

# SKGE3 GAS FIRED HUMIDIFIER



CE



**neptronic**<sup>®</sup>

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# SKGE3 GAS FIRED HUMIDIFIER

The SKGE3 gas fired humidifier by Neptonic uses the latest gas technology to produce steam. On a call for humidity, the combustion blower creates a negative pressure across the combined gas valve with venturi orifice located at the air inlet. Gas and air mixture is ignited on the premix gas burner. Products of combustion circulate into the heat exchanger submerged in water, thus heating up the water in the evaporation chamber to produce steam.

## SKGE3 Advantages

The SKGE3 gas fired humidifier generates mineral free, odourless, sterile steam by using the power of natural gas or propane. Cost of operation and its carbon footprint is much lower than electric humidifiers with equivalent control accuracy (as low as +/-1%RH).

- ▶ Steam capacity from 50-400kg/hr
- ▶ Turn down ratio of 10:1
- ▶ Functions with Tap, RO or DI water.
- ▶ Combustion efficiency: 83% to 91% (depending on model)
- ▶ Modular design: 1 to 4 modules, easy to configure and install
- ▶ Easy servicing: cleans and re-installs within minutes
- ▶ Smallest footprint in the industry
- ▶ Patented AFEC technology for safe and efficient operation
- ▶ Available with BACnet MS/TP communication interface
- ▶ Equipped with drain pump.
- ▶ Waste water drained below 60°C
- ▶ Self adjusting burner for altitude compensation

## Typical Applications

When natural gas or propane or LPG is available on site, the SKGE3 gas fired humidifier is ideal for capacities from 50-400kg/hr. Typical applications for SKGE3 humidifiers include:

▶ Hospitals/  
Institutions

▶ Paint Booths

▶ Clean Rooms

▶ Laboratories

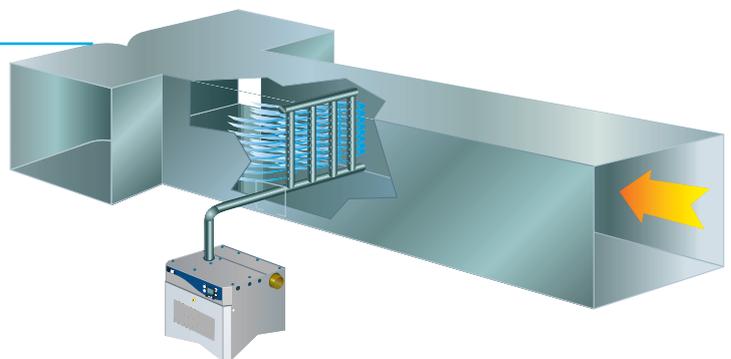
▶ Commercial



## Typical Installation

The SKGE3 gas fired humidifier is designed to distribute steam into a duct or AHU. Common water supply inlet, gas supply inlet, drain outlets and flue outlet can be located either on the right or left hand side of the SKGE3. Steam outlets are located on top of each module. Air inlet can be through the front door with natural ventilation or from top of each module if direct combustion air (sealed combustion) option is selected.

If flue pipe installation or air supply is an issue, the optional ETL certified outdoor enclosure is an ideal choice.

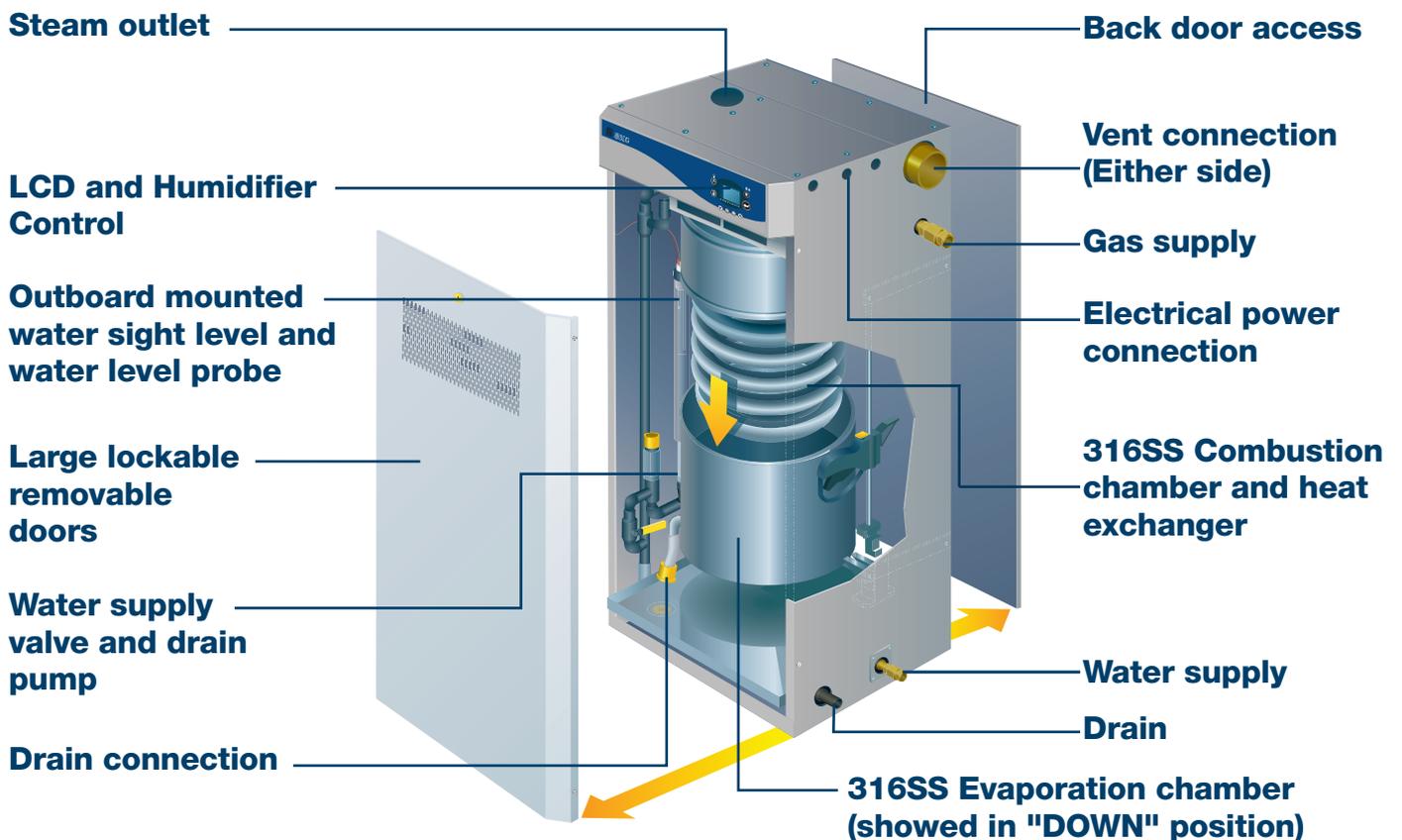


# System Overview

## Gas Train / Controls (Top View)



## User Interface and Controller



## Modular Design

### Flexible Solution

Modular design offers flexibility and convenience; each module adds up to 100kg/hr of steam capacity. With the smallest footprint in the industry, the SKGE3 module can be easily installed and assembled on site when access is limited. Module assembly can be arranged in line, in L shape, or back to back to accommodate any specific space conditions. Water, gas, water drain and flue connections can be located on either side of the enclosure.



# ■ AFEC System (Anti-Foaming Energy Conservation)



Patented AFEC technology developed by the Neptonic engineering team offers a unique, safe and energy efficient control of boiling water and steam. It provides efficient and accurate water level control whatever the water purity (tap, RO or DI water):

The AFEC system consists of:

- ▶ Mass measuring water sensor
- ▶ Anti-foam sensor
- ▶ Electronic high temperature sensor
- ▶ Interactive LCD display and microprocessor controller

The foam sensing probe, automatically initiates a drain cycle upon foam formation. Without having a continuous skimming to drain off expensive boiling water.

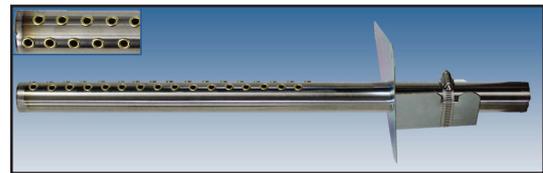
## ■ Options

### ■ Steam Distribution Systems

For duct distribution installation, the SKGE3 requires either a Multi-Steam or S.A.M.E2 as a steam distribution system to disperse steam.



**Multi-Steam**  
For absorption distance  
of less than 900mm



**S.A.M.E2**  
For absorption distance  
of less than 1500mm

### ■ X-Stream™ Technology

- ▶ High efficiency insulated steam distributor (channel and header) with patent pending steam ejector eyelets
- ▶ Double wall 304 stainless steel with encapsulated Armacell UT/Solaflex™ foam insulation
- ▶ Specially engineered silicone eyelets prevent condensate ejection on start up and any modulating humidity demand
- ▶ Significant reduction in wasted energy
- ▶ Reduces airstream heat gain and generated condensate
- ▶ For more details, refer to the X-Stream™ sales literature



Multi-Steam™ HD

# Outdoor Enclosure

## Features

- ▶ Hinged doors provide full access (serviceability) from the front, back and top of unit
- ▶ Fully insulated and constructed from heavy duty steel
- ▶ Stainless steel bottom drip pan
- ▶ Zinc primer and polyurethane powder coating for resistance against scratches and corrosion on the exterior and interior surfaces
- ▶ Built-in anti-freeze and overheat protection
- ▶ Easy installation on a roof curb or stand
- ▶ Connection can be made from side or through the roof curb



# Maintenance

## 4 Easy Steps!

- 1 Disconnect the drain water connection
- 2 Disengage bandclamp
- 3 Lower the evaporation chamber
- 4 Remove chamber for scale cleaning



# Specifications

## Output and Power Consumption

Model	Steam capacity	Input Capacity m <sup>3</sup> /h (kW)		Dimensions		
	kg/hr	Natural Gas	Propane Gas	A Height	B Width	C Depth
SKGE3-0501	50	4.6 (49)	2.1 (55)	137 cm	61 cm	56 cm
SKGE3-0701	70	5.8 (62)	2.6 (68)			
SKGE3-0801	80	6.5 (69)	2.9 (75)			
SKGE3-1001	100	6.8 (72)	3.0 (79)		122 cm	
SKGE3-1202	120	10.4 (110)	4.8 (123)			
SKGE3-1502	150	11.6 (123)	5.2 (136)			
SKGE3-1702	170	12.6 (134)	5.7 (147)			
SKGE3-2002	200	13.6 (144)	6.1 (158)		183 cm	
SKGE3-2503	250	19.1 (203)	8.6 (222)			
SKGE3-2703	270	19.4 (206)	8.7 (225)			
SKGE3-3003	300	20.4 (216)	9.1 (236)		244 cm	
SKGE3-3504	350	25.9 (275)	11.6 (301)			
SKGE3-3704	370	26.2 (278)	11.8 (304)			
SKGE3-4004	400	27.2 (288)	12.2 (315)			

# Humidisoft

## Specify your SKGE3 Online



## Humidifier System Design and Specification Web Application

Ready to specify your SKGE3 Humidifier? Neptronic has developed a web application that saves you time when sizing and specifying Neptronic commercial, industrial or residential humidifiers.

### Features

- ▶ Automatic humidification load calculation
- ▶ Web based
- ▶ Report Generator
- ▶ Display Absorption Distance
- ▶ Steam Dispersion Selection
- ▶ Humidifier Options
- ▶ Project Management

### Easy to Use

Once you have registered for an online account. You can start creating projects and create your very own humidifier virtually with all the available features with ease.

Project	Humidifier	Dispersion	Options	Reports	Pricing
Type					
<input checked="" type="radio"/> Isothermal (Hot Steam) <input type="radio"/> Adiabatic (cold mist)					
Category					
<input type="radio"/> Commercial Electric <input checked="" type="radio"/> Commercial Gas <input type="radio"/> Residential Electric <input type="radio"/> Steam to Steam <input type="radio"/> Direct Steam					
Entering Air Conditions		Indoor Conditions		Distribution	
Temperature <input type="text"/> °C		Temperature <input type="text"/> 21.1 °C		<input checked="" type="radio"/> In Duct	
Relative Humidity <input type="text"/> %		Relative Humidity <input type="text"/> 30 %		<input type="radio"/> In Space	
Ventilation System					
<input type="radio"/> Natural <input checked="" type="radio"/> Mechanical <input type="radio"/> Economizer					
Total Air Flow <input type="text"/> 5097 m <sup>3</sup> /hr			Outside Air <input type="text"/> 100 %		
Humidifier(s)					
<input type="checkbox"/> Enter Load Manually    Calculated Load <input type="text"/> 23.06 kg/hr    Total Capacity <input type="text"/> 50.00 kg/hr <a href="#">Select Model</a>					

Project	Humidifier	Dispersion	Options	Reports	Pricing
Voltage					
<input type="text"/> 120/1 <input checked="" type="checkbox"/> Show Voltages for current model only					
Gas Supply		Control			
<input type="radio"/> Propane <input checked="" type="radio"/> Natural Gas		<input type="radio"/> On / Off <input checked="" type="radio"/> Modulating			
Humidistat Type					
<input type="radio"/> None <input type="radio"/> Wall Humidistat HRO20 <input type="radio"/> Wall Humidity Sensor SHR10 <input checked="" type="radio"/> Duct Humidity Sensor (return duct) SHC80 <input type="radio"/> Wall Humidistat HRO20 + Wall Humidity Sensor SHR10 <input type="radio"/> Wall Humidistat HRO20 + Duct Humidity Sensor (return duct) SHC80 <input type="checkbox"/> Window Temperature Sensor SHW0-11					
VAV System (modulating high limit)					
<input checked="" type="radio"/> None <input type="radio"/> Wall Humidistat HRO20LSS + Duct Humidity Sensor (supply duct) SHC80 <input type="radio"/> High Limit Duct Humidity sensor (supply duct) SHC80					
Flexible Steam Hose			High Limit & Air Pressure Switch		
<input type="text"/> 3" <input type="text"/> 10 ft			<input checked="" type="checkbox"/> Air Pressure switch APS <input checked="" type="checkbox"/> High Limit Duct Humidistat HC201		
Other Options					
<input type="checkbox"/> BACnet (MS/TP) Network Capability <input type="checkbox"/> Standard DI/RO Water (below 10 megohm) <input type="checkbox"/> Humidifier Weather Enclosure (W) <input type="checkbox"/> Ducted Combustion Air (Seal Combustion)					

# ■ Humidifier Product Line



## ENGINEERED TO LAST

### ELECTRIC



#### SK300

- ▶ Capacities from 5-120 kg/hr
- ▶ Permanent cleanable chamber
- ▶ Outdoor enclosure available

### RESIDENTIAL



#### SKR

- ▶ Capacities from 3-5 kg/hr
- ▶ Permanent cleanable chamber
- ▶ Reliable siphon drain

### STEAM TO STEAM



#### SKS

- ▶ Capacities from 15-670 kg/hr
- ▶ Scale management system
- ▶ Insulated external panels

### DIRECT STEAM



#### SKD

- ▶ Capacities from 2-525 kg/hr
- ▶ Jacketed or Multi-Steam Type
- ▶ Unique Electronic Steam Controller

### GAS FIRED



#### SKGE3

- ▶ Capacities from 50-400 kg/hr
- ▶ Modular design
- ▶ Outdoor enclosure available

### EVAPORATIVE



#### SKV

- ▶ Free cooling up to 12 °C
- ▶ Custom design to fit your application
- ▶ Hygienic operation with Silver Ion dosing system
- ▶ 4 Efficiencies: 65%/75%/85%/95%

### HIGH PRESSURE ATOMIZER



#### SKH

- ▶ Capacities up to 1200 KG/hr
- ▶ Up to 32 zones
- ▶ Installation In-duct or In-space

### STEAM DISTRIBUTION



#### Distribution

- ▶ Multi-Steam distribution
- ▶ S.A.M & S.A.M.E2 wands
- ▶ SDU (Space distribution unit)

### HUMIDITY CONTROLS



#### Controls

- ▶ Humidity controls / sensors
- ▶ Safety controls
- ▶ BACnet compatible

MANUFACTURER OF ■

- HVAC CONTROLS
- ELECTRIC ACTUATORS
- ACTUATED VALVES
- HUMIDIFIERS
- ELECTRIC HEATERS

■  
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