

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

CMM AutoQAL

Manufactured by:

Gasmet Technologies Oy

Mestarintie 6,
01730 Vantaa
Finland

has been assessed by Sira Certification Service
and for the conditions stated on this certificate complies with:

**MCERTS Performance Standards for Continuous Emission
Monitoring Systems (CEMS) and T-CEMS, Version 4 dated July 2018
EN15267-1:2009, EN15267-2:2009 & EN15267-3:2007
& QAL 1 as defined in EN14181:2014**

Certification Ranges:

Hg 0 to 5µg/m³
0 to 10µg/m³
0 to 45µg/m³
0 to 100µg/m³
0 to 1000µg/m³

Project No.: 80034150
Certificate No: Sira MC200353/00
Initial Certification: 11 June 2020
This Certificate issued: 11 June 2020
Renewal Date: 10 June 2025



Emily Alexander
Environmental Project Engineer

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service

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Approved Site Application

Any potential user should ensure, in consultation with the manufacturer, that the monitoring system is suitable for the intended application. For general guidance on monitoring techniques refer to the Environment Agency Monitoring Technical Guidance Notes available at www.mcerts.net

On the basis of the assessment and the ranges required for compliance with EU Directives this instrument is considered suitable for use on waste incineration and large coal-fired combustion plant applications. This CEM has been proven suitable for its measuring task (parameter and composition of the flue gas) by use of the QAL 1 procedure specified in EN14181, for IED Chapter III and IED Chapter IV applications for the ranges specified. The lowest certified range for each determinand shall not be more than 1.5X the daily average emission limit value (ELV) for IED Chapter IV applications, and not more than 2.5X the ELV for IED Chapter III and other types of application.

The field tests took place over a period of a year with an initial six months and an additional three months in the exhaust gas of a coal-fired power plant, as well as one month in the exhaust gas of a waste incinerator and a cement plant.

Basis of Certification

This certification is based on the following Test Report(s) and on Sira's assessment and ongoing surveillance of the product and the manufacturing process:

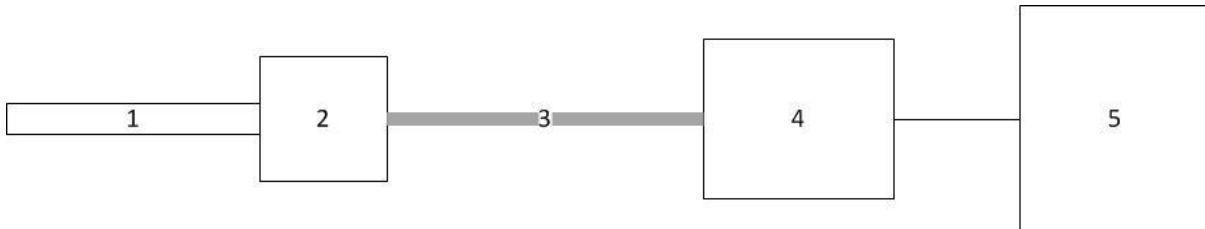
TÜV Rheinland Energy GmbH Supplementary Report No. : 936/21238865/D dated 1 October 2018
TÜV Rheinland Energy GmbH Report No. : 936/21247480/A dated 8 August 2019

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Product Certified

The CMM AutoQAL measuring system consists of the following parts:



1. Heated Sample Probe	2. Heated Filter	3. Heated Sample Line	4. Gas Conditioning	5. Analyser
Model: Stainless steel, glass coated, minimum 180°C	Model: Sintered, glass coated, minimum 180°C	Model: Gasmeter CMM heated line	Model: Compressed air-conditioning	Model: Mercury analyser with integrated high temperature converter

Allowable variations could include:

- A different brand or model of sampling system of the same type, provided that there is evidence the alternative system works with similar types of CEM.

This certificate applies to all instruments fitted with software version 1.198 upwards (current version as of certification date 1.204), serial number 20000 onwards.

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Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: +5°C to +40°C
Instrument IP rating: IP56

Note: For outdoor installations the analyser needs to be mounted into an IP65 environment. If the instrument is supplied with an enclosure, then the ambient temperature shall be monitored inside the enclosure to ensure that it stays within the above ambient temperature range.

Results are expressed as error % of certification range, unless otherwise stated.

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Response time						
Hg 0 to 5µg/m ³					106s	<200s
0 to 10µg/m ³					107s	<200s
0 to 45µg/m ³					89s	<200s
0 to 100µg/m ³					109s	<200s
0 to 1000µg/m ³					97s	<200s
Repeatability standard deviation at zero point						
Hg	0.2					<2.0%
Repeatability standard deviation at reference point						
Hg		0.5				<2.0%
Lack-of-fit						
Hg 0 to 5µg/m ³			-1.04			<2.0%
0 to 10µg/m ³			-1.01			<2.0%
0 to 45µg/m ³			-1.29			<2.0%
0 to 100µg/m ³		0.85				<2.0%
0 to 1000µg/m ³		0.92				<2.0%

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Influence of ambient temperature zero point (+5°C to +40°C) Hg		0.6				<5.0%
Influence of ambient temperature reference point (+5°C to +40°C) Hg			1.4			<5.0%
Influence of sample gas flow for extractive CEMS Hg		-0.7				<2.0%
Influence of voltage variations (196V to 253V) Hg		0.9				<2.0
Influence of vibration (10 to 60Hz (±0.3mm), 60 to 150Hz at 19.6m/s ²) Hg		-0.8				<2.0
Cross-sensitivity at zero with interferents: O ₂ , H ₂ O, CO, CO ₂ , CH ₄ , N ₂ O, NO, NO ₂ , NH ₃ , SO ₂ , HCl, Hg	0.46					<4.0%
Cross-sensitivity at reference with interferents: O ₂ , H ₂ O, CO, CO ₂ , CH ₄ , N ₂ O, NO, NO ₂ , NH ₃ , SO ₂ , HCl, Hg				3.14		<4.0%

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Measurement uncertainty Hg (For and ELV of 2 µg/m ³)					Guidance - at least 25% below max permissible uncertainty 15.2	<30% (40%)
Calibration function (field) Hg					0.9093	>0.90
Response time (field) Hg					117s	<200s
Lack of fit (field) Hg 0 to 5µg/m ³			1.76			<2.0%
Maintenance interval					Note 2 4 weeks	>8 days
Zero and Span drift requirement	<p>It is possible to record zero and span drift. This complies with the requirement for QAL3 according to EN 14181. It is possible to check zero and span point using integrated HgCl₂ test gas generator.</p>					<p>Clause 6.13 & 10.13</p> <p>Manufacturer shall provide a description of the technique to determine and compensate for zero and span drift.</p>
Change in zero point over maintenance interval Hg			1.6			<3.0%
Change in reference point over maintenance interval Hg			1.6			<3.0%
Availability					99%	>95% (>98% for O ₂)
Reproducibility Hg				2.2		<3.3%

Note 1: Wet test gases must be used for measuring Hg when performing the functional test.

Note 2: The CMM AutoQAL has a maintenance interval of 4 weeks. Maintenance work to be carried out includes regular visual inspections of the compressed air, temperature of the cell and sample gas line. The test gas filter and air conditioning system, sample gas lines are to be checked regularly. A zero and span point check to be carried out every four weeks by feeding wet test gas. The CMM AutoQAL is equipped with automatic wet test gas span check capability. Automatic span checks can be scheduled for every maintenance interval for QAL3 purposes. Please consider the manufacturer's instructions for further guidance.

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Description

Gasmet CMM AutoQAL is an automatic emission monitoring system designed to meet the regulations for continuous mercury measurement standards in different kind of flue gas emitting plants.

Gasmet CMM AutoQAL employs atomic fluorescence spectroscopy and thermal conversion of ionic mercury compounds to atomic mercury. It measures hot, wet and corrosive gas streams continuously in real time. No wet chemistry or gold amalgamation trap is needed. High inherent sensitivity of the atomic fluorescence spectroscopy enables extensive dilution of the sample gas, which guarantees long service life of the sample wetted components. In the analyser, diluted, dry sample gas is led through thermal reduction. The sample, containing only atomic mercury then enters the low pressure sample cell, for an interference free measurement of mercury.

Automatic calibration and adjustment of the system is performed automatically with an internal Hg cell that produces constant flow of atomic mercury. For official span check purposes, integral wet HgCl₂ test gas generator can be operated in automatic mode or if needed, manually. The data produced this way is fully valid for QAL3 purposes.

General Notes

1. This certificate is based upon the equipment tested. The Manufacturer is responsible for ensuring that on-going production complies with the standard(s) and performance criteria defined in this Certificate. The Manufacturer is required to maintain an approved quality management system controlling the manufacture of the certified product. Both the product and the quality management system shall be subject to regular surveillance according to 'Regulations Applicable to the Holders of Sira Certificates'.
2. The design of the product certified is defined in the Sira Design Schedule V00 for certificate No. Sira MC200353/00.
3. If certified product is found not to comply, Sira Certification Service should be notified immediately at the address shown on this certificate.
4. The Certification Marks that can be applied to the product or used in publicity material are defined in 'Regulations Applicable to the Holders of Sira Certificates'.
5. This document remains the property of Sira and shall be returned when requested by the company.

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