

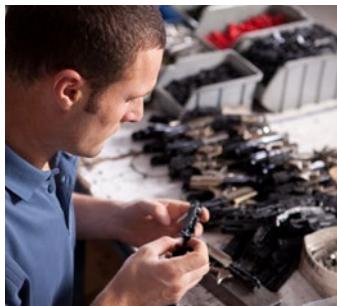


# Gas Steam Humidifiers



Humidification and Evaporative Cooling

 **nortec**



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## Nortec GS-Series – the next generation of gas steam humidifiers.

Nortec specializes in the design and production of superior humidification systems. It's all we do! Our future depends on our ability to understand the needs of all our customers. We create the most appropriate solutions to their specific needs in the most efficient way. To this end, we draw upon our extensive experience to develop an ever-growing range of products that will provide our customers with maximum reliability, minimum maintenance and a choice of energy sources.

The Nortec GS-Series product line is no exception. Every unit has a built-in modular stainless steel heat treated heat exchanger – its flat surfaces ensure easy cleaning and its proven design ensures reliable operation in all water conditions. The control system is powered by a 120V or 208-240V single phase electrical supply. Each humidifier is built to operate with a normal potable cold water source, RO (reverse osmosis) or DI (De-mineralized) water as a standard. GS-Series products are manufactured in Nortec's ISO 9001-2001 registered facility. Your Nortec representative can provide details.

# Operating advantages

## Economy

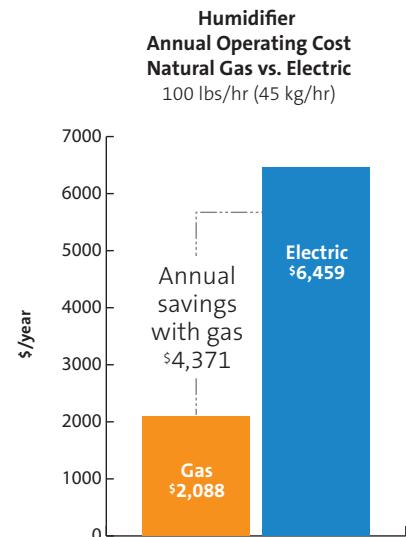
Nortec GS-Series Gas Steam humidifiers provide clean steam humidification at an economical operating cost. Units are packaged in a powder coated cabinet for zero clearance space requirement while offering high efficiency output. They can be controlled from either a local humidistat or from the central Building Management System. Additionally, multiple units can be staged together.

The combustion system utilizes a modulating forced draft combustion air blower, a negative pressure regulator gas valve and a 100% premix burner. On a call for humidity, the combustion air blower starts creating a negative pressure across the valve orifice located at the air inlet. The hot surface ignitor then energizes. The gas valve opens and the regulated gas/air mixture is forced through the burner ports and is ignited.

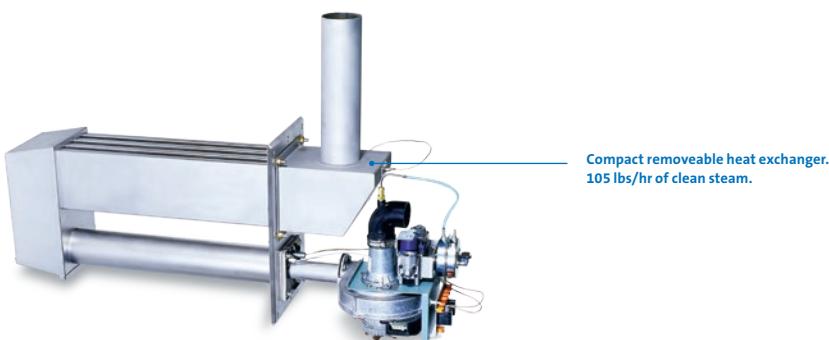
## Easy Maintenance

The compact stainless steel heat treated heat exchanger has large flat surfaces to minimize scale buildup in the humidifier tank. Scale tends to fall off the exchanger wall to the bottom of the tank, maintaining efficient heat transfer to the water and extending the intervals between cleanings. The smooth stainless steel surface of the tank and removable heat exchanger are easily cleaned and maintained.

The GS-Series compact heat exchanger design provides a minimum footprint area where space requirement is an issue.



Operating costs based on electric cost of \$0.11 per kWh, natural gas cost \$0.90 per therm, full output for 2,000 hours per season. Efficiency of electric unit is 97% and efficiency of gas unit is 83%. Costs do not include Electric Peak demand charges.



# Technology

The GS-Series gas steam humidifier gives you more than economical operation... it's the most versatile gas humidifier available in the industry. When natural gas or propane is your preferred energy choice, the GS-Series gives you the options!

This humidifier employs a state-of-the-art controller giving networking capability to your engineer and superior interconnection capabilities. It provides venting and steam distribution flexibility to the contractor allowing fast and easy installation in retrofit or new applications. The integrated troubleshooting guide, smart drain water tempering and pre-cleaning sequence ensures fast servicing and efficient operation in all conditions. Units are all packaged and built by Nortec experts and fit through a 36" door, meaning retrofits couldn't be easier.



### Multi-function display



## GS-Series outdoor model

■ Standard ■ Optional

- Low emission gas appliance
- Capacity up to 630 lbs/hr with a single unit
- Nortec Total Controller
  - Modbus host protocol. Optional other BMS protocol availability.
  - Easy to use scroll down menus
  - Staged modulation of up to 10 units
- Advanced scale management system with pre-cleaning sequence
- Heavy-duty drain pump for scale removal
- Full modulation to 25 lbs/hr (11 kg/hr) for all capacities
- Produces clean, uncontaminated steam
- Multiple venting options for easy installation
- All components suitable for RO/DI and potable water
- Compact flat surface heat treated heat exchanger
- Internal water tempering for drain water cooling
- 360° gas burner technology
- All service connection outside the cabinet ready for field connection
- Fully insulated tank for efficient operation

Features	
Multi function, backlight, LCD graphic display	■
Total controller with keypad programming and real time clock	■
Manual steam capacity adjustment (lbs/hour)	■
Keypad setpoint adjustment (humidity %)	■
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	■
Pre-cleaning sequence	■
Keep warm feature for rapid response and additional freeze protection	■
Networking up to 10 units (maximum of 6000 lbs/hr)	■
Intuitive scale management system based on steam production	■
Smart drain water cooling	■
On/Off cycling prevention	■
BMS communication interface via Modbus	■
Transducer signal acceptance	■
Modulation control compatible with staging of burners	■
Industry standard single or dual modulation signal acceptance	■
Remote fault indication	■
Modulation control utilizing variable speed, and pre-mix blower(s)	■
Status indication lamps (demand, service and fault)	■
Precise five level water level indication	■
Full tank blowdown capability via timer or external trigger	■
Hygienic automatic drain on three day off cycle	■
Materials suitable for all water types, including Potable, RO and DI	■
Turn-down ratio from maximum output to 25 lbs/hr (11 kg/hr)	■
Totally enclosed cabinet with integral pipe chase	■
Zero clearance to combustible	■
Fits through a 36" door	■
Single supply water connection	■
Large cleaning ports for all capacities	■
B or BH venting options	■
Low emission NOx and CO levels	■
Accepts natural gas or propane	■
Accepts 110-120 V or 208-240 V power supply	■
CSA approved	■
Floor stand	■
Sealed combustion and direct vent option	■
<b>Outdoor Units Only</b>	
Totally enclosed weather proof integral cabinet	■
Internal cooling and heating fans	■
Flue venting (BH stack vent)	■

# Options



## SOFTWARE

### Links-Series

Nortec **Links-Series** 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.

### 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).



## STEAM DISTRIBUTION

### BP-Series

for in space applications (remote mounted).



### AS-Series

to distribute atmospheric steam into ducts.



### AM-Series

for use in air handlers or ducts where short steam absorption distance is critical.



## Technical data

SPECIFICATION	GS 100	GS 200	GS 300	GS 400	GS 500	GS 600
Capacity: lbs/hr	25-100	25-200	25-300	25-400	25-500	25-600
Capacity: kg/hr	11-45	11-91	11-136	11-182	11-227	11-273
Input BTU/hr max	140,000	280,000	420,000	560,000	700,000	840,000
Input kJ/hr max	41	82	124	165	206	247
Flue Emissions	Low CO (<10ppm) and NOx (<40ppm)					
Unit rated Amps	2	4	6	7	9	10
Voltage/Phase	110-120V/1	110-120V/1	110-120V/1	110-120V/1	110-120V/1	110-120V/1
Unit rated Amps	1	2	3	4	5	6
Voltage/Phase	208-240/1	208-240/1	208-240/1	208-240/1	208-240/1	208-240/1

INSTALLATION FEATURES & REQUIREMENTS	
Choice of venting comes standard allowing greater installation flexibility, B or or BH venting with or without sealed combustion option.	
Cabinet and insulation allows mounting to combustible surfaces for minimum space requirement.	
Exclusive full size cleanout port for fast and easy servicing.	
Floor stand optional for GS indoor units.	
All service connections exterior to the humidifier ready for field connections.	
110-120, 208-240V single phase power supply.	
Steam outlet configuration ready for duct distributor, remote mounted blower pack or short absorption manifold connection.	<p><b>The most compact removable heat exchanger. 100 lbs/hr (45 kg/hr) of clean steam.</b></p>  



ISO 9001  
SEDEX  
SAI Global Services  
U.S. Patent 5,816,496  
Canadian Patent 2,203,332

As a leading manufacturer of commercial/industrial humidification systems for more than 40 years, Nortec has the technology and application expertise to meet the needs of any application.

**Contact us today and ensure you have the best humidification solution for your application.**

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