



we love humidity

Product Handbook

Humidification &
Evaporative Cooling

 **nortec**
CONDAIR GROUP

Contents

	Design Tools / Programs HELP Autodesk Revit® Models	2
	Electric Steam EL-Series OE-Series RH-Series RS-Series	4
	Gas Steam GS-Series	10
	Evaporative ME-Series DL-Series ML-Series Draabe-Series JS-Series	14
	Central Steam SE-Series	34
	Steam Distribution LS-Series BP-Series AS-Series AM-Series	36
	Controls	40
	Software Building Connectivity OnLine-Series	42
	Application Cross Reference	44

Why Nortec?

Nortec specializes in the design and production of superior humidification systems. We create the most appropriate solutions to meet your specific needs in the most efficient and cost effective way. To this end, we draw upon our extensive experience to develop an ever growing range of products manufactured to our stringent ISO 9001:2008 certified quality standards that will provide our customers with maximum reliability, minimum maintenance and a choice of energy sources.

When you choose Nortec products, you are choosing a company that has built a reputation for superior quality humidification systems. Nortec is also the only humidifier company to manufacture a complete range of solutions including electric steam, subsonic fogging, high pressure fogging, evaporative media, direct steam injection, steam exchange and gas-fired technologies.

Technical Services – Worry Free Systems

Nortec understands the importance of humidification equipment performance, and provides its customers with full access to the industry's best support provided by our factory trained technicians. Nortec can provide complete support from the initial system design and engineering through a comprehensive installation and startup.

Complete training on the operation and maintenance is provided to your staff on-site. To ensure optimum system reliability, performance and hygiene, Nortec provides a comprehensive preventive maintenance program including a BQ bacteria test on-site to ensure proper water quality during humidification. Nortec is dedicated to provide the very best service and technical support for your equipment. Please feel free to contact us for all of your service and support needs.

Everywhere you need to be.



HELP is an interactive humidification engineering and loadsizing program that guides you through the process of selecting humidification systems. The web based software is designed to make humidification projects quicker and easier. It includes an online catalog, product selection wizards, specification and schedule tools, and a built-in representative finder to connect you with your local Nortec representative for pricing.

Visit www.nortechelp.com to register for a free account and see how effortless humidification projects can be!

**Wizard-based
product selection
to build a complete
humidification system**

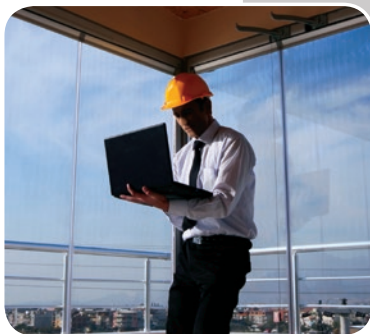
**Intuitive
graphical load
sizing system**

**Dynamically
generated
humidifier
dimensional
drawings**

**Cloud
saved projects**

**Humidifier
schedules with
pdf or excel
export**

**Visual
schematics**



Do you install or service Nortec humidifiers?



If so, **Nortec's Certified Technician Program** is for you.

Our certification program is a series of online courses that will lead you to becoming a Nortec Certified Technician. What a better way to give your customers an added peace of mind, than to have their work completed by someone who is certified by Nortec.

You are eligible for the program if you are an employee of a Nortec Authorized Agent or an individual that is referred to the program by a Nortec Authorized Agent.

To learn more about the program or to register, please visit humidity.com.

Revit® Models now available at Autodesk® **Seek**

Nortec now offers Building Information Modeling (BIM) models for all product lines! The models are complete with detailed 3D geometry, submittal data, specifications, and product details. Nortec is the first humidifier manufacturer to offer this important support tool for architects and consulting engineers.

To access Nortec models visit seek.autodesk.com and search “Nortec” or visit humidity.com for a direct link.

ELECTRIC STEAM

Nortec electrode steam humidifiers provide pure, clean steam using the most efficient steam humidification process. Energy is conserved with efficient steam conversion rate, smart water use and lowest energy losses due to low hot water drain rates. Maintenance is easy and economical with cylinder technology. Solid mineral scale sinks to the bottom of the cylinder which, when filled with residue, is easily removed and replaced.

Nortec electrode steam humidifiers offer complete application flexibility. They can be integrated into central HVAC systems with distributors, AM-Series, or placed in specific locations with their own steam distribution blower pack (BP-Series) for individual room control.

Why Cylinders?

- Energy efficient
- Reduce down time and costly maintenance
- No special tools required to remove cylinder
- Removes all minerals left behind
- No need for specially treated water
- Keep humidifiers working at optimum performance



Output vs. Cylinder Life

Unlike other humidifiers whose performance degrades gradually throughout the life of the cylinder, Nortec electrode steam humidifiers maintain maximum efficiency from beginning to end. As minerals build-up on the electrodes in the cylinder, the patented Auto-Adaptive control system automatically raises the water level slightly in the cylinder. This exposes fresh electrode surface to the water and maintains peak output and efficiency from the humidifier. Once the electrode surface is completely insulated by the minerals, the user is alerted to change the cylinder.

All Nortec electrode steam humidifiers feature a disposable cylinder. Contact your local Nortec agent for more cylinder replacement information.



The **EL-Series** is the newest electrode steam humidifier from Nortec. With forty years experience and a leader in commercial humidification, Nortec has developed an all new touch screen controller that is easy to navigate and contains more information than ever before.

- Intuitive touch screen control
- Standard building automation support with integrated BACnet™ (IP and MSTP Slave)
- OSHPD certification for seismic environments
- USB port for performance downloads
- SIM card storage of all operational information and user changes
- New cabinet design and smaller footprint than previous NH models
- Zero unit side clearance



Options



OnLine-Series



BP-Series
AS-Series
AM-Series

ELECTRIC STEAM



The **OE-Series** electrode OEM humidifier is ideal for specialty air handling equipment. Using replaceable cylinders, the OE-Series is the easiest component humidifier to maintain. With standard modulation and Modbus, the OE-Series can be integrated into the most demanding systems. Multiple configurations and capacities are available for installation flexibility.



The **RH-Series** electrode residential humidifier features the same proven technology as commercial electrode units to deliver efficient and dependable humidification to your home. Two models are available to cover all residential application: the RH-Series Space for in-space humidification and the RH-Series Duct for humidification through the duct system.



EL-OC and RS-OC

Outdoor models for **EL-Series** and **RS-Series** available for almost any outdoor application.



RS-Series with
scale collector
tank option

The **RS-Series** resistive element humidifier provides pure, clean, atmospheric steam from potable or DI/RO water with high precision. With SSR heating element control coupled with a high precision humidistat, the RS-Series can be accurate to $\pm 1\%$, perfect for humidity-critical applications.

For potable water applications, the patented scale management system option saves time and money during maintenance. Scale sinks into the scale tank which can be easily removed and emptied.

- Precise RH tolerances for humidity critical applications
- Use with potable, DI, or RO supply water
- User-friendly touchscreen controller
- Standard building automation support with integrated BACnet (IP and MSTP Slave)
- Scale collector tank option for easy maintenance
- Zero unit side clearance

Options



OnLine-Series



BP-Series
AS-Series
AM-Series

- Ambient temperature range of -40°F to 104°F (-40°C to 40°C)
- Easiest and fastest installation and maintenance in the industry
- Full range of indoor capacities and voltages
- User-friendly touchscreen display with standard BMS connectivity

ELECTRIC STEAM

Electrode (EL-Series)

SPECIFICATION	EL 005	EL 010	EL 020
Capacity: lbs/hr*	1-5	2-10	4-20
Capacity: kg/hr*	0.5-2.2	0.9-4.5	1.8-9
Input kW max	1.9	3.8	7.6
Voltage	110-120	208-600	208-600
Phase	1	1	1
No. of Cylinders/Control Circuits	1/1	1/1	1/1



Steam Distribution Choices **

Nortec steam hose I.D.	7/8" 2.2 cm	7/8" 2.2 cm	7/8" 2.2 cm
BP-Series (built-on)	yes	yes	yes
BP-Series (remote mounted)	yes	yes	yes
AS-Series	yes	yes	yes
AM-Series	yes	yes	yes

Resistive Element (RS-Series)

SPECIFICATION	RS 010	RS 015	RS 020
Capacity: lbs/hr*	0-10	0-15	0-20
Capacity: kg/hr*	0-4.5	0-6.8	0-9.0
Input kW max	3.9	6.0	7.7
Voltage	208-600	208-600	208-600
Phase	1 / 3	1 / 3	1 / 3
No. of Stainless Steel Tanks	1 x small	1 x small	1 x small



Steam Distribution Choices **

Nortec steam hose I.D.	1-3/4" 4.5 cm	1-3/4" 4.5 cm	1-3/4" 4.5 cm
BP-Series (built-on)	yes	yes	yes
BP-Series (remote mounted)	yes	yes	yes
AS-Series	yes	yes	yes
AM-Series	yes	yes	yes

EL 020	EL 030	EL 050	EL 075	EL 100	EL 150	EL 200
4-20	6-30	10-50	15-75	20-100	15-150	20-200
1.8-9	2.7-13.6	4.5-22.7	6.8-34	9-45	6.8-68	9-91
7.6	11.4	18.7	28.1	37.4	56.1	74.8
208-600	208-600	208-600	208-600	208-600	208-600	208-600
3	3	3	3	3	3	3
1/1	1/1	1/1	1/1	1/1	2/2	2/2

7/8" 2.2 cm	7/8" 2.2 cm	1-3/4" 4.5 cm	1-3/4" 4.5 cm	1-3/4" 4.5 cm	1-3/4" 4.5 cm	1-3/4" 4.5 cm
yes	yes	yes	yes	yes	n/a	n/a
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes

* EL-Series can be field adjusted from 20% to 100% of full output.

** Refer to Engineering Manual for steam distribution methods.

RS 030	RS 045	RS 065	RS 090	RS 090	RS 130	RS 180
0-30	0-45	0-65	0-90	0-90	0-130	0-180
0-13.6	0-20.4	0-29.5	0-40.9	0-40.9	0-59.0	0-81.8
10.8	16.3	24.5	32.6	32.1	48.0	64.2
208-600	208-600	208-600	208-240	440-600	440-600	440-600
1 / 3	3	3	3	3	3	3
1 x med	1 x med	1 x med	2 x med	1 x med	2 x med	2 x med

1-3/4" 4.5 cm	1-3/4" 4.5 cm	1-3/4" 4.5 cm	1-3/4" 4.5 cm	1-3/4" 4.5 cm	1-3/4" 4.5 cm	1-3/4" 4.5 cm
yes	yes	yes	no	yes	no	no
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes

* Capacities are voltage dependant. Output can be field adjusted from 20% to 100% of rated capacity.

** Refer to Engineering Manual for steam distribution methods.

GAS STEAM



U.S. Patent 5,816,496
Canadian Patent 2,203,332

The Nortec **GS-Series** gas-fired humidifier provides pure, clean atmospheric steam with economical operation. New heat exchanger and component designs allow for simplified maintenance and reliable performance. The GS has an even more minimalistic footprint with two varying unit sizes available that have their own space saving characteristics.

Nortec is proud to introduce the revolutionary and industry-first Condensing System (CS) GS model which provides true condensing high-efficiency over 90%. A Low-Emissions (NX) model is also available for the GS-Series which meets California emissions requirements. With both savings in installation and operation, the GS offers quick payback for high-efficiency upgrades.

Options



Building Connectivity
OnLine-Series



BP-Series
AS-Series
AM-Series

Integrated Controller



Features	GS
Intuitive, touch screen Integrated Controller	■
BMS compatibility via Modbus, BACnet IP or BACnet MSTP Slave	■
BMS compatibility via BACnet MSTP Master or LonWorks	■
Single or dual modulation capability	■
USB port for performance download	■
Manual steam capacity adjustment	■
Continuous self-diagnostic with self-correction and fail safe operation	■
On screen troubleshooting center with corrective action	■
On screen indication of service and fault history	■
On screen graphic indication of humidity demand trends	■
Low and high relative humidity alarms	■
Automatic duty cycling of burner for equal usage	■
Adjustable automatic blow down period	■
Pre-cleaning sequence	■
Keep warm feature for rapid response and additional freeze protection	■
Automatic float level, fill and drain component checks	■
Flat plate burner design for more efficient combustion	■
Internal Smart drain water cooling and drain pump	■
On/off cycling prevention	■
Totally enclosed cabinet with internal pipe chase	■
Corrosion and scratch resistant cabinet	■
Integrated float/fill system external to boiling water tank	■
Integrated vacuum break valve	■
Zero clearance to combustibles	■
Fits through a 36" door	■
Single water supply, gas inlet, steam outlet and vent connections	■
Large cleaning port with round edges and no lips for all capacities	■
Heat treated 316 S.S. heat exchanger with minimal welding	■
Materials suitable for all water types, including Potable, RO and DI	■
Stand, floor or wall mounting options	■
Accepts 110-120V power supply	■
Sealed combustion option	■
Sacrificial anode inside tank to protect against corrosion	■
High Efficiency >90%, fully condensing model	■
Low No _x model for California emissions standards	■

■ Standard ■ Optional

GAS STEAM

GS-Series

SPECIFICATION	MODEL	GS 50	GS 100	GS 150
Capacity: lbs/hr		10-50	20-100	30-150
Capacity: kg/hr		4.6-23	9-45	13-65
Max Input BTUH	CS	62000	124000	186000
	NX	65000	130000	195000
Max Input kW/hr	CS	18.2	36.3	54.5
	NX	19	38.1	57.1
Flue Emissions	CS			
	NX			
Unit rated Amps		2	2	3.2
Voltage/Phase				

INSTALLATION FEATURES & REQUIREMENTS	
CPVC venting option for CS and NX models	
Reduced footprint with minimum and recommended clearance requirements	
Cabinet and insulation allows mounting to combustible surfaces for minimum space requirement.	
Largest possible cleanout port for easy service and maintenance	
Exclusive full size cleanout port for fast and easy service	
Optional floor stand for full size units	
Standard floor stand or wall mounting brackets included with compact size units	
All service connections exterior to the humidifier and ready for field connections	
110-120V, single phase power supply	
Common connections with GSTC for simplified retrofit	

	GS 200	GS 300	GS 450	GS 600
	20-200	30-300	30-450	30-600
	9-90	13-160	13-195	13-260
	248000	372000	558000	744000
	260000	390000	585000	780000
	72.7	109	163.5	218
	76.2	114.3	171.4	223
CO: 21 ppm, CO ₂ : 9.5%, NO _x : 30ppm				
CO: 5 ppm, CO ₂ : 8.5%, NO _x : 7 ppm				
	2.7	5.1	7	8.9
110-120V/1				



EVAPORATIVE



ME
SERIES

Saving energy and water, while reducing operating costs, is an important challenge in an increasingly energy conscious world. The Nortec **ME-Series** evaporative media humidifier/cooler is an efficient way to provide both humidification and cooling while reducing building energy usage. Water evaporating from the media extracts sensible heat from the air stream generating cooling in addition to humidity, often as much as 22°F (12.5°C) or more.

The key to this high level of performance is the unique V-profile polyester media, which intensifies the moisture exchange process and is available in both 8" and 12" thicknesses to meet nearly any performance requirement. The media also features a UL 900 smoke and flame rating in the USA (ULC-S111-07 Class 2 in Canada).

The ME-Series is available in both direct feed and recirculation models. Direct feed models are excellent for potable water applications or where a central recovery system is being employed. Recirculation models are ideal for all water types, and features a unique hydraulic module. The self-contained hydraulic module offers flexibility to be installed internally or externally to the airstream. External installations separate the mechanical components from the airstream, simplifying installation and maintenance.

Also available is the advanced Integrated Controller which features LCD touchscreen display and advanced control functions allowing the user to adjust a variety of operational parameters.

Features Comparison	ME control	ME direct feed
Operates on DI/RO, Potable, Soften Water	■	■
Recirculation Water System	■	
Flow Through Water System		■
Integrated Controller With Backlit LCD Touchscreen Display with On Screen Help	■	
Basic Control Panel		■
Smart Water Management System	■	
Adjustable Flush Cycles	■	
Pre-cleaning Sequence	■	■
Smart Media Box Drying	■	■
Modbus Protocol standard	■	
Programmable Maintenance Settings	■	
Individual Step-Control, 1-5 stages	■	
Step-Control, 1 – 5 stages		■
Multi-Unit Networking	■	
Display and Control of RH	■	
Multiple Control Signal Acceptance	■	■
Operation History Log	■	
Remote Fault Indication	■	
Conductivity Smart Monitoring	■	
Ultra Violet Water Treatment	■	
Stainless Steel Reservoir	■	■
Stainless Side frames	■	■
V-Profile Polyester Media	■	■
Glass Fiber Media	■	■
Mist Eliminator V-Profile Polyester Media (above 689 fpm)	■	■
2 Year Limited Warranty *Excluding Media	■	■
Building Connectivity BMS gateways – BACnet, LonTalk, N2	■	

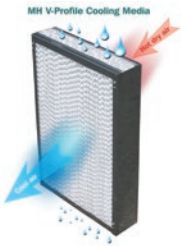
- High performance with low energy usage
- Hygienic operation
- Free evaporative cooling
- Fiber glass or polyester media
- Complete packaged system
- Industry first external recirculation module
- Integrated Control System

ME-Series

SPECIFICATION
Media Box Depth
Media Box Efficiency max.
Maximum Face Velocity Over Media
Maximum Face Velocity With Integral Mist Eliminator
8" Media Pressure Drop at 500 fpm
Fire Protection Rating
Power Supply Control Unit
Power Supply Circulation Pumps
Power Consumption
Water Supply Pressure
Unit Width
Unit Height
Unit Depth (Internal Installation)
Unit Depth (External Installation)
Standards and Guidelines

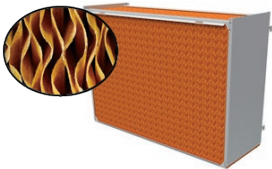
V-profile Polyester Media

- Hygroscopic Coating
- High Velocity Performance
- Low Pressure Losses
- UL 900 Smoke and Flame Rating
- Suitable for DI/RO, potable, softened water
- No Droplets, Free of Aerosols



Glass Fiber Media

- Glass Fiber Media
- Impregnated with Silver Ions
- High Velocity Performance
- Lowest Pressure Drop
- Suitable for All Water Types
- UL 900 Smoke and Flame Rating



GLASS FIBER MEDIA	V-PROFILE POLYESTER MEDIA
4", 6", 8"	8", 12"
75%, 85%, 95%	85%, 95%
689 fpm (3.5 m/s)	
886 fpm (4.5 m/s)	
0.3 IWC (75 Pa)	0.27 IWC (67 Pa)
UL 900 Class I (USA), ULC-S111-07 Class 2 (Canada)	
100–240 V/1/50...60 Hz	
24 V/50...60 Hz	
85–278W (2-5 stages, no options fitted)	
29-72.5 psi	
25"- 166" (635 – 4216mm)	
26"- 158" (660 - 4013mm)	
31" (797mm)	
25" (636mm)	
NRTL Approval, UL-900, ULC-S111-07	

Integrated Control (IC) System

- Smart Water Management
- Advanced Hygiene Control
- Modbus interface standard
- Intuitive touch screen control
- Simple operation
- Available BACnet, LonWorks, N2 gateways
- NRTL-C Approved



EVAPORATIVE



The Nortec **DL-Series** intelligently combines two humidification technologies to benefit from the advantages of atomization and evaporation. The hybrid humidifier delivers hygiene, performance and cost-effectiveness.

Low pressure molecular nozzles require less compression work which translates to significant energy savings. The nozzle system has the highest control precision with 15 stages of output in conjunction with an adjustable speed driven humidification pump. Using low pressure molecular nozzles combined with unique ceramic media absorption distance is minimized and guarantees the humidified air is absolutely aerosol free.

The HygienePlus® concept is a complete hygiene solution that has the highest hygiene quality. The HygienePlus® concept is based on demand driven silver ionization of the humidifying water to prevent the growth of harmful microbial organisms. The silver ions treat all the humidification components for unmatched hygiene.



- Very low pressure drop: 0.16 IWC at 400 fpm
- Extremely low installation length of 23.6"
- Optimized ceramic for higher humidification efficiency
- Certificated hygiene system with HygienePlus® Concept
- Modern and intuitive touch screen controller
- Low maintenance required
- BMS connectivity available

DL-Series

SPECIFICATION
Maximum Duct Velocity
Maximum Duct Velocity With Booster
Pressure Drop at 500 fpm
Power Supply
Voltage Solenoid Valves
Water Supply Pressure
Unit Width
Unit Height
Unit Depth
Control Accuracy

Patented Ceramic Media

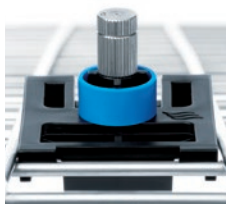
- Full surface evaporation
- Maximum utilization of humidifying water
- Aerosol free
- Very low pressure drop
- Does not require replacement



TYPE A (WITH BOOSTER PUMP)	TYPE B (WITHOUT BOOSTER PUMP)
590 fpm (3 m/s)	
787 fpm (4 m/s)	
Approx. 0.20 IWC (50 Pa)	
110-240 V/1/50...60hz	
24 V DC	
44 psi – 102 psi (3 – 7 bar)	44 psi – 102 psi (3 – 7 bar)
17.7"– 165.4" (450 – 4200 mm)	
17.7"– 157.5" (450 – 4000 mm)	
23.6"– 35.5" (600mm – 900mm)	
7-Steps: ±3% RH 15-Steps: ±2% RH 31-Steps: ±2%RH	7-Steps: ±4% RH 15-Steps: ±3% RH 31-Steps: ±3%RH

Molecular atomizer nozzles

- Flexible spray angle of 15°
- Non-wearing
- High precision humidification
- Multiple nozzle sizes
- Made from 316 stainless steel



EVAPORATIVE

All **ML-Series** humidification modules can be combined in one or more rooms or halls depending on space, product behavior, type of production and similar factors.



The ML Princess 2 is supplied in an elegant design and is recommended for humidification production areas within all industries. For applications in production areas with high ceilings as well as the horticulture sector, the ML Princess 3 is the ideal solution. ML Solo Series is used in applications with small moisture requirements such as the fruit and vegetable departments, or print rooms with low ceilings. The ML Flex System is used in the textile industry or for dust binding in rooms with high dust exposure. The system is ideal for fog cooling of items, or in zones where a significant cooling effect is required. It can also be used in explosion-proof rooms.

SPECIFICATION	ML PRINCESS 2	ML PRINCESS 3
Nozzles	8 stainless steel nozzles	12 stainless steel nozzles
Capacity – lbs/hr (kg/hr)	Up to 80 (36) with full evaporation	Up to 120 (54) with full evaporation
Built-in Distribution Fan	Even humidification at 55 dBa and 100W	Even humidification at 59 dBa and 160W
Ceiling Heights – ft (m)	As low as 12 (3.6)	23 (7) or higher
Mount	Ceiling or wall	Ceiling or wall
Recommended Use	Humidification and cooling in large manufacturing and production areas in all industries	Humidification and cooling in large manufacturing and production areas in all industries with high ceilings



ML SOLO 1	ML SOLO 2	ML FLEX SYSTEM
One stainless steel nozzle with adjustable vaporization angles	Two stainless steel nozzles with adjustable vaporization angles	Customized nozzle and stainless steel pipe system with two stainless steel nozzle designs for full evaporation
5.5 (2.5) - 10 (4.5)	11 (5) - 20 (9)	5.5 (2.5) - 10 (4.5) per nozzle
Low noise for even humidification at 34 dBa	Low noise for even humidification at 37 dBa	N/A
As low as 8 (2.4)	As low as 8 (2.4)	24 (7.3) or higher
Ceiling or wall	Ceiling or wall	Suspended, ceiling, or wall
Small work areas and offices	Small work areas and offices	High racking, explosion-proof and very dusty environments. Customized array construction for induct or plenum spaces.

ML-Series Pumpstation

In a direct room application or in air handling applications



ML Humidity and Temperature Sensor

- Electronic sensor for measuring temperature and humidity in atmospheric air
- Humidity sensor is ideal in combination with electronic controls and for indication of actual humidity
- Reading of the humidity sensor is a 0 VDC – 10 VDC signal corresponding to 0% RH – 100% RH

ML High Pressure Pumpstation and Control: Standard Components

- Consistent high pressure 1000 psi for fine atomization
- High-clean water filtration
- Temperature and pressure pump safety protection
- Water meter
- Hour meter
- UV sterilization of water
- Siemens PLC humidity zone controllers with auto flush feature
- Corrosion resistant materials
- Water lubricated stainless steel Danfoss pump (very low maintenance)
- Turn-key assembly on self-contained single skid frame
- Available capacity from 264 - 5,280 lbs/hr (120 - 2,395 kg/hr)
- Redundant systems capable
- Low energy consumption
- Directly coupled motor to pump – never belt driven – no belts to change

Reverse Osmosis Systems

- Ultra-clean de-mineralized water filtration
- Stand-alone or pumpstation integrated
- Low energy consumption, high-flow membranes
- 5 micron sediment pre-filter
- Full system control and gauges
- Processes normal tap water
- Fully compatible with ML high pressure systems
- Nozzle clogging protection
- Clean In Place (CIP) add-on available to periodically dose the water with sanitizing agent. For ultra low bacteria count and keeping the system hygienic.

EVAPORATIVE

Draabe-Series humidification solutions are for applications with both high or low humidification requirements. The Draabe direct room humidification system can be individually positioned and, in combination with the integrated water treatment unit, is easy to maintain and a completely hygienic solution.



SPECIFICATION	NANOFOG	TURBOFOG NEO1
Nozzles	Single atomizer with one stainless steel nozzle	Single atomizer with one stainless steel nozzle
Capacity – lbs/hr (kg/hr)	Up to 7 (3)	Up to 8 (3.5)
Built-in Distribution Fan	Virtually silent operation	34 dBa
Ceiling Heights – ft (m)	As low as 8 (2.4)	As low as 8 (2.4)
Mount	Wall mounted swiveling atomizer	
Recommended Use	Small work areas and offices	

Nortec-Series AF-22

Compressed Air Humidifier

- Built in set point and humidity sensor (Internal +/- 3% RH)
- Capacity: 22 lbs/hr
- Easy to install – Ideal for retrofits
- User friendly control interface
- Standard UV-light sterilization
- Water quality: Tap water (Reverse Osmosis optional but recommended)
- Regular automatic flushing
- Suitable for woodworking, textile and printing applications





NanoFog



TurboFog Neo1



TurboFog Neo 2x2



TurboFog Neo8

TURBOFOG NEO	TURBOFOG NEO2X1	TURBOFOG NEO2X2	TURBOFOG NEO8
Single atomizer with two stainless steel nozzles	Dual atomizer with two stainless steel nozzles	Dual atomizer with four stainless steel nozzles	Single atomizer with eight stainless steel nozzles
Up to 17 (7.7)	Up to 17 (7.7)	Up to 35 (15.8)	Up to 70 (31.7)
37 dBa	37 dBa	37 dBa	55 dBa
As low as 12 (3.6)	As low as 12 (3.6)	As low as 16 (4.9)	As low as 18 (5.5)
For adjustable distribution of humidity and full evaporation			Ceiling
Low ceiling work areas and small operations environments		Production work areas and operations environments	Production work areas with higher ceilings

Nortec-Series B500

Evaporative Humidifier

- No installation required
- Standard UV-light sterilization
- Bio-Filter helps remove impurities
- Manual fill or automatic water supply
- Portable – Easy mobility into any room
- Ease of use – Complete with a remote and wireless hygrometer
- Integrated self-diagnosis system
- Suitable for patient rooms, museums, pharmaceuticals and more!



Draabe-Series Pump Systems



HighPur

- Consistent 1000 psi operation for fine atomization
- UV-C water sterilization
- 100% evaporation of feed water
- Automatic self-flushing with cyclical exchange of water in stand-by mode
- Electronic safety check with pump monitor and inlet/outlet pressure monitoring
- Fully integrated small unit design
- Capacity of up to 660 lbs/hr and (300 kg/hr) per box



PerPur

- Demineralization of standard tap water
- Up to 80% high yield efficiency
- Pure water hygiene with automatic flushing function
- Optimization of consumables
- Capacity of up to 660 lbs/hr and (300 kg/hr) per box



SynPur

- Ultra-clean deionized water for critical applications
- Cyclical flushing function with additional UV-C sterilization
- Capacity of 880 lbs/hr (400 kg/hr)

DuoPur

- 2 in 1 system: high pressure + reverse osmosis water treatment
- Compact, space-saving system
- No deposits in pipes or nozzles
- 100% germ-free through extensive hygiene functions
- Micro-fine pure water atomisation through a pulsating hydraulic flow
- Very energy efficient
- Full-service approach



TrePur

- 3 in 1 system: high pressure + reverse osmosis water treatment + conductivity sensing/CO2 dosing
- Compact, space-saving system
- Complete demineralisation for sensitive applications
- 100 % germ-free through extensive hygiene functions
- Micro-fine pure water atomisation through a pulsating hydraulic flow
- Very energy efficient
- Full-service approach





JS
SERIES

JetSpray

Compressed air & water spray humidifier

The **JS-Series** has been humidifying factories and processing plants throughout the World for over 30 years and is trusted by the leading companies in many different industries including:

- Textile
- Printing
- Tobacco
- Cold storage Automotive
- Tea
- Crop storage
- Abattoirs
- Electronics
- Botanical gardens
- Pulp & paper

Why use compressed air?

A compressed air and water humidifier offers guaranteed evaporation of the moisture into the atmosphere without any potential risk of drips. By forcing the water to mix with the air under pressure the sprays produced are rapidly absorbed and highly directional.

This makes the JS ideal for cold temperature applications, such as cold stores and freezers, where the ambient humidity is often high and humidification less readily absorbed by the air.

As no fan unit is required to encourage evaporation, the JetSpray can reliably be used in very dusty and dirty industrial environments without frequent maintenance.

Hygienic operation

The JS-Series is a sealed system with no open water tanks, minimising the risk of water contamination. Automatic purge and flush cycles ensure water cannot remain in the pipelines to stagnate. An air run-on feature leaves the pipe work dry at the end of the cycle.

PureFlo Ag+ silver ion water treatment is incorporated on the incoming water supply line. This is a bacteriostatic agent with residual effects throughout the pipe work, promoting hygienic operation.

50% less water consumption

The JS can be operated on any type of potable water supply. This reduces water consumption by up to 50% compared to other spray humidifiers that need demineralized and softened water to prevent blockages at the nozzle.

30% less air consumption

Unlike other air and water spray humidifiers that use the air pressure to push back the self-cleaning pin mechanism, the JetSpray nozzle uses the water pressure. This results in a lower required air pressure and a 30% reduction in compressed air consumption compared to other air and water systems.

Low maintenance

The JS nozzle contains a self-cleaning mechanism that prevents blockages. A pin is forced through the nozzle orifice whenever the spray stops and is pushed back by the water pressure during operation. Unlike piston driven nozzle systems no lubrication of this mechanism is ever required and the only necessary maintenance of the nozzle line is to occasionally wipe the air caps to remove dust.

The nozzles are so robust in operation they carry a 10-year warranty.

EVAPORATIVE

JS-Series

SPECIFICATION
Output – lbs/hr (kg/hr)
Modulating or on/off
Humidity Control
Power Consumption (ex. air compressor) W
Power Supply
Accreditations

NOZZLE OUTPUT – lbs/hr (litres/hr)
SCFM air consumption per nozzle @ 31.9 PSI (2.2bar)
CFM air consumption per nozzle. Free air delivery (0.33CFM/l)
CFM air consumption per nozzle. Free air delivery (0.73CFM/lb)
M3/hr air consumption per nozzle. Free air delivery (0.56M3/hr/l)

JS60	JS600DS	JS600M
5.5 (2.5) - 132 (60)	5.5 (2.5) - 1322 (600)	5.5 (2.5) - 1322(600)
On/Off	On/Off	Modulating
±4%RH	±3%RH	±2%RH
170	200	210
110-230 VAC		
CE, UL Listed, WRAS		

5.5 (2.5)	7.7 (3.5)	9.9 (4.5)	12.1 (5.5)	14.3 (6.5)	19.8 (9)	26.4 (12)	33 (15)
0.38	0.53	0.68	0.83	0.98	1.35	1.8	2.25
0.83	1.16	1.49	1.82	2.15	2.97	3.96	4.95
4.01	5.62	7.23	8.83	10.44	14.45	19.27	24.09
1.4	1.96	2.52	3.08	3.65	5.05	6.73	8.41

CENTRAL STEAM



Steam Exchange Humidifiers

Packaged steam to steam humidifiers produce clean atmospheric steam using boiler steam as an energy source. Available in 2 models: SET Indoor and SETC Outdoor.

SPECIFICATION	SE 050	SE 100
Pressure range - psig (kPa)		
Max. capacities (at 15 psi steam pressure) - lbs/hr (kg/hr)	50 (23)	100 (45)
Physical data - Width x Height x Depth	25.6" x 20.6" x 18.4" 65.1cm x 52.4cm x 46.7cm	46.4" x 32" x 18.4" 117.8cm x 81.3cm x 46.7cm
Standard actuator		
Built-in steam trap		
Insulation & Cabinetry		
Voltage/Phase		
Full load amps		
Internal Smart Drain Water Cooler		
Steam Outlets (s) - OD	1 x 1.75" (1 x 4.44cm)	

Options

Keep Warm Feature	no	yes
Freeze Protection	no	yes
Outdoor Model	no	yes
Floor Stand	yes	yes

- Capacities up to 1050 lbs/hr (476 kg/hr)
- Nortec Total Controller
- Intuitive scale management based on steam production
- All components suitable for RO, DI or potable water
- Built-in drain water cooling
- Fully modulating down to 25% of capacity
- Built-in float & thermostatic steam trap(s) and P-trap
- Fully insulated tank for efficient operation
- Pre-cleaning sequence for easier and faster maintenance
- Includes valve, actuator and strainer

Options



Building Connectivity
OnLine-Series



BP-Series
AS-Series
AM-Series

SE 175	SE 250	SE 375	SE 525	SE 750	SE 1050
5-15 (35-105)					
175 (79)	250 (114)	375 (170)	525 (240)	750 (340)	1050 (476)
20.0" x 20.0" 4cm x 50.8cm	46.4" x 32.0" x 26.4" 117.8cm x 81.4cm x 67.1cm		46.4" x 32.0" x 42.0" 117.8cm x 81.4cm x 106.7cm		46.4" x 32.0" x 58.0" 117.8cm x 81.4cm x 147.3cm
Electric Modulating 0-10 VDC, 24 VAC					
Float & Thermostatic					
Standard					
110-120/1					
2.1					
Standard					
1 x 3" (1 x 7.62cm)			1 x 4" (1 x 10.16cm)	2 x 4" (2 x 10.16cm)	

yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes

STEAM DISTRIBUTION



LS
SERIES

Pressure Steam Humidifiers

Nortec **LS-Series** pressure steam humidifiers deliver reliable humidity from the facility steam boiler for duct or air handler application. With distributors constructed of premium quality 304 stainless steel, the LS Series features Nortec’s tube in tube design for efficient operation. LiveSteam distributors are available in a wide variety of lengths ranging from 12" to 144" to suit your duct size for the best possible steam dispersion. Multi-tube units are also available.

SPECIFICATION	MODEL 200 MODEL LS1	MODEL 300 MODEL LS2
Pressure range - psig (kPa)	2-50 (14-345)	2-50 (14-345)
Max. capacity single tube - lbs/hr (kg/hr)	284 (129)	571 (259)
Max. capacity multi-tube - lbs/hr (kg/hr)	374 (170)	653 (297)
Separator physical data - Height x Diameter	7.7" x 6" 195mm x 152mm	8.8" x 6" 223mm x 152mm
Standard actuator		
Standard steam trap		
Separator and dispersion tube material		

Options

Pneumatic actuator	yes	yes
Electric on/off actuator	yes	yes
Tube insulation	yes	yes
DI water installation	yes	yes

- Available single or multiple tube configurations (AS-Series)
- Available with short absorption distributors (AM-Series)
- Pressure ranges from 2-50 PSIG (14-345 kPa)
- High capacity system up to 3200 lbs/hr (1452 kg/hr)
- Economical and cost effective system to meet high humidity requirements
- Delivers precise humidity control
- Steam jacketed dispersion tubes to prevent “spitting”
- Available tube insulation for increased efficiency
- Suitable for boilers operating on DI, RO or potable water
- Available pneumatic or electric controls

MODEL 450 MODEL LS3	MODEL 600 MODEL LS3	MODEL 800 MODEL LS3	AM AM-MINI
2-50 (14-345)	2-50 (14-345)	2-50 (14-345)	2-50 (14-345)
916 (417)	1258 (572)	N/A	N/A
1030 (468)	1664 (757)	3209 (1456)	3200 (1452)
10.5" x 6" 268mm x 152mm	11.2" x 9" 284mm x 229mm	12.6" x 9" 322mm x 229mm	Custom
Electric Modulating 0-10 VDC, 24 VAC			
Float & Thermostatic			
Stainless Steel 304			

yes	yes	yes	yes
yes	yes	yes	yes
yes	yes	yes	yes
no	no	no	yes

STEAM DISTRIBUTION



BP-Series

BP-Series blower packs are an optional accessory used for direct steam distribution into localized areas, or into structures that do not have a built-in air distribution system. When used with the EL-Series, RS-Series, or RH-Series models, built-on blower packs are available for ease of installation. Remote mounted blower packs are also available with the EL-Series, RS-Series, SE-Series, GS-Series, and RH-Series humidifiers for better distribution of steam in the space being humidified.



AS-Series

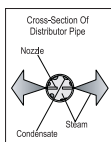
Nortec's **AS-Series** atmospheric steam distributor allows for direct introduction of atmospheric steam into a duct system or Air Handling Unit. Atmospheric steam distributors are designed for use with EL-Series, RS-Series, GS-Series, SE-Series and RH-Series humidifiers. All steam distributor tubes are made of stainless steel and adjustable for horizontal or vertical flow applications. An Integral condensate return allows for condensate produced at the distributor to be returned back to the humidifier or drained through a convenient floor drain.



AM-Series

The **AM-Series** short absorption manifold, distributes clean steam, precisely controlled, uniformly into the air stream, and void of any condensate spray. Nortec's steam absorption system is for use in air handling units and duct systems where short steam absorption distance is critical. Steam distribution takes place via distributor tubes with integrated nozzles which extend into the center of the distribution tube ensuring only condensate-free steam is released. Condensate drains out of the distribution tubes through the header, eliminating the need for jacketed tubes.

An AM-mini is also available for use in ducts with heights ranging from 8" - 24" (20.3 - 61.0 cm). Optional stainless steel air gap insulation can reduce energy losses by up to 70%, while ensuring efficient and hygienic operation.



DISTRIBUTOR	EL SERIES	RS SERIES	RH SERIES	GS SERIES	SE SERIES
AS-Series	■	■	■	■	■
BP-Series (built-on)	■	■	■		
BP-Series (remote)	■	■	■	■	■
AM-Series	■	■		■	■
AM-Series (mini)	■	■		■	■

CONTROLS



Digital wall control



Digital duct control

Nortec offers control solutions for every humidification application. Options include on/off humidistats for general control applications, modulating humidistats for precise control and remote control of relative humidity through a building management system.

Contact your local Nortec representative for details.

On/Off Controls

Nortec **on/off controls** can be used with all technologies for humidity control and/or humidification safety.

For room humidity control, Nortec offers a return-air duct mounted on/off digital duct humidistat or a wall mounted on/off digital humidistat. Both humidistats come complete with a built-in sensor, a keypad for adjusting setpoint and a backlit LCD display. Features such as outdoor temperature setback and a relay for furnace/circulation fan control ensure safe, energy efficient operation. Accuracies of $\pm 5\%$ RH are expected.

For humidification safety, Nortec offers an air-proving and high-limit control. The air-proving switch is used to prevent humidifying when there is no air movement in the duct. For high-limit control, an on/off digital duct humidistat is used to avoid over humidification of the supply duct.

Modulating Controls

Nortec offers **humidistats** for room and duct control.

Humidistats provide a demand signal to the humidifier, while transducers sense relative humidity and are used for setpoint control at the humidifier. Typical accuracies of $\pm 3\%$ RH are expected with standard conditions, while tolerances of $\pm 1\%$ RH can be achieved for specialty applications.

Humidistats and transducers can either be wall mounted for room humidity control or duct mounted for room humidity and/or high limit control. Both wall and duct controls come complete with a keypad for configuration as well as a backlit digital display. Controls can be combined with Nortec OnLine-Series and/or Building Connectivity, to allow remote display and configuration of humidity setpoints.



Nortec **Building Connectivity** offers monitoring and control allowing humidifier(s) to communicate to your Building Management System (BMS). The controller is factory installed and is located internally to the humidifier. Simply specify at time of order what operating protocol you are using – BACnet IP, BACnet MSTP, LonWorks or Johnson N2.



PROTOCOL	EL SERIES	RS SERIES	GS SERIES	SE SERIES	ME SERIES	DL SERIES
Modbus	■	■	■	■	■	■
BACnet IP	■	■	■	■	■	■
BACnet MSTP (Slave)	■	■	■	■	■	■
BACnet MSTP BTL (Master)	■	■	■		■	■
BACnet IP BTL	■	■	■		■	■
Lonworks	■	■	■	■	■	■
Johnson N2				■		

■ Standard ■ Optional



ONLINE
SERIES

Nortec **OnLine-Series** is a remote interactive communication package that allows web-based contacts to monitor, maintain and control a humidification center from any location worldwide using standard internet connections. This advanced software shows graphic representations of the humidifier and its key parameters (up to 75 functions).

Nortec OnLine-Series powered by HELP.

Option



EL-Series
RS-Series



GS-Series



SE-Series

APPLICATION CROSS REFERENCE



APPLICATION	°C	°F	%RH	EL SERIES
Abrasive	26	79	50	■
Bread	27	81	75	■
Ceramics	27	81	60-70	■
Cheese Curing	16-18	61-64	90	
Clean Rooms	22-23	72-73	43-47	■
Data Centers (Class 1 and 2)	15-32	59-90	20-80	■
Electrical (Instruments)	21	70	50-55	■
Electrical (x-ray)	20	68	40-50	■
Electrical (Switch gear)	23	73	50	■
Fruit Storage	4-7	39-45	85-90	
Fur Storage	4-10	39-50	55-65	■
Hospitals (Admin.)	21-27	70-81	30-50	■
Hospitals (ICU)	21-24	70-75	30-60	■
Hospitals (Operating Rooms)	20-24	68-75	30-60	■
Leather (Drying)	20-52	68-126	75	■
Leather (Storage)	10-16	50-61	40-60	■
Lenses (Optical)	27	81	80	■
Libraries	17-22	63-72	50	■
Meat & Fish	0-1	32-34	88-92	
Mushrooms	9-16	48-61	80	
Paint	16-32	61-90	80	■
Pharmaceuticals	24	75	35-50	■
Photo Studio	21-22	70-72	45-55	■
Plastics (Manufacturing)	24-27	75-81	45-65	■
Plywood (Pressing)	32	90	60	
Printing (Storage)	24-27	75-81	50	■
Printing (Web offset)	24-27	75-81	50	■
Rubber (Molding)	23	73	50	
Textiles (Knitting)	24	75	60-65	
Textiles (Spinning)	24-27	75-81	35-60	
Textiles (Weaving)	24-27	75-81	70-85	
Tobacco	21-24	70-75	55-65	■
Schools & Universities	20-24	68-75	20-60	■
Office Space	21	70	20-50	■



RS SERIES	GS SERIES	LS SERIES	SE SERIES	ME SERIES	DL SERIES	ML SERIES	DRAABE SERIES	JS SERIES
■	■	■	■	■	■	■	■	■
■					■	■	■	
■	■	■	■	■	■	■	■	■
					■	■	■	■
■	■			■	■			■
■				■	■			■
■	■	■	■	■	■			■
■	■	■		■	■			
■				■	■			
					■	■	■	■
■	■		■		■	■	■	■
■	■	■	■	■	■			
■	■	■	■		■			
■	■	■	■		■			
■	■	■	■		■	■	■	
■	■	■	■		■	■	■	■
■	■	■	■	■	■			■
■	■	■	■	■	■			
					■	■	■	■
					■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■			■
■	■		■	■	■		■	
■	■	■	■	■	■	■	■	■
				■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
				■	■	■	■	■
				■	■	■	■	■
				■	■	■	■	■
				■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■			
■	■	■	■	■	■		■	

■ Treated water recommended.

USA

2700 90th Street
Sturtevant, WI 53177

835 Commerce Park Drive
Ogdensburg, NY 13669

Canada

2740 Fenton Road
Ottawa, Ontario K1T 3T7

1.866.NORTEC1

nortec@humidity.com

