

Specifications - [IER]

Section 23 84 13 – Humidifiers

PART 1 - GENERAL

1.1 SUMMARY

.1 Section includes:

.1 Materials and installation for electric self-contained humidifiers and accessories.

1.2 RELATED SECTIONS

1.3 REFERENCES

.1 Air-Conditioning and Refrigeration Institute (AHRI) AHRI 640, Performance Rating of Commercial and Industrial Humidifiers

1.4 SUBMITTALS

.1 Submittals in accordance with Section []- Submittal Procedures.

.2 Product data:

.1 Submit manufacturer's printed product literature, specifications and datasheet for heating, ventilation and air conditioning distribution piping and ductwork.

.3 Shop drawings:

.1 Submit shop drawings to indicate project layout, dimensions, and extent of humidification system.

1.5 QUALITY ASSURANCE

.1 Certifications:

.1 Humidifier(s) shall be certified as per UL998 by a Nationally Recognized Laboratory (NRTL).

.2 ANSI/NFPA 70 – National electric code

.2 Warranty

.1 Humidifier(s) shall be warranted for a period of three (3) years.

Part 2 - Product

2.1 Electric self-contained humidifier

.1 The humidifier shall be certified as per UL998 by a Nationally Recognized Laboratory (NRTL).

.2 Humidifier internal parts including boiling chamber, hydraulic circuit components, electrical components should be easy to access with a unique front door access.

.3 Boiling chamber, cover and fittings constructed from series 300 stainless steel.

.4 Boiling chamber cylinder provided with thermal insulation. Thermal insulation shall not be able to lose thermal properties when in contact with water.

.5 Immersion heaters INCOLOY alloy-sheathed resistance type with bending radius of 1in minimum to reduce stress concentration, with a tube diameter of 0.43in minimum to maximize surface contact area to water and with no more than 70 watts per square inch of watt density.

.6 Humidifier to have the following safety protection features:

.1 Hi-limit temperature switch

.2 Electronic continuous water level sensor.

.3 Evaporation rate control algorithm.

.4 EcoEnerSmart™ water dilution auto adaptable depending on water quality

- .5 Integrated back flow prevention water hydraulic with no check valve or open fill cup that are prone to overflow
- .6 Conductive foam detection sensor.
- .7 Humidifier shall be able to be supplied with tap or well water or treated water such as softened or reverse osmosis (RO) water without alteration or add-on option.
- .8 Removal of boiling chamber cylinder for regular cleaning and maintenance shall be done without the need of tools, and without the use of consumable such as gasket or others.
- .9 Humidifier to provide full modulation using integrated SSR control, without additional option.
- .10 Humidifier shall include an integrated automatic wasted water drain cooling function ensuring a maximum water drained temperature of 140°F (60°C), without additional option.
- .11 Automatic drain of humidifier's boiling chamber should be done with a drain pump allowing for fast and efficient partial or complete flush out without being affected by scale with a minimum flow of 6GPM.
- .11 Humidifier control and user interface to be provided by 7in touch screen and microprocessor with real time operating system and multilingual screens and menus. User interface should include the following:
 - .1 Dashboard screen indicating real time power consumption and log of events, with the 200 last events recorded in non volatile memory
 - .2 Overview screen indicating real time status of all internal sensors and operation of the humidifiers.
 - .3 Control and humidifier setting screens with possible restricted access allowing for the full set-up of the humidifier and control communication including PID adjustments for optimize humidity control of critical applications
 - .4 Ethernet or Wi-Fi settings for remote control through steamOcloud proprietary web server.
 - .5 Easy software upgrade through USB 2.0 connection
- .12 Supplied with Modbus RTU for secure and easy integration to Building Management System (BMS), as standard and without additional option.
- .14 Three (3) years warranty.
- .15 Optional Accessories
 - .1 Air flow proving switch.
 - .2 High limit switch humidistat.
 - .3 Electronic RH% sensor for duct or space.
 - .4 BACnet MSTP remote communication to Building Management System (BMS).
 - .5 Stand metal frame for floor installation.
 - .6 Wall mounting bracket to ease of wall installation
 - .7 IP65, equivalent to NEMA 4 type outdoor enclosure made in stainless steel and with anti-freeze and/or heat protection.

Part 3 - Execution

3.1 INSTALLATION

- .1 Install in accordance with manufacturer's instructions.
- .3 Install humidistat in accessible location.
- .4 Install access doors or panels in adjacent ducting.
- .5 When installing in ducting, provide waterproof duct up and downstream.

3.2 FIELD QUALITY CONTROL

- .1 Commissioning / start-up:

Have manufacturer's representative of products, supplied under this Section, supervise start-up of humidifier and provide written start-up report.

END OF SECTION