

High  
Efficiency  
Solutions.

CAREL



## gaSteam

Gas-fired humidifiers, the green  
solution to humidify and save money



# Gas-fired humidifier for applications with high steam demand

The gaSteam humidifier features extremely high thermal efficiency and fully exploits the cost advantage of gas.

Fitted with a stainless steel heat exchanger, it guarantees reliability and safety.

- models with steam production of 100, 200 and 400 lbs/hr (45, 90 and 180 kg/h);
- modulation from 25 to 100% of rated capacity (from 12.5% on UG180);
- maximum efficiency and safety ensured by the premix burner with proportional gas valve.

gaSteam is a green solution as it operates on natural gas, a clean and economical energy source.

gaSteam works by burning natural gas or LPG, without needing to change burner when changing the type of fuel, but rather simply setting some burner calibration parameters.



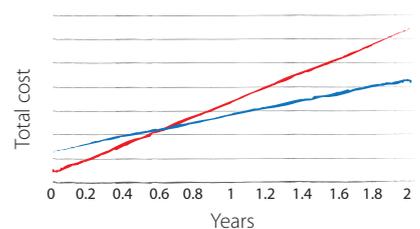
## Safety and Certification

gaSteam is fitted with multiple safety devices, and is ETL and CE certified (certification issued by TÜV-DVGW); moreover, the flamer control board has AGA (Australian Gas Association) certification. The low NOX emissions means the appliance is approved as class 5 for models UG045, UG090 and UG180.

## Energy saving

Estimated savings of up to 70% in energy costs are possible when using gas rather than electricity as the energy resource to produce steam in normal operation. gaSteam is therefore the ideal choice for applications where steam is needed many hours a day, bringing significant savings in operating costs and a rapid return on investment.

Comparison between a traditional electrode humidifier and gaSteam



— gaSteam  
— traditional electrode humidifier

Reference values: electricity 0.206 \$/kwh, gas heat value 9058 BTU/ft<sup>3</sup>, gas cost 0.027 \$/ft<sup>3</sup>



### High efficiency

The advanced design of the stainless steel heat exchanger, with a large heat transfer area, ensures high efficiency (94-96%) and excellent corrosion resistance.



### Precision

gaSteam is ideal for precision applications, with continuous flow-rate modulation from 25% (12.5% on UG180) to 100% ( $\pm 2\%$  from set point).



### Easy to install

Unit setup is made easy by the simple and intuitive user interface, which guides users in setting the parameters for basic humidifier operation.

## Heat exchanger

Heat exchanger featuring an exclusive design that guarantees high efficiency (94-96%) and easy maintenance. Made from stainless steel to ensure long life, even in heavy-duty operation.



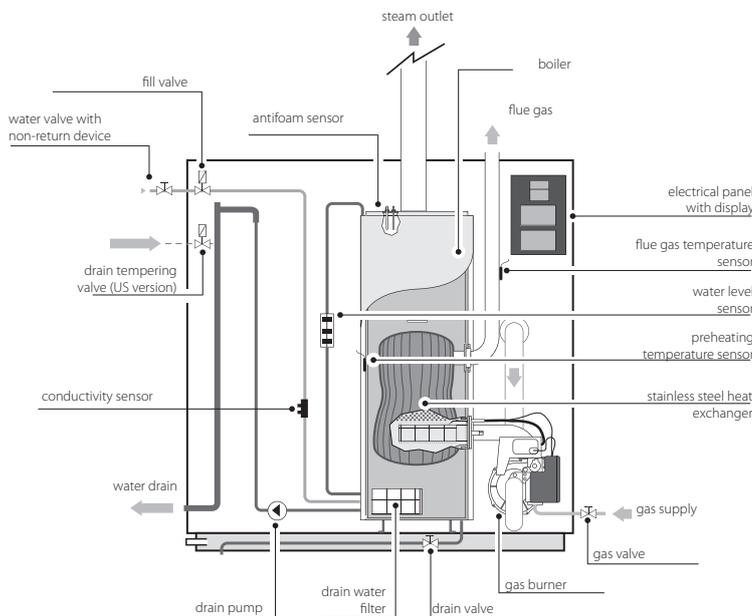
## Electronic control

Controller with intuitive graphic interface, programmable in 5 languages (Italian, English, French, Spanish, German). Complete with "configurable" screen to guide users in setting the main humidifier values during setup. gaSteam features the following control modes: ON/OFF, proportional (0 to 1 Vdc, 0 to 10 Vdc, 2 to 10 Vdc, 0 to 20 mA, 4 to 20 mA), or modulating temperature/humidity control (temperature control for steam bath applications).

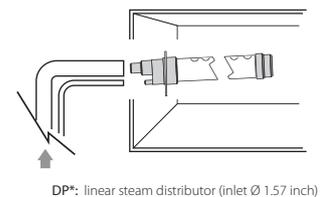


## Safety and flame control

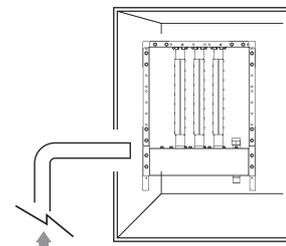
The control system connected to the electrical panel directly detects the flame, thus guaranteeing maximum reliability and safety. In addition, in the event of faults the control system attempts to reignite the flame or closes the safety valve, providing an alarm signal.



### duct applications



DP\*: linear steam distributor (inlet Ø 1.57 inch)



SA\*: ultimateSAM, steam distributor with short absorption distance

gaSteam can also operate on demineralized water, the ideal solution for minimizing maintenance.



### Safety

gaSteam has numerous safety systems including: negative-pressure double-closing gas valve, flame sensor, flue gas temperature sensor.



### Saving and the environment

gaSteam works by burning natural gas, a clean and economical energy source.



### Easy cleaning and maintenance

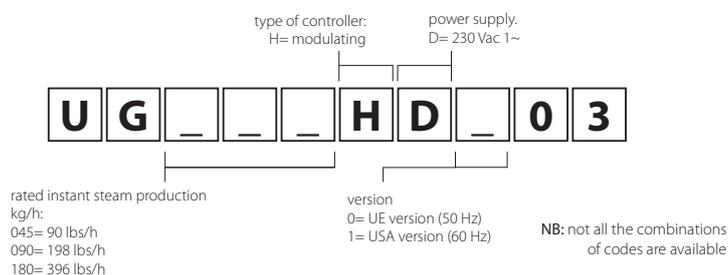
Controller fitted with diagnostic functions and alarm log display. The unit has been specially designed to make cleaning and routine maintenance easier.

## gaSteam table

Specifications	UG045*	UG090*	UG180*
<b>General</b>			
Rated steam production (lbs/h)	100	200	400
Steam production modulation	25-100%	25-100%	12.5-100%
Heat input (BTU)	112,763	213,449	426,897
Heat output (BTU)	118,712	221,987	443,973
Power supply	230 Vac (-15+10%). 50/60 Hz single-phase (depending on the region)		
Power consumption at rated voltage (W)	110	140	190
Steam outlet pressure limits (Pa)	0-2000	0-2000	0-2000
Steam connection (Ø inch)	2x1.57	2x1.57	4x1.57
Gas connection	1"G	1"G	1 1/4 "G
Types of gas	natural gas, GPL		
Flow-rate/pressure on natural gas (G20) (m <sup>3</sup> St/h - Pa)	3.68 - 2000	6.87/2000	13.4/2000
Flow-rate/pressure on natural gas (G25) (m <sup>3</sup> St/h - Pa)	4.2 - 2000	8.7 - 2000	17.5 - 2000
Flow-rate/pressure on propane (G30) (m <sup>3</sup> St/h - Pa)	1.10 - 3000	2.06 - 3000	4.12 - 3000
Operating conditions	1T40 °C (34T104 °F) 10-90% RH non-cond.		
Storage conditions	-10T70 °C (14T158 °F) 5-95% RH non-cond.		
Ingress protection	IP20		
Flue gas temperature (°C (°F))	135 (275)	170 (338)	165 (329)
Type of control	ON/OFF control, external proportional signal, humidity control + humidity limit, humidity control, temperature control, external signal + humidity limit		
<b>Water fill</b>			
Connection	3/4"G male		
Temperature limits (°C (°F))	1T40 (34T104 °F)		
Water pressure limits (MPa - bar (PSI))	0.1 to 0.8 - 1 to 8 (14.5 to 166)		
Instant flow-rate (gpm)	4.76		
Total hardness (ppm) CaCO <sub>3</sub> equivalent (*)	50-500		
Maximum conductivity limits (µS/cm) (*)	1500		
<b>Water drain</b>			
Connection (Ø inch)	1.97		
Instant flow-rate (gpm)	6.6		
Drain tempering instant flow rate (gpm)	8.45		

(\*) gaSteam can be supplied with completely demineralized water (1 µS/cm). If supplied with softened water, the minimum hardness value indicated must be complied with, following instructions shown in the manual.

## Unit code



## Reference market versions

	UG***HD003	UG***H0103
drain pump	50 Hz	60 Hz
drain tempering	optional	standard
fill hose	optional	standard

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