



Humidifier Selection Report

Date	Project	Zone	System Unit	Elevation
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Designed Condition

Outside Air Conditions (2)			Space Conditions (1) & Distribution		
DB Temp.	RH%	OA intake %	DB temp.	RH%	Distribution
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HVAC System Information

Duct Information						ERV (6)	
Air Volume	Type	Width	Height	Diameter	Air Velocity	Installed	Latent Effect Winter
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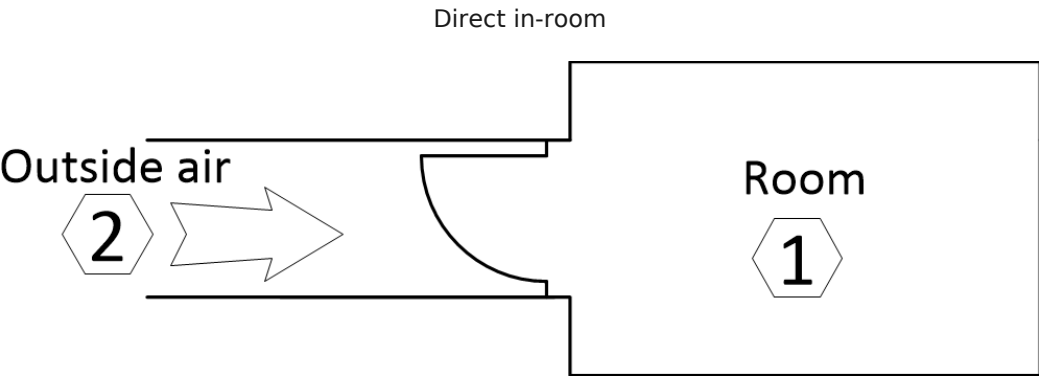
Humidification Load

Calculated Load	Humidifier Model
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Air Conditions

Mixed Air (3)		Before Humidifier (4)		After Humidifier (Supply) (5)	
DB Temp.	RH%	DB Temp.	RH%	DB Temp.	RH%
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Humidification System Schematic View



IER Product Datasheet

Humidification Load

Calculated Load	Humidifier Model
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Main & Standard Features

- Fully modulating humidifier.
- Permanent stainless steel cylinder with thermal insulation.
- Suitable for tap (city) water or RO water without additional option.
- Easy and quick regular service cleaning in minutes with no tool.
- Log of events and alarms.
- Modbus RTU remote communication.
- Three year warranty (when installation is commissioned with no non conformance by authorized service representative).
- Certified as per UL998 by TUV-SUD.
- Drain water automatically cooled down at 140°F [60°C].

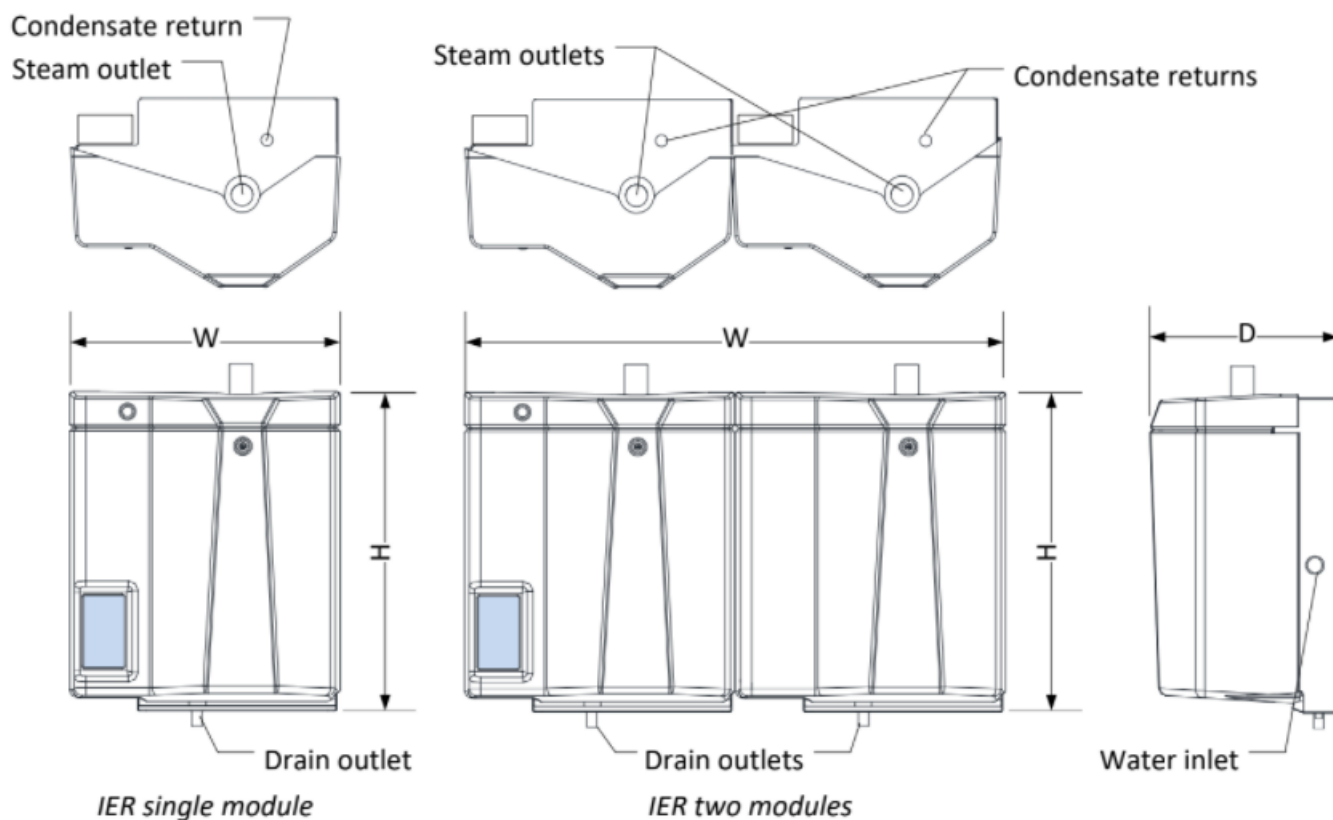
Electrical Data

Model	Steam Capacity	Power	Current for following available voltages					
			120Vac 1ph	208Vac 1ph	240Vac 1ph	208Vac 3ph	480Vac 3ph	600Vac 3ph
IER02	6.3 lb/h [2.8 kg/h]	2.1kW	17.5A	11.8A	8.75A	-	-	-
IER04	10 lb/h [4.5 kg/h]	3.3kW	-	16.0A	13.9A	9.3A	4.0A	3.2A
IER05	15 lb/h [6.8 kg/h]	5.0 kW	-	24.0A	20.8A	13.9A	6.0A	4.8A
IER09	24 lb/h [11.4 kg/h]	8.3 kW	-	40.1A	34.7A	23.1A	10.0A	8.0A
IER12	35 lb/h [15.9 kg/h]	11.7 kW	-	-	44.2A	32.4A	14.0A	11.2A
IER17	50 lb/h [22.7 kg/h]	16.7 kW	-	-	-	46.3A	20.0A	16.0A
IER22	65 lb/h [29.5 kg/h]	21.7 kW	-	-	-	-	26.1A	20.8A
IER24	70 lb/h [31.8 kg/h]	23.4 kW	-	-	-	64.8A	-	-
IER31	93 lb/h [42.3 kg/h]	31.0 kW	-	-	-	-	37.3A	29.8A
IER34	100 lb/h [45.4 kg/h]	33.4 kW	-	-	-	92.6A	-	-

IER44	130 lb/h [59.1 kg/h]	43.3 kW	-	-	-	-	52.1A	41.7A
IER62	185 lb/h [84.1 kg/h]	61.7 kW	-	-	-	-	74.2A	59.3A

Note: IER is a resistive type humidifier, current rating does need to be oversized, there is no risk of overload.

Dimensions & Weight



Model	Steam Capacity	Module		Steam outlet		Dimensions			Weight	
		Qty	Type	Qty	OD	W	H	D	Net	Oper.
IER02	6 lb/h [2.8 kg/h]	1	Small	1	1-1/2in [DN40]	20in [51cm]	23in [59cm]	13in [33cm]	45lb [21kg]	74lb [34kg]
IER04	10 lb/h [4.5 kg/h]									
IER05	15 lb/h [6.8 kg/h]									
IER09	24 lb/h [11.4 kg/h]									

IER12	35 lb/h [15.9 kg/h]	1	Medium	1	2in [DN50]	23in [59cm]	27in [69cm]	17in [43cm]	68lb [31kg]	118lb [54kg]
IER17	50 lb/h [22.7 kg/h]									
IER22	65 lb/h [29.5 kg/h]									
IER24	70 lb/h [31.8 kg/h]	2	Medium	2	2in [DN50]	42in [107cm]	27in [69cm]	17in [43cm]	136lb [62kg]	236lb [107kg]
IER31	93 lb/h [42.3 kg/h]	1	Medium	1	2-1/2in [DN65]	23in [59cm]	27in [69cm]	17in [43cm]	68lb [31kg]	118lb [54kg]
IER34	100 lb/h [45.4 kg/h]	2	Medium	2	2in [DN50]	42in [107cm]	27in [69cm]	17in [43cm]	136lb [62kg]	236lb [107kg]
IER44	130 lb/h [59.1 kg/h]	2	Medium	2	2in [DN50]	42in [107cm]	27in [69cm]	17in [43cm]		
IER62	185 lb/h [84.1 kg/h]	2	Medium	2	2-1/2in [DN65]	42in [107cm]	27in [69cm]	17in [43cm]		

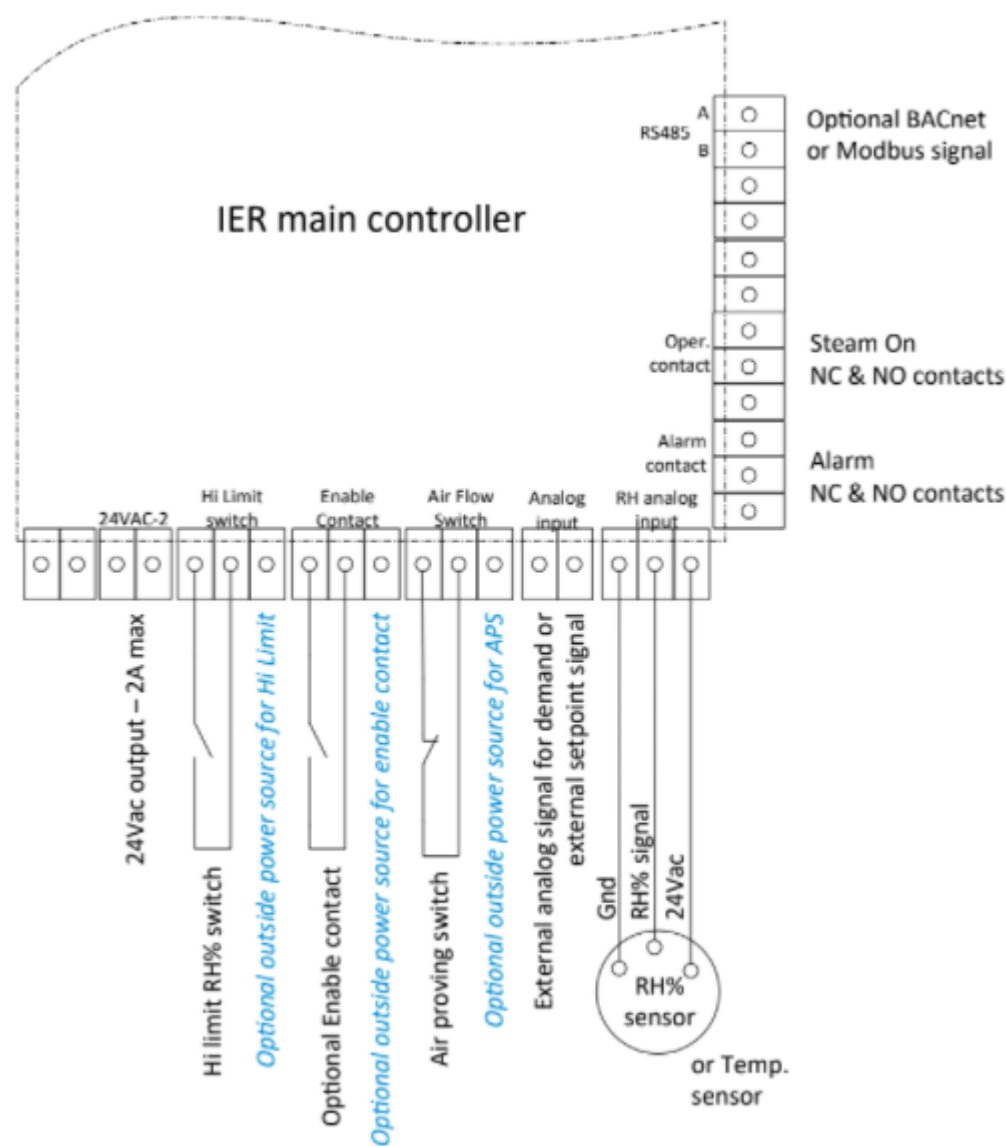
Clearances

Front	Left	Right	Top (Ceiling)	Bottom (Floor)
30in [75cm]	0in [0cm]	5in [13cm]	12in [30cm]	24in [60cm]

Water Supply & Drain

File rate	Inlet Pressure		Water Temperature		Water Connection
2.1GPM [8l/min]	Min: 15PSI [200kPa]	Max: 80PSI [550kPa]	Min: 37°F [3°C]	Max: 105°F [40°C]	3/4G Supplied with S/S braided hose with 3/8 female comp
Water Conductivity		Water Hardness		Water PH	Chloride Content
1 to 1500μS/cm		0 to 16grains/gallon [0 to 15° gH] or [268mg CaCO ₃ /l]		6.5 to 7.5	0 to 50ppm max
Drain Rate	Water Drained Temperature		Drain Connection		Condensate Return
6.6 GPM [25 l/min] per Module	120°F [60°C] When drain cooling function is enabled		1-1/4in [DN32] supplied with EPDM hose coupling		NPT 1/2in female located on top of each cylinder

Control Connections



Admissible control signals

Proportional External demand, Analog input:

0-10Vdc, 0-5Vdc, 1-5Vdc, 2-10Vdc or 4-20mA

On-Off external signal, Enable contact:

Dry contact

Proportional RH% sensor, RH% (or temp.) analog input:

0-10Vdc, 0-5Vdc, 1-5Vdc, 2-10Vdc or 4-20mA

Modbus signal:

Modbus through RS485 terminal

Optional BACnet signal:

BACnet MS/TP through RS485 terminal

Available feedback signals

Proportional output feedback:

0-10Vdc

Operation / Steam ON contacts:

NO & NC dry contacts

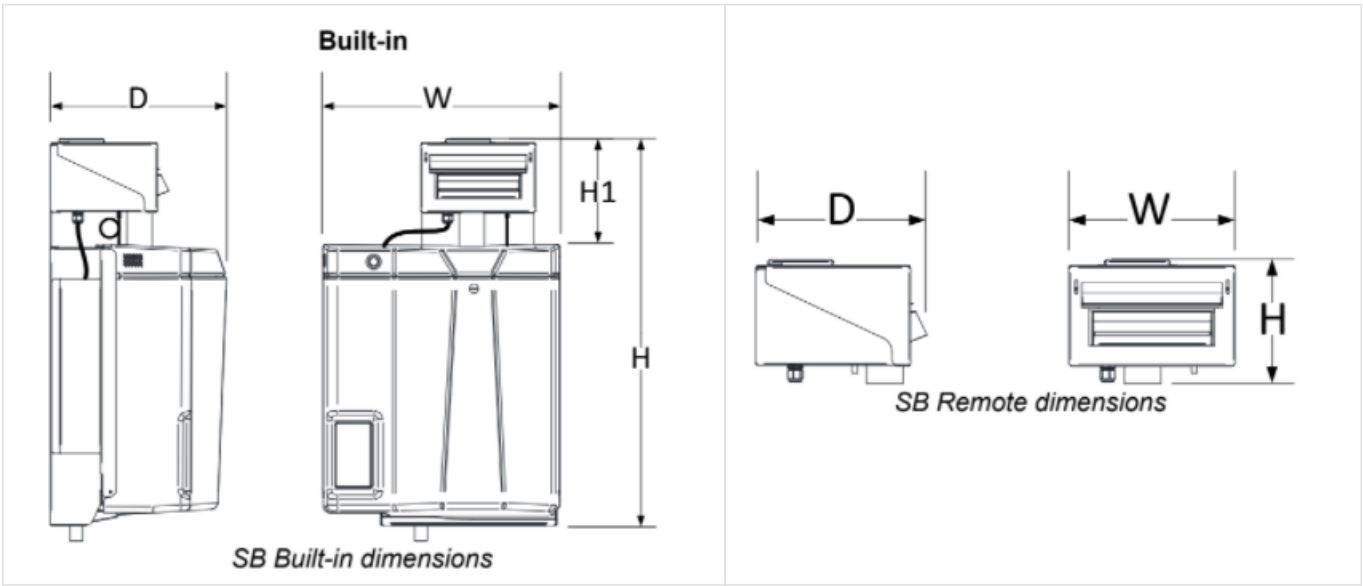
Alarm contacts

NO & NC dry contacts

SB Product Datasheet

	Model	Steam Capacity	Airflow	Power	Voltage		Current
					Remote	Built-in	
	SBS	26lb/h [12kg/h]	220CFM [375m3/h]	34W	120Vac	Same as IER	0.3A @ 120Vac
	SBM	65lb/h [29.5kg/h]	330CFM [560m3/h]	60W	120Vac	Same as IER	0.6A @ 120Vac
	SBL	96lb/h [44kg/h]	330CFM [560m3/h]	60W	120Vac	Same as IER	0.6A @ 120Vac

Dimensions



Model	Dimensions				Steam Inlet Ø	Net Weight
	W	H	H1	D		
SBS Built-in	20in [510mm]	23in [585mm]	8.5in [216mm]	13in [330mm]	1-1/2in [DN40]	8lb [3.6kg]
SBS Remote	9.2in [235mm]	7in [178mm]	/	9in [229mm]		
SBM/SBL Built-in	23.5in [590mm]	38in [965mm]	10.5in [267mm]	17.5in [445mm]	2in [DN50]	10lb [4.5kg]
SBM/SBL Remote	11.25in [292mm]	9in [229mm]	/	12in [305mm]		

Specification

Section 23 84 13 – Humidifiers

Part 1 - General

1.1 SUMMARY

.1 Section includes:

.1 Materials and installation for electric self-contained humidifiers and accessories.

1.2 RELATED SECTIONS

1.3 REFERENCES

.1 Air-Conditioning and Refrigeration Institute (AHRI) AHRI 640, Performance Rating of Commercial and Industrial Humidifiers

1.4 SUBMITTALS

.1 Submittals in accordance with Section []- Submittal Procedures.

.2 Product data:

.1 Submit manufacturer's printed product literature, specifications and datasheet for heating, ventilation and air conditioning distribution piping and ductwork.

.3 Shop drawings:

.1 Submit shop drawings to indicate project layout, dimensions, and extent of humidification system.

1.5 QUALITY ASSURANCE

.1 Certifications:

.1 Humidifier(s) shall be certified as per UL998 by a Nationally Recognized Laboratory (NRTL).

.2 ANSI/NFPA 70 – National electric code

.2 Warranty

.1 Humidifier(s) shall be warranted for a period of three (3) years.

PART2 - PRODUCTS

2.1 Electric self-contained humidifier

.1 The humidifier shall be certified as per UL998 by a Nationally Recognized Laboratory (NRTL).

.2 Boiling chamber, cover and fittings constructed from series 300 stainless steel.

.3 Boiling chamber provided with thermal insulation. Thermal insulation shall not be able to lose thermal properties when in contact with water.

.4 Immersion heaters INCOLOY alloy-sheathed resistance type.

.5 Humidifier to have the following safety protection features:

.1 Hi-limit temperature switch

.2 Electronic continuous water level sensor.

.3 Evaporation rate control algorithm.

.4 Auto dilution auto adaptable depending on water quality

.5 Integrated back flow prevention water hydraulic with no check valve or open fill cup that are prone to overflow

.6 Conductive foam detection sensor.

.6 Humidifier shall be able to be supplied with tap or treated water such as softened or reverse osmosis (RO) or deionised (DI) water without alteration or add-on option.

.7 Removal of boiling chamber cylinder for regular maintenance shall be done with quick release latch and guide & lock (patented) device is giving full access to heating elements and allows for cleaning and removal of scale in tank without the use of tool. There is also no need to disconnect electrical and steam connections, and no need to replace gasket at each service.

.8 Humidifier to provide full modulation using integrated SSR control.

.9 Humidifier shall include an integrated automatic wasted water drain cooling function ensuring a maximum water drained temperature of 140°F (60°C).

.10 Humidifier control and user interface to be provided by 7in touch screen and microprocessor with real time operating system allowing access to Overview and Service screen and to restricted access configuration sub-menu for control and communication set-up as well as humidifier set-up.

.11 Supplied with Modbus RTU for secure and easy integration to Building Management System (BMS).

.12 Easy software upgrade through USB 2.0 connection

.13 Warranty three (3) years.

.14 Optional Accessories

.1 Air flow proving switch.

.2 High limit switch humidistat.

.3 Electronic RH% sensor for duct or space.

.4 BACnet MSTP remote communication to Building Management System (BMS).

.5 Stand metal frame for floor installation.

.6 Bracket to ease of wall installation

.7 IP65, equivalent to NEMA 4 type outdoor enclosure.

PART3 EXECUTION

3.1 INSTALLATION

.1 Install in accordance with manufacturer's instructions.

- .3 Install humidistat in accessible location.
 - .4 Install access doors or panels in adjacent ducting.
 - .5 When installing in ducting, provide waterproof duct up and downstream.
- 3.2 FIELD QUALITY CONTROL
- .1 Commissioning / start-up:
 - Have manufacturer's representative of products, supplied under this Section, supervise start-up of humidifier and provide written start-up report.
- END OF SECTION