

Gas Humidifier Specification

- The Humidifiers shall be supplied by Humidity Solutions Ltd and must be Gas Fired Steam humidifiers for fully-automatic microprocessor controlled generation of odourless and sterile steam.
- The Humidifiers shall be supplied compliant with WRAS, for direct connection to wholesome water supply. Installer must incorporate a non return valve and Type B drain air gap to prevent back-siphoning.
- The humidifier shall be certified to comply fully with CE regulations with a high degree of operational safety, maintained through automatic operational control with integrated fault detection system with a safety shutdown circuit,
- The humidifier range shall be suitable for connection to any water supply source. The humidifier shall accept raw mains water, partially softened water or reverse osmosis water to 1 MΩ. Steam production shall be consistent irrespective of water quality.
- The humidifier shall be designed for both room air-dependent and independent installations capable of producing steam within the range of 5 - 400kg/hr.
- The case of the humidifier shall be a compact structure to minimise space requirements with powder coated steel cabinet designed for floor mounting
- The humidifier must have high thermal efficiency with values greater than 87%.
- The humidifier components shall be covered by a warranty for a period of two years. The steam shall be generated in a guaranteed-for-life, non-disposable, stainless steel boiling vessel with unique scale management system.
- As part of the Unique Scale Management System the heat exchanger shall be self-cleaning design. This innovative heat exchanger configuration shall expand and contract with changes in temperature to remove scale from the surface of the exchanger to a removable position at the base of the evaporation chamber.
- As part of the Unique Scale Management System any scale accumulated will be easily removable from the humidifier.
- The humidifier must have a water level control system to prevent operation of combustion chamber and heat exchanger in free air. The humidifier shall have robust level control. The humidifier must have the ability to sense 'foaming' and take a corrective action by going into a drain cycle.
- The water level in the boiling vessel and thus the humidifier output shall be maintained at a constant level via an electronic control system in a separate water compartment.
- For safe temperature operation, the humidifier must have both an electronic temperature sensor on both the flue gases and the stainless steel evaporation chamber and also an external bimetallic temperature cut-off mounted on the external wall of the evaporation chamber.
- Automatic draining of the water tank and evaporation chamber shall be achieved by an electro-mechanical drain pump. To minimize energy consumption, the humidifier shall have a user adjustable drain cycle periods according to variations in water conditions.
- The humidifier shall operate within the range of duct pressures of ± 2500 Pa.
- For safety and security reasons, all components, electrical wiring and plumbing connections will not be exposed and must be contained within the cabinet of the humidifier. The humidifier shall have three compartments, one mechanical containing the evaporation chamber, supply and drain valves, water connections and drip tray. Other compartments shall house electrical components, gas control components, gas valve and air / gas premix blower. A separate compartment shall house the electronic controls.

- Reliable ignition shall be achieved using easily replaceable hot surface igniters.
- Each humidifier shall require only a single electrical power supply, a single gas supply, a single water supply, single drain connection and a single flue connection.
- The humidifier shall have an interactive “backlit” Liquid Crystal Display Screen (LCD) on the front panel of the unit.
- The humidifier shall be microprocessor controlled for the purposes of 4 main interface functions: ‘Status’ ‘Configuration’ ‘Alarms’ and ‘Diagnostics’. The Status section shall display relevant parameters such as system demand, system output, actual humidity, water levels and temperatures, flue temperatures and operating hours. The Configuration section shall be used to adjust parameters such as control modes, set-points, drain cycles and service hour counters. For more in depth analysis there will be the use of the Alarms and Diagnostic sections.
- The humidifier shall have internationally recognisable symbols for displaying “Power” and “Fault” status. Also included shall be switches for “Power” and “Drain” plus scroll and program switches. The switches and indicators shall be of the water tight active membrane type backlit by lifetime LED’s.
- The humidifier must be compatible with BACnet protocol. This protocol offers “plug and play” integration of devices to Building Management Systems.
- After a period of no demand (factory’s setting that can be reprogrammed), the humidifier will go into “shutdown” mode draining the humidifier.
- The humidifier must be cable of accepting a 0-10VDC, 2-10 VDC or a 4-20 mA modulating control signal. The humidifier shall be cable of modulating output to 100% of its capacity. Modulation shall be achieved through speed modulation of the air/gas premix blower
- The humidifiers shall have the capacity to be linked with Humidity Solutions controller/sensors for fully automatic control and set-point adjustment at the humidifier or on the controller. With secondary high level humidity sensing, control shall be fully proportional.
- The humidifier shall be fitted as standard with a PCB to indicate fault status remotely via volt-free contacts. Any humidifier fault shall be indicated not only by a constant red light on the front of the unit, but also confirmed by the LCD display.
- The system is to be supplied by: Humidity Solutions Ltd, Humidity House, 3 The Axis Centre, Cleeve Road, Leatherhead, Surrey, KT22 7RD