



# GS Series™

Gas Steam  
Humidifiers

Designed for air handling  
systems and for areas  
requiring individual  
humidification control



## **NORTEC GS Series – the next generation of gas steam humidifiers.**

commercial offices  
schools and universities  
museums  
printing  
laboratories  
libraries  
manufacturing plants

AxAir 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.

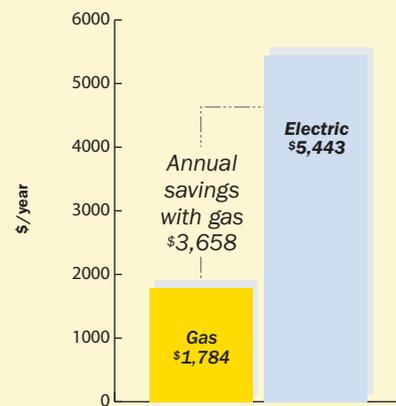
The NORTEC GS Series product line is no exception. Every unit has a built-in modular stainless steel heat exchanger – its flat surfaces ensure easy cleaning and its proven design ensures reliable operation in all water conditions. The control system is powered by a 120V or 208-240V single phase electrical 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 AxAir NORTEC representative can provide details.

## 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, from the central building management system or 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.

**Annual Operating Cost of  
Natural Gas Humidifier vs Electric Humidifier**  
100 lbs/hr (45 kg/hr)



Operating costs based on an electric cost of \$0.08 per kWh, natural gas cost \$0.75 per therm, full output for 2,000 hours per season. Efficiency of electric unit is 97% and efficiency of gas unit is 82%. Costs do not include electric peak demand charges.

## Easy Maintenance

The compact stainless steel 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 removeable 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.



Compact removeable heat exchanger.  
105 lbs/hr of clean steam.

## technology

The new generation of GS Series Gas Steam humidifiers 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 new GS Series gives you the options!!! This new 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 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.

- ▶ Low emission gas appliance
- ▶ Capacity up to 630 lbs/hr with a single unit
- ▶ Nortec Total Controller
  - Modbus host protocol
  - Easy to use scroll down menus
  - Staggered 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



GSTC 100



# GS Series™

Gas Steam  
Humidifiers

- ▶ Produces clean, uncontaminated steam
- ▶ Multiple venting options for easy installation
- ▶ All components suitable for RO/DI water
- ▶ Compact flat surface 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



GS OUTDOOR  
ENCLOSURE



GSTC

The **GSTC** has a built-in microcomputer with a full size display that provides instantaneous updating of all operating parameters. The unit accepts a modulation control signal from a BAS varying its output to meet capacity demand. Models feature a capacity adjustment of output down to 25 lbs/hr.

The **GSP** uses status lamps on the front to provide operating diagnostics. The GSP model can accept a modulating control signal from building management systems.



GSP

Features Comparison	GSTC	GSP
Steam Capacity adjustment	●	
Full size alphanumeric display and keypad	●	
Total Controller with Modbus host protocol	●	
Transducer signal acceptance	●	
Individual component diagnostic capability	●	
Keypad set-point adjustment(humidity)	●	
Display of relative humidity	●	
Low and high relative humidity alarms	●	
Adjustable drain with no call for humidity	●	
Keep warm feature	●	
Networking capability up to 10 units	●	
Pre-cleaning sequence	●	
Troubleshooting Guide	●	
Self diagnostic capabilities	●	
Fault history	●	
Smart drain water cooling	●	
On/off cycling prevention	●	
Full tank blowdown capability via timer or external trigger	●	●
Board mounted display for fault and demand indication	not req.	●
Parameter change through jumper settings	keypad	●
Remote fault indication	●	●
Single or Dual modulation signal acceptance	●	●
Industry standard modulation signal acceptance	●	●
Time to next maintenance alarm	●	●
Internal Drain water cooler	●	●
System demand indication	●	●
Output display	●	●
Precise five level water level indication	●	●
Status indicator lamps	●	●
Backlit display	●	●
B or BH venting options	●	●
BH stack vent (outdoor only)	●	
Large Side tank cleaning port	●	●
Top access cleaning (300, 400, 500 & 600 lb models)	●	●
Single water connections	●	●
Turn-down ratio from maximum output to 25lbs/hr(11kg/hr)	●	●
Time proportioning below 25lbs/hr(11kg/hr)	●	●
120V or 208-240V power supply	●	●
Freeze protection	●	●
Integral enclosure (outdoor only)	●	
Nortec Links Building Management System capable using BACnet or LonWorks N2 protocols	○	○
Nortec OnLine for web based monitoring and control	○	
Sealed combustion / Direct vent	○	○
Floor stand	○	○
<b>Distribution Systems</b>		
Short Absorption Manifold SAM-e	○	○
Steam distributor	○	○
Blower pack	○	○

● = standard ○ = optional

# options

## Steam Distributor Systems

Nortec offers flexible steam distribution choices to satisfy a wide range of requirements:

- Stainless Steel **Steam Distributors** to distribute atmospheric steam into ducts.
- Independant **Blower Packs** for in space applications (remote mounted).
- **SAM-e Short Absorption Manifold** for use in air handlers or ducts where short steam absorption distance is critical.



Atmospheric steam distributor



Blower pack



SAM-e Short Absorption Manifold

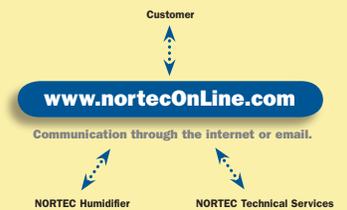
## NORTEC LINKS

NORTEC Links 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.



## NORTEC OnLine

NORTEC OnLine is a remote interactive communication package that allows satellite 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).



SPECIFICATION	GS 100	GS 200	GS 300	GS 400	GS 500	GS 600
Capacity: lbs/hr	25-105	25-210	25-315	25-420	25-525	25-630
Capacity: kg/hr	11-47	11-95	11-143	11-191	11-238	11-286
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	4	6	8	10	12	14
Voltage/Phase	120V/1	120V/1	120V/1	120V/1	120V/1	120V/1
Unit rated Amps	2	3	4	5	6	7
Voltage/Phase	208-240/1	208-240/1	208-240/1	208-240/1	208-240/1	208-240/1

#### INSTALLATION FEATURES & REQUIREMENTS

- Single point cabinet door fastening for easy removal.
- Choice of venting comes standard allowing greater installation flexibility, B or BH venting.
- 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.
- 120, 208-240V single phase power supply.
- Steam outlet configuration ready for duct distributor, remote mounted blower pack or Short absorption manifold connection.



# AxAir Nortec

a WMH Company

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ISO 9001:2000



Certificate No. 002419



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

electric steam — atomizing nozzles — high pressure nozzles — steam injection — steam exchange — gas steam