

Mercury calibrator MC-3000

CALIBRATORS

APPLICATIONS

The MC-3000 is used for generating a continuous stream of a mercury vapor loaded gas stream in order to check or calibrate mercury analyzers.

It is also suitable for all those applications where a gas stream with a preset and constant mercury concentration is needed.

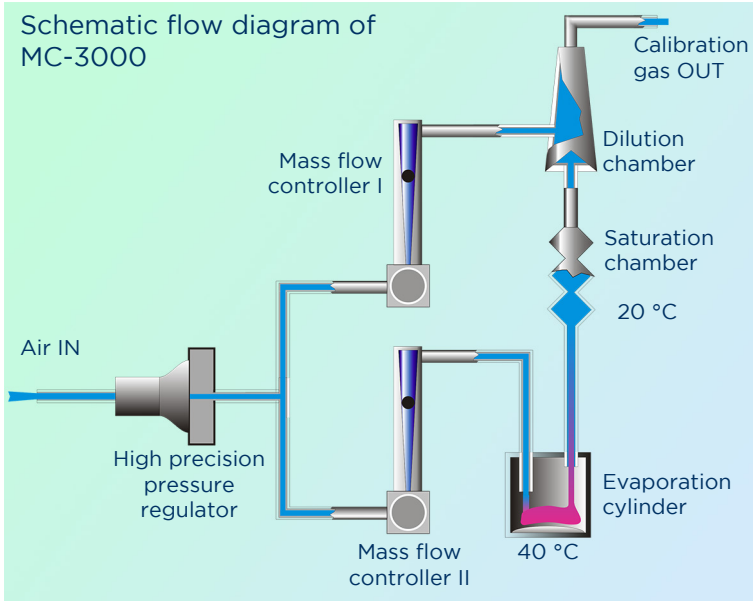


MC-3000 in operation: Calibration of a mercury monitoring system

SPECIFIC FEATURES

- Generates elemental mercury vapor
- Continuous operation
- Approx. 10 ... 500 $\mu\text{g}/\text{m}^3$ Hg^0
- Compact and portable size
- No permeation principle - no need to calibrate the calibrator
- Microprocessor controlled
- Easy to operate

Schematic flow diagram of MC-3000



PRINCIPLE OF OPERATION

A carrier gas stream (air or nitrogen) is first charged with mercury vapor. The mercury loaded gas is then saturated by cooling. Excess mercury is condensing in a special cell thus achieving equilibrium. After having been saturated with mercury the gas is diluted to get lower mercury concentrations as needed for calibration of instruments. The dilution ratio is continuously controlled by a microprocessor in order to obtain a flow of calibration gas with a constant mercury concentration.

OPERATION

Using the MC-3000 is easy:

The device is placed on a flat surface and connected to the carrier gas source, for example a compressed air line. A portable air pump with a tank is delivered as an accessory. The MC-3000 is then switched on and the desired mercury concentration is set via keypad. After allowing 30 minutes for stabilizing the calibrator delivers a constant stream of air with the pre-set mercury concentration.

TECHNICAL SPECIFICATIONS

Range of concentrations:	approx. 10 ... 500 µg / m ³ Hg°
Generated calibration gas flow:	1 ... 9 L / min, depending on conc.
Carrier gas:	Air, Nitrogen
Carrier gas flow:	max. 12.5 l/min
Carrier gas pressure:	1 ... 3 bar
Cleansing of carrier gas:	built-in particulate filter 0.2 µm
Mercury absorption filter:	sulphurized activated carbon at outlet
Temperature sensors:	PT-100 withh 0.01 °C accuracy
Flowmeter:	electronic mass flow controller
Connectors:	for tubing 4mm i.d. / 6mm o.d.
Power supply:	110 - 230 VAC/50 - 60 Hz;
Power consumption:	30 VA
Dimensions (W x H x D):	45 x 18 x 27 cm
Weight:	approx. 4.7 kg

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