



AIR CLEANING EQUIPMENT INC
303 N Main St • Broadway NC 27505 • 800-962-0650

WWW.INDUSTRIALAIRTREATMENT.COM

HydroStream Model HC-100

Evaporative Humidification (100 lbs/hr)
Produces “Already Humidified Air”

Information – Specifications pg 1

HydroStream Humidifier Model HC-100 (100 lbs/hr)



Low energy production of “already humidified air” within a completely packaged “All in One” system.

- Fully Automatic – Dual Function Humidity Control System:
 - Maintains Your Desired Winter Humidity Setpoint (e.g. 45% RH @ 72°F)
 - Optional Summer Evaporative Cooling
- Independent temperature & humidity control
- Uses Low Energy
- Easy to Operate Intelligent LCD Controller
- Engineered in Upflow OR Downflow Design
- Installation: floor, wall or ceiling hung
- Requires water supply – 115V electrical – access to a drain

HydroStream Model HC-100

Specifications

- Humidification Capacity:
 - 110 lbs/hr @ 70°F/40%RH.
- Units located on the floor OR attached to wall shelf (by others) OR ceiling hung (includes a pre-fabricated attached frame for fixing unit to wall or ceiling).
- Unit has automatic float/valve assembly providing automatic fill from permanent inlet water connection.
- Airflow: 7,773 CFM - Fan Type: Axial
- Fan Speeds: 1 ph, multi-spd.
- Sound Level: 76 dBA.
- Output: 1.1 kw • Voltage: 115V / 11.2A / 1Ph / 60Hz – OR – 230V / 5.6A / 1Ph / 60Hz.
- Dimensions: 44.85” x 44.85” x 38” (not including transition and diffuser)
- Vent Size: 25.5” x 25.5”.
- Net Weight: 176 lbs
- Operational Weight: 242 lbs
- 8 gallon water reservoir
- Pad Replacement every 3-5 yrs
 - 4 piece pad set: \$200.00
 - (Current pricing as of Dec 2013)
- Pad size: 24”H x 32.37”W x 3.9”D
- 4 ea washable air pre-filters (included).
- Use potable water.
- Water Treatment:
 - Only use clean water with a steady pressure between 20-50 psig at the unit.
 - It is advised to use a water treatment method to control water hardness in excess of 8 grains in order to simplify the cleaning cycle, to maintain unit output performance, and maximize pad life. Recommended water treatment types:
 - a. Water Softening (locally sourced).
 - b. Alternative to softening is ScaleX2 Water Treatment to control calcium scale buildup (provided in all quotes from ACE).



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Information – Specifications pg 2

• Operational Overview

The **HC-100** produces an “already humidified air stream” of 110 lbs/hr directed into your plant air space. No visible moisture exits the unit – just a humidified airstream migrating quickly and equalizing throughout your entire plant air space via Dalton’s Law of Partial Pressure

The HC-100 Humidifier is the Medium (44.85”w x 44.85”d x 38”h) base size unit within the HydroStream sizes designed for medium to large space areas to maintain your required humidity set point (e.g. 45%RH @ 72°F) during the dry air periods of plant and production operations.

The intelligent LCD controller regulates continuous flowing water from the 8 gallon water reservoir through four water saturated pads (one on each side of the unit) while dry filtered air passes through creating a steady stream of evaporated moisture.

This size unit operates with four pads on each side of the unit where the air is pulled into each water saturated pad from four sides of the unit and then delivered through a transition housing into the top either with a horizontal one way diffuser OR through a Quad Diffuser with adjustable louvers for maximum air control directed into your plant space.

Operation consists of the intelligent LCD controller regulating continuous flowing water from the HC-100 water reservoir through 4 each water saturated pads while dry filtered air passes through the pads creating an air flow stream of evaporated moisture directly into your manufacturing air space. As the unit receives a call for humidity from the humidistat sensor, the circulating pump begins to pass water down through the evaporative pad media. Air passing through the pad media evaporates the water off of the pad media surfaces and the cooler and more humid air is introduced into the room. Water is introduced into the humidifier via the float and valve assembly. The reservoir should be drained once per day to keep the water fresh and clean. This function alone is your most important automatic operation feature which allows the unit to produce daily and continuous humidified air with the least amount of any ongoing maintenance. The auto drain function will periodically drain the unit to insure daily fresh water and can be set to empty and fill on any empty fill cycle you may choose. In the Auto Mode, the water management system automatically swirl drains the reservoir based on the TDS (Total Dissolved Solids) level which accumulates as water evaporates and TDS dissolved solids accumulate. In addition, the reservoir automatically drains during periods of non-use.





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Information – Specifications pg 3

• HC-100 Design Options

HC-100 Base Unit:



Shown in upflow configuration

*Choice of
Upflow or
Downflow
Design.*

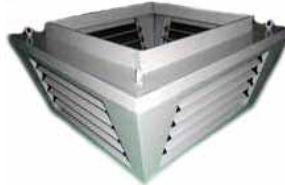
*Fan pulls
air in on
four sides*

*45" x 45"
x 38" h*

Air Flow Diffuser Choices:



One Way Diffuser attaches to upflow or downflow base unit with adjustable two way louvers to control exact direction of air flow. (adds 30" to base height)



Quad Diffuser attaches to top of upflow base unit or bottom of downflow base unit to control air flow on four sides with adjustable louvers (adds 15" to base height)

INSTALLATION:

Units are located either on the plant floor, mounted on a wall shelf / bracket, or ceiling hung (includes hanging frame with lift rings mounted to bottom of base unit). Operational weight with 8 gallons of water in reservoir is 242 lbs. Allow 65" overall height for base unit with drain and choice of air diffuser. Allow 15" of air space around all four sides.

Optional special order air socks to tightly control horizontal air disbursement.

All units require pre-treated water to control water hardness (see details pg 5), electrical supply of 1) 115V / 11.2A / 1Ph / 60Hz; or 2) 230V / 5.6A / 1Ph / 60Hz; and access to a drain (water can be easily pumped by a condensate pump to a gravity flow pipe which empties into an available drain).

All units include an LCD controller, humidistat/sensor, air flow transition and diffuser, intelligent auto clean, and low water protection.



Configured either
as Upflow or
Downflow design





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Information – Specifications pg 4

• Controls, Humidistat & Programming Overview

The HC-100 User Manual provides detailed instructions for programming all control functions including many options for both manual and automatic control.

Your unit is factory pre-programmed for all functions including your required set-point (e.g.45% RH) and only changes to settings would be required (fan speed adjustments, timer settings for all functions and clean cycles can be re-set). If there is a loss of building power, the unit will restart automatically.



**HC-100
LCD Control
Module**

Located at floor
level
Connected to
HC-100
via 40 feet of
phone cable

The LCD Control Module is a separate unit located at floor level in an easily accessible location. Module comes with 40' phone cable which is connected to the HC-100.

Unit with power connected is in Standby State alternating display of room temperature and humidity. After inputting your operating parameters, system runs in AUTO Mode during the winter by the Humidistat Sensor automatically controlling all of your input parameters with real time humidity readings on display. The added functionality of using both humidity and temperature allows you to operate the HC-100 year round for both winter humidification and summer evaporative cooling.

AUTO CLEAN mode button sets clean cycle for drain valve to empty reservoir which is factory pre-set for every five hours but can be changed to empty the reservoir once per day.

The Humidistat Sensor comes with 25' of phone cable which is connected to the LCD Control Module. The humidistat is located in the general area of the HC-100 and reads the air humidity in that exact location which in turn controls the on/off operation of the HC-100. Each HC-100 acts as an independent zone controlled by a dedicated humidistat.



**Wall Mount
Humidistat Sensor
connected to
wall mount LCD Controls
via 25 feet of phone cable**



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Information – Specifications pg 5

• Pad Care & Maintenance

The HC-100 has four pads located on each side of the unit. They are accessed by removing the clip on the top side of the unit and the side panel separates from the top of the unit.

Pads should be cleaned periodically to ensure unit output performance. Pad cleaning frequency is dependent on both duty cycle and water supply. The key to maintenance is to allow the units to drain once per day and insure the pads are dried thoroughly before extended periods of unit/fan shutdown. Average cleaning frequency will be every 3-6 months. To clean pads, completely dry pads and clean with soft brush.

For seasonal shutdown, empty and clean reservoir, run the fan (only) for two hours to completely dry out pads, remove pads, clean with soft brush and store until next season startup. Note: pads can be also placed back into the unit in the event of dry air conditions during off-season and the HC-100 used as needed.

- 4 piece pad set • Pad size: 24"L x 32.37"W x 3.9"H
- Replace every 3-5 years
- Pad Replacement Cost: 4 piece pad set - \$200.00 (Current pricing as of Dec 2013)



Water Saturated Pad

• Diagram of Components

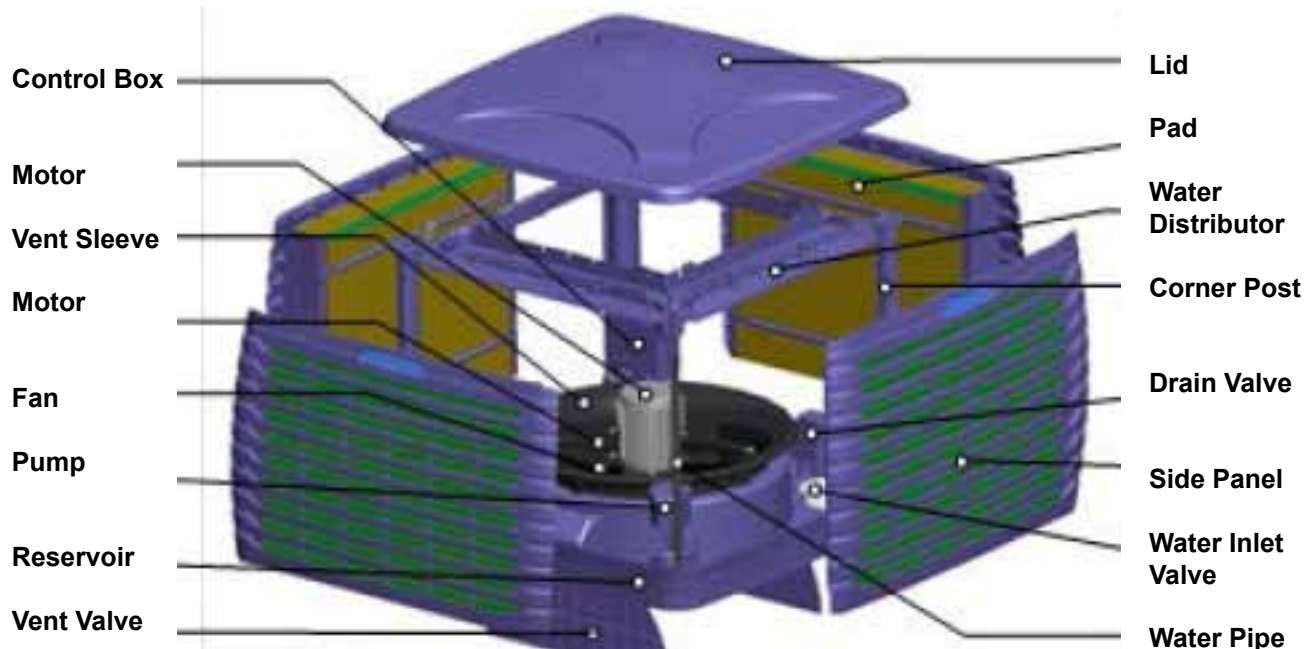


Diagram shows fan at bottom in a downflow unit (fan at top in an upflow unit)



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Information – Specifications pg 6

HydroStream Recommended Water Treatment: ScaleX2®

A Superior Water Softener Alternative – Prevents Scale Caused by Calcium Carbonate for Industrial Humidity Control Systems

- **Chemical-Free Scale Prevention** – Requires no salt, chemicals or electricity – Template Induced Crystallization (TIC) – Chemical-free scale prevention – converts scale-causing calcium carbonate into harmless, inactive microscopic crystals.
- **NSF Tested & Certified** against the international protocol for scale prevention – ScaleX2® achieved a 99.6% effectiveness rating – the highest among all water softener alternatives. Used in business applications successfully for 6 years.
- **Simple & Efficient Operation** – Converts dissolved hardness ions (scale-causing calcium carbonate) into harmless, inactive microscopic crystals - No backwash water waste – Long lasting media-not consumed by the reactions – Great fit for corporate "Green" programs or initiatives.

"Nano-Crystal" observed on the ScaleX2 media surface by a scanning electron microscope – ScaleX converts formerly dissolved calcium into harmless microscopic solid crystals



How it Works: ScaleX2 induces atomic sized nucleation sites on the surface of small polymer beads converting dissolved hardness into microscopic crystals. Once the crystals grow to a certain size they are released from the bead and harmlessly carried away with the flow of water. The crystals maintain their solid form in solution and keep the hardness out of the water so that it can't form scale.

Your Incoming Raw Water Chemistry Limitations (Use only on municipal water)

- pH: 6.5 to 8.5
- Max Hardness: 75 grains (1300 ppm CaCO₃)
- Water Temperature: 41 to 140° F
- Chlorine: less than 3ppm
- Iron: 0.3 mg/l max.
- Manganese: 0.05 mg/l max.
- Copper: 1.3 mg/l max.
- Oil & H₂S: Remove prior to ScaleX2®
- Polyphosphates: Remove prior to ScaleX2®



Model	SX2-11	SX2-12	SX2-12B
GPM Capacity	1.5 GPM	2 GPM	4 GPM
Dimensions			
Height	14.5" H	25" H	28.25" H
Width	8.5" W	8" W	11.75" W
Depth	5" D	5" D	8" D
Weight	8 lbs	10 lbs	16 lbs
Annual Cartridge Replacement	Reorder as SCLX2-1	Reorder as SCLX2-2	Reorder as SCLX2-4

• Note: Each cartridge provides one year of treatment, replace yearly (HydroStream Quotation includes two year supply)

