators

### What is the difference between a Heat Recovery Ventilator (HRV) and an Energy Recovery Ventilator (ERV)?

HRVs will transfer temperature from the high temperature air stream to the low temperature air stream. ERVs transfer both temperature and moisture. Since transferring temperature and moisture has benefits in the winter and summer, ERVs are recommended in climates with high humidity.

### What types of heating and cooling systems can an ERV or HRV be installed with?

An ERV or HRV can be interfaced with any forced air HVAC

system. It can also be used as an independent ventilation system in homes without a forced air HVAC system. The HVAC installer will know the preferred method of installation for each application.

### What is the main benefit of an ERV or HRV?

An ERV or HRV continually dilutes odors and/or indoor pollutants, by introducing fresh outside air to provide a healthier indoor environment.

### Can I use an ERV or HRV all year?

Yes. You can keep your windows closed and operate the ERV or HRV throughout the year while efficiently producing a fresher indoor environment.

### How does an ERV or HRV function?

Fresh air is continually brought into the home by the system and a like amount of stale indoor air is exhausted at the same time; in other words, the same amount of air is being exchanged. However, the hot or cold energy (depending on the season) is extracted from the indoor air before it's exhausted and transferred to the incoming air, so that there is little energy lost.

## Carbon Monoxide Alarms

### What is Carbon Monoxide (CO)?

CO is a colorless, odorless and tasteless poison gas that can be fatal when inhaled. It is sometimes called the "silent killer." CO inhibits the blood's capacity to carry oxygen. CO can be produced when burning fuels such as gasoline, propane, natural gas, oil or wood. CO is the product of incomplete combustion. If you have fire, you have CO.

### Where does CO originate?

CO originates from any fuel-burning appliance that is malfunctioning or improperly installed. Appliances can include furnaces, gas range/stove, gas clothes dryer, water heater, portable fuel-burning space heaters, fireplaces, generators and wood burning stoves. In addition, CO can originate from vehicles, generators and other combustion engines running in an attached garage. Lastly, CO can also originate from a blocked chimney or flue, a cracked or loose furnace exchanger, back drafting and changes in air pressure, and operating a grill in an enclosed space.

### What are CO poisoning symptoms?\*

Initial symptoms can present similarly to the flu without a fever and can include dizziness, severe headaches, nausea, sleepiness, fatigue/weakness and disorientation/confusion.

### What are the effects of CO exposure?\*

*Common Mild Exposure* – Slight headache, nausea, vomiting, fatigue, flu-like symptoms.

*Common Medium Exposure* – Throbbing headache, drowsiness, confusion, fast heart rate.

\* <https://www.epa.gov/indoor-air-quality-iaq/carbon-monoxides-impact-indoor-air-quality>

# FAQs

*Common Extreme Exposure* – Convulsions, unconsciousness, brain damage, heart and lung failure followed by death.

If you experience even mild CO poisoning symptoms, immediately call for medical attention!

## **Do I need a CO Alarm?**

Every home with at least one fuel-burning appliance/heater, attached garage or fireplace should have a carbon monoxide alarm. If the home has only one carbon monoxide alarm, it should be installed in the main bedroom or in the hallway outside of the sleeping area. An alarm should be installed on every level of the home and in sleeping areas. Place the alarm at least 15 feet away from fuel-burning appliances. Make sure nothing is covering or obstructing the unit. Do not place the unit in dead air spaces or next to a window or door. Test the carbon monoxide alarm once a week by pressing the test/reset button. Every month unplug the unit and vacuum with a soft-brush attachment or wipe with a clean, dry cloth to remove accumulated dust.

## **Should my CO Alarm have a digital display?**

A digital display allows you to see if CO is present and respond before it becomes a dangerous situation. Peak Level Memory stores the highest recorded reading prior to being reset. This feature enables you to know if there was a reading while you were away from home and can help emergency responders determine the best treatment.

## **What steps should I take to prevent CO poisoning?**

Properly equip your home with carbon monoxide alarms on every level and in sleeping areas. The only safe way to detect CO in your home is with a CO alarm. Every year have the heating system, vents, chimney and flue inspected by a qualified technician. Regularly examine vents and chimneys for improper connections, visible rust and stains. Install and operate appliances according to the manufacturer's instructions. Only purchase appliances that have been approved by a nationally recognized testing laboratory. Never use a gas range/stove to heat the home. Never leave your car idling in a closed garage or use fuel-powered appliances or tools in enclosed, attached areas such as garages or porches. Carbon monoxide can seep into your home through vents and doors.

## **What should I do if my CO alarm sounds?**

If anyone is experiencing symptoms, you need to get everyone into fresh air and call 911. If no one is experiencing symptoms, you should call the fire department or a qualified technician to have the problem inspected. If you are unable to leave the home, open the doors and windows, and turn off all possible sources while you are waiting for assistance to arrive. Under no circumstance should an alarm be ignored!



# Selling Tips: Healthier Profits from Healthy Home Air

Selling Indoor Air Quality (IAQ) products is more than just adding an Infinity® air purifier to every estimate – although that’s a good start! It takes a dedicated effort on your part to understand common issues found in many homes, match those issues with the Carrier IAQ product that can make a difference, and present the homeowner with real solutions for achieving healthier home air and peace of mind.

## What is Healthy Home Air?

Healthy home air is our way of describing indoor air quality in the home as it relates to its occupants. The first step to selling IAQ products is understanding common indoor pollutants, their sources, and their impacts on homeowners.

### Common Indoor Pollutants and Their Impact on Homeowners

Common Pollutant	Source*	Impact on Homeowner
Airborne bacteria and viruses	Airborne droplets, mucus	Cough, cold, flu, infectious disease
Mold/mildew	Water leakage, humidity	Irritated eyes, nose, throat, skin
Volatile organic compounds (VOCs)	Manmade household materials and dry cleaning	Nose and throat discomfort, headaches
Carbon Monoxide (CO)	Fuel-burning appliances, fireplaces	CO poisoning
Allergens	Dust mites, mold, pollen, animal dander, smoke, or household chemicals	Triggers allergies and asthma
Secondhand smoke	Tobacco smoke, fireplaces	Cardiovascular disease, lung cancer
Pet Dander	Cats, dogs, birds, rodents	Irritated eyes, nose and lungs
Odors	Kitchens, bathrooms, exercise rooms	Unpleasant living conditions

\* <https://www.epa.gov/indoor-air-quality-iaq/care-your-air-guide-indoor-air-quality>

## Treat the Problem, Not the Symptom

Homeowners may attempt surface-level solutions – frequent cleaning, portable air cleaners or room dehumidifiers. With Carrier IAQ products, you can take steps to improve indoor air quality and comfort throughout your home.

## Observe, Ask, Educate

Now it’s time to connect the dots and integrate Carrier IAQ into your sales process every time you enter a customer’s home. We recommend a three-step method:

**1**

**Observe** the homeowner’s situation using all of your senses to detect home air quality issues.

**2**

**Ask** questions to further identify healthy home air needs and issues, then carefully listen to the answers.

**3**

**Educate** the homeowner about how Carrier IAQ products address airborne pollutants, improve comfort and enhance system performance.

# Selling Tips con't

Here are some examples:

Observe	Ask	Educate
<b>Pets:</b> Water/food dishes, pet toys, litter boxes, pet hair on furniture, etc.	- Have you noticed an increase in sneezing when your pets are indoors more during the day? - Do visitors ever mention a lingering pet odor?	- Air purifier, air filter or air scrubber to reduce dander - HRV/ERV or fresh air vent to reduce odors from particulates
<b>Mold/Mildew:</b> Spots on walls/ceilings, musty smells in bathrooms or basements	- Have you noticed mold/mildew growth in basement or bathroom? - Do you notice a musty smell in the air?	- Dehumidifier to reduce moisture to inhibit the growth of mold/mildew - HRV/ERV or fresh air vent to replace indoor musty air with fresh outdoor air
<b>Allergy Sufferers:</b> Nebulizers or inhalers, boxes of tissues in multiple locations	- Does anybody have asthma? - Does anybody have allergies? - Tree allergies (March – May) - Ragweed (August – October) - Dust, mold, pet dander (winter months)	- Air purifier, air filter or air scrubber to help reduce airborne pollutants/triggers
<b>Potential CO Sources:</b> Attached garage, gas appliances, fireplace	- Do you warm up your car in the garage? - Do you use your fireplace? - Do you have your gas appliances serviced/inspected regularly?	- CO alarm to signal dangerous levels of CO - HRV/ERV or fresh air vent to circulate fresh air
<b>Look for the Cook:</b> Cookbooks, spices or lots of fresh fruits and vegetables around the kitchen	- How often do you cook during the day? - Do you use gas or electric appliances? - Do visitors ever notice a lingering odor from cooking?	- Air purifier, air filter or air scrubber to reduce particulates - HRV/ERV or fresh air vent to reduce odors from particulates - CO alarm to signal dangerous levels of CO
<b>The Re-Modeler:</b> Paint cans and brushes, drywall spackle, tarps, tools	- Are you planning a home improvement project? - Does anybody have asthma? - Does anybody have allergies?	- Air purifier, air filter or air scrubber to help reduce airborne pollutants/triggers - HRV/ERV or fresh air vent to circulate fresh air
<b>Condensate:</b> Decaying window frames, water droplets on windows or walls, peeling wallpaper	- Do you notice water droplets on your windows? - How old are your windows? - How old is your home?	- Dehumidifier to reduce moisture to inhibit the growth of mold/mildew - HRV/ERV or fresh air vent to replace indoor musty air with fresh outdoor air

## One Last Piece of Advice – from AirAdvice

For many people, seeing is believing when it comes to air quality issues. That's why using the third-party AirAdvice test can be a big help for selling IAQ products. It's simple, fast, and can generate a report that you can review with a homeowner.

- Simply plug it in – it takes 30 minutes
- Data is collected, a report is generated and emailed to you
- Report includes pollutant levels, potential causes and recommended solutions

## Looking Ahead

We appreciate our entire network of outstanding dealers and your efforts in delivering exceptional home comfort and customer satisfaction. We are planning for another exceptional year with an added emphasis on the benefits of our IAQ products and the Infinity® air purifier.

We hope this guide is a helpful resource for you and that the materials within it allow you to capitalize on new opportunities and continue to find success making sales now and beyond.

# IAQ Terms

## Aerosol

An assemblage of small particles, solid or liquid, suspended in air. The diameter of the particles may vary from 100 microns down to 0.01 microns.

*Examples:* dust, smoke, fog

## Air

The mixture of gases that make up the atmosphere. Air is composed of 78% nitrogen and 21% oxygen. The balance consists of smaller amounts of gases that vary with the location in which the air is sampled.

## Air Change

A measure of the amount of air moving into and out of a space because of leakage or mechanical ventilation. One air change is a volumetric flow of air equal to the cub content of 10,000 cubic feet and the ventilation rate is 1000 cfm, 0.1 (1000/10,000) air change is occurring every minute, or 6 (60 x 0.1) air changes are occurring per hour.

## Air Flow

Quantity of air (cfm) passing through a given cross sectional area (ft<sup>2</sup>) at a stated velocity (fpm).

## Allergen

A biological or chemical substance that causes an allergic reaction. Common allergens include pollen, animal dander, dust and dust mites.

## ASHRAE

American Society of Heating, Refrigerating, and Air-Conditioning Engineers

## Asthma

A usually chronic inflammatory disorder constricting the airways characterized by difficulty in breathing.

## Bacteria

Single-celled microorganisms ranging from harmless and beneficial to intensely virulent and lethal.

## CDC

Centers for Disease Control and Prevention: the branch of the U.S. Public Health Service under the Department of Health and Human Services charged with the investigation and control of contagious disease in the nation.

## CFM

Cubic feet per minute

## CFU

Colony forming unit. A single microorganism or a cluster of microorganisms which when cultured on suitable nutrient will form a single visible colony.

## CO

Carbon monoxide is a poisonous, colorless, odorless and tasteless gas. CO is a common industrial hazard resulting from the incomplete burning of material containing carbon such as natural gas, gasoline, kerosene, oil, propane, coal, or wood.

## Dander

Small scales of animal skin.

## Dehumidify

To remove water vapor from an air stream or from air in a space.

## Dust

An aerosol of particles of any solid material, usually with particle size less than 100 microns.

## EPA

Environmental Protection Agency: an independent federal agency, created in 1970, that sets and enforces rules and standards that protect the environment and control pollution.

## Filter Media

Material that makes up the filter element. Glass fibers and polyester fibers are examples of filter media. ("Media" is the plural of "medium". Common practice allows it to be used in the singular and "medias" as the plural).

## FPM

Feet per minute

## Gas

A fluid that has no fixed dimensions and fully occupies the space that contains it. (2) Vapor phase or state of a substance.

## HEPA

High Efficiency Particulate Air (filter). Certified HEPA filters must achieve an efficiency of 99.97% for particles down to 0.3 microns.

## IAQ

Indoor air quality

# IAQ Terms

## MERV

Minimum Efficiency Reporting Values, or MERVs, report a filter's ability to capture larger particles between 0.3 and 10 microns ( $\mu\text{m}$ ).

## Microbe

A microscopic single-cell organism.

## Micron

One millionth of a meter. A micron is more correctly known as a micrometer. There are 25,400 microns per inch.

## Mold

A fungus that grows on damp decaying organic matter. It is characterized by a fuzzy mat surface.

## Odor

A quality of gases, liquids, or particles that stimulates the olfactory organ.

## Particles

Very small solid or liquid substances that are light enough to float suspended in the air.

## PPM

Parts per million. A common measurement used to identify the concentration of gaseous contaminants in the air.

## Pressure Drop

The resistance of a device to the flow of a fluid through it. The pressure drop of a filter is a measure of its resistance to airflow through it. Resistance is measured in inches w.g. in the Inch-Pound system of measurement. It is measured in Pascals in the SI system.

## Radon

Radioactive pollutants which originate from natural sources such as rock, soil or groundwater.

## Respirable Particulates

Pollutants in the air that can be inhaled.

## UV

Of electromagnetic radiation having a wavelength shorter than that of the violet end of the visible spectrum but longer than that of X-rays.

## Vapors

Gases formed by the evaporation of materials that are normally liquids or the sublimation of materials that are normally solids.

## Ventilation

The introduction of outdoor air into a building by mechanical means.

## VOC

Volatile Organic Compound. It is released (off-gassed) into the air at room temperature. Common sources which may emit VOCs into indoor air include housekeeping and maintenance products, and building and furnishing materials. In sufficient quantities, VOCs can cause eye, nose, and throat irritations, headaches, dizziness, visual disorders, memory impairment; some are known to cause cancer in animals; some are suspected of causing, or are known to cause, cancer in humans. At present, not much is known about what health effects occur at the levels of VOCs typically found in public and commercial buildings.



# Where To Go For More Information

## HVACpartners

Visit [HVACpartners.com](https://HVACpartners.com) for access to all the launch kit content.

Go to: HVACpartners > Marketing Tools > Sales Tools > Marketing Launch Kits > IAQ Products

## Training Modules

Visit [MLCTraining.com](https://MLCTraining.com) for access to My Learning Center and look for these Indoor Air Quality courses:

- Healthy Home Air Products (IAQ)
- OptiClean™ Negative Air Machine (NAM) & Air Scrubber
- Healthy Home Air 101: Indoor Air Quality Issues & Solutions
- IAQ Sales Simulations

# Reference Footnotes

<sup>1</sup> The Infinity® air purifier has demonstrated effectiveness against the murine coronavirus, based on third-party testing (2020) showing a >99% inactivation, which is a virus similar to the human novel coronavirus (SARS-CoV-2) that causes COVID-19. Therefore, the Infinity air purifier can be expected to be effective against SARS-CoV-2 when used in accordance with its directions for use. Third-party testing (2012, 2007) also shows ≥99% inactivation for the type of virus that causes common colds, Streptococcus pyogenes and human influenza. Airborne particles must flow through your HVAC system and be trapped by the Infinity filter to be inactivated at 99%.

<sup>2</sup> <https://www.airadviceforhomes.com/contractors/airadvice-for-homes/>

<sup>3</sup> [https://www.ashrae.org/file%20library/technical%20resources/ashrae%20journal/2020journaldocuments/72-74\\_ieq\\_schoen.pdf](https://www.ashrae.org/file%20library/technical%20resources/ashrae%20journal/2020journaldocuments/72-74_ieq_schoen.pdf)

<sup>4</sup> <https://www.epa.gov/report-environment/indoor-air-quality>

<sup>5</sup> <https://www.epa.gov/iaq-schools/why-indoor-air-quality-important-schools>

<sup>6</sup> <https://www.epa.gov/report-environment/air>

<sup>7</sup> <https://www.epa.gov/indoor-air-quality-iaq/care-your-air-guide-indoor-air-quality>

<sup>8</sup> <https://blog.epa.gov/2014/04/28/how-many-breaths-do-you-take-each-day/>

<sup>9</sup> Test data obtained by running ASHRAE 52.2 2012 version.

<sup>10</sup> MERV is a filter efficiency standard ranging from 1 to 16 (higher MERV = higher efficiency). The Infinity air purifier achieves a MERV 15 rating based on third-party testing (2012) showing 95% of particles size 1.0 to 3.0 microns captured and 85% of particles size 0.3 to 1.0 microns captured.

<sup>11</sup> <https://aem.asm.org/content/aem/76/9/2712.full.pdf>

<sup>12</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7293495/>

<sup>13</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7224694/>

<sup>14</sup> [https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html?CDC\\_AA\\_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fspecific-groups%2Fguidance-business-response.html](https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fspecific-groups%2Fguidance-business-response.html)

<sup>15</sup> To the original owner, the Infinity air purifier, ultraviolet germicidal lamp base, humidifiers, carbon monoxide alarm, heat recovery ventilators and energy recovery ventilators are covered by a 10-year parts limited warranty upon timely registration. The limited warranty period is five years if not registered within 90 days of installation except in jurisdictions where warranty benefits cannot be conditioned upon registration.

To the original owner, the Carrier fresh air vent and dehumidifier are covered by a five-year limited warranty.

The Carrier ultraviolet germicidal lamp bulbs are covered by a 90-day parts limited warranty.

See warranty certificate at [carrier.com](https://carrier.com) or included in product literature for complete details and restrictions.



Turn to the experts

HEALTHYHOMES

01-IAQ-078-01  
10/6/2020

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