

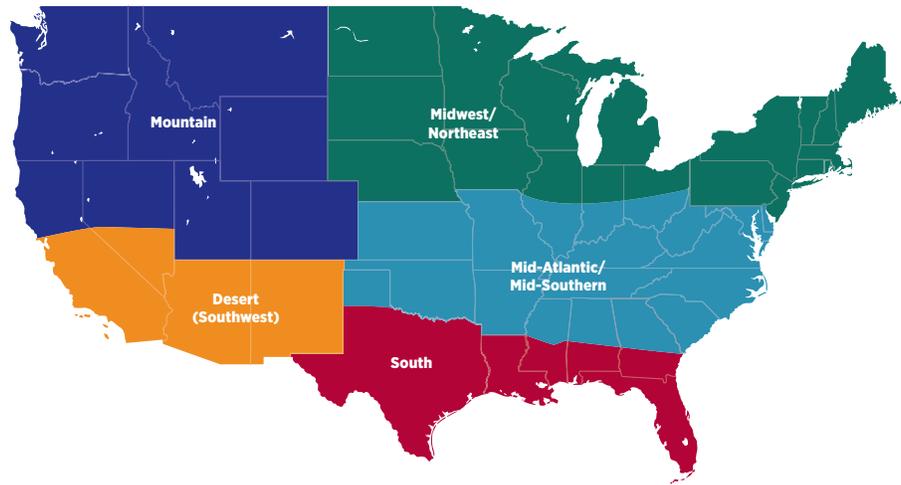
Aprilaire humidifiers can be installed on many different types of HVAC equipment and controlled to provide optimal humidity levels. This application guide is to assist in the selection of the appropriate Aprilaire product based upon geography and heating equipment.

The Aprilaire humidifier product portfolio consists of evaporative flow through, fan-powered products and residential steam. It's important to consider the plenum temperature, air flow (fan speed) and run time (heat call primary, fan only call secondary) when selecting products.

Aprilaire's control strategy will maximize the humidifier run time/capacity. The automatic humidity controls have an integrated blower activation relay. This relay is factory set to "ON". It will turn on the humidifier and the HVAC blower for humidification without a heat call. This will dramatically increase the capacity of the humidifier. Installations with a manual humidifier control can increase capacity by turning the thermostat fan to "ON". When installing evaporative humidifiers, it's recommended they are plumbed to hot water.

This application guide covers the climates of:

**All Regions
& Climates**



HVAC VARIABLES				CLIMATE ZONE/RECOMMENDED SOLUTION BY MODEL				
EQUIPMENT	PLENUM TEMP. IN °F	RUN TIME	AIRFLOW VOLUME	MIDWEST/NORTHEAST	MID-ATLANTIC/MID-SOUTHERN	SOUTH	DESERT (SOUTHWEST)	MOUNTAIN
Gas/Oil Furnace-Single Speed	120-140	Periodic	Adequate	400/500/600/700/800	500/600/700/800	600/700/800	800	600/700/800
Gas/Oil Variable Speed Furnace	120-140	Constant	Limited	700/800*	700/800	700/800	800	700/800*
Heat Pump/Geo-Single Stage	90	Periodic	Adequate	600/700/800	600/700/800	800	800	600/700/800
Heat Pump/Geo-Multi-Variable Speed Furnace	90	Constant	Limited	700/800	700/800	800	800	700/800
Boiler With Ahu	70	Periodic	Adequate	800	800	800	800	800
Boiler With Ahu/Coil	90	Periodic	Adequate	700/800	700/800	800	800	800
Boiler	N/A	N/A	N/A	865	865	865	865	865
Electric Baseboard Heating	N/A	N/A	N/A	865	865	865	865	865
Humidifying with A/C Unit	<70	Periodic	Adequate	N/A	N/A	800	800	800

* Evaporative performance of bypass humidifiers decreases with lower airflow volume and temperature. Bypass models can be used in these applications if the HVAC system pressure differential between supply and return ducts is at least 0.08 in.wg and air temperature in the supply duct is at least 100°F.

	Aprilaire Humidifiers	Model No.	Type of Humidification	Unit Size Width x Height x Depth	Plenum Opening	Capacity gpd = Gallons Per Day	Electrical Data
800 Series		800† 801***	Steam Humidifier For applications when evaporative units are less practical (attics, crawl spaces, closets, milder winter climates, non-forced air heating source).	10.125" x 20.875" x 7.125"	-	11.5 gpd 16.0 gpd 20.5 gpd	120V-60 Hz 11.5 AMP 120V-60 Hz 16 AMP 208V-60 Hz 11.5 AMP
		865 866***	Ductless Humidification System Includes the Model 800, Fan Pack, Model 65 Control and Model 4028 Drain Trap. For homes without forced air heating systems.	Fan Pack: 14" x 6.9" x 3.9375" Finished Grille: 16.1875" x 9" x 1.9375"	-	30.0 gpd 23.3 gpd 34.6 gpd	208V-60 Hz 16 AMP 240V-60 Hz 11.5 AMP 240V-60 Hz 16 AMP
700 Series		700* 700M**	Powered Unit Built-in fan that pulls heated air directly from the furnace.	15.90625" x 18" x 10.34375"	W: 14.75" H: 14.3125"	18 gpd	120V-60 Hz 0.8 AMP
600 Series		600* 600M**	Bypass Unit Uses the furnace blower to move air through a Water Panel®.	15.375" x 15.75" x 10.25" 6" dia. round opening	W: 10" H: 12.75"	17 gpd	24V-60 Hz 0.5 AMP
500 Series		500* 500M**	Bypass Unit Designed for smaller homes.	15.625" x 13" x 10.25" 6" dia. round opening	W: 9.5" H: 9.5"	12 gpd	24V-60 Hz 0.5 AMP
400 Series		400* 400M**	Bypass Unit Uses 100% of water and evaporative technology that eliminates the need for a drain.  Conserves Water.	15.375" x 15.75" x 10.25" 6" dia. round opening See note on heat pumps†	W: 10" H: 12.75"	17 gpd	24V-60 Hz 0.5 AMP



HUMIDIFIER SIZING CHART GPD Needed Per Square Foot† Based on Building Structure Tightness							
Structure Tightness (8' Ceilings)	1000 Ft²	1500 Ft²	2000 Ft²	2500 Ft²	3000 Ft²	4000 Ft²	5000 Ft²
Tight	4.3 gpd	6.4 gpd	8.5 gpd	10.6 gpd	12.7 gpd	17 gpd	21.2 gpd
Average	8.6 gpd	12.8 gpd	17 gpd	21.3 gpd	25.4 gpd	34 gpd	42.6 gpd
Loose	12.7 gpd	19.1 gpd	25.5 gpd	31.8 gpd	38.1 gpd	51 gpd	63.6 gpd

*Automatic Digital Control with Auto-Trac® (shown)

**Manual Control - For those rare occurrences where an automatic control is not practical, Aprilaire digital control can be installed in manual mode while still delivering the accuracy and information you need for optimum performance.

***801 & 866 Modulating Steam Humidifier - For precise RH control. Controls are sold separately.

† Heat Pumps - Model 400 can be installed in heat pump applications. However, due to the fact that heat pumps deliver lower temperature air to the home than gas furnaces, evaporation will be approximately 60% of rated capacity. (With other Aprilaire models, hot water can be used instead of cold to maximize evaporation. However, due to the nature of the wicking water panel in the Model 400 hot water provides less benefit.) As such, your dealer will need to take the size and age of your home

into consideration to ensure the Model 400 will provide satisfactory comfort and protection through adequate humidification.

††Model 800LC - Available for low conductive water 75-300uS/cm and 120VAC applications

‡AHRI Air Conditioning, Heating, and Refrigeration Institute GPD = Gallons Per Day Guideline F

A family of 4 will add 2 gallons of humidity per day through everyday activities like breathing, cooking, bathing and washing. Evaporative capacities assume blower is active 100% of the time, plenum temperature is at 120°F and water is cold.

Bypass Humidifiers - Can be installed on the supply or return plenum.

Water Usage Rate - Models 350, 360 and 700 are 6 gph (gph=gallons per hour); Models 500 and 600 are 3 gph; Model 400 is 0.7 gph; Model 800 is 0.6 to 1.8 gph depending on voltage, amp draw and water quality.