

# MrSteam® Commercial Steam Bath Generator Specification

## Specification Sheet

No. CU0686

Issue Date: JUNE 2010

Series: CU

Pressure Range: Max15 PSIG

KW Rating: 9KW to 108KW

Cubic Volume Range: Up to 4500 cuft commercial steamrooms.

### 1.0 General

- 1.1 The Commercial Steam Bath Generator shall be a MrSteam® Series CU built in accordance with current ASME Boiler and Pressure Vessel codes, comply with and shall bear the appropriate ASME stamps.
- 1.2 The pressure vessel shall be National Board stamped and registered.
- 1.3 The generator shall be UL/cUL listed complying with UL and CSA safety requirements for Electric Steam Boilers.
- 1.4 The control circuit shall not exceed 120 volts for the USA and Canada.
- 1.5 The pressure vessel shall be of vertical construction with no portion of the heating element wet side exposed to the steam environment.
  - 1.5.1 The pressure vessel shall be fully insulated using non-combustible fibrous glass material.
  - 1.5.2 The jacket enclosure shall be minimum 18-gauge steel, primed and finished in baked enamel.
  - 1.5.3 All subdivided components, including fuses, fuse blocks, power magnetic contactors, etc., shall be rated for their intended use, and shall be enclosed within the overall jacket assembly. No wiring between components or sections of the boiler shall be external unless routed in suitable metallic conduit using anti-short bushings and fittings.
  - 1.5.4 All access doors and panels enclosing serviceable components such as fuses shall be hinged and provided with quarter-turn fasteners to allow entry for adjustments and servicing.
- 1.6 Steam bath generators rated more than 36kw shall utilize a McDonnell Miller 150 for liquid Level and low-water cut-off and plumbed with unions.
  - 1.6.1 Steam bath generators rated up to 36kw shall utilize electronic liquid level and low water cut-off controls.
- 1.7 Operating automatic reset and a high-limit manual reset pressure controls, plumbed and wired on the generator, shall be provided to deenergize all power contactors.
- 1.8 The generator shall have the capability of operating under saturated steam conditions.
- 1.9 The heating elements shall be stainless steel, min. 0.430 inch diameter; silver brazed into field serviceable ASME grade carbon steel flanges without the use of mechanical compression fittings.
- 1.10 No element shall exceed 18kw rating and flanged bolts shall not pass into the boiler-heating chamber.
- 1.11 The generator shall be equipped with: external liquid level gauge glass with service valves, indicating on/off switch, strainer and solenoid feed water assembly, ASME code safety valve set to open at 15PSIG, a check valve on the water feed line, a 0-30PSIG range pressure gauge and drain/blowdown service valves.
- 1.12 Steam bath generators rated more than 36kw shall utilize a high-water content control, complete with sensor and electronic PC board, shall be provided as standard to deenergize all power contactors in the event of a high-water condition.
  - 1.12.1 Steam bath generators rated up to 36kw shall utilize a high-water content control which is integral to the standard liquid level control and shall be provided with sensor to deenergize all power contactors in the event of a high-water condition.
- 1.13 The generator shall have integral legs at the lowest section of the assembly to provide clearance to flooring.
- 1.14 An auxiliary low water cut-off with automatic reset complete with sensor and electronic PC board shall be provided as standard to deenergize all power contactors in the event of a low-water condition.

- 2.0 MrSteam®, Automatic Blowdown System.**
- 2.1 A MrSteam® Automatic Blowdown system shall be supplied with 24-hour, 7-day programmable operation for single or multiple daily blowdowns with adjustable time delay.**
- 2.2 The system Automatic Blowdown shall be electrical, operate on 120VAC and shall deenergize the generator before blowdown sequence occurs.**
- 2.3 This system shall have as standard a motorized full-opening ball valve complete with stainless steel ball, trim and stem, and shall be considered self-cleaning. The use of a solenoid or paddle valve shall not be acceptable for this purpose.**
- 2.4 MrSteam® Automatic Blowdown System to be suitable for field relocation to maximize location options.**
- 3.0 MrSteam® Digital 1™ System.**
- 3.1 A MrSteam® Digital 1™ electronic temperature system shall provide Steam-On-Demand® by operating under low pressure steam conditions utilizing an electronic thermistor sensor assembly, electric solenoid(s) to provide steam flow control, and an electronic temperature controller, field adjustable from 100-120 degrees F maximum. Suitable quantity and sized steamhead(s) shall be provided to distribute steam to the steam room(s).**
- 3.2 In addition, each MrSteam® Digital 1™ system shall have an integral high temperature setting to deenergize the steam bath generator, set to 130 degrees F.**
- 3.3 MrSteam® Digital 1™ System to be suitable for field installation to maximize location options.**
- 3.4 The thermistor sensor assembly shall be sealed and protected by a bulb guard.**
- 3.5 A suitable sized generator shall be able to operate independently or concurrently, a maximum of two separate steamrooms each approximately equal in size and construction under low-pressure steam conditions with each room controlled by a Digital 1™ System for Steam-On-Demand® and desired temperature control.**
- 3.6 One (1) Digital 1™ System shall be specified for each steamroom supplied with steam by a CU generator to allow the owner/operator to select the desired steamroom operating temperature between 100 – 120 degrees F.**
- 4.0 MrSteam® AromaFlo® Essential Oil Delivery System for Commercial Steam Rooms.**
- 4.1 AromaFlo system to be complete with oil atomizer, filter, bases, and injector.**
- 4.2 AromaFlo 120V system to be complete with 120V receptacle, faceplate, and safety warning.**
- 4.3 Access to programming switch restricted by removable enclosure cover with the use of a tool.**
- 4.4 AromaFlo to be available in 120V/60 Hz and cUL listed and CE certified.**
- 4.5 AromaFlo to have electric time/volume and interval programmability and deliver oil only during call-for-steam cycle.**
- 5.0 Mr. Steam® ASME Code Blowdown Tank**
- 5.1 Mr. Steam® ASME blowdown tanks shall be built to ASME section VIII**
- 5.2 A Mr. Steam® ASME Code Blowdown Tank shall be supplied to reduce the temperature and pressure to insure a safe discharge of steam bath generator water.**
- 5.3 A Mr. Steam® ASME Code Blowdown Tank shall be supplied complete with temperature gauge, pressure gauge and gauge glass assembly.**
- 6.0 Mr. Steam® CU ALARM**
- 6.1 A Mr. Steam® CU ALARM shall be used where codes require an audible alarm to signal an over temperature condition.**
- 7.0 Mr. Steam® CU STEAMSTOP**
- 7.1 A Mr. Steam® CU STEAMSTOP shall be used to deenergize the steam bath generator in the event of an emergency.**
- 7.2 Mr. Steam® CU STEAMSTOP to be suitable for locating inside the steam room.**
- 8.0 Ordering**
- 8.1 The Commercial steambath generator shall be Mr. Steam® Model No. CU \_\_\_\_\_, suitable for \_\_\_\_ V \_\_\_\_\_ PH \_\_\_\_\_ Hz, and supplied with all standard MrSteam® CU features, including appropriate Digital 1™ Plus temperature control system(s).**
- 8.2 In addition, each CU shall be equipped with a Mr. Steam® Automatic Blowdown System.**
- 8.3 Each steam room shall be provided with an AromaFlo® essential aromatic oil delivery system.**
- 8.4 Where required by codes or jurisdictional authorities, blowdown tank, CU STEAMSTOP and/or CU ALARM shall be provided.**