

Steam QM-3

Steam Quality Monitor



Until now measuring steam quality has largely been a manual process, which is time consuming and presents inherent safety and accuracy risks. Steam QM-3* is an intelligent solution that allows pharmaceutical manufacturers, hospitals, and other facilities concerned with steam quality to easily and efficiently measure the quality of steam used for sterile applications.

Steam QM-3 is an automatic steam quality monitor which determines and communicates the dryness fraction, the amount of superheat present, and the concentration of non-condensable gases in steam.



Product Features

- Simple “Plug and Play” installation
- Simultaneous steam dryness, superheat and non-condensables (NCGs) monitoring
- Safe alternative to the traditional manual method of sampling steam
- RS485 connection for data logging using regulation compliant device; results may be remotely monitored via MODBUS

EN285

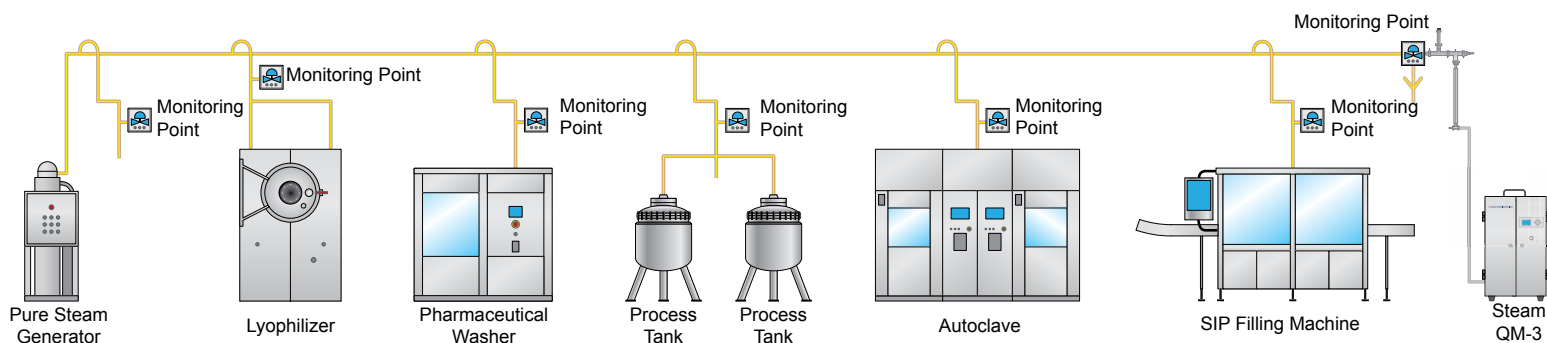
The European Standard EN 285 specifies requirements and the relevant tests for large steam sterilizers, primarily used in health care, for the sterilization of medical devices and their accessories contained in one or more sterilization modules. EN285 Requires: Steam dryness for sterilization of metal loads > 0,95 and > 0,9 for non-metal loads; Maximum superheat of steam after expansion to atmospheric pressure is 25 °C (77 °F); The maximum limit for non-condensable gas volume must not exceed 3,5% of the volume of liquid condensed from steam.

Steam QM-3 Sensing Range

Dryness Fraction	0,85 – 1,0
Amount of Superheat Present	0-50° C (0-122° F)
NCG Content	0-15%

Applications

- Pharmaceutical industry: autoclaves / sterilization
- Hospitals



***Patent Pending**

Steam Quality Monitor – Steam QM-3

Manual Versus Automatic

Until now steam quality measurement has been a time-intensive, unreliable and potentially unsafe process. Steam QM-3 is not only more reliable and safer than manual testing, the unit is also portable, so it can be easily transported to multiple points on your steam line.

When you compare Steam QM-3 to manual testing methods the choice is clear:

Manual Method	Automatic Method
Description	
- A sample of clean steam is condensed, and the enthalpy allows measurement of steam dryness, and NCG content. - Temperature measurement before condensation identifies an excess of superheat temperature.	- Reducing steam pressure to atmosphere allows measurement of steam dryness. - Steam temperature and pressure measurements detect superheat. - Volume of non-condensable gases are compared to condensate.
Disadvantages	Advantages
- Time Consuming: Typically manual steam quality measurement requires two people, and can take up to three hours per measurement point. This does not include additional time required to complete necessary reports. - Trending: It is impossible to monitor a trend over a period of time. - Unsafe: There are inherent safety risks involved in sampling live steam and condensate in a water receiver. - Unreliable: Measurement results depend on the skill of the technician conducting the test.	- Quick and Easy: Steam QM-3 is simple to install. - Trending: Continuous measurements provide trending data over time. - Safe: Because Steam QM-3 is installed while the steam valve is closed, it is much safer than manual measurement methods. - Reliable: Steam QM-3 is both reliable and accurate within +/- 1% of steam dryness.

Installation Qualification/Operational Qualification

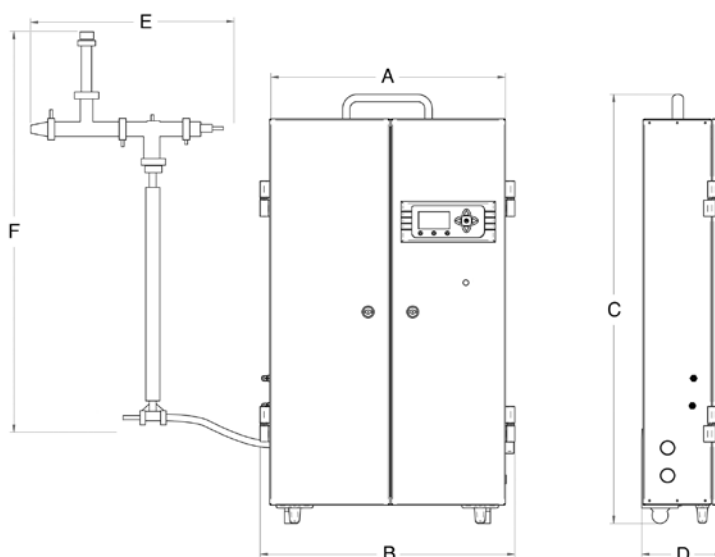
Installation Qualification/Operational Qualification (IQ/OQ) procedures available to comply with government and international standards that recommend documented verification that your equipment is installed and functioning according to the manufacturer's specifications.

Steam QM-3 Specifications

Steam Operating Pressure Range	0,5-4 barg (7-60 psig)
Voltage	110/230 VAC
Cooling Water	15 l/h @ 10 °C (4 gph @ 50 °F)

Steam QM-3 Dimensions & Weight

	in	mm
A – Cabinet Width	22	550
B – Width	24	600
C – Cabinet Height	40	1 000
D – Depth	7.5	190
E – Width	21	440
F – Height	37	945
Cabinet Weight	42 lb	19 kg
Total Weight	55 lb	25 kg



Steam QM-3 Package Includes:

Insulation Covers • Wall Mount • All Necessary Accessories

Optional Feature:

Data Logger

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Armstrong provides intelligent system solutions that improve utility performance, lower energy consumption, and reduce environmental emissions while providing an “enjoyable experience.”



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