Vapormist®

Electric-to-Steam
Humidification System

PRODUCT CATALOG

DRISTEEM®
The humidification experts

Now with Vapor-logic®4 controller:

- Web-enabled access
- Interoperability via Modbus® or optional BACnet® or LonTalk®

Versatility for finished spaces

DRI-STEEM® offers Space Distribution Units that match the Vapormist cabinet. See Page 15.

The Vapormist humidifier is a compact, cabinet-style unit compatible with all water types (tap, softened, deionized, reverse osmosis) and numerous dispersion options. Installation is a snap — just attach the frame to a supporting structure and connect electrical and water services.

Available matching Space Distribution Units disperse steam with no visible vapor trail, making Vapormist ideal for use in finished spaces.

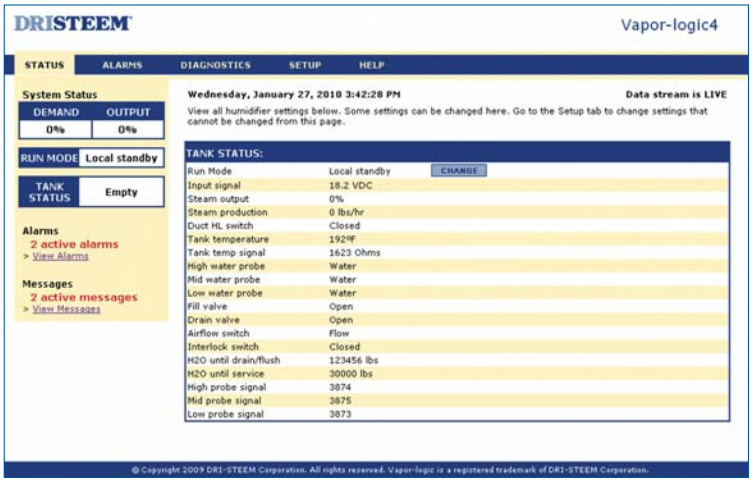
Comprehensive control with Vapor-logic4

Vapormist with Vapor-logic4 sets new standards for control in electric steam humidification:

Interoperability allows communication with building automation systems via Modbus or with optional BACnet or LonTalk protocols.

Safety presets initiate fill and drain cycles and keep the humidifier cool and safe if sensed conditions, though unlikely, could be hazardous.

Web-enabled control allows you to set up, view, and adjust humidifier functions via Ethernet, either directly or remotely through a network.



Vapormist features and benefits

Versatile

- Uses tap, softened, or DI/RO water
- Capacity from 6 to 102 lbs/hr (2.7 to 46 kg/h), link up to 16 units for capacity up to 1632 lbs/hr (740 kg/h)
- Disperses steam through ductwork with dispersion tubes or panels, or directly into a room with a Space Distribution Unit (SDU) mounted remotely or on top of the Vapormist

Flexible

- Control to ±3% RH
- On-off or time-proportioned (TP) control for application control in most environments; solid-state relay (SSR) option for tight control
- Electronically monitored water level ensures safe and reliable operation

Easy to maintain

- Removable cover allows easy access to evaporating chamber and electrical connections
- Softened water significantly reduces maintenance requirements
- End-of-season autodrain minimizes microbial growth
- User-adjustable water skimmer skims off floating minerals
- Controller-operated drain and flush removes precipitated minerals from evaporating chamber
- Constant thermal expansion and contraction of heating elements continuously sheds mineral buildup

DRI-STEEM dispersion: Proven and guaranteed

When it comes to absorption performance, competitors don't come close to DRI-STEEM's proven and guaranteed dispersion systems. Define your dispersion requirements and DRI-STEEM will meet or exceed them. Guaranteed. See Pages 12-23 for more dispersion information.

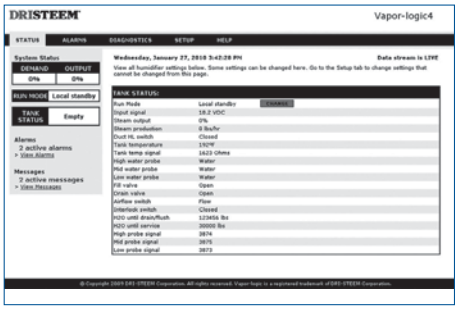
Save even more energy with our High-Efficiency Tube option

An option for new and existing Ultra-sorb® and Rapid-sorb® dispersion assemblies, High-Efficiency Tubes provide significant energy savings: Wasted energy is reduced by up to 85%. Airstream heat gain and condensate are also significantly lowered. See Pages 14-15 for more information.

Vapor-logic4 controller

Keypad/display

Web interface



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.

Accurate, responsive control

The Vapor-logic4 controller provides accurate, responsive RH control. 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.

Cycle counter triggers a message when it's time to replace the contactor.

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 air temperature monitoring, such as in a duct, and enables temperature compensation to prevent window condensation.

Programmable outputs allow remote signaling and device activation.

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

Controller data, such as RH, air temperature, water use, energy use, alarms, and messages, can be downloaded to a PC for viewing and analysis. RH, alarms, and messages can also be viewed on the keypad/display and Web interface.

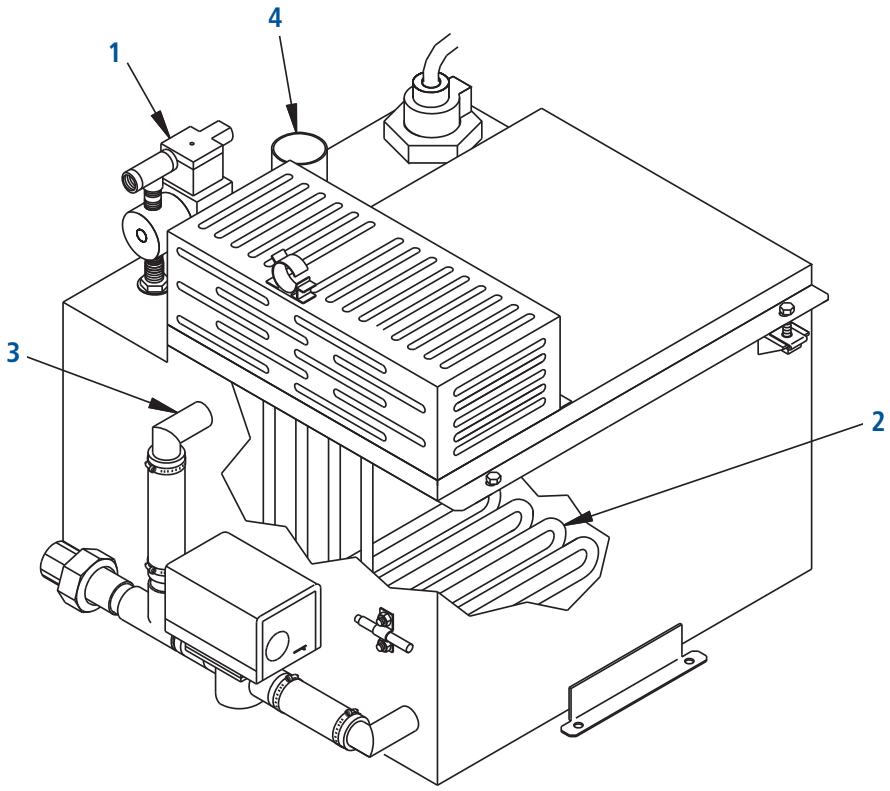
Enhanced diagnostics include:

- **Test outputs** function using keypad/display or Web interface to verify component operation
- **Test humidifier** function using simulated demand to validate performance

mc_042710_1500-VM

Figure 5-1:
Vapormist principle of operation

Tap/softened water Vapormist (shown with cover removed)



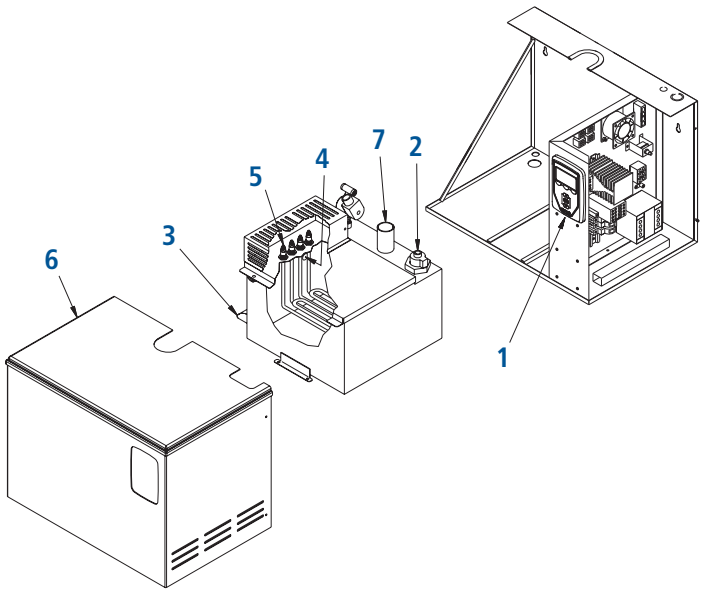
OM-2000

1. When the system is first activated, the fill valve opens and the evaporating chamber fills with water to the operating level.
2. On a call for humidity, the heating elements are energized, causing the water to boil. The fill valve opens and closes as needed to maintain the operating water level.
3. During refill in tap/softened water systems, a portion of the surface water is skimmed off, carrying away precipitated minerals.

   DI/RO water systems (systems using deionized water or water that has been treated using reverse osmosis) do not require skimming.
4. Steam created in the evaporating chamber flows through vapor hose or piping to the dispersion assembly, where it is discharged into the airstream.

Figure 6-1:
Keypad/display

Figure 6-2:
Vapormist components



OM-402-2

1. Vapor-logic4 controller

Vapor-logic4 controls all humidifier functions and can connect to a building automation system via Modbus or optional BACnet or LonTalk. See Page 4 for more information.

2. Water level control

Tap/softened water systems control water levels electronically using a three-rod probe (Figure 7-1).

Systems with the DI/RO water option control water levels using a float valve (Figure 7-2) and low-water cutoff switch.

3. Drain

Duration and frequency of draining are user adjustable. To avoid possible stagnant water and microbial growth, the humidifier automatically drains if there is no call for humidity after a user-defined time period (72-hour default).

4. Water skimmer/overflow port

In tap/softened water systems, the water skimmer reduces surface minerals in the evaporating chamber. Skimming occurs each time the humidifier fills. The skim time duration is user-adjustable.

Systems with the DI/RO water option do not require skimming; the skimmer port functions as an overflow port.

5. Heating elements

Low-watt-density Incoloy-sheathed heating elements ensure operation for many seasons. Constant expansion and contraction of heating elements sheds mineral scale. In the unlikely event of heater failure, heating elements can be removed easily.

6. Removable cover

A removable cover allows easy access to the evaporating chamber, electrical connections, and drain.

7. Steam outlet

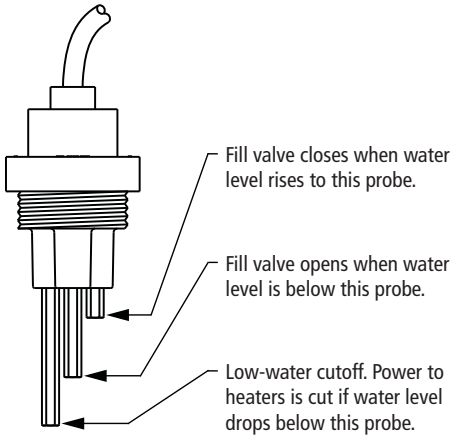
Steam generated in the humidifier rises through the steam outlet and travels to the dispersion assembly through vapor hose or piping.

8. Temperature sensor (not shown)

Mounted on the evaporating chamber, this sensor enables:

- Over-temperature protection
- Freeze protection
- Preheating, allowing rapid response to a call for humidity

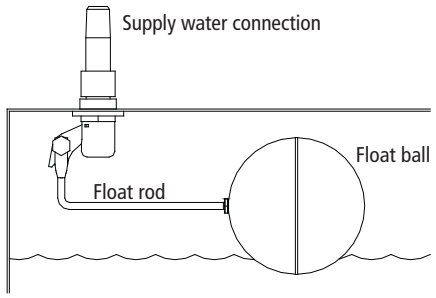
Figure 7-1:
Water level control for tap/softened water humidifier



Humidifiers using tap or softened water control water levels electronically using a three-rod probe. The controller responds with the above actions when the water level reaches each rod.

mc_030910_1335 VLC-OM-030

Figure 7-2:
Water level control for DI/RO water option humidifier



Humidifiers using DI/RO water control water levels using a float valve and low-water cutoff switch.

mc_052710_1644 OM-7396

Table 8-1:
Vapormist capacities, electrical specifications, and weights

VM model	Maximum steam capacity		Current draw (amps)											Weights ‡			
			Single-phase						Three-phase					Shipping		Operating	
kW	lbs/hr	kg/h	120V	208V*	240V*	277V	480V†	600V†	208V*	240V†	277V	480V†	600V†	lbs	kg	lbs	kg
2	6	2.7	16.7	9.6	8.3	7.2	4.2	3.3	—	—	—	—	—	80	36	95	43
4	12	5.4	33.3	19.2	16.7	14.4	8.3	6.7	16.7**	14.4**	12.5	7.2**	5.8**	80	36	95	43
6	18	8.2	—	28.8	25.0	21.7	12.5	10.0	25.0**	21.7**	18.8	10.8**	8.7**	88	40	122	55
8	24	10.9	—	38.5	33.3	28.9	16.7	13.3	33.3**	28.9**	25.0	14.4**	11.5**	88	40	122	55
10	30	13.6	—	—	41.7	36.1**	20.8	16.7	29.1**	25.3**	21.9	12.6**	10.1**	93	42	139	63
12	36	16.3	—	—	—	43.3	25.0	20.0	33.3	28.9	25.0	14.4	11.5	93	42	139	63
14	42	19.1	—	—	—	—	29.2	23.3	38.9	33.7	29.2	16.8	13.5	93	42	139	63
16	48	21.8	—	—	—	—	33.3	26.7	44.4	38.5	33.3	19.2	15.4	93	42	139	63
21	63	28.6	—	—	—	—	43.8	35.0	—	—	43.8	25.3	20.2	95	43	152	69
25	75	34.0	—	—	—	—	—	41.7	—	—	—	30.1	24.1	95	43	152	69
30	90	40.9	—	—	—	—	—	—	—	—	—	36.1	28.9	101	46	156	71
34	102	46.3	—	—	—	—	—	—	—	—	—	40.9	32.7	101	46	156	71

* On 208V/240V/single-phase/three-wire and on 208V/three-phase/four-wire supplies, the neutral line provides a separate 120V circuit for the SDU fan unit.

** For wire sizing, the highest leg draw is shown due to current imbalance.

† Add the following to Vapormist weights if using an SDU option (these weights are for additional control components housed within the Vapormist cabinet):
– SDU-I: 12 lbs (5.5 kg) (SDU-I shipping weight is 68 lbs [31 kg])
– SDU-E: 9 lbs (4 kg) (SDU-E shipping weight is 61 lbs [28 kg])

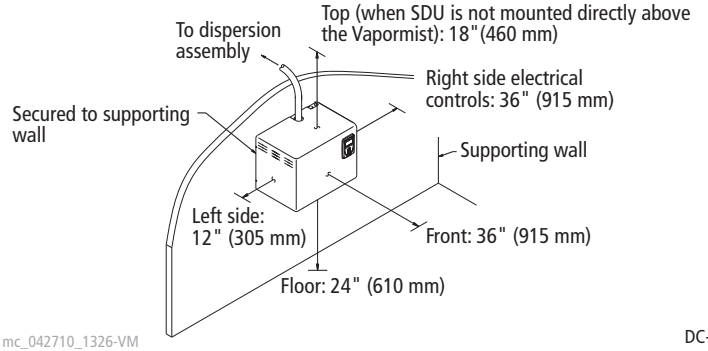
‡ Add the following if using the SSR option:
– For single-phase or three-phase models drawing less than 21.7 amps, add 2 lbs (1 kg)
– For three-phase models drawing more than 21.7 amps, add 4 lbs (2 kg)

All Vapormist models operate at 50/60 Hz.

mc_042610_0900

Figure 8-1:
Vapormist clearance recommendations

Maintain these clearances for service and maintenance.

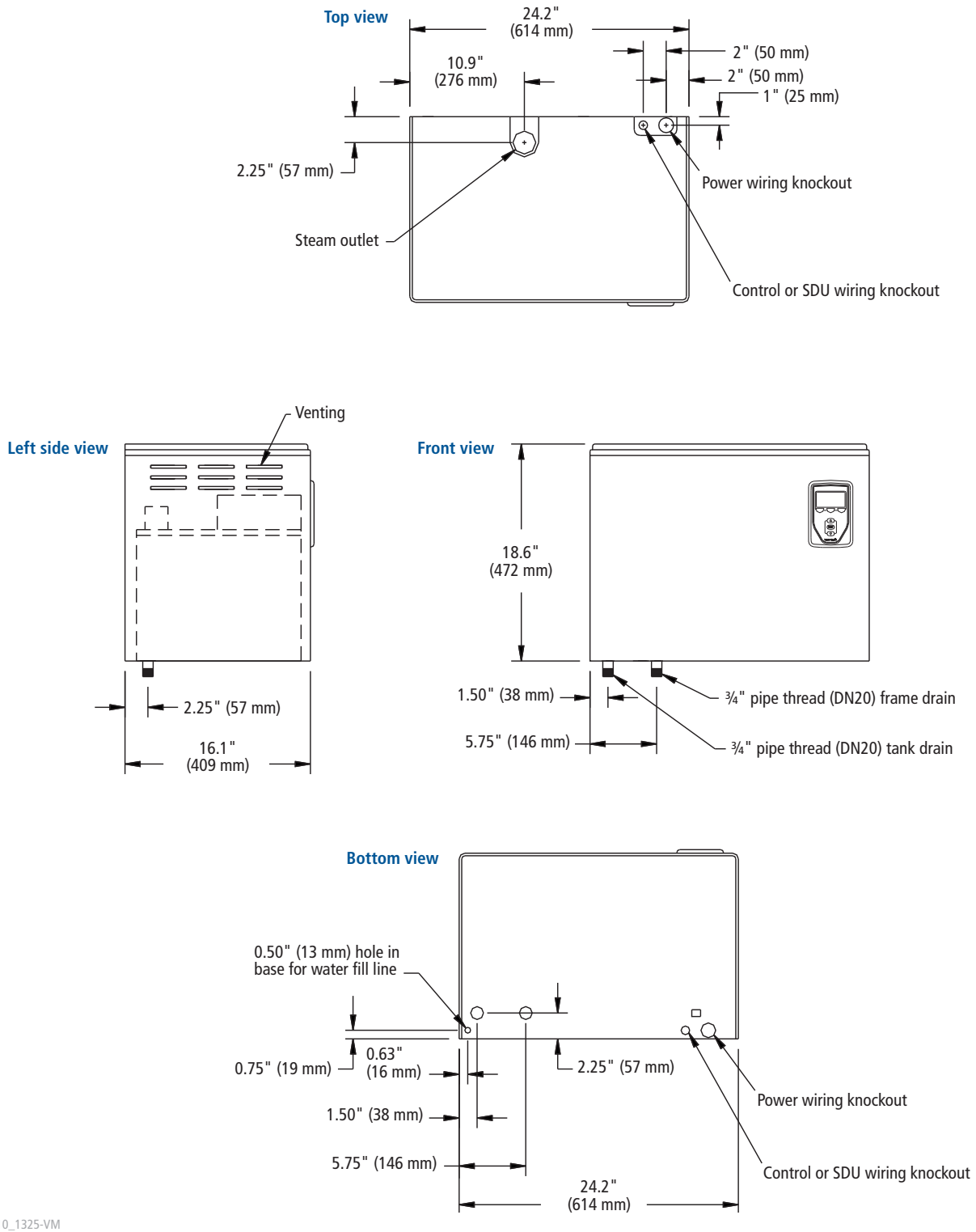


mc_042710_1326-VM

DC-1201

Vapormist dimensions

Figure 9-1:
Vapormist dimensions

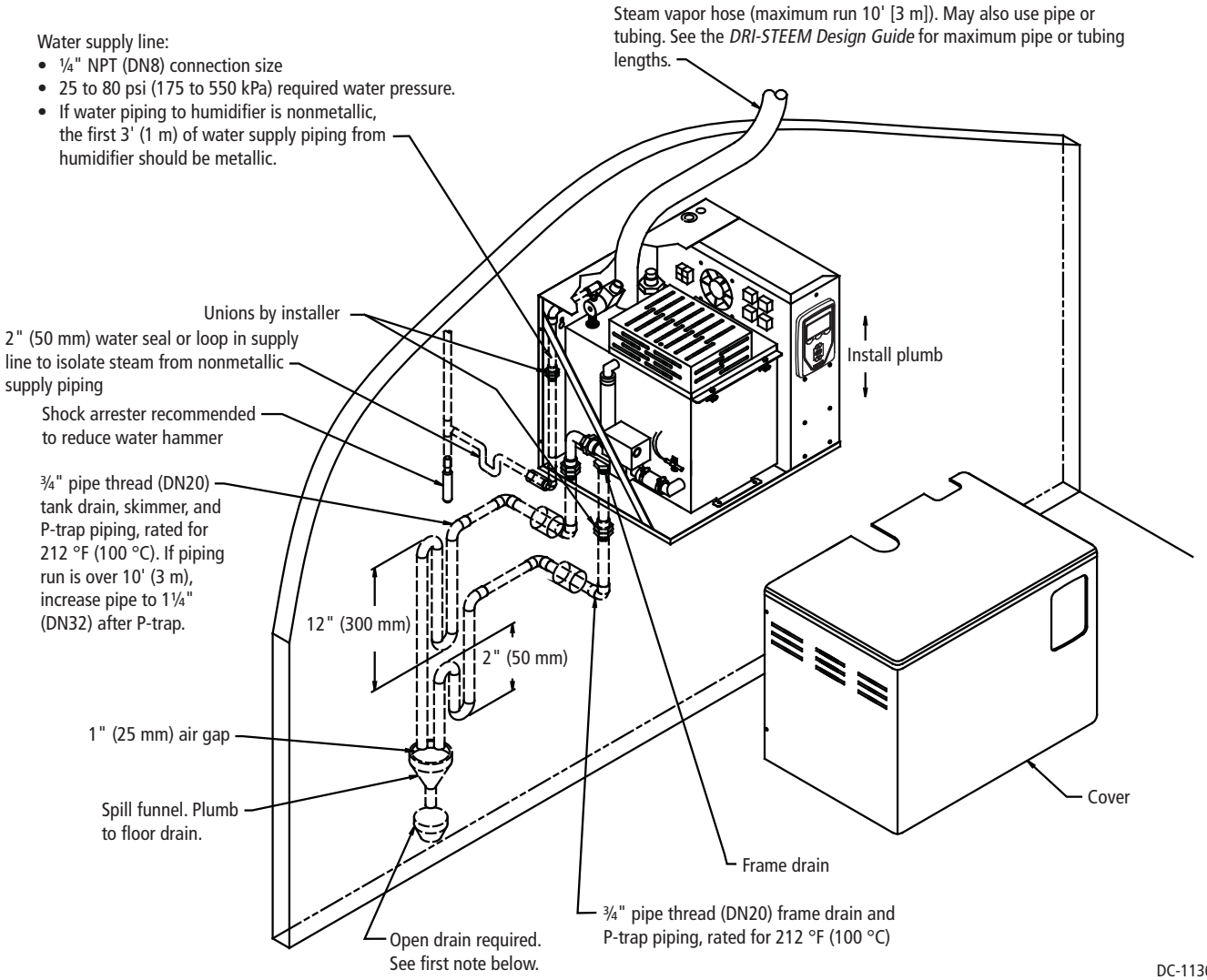


mc_042710_1325-VM

DC-1167

Vapormist piping: Tap/softened water

Figure 10-1:
Vapormist (tap/softened water) field piping overview



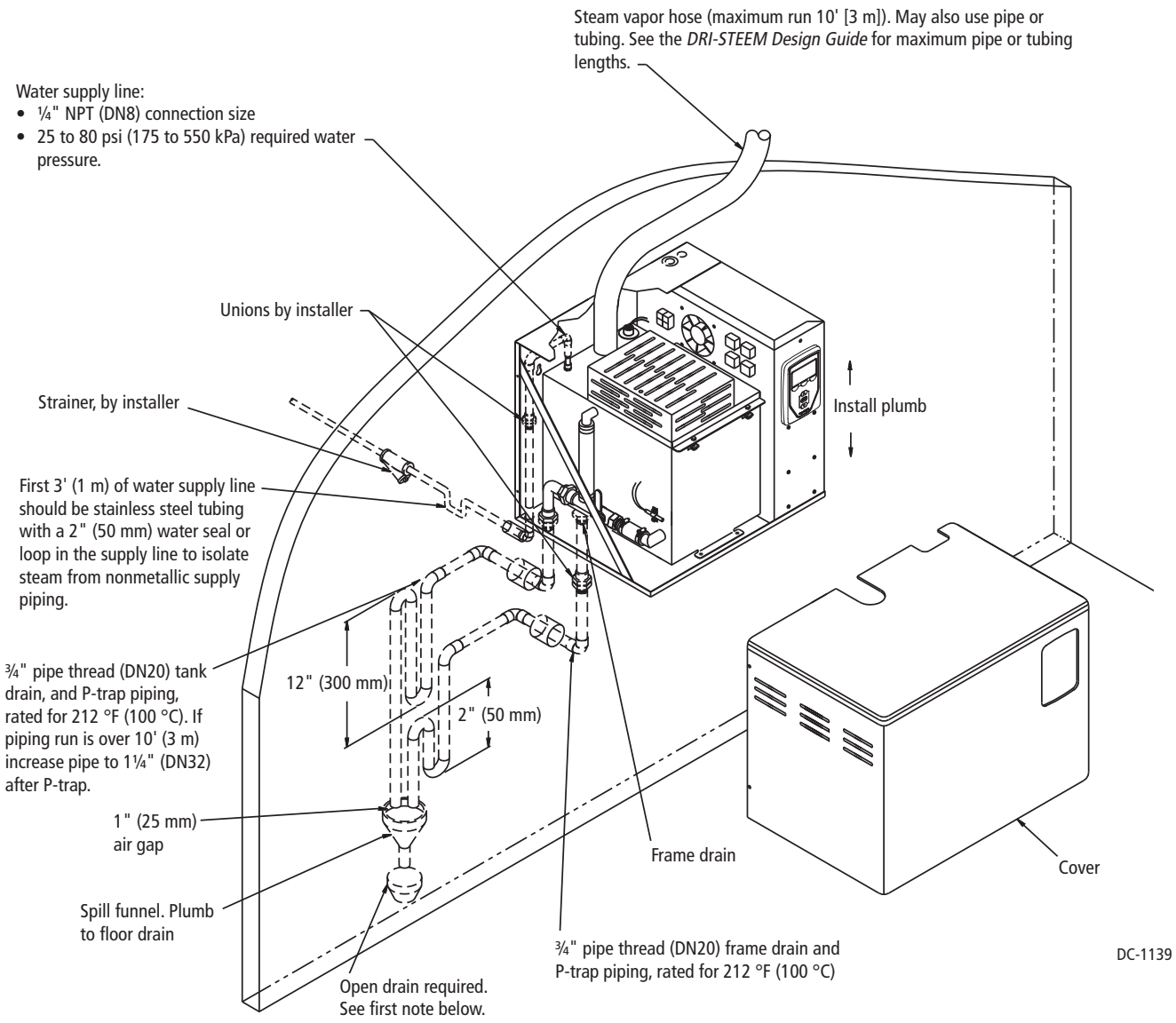
Notes:

- Locate air gap only in spaces with adequate temperature and air movement to absorb flash steam; otherwise, condensation may form on nearby surfaces. Refer to governing codes for drain pipe size and maximum discharge water temperature.
- Offset humidifier from spill funnel or floor drain to prevent flash steam from rising into cabinet.
- Dashed lines indicate provided by installer.
- Water supply inlet is more than 1" (25 mm) above skim/overflow port, eliminating the possibility of backflow or siphoning from tank. No additional backflow prevention is required; however, governing codes prevail.
- Install a union in water supply and drain lines as shown to allow tank removal.
- Damage caused by chloride corrosion is not covered by your DRI-STEEM warranty.

mc_042710_1327-VM

Vapormist piping: DI/RO water option

Figure 11-1:
Vapormist (DI/RO water option) field piping overview

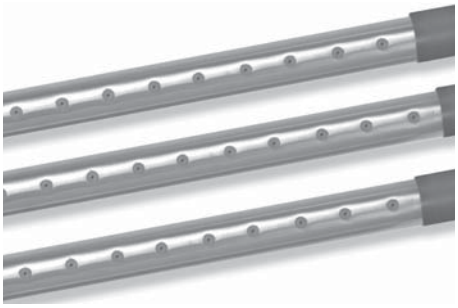


Notes:

- Locate air gap only in spaces with adequate temperature and air movement to absorb flash steam; otherwise, condensation may form on nearby surfaces. Refer to governing codes for drain pipe size and maximum discharge water temperature.
- Offset humidifier from spill funnel or floor drain to prevent flash steam from rising into the cabinet.
- Dashed lines indicate provided by installer.
- The water supply inlet is more than 1" (25 mm) above the overflow port, eliminating the possibility of backflow or siphoning from the tank. No additional backflow prevention is required; however, governing codes prevail.
- Install a union in the water supply and drain lines as shown to allow tank removal.
- Damage caused by chloride corrosion is not covered by your DRI-STEEM warranty.

mc_042710_1328-VM

Drip-free dispersion basics



DRI-STEEM's dispersion tubes are fitted with one or two rows of closely-spaced thermal-resin tubelets to evenly disperse steam across the airstream.

Guaranteed non-wetting distances

Using data collected in our on-site test laboratories, we have developed guaranteed steam absorption (non-wetting) distances, allowing you to confidently choose equipment that will accommodate any application.

Dry steam

Adding humidification to an airstream without creating wetness in the duct system is critical for the maintenance of a healthy environment. Wet areas in ducts are a threat to the health of building occupants since they moisten dust on duct floors, creating ideal breeding grounds for disease-producing microbes. In addition, water accumulating in ducts can drip and cause building damage.

Steam exits drip-free through tubelets

All DRI-STEEM evaporative dispersion tube units discharge steam through thermal-resin tubelets fitted into dispersion tubes. These tubelets extend from the center of the tube, where the steam is driest, through the tube wall, to the duct airstream. In essence, the tubelets provide a temperature-neutral exit tunnel for steam, allowing steam to cross over lower-temperature metal without condensing or dripping. Each tubelet contains a calibrated orifice sized for steam capacity. These tubelets are a DRI-STEEM exclusive, and are essential for drip-free steam dispersion.

Drip-free dispersion basics

Condensate management

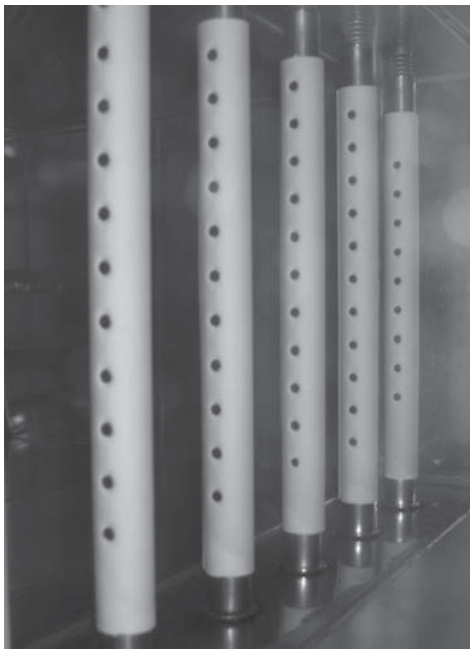
Some condensation is inevitable in steam dispersion, but through careful design condensate can be managed.

For example, Ultra-sorb Models LV and LH use gravity to remove condensate. Steam enters the supply header, exits through the tubelets, and condensate drains out the return header. Ultra-sorb Model XV, available with STS humidifiers, has a heat exchanger that vaporizes dispersion-generated condensate.

Rapid-sorb dispersion units manage velocities to ensure condensate is not pushed out into the air along with steam but drains out the opposite end of the header.

Reduce condensate, wasted energy with High-Efficiency Tubes

To significantly reduce condensate and wasted energy, use DRI-STEEM's High-Efficiency Tubes, which reduce dispersion-generated condensate and wasted energy by up to 85%. See our *High-Efficiency Tube option* described in more detail on Page 14.



Ultra-sorb Model XV with standard High-Efficiency Tubes

Vapormist steam dispersion options

Ultra-sorb Models LV

Ultra-sorb Model LH

Ultra-sorb Model LV
with High-Efficiency Tubes

Rapid-sorb
with High-Efficiency Tubes

Ultra-sorb Models LV and LH

Most versatile

- Guaranteed, short non-wetting distances — install within inches of downstream devices
- Reduce wasted energy up to 85% and increase capacity with optional High-Efficiency Dispersion Tubes
- Lowest installation cost — factory assembly for easy installation

Capacity:
Up to 1850 lbs/hr (840 kg/h) per panel

High-Efficiency Dispersion Tubes option

For new and existing Ultra-sorb, Rapid-sorb, single dispersion tube

- Highest efficiency
- Increases tube capacity up to 6 lbs/hr (2.7 kg/h)
- Up to 85% reduction in wasted energy, airstream heat gain, and condensate production
- Plenum approved for in-duct installation

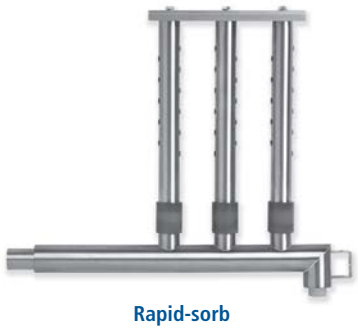
Vapormist steam dispersion options

Rapid-sorb® dispersion tube system

Multiple tubes, short non-wetting distance

- Short non-wetting distance, compared to single dispersion tube
- Horizontal or vertical airflows
- Install Rapid-sorb header inside or outside duct
- Available with High-Efficiency Dispersion Tubes

Capacity: Up to 2100 lbs/hr (955 kg/h) per system



Rapid-sorb dispersion tube system

Single dispersion tube

Installation flexibility

- Low-capacity dispersion for horizontal or vertical airflows.
- Available as a High-Efficiency Dispersion Tube

Capacity: Up to 97 lbs/hr (38 kg/h)

Single dispersion tube

Space distribution units

Quiet, fan-based steam dispersion

- SDUs mount on top of Vapormist humidifiers or remotely
- Designed for finished spaces

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

SDU
mounted on
Vapormist humidifier

Table 16-1:
Ultra-sorb Model LV and LH tube capacity*

Insulated		Uninsulated	
lbs/hr	kg/h	lbs/hr	kg/h
86	39	80	36

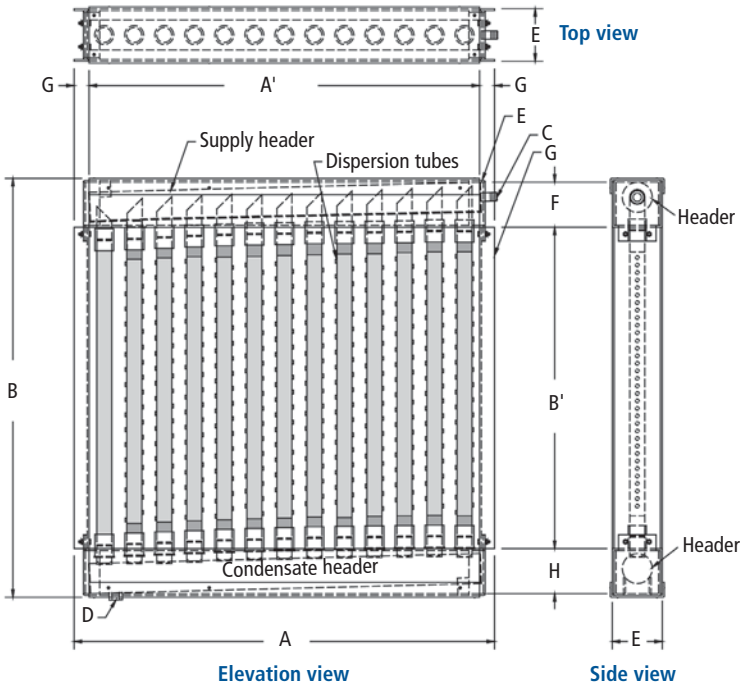
Note:
* **For Model LV,** If face height is <26" (660 mm), tube quantity per panel may need to increase to compensate for reduced capacity of short tubes.
For Model LH, if face width is <25" (635 mm), tube quantity per panel may need to increase to compensate for reduced capacity of short tubes.

Consult DRI-STEEM or see Dri-calc for the correct calculation.

mc_010709_0710

Notes:
- For more information about Ultra-sorb, see the Ultra-sorb catalog or DRI-STEEM's Dri-calc software.

Figure 16-1:
Ultra-sorb Model LV dimensions



mc_062711_1425

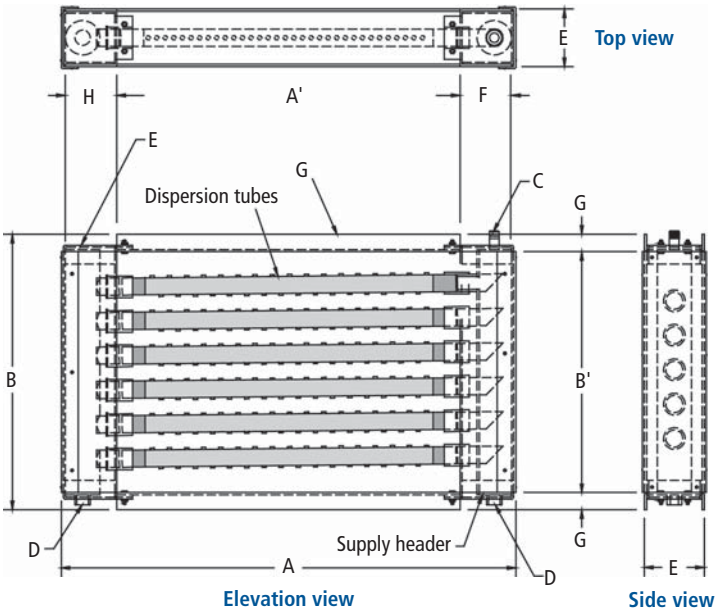
OM-123

Table 16-2:
Ultra-sorb Model LV dimensions

A Unit width	15" (380 mm) min, 147" (3735 mm) max, in 1" (25 mm) increments
A' Face width	12" (305 mm) min, 144" (3660 mm) max, in 1" (25 mm) increments
B Unit height	21" (530 mm) min, 156" (3960 mm) max, in 1" (25 mm) increments Shipped unassembled by request or if unit height is more than 98" (2490 mm)
B Face height	12" (305 mm) min, 144" (3660 mm) max, in 1" (25 mm) increments
C Steam inlet diameter	Determined by maximum steam capacity
D Condensate drain	3/4" pipe thread (DN20)
E Header enclosure (front to back)	For 3" (DN80) and 4" (DN100) headers, E = 5" (127 mm); for 5" (DN125) header, E = 6" (152 mm); for 6" (DN150) header, E = 7" (178 mm)
F Header enclosure (top to bottom)	For 3" (DN80) header F = 4.5" (114 mm); for 4" (DN100) header, F = 5.5" (140 mm); for 5" (DN125) header, F = 6.5" (165 mm); for 6" (DN150) header F = 7.5" (191 mm)
G Mounting flange	1.5" (38 mm)
H Condensate header enclosure	4.5" (114 mm)
Note: Header dimensions are determined by capacity. See Table 17-1.	

mc_050808_1215

Figure 17-1:
Ultra-sorb Model LH dimensions



mc_062711_1424

OM-124b

Table 17-1:
Nonpressurized steam header capacities

Header capacity		Header diameter	
lbs/hr	kg/h	inches	DN
300	135	3	80
600	270	4	100
1100	500	5	125
1850	820	6	150

mc_062711_1426

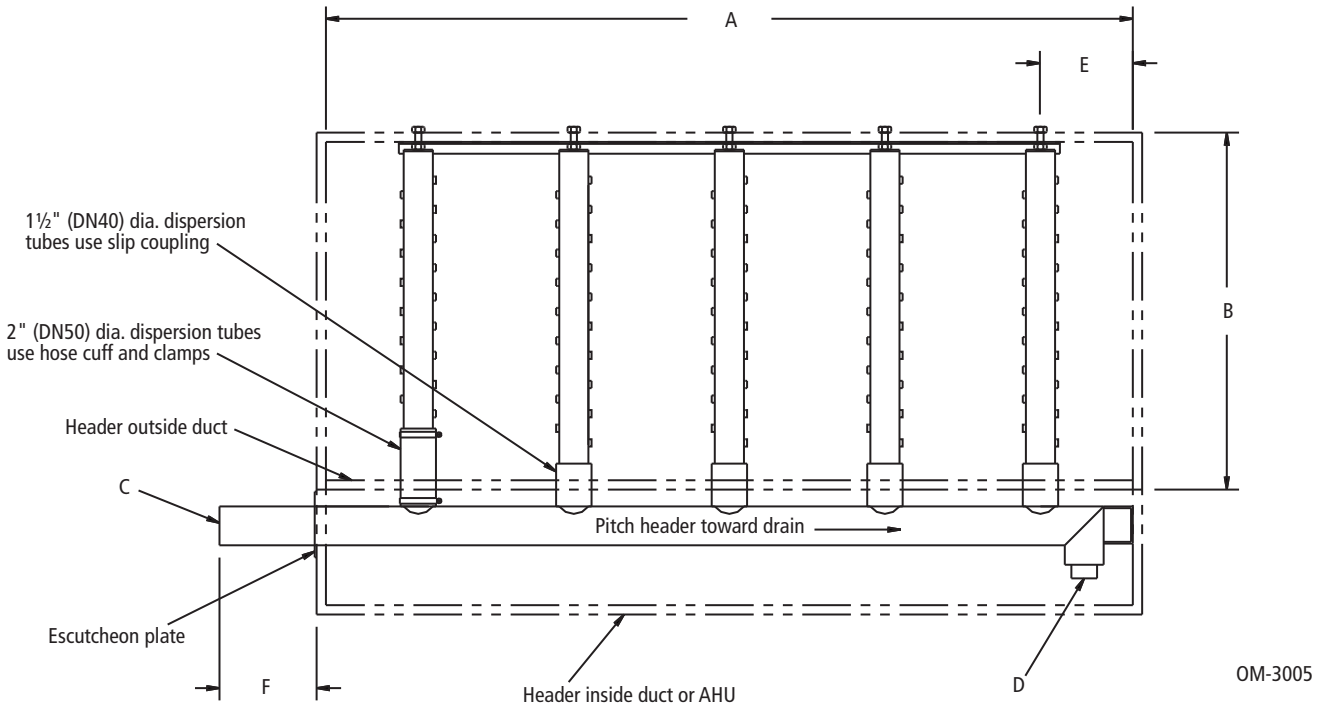
Notes:
- When connected to a Vapormist humidifier install Ultra-sorb Model LH in vertical airflows only.
- For more information about Ultra-sorb, see the Ultra-sorb catalog or DRI-STEEM's Dri-calc software.

Table 17-3:
Ultra-sorb Model LH dimensions

A Unit width	21" (530 mm) min, 129" (3280 mm) max, in 1" (25 mm) increments
A' Face width	12" (305 mm) min, 120" (3050 mm) max, in 1" (25 mm) increments
B Unit height	15" (380 mm) min, 123" (3125 mm) max, in 1" (25 mm) increments Shipped unassembled by request or if unit height is more than 98" (2490 mm)
B' Face height	12" (305 mm) min, 120" (3050 mm) max, in 1" (25 mm) increments
C Steam inlet diameter	Determined by maximum steam capacity
D Condensate drain	3/4" pipe thread (DN20)
E Header enclosure (front to back)	For 3" (DN80) and 4" (DN100) headers, E = 5" (127 mm); for 5" (DN125) header, E = 6" (152 mm); for 6" (DN150) header, E = 7" (178 mm)
F Header enclosure (top to bottom)	For 3" (DN80) header, F = 4.5" (114 mm); for 4" (DN100) header, F = 5.5" (140 mm); for 5" (DN125) header, F = 6.5" (165 mm); for 6" (DN150) header, F = 7.5" (191 mm)
G Mounting flange	1.5" (38 mm)
H Condensate header enclosure	4.5" (114 mm)
Note: Header dimensions are determined by capacity. See Table 17-1.	

mc_062711_1430

Figure 18-1:
Rapid-sorb dimensions



Note:
Add water seal to condensate drain as shown in the Dri-calc Installation Guides or the humidifier's Installation, Operation, and Maintenance manual.

Table 18-2:
Rapid-sorb tube capacities*

Tube diameter		Insulated (High-Efficiency Tubes)		Uninsulated	
inches	DN	lbs/hr	kg/h	lbs/hr	kg/h
1½	40	43	19.5	40	18.2
2	50	80	36.4	77	35

Note:
* Capacities shown are for horizontal airflow. See Dri-calc for vertical airflow capacities. If face height is <22" (559 mm), tube quantity per panel may need to increase to compensate for reduced capacity of short tubes. Consult DRI-STEEM or see Dri-calc for the correct calculation.

Table 18-1:
Rapid-sorb dimensions

Dimension	Description	Inches (mm)
A	Face width	12" (305) minimum to 120" (3048) maximum in 1" (25) increments
B	Face height	12" (305) minimum to 120" (3048) maximum in 1" (25) increments
C	Steam inlet	Determined by humidifier maximum capacity
D	Condensate drain	¾" pipe thread (DN20)
E	Distance from tube center to inside of duct or AHU wall	4.5" (114) minimum
F	Distance from outside of duct or AHU wall to end of Rapid-sorb leader	4.5" (114) minimum

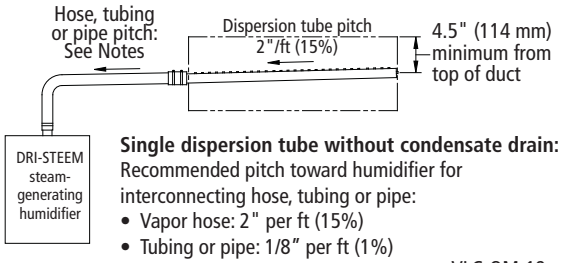
Note:
All Rapid-sorb units are custom-sized and field-assembled to fit the duct or air handler. Consult DRI-STEEM for sizes larger or smaller than those listed above.

mc_121311_1321

Single dispersion tube

Figure 19-1:
Single dispersion tube without and with condensate drain

Without drain

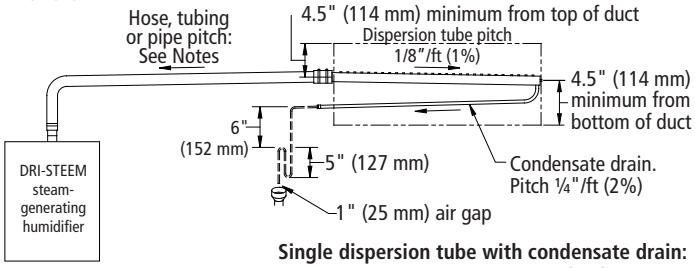


Single dispersion tube without condensate drain:
Recommended pitch toward humidifier for interconnecting hose, tubing or pipe:

- Vapor hose: 2" per ft (15%)
- Tubing or pipe: 1/8" per ft (1%)

VLC-OM-19-m

With drain



Single dispersion tube with condensate drain:
Recommended pitch toward humidifier for interconnecting hose, tubing or pipe:

- Vapor hose: 2" per ft (15%)
- 1½" tubing or pipe: ½" per ft (5%)
- 2" tubing or pipe: ¼" per ft (2%)

VLC-OM-18-m

Table 19-1:
Single dispersion tube capacities*

Tube size		Insulated (High-Efficiency Tubes)				Uninsulated			
		Without drain		With drain		Without drain		With drain	
inches	DN	lbs/hr	kg/h	lbs/hr	kg/h	lbs/hr	kg/h	lbs/hr	kg/h
1½	40	29	13.2	65	29.5	28	12.7	62	28.2
2	50	65	29.5	97	44.1	62	28.2	93	42.3

Notes:

* If face width is <19" (483 mm), tube capacity could be reduced. Consult DRI-STEEM or see Dri-calc for the correct capacity.

- Single dispersion tubes are available with face width between 6" (152 mm) and 120" (3048 mm) in 1" (25 mm) increments.

mc_121311_1337

Space Distribution Units: SDUs

DRI-STEEM's SDUs match the Vapormist cabinet

SDU-I (Space Distribution Unit Internal Absorption) disperses steam without a visible vapor trail. This option is ideal for spaces where the presence of vapor creates either a visual problem or a condensation risk.

For larger capacities, choose the SDU-E (Space Distribution Unit External Absorption).

Both SDU models offer extremely quiet, reliable steam distribution.

Mount the Vapormist and SDU to wall studs using the template on the box. Two lag bolts are provided with each unit.

Provide at least 6" (152 mm) clearance on each side of an SDU when mounted remotely. For required SDU-E clearances see Table 22-1.

SDU-I is available for Vapormist humidifier models VM-2 through VM-8, and all VM-10 models except those using 240V, three-phase power with SSR control.

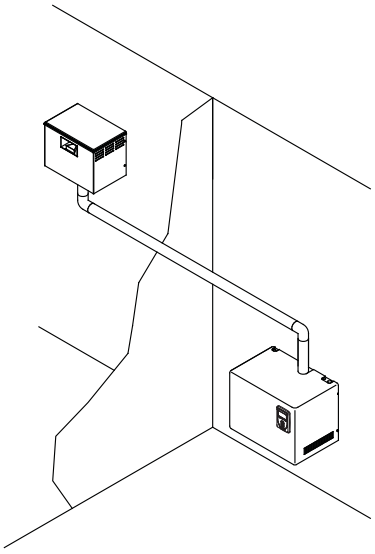
SDU-E is available for all Vapormist humidifiers except VM-2 and models using 240V, 277V, and 480V three-phase power with the SSR control option and drawing more than 21.7 amps.

Note: SDUs ship separate from the Vapormist.

mc_052510_1525

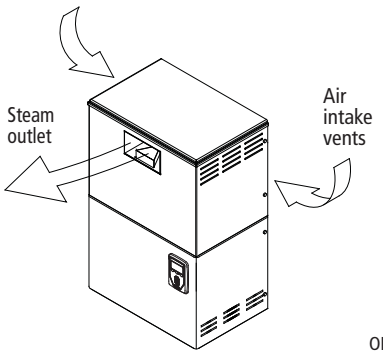
Figure 20-1:
SDU mounting options

Remote from humidifier



OM-56-1

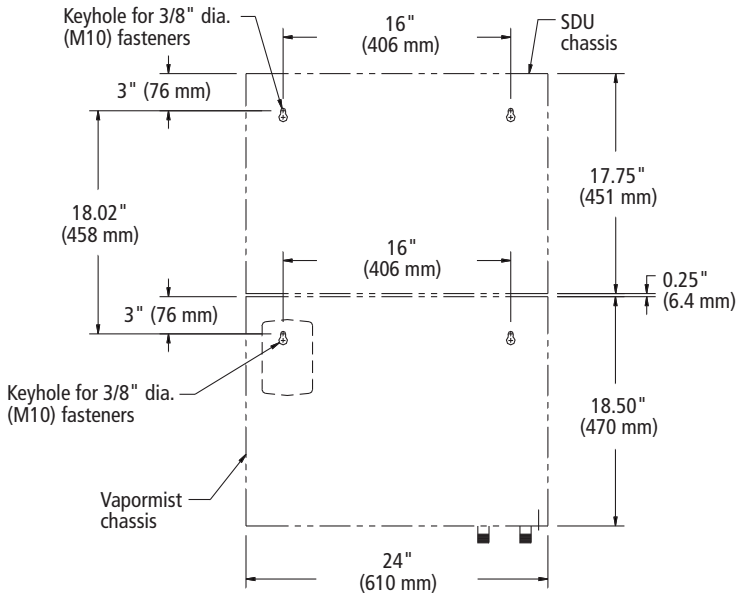
Directly above humidifier



mc_052510_1620

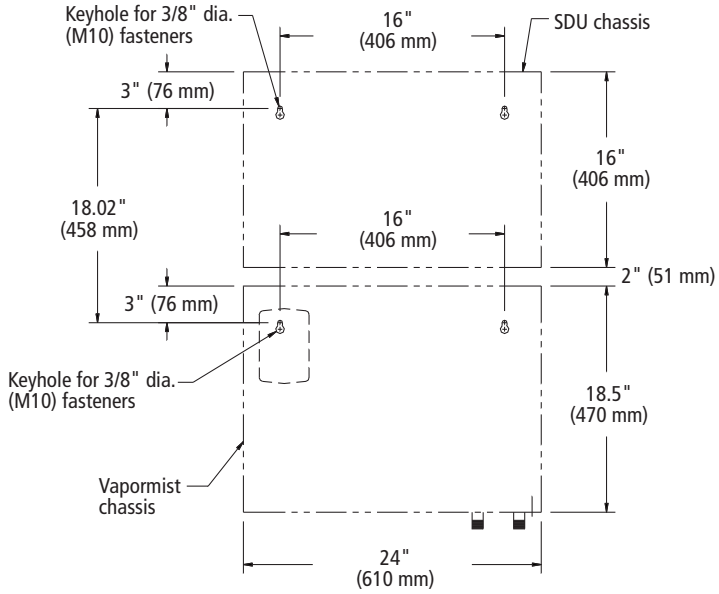
OM-55-1

Figure 21-1:
Wall-mounted Vapormist and SDU-I



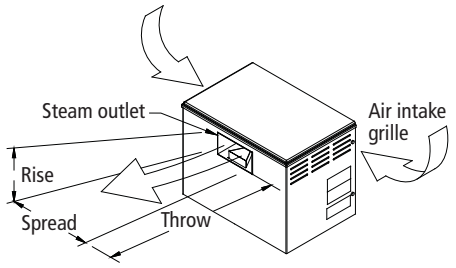
mc_052610_1505-VM OM-282-4

Figure 21-2:
Wall-mounted Vapormist and SDU-E



mc_052610_1506-VM OM-282-7

Figure 22-1:
SDU-E rise, spread, and throw



mc_042710_1435 DC-1027

As steam is discharged from the SDU-E, it quickly cools and turns to a visible fog that is lighter than air. As this fog is carried away from the SDU-E by the airstream, it tends to rise toward the ceiling. If this fog contacts solid surfaces (columns, beams, ceiling, pipes, etc.) before it disappears, it could collect and drip as water. The greater the space relative humidity, the more the fog will rise, throw and spread.

Table 22-1 lists the minimum rise, throw and spread non-wetting distances for SDU-E at 40%, 50% and 60% RH in the space. Surfaces cooler than ambient temperature, or objects located within this minimum dimension, can cause condensation and dripping. To avoid steam impingement on surrounding areas, observe the minimum non-wetting distances in Table 22-1.

The SDU-E contains a blower (120 V, single-phase, 60 Hz) and an airflow proving switch (field-wired to the humidifier electrical panel). A wiring diagram of the SDU-E is included with the unit.

On a call for humidity, the humidifier begins producing steam, and the start relay energizes the SDU-E blower. When the call for humidity is satisfied, the Vapor-logic4 controller keeps the blower running to disperse residual moisture using a time delay.

mc_042710_1255

Table 22-1:
SDU-E minimum nonwetting distances

kW	Maximum steam capacity		40% RH @ 70 °F (21 °C)						50% RH @ 70 °F (21 °C)						60% RH @ 70 °F (21 °C)					
			Rise		Spread		Throw		Rise		Spread		Throw		Rise		Spread		Throw	
	lbs/hr	kg/h	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m
2	6	2.7	1.0	0.3	1.0	0.3	5.0	1.5	1.5	0.5	1.5	0.5	6.5	2.0	2.5	0.8	2.5	0.8	7.5	2.3
4	12	5.4	1.0	0.3	1.0	0.3	5.0	1.5	1.5	0.5	1.5	0.5	6.5	2.0	2.5	0.8	2.5	0.8	7.5	2.3
6	18	8.2	1.0	0.3	1.0	0.3	5.0	1.5	1.5	0.5	1.5	0.5	6.5	2.0	2.5	0.8	2.5	0.8	7.5	2.3
8	24	10.9	1.0	0.3	1.0	0.3	5.5	1.7	1.5	0.5	1.5	0.5	6.5	2.0	2.5	0.8	2.5	0.8	7.5	2.3
10	30	13.6	1.5	0.5	1.5	0.5	6.0	1.8	2.0	0.6	2.0	0.6	7.0	2.1	3.0	1.0	3.0	1.0	8.0	2.5
12	36	16.3	1.5	0.5	1.5	0.5	6.0	1.8	2.0	0.6	2.0	0.6	7.0	2.1	3.0	1.0	3.0	1.0	8.0	2.5
14	42	19.1	2.0	0.6	2.0	0.6	7.0	2.1	2.0	0.6	2.0	0.6	7.0	2.1	3.0	1.0	3.0	1.0	9.0	2.7
16	48	21.8	2.0	0.6	2.0	0.6	7.0	2.1	2.0	0.6	2.0	0.6	7.0	2.1	3.0	1.0	3.0	1.0	9.0	2.7
21	63	28.6	2.0	0.6	2.0	0.6	7.5	2.3	2.5	0.8	2.5	0.8	10.0	3.0	3.0	1.0	3.0	1.0	12.0	3.7
25	75	34.0	2.0	0.6	2.0	0.6	8.0	2.5	2.5	0.8	2.5	0.8	10.5	3.2	3.5	1.1	3.5	1.1	12.5	3.8
30	90	40.9	2.0	0.6	2.0	0.6	8.0	2.5	2.5	0.8	2.5	0.8	10.5	3.2	3.5	1.1	3.5	1.1	12.5	3.8
34	102	46.3	2.0	0.6	2.0	0.6	8.0	2.5	2.5	0.8	2.5	0.8	10.5	3.2	3.5	1.1	3.5	1.1	12.5	3.8

Notes:
- Surfaces or objects directly in the path of vapor discharge may cause condensation and dripping.
- To avoid steam impingement on surrounding areas, observe the minimum nonwetting dimensions in this table.
- Rise: The minimum nonwetting height above the steam outlet of the SDU-E.
- Spread: The minimum nonwetting width from the steam outlet of the SDU-E.
- Throw: The minimum nonwetting horizontal distance from the steam outlet of the SDU-E.

mc_042710_1300

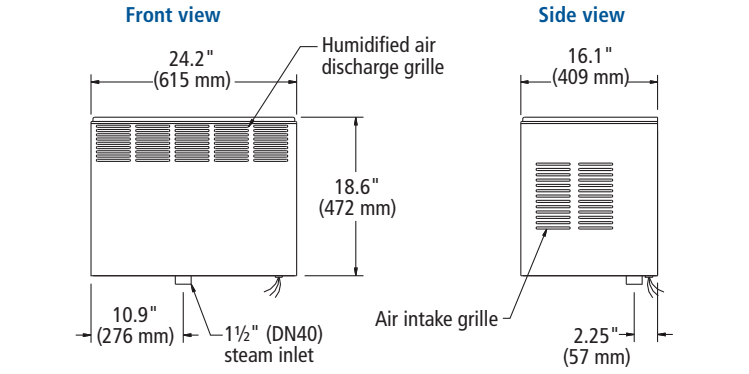
Table 23-1:
SDU specifications

SDU model	Maximum capacity		Shipping weight		Amps at 120V (50/60 Hz)	Horse-power	cfm	m³/s	dB*
	lbs/hr	kg/h	lbs	kg					
SDU-I	30	13.6	68	31	3.20	1/5	760	0.36	58
SDU-E	102	46.3	61	28	2.07	1/8	545	0.26	64

* Measurement taken 6.5' (2 m) in front of SDU cabinet.

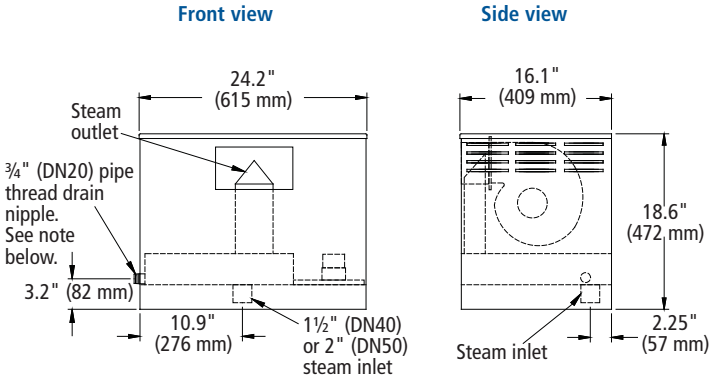
mc_042710_1440

Figure 23-1:
SDU-I mechanical detail



mc_052510_1700 DC-1076

Figure 23-2:
SDU-E mechanical detail



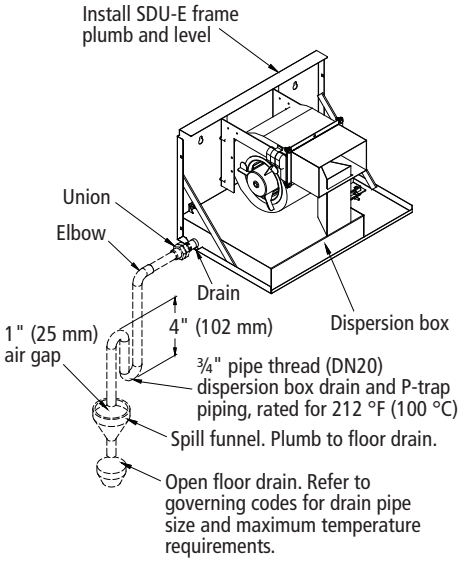
Note: SDU-E dispersion box requires an installed condensate drain line and water seal, provided by installer. See Figure 23-3.

mc_052510_1701 DC-1078

Important: For visible vapor to be absorbed completely within the SDU-I unit before being discharged as humidified air, room air must be 45% RH or less. Trying to maintain greater than 45% RH will cause visible vapor and potential for moisture collection on the discharge grille.

Note: If using Vapormist models VM-10, VM-12, VM-14, or VM-16 with an SDU-E, the Vapormist steam outlet must be 2" to match the SDU-E steam inlet.

Figure 23-3:
SDU-E drain line piping



mc_042710_1445 OM-1245

Conserving resources through better performance

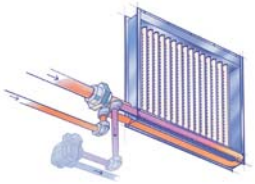
DRI-STEEM conserves resources by designing humidification systems that optimize performance. Systems that perform well save energy and water and, ultimately, cost less to operate and maintain.

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 STS® steam-to-steam humidifiers and 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:

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 construction of the Vapormist humidifier, which features cleanable, stainless steel construction. DRI-STEEM also leads the industry with a Two-year Limited Warranty and optional extended warranty.

For more information

www.dristeem.com
sales@dristeem.com

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

DRI-STEEM Corporation
An ISO 9001:2000 certified company

U.S. Headquarters:
14949 Technology Drive
Eden Prairie, MN 55344
800-328-4447 or 952-949-2415
952-229-3200 (fax)

European office:
Marc Briers
Grote Hellekensstraat 54 b
B-3520 Zonhoven
Belgium
+3211823595 (voice)
+3211817948 (fax)
E-mail: marc.briers@dristeem.com

Form No. VM-CAT-1211