



# A Guide to Understanding Indoor Air Quality Solutions

# Why Is Indoor Air Quality Important?

Poor indoor air quality (IAQ) is a serious problem facing homeowners today, according to the American Lung Association.<sup>®</sup> The roots of this problem can be traced directly to the desire for energy-efficient homes to minimize the effects of higher energy costs. Unfortunately, making homes tighter and more energy efficient also reduces the naturally occurring exchange of indoor and outdoor air. Fresh outside air stays out, while air pollutants, excessive humidity and/or overly dry conditions stagnate the indoor air over time.

While homeowners can't see the majority of indoor air contaminants, they certainly see the effects. These microscopic particles slowly stain walls, ceilings, furniture, drapes and carpets. Lack of humidity control can keep a home damp and sticky, while excessive dryness can crack woodwork and antiques, or create static electricity and dry skin. Particles attaching to your home's interior have to be scrubbed, laundered or dry cleaned away at the expense of the homeowner's time, money and effort.

But costly cleaning isn't the only consequence of dirty, humid, or dry indoor air. It is estimated that one in ten people living in North America suffer from asthma or allergies, and pollen, mold spores and dust-mite debris are among the most troublesome triggers of such ailments. Likewise, bacteria and viruses that can be found in indoor air have the potential to cause and spread disease.

Every cubic foot of air breathed carries a mixture of millions of these tiny annoyances. In small concentrations, these particles and gases may cause discomfort in the home. In significant concentrations, they can cause sickness.



# Indoor air quality is maintained in three ways — source control, dilution and reduction

## Controlling Indoor Air Pollution

### *Source Control*

Involves eliminating air pollutants before they enter the home. For example, by not allowing people to smoke or have pets in the home, homeowners practice source control. Such examples are not always practical. Installing whole-house humidifiers, dehumidifiers and UV Treatment Systems help stop the problem before they start. By maintaining optimal relative humidity levels in the home with humidity control equipment, and sterilizing pathogens with UV Treatment Systems, homeowners deter such harmful contaminants as mold, mildew, bacteria and viruses from forming.

### *Dilution*

Replaces a portion of the indoor air with fresh outdoor air. This process occurs naturally in all homes, but at different rates depending on the structure's tightness. Opening windows is one way to increase the pace of air exchange, although it can be an energy-wasting solution. Energy-efficient ERV and HRV ventilation systems exchange indoor air for outdoor air while recovering most of the energy used to heat or cool the air being exhausted. Controlling fresh air entering the home allows it to be conditioned by an efficient air cleaner, dehumidifier and UV Treatment System prior to passing through the home's furnace or air conditioner.

### *Reduction*

Filters or neutralizes particulates found in indoor air. Air cleaners installed just ahead of the heating and cooling equipment remove a portion of airborne pollutants each time air is pulled into the return air ducts.

## Their Home. Your Solution.

To offer homeowners the best solution for maintaining good air quality in their homes, use the key questions below to uncover their concerns and pressure points:

- Are there smokers, pets or sources of pollen or bacteria in the home?
- Do you have dry air?
- Do odors linger in the home?
- Does the air feel sticky or damp?
- Do family or friends have allergies or asthma?
- Are there children living in the home?
- Do you have static cling or experience static shocks in the winter?
- Are there wood furnishings, woodwork, artwork, musical instruments or collectibles that need to be protected and preserved?
- Do you have condensation on windows when temperatures drop?

# Why Honeywell Indoor Air Quality Solutions?



## *Proven Experience*

With over 100 years in the heating and cooling business and over 50 years in the IAQ product business, Honeywell knows the HVAC system inside and out. It's that experience and knowledge — combined with feedback from hundreds of contractors across North America — that allows us to develop IAQ product solutions that work with today's varying systems and unique applications. When it comes to comfort and indoor air quality, you can count on Honeywell to deliver solutions that maximize efficiency, effectiveness and performance.



## *Customer-Driven Innovation*

When it comes to product design, Honeywell's experience is just the beginning. Just as important are insights from contractors and homeowners about how they wish products worked, installation issues they'd like solved and more. It's the practical use of these insights that make Honeywell innovations true innovations — the kinds that contractors are comfortable installing and homeowners are comfortable using.

- TrueSTEAM™ Humidifiers — Installation ease and flexibility with a more consistent level of humidity independent of the HVAC system.
- PopUP™ Media Replacement Filter — A high efficiency filter with no assembly required, less storage space and increased replacement sales.

From Air Cleaners to Dehumidification, Honeywell has and will continue to listen to your needs and provide the highest-quality, innovative HVAC product solutions.



## *Industry-Leading Support*

Honeywell backs every product — and every contractor and homeowner — with unmatched technical, product and sales support. From a network of knowledgeable local sales reps and toll-free support to online and on-site training to product websites, Honeywell delivers support as innovative and top-quality as its products.

### **Online Resources**

- [www.forwardthinking.honeywell.com](http://www.forwardthinking.honeywell.com)
- [www.customer.honeywell.com](http://www.customer.honeywell.com)
- [www.literature.honeywell.com](http://www.literature.honeywell.com)

### **Toll-Free Customer Service**

- Homeowner and Dealer Support 1-800-468-1502
- TrueSTEAM, Ventilation and Dehumidification Support 1-800-814-9452
- Contractor PRO™ Priority Support 1-877-880-3383
- Order Support Lines

### **Local Support Through Your Honeywell Contractor Development Specialist**

Learn more about available Honeywell support on the back cover.

# All-In-One Control

*Honeywell's experience and understanding of HVAC products shine through in the convenient, efficient ways Honeywell products work with the home's system.*

## Easier To Use

All-in-one controls combine temperature control and IAQ control into one convenient unit. So rather than a thermostat, humidistat and ventilation control, homeowners can have one attractive, easy-to-use control on the wall.

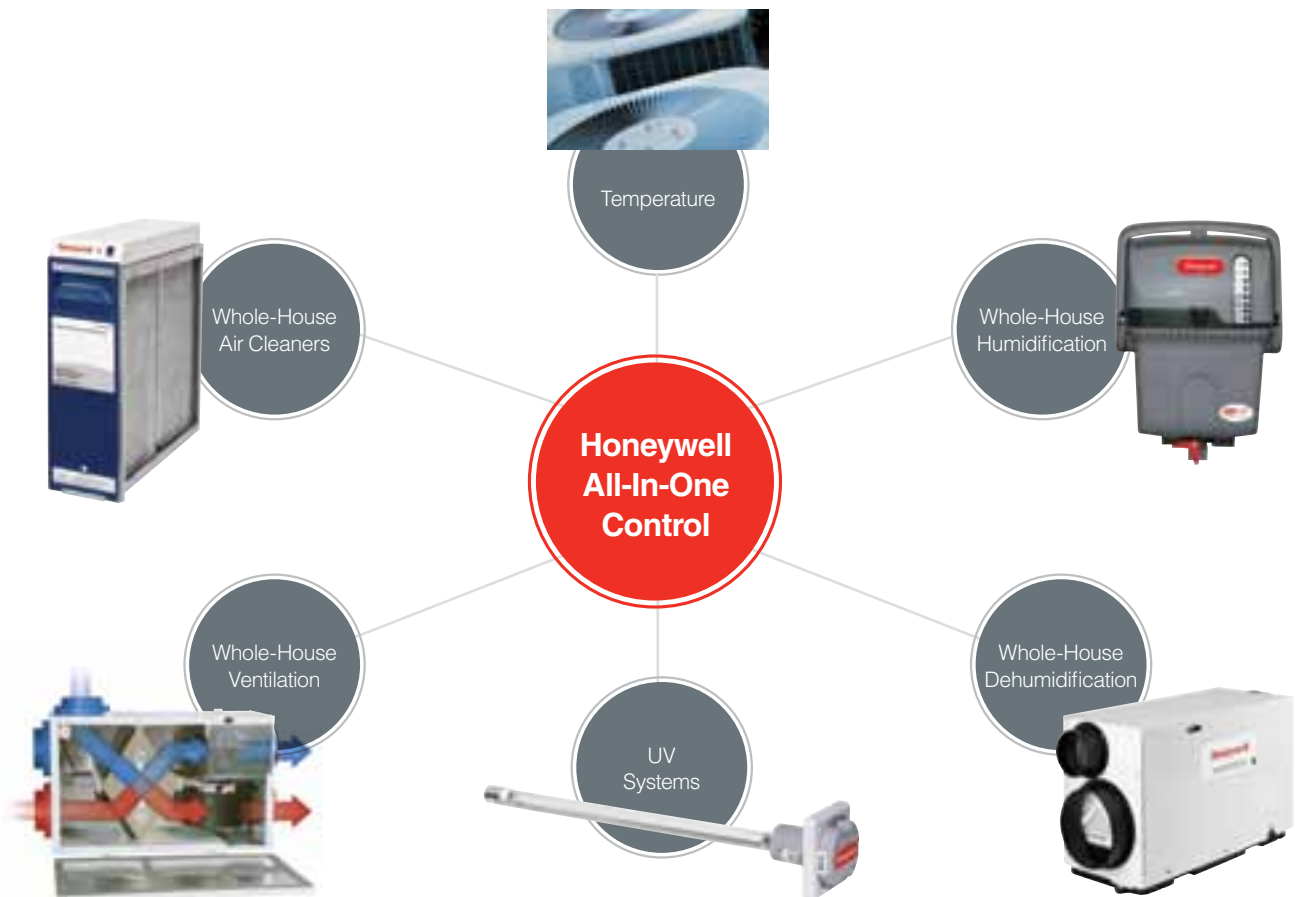
## Easier To Install

Honeywell's complete selection lets you choose the all-in-one control with the options that best suit your needs: running fewer wires, integrating fan control, wireless sensors and more.

## Easier to Control

Because all of the elements are integrated into one intelligent control, the home's system works more effectively.

Whether you need to control one IAQ product or an entire system from one control, Honeywell offers the ideal choice to meet your needs.



# Air Filtration and Performance

*You can help homeowners compare air-cleaning options by helping them understand the differences in air filtration efficiency ratings and the importance of maintaining airflow as the filter gets dirty.*

## Measuring Air Filtration Performance

Air filtration efficiency depends on the type of air cleaner used, and the type, number and size of the particles in the air stream. It varies from as little as 3% for ordinary throw-away fiberglass filters, to up to 100%<sup>1</sup> for Honeywell's electronic air cleaner.

Every time the furnace or air conditioner operates, the blower motor circulates air through the ductwork. The force it must overcome to move this air is called "static pressure." All air cleaners, because they are designed to capture particles, present a barrier to airflow. This barrier causes air pressure in the ductwork to drop as the blower motor pulls air through the air cleaner.

This is important because air cleaner efficiency ratings can be related to static pressure and pressure drops. Achieving an apples-to-apples comparison between different air cleaners can be a difficult task because manufacturers may measure efficiency at different airflows and pressures.

## Types of Efficiency Testing

**Fractional Efficiency Testing** measures the efficiency of media filters and electronic air cleaners by size of particle captured. The higher the test figure, the higher the efficiency.

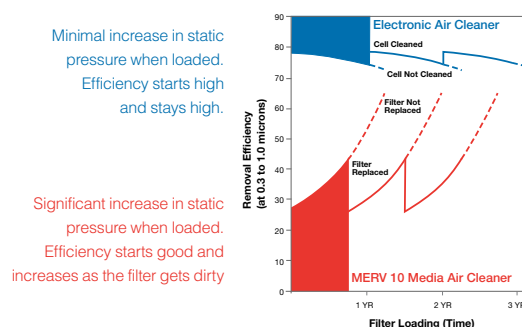
**Minimum Efficiency Reporting Value (MERV)** based on Fractional Efficiency Testing, MERV measures the efficiency of media air filters and cleaners that have been in service for a period of time. The higher the media MERV rating, the better the efficiency over the life of the filter. See page 10 for more detail.

**Weight Arrestance Testing** measures the weight of particles trapped by the air cleaner. This efficiency method is typically used for filters that have a MERV less than 4. A small fraction of all particles (10%) account for 99% of the weight of all particles in the air. These heavy particles tend to settle from the air before reaching an air cleaner.

**Initial pressure drop** measures the decrease in air pressure across brand-new media filters or recently cleaned electronic air cleaners. The lower the pressure drop, the better the airflow in the HVAC system.

Honeywell air cleaners are tested using the Fractional Efficiency Testing, MERV Testing, and Initial Pressure Drop measurements, Weight Arrestance Testing does not differentiate high-efficiency filters.

Comparing Efficiency of Electronic Vs. Media as They Get Dirty



Common knowledge says that media air cleaners get more efficient and electronic air cleaners get less efficient as they get dirty. What you may not know is that Honeywell's electronic air cleaners stay highly efficient – even more efficient than a dirty media filter. That's what you get when you work on a design for 50 years.

## What are Airborne Particles and Where Do They Come From?

You may be surprised to learn that some common household items pollute the air you breathe, including:

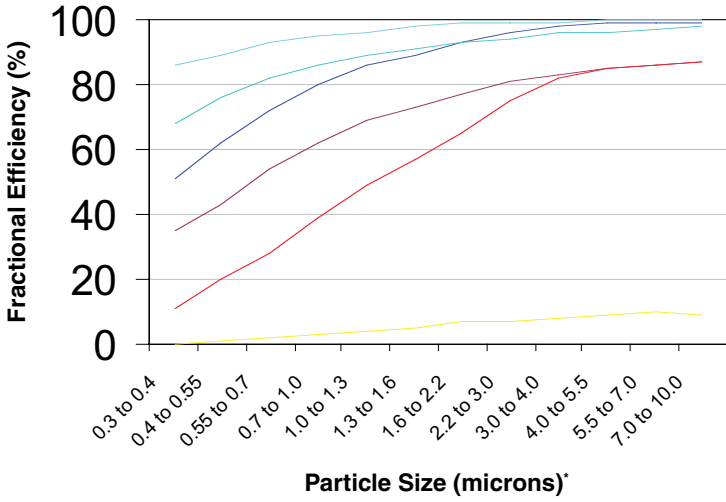
- Pollen and spores
- Human skin flakes
- Candle soot
- Infiltrating dust
- Viruses, bacteria and fungi
- Pet dander
- Tobacco or wood smoke
- Cooking smoke and airborne grease
- Radon gas seeping through the walls and foundations
- Chemical fumes and volatile organic compounds generated by household cleaners

Every cubic foot of air you breathe carries a mixture of millions of such airborne particles — objects so small you could fit 749 of them in the eye of a needle!

Although the larger particles are more visible, and catch attention more easily, the smallest of these particles are of greatest concern for indoor air quality. Viruses, bacteria, smoke and grease are among the smallest and can be most damaging to the home and the individuals who live there.

Honeywell provides a wide variety of air filters and air cleaners that reduce the number of airborne particulates flowing into the home.

Initial Efficiencies<sup>3</sup>

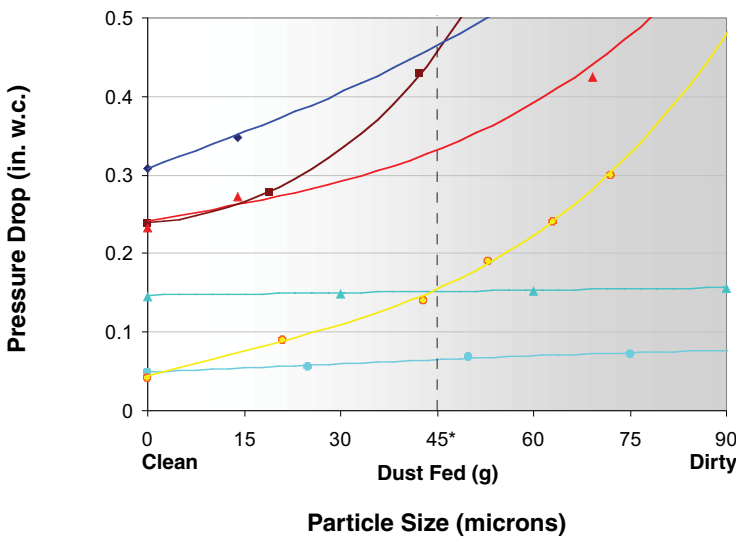


Filter Efficiency

This chart illustrates the efficiency of different filter types based on particle size.

- FC200
- PopUP
- FC100
- F300A at 500fpm
- F300A at 300fpm
- 1" Filter

Pressure Drops as Filter Gets Dirty<sup>2</sup>



Filter Life

This chart illustrates increasing pressure drop as the filter gets dirty.

- FC200
- PopUP
- FC100
- F300A at 500fpm
- F300A at 300fpm
- 1" Filter

\*Approximately 6 months.

Growing Demand

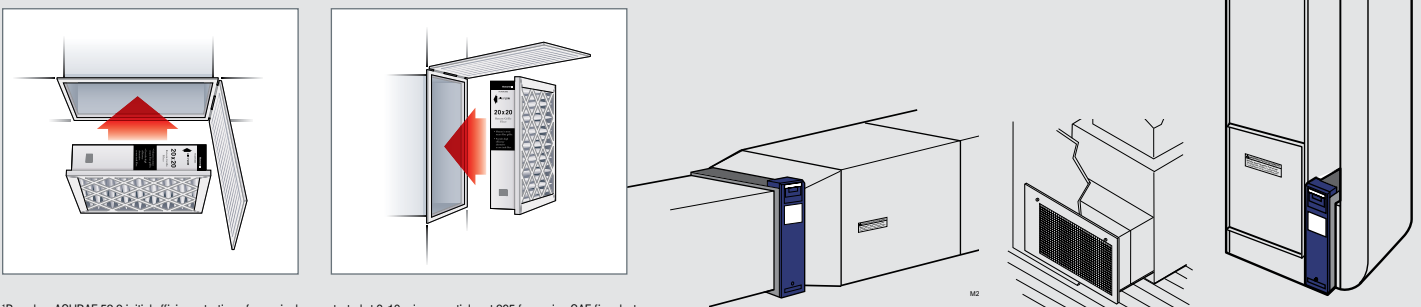
Consumer demand for air cleaners has been on the rise in recent years. According to the Environmental Protection Agency (EPA), indoor air can be 2 – 5 times more polluted than outdoor air. Informing homeowners of how filtered air can increase overall comfort is an important selling point.

Signs That A Home Needs Air Filtration

- Pets
- Allergy issues
- Portables in multiple locations
- Central air conditioning






Typical Installations

The air cleaner or filter should be installed where maximum air circulation is passing through the HVAC system. The best location is in the return air duct next to the blower compartment so the air cleaner can help to keep the blower motor and evaporator coils clean. For the most efficient air cleaning, spread airflow evenly across the face of the media, and choose a location that is readily accessible for filter maintenance.



<sup>1</sup>Based on ASHRAE 52.2 initial efficiency testing of new air cleaners tested at 3-10 micron particles at 295 fpm using SAE fine dust.  
<sup>2</sup>Based on ASHRAE 52.2 efficiency testing of new air cleaners using SAE fine dust.  
<sup>3</sup>Based on ASHRAE 52.2 initial efficiency of new filters.

# Honeywell Air Cleaners and Filters

	Model	Type	OS#	Size	Application	Rated Airflow	Electric Rating	Efficiency (MERV/not applicable to electronic air cleaners)	Initial Pressure Drop at Rated Airflow	
	F500	HEPA	F500A1000	Conditioned Space	Bypass or Stand Alone	360 CFM	120V	0.3 microns=99.97%	N/A	3200 3200602 320060
			F500B1009	Unconditioned Space						
	F300E	Electronic	F300E1001	16X20	Inline air filtration	1200 CFM	120V	Initial efficiency at 295 FPM 0.3 to 1.0 microns=91% 1.0 to 3.0 microns=98% 3.0 to 10.0 microns=100%	0.05 at 295 0.26 in. w.c.	50
			F300E1019	16X25		1400 CFM				50
			F300E1027	20X20		1400 CFM				50
			F300E1035	20X25		2000 CFM				50
	F300A,B		F300A1620	16X20	Inline air filtration	1200 CFM	120V	Initial efficiency at 492 FPM 0.3 to 1.0 microns=78% 1.0 to 3.0 microns=92% 3.0 to 10.0 microns=97%	0.15 at 492 0.21 in. w.c.	50
			F300A1625	16X25		1400 CFM	120V			50
			F300A2020	20X20		1400 CFM	120V			50
			F300A2025	20X25		2000 CFM	120V			50
			F300A2012	20X12.5		1000 CFM	120V			50
			F300B2012	20X12.5		1000 CFM	240V			50
	F52F	F52F1048	20X12.5	Central return grille	1000 CFM	120V	0.3 to 1.0 microns=73% 1.0 to 3.0 microns=88% 3.0 to 10.0 microns=95%	0.2 in. w.c.		
		F52F1055	20X25		2000 CFM					
	F200E	Media	F200E1003	16X20	Inline air filtration	1200 CFM		MERV 13 at 492 FPM 0.3 to 1.0 microns=63% 1.0 to 3.0 microns=90% 3.0 to 10.0 microns=97%	0.3 in. w.c.	F
			F200E1011	16X25		1400 CFM				F
			F200E1029	20X20		1400 CFM				F
			F200E1037	20X25		2000 CFM				F
	F100F	Media	F100F2028	16X20	Inline air filtration	1200 CFM		MERV 10 at 492 FPM 0.3 to 1.0 microns=25% 1.0 to 3.0 microns=62% 3.0 to 10.0 microns=85%	0.23 in. w.c.	F
			F100F2002	16X25		1400 CFM				F
			F100F2036	20X20		1400 CFM				F
			F100F2010	20X25		2000 CFM				F
			F100F2044	25X20		2000 CFM				F
			F100F2051	25X22		2000 CFM				F

Central system air cleaners and filters are generically categorized by:

**Basic Furnace Filters**, which come standard with most HVAC systems. These filters only protect the furnace from bulk dust that can clog equipment; they do little to remove smaller particles from the air.

**High-Efficiency Particulate Air (HEPA) Filters** use deeply folded media to trap a minimum of 99.97% of 0.3 micron particles passing through the filter. HEPA filters come in portable, bypass ducted and stand-alone configurations. The Honeywell F500 HEPA filter can be used as a bypass or in-line configuration. Beware of manufacturers who use terms like "HEPA-style" or "HEPA-like" filters. Many manufacturers offer HEPA-style filters, but they may only be "close to" HEPA efficiencies or achieve HEPA efficiencies by circulating air through the filter numerous times. The Honeywell F500 meets the true definition of HEPA by removing 99.97% of the hardest to filter particles the first time through the filter.

**1. Media Filters**, which filter the air using webs of polypropylene fibers. Honeywell offers several media air cleaners and replacement filters, including space and time saving products like the PopUP™ media replacement filter. The PopUP™ simplifies installation and maintenance with a design that collapses down for space-saving shipping and self-assembles without the need for combs, pleat spacers or end caps.



Features and Functions							Warranty
Replacement Filter/ Postfilter	Standard Efficiency Enhancing Postfilter with Anti-Microbial Coating	AIRWATCH™ Maintenance Reminder	Maintenance Cycle	Self Regulating Power Supply	Dual Voltage Output Efficiency Optimization	Test Button Operating Verification	
6026-001 Carbon 7-001 2-inch Prefilter 28-001 HEPA Filter		Wireless reminder included	Carbon = up to 4 months 2-inch Prefilter = up to 16 mo. HEPA Filter = up to 5 years.				5 Year
0000293-001 0000293-002 0000293-003 0000293-004	Yes	Optional	Vacuum prefilter = up to 6 months Wash cells = up to 1 year Replace postfilter = 6 months	Yes	Yes	Yes	5 Year
0000293-001 0000293-002 0000293-003 0000293-004 0000293-004 0000293-004	Optional	Optional	Vacuum prefilter = up to 3 months Wash cells = up to 1 year	Yes	Yes	Yes	5 Year
		Optional	Vacuum prefilter = up to 3 months Wash cells = up to 1 year	Yes	Yes		5 Year
C200E1003 C200E1011 C200E1029 C200E1037		Wireless RF with pressure sensor included	Replace filter = up to 1 year				5 Year
C100A1003 C100A1029 C100A1011 C100A1037 C100A1037 C100A1037		Optional	Replace filter = up to 1 year				5 Year

**2. Electronic Air Cleaners**, which electrically charge and collect airborne particles on a collection grid. The Honeywell F300 EAC captures up to 100%<sup>1</sup> of airborne particles passing through the product. The design of the F300's collection grid section offers the most surface area available for collecting these charged particles. The F300 power supply also increases voltage based on the amount of particles collected on these plates, so that efficiency over time stays high; an important aspect in EAC selection.

**1 Here's How It Works**

Media Filters clean the air in three ways—straining, interception and diffusion.

First, coarse particles are strained out of the air like cooked pasta is strained when poured into a colander. Smaller particles are bumped and jostled about (interception) and move in random patterns (diffusion) until they run into a media fiber and are removed from the air stream. A magnetic charge can be added to the media fiber to attract naturally charged particles in the air and improve the removal efficiency.

Clean air circulated back through your home

**2 Here's How It Works**

The scientific name for the air cleaning process is—**Two-Stage Electrostatic Precipitation**

Most large particles are caught on the pre-filter screen. Smaller particles flow through the screen to the first section of the cell where they are zapped by an electrical charge. Charged particles are then trapped in the collecting section. The electronically cleaned air is circulated back to your home.

Air Flow

Electronically charged wires zap particles

Electronically charged plates attract particles like magnets

Electronically cleaned air circulated back through your home

PRE-FILTER SCREEN    STAGE 1 CHARGING SECTION    STAGE 2 COLLECTION SECTION    POST-FILTER SCREEN

# Honeywell Replacement Filters







Honeywell replacement filters come a wide variety of sizes and styles to fit nearly every application. For long-lasting, high-efficiency performance that doesn't compromise airflow, advise your customers to stick with quality Honeywell filters.

## What is MERV?

At its most basic, MERV (Minimum Efficiency Reporting Value) is a measure of filter efficiency. The MERV value takes information on the efficiency of the filter against a range of particles from coarse (such as pollens) to fine (such as smoke), then boils it down into one easy-to-understand number. The MERV number can be used to compare filters made by different manufacturers as long as testing conditions, such as air speed, are the same.

Filter Category	Airborne Contaminants Targeted*	Equipment Protection	Air Treatment Level
MERV 1 to 4 Coarse fiber filter	Pollen Airborne dust mite debris Carpet and clothing fibers	Minimal	-
MERV 5 to 8 Standard household filter	The above plus: Mold Plant Spores	Basic	Basic
MERV 9 to 12 Premiere household filter	The above plus: Auto emissions Airborne lead dust Airborne coal dust	Better	Improved
MERV 13 to 16 Hospital grade	The above plus: Certain bacteria Tobacco smoke Sneeze particles Cooking oil	-	Superior

\* From Cross-Reference and Application Guidelines (Table E-1, ASHRAE Standard 52.2).

	Model	OS#
<b>Cartridge</b>		
	FC200	FC200E1003
		FC200E1029
		FC200E1011
		FC200E1037
	FC100	FC100A1003
		FC100A1029
		FC100A1011
		FC100A1037
		FC100A1052
		FC100A1045
<b>PopUP</b>		
	POPUP	POPUP1620
		POPUP1625
		POPUP2020
		POPUP2025
		POPUP2200
		POPUP2400
<b>Perfect Fit</b>		
 <b>NEW</b>	TRN	TRN1427T1
		TRN1727T1
		TRN2121T1
		TRN2127 T1
		TRN2321T1
		TRN2427T1
		TRN2621T1
<b>Return Grill</b>		
	FC40	FC40R1094
		FC40R1037
		FC40R1102
		FC40R1110
		FC40R1128
		FC40R1045
		FC40R1169
		FC40R1052
		FC40R1060
		FC40R1136
		FC40R1185
		FC40R1830
		FC40R1003
		FC40R1144
		FC40R1011
		FC40R1029
FC40R1078		
FC40R1177		
 <b>NEW</b>	FC20	FC20R1625
		FC20R2020
		FC20R2025
		FC20R2030

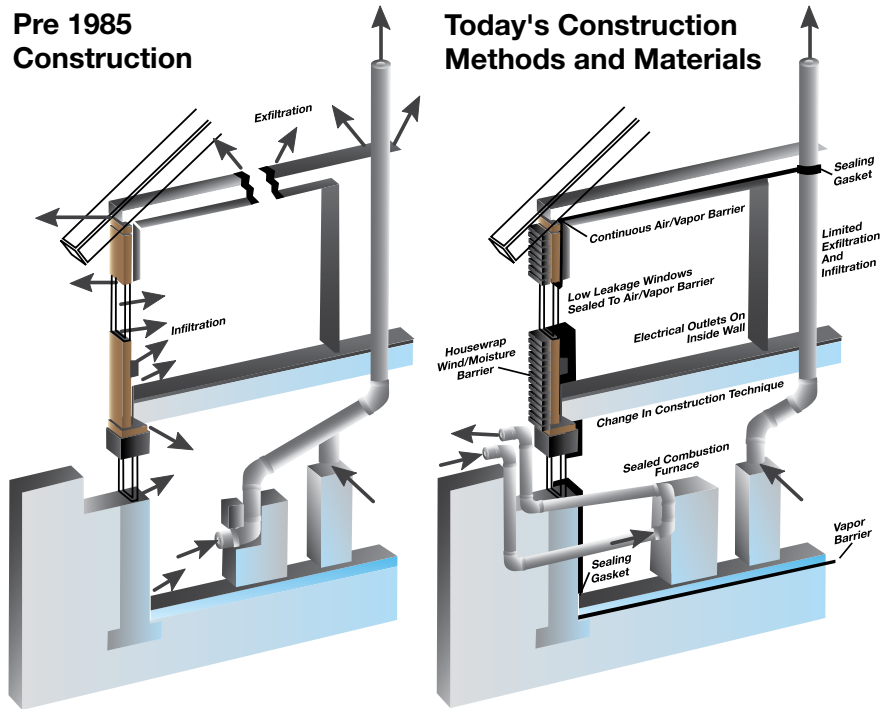
Aprilaire® is a registered trademark of Research Product Corporation and Perfect Fit™ is a registered trademark of American Standard Companies. Honeywell is not affiliated in any way with Research Product Corporation or American Standard Companies.

Size	Fits				Features and Functions			
	F100	F200	Apriliaire®	Perfect Fit™	Rated Airflow	Efficiency	Initial Pressure Drop at Rated Airflow	Maintenance Cycle
16x20x4	x	x			1200 CFM	MERV 13	0.31 in. wc	Replace filter every 6 to 12 months
16x25x4	x	x		1400 CFM				
20x20x4	x	x		1400 CFM				
20x25x4	x	x	x	2000 CFM				
16x20x4	x	x		1200 CFM	MERV 10	0.23 in. wc	Replace filter every 6 to 12 months	
16x25x4	x	x		1400 CFM				
20x20x4	x	x		1400 CFM				
20x25x4	x	x	x	2000 CFM				
20x12.5x4	F27FF1032			1000 CFM				
21.5x27.5x4	F27F1057			2000 CFM				
16x20x5	x	x		1200 CFM	MERV 11	0.24 in. wc	Replace filter every 6 to 12 months	
16x25x5	x	x		1400 CFM				
20x20x5	x	x		1400 CFM				
20x25x5	x	x		2000 CFM				
20x25x5			x	2000 CFM				
16x28x5			x	2000 CFM				
14.5x27x5				x	1400 CFM	MERV 10	0.17 in. wc	Replace filter every 6 to 12 months
17.5x27x5				x	1600 CFM			
21.5x21x5				x	1600 CFM			
21x27x5				x	2000 CFM			
23.5x21.5				x	1800 CFM			
24x27x5				x	2500 CFM			
26x21x5				x	2000 CFM			
12x12x4	Replaces 1 inch filters in filter grills.				500 CFM	MERV 10	0.12 in. wc at 2 cfm per sq. in.	Replace filter every 6 to 12 months
12x24x4					1000 CFM			
14x14x4					680 CFM			
14x20x4					972 CFM			
14x24x4					1167 CFM			
14x25x4					1215 CFM			
14x30x4					1458 CFM			
16x20x4					1111 CFM			
16x25x4					1389 CFM			
18x24x4					1500 CFM			
18x18x4					1125 CFM			
18x30x4					1875 CFM			
20x20x4					1389 CFM			
20x24x4					1667 CFM			
20x25x4					1736 CFM			
20x30x4					2083 CFM			
24x24x4	2000 CFM							
24x30x4	2500 CFM							
16x25x2					1389 CFM	MERV 8	0.18 in. wc at 2 cfm per sq. in.	Replace filter every 3 to 6 months
20x20x2					1389 CFM			
20x25x2					1736 CFM			
20x30x2					2083 CFM			

# Why Is Ventilating Indoor Air Important?

Today's building regulations require homes be tightly built for energy efficiency, but that same tightness can also restrict the intake of fresh air and trap potentially hazardous indoor air pollutants, such as humidity, dry air, wood material off-gassing, cleaning agents, radon, carbon monoxide/dioxide and household odors from people themselves.

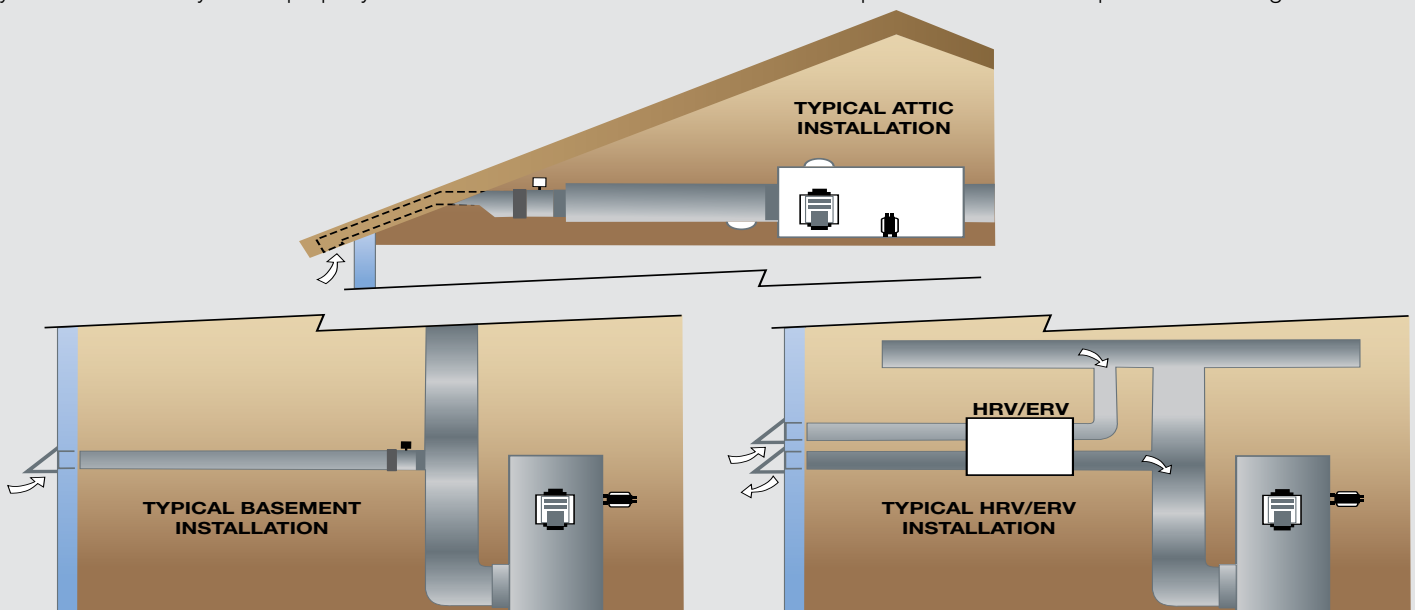
These new codes have increased the need for mechanical ventilation. Because of their versatility with both new construction and retrofit projects, Honeywell's ventilation systems provide immediate benefits to a home.



## Typical Installations

Energy and Heat Recovery Ventilation (ERV and HRV) systems function with existing HVAC equipment or can function as a stand-alone system. These systems can be suspended from exposed ceiling joists or surface, or floor mounted.

For fresh air system installation, the air duct and damper must be installed between the outdoors and the return side of the HVAC system. The control is mounted near the HVAC system and wired between the thermostat and fan control. Simple diagnostics and a test button let you know that the system is properly installed and if the ventilation rate meets the required standard for that particular building.



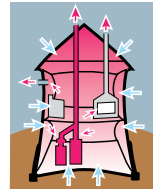
## ASHRAE Standard 62.2 for Ventilation

ASHRAE Standard 62.2 “defines the roles of and minimum requirement for mechanical and natural ventilation systems and the building envelope intended to provide acceptable indoor air quality (IAQ) in low-rise residential buildings.” (ASHRAE 62.2 2007)

### Ventilation for ASHRAE 62.2 may be met by any of the following:

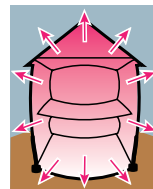
#### Exhaust Ventilation

- Negative pressure draws fresh air from an unknown source
- Fresh air may come through structure, garage, etc.
- Must have make-up air for combustion products



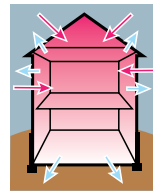
#### Supply Ventilation

- Positive pressure pushes stale air out of the home
- Fresh air enters home from a known source
- Fresh air can be conditioned before entering the living space
- Stale air may pass through the structure



#### Balanced Ventilation

- Net zero pressure differential in home
- Outdoor air comes from a known source
- Fresh air can be conditioned before entering the living space



### Sizing a Ventilation System According To ASHRAE 62.2:

According to ASHRAE Standard 62.2, the required amount of outdoor air to be continuously introduced into the home is:

$$Q_{fan} = 0.01A_{floor} + 7.5(N_{br} + 1)$$

Where:

$Q_{fan}$  = fan flow rate, CFM

$A_{floor}$  = floor area, ft<sup>2</sup>

$N_{br}$  = Number of bedrooms;  
not to be less than 1

**Table 4.1a (I-P)**  
**Ventilation Air Requirements, cfm**

Floor Area (ft <sup>2</sup> )	Bedrooms				
	0 - 1	2 - 3	4 - 5	6 - 7	> 7
< 1500	30	45	60	75	90
1501 – 3000	45	60	75	90	105
3001 – 4500	60	75	90	105	120
4501 – 6000	75	90	105	120	135
6001 – 7500	90	105	120	135	150
> 7500	105	120	135	150	165

\* Table 4.1a may also be used to size continuous ventilation

There are also provisions in ASHRAE 62.2 that allow ventilation to be delivered on a non-continuous basis, providing maximum output at a fraction of the time. ENERGY STAR, Environments for Living (EFL), and many ventilation codes in the US and Canada require homes to install ventilation per the ASHRAE 62.2 Standard.

All Honeywell ventilation controls have built in programming to ventilate according to ASHRAE 62.2, making it easy to meet this code and pass inspection.

## Helping Homeowners

Homeowners understand the energy-saving benefits of a tightly built home, but it's important to make sure they also understand how a tightly built home affects air quality. By educating them on the need to exchange air, as well as the effectiveness of whole-house ventilation over portable units (quieter, lower cost and more capacity), you'll help them select the right ventilation solution for their home.

## Signs That A House Needs Ventilation

- Excessive dust (house under negative pressure)
- Overly humid
- Can still smell breakfast in the afternoon

# Honeywell Ventilation

Help homeowners understand their options for the best balance of energy savings and ventilation control.



**Honeywell Energy Recovery Ventilators (ERV) and Heat Recovery Ventilators (HRV)** provide fresh replacement air while recovering up to 70% of the exhausted air's sensible heat, as well as some of the latent heat, by transferring moisture from one air stream to the other. The system draws fresh outdoor air through the ventilator for distribution

throughout the house. Stale air is exhausted outside through the ventilator. Heat is transferred from one air stream to the other as the air passes through the opposite sides of the heat transfer core. ERV systems provide the added benefit of reducing the amount of humidity from the incoming air making ERVs a great choice for humid southern climates. HRV and ERV models also offer core defrost as an option for colder climates.



**Y8150 Fresh Air Ventilation Systems** provide an economical way to work with the existing system fan to deliver outside air to the home, automatically meeting the ASHRAE 62 standard. Intuitive, 'set it and forget it' programming keeps your customers from adjusting the controls, helping to reduce callbacks. With an overall low total installed cost, it is easy to wire in any orientation, requiring only the included damper, transformer and control.

## Honeywell Ventilation Controls



### Digital Bath Fan Control

An economical — and aesthetically pleasing — way to meet ASHRAE Standard 62.2 with any single-speed bath fan, the control has four program setups and comes in both Empire White and Biscuit.



### VisionPRO® IAQ

One convenient programmable control does it all: temperature, humidification, dehumidification and ventilation.



### TruelAQ®

Manage whole-house humidifiers, dehumidifiers, ventilators and bathroom fans from a single control. Plus, TruelAQ delivers automatic humidity control based on both inside and outside temperatures to maximize efficiency.



### W8150 Ventilation Control

Easily control fresh air according to ASHRAE ventilation standards. Intuitive "set it and forget it" programming reduces call backs.

	Model
 Balanced Ventilation	ER150B2006
	ER200B2006
	ER150C2004
	ER200C2004
 Balanced Ventilation	HR150B1005
	HR200B1005
 Supply Ventilation	Y8150A1009
	W8150A1001
 Exhaust Ventilation	HVC0001
	HVC0002

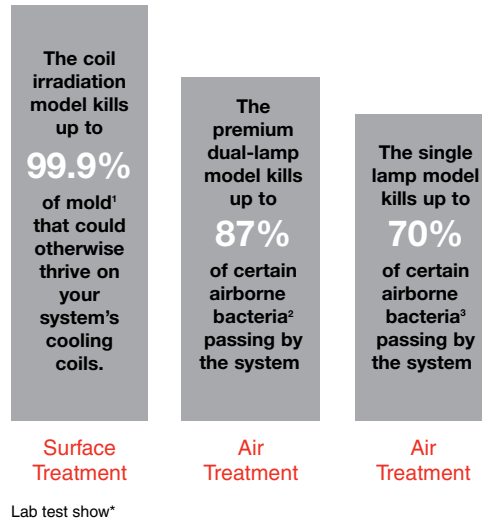
Type	Application			Performance				Features and Functions					Warranty
	Heat Transfer	Moisture Transfer	Defrost Control	Net Supply Airflow @ 0.2 in. wg	Sensible Recovery Efficiency*	Moisture Transfer Ratio*	Nominal Current @ Max speed (amps)	Fan Speeds	Furnace Fan Interlock	Integral Balancing Dampers	Insulated Cabinet	Washable Core	
Energy Recovery Ventilator	•	•	•	140	81%	26%	1.4	2	•	•	•	Yes	5 year
Energy Recovery Ventilator	•	•	•	169	76%	26%	1.4	2	•	•	•	Yes	5 year
Energy Recovery Ventilator	•	•		140	81%	26%	1.4	2	•	•	•	Yes	5 year
Energy Recovery Ventilator	•	•		169	76%	26%	1.4	2	•	•	•	Yes	5 year
Heat Recovery Ventilator	•		•	164	66%		1.7	2	•	•	•	Yes	5 year
Heat Recovery Ventilator	•		•	206	60%		1.7	2	•	•	•	Yes	5 year
Economy Ventilation							0.25		•				5 year
Economy Ventilation							0.25		•				5 year
Exhaust Ventilation Control							Max Load 2.5A						5 year
Exhaust Ventilation Control							Max Load 2.5A						5 year

VENTILATION

\* Performance per CAN/CSA-C439-88

# Show Homeowners How UV Treatment Systems Can Control Mold And Bacteria Growth

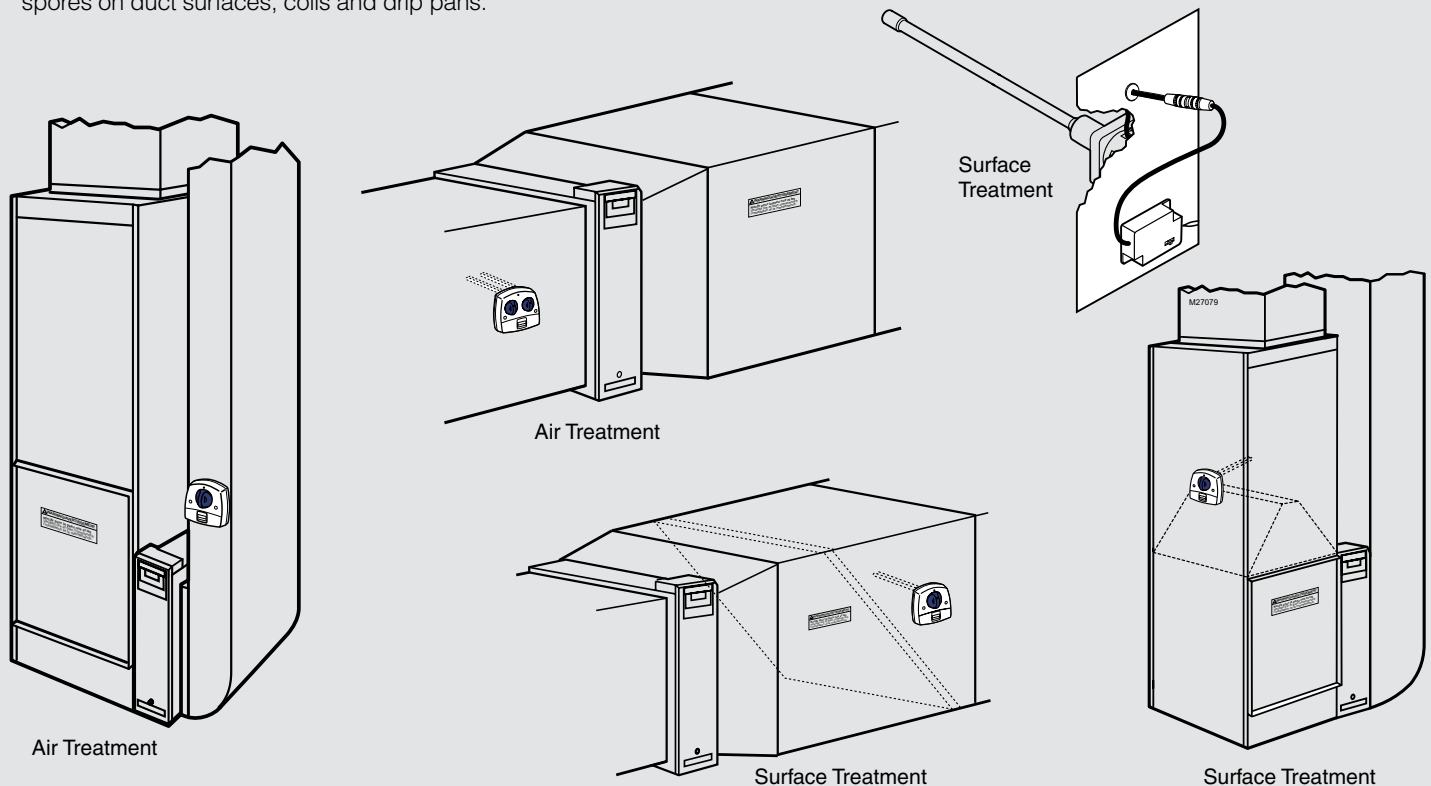
Ultraviolet irradiation has been used for years in a wide variety of disinfection and purification systems, but its newest application is in the HVAC industry. When installed in forced air heating and cooling systems, Ultraviolet Systems kill airborne or surface microorganism contaminants like bacteria and mold. Honeywell UV systems use patented SmartLamp™ control technology that monitors the HVAC system to operate the lamps only when needed. This technology extends bulb life up to five times and reduces power consumption, lowering operating costs. The UV systems also include local diagnostics with the SmartLamp, LED and reset capability.



<sup>1</sup>Test performed in a test duct showed reduction in colony-forming aspergillus niger mold spores when surface was irradiated at a distance of 18 in. for three hours in still air, using new lamps.  
<sup>2</sup>Test showed single-pass kill rate of serratia marcescens bacteria in a clean metal 12 in. x 25 in. duct at an airflow rate of 2000 cfm using new lamps.  
<sup>3</sup>Test showed single-pass kill rate of serratia marcescens bacteria in a clean metal 12 in. x 25 in. duct at an airflow rate of 2000 cfm using new lamps.

## Typical Installations

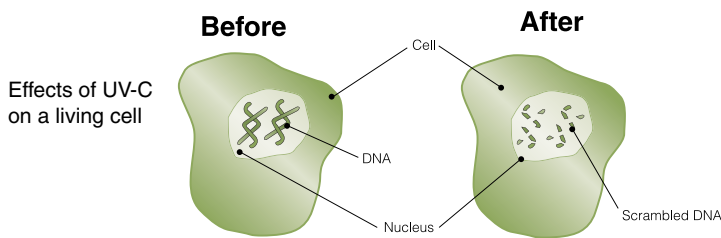
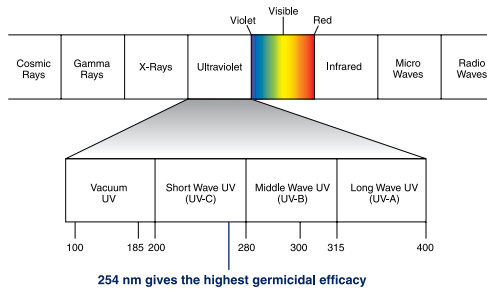
UV Air Treatment models are installed on the return duct of the HVAC equipment. The single-lamp unit has moderate efficiency and the dual-lamp unit has high-efficiency performance against airborne bacteria in return air applications. The UV Coil Irradiation model is installed in the supply side air duct to illuminate the A-Coil section of the air conditioning equipment. It reduces mold growth and spores on duct surfaces, coils and drip pans.





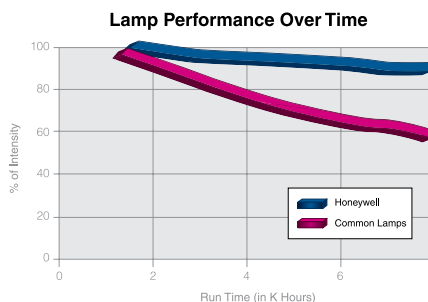
# How Does UV Technology Work?

Ultraviolet is a high-energy light invisible to the naked eye, which make up three bands of the light spectrum (UV-A, UV-B and UV-C) UV-C is the wavelength of light utilized by Honeywell UV Treatment Systems to scramble the DNA coding of bacteria and germs, rendering the pathogen nonviable, unable to reproduce or infect. This is possible because the pathogen's nucleic acid absorbs light energy from 230nm – 290nm, which is within the range of UV-C light.



The dosage required is a measurement of light intensity and exposure time, and differs for each type of pathogen. Many additional factors determine the effectiveness of UV-C irradiation:

- **Lamp Intensity** – Higher for airborne pathogens since exposure time is limited.
- **Lamp Life** – Industry standard for effective UV-C emission is 8,000 hours. Honeywell uses soft lamps that are chemically coated to minimize mercury buildup on lamp walls, increasing effective operation to 10,000 hours.
- **Fan Speed** – Slower fan speeds increase the time a pathogen is exposed to UV-C. Honeywell models were tested at 2,000 cfm in a 12" x 25" duct, representative of real-life applications.
- **Lamp Position** – Three feet of open space both before and after the lamps wherever possible provides the most effective UV-C dosage.
- **Temperature** – Cooler temperatures make it more difficult for UV-C to penetrate the glass lamp wall, which is why UV Air Treatment Systems should be installed on the return duct to avoid exposure to chilled air during air conditioning season.
- **Maintenance** – Dust settling on the outside of lamps reduces the intensity of light, which reduces efficiency of the system. Quarterly lamp cleaning with a soft damp cloth ensure proper UV-C output.



## Served By History

UV treatment solutions are fairly new to the HVAC industry, but have been utilized for nearly a century as a germicidal agent in clean zones such as hospitals, restaurants and water treatment plants. UV can be installed in new construction, retrofit and add-on projects. The following pages highlight the types of Honeywell UV Treatment systems available and the ideal application for each.

## Signs That A Home Needs A UV Treatment System

- Children present
- Humid climate
- Closed windows and dry climate in winter

# Honeywell UV Treatment Systems

Patented SmartLamp™ technology is used in UV Treatment Systems to provide additional equipment protection, extended lamp life, and maintenance indications to reduce callbacks.



UV Air Treatment System  
Dual Lamp Return Air



UV Air Treatment System  
Single Lamp Return Air



UV Surface Treatment  
System Coil Irradiation



SnapLamp™  
Replacement Bulb

**Honeywell UV Air Treatment Systems** are installed in the return duct to irradiate airborne germs. Because these germs are airborne, UV Air Treatment systems provide higher intensity UV-C dosages to effectively irradiate these mobile germs. UV Air Treatment Systems are available in both dual- and single-lamp configurations, and kill up to 87% of certain airborne germs passing through the duct work.

**Honeywell UV Coil Irradiation Systems** are installed near air conditioning equipment drain pans and evaporator coils to prevent the growth of mold and other micro organisms.

**SnapLamp™** replacement bulbs literally make replacement a snap, giving you a quick source for recurring revenue.

## TrueUV™ Makes Installation Easy

**The TrueUV™ Ultraviolet Treatment System** takes Honeywell's famous installation ease to a new level with the flexibility of remote mounting. Plus, angled mounting brackets allow for an easy fit in tight spaces. Internal, exterior, remote, angle, low profile — you can install TrueUV systems in homes where UV treatment previously seemed impossible.



TrueUV™

	Model	Appli
	UV100E2009	• Air Treatment
	UV100E3007	
	UV100E1043	•
	UV100A1059	•
	UV100A2008	•
	UV100RMI	
	Replacement Bulbs	

Application	Features and Functions											Warranty	
Surface Treatment	Quick and easy install and maintenance	Safety is built into sealed design with interlocks	Check operation safely with light pipe in handle	SnapLamp™ replacement bulb provides quick and easy replacement at lower cost	SmartLamp™ Technology					Kill Rate*	Recommended Application	Voltage	Warranty
					Air Flow Sensor extends bulb life	Bulb cycles to extend bulb life	Protection from harsh conditions	Bulb life indicator	EnviracCOM™ communications				
	•	•	•	•	•	•	•	•	•	87% Air Treatment	Up to 2,000 CFM	120V	5 Year
•	•	•	•	•	•	•	•	•	•	99.9% Surface Treatment	Any Residential System	120V	5 Year
	•	•	•	•	•	•	•	•	•	70% Air Treatment	Up to 1,600 CFM	120V	5 Year
•	•	•	•	•						75% Air Treatment 99.9% Surface Treatment	Up to 1,725 CFM Air Treatment Surface Treatment – Any Residential System	120V	5 Year
•	•	•	•	•						75% Air Treatment 99.9% Surface Treatment	Up to 1,725 CFM Air Treatment Surface Treatment – Any Residential System	240V	5 Year
•	•	•	**	•		•				99% Surface Treatment	Any Residential System	24V	5 Year
	•	•	•	•									Limited

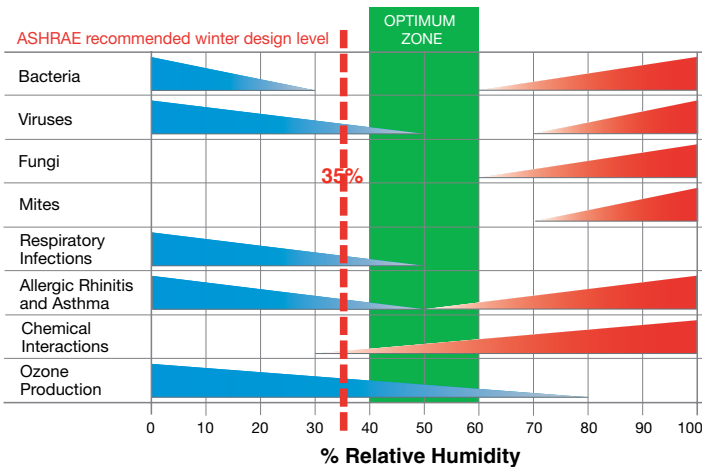
UV SYSTEMS

\* Air treatment test performed shows a single pass kill rate of Serratia marcescens bacteria in a clean metal 12" x 25" duct at an airflow of 2,000 cfm using new lamps. Surface treatment test performed in a test duct showed a 3-log (99.9%) reduction in colony-forming Aspergillus niger mold spores when surface was irradiated at a distance of 18" for three hours in still air using new lamps.

\*\* Viewing window included, but installed separately

# Proper Humidification Enhances Indoor Air Quality

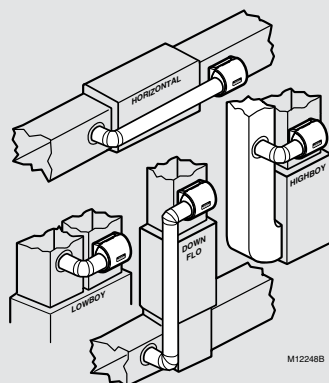
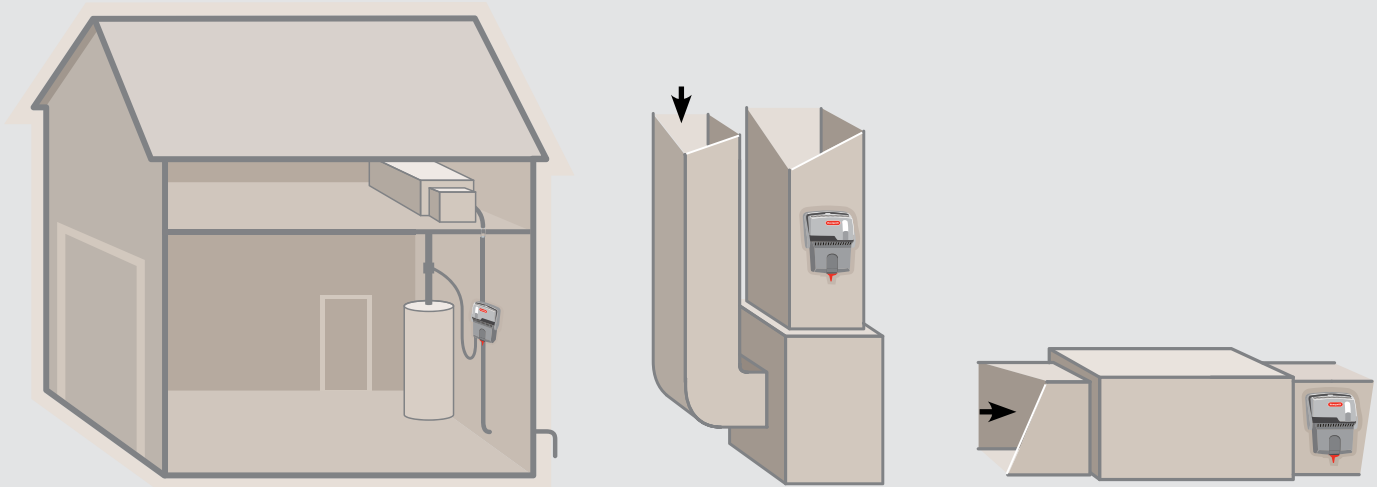
While air cleaners, ventilation and UV treatment systems keep indoor air clean, proper humidification is needed to control relative humidity (RH) levels in the home and minimize unhealthy airborne pollutants. Too little humidity leaves the body vulnerable to infections, and can cause damage to the home's wood furnishings. Inversely, too much humidity creates ideal breeding grounds for mold, mildew and dust mites.



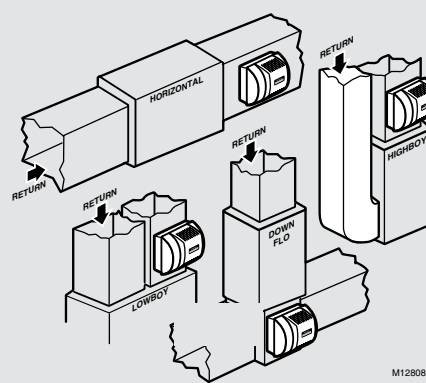
The optimal range for annual indoor relative humidity is 35% during the heating season, according to ASHRAE standards. Today's Honeywell whole-house humidifiers and controls help maintain these optimal ranges while preventing condensation (a common cause of mold development). To understand the benefits of humidification, you must first understand the terms and science behind this technology.

## Typical Installations

Flow-through humidifiers are installed on either the supply plenum or return duct, based on the specific application. Steam humidifiers are mounted directly to the duct work or remotely to provide humidity on demand. Controlled by a humidistat, whole-house humidifiers introduce moisture directly into the duct's airstream to evenly distribute humidity throughout the home.



M12248B

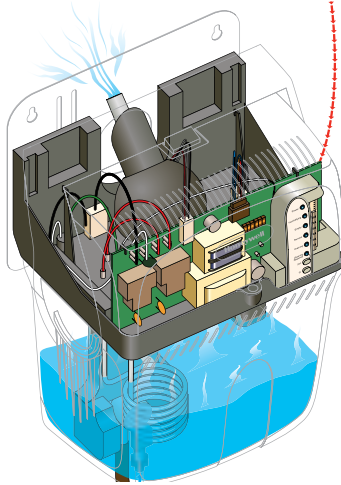


M12808

# Understanding Humidity

Humidifiers operate by the principle that vapor is created when warm dry air is blown over a water-soaked area (flow-through units), or through steam from evaporated heated water (steam units). As the vapor or steam circulates, the relative humidity rises in the living areas.

Humidified Air



In steam devices, an internal heating element uses electricity to add energy directly to the water via boiling.



In evaporative pad devices, energy is absorbed from the air and must be restored later by the heating system, using gas for heat.

**Relative humidity** – The amount of moisture present at a given temperature versus the maximum amount of humidity the air is capable of holding at that same temperature. If relative humidity is 35% at a given temperature, the air is 35% saturated with water.

**Dew point** – The temperature at which moisture in the air will condense into water droplets. To prevent condensation, dew point must be below the temperature of the coldest surface in the house. As the temperature of home surfaces (typically windows) drops below dew point, condensation forms.

**Mold Prevention** – The trick to preventing condensation within a home is not moisture elimination, but moisture control. The majority of mold growth in homes is not caused by humidified air, but standing bulk water; usually around a cold surface (i.e., windows). According to ASHRAE standards, mold can develop when humidity levels are above 60%. Honeywell humidity controls are designed to inhibit relative humidity from exceeding this level, which minimizes the risk of mold growth.

**Infiltration** – Cold air holds less moisture than warm air. Without adequate humidification, the natural infiltration of cold, dry, outside air into a home will lower the indoor relative humidity far below the comfort level. During the winter months, indoor relative humidity can drop below 6% as a result. Too little humidity can damage wooden assets in the home, including hardwood floors, staircases, furniture and musical instruments.

## Identifying Whole-House Humidification Opportunities

Once you're in the home, whether on a sales or service call, take a moment to observe the family and their home environment to see if they could benefit from a whole-house humidifier.

Some things to look for include:

### Families with newborns and young children

Some studies suggest that air with higher levels of humidity may decrease the survival of certain viruses and their transmission rates.\*

### Conversation starters

- > Do you or your kids seem to get sick more often in the winter?
- > Are you concerned about anyone in your family getting the flu?

### Homes with lots of wood furnishings, paintings or musical instruments

Proper humidity reduces risk of damage to home's woodwork, flooring, musical instruments and paintings.

### Conversation starters

- > Did you know many wood flooring companies require a centrally ducted humidifier for the floor warranty to be valid?
- > Did you know that without proper levels of humidity that wood floors can crack or form gaps and warp prematurely?
- > Did you know your paintings and musical instruments can crack or go out of tune without humidity?

\*Lowen AC, Mubareka S, Steel J, Palese P (2007) Influenza virus transmission is dependent on relative humidity and temperature. PLoS Pathog 3(10): e151. doi:10.1371/journal.ppat.0030151

# Honeywell Whole-House Humidifiers



**TrueSTEAM™ humidification systems** operate independently from the heating and cooling system for higher, more consistent levels of humidity, so homeowners can enjoy their desired humidity setpoints regardless of air temperature. Installation, including a remote mounting option up to 20 feet from the system, is easy — there's even a wireless option. Perhaps best of all, the TrueSTEAM is eco-friendly and economical, using up to 70 percent less water than traditional flow-through humidifiers.



**HE365 fan-powered flow-through humidifiers** work best with variable speed, multistage furnaces, which reduce airflow during extended runtimes when only the first stage of heat is operational. The HE365 comes with an internal fan which acts as a booster to the furnace blower during these reduced airflow cycles. Powered flow-through units do not require a bypass duct and can be installed where access to only one duct is available.



**HE225/HE265 bypass flow-through humidifiers** provide versatility with installation options on either the supply plenum or return duct. A bypass duct connects the unit to the duct opposite of the unit installation. When the furnace blower moves air into the supply, higher pressure is created than in the return duct. This pressure differential sucks air from the supply, through the humidifier's soaked clay media pad, and into the return duct for recirculation through the furnace and out into the living areas.

## Honeywell Humidity Controls

From all-in-one controls to the basics, Honeywell lets you provide homeowners options:



**Prestige®**  
The easiest-to-use thermostat ever, the stylish Honeywell Prestige Comfort System also offers wireless humidification control for easy installation in every application.



**VisionPRO® IAQ**  
Use the convenient touchscreen for effortless programming for temperature, humidification, dehumidification and ventilation.



**TrueIAQ®**  
A single control that manages whole-house humidifiers, dehumidifiers, ventilators and bathroom fans, TrueIAQ offers automatic humidity control based on both inside and outside temperatures, providing homeowners with advanced humidity sensing and programming.



**Manual Humidistats**  
Meet basic needs with a variety of simple controls that can be installed near the humidifier, or in the living space.

		Model
	BEST	HM512
	BETTER	HM509
	GOOD	HM506
	BETTER	HE365
	GOOD	HE265
	GOOD	HE225

OS#	Type	Capacity		Humidity Control			Features and Functions											
		Gallons per Day	Maximum Square Footage Coverage (based on tight-fit home)	Manual Control	TrueIAQ Digital Control	VisionPRO IAQ, a 3-wire control	Prestige with wireless adapter and outdoor sensor	Includes Installation Kit	Humidity On Demand	Humidity When System Operates	PerfectFlo Water Distribution Tray with UV Stabilizer	Dewpoint Control	Prevent Frost on Windows	Outdoor Sensor Optional	Remote Mount	RedLINK Wireless Enabled	Replacement Parts	
HM512WTHX9	TrueSTEAM steam humidifier	12	3000				•	•			•	•		•	•	RO Filter Pack 50045947 Polyphosphate Filter 50028044		
HM512W1005										•					•		•	
HM512VPIAQ					•					•			•	•			•	•
HM512DG115				•						•			•	•	•		•	•
HM509W1005		9	2500						•						•		•	
HM509VPIAQ					•				•			•	•		•		•	
HM509DG115					•				•			•	•	•	•		•	
HM509H8908				•					•						•		•	
HM506W1005		6	2000						•						•		•	
HM506VPIAQ					•				•			•	•		•		•	
HM506DG115					•				•			•	•	•	•		•	
HM506H8908				•					•						•		•	
HE365VPIAQ	Fan powered Flow-Through	18	3000		•				•	•	•	•				Anti-Microbial HC26E1004 HC26A1008		
HE365DG115					•				•	•	•	•	•					
HE365H8908					•				•	•	•	•	•					
HE365B1234					•			•	•	•	•	•	•					
HE365A1234					•			•	•	•	•	•	•					
HE265VPIAQ	Bypass Flow-Through	17	2800		•				•	•	•	•				Anti-Microbial HC26E1004 HC26A1008		
HE265DG115					•				•	•	•	•	•					
HE265H8908					•				•	•	•	•	•					
HE265B1234					•			•	•	•	•	•	•					
HE265A1234					•			•	•	•	•	•	•					
HE225VPIAQ		12	2000		•				•	•	•	•				Anti-Microbial HC22E1003 HC22A1007		
HE225DG115					•				•	•	•	•	•					
HE225H8908					•				•	•	•	•	•					
HE225B1234					•			•	•	•	•	•	•					
HE225A1014					•			•	•	•	•	•	•					

HUMIDIFICATION

# Whole-House Dehumidification

*Most homeowners understand that excess moisture in the air can make them feel hot and sticky, but they don't know that options exist beyond cranking up the air conditioning or using portable dehumidifiers. By learning how dehumidification works — and being able to present whole-house recommendations — you'll be a more valuable consultant and be more likely to make a sale that homeowners both want and need.*

## How Does Dehumidification Work?

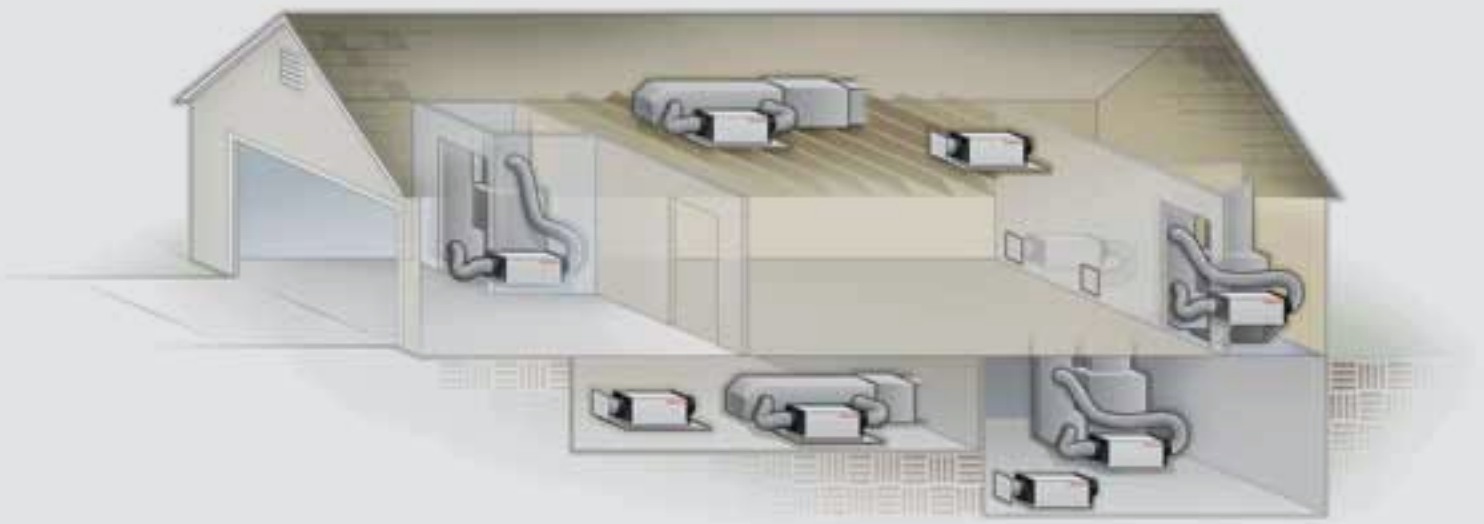
Whole-house dehumidifiers remove moisture (latent heat) from the air, allowing the air conditioner to focus on removing the heat sensed by the thermostat (sensible heat). This allows the air conditioner to operate more efficiently and achieve the SEER rating it was designed to achieve.

An advantage of whole-house dehumidifiers is that they also provide improved levels of home comfort during mild periods when the air conditioner may not be running enough to remove excess moisture. For these conditions when humidity relief is necessary but lower temperatures aren't — such as morning and evenings or during a rainstorm — a whole-house dehumidifier is ideal.

Homeowners using a whole-house dehumidifier also save money on their air conditioning bills because reduced relative humidity in the home makes it feel cooler, so the thermostat can be set at a higher temperature to run the air conditioner less frequently.

## Typical Installations

For the ideal installation, the whole-house dehumidifier should draw air from the central part of the home and return it to isolated areas, such as bedrooms, the den, utility rooms, or family room. The unit can draw from the return and dump into the supply if needed, and it can be installed in a variety of locations to meet application needs. The control should be installed where it can accurately sense relative humidity. Honeywell TrueDRY models can also be used as a standalone solution to remove moisture from problem areas.





## Ideal Options

Honeywell offers a full line-up of TrueDRY™ dehumidifiers to meet the needs of any residential application. Sizes are available to cover homes from small condos to large residences. And whether the application requires installing a TrueDRY unit in a tight utility closet, crawl space or an unfinished basement, you'll find installation a breeze.



A key feature that homeowners really appreciate: Honeywell TrueDRY dehumidifiers are ENERGY STAR rated and use only 20% to 60% of the energy required by other brands.

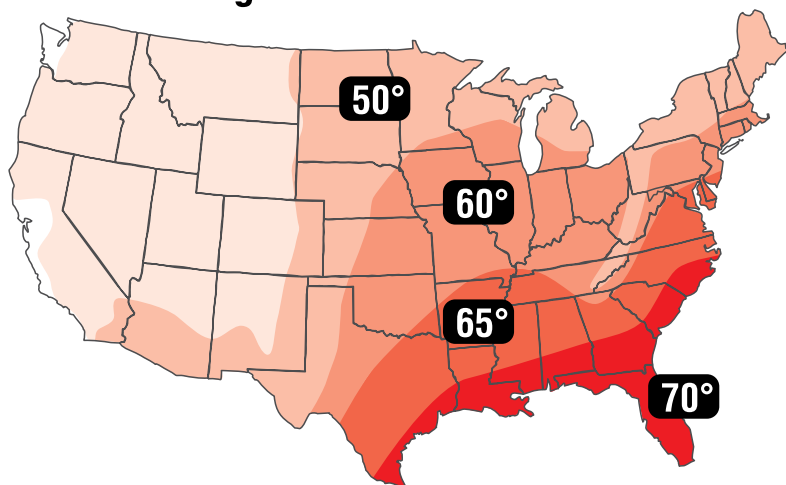


## How Can Dehumidification Help Control Indoor Air Quality?

ASHRAE industry standards cite ideal indoor relative humidity levels below 51% to deter unwanted conditions and boost overall comfort. Any geographic region with summer dewpoint averages above 55° F are potential growth regions for whole-house dehumidifiers.

Whole-house dehumidifiers are designed to provide three key components to healthy indoor air — fresh air ventilation, particulate filtration and humidity control.

### Average Summer Dew Points



## Not Just New Construction

Retrofit dehumidification sales have been on the rise in recent years, making it the HVAC industry's hot-topic comfort solution. Coupling the energy savings message with the ventilation control included with the DR90 and DH150 will ensure the home is provided with high-capacity, cost-effective dehumidification that will safeguard the home from excess moisture while improving home comfort.

## Signs That a Home Needs Dehumidification

- Low set point on thermostat in hot climate
- Condensation on walls and windows
- Humidity levels above 60%
- Uncomfortable sleeping conditions
- Portable dehumidifiers

# Honeywell Whole-House Dehumidifiers

Unlike portable, single-room dehumidifiers that only remove moisture in the rooms where they're located, Honeywell TrueDRY™ Dehumidification Systems offer a whole-solution that's more effective and can be less expensive than putting multiple single-room units in a home. Plus, TrueDRY models can also be used as a standalone solution to remove moisture from specific problem areas, improve comfort and eliminate the need for maintenance (such as emptying collection buckets) — all while using less energy compared to most portable dehumidifiers.

Three TrueDRY models are available — DR65, DR90 and DH150 — so it's easy to find the right-sized unit for any application. Control with a basic dehumidistat or through an all-in-one control such as VisionPRO IAQ, Honeywell TrueDRY models also include a MERV 11 air filter to help bring fresh, filtered air into the home. And, of course, because they reduce the load on air conditioners, TrueDRY dehumidifiers help reduce energy costs.



## Honeywell Dehumidification Controls



### Prestige®

Stylish and rated the easiest-to-use thermostat ever, the Honeywell Prestige Comfort System also provides dehumidification control. Installation has never been easier.



### VisionPRO® IAQ

Effortless programming and convenient touchscreen control for temperature, humidification, dehumidification and ventilation.



### TruelAQ®

Offering the efficiency of automatic humidity control based on both inside and outside temperatures, TruelAQ is a single control that manages whole-house dehumidifiers, humidifiers, ventilators and bathroom fans.



### Manual Dehumidistats

Choose from a range of simple controls to easily meet basic dehumidification needs. Can be installed near the dehumidifier or in the living space.



Model	OS#	Specifications					Control Options	Features			
		Pints per Day	Energy Usage	Energy Star Rated	Nominal Airflow	Refrigerant		Filter Efficiency	Upflow Conversion	Dual Filter Access	Integrated Supply Vent
DR65	DR65VPIAQ	65	6.2 A	Yes	160 CFM	 R-410A	VisionPRO IAQ, Onboard manual dehumidistat	MERV 11	x	x	
	DR65A1000						Onboard manual dehumidistat		x	x	
DR90	DR90VPIAQ	90	6.7A	Yes	235 CFM	 R-410A	VisionPRO IAQ	MERV 11			x
	DR90A1000										x
DH150	DH150A105	150	6.9A	Yes	415 CFM	R-410A	VisionPRO IAQ	MERV 11		x	x
	DH150A100								x	x	

# No One Backs Your Business Like Honeywell

## Online Resources:

### [www.forwardthinking.honeywell.com](http://www.forwardthinking.honeywell.com)

- New Product Information and Training
- Interactive Product Demos
- Full Line of Honeywell Products
- Product Photography, Sales/Technical Literature

### [www.customer.honeywell.com](http://www.customer.honeywell.com)

- Online Ordering and Pricing
- Distributor Order Status and Shipment Tracking
- Private Label Program
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### [www.literature.honeywell.com](http://www.literature.honeywell.com)

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## Toll-Free Customer Service

### Homeowner and Dealer General Technical Support

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### Dealers and Distributors Product Specific Technical Support

- TrueSTEAM, Ventilation and Dehumidification Support 1-800-814-9452

### Contractor PRO™ Priority Technical Support

- 1-877-880-3383
- Have Your Contractor PRO Account Number Ready \_\_\_\_\_

### Order Support

- Customer Care Support 1-888-793-8193 (Distributors Only)
- Order Entry 1-888-793-8193
- Order Status, Pricing and Availability 1-888-793-8193
- New Order Fax Line 1-800-356-0149

## Your Local Honeywell Contractor Development Specialist

Name: \_\_\_\_\_

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## Learn More

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