

Aprilaire®

COMMERCIAL HUMIDIFIERS

HIGH CAPACITY, VERSATILE, EASY-TO-INSTALL UNITS THAT MAKE COMMERCIAL HUMIDIFICATION AS EASILY ACCOMPLISHED AS RESIDENTIAL INSTALLATIONS

Aprilaire Commercial Humidifiers, available in three models, bring new versatility and simplicity in providing controlled humidification in commercial installations. They provide humidification by the evaporative process—eliminating mists, droplets, "white dust," and have these important features:

HIGH CAPACITY — Evaporate as much as 4½ gallons of water per hour.

VERSATILE — Models for use with any type heating.

CONTROL — By an accurate humidistat.

EASE OF INSTALLATION — Installation steps are comparable to those for residential units.

MINIMUM MAINTENANCE — Water flushes minerals to drain.



MODEL 1120



MODEL 1130



MODEL 1140



Aprilaire®

COMMERCIAL HUMIDIFIER

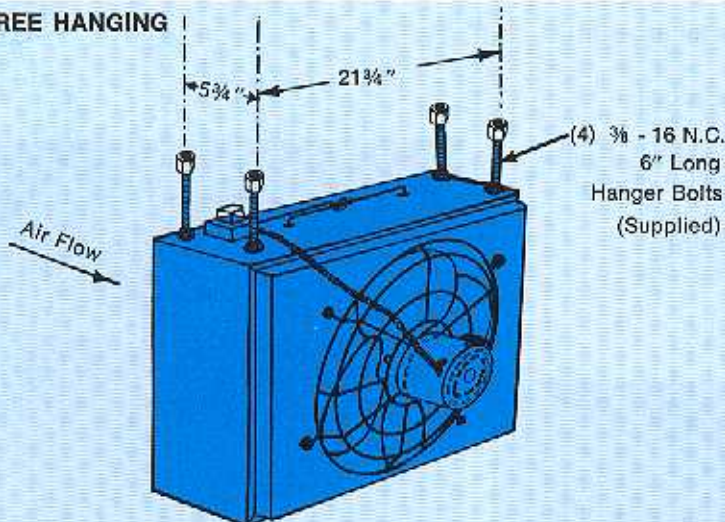
MODEL 1120

A self-contained model, designed for installation in the conditioned space, and independent of the heating system. Hot water from the service water heater is supplied to the unit, and furnishes the heat necessary for evaporation. Air movement is accomplished by a two speed fan, which pulls dry air into the humidifier, through the Water Panel® evaporator, and distributes humidified air into the conditioned space.

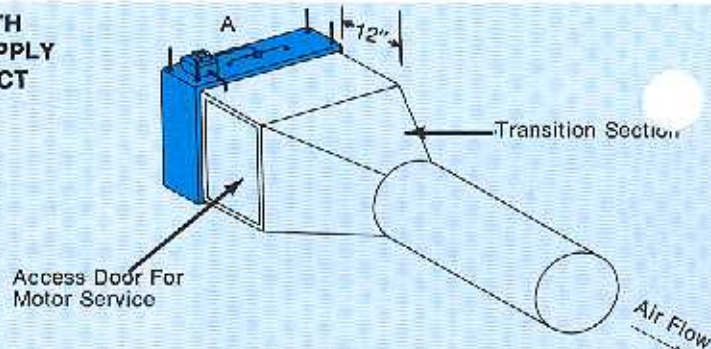
HOW TO SPECIFY

The humidifier to be of the wetted element evaporative type. The evaporative media to be fireproof and rustproof with a mineral coating not susceptible to fungus or bacterial decomposition. The evaporative media to be slit and expanded aluminum having an adherent water wicking mineral fiber coating. The evaporative media to be self-supporting. The humidifier to be self-contained for installation in the conditioned space. To be furnished complete with a 24-volt humidistat, 120 volt 60 Hz motor and water solenoid valve, a combination relay/transformer, saddle valve and mounting bolts. The humidifier to have an evaporative capacity of 2.64 gallons of water per hour when using 25 gallons per hour of 140° F. service hot water under ambient conditions of 35% relative humidity at 72° F.

FREE HANGING

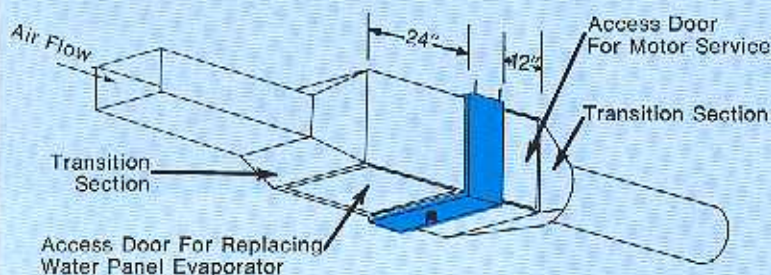


WITH SUPPLY DUCT

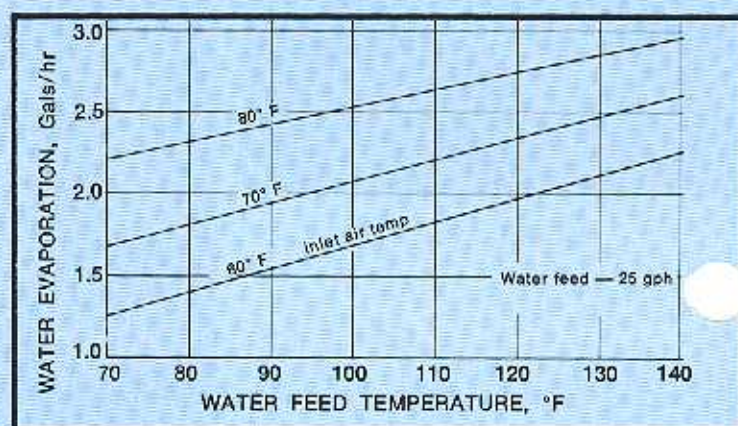


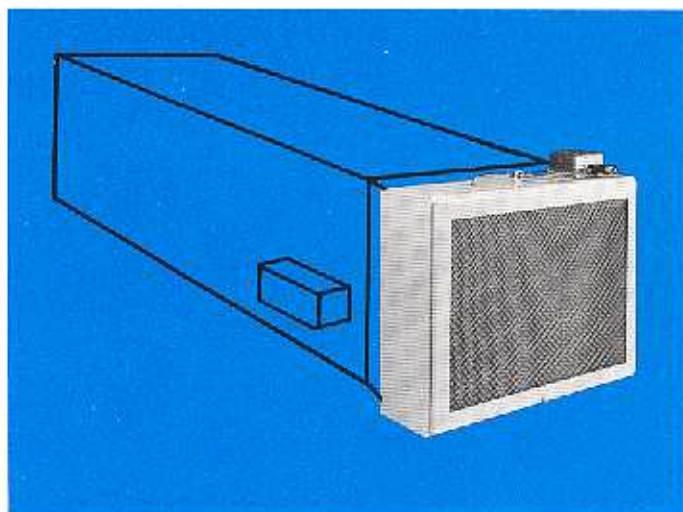
1. The resistance of the add on duct, grilles, etc. should not exceed .25 inches w.g.
2. The transition section must follow good sheet metal practice.
3. The minimum duct size is 16" round or 12" x 20" rectangular (inside dimension).
4. Fiber glass duct may be used for sound attenuation.
5. Water Panel evaporator replacement requires 18 inches open space at A.

WITH SUPPLY AND RETURN DUCT



1. The resistance of the add on duct, grilles, etc. should not exceed .25 inches w.g.
2. The transition sections must follow good sheet metal practice.
3. The minimum duct size is 16" round or 12" x 20" rectangular (inside dimension).
4. Fiber glass duct may be used for sound attenuation.





Aprilaire®

COMMERCIAL HUMIDIFIER

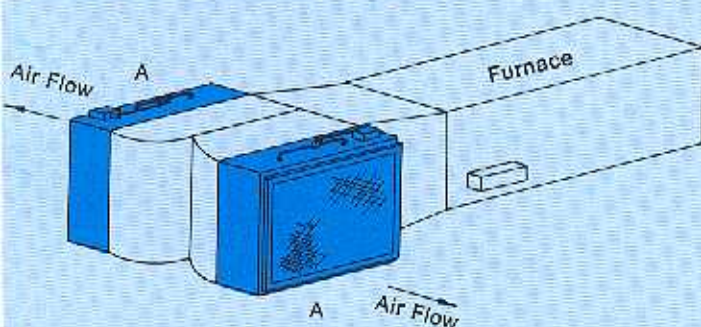
MODEL 1140

Model 1140 is designed for installation with its own forced air heat source and is installed independent of the building heating system. A transition fitting connects the unit to the heat source—and humidified air can be discharged into the immediate area or duct work can be installed for distribution to other locations.

HOW TO SPECIFY

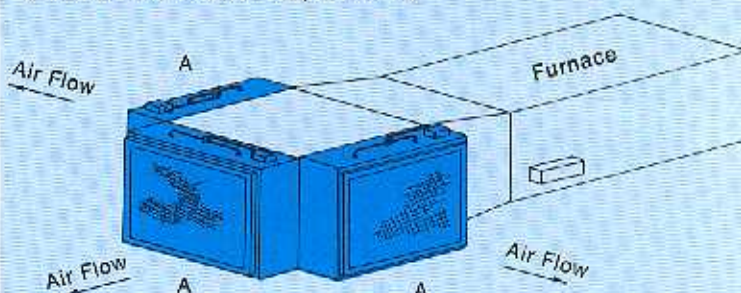
The humidifier to be of the wetted element evaporative type. The evaporative media to be fireproof and rustproof with a mineral coating not susceptible to fungus or bacterial decomposition. The evaporative media to be slit and expanded aluminum having an adherent water wicking mineral fiber coating. The evaporative media to be self-supporting. The humidifier to be designed for use in conjunction with a heat source to supply warm air necessary for evaporation. The humidifier to be supplied complete with 24 volt humidistat, 120 volt 60 Hz water solenoid valve and saddle valve. Under ambient conditions of 35% relative humidity and 72° F. the humidifier to have an evaporative capacity of 4.57 gallons of water per hour when used with a heat source having 800 cfm of 140° F. air. (See package specification table and performance curves for capacity at other application conditions.)

SINGLE HEAT SOURCE, 2 1140's



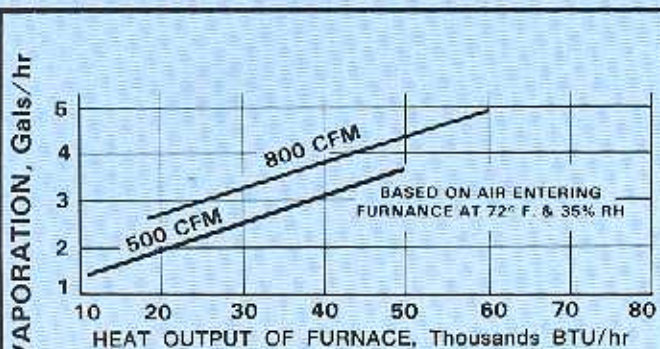
1. The resistance through the 1140 is 0.2 inches w.g.
2. Water supply — 1/4" copper tubing to each unit from a 3/8" (min.) source.
3. Water Panel evaporator replacement requires 18" open space at A.
4. All heat source air must be directed through the 1140's.

SINGLE HEAT SOURCE, 3 1140's



1. The resistance through the 1140 is 0.2 inches w.g.
2. Water supply — 1/4" copper tubing to each unit from a 3/8" (min.) source.
3. Water Panel evaporator replacement requires 18" open space at A.
4. All heat source air must be directed through the 1140's.

EVAPORATIVE CAPACITIES AT BTU OUTPUTS



PACKAGE SPECIFICATION TABLE (ONE FURNACE AND TWO OR MORE MODEL 1140 UNITS)

FURNACE OUTPUT BTU/HR	NUMBER MODEL 1140 REQUIRED	FURNACE* AIRFLOW CFM	TOTAL EVAPORATION RATE GAL/HR	LEAVING TEMPERATURE °F. HUMIDIFIED AIR
60,000	2	1000	5.0	80
90,000	3	1500	7.5	80
120,000	4	2000	10.0	80
150,000	5	2500	12.5	80
300,000	10	5000	25.0	80
450,000	15	7500	37.5	80

*When ordering furnace, specify the blower and motor that would be used if cooling coils were added.

The need for COMMERCIAL HUMIDIFICATION

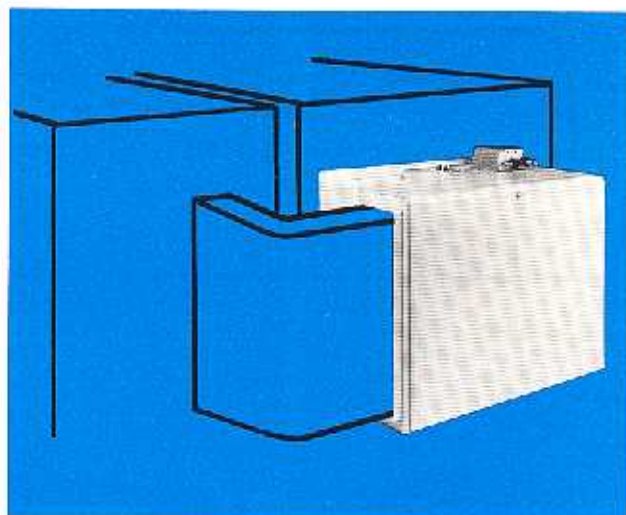
There are very few commercial establishments that do not require additional moisture during the heating season. Among the reasons for needing higher relative humidity are preservation of the product being produced, preservation of a building or its contents, or meeting a process requirement. Maintaining of comfort conditions, of course, is an added benefit. The product or process involved will determine the level of relative humidity that should be maintained. Anytime there is a need to control temperature $\pm 2^\circ\text{F}$, there probably is a need to control relative humidity.

In commercial humidification, the level of relative humidity should be maintained regardless of the type of building construction or the

effects that high humidity might have on structural members. In constructing a new building, of course, anticipated humidity requirements should be taken into consideration during the planning and design stages.

The following list includes some of the users who require controlled humidity and temperature. Recommended levels are indicated for both, along with the purposes of controlled humidity. The list is based on information obtained from the Heating, Ventilating and Air Conditioning Guide, U.S. Forest Products Laboratory pamphlets, customer contracts, and other reliable sources. For further information, see the ASHRAE Guide Applications, or other trade sources.

USE	Fahrenheit Temperature	Relative Humidity	PURPOSE
Bowling Centers	68°-75°	40-50%	Dust control, favorable approach conditions, & lively reaction of the pins & kickbacks.
Churches	70°	35%	Stop drying out of pews, organ pipes, etc.
Cotton Classing	65°-75°	60-65%	To obtain the maximum length & strength of the cotton fibers.
Electronic Accounting & Computing Equipment	72°-75°	40-60%	To prevent machine cards & tapes from expanding or curling—reduce static electricity.
Fur Storage	40°-50°	55-65%	R.H. must be above 55% to prevent hair splitting. Caution: Mold growth if above 80%.
Leather Processing & Products	70°-120° 50°-60°	40-75% 40-60%	Leather is sold by weight and water content must be maintained for weight. Leather is more pliable with proper humidity; prevent cracks.
Libraries & Museums	70°-80°	40%	To prevent drying out of papers, wood & other vegetable material.
Music Stores	70°	40%	Prevent drying of wood, reeds, etc.
Office Areas	70°-72°	35%	Comfort and health.
Photo Studio & Supply Storage	70°-80°	35-50%	See printing and paper storage.
Plywood (hot pressed)	90°	50%	Prevent uneven expansion and poor contact in gluing of plys.
Precision Machining	68°-80°	35-50%	Dust & Quality Control.
Printing & Paper Storage	68°-75°	35-50%	Prevent distortion of paper size, static electricity, poor inking and non-uniformity.
Wood Processing & Fabrication	70°	50%	To reduce expansion and contraction and allow even curing.



Aprilaire®

COMMERCIAL HUMIDIFIER

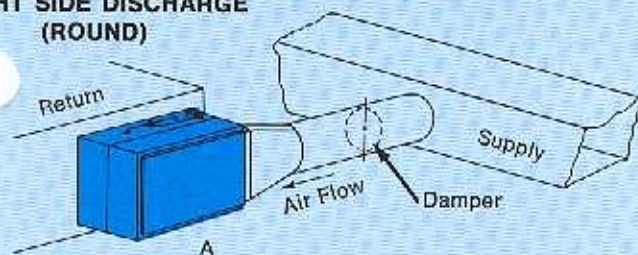
MODEL 1130

Designed for installation on a forced air handling system moving more than 3200 CFM. Heat for evaporation can be supplied by the warm air in the air handling system, by service hot water, or both. Model 1130 operates on the "by-pass" principle. It can be installed on either the supply or return air plenum — and the static pressure difference between the two plenums forces unhumidified air through the Water Panel® evaporator, where evaporation takes place. Humidified air is then distributed through the supply air system.

HOW TO SPECIFY

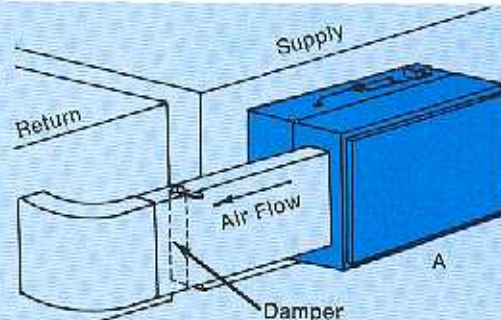
The humidifier to be of the wetted element evaporative type. The evaporative media to be fireproof and rustproof with a mineral coating not susceptible to fungus or bacterial decomposition. The evaporative media to be slit and expanded aluminum having an adherent water wicking mineral fiber coating. The evaporative media to be self-supporting. The unit to be designed for installation on a forced air handling system. To be designed for mounting on either the supply or return plenum. To operate on the "by-pass" principle. The humidifier to be supplied complete with 24 volt humidistat, 24 volt 60 Hz solenoid valve and a 24 volt transformer, saddle valve and mounting accessories. Under ambient conditions of 35% relative humidity and 72° F., the humidifier to have an evaporative capacity of 2.64 gallons of water when supplied with 25 gallons per hour of 140° F. service hot water or a capacity of 4.57 gallons of water per hour when applied to an air handling system providing 800 cfm of 140° F. air. (See performance curves for capacity at other application conditions.)

RIGHT SIDE DISCHARGE (ROUND)



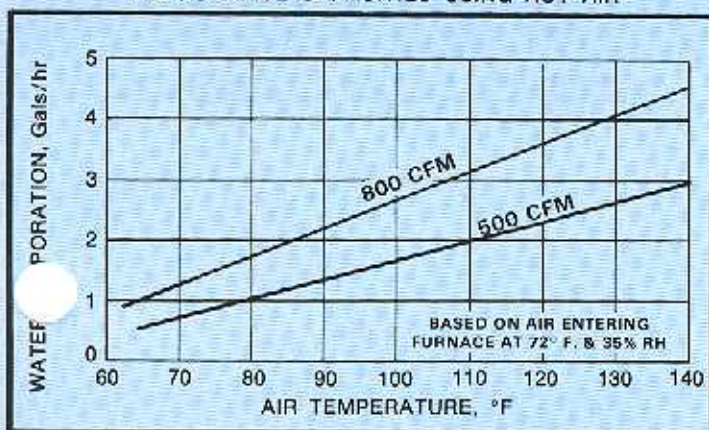
1. It is essential that the by-pass connection be dampered. The damper must be closed during the cooling season. If the total system pressure differential exceeds 0.2 inches w.g. the damper should be set so that a slant gauge or manometer reads 0.2 inches w.g. across the Water Panel evaporator.
2. Use 6" x 18" rectangular or 12" round duct for by-pass connection.
3. Water Panel evaporator replacement requires 18" open space at A.
4. By-pass section opening can be right or left.

LEFT SIDE DISCHARGE (RECTANGULAR)

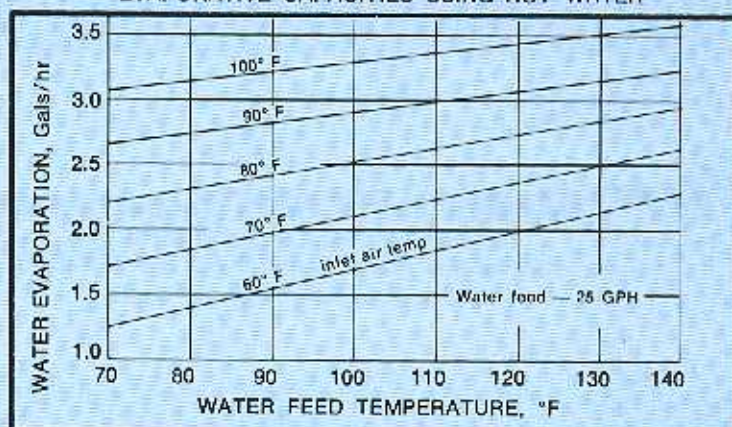


1. It is essential that the by-pass connection be dampered. The damper must be closed during the cooling season. If the total system pressure differential exceeds 0.2 inches w.g. the damper should be set so that a slant gauge or manometer reads 0.2 inches w.g. across the Water Panel evaporator.
2. Use 6" x 18" rectangular or 12" round duct for by-pass connection.
3. Water Panel evaporator replacement requires 18" open space at A.
4. By-pass section opening can be right or left.

EVAPORATIVE CAPACITIES USING HOT AIR



EVAPORATIVE CAPACITIES USING HOT WATER



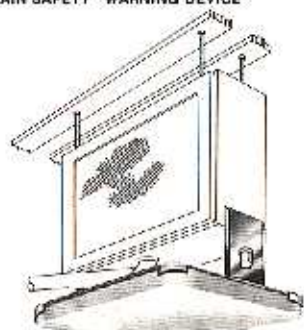
EASY REFERENCE SIZING CHART (cubic foot capacities)*

TO MAINTAIN R.H. of: (at 70°F)	30%	35%	40%	45%	50%	55%
One 1130 or 1140 @ 120°F Air - 500 CFM	55,300	47,300	41,350	36,700	33,000	29,950
One 1120 or 1130 @ 140°F Hot Water	63,900	54,600	48,000	42,400	38,100	34,600

EXAMPLE: 40% R.H. Desired, 70,000 cf/hr (fresh air), use two 1120 if independent, two 1130 or 1140 if on 120° air and 500 CFM.

*Determine cubic footage to be humidified from fresh air make-up, exhaust air, or infiltration, whichever is larger. Chart cannot be used if cooling unit operates simultaneously with humidifier. (See Form A-1774.)

DRAIN SAFETY™ WARNING DEVICE



Illustrated above is the 1101 Drain Safety™ warning device. It can be used with any 1100 series humidifier and is usually required for any humidifier installation that is concealed over a finished area. It eliminates the need for costly auxiliary drain equipment.



SPECIFICATIONS	1120	1130	1140
EVAPORATIVE CAPACITY (Gallons of Water per Hour)	2.64 with 140°F water	2.64 with 140°F water 4.57 with 140°F air†	4.57 with 140°F air†
UNIT SIZE	24½ H. x 25¾ W. x 16" D.	24¼ H. x 25¾ W. x 16" D.	24¼ H. x 25¾ W. x 8½" D.
AIR INTAKE	19½ H. x 24¾" W.	19½ H. x 24¾" W. (1)	19½ H. x 24¾" W.
AIR OUTLET	19½ x 24¾"	6 x 18" (1)	19½ x 24¾"
WATER PANEL SIZE	18" x 24" x 3" (nominal)	18" x 24" x 3" (nominal)	18" x 24" x 3" (nominal)
AIR FLOW	800 cfm	800 cfm (2) (see below)	800 cfm
ELECTRICAL DATA	Motor & Valve 3.0 amps, 120 V Control 0.5 amps, 24 V	Valve and Control 0.5 amps, 24 V	Valve 0.1 amps, 120 V Control 1.5 amps, 24 V
WATER FEED(3)	25 G.P.H.	25 G.P.H.	25 G.P.H.
DRAIN CONNECTION	1¼" NPT	1¼" NPT	1¼" NPT
ACCESSORIES INCLUDED	Transformer-Relay Saddle Valve Humidistat	Transformer Saddle Valve Humidistat	Saddle Valve Humidistat
SHIPPING WEIGHT	60 pounds	50 pounds	40 pounds

(1) Left or right discharge

(2) Do not install on system with less than 3200 C.F.M.

(3) ¼" compression fitting

† Air temperature rating is for comparative purposes. Application capacities vary with different conditions. See air temperature curves and package specifications table for additional information.



RESEARCH PRODUCTS CORPORATION

P.O. BOX 1467 • MADISON, WI 53701-1467

Call toll-free 1-800-334-6011 • FAX 608/257-4357

Products For Better Indoor Air Quality