



DRISTEEM[®]
The humidification experts



All Products Brochure



Who we are



Experts

We design and manufacture humidification systems to meet your unique humidification requirements. We have earned our reputation as the humidification experts by supporting customers' unique commercial, health care, industrial, and process-critical applications for over 45 years.

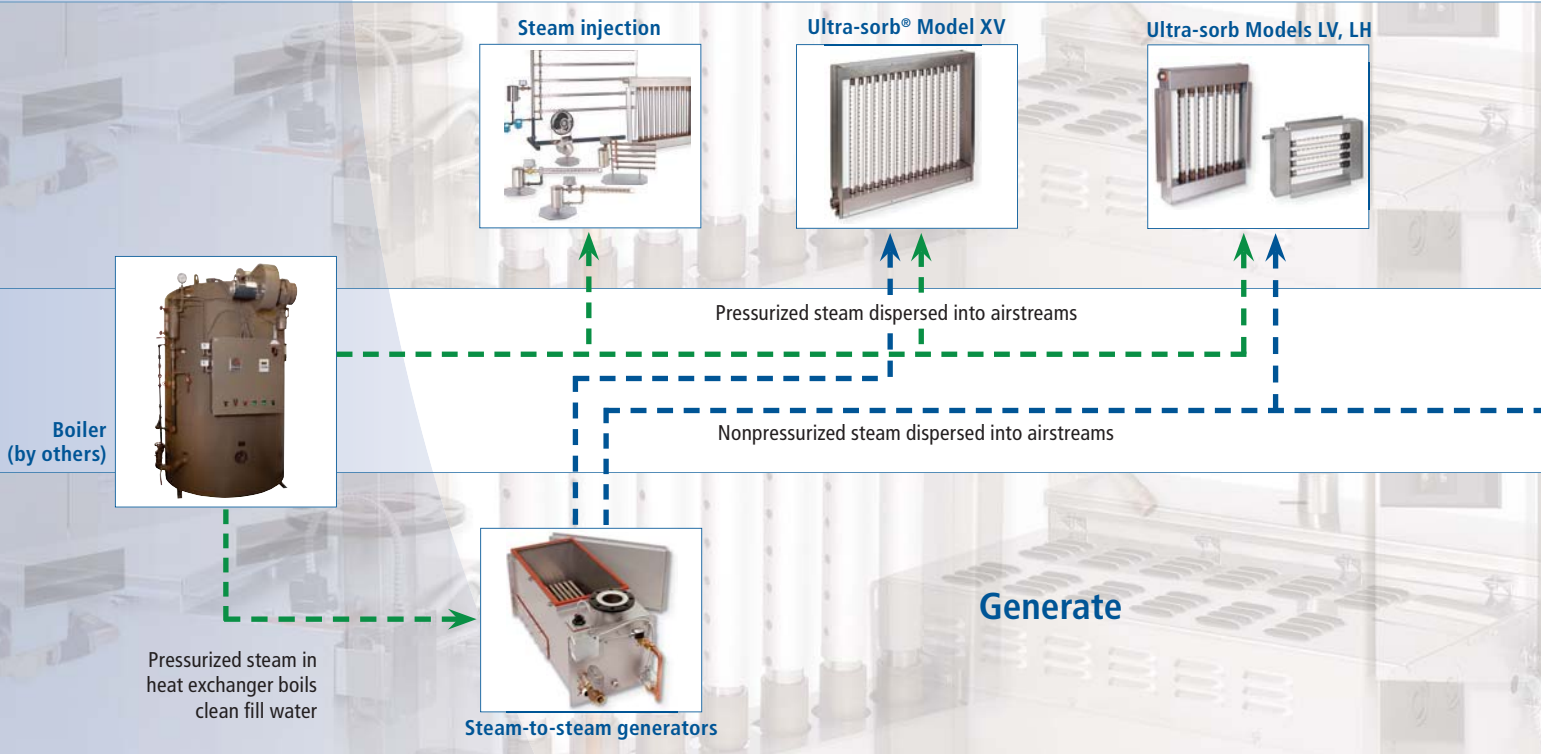


Innovators

Through extensive research and development, we continue to develop industry-leading innovations that greatly improve methods for adding moisture to air with precise control.

On a mission

Our mission is to provide customers with exceptional service and superior products that condition or control air for HVAC applications.



What we do

Create healthy environments

Bacteria and viruses thrive in dry air. Studies show that when room RH drops below 40 percent, respiratory illness increases. Proper humidification can significantly reduce student and employee absenteeism.



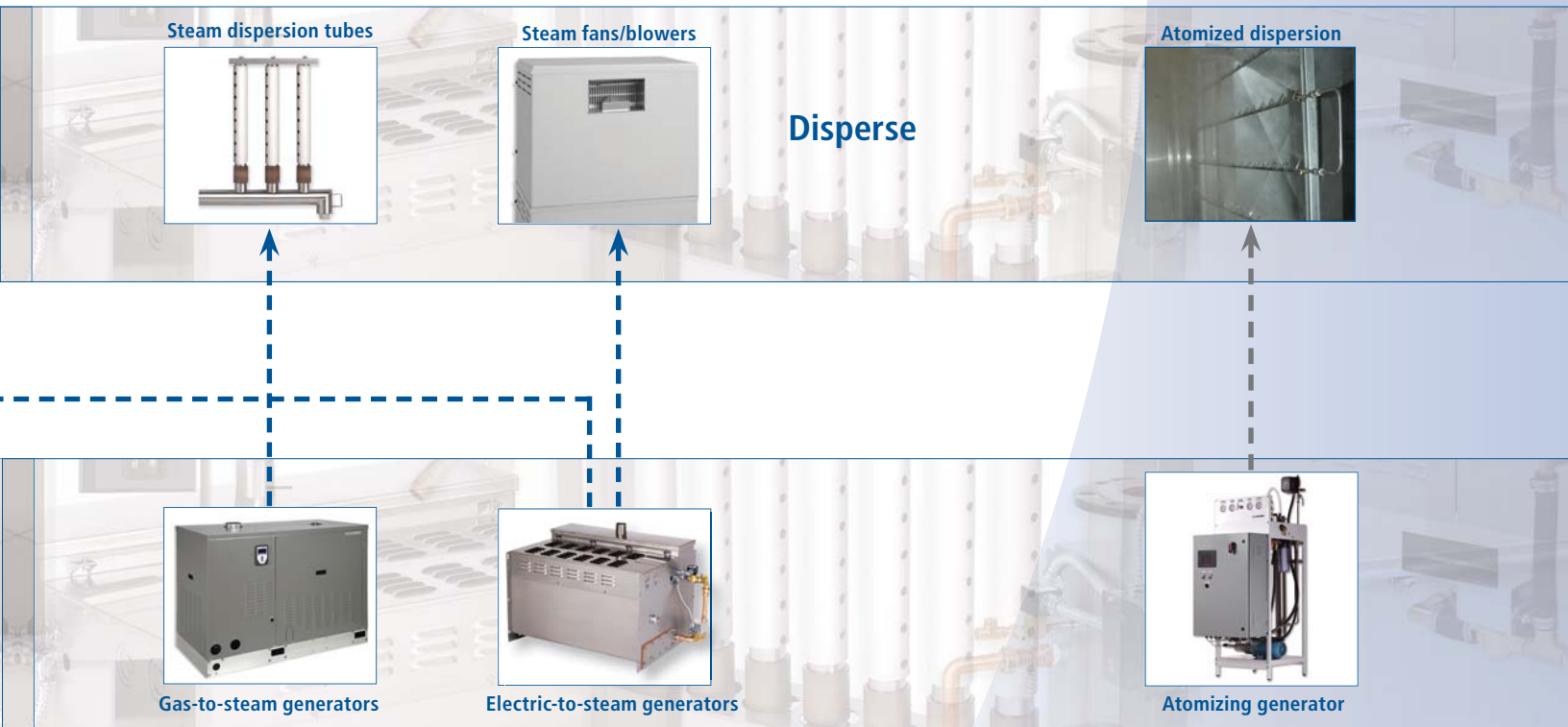
Improve production processes

Controlling a building's RH significantly improves production processes. RH affects the moisture content of hygroscopic materials, such as wood, textiles, paper, leather, fibers, and foods. Such materials either absorb or release moisture to reach equilibrium, which can negatively affect production processes.



Preserve materials and artifacts

Fluctuating RH causes material to repeatedly absorb and release moisture. These changes affect a material's weight, strength, and appearance, which can damage and shorten its longevity.



Steam generation



GTS humidifier
gas-to-steam generator

Gas-to-steam generator

GTS® humidifier

Lowest operating cost

The robust GTS humidifier provides a broad capacity range and is compatible with all water types. Application flexibility makes GTS the ideal choice for almost any application.

- Vapor-logic®4 controller (see Page 11)
- Lowest operating cost (calculate potential savings with the **Energy-calc program**; see “Tools” on Page 15)
- Indoor and outdoor enclosures
- Integral drain water tempering

Capacity range: 75–600 lbs/hr (34–272 kg/h) for each unit; link up to 16 units for capacity up to 9600 lbs/hr (4354 kg/h)



STS humidifier
steam-to-steam generator

Steam-to-steam generator

STS® humidifier

Chemical-free steam

The STS humidifier creates chemical-free humidification steam using boiler steam as its energy source. It accomplishes this by using boiler steam in its heat exchanger to vaporize clean fill water into humidification steam. STS is compatible with all water types.

- Vapor-logic4 controller (see Page 11)
- Control to $\pm 1\%$ RH with available options for specific applications
- Most energy-efficient means of producing chemical-free steam with pressurized steam as the energy source
- Easy retrofit for steam injection humidifiers

Capacity range: 20–1600 lbs/hr (9.1–726 kg/h) for each unit; link up to 16 units for capacity up to 25,600 lbs/hr (11,612 kg/h)

Steam generation

Electric resistive-element steam generators

Vaporstream® humidifier

Versatility and critical control

From providing comfort humidity to meeting the strictest clean-room requirements, the Vaporstream electric humidifier is an industrial-grade unit designed to meet the humidification demands of any building environment. Vaporstream models and options include multiple control capabilities, a broad capacity range, and compatibility with all water types.

- Vapor-logic4 controller (see Page 11)
- Control to $\pm 1\%$ RH
- Zero to 100% modulating output
- Weather cover and climate-controlled outdoor enclosure options
- Numerous configurations and options available
- Disperses steam through ductwork or directly into a space

Capacity range: 5.7–285 lbs/hr (2.6–129 kg/h) for each unit; link up to 16 units for capacity up to 4560 lbs/hr (2068 kg/h)



Vaporstream humidifier
electric resistive-element steam generator

Vapormist® humidifier

Versatility for finished spaces

The Vapormist humidifier is a compact, cabinet-style unit compatible with all water types and numerous dispersion options. Installation is a snap: Just attach the frame to a supporting structure and connect electrical and water services.

- Vapor-logic4 controller (see Page 11)
- Zero to 100% modulating output
- Attractive enclosure — perfect for finished spaces
- Disperses steam through ductwork or directly into a space through matching Space Distribution Units (SDU)

Capacity range: 6–102 lbs/hr (2.7–46 kg/h) for each unit; link up to 16 units for capacity up to 1632 lbs/hr (740 kg/h)



Vapormist humidifier
electric resistive-element steam generator

Steam generation



CRUV humidifier
electric resistive-element steam generator

Electric resistive-element steam generator

CRUV® humidifier

Compact and easy to service

The compact CRUV humidifier is designed to integrate inside an existing enclosure, such as a packaged air conditioning unit, or added to an existing system, such as an environmental chamber. CRUV is self contained and compatible with all water types.

- LW Series controller or optional Vapor-logic4 controller (Page 11) for multiple levels of control capability
- Zero to 100% modulating output
- Easy tank access without disconnecting electrical or piping lines
- Operates several seasons without cleaning

Capacity range: 6–102 lbs/hr (2.7–46 kg/h)



XT humidifier
electrode steam generator

Electrode steam generator

XT humidifier

Easy installation and maintenance

The XT electrode steam humidifier provides humidification for a wide range of buildings and applications. Low up-front cost and minimal maintenance make XT one of the most affordable humidification systems to purchase and install.

- Vapor-logic4 controller (see Page 11)
- Easy to maintain — just replace the affordable steam cylinder when prompted
- Automatic drain and fill events optimize humidifier performance

Capacity range: 5–200 lbs/hr (2.3–91 kg/h); stage up to four humidifiers together for maximum system capacity of 800 lbs/hr (360 kg/h)



XT electrode steam humidifier

Atomization

High-Pressure Atomizing Systems

Versatility and energy efficiency

DRI-STEEM High-Pressure Atomizing Systems provide high-quality humidification solutions suitable for a wide variety of applications.

Each system's high-pressure pump propels treated, unheated water past a small turbine inside each dispersion nozzle. This fragments water droplets into ultra-fine particles that quickly evaporate in airstreams or open spaces.

- ***Guaranteed system performance.*** Over 45 years of humidification experience allows DRI-STEEM to confidently guarantee system performance. DRI-STEEM's comprehensive system design charts ensure a properly designed system by addressing all relevant psychrometric parameters.
- ***Most energy-efficient humidification system when cooling year-round.*** As atomized water droplets evaporate, air temperature can drop 20 °F (11 °C) or more.

Every pound of atomized humidification added to air removes approximately 1000 Btu of heat. Twelve pounds of atomized humidification replaces about one ton of cooling. (15 kg of atomized humidification replaces about 10 kW of cooling.)

- ***Adaptable to all building types.*** DRI-STEEM High-Pressure Atomizing Systems humidify via air handlers, ducts, or in open spaces. One system can control multiple zones with multiple set points. A broad capacity range further enhances application versatility.

- ***Maximum uptime; systems can operate up to five seasons without interruption.*** Robust stainless steel construction, available reverse-osmosis water treatment, and automatic membrane back-flushing ensure maintenance-free operation, maximizing uptime.

Capacity range: 250–8500 lbs/hr (114–3859 kg/h)



Installed in an AHU



Installed in an open area



High-Pressure Atomizing System

Steam dispersion



Nonpressurized steam dispersion

Rapid-sorb® dispersion tube system

Single header with multiple tubes, short non-wetting distance

Rapid-sorb steam dispersion tube systems are designed for applications where multiple tubes are needed to handle the load and/or when the available non-wetting distance is limited.

- Short non-wetting distance, compared to single dispersion tube
- Models available in sizes from 10" × 10" (254 × 254 mm) and up
- For horizontal or vertical airflows with header inside or outside duct
- Available with High-Efficiency Dispersion Tubes

Capacity: Up to 800 lbs/hr (363 kg/h)

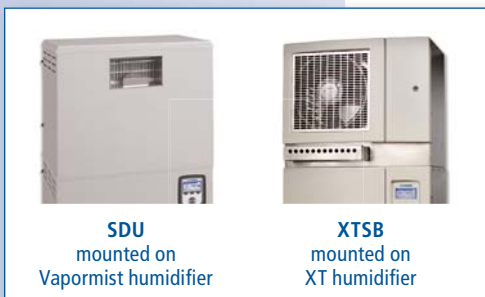


Single dispersion tube

Installation flexibility

Low-capacity dispersion for horizontal or vertical airflows.

Capacity range: 28–85 lbs/hr (12.7–38 kg/h)



Space distribution units and blowers

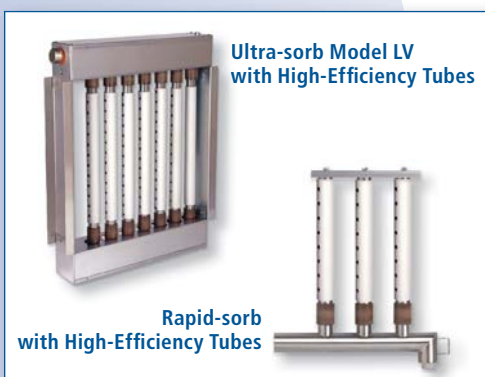
Remote or humidifier-mounted dispersion

Space distribution units (SDUs) and steam blowers mount on top of humidifiers or quietly disperse steam remotely within a room.

- SDUs mount on top of Vapormist humidifiers, or they can remotely disperse steam from any Vapormist or Vaporstream humidifier.
- XT steam blowers (XTSB) mount on top of XT humidifiers, or they can remotely disperse steam from any XT humidifier.

SDU capacity: Up to 102 lbs/hr (46.3 kg/h)

Steam blower capacity: Up to 50 lbs/hr (22.7 kg/h)



High-Efficiency Tubes option

For new and existing Ultra-sorb and Rapid-sorb

- Highest efficiency
- Shortest non-wetting distance
- Up to 85% reduction in wasted energy, airstream heat gain, and condensate production
- Plenum approved for in-duct installation with revolutionary, patent-pending insulating material

Ultra-sorb

Pressurized steam injection or nonpressurized steam dispersion

Ultra-sorb steam dispersion panel

The Ultra-sorb steam dispersion panel established industry standards for meeting short non-wetting requirements.

- Guaranteed non-wetting distances — install within inches of downstream devices without condensate worries
- Reduce wasted energy with High-Efficiency Tubes
- Lowest installation cost
- Models available from 12" × 12" up to 144" × 144" (305 × 305 mm to 3658 × 3658 mm) for horizontal or vertical airflow
- Factory assembled for easy installation or shipped unassembled
- Requires less than 1 psi (7 kPa) of pressure to disperse steam

Ultra-sorb Model XV

Highest performance

- Highest-performing steam dispersion product on the market
- Most efficient:
 - High-Efficiency Tubes standard
 - Least condensate generation
 - Zero condensate waste — vaporizes generated condensate and returns pressurized condensate
- For pressurized steam applications, 5 psi (35 kPa) minimum
- Chemical-free boiler steam humidification when used with our STS steam-to-steam humidifier

Capacity:

Pressurized steam: Up to 1610 lbs/hr (730 kg/hr)

STS humidifier: Up to 450 lbs/hr (204 kg/h) per panel

Ultra-sorb Models LV & LH

Most versatile

- Optional High-Efficiency Tubes
- Easy installation
- For pressurized or nonpressurized steam applications

Capacity:

Pressurized steam: Up to 4000 lbs/hr (1815 kg/h)

Nonpressurized steam: Up to 1850 lbs/hr (840 kg/h)



Ultra-sorb Models LV



Ultra-sorb Model XV



Ultra-sorb Model LH

Steam injection

All Steam Injection humidifiers shown here, except Area-type, are available with options for applications requiring all stainless steel construction.



Multiple-tube humidifier



Mini-bank humidifier



Single-tube humidifier



Area-type humidifier

Steam injection features

DRI-STEEM's Steam Injection humidifiers are available in a wide variety of models and adaptable to numerous applications.

- Steam jacketed dispersion tubes — eliminate condensation and dripping
- Stainless steel construction — instantaneous heat-up, minimal condensation, and no cold start-up spitting
- Lightweight construction — no special supports or hangers required

Multiple-tube humidifiers

Fits any need, for large capacity

The Multiple-tube humidifier is designed for large ducts and air handlers. Multiple-tube achieves short to moderate non-wetting distances and is field piped and field assembled.

The Maxi-bank™ option is pre-assembled and includes the steam header and interconnecting piping.

Steam pressure range: 2–50 psi (14–345 kPa)

Capacity range: 6.5–3989 lbs/hr (2.3–1809 kg/h)

Mini-bank® humidifier

Pre-assembled for small ducts

The Mini-bank humidifier is designed for small ducts and short non-wetting distances. With a pre-engineered and pre-assembled header/tube assembly, it is ready for mounting and hookup.

Steam pressure range: 2–15 psi (14–103 kPa)

Capacity range: 1.6–84 lbs/hr (0.7–38 kg/h)

Single-tube humidifier

Suitable for—but not limited to—small-capacity systems

The Single-tube humidifier features a wide range of dispersion tube lengths and is suitable for moderate to long non-wetting distances. The separator/tube assembly is pre-assembled.

Steam pressure range: 2–50 psi (14–345 kPa)

Capacity range: 1.5–525 lbs/hr (0.7–238 kg/h)

Area-type™ humidifier

For rooms without ducts

The Area-type humidifier is designed for open spaces such as warehouses and manufacturing spaces that do not have a duct system. Steam discharged from the humidifier is quietly dispersed by a fan without discharging water droplets.

Steam pressure range: 2–15 psi (14–103 kPa)

Capacity range: 1.8–286 lbs/hr (0.8–130 kg/h)

Control

Accurate, responsive control

Vapor-logic4 is the control platform for all DRI-STEEM nonpressurized steam generation humidifiers. Vapor-logic4 provides accurate, responsive RH control, and PID control tunes the system for maximum performance.

Modbus®, **BACnet®**, or **LonTalk®** allow interoperability with multiple building automation systems. Modbus is standard, and BACnet or LonTalk are available options.

Web interface provides the capability to set up, view, and adjust humidifier functions via Ethernet, either directly or remotely through a network.

Contactor wear leveling distributes cycles among multiple contactors for equal wear and longer contactor life in Vaporstream humidifiers.

Cycle counter triggers a message when it's time to replace contactors in electric humidifiers.

USB port allows easy firmware updates, and data backup and restore capability.

Real-time clock allows time-stamped alarm and message tracking, and accurate drain and flush scheduling.

Auxiliary temperature sensor/transmitter allows temperature compensation control to prevent window condensation, or air temperature monitoring, such as in a duct.

Programmable outputs allow remote signaling and device activation.

Multiple-humidifier control allows staged control of up to 16 humidifiers with one controller.

Data logs can be downloaded to a PC for viewing and analysis.

Enhanced diagnostics and data collection.



STATUS	ALARMS	DIAGNOSTICS	SETUP	HELP
System Status				
DEMAND OUTPUT		Monday, January 3, 2011 3:42:28 PM		
0% 0%		View all humidifier settings below. Some settings can be changed here. Go cannot be changed from this page.		
RUN MODE Local standby		TANK STATUS:		
TANK STATUS Empty		Run Mode Local standby <input type="button" value="CHANGE"/>		
Alarms 0 active alarms		Input signal 18.2 VDC		
Messages 2 active messages		Steam output 0%		
View Messages		Steam production 0 lbs/Hr		
		Duct HL switch Closed		
		Tank temperature 192°F		
		Tank temp signal 1623 Ohms		
		High water probe Water		
		Mid water probe Water		
		Low water probe Water		
		Fill valve Open		
		Drain valve Open		
		Airflow switch Flow		
		Interlock switch Closed		
		H2O until drain/flush 123456 lbs		
		H2O until service 30000 lbs		
		High probe signal 3874		
		Mid probe signal 3875		
		Low probe signal 3873		

Use the Vapor-logic4 keypad or the Web interface to control your humidification system.



Insert a USB flash drive into the Vapor-logic4 board's USB port to perform software updates, download data logs, and back up and restore data.

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Custom engineering



Tailored solutions for unique applications

For over 45 years, DRI-STEEM has been the only humidification manufacturer to offer engineering design services with custom humidification solutions.

Challenge us with your requests! To get you thinking about the possibilities, here are a few of the custom projects we've completed:

- **Racked units, single-point connections.** We've stacked multiple humidifiers in racks with single-point piping and electrical connections, making field installation easier and less costly.
- **Strict process requirements.** To meet ultra-clean standards, or to protect the humidifier from a destructive environment such as one that might cause corrosion, all of our products can be passivated or acid cleaned.
- **Custom configurations.** We've moved drains to new locations, added custom drain piping, p-traps and tri-clover connectors to facilitate easy field connections. We've installed special relays to allow the humidifier to work in tandem with a previously installed blower.
- **Non-humidification applications.** We installed humidifiers at an aquarium to sterilize fish water (they dispersed the steam safely outdoors). We've also modified our Drane-kooler Water Tempering Device to cool water discharged from sterilization equipment. Since sterilizers run continuous cold water to temper discharged condensate, the Drane-kooler, with its temperature-actuated valve, admitted cold water only when needed, saving gallons of water.

These are only a few examples of the custom projects we've done over the years. Let us know if you have a custom project where we can assist you.

Options and accessories

Outdoor enclosures and weather covers

Heated/ventilated outdoor enclosures for evaporative humidifiers ship to the job site completely assembled, so installation is a snap. Third-party tests ensure that outdoor enclosures provide reliable operation under extreme conditions. The GTS outdoor enclosure is CSA-certified for outdoor operation, and the STS and Vaporstream outdoor enclosures are ETL approved for outdoor operations. Weather covers for Vaporstream and STS humidifiers are fully assembled at the factory to protect against wind, sun, and rain.

Humidifier De-scaling solution

Keep your humidifier operating at peak efficiency with DRI-STEEM Humidifier De-scaling Solution. The De-scaling Solution cleans without corroding humidifier tanks or welds.



Drane-kooler

The Drane-kooler mixes cold water with hot discharge water to reduce the water temperature before it enters the drain system. This complies with code requirements and prevents damage to PVC drain piping.



Extended Warranty Program

An extended warranty provides coverage for one or two years beyond DRI-STEEM's standard Two-year Limited Warranty eliminate unforeseen expenses and lay the groundwork for a manageable budget.

Service Kits

Service Kits combine common replacement parts for servicing DRI-STEEM humidifiers. Each Service Kit is priced lower than purchasing the parts individually.



Heated/ventilated outdoor enclosures
Available for all evaporative humidifiers



Weather covers
Available for Vaporstream and STS humidifiers

Overview: All products

DRI-STEEM steam generator comparison						
	CRUV	Vapormist	XT	Vaporstream	GTS	STS
Energy source						
Electric, resistive (heating element)	X	X		X		
Electric, conductive (electrode)			X			
Natural gas or propane					X	
Boiler steam						X
Steam capacity, lbs/hr (kg/hr)						
Maximum (one humidifier)	102 (46)	102 (46)	200 (91)	285 (129)	600 (272)	1600 (726)
Minimum	6 (2.7)	6 (2.7)	10 (4.5)	5.7 (2.6)	75 (34.0)	20 (9.1)
Maximum (multi-tank control)		1,632 (740)	800* (362)	4,560 (2,068)	9,600 (4,354)	25,600 (11,612)
Application size based on steam capacity**						
Square footage (m ²) capability of 1 humidifier	17,000 (1,579)	17,000 (1,579)	33,000 (3,065)	47,500 (4,412)	100,000 (9,290)	266,000 (24,712)
Controller						
Vapor-logic4 controller	Optional	X	X	X	X	X
Microprocessor LW417 control	X					
Microprocessor on-off or modulating demand signal			X			
Control capability						
With modulating demand signal	± 3%	± 3%	± 3%	± 1%	± 3%	± 3%
With on-off demand signal	± 3%		± 5%			
With available options for specific applications						± 1%
Water type						
Tap	X	X	X	X	X	X
Softened	X	X	X	X	X	X
Deionized	X	X		X	X	X
Reverse osmosis	X	X		X	X	X
Installation options						
Indoor		X	X	X	X	X
Outdoor (in optional enclosure)				X	X	X
Finished space		X	X			
In packaged A/C unit [removed X's from VM & STS]	X					
Dispersion options						
Ultra-sorb Models LV and LH		X	X	X	X	X
Ultra-sorb Model XV						X
Rapid-sorb	X	X	X	X	X	X
Single dispersion tube	X	X	X	X		X
Space distribution unit, external absorption (SDU-E)		X		X		
Space distribution unit, internal absorption (SDU-I)		X		X		
Top- or remote-mounted XT steam blower (XTSB)			X			
Area-type fan (mounted on steam generator)				X	X	X
Water tempering						
Drane-kooler	Optional	Optional		Optional	X	Optional
Integral water tempering			X			
* Four staged XT humidifiers, not via multi-tank control						
** 20% outdoor air at 3 lbs/hr/100 cfm (231 kg/h per m ³ /h), building need of 40% RH @ 72 °F (22.2 °C), typical commercial building load of 1 cfm/ft ² (18 m ³ /h per m ²)						

Overview: All products

DRI-STEEM atomization, steam injection, and dispersion product comparison							
Vapor delivery type	DRI-STEEM product	Capacity		Steam pressure at entry to dispersion assembly, psi (kPa)			
		lbs/hr	kg/hr	<0.5 (3.4)	2-15 (14-103)	2-50 (14-345)	5-50 (34-345)
Atomization	High-Pressure Atomizing System	8500	3855	NA	NA	NA	NA
Nonpressurized steam dispersion from DRI-STEEM steam generator	Single dispersion tube (without condensate drain)	57	25	X			
	Single dispersion tube (with condensate drain)	85	38	X			
	Rapid-sorb	800	363	X			
	Ultra-sorb Model LV	1850	840	X			
	Ultra-sorb Model LH	1850	840	X			
	Ultra-sorb Model XV (with STS humidifier)	450	204	X			
	SDU-I	30	13.6	X			
	SDU-E	102	46.3	X			
	XTSB-20	20	9.1	X			
	XTSB-50	50	22.7	X			
Area-type fan	286	130	X				
Steam injection from boiler	Single-tube humidifier	525	238			X	
	Mini-bank humidifier	84	38		X		
	Multiple-tube humidifier	3989	1809			X	
	Ultra-sorb Model LV	4000	1815			X	
	Ultra-sorb Model LH	4000	1815			X	
	Ultra-sorb Model XV	1610	730				X
	Area-type humidifier	286	130		X		

Tools			
Dri-calc®	Load-calc	Energy-calc	www.dristeem.com
<p>Sizing and selection software</p> <p>DRI-STEEM's Dri-calc software will size loads, select equipment, write specifications, generate as-configured installation guides, and create equipment schedules.</p> <p>Click Order Dri-calc on the Tools tab of our website to request a free copy of Dri-calc.</p>	<p>Humidification load calculator</p> <p>Load-calc provides a humidification load calculation based on entering air, outside air, and desired room conditions.</p> <p>Click Load-calc program on the Tools tab of our website to launch the tool.</p>	<p>Energy savings calculator</p> <p>In many locations, the savings from switching from existing electric humidifiers to new gas humidifiers are so significant the energy savings can pay for replacement equipment and installation costs.</p> <p>Click Energy-calc program on the Tools tab of our website to launch the tool.</p>	<p>Our website</p> <p>Visit our website to:</p> <ul style="list-style-type: none"> • Find a DRI-STEEM representative • Get the most current product information • Learn more about humidification • Calculate load online • Calculate energy savings online • Watch product videos

Conserving resources through better performance

Expect quality from the industry leader

For more than 45 years, DRI-STEEM has been leading the industry with creative and reliable humidification solutions. Our focus on quality is evident in the superior construction of DRI-STEEM products. DRI-STEEM also leads the industry with a Two-year Limited Warranty and optional extended warranty.

For more information

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For the most recent product information visit our website:
www.dristeem.com

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Continuous product improvement is a policy of DRI-STEEM Corporation; therefore, product features and specifications are subject to change without notice.

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Maxi-bank and Area-type are trademarks of DRI-STEEM Corporation.

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DRI-STEEM conserves resources by designing humidification systems that optimize performance. Systems that perform well save energy and water and, ultimately, cost less to operate and maintain.

Save energy

For applications requiring short absorption, High-Efficiency Dispersion Tubes reduce wasted energy up to 85% by significantly reducing airstream heat gain and condensate production. Available for new and retrofit Ultra-sorb® and Rapid-sorb® steam dispersion panels.

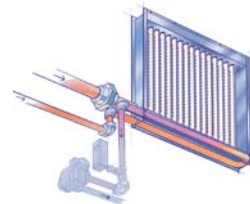


DRI-STEEM's High-Pressure Atomizing Systems disperse unheated micro-fine water particles into airstreams or open spaces. As atomized water droplets evaporate, air temperature drops, reducing the cooling load. This provides significant energy savings when humidifying and cooling simultaneously.



Save water

Ultra-sorb Model XV eliminates water waste and reduces airstream heat gain, energy costs, and boiler chemical use. Available for all pressurized steam applications.



Optimize performance

DRI-STEEM's most advanced controller, Vapor-logic®4 continuously monitors space conditions to align humidifier output with demand. The result is accurate, responsive control.



Your DRI-STEEM representative is:

