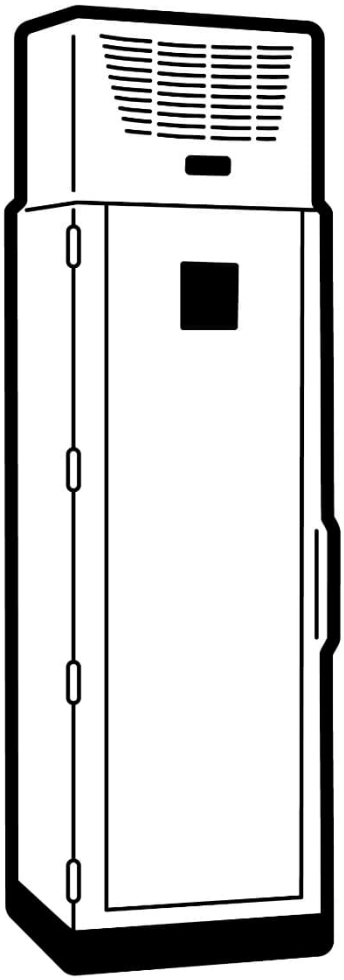

CMM AutoQAL

Gasmet CMM AutoQAL is a fully automated EN 15267 certified solution for continuous mercury monitoring including automatic QAL3 validation tool for $HgCl_2$ or Hg^0 span checks according to EN14181

System specifications

Measuring principle	Cold vapor atomic fluorescence (CVAF) with extractive filtration, dilution and thermal conversion	
Measuring range	Minimum certified range 0 - 5 µg/m³ Maximum certified range 0 - 1000 µg/m³	
Sample conversion	Integrated high temperature thermal converter	
Source	Low pressure mercury vapor lamp	
Minimum detection limit for total mercury	0.02 µg/m³, total Hg (complete system, with dilution)	
Operation wavelength	253.7 nm	
Power supply	Standard version:	400 VAC, 3 x L+N+PE
	Power consumption ~ 6,6kW (the full CMM with heated lines, 25 m)	
	US version:	200 VAC, 3 x L+N+PE
Response time	Typically < 120 s, depending on the sample line length and measurement time	
Dilution probe	Operating principle:	Ejector with critical orifice
	Material:	SS 316, glass coated sample wetted parts
	Operating temperature:	Maximum setting 250 °C (filter housing temperature)
	Filter element: Dust load: Flow alarm:	Glass coated SS 316, 2 µm < 2 g/m3 Yes
	Heated probe tube:	
	Material:	SS 316, glass coated sample wetted parts
	Temperature: Length: Mounting flange:	Maximum setting 250 °C 122 cm 60 cm (optional) DP100PN16
Air conditioning	Cooling capacity: Internal circulation:	A35 °C / A35 °C 1500 W 500 m3/h
Test Gas Generator for Hg^0	Vapor generation from saturated source and dilution Approved for regulatory zero and Hg^0 span checks	
	Span gas flow control: Hg source temperature:	MFC 0 – 20 ml/min 1 – 10 °C
	Calibration concentration ranges converted to Hg^0:	
	Saturated Hg source:	5 µg/m3
CMM AutoQAL for $HgCl_2$ gas generator	Operation principle: Liquid $HgCl_2$ solution sprayed and vaporized to dilution gas	
	Automatic $HgCl_2$ test gas generator. Approved for regulatory $HgCl_2$ span checks Validation interval 4 weeks.	
	$HgCl_2$ span target value is 70 – 90% of system measuring range	
Detector	Photon detection unit with photon counting	

Heated sample line	Standard 230 V version:	2 - 47 m (according to site)
	US 115 V version:	2 – 23.5 m (according to site)
	Tube size:	2 * 6/8 mm
	Core material:	PFA Teflon core
	Temperature:	Maximum 200 °C
	Fittings:	8 mm Swagelok
	Power consumption:	145 watts/meter
	Dilution and blowback air:	Unheated 2 * 4/6 mm Teflon core, 6 mm Swagelok
	Analyzer and test gas generator are connected to dilution probe with combined heated line which divides into two parts on both ends.	
Instrument air preparation	Instrument air inlet:	6 – 10 bars, 60 l/min, oil free, dew point -40°C, 8 mm Swagelok fittings
	Instrument air filtration:	3-stage filter unit
	Nitrogen generator:	Capacity 99 % N2, 8 l/min, 5-6 bars, efficiency ratio 20 %
	Calibration gas drying:	Absorption dryer, capacity -30 °C
	Mercury scrubber:	Absorption scrubber
	Vacuum pump:	WOB-L piston twin headed
Input signals	External standby control	
Output signals	**5 device status contacts:** System alarm, service request, maintenance status, result valid and concentration alarm 4 analog signals (4 - 20 mA) for measurement data	
	Concentration alarm: Concentration alarm is a user defined concentration alarm signal. It can be defined from MAUI Program settings menu (Concentration alarm limits, Low and High). The alarm is only connected to a digital output signal in the CMM cabinet, and is not visible in MAUI display or measurement data.	
	Bus Output: Output format: Modbus TCP/IP With optional converter the Modbus TCP/IP can be converted to Profinet. Other fieldbus formats available on request.	
Measuring data outputs	The CMM system is equipped with 4 analog outputs representing the result total Hg concentration with different ranges.	
	Analog output range:	4 – 20 mA. Active, load 350 Ω max.
Enclosure	Dimensions without the door handles (H x W x D):	
	Control unit	2120 x 600 x 600 mm (cooling unit on top)
	Material:	Bake painted steel
	IP class:	IP54
Weight	Sampling probe:	approximately 27 kg (dilution probe + probe tube)
	Cabinet:	approximately 230 kg (the full CMM cabinet)
Product compliance	CE, UKCA	
Operating system	Microsoft Windows CE	
Application software	MAUI	

Sample gas conditions

Sample gas temperature	Up to 400 °C (max in stack)
Sample gas pressure	0.9 – 1.2 bars (in stack)
Sample gas dust content	0 – 2 g/m³

Operating and storage conditions

Control unit ambient temperature	5 – 40 °C
Sampling probe ambient temperature	-20 – 50 °C
Storage temperature	-20 – 60 °C, non-condensing

Performance specifications

Zero-point calibration	24 hours
Span calibration	24 hours
Zero-point drift	< 2% of measuring range per calibration interval
Sensitivity drift	< 2% of measuring range per calibration interval
Linearity deviation	< 2% of measuring range