

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

Model APSA 370 SO₂ Analyser

Manufactured by:

Horiba Limited

*Miyanohigashi
Kisshoin
Minami-Ku
Kyoto
Japan*

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

MCERTS Performance Standards for Continuous Ambient Air Quality Monitoring Systems, Version 10 (June 2016)

Certification Ranges :

SO₂ 0 to 700 µg/m³
 0 to 1000 µg/m³

Project No.: 70120923
Certificate No: Sira MC070091/04
Initial Certification: 10 January 2007
This Certificate issued: 23 May 2017
Renewal Date: 20 May 2022

Emily Alexander
Deputy Certification Manager

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 these tests this certificate is valid when the instrument is used for urban air quality monitoring and similar applications.

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 Köln Report Number: 936/21204643/D dated 07/07/06

TÜV Rheinland Report Number: 936/21204643/D dated 05/10/2013

Product Certified

The APSA 370 measuring system consists of the following parts:

- Horiba APSA 370 SO₂ analyser

This certificate applies to all instruments fitted with software version P1000878001C onwards (serial number 432866-10012 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

Test	Results expressed as % of measured value				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Repeatability at zero					0.08 nmol/mol	<1 nmol/mol
Repeatability at hourly limit value					0.14 nmol/mol	<3 nmol/mol
Residual lack of fit at zero					0.42 nmol/mol	<5 nmol/mol
Lack of fit (largest residual from the linear regression line)	0.3					<4%
Sensitivity coefficient to sample gas pressure					0.02 nmol/mol/kPa	<3 nmol/mol/kPa
Sensitivity coefficient to sample gas temperature					0.09 nmol/mol/K	<1 nmol/mol/K
Sensitivity coefficient to surrounding air temperature					Zero: 0.03 nmol/mol/K Span: 0.40 nmol/mol/K	<1nmol/mol/K <1 nmol/mol/K
Sensitivity coefficient to electrical supply voltage					0.02 nmol/mol/V	<0.3 nmol/mol/V
Interference by H ₂ O (at concentration of 19 nmol/mol)					1.53 nmol/mol	<10 nmol/mol
Interference by H ₂ S (at concentration of 200nmol/mol)					0.57 nmol/mol	<5nmol/mol

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Test	Results expressed as % of measured value				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Interference by NH ₃ (at concentration of 200 nmol/mol)					0.40 nmol/mol	<5 nmol/mol
Interference by NO (at concentration of 500nmol/mol)					4.20 nmol/mol	<5 nmol/mol
Interference by NO ₂ (at concentration of 200nmol/mol)					0.93 nmol/mol	<5 nmol/mol
Interference by m-xylene (at concentration of 1µmol/mol)					0.47 nmol/mol	<10 nmol/mol
Averaging effect				4.3		<7%
Short term zero drift (over 12h)					0.04 nmol/mol	<2 nmol/mol
Short term span drift (over 12h)					0.09 nmol/mol	<6 nmol/mol
Response time (rise)					83 s	180 s
Response time (fall)					86 s	180 s
Difference between rise and fall time				5.0		<10%
Reproducibility under field conditions Note 1				4.2		<5% averaged over three month period
Long term zero drift (over 3months) Note 1					0.14 nmol/mol	<5 nmol/mol
Long term span drift (over 3 months) Note 1	0.08					<5% of the max of certification range
Period of unattended operation Note 1					3 months	3 months not less than 2 weeks
Availability (data capture) Note 1					98%	>90%
Total Expanded Uncertainty					11.28%	<15%

Note 1: Field test: The field test was performed at an urban site for 3 months.

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Description

The APSA 370 ambient air analyser measures SO₂ using ultraviolet fluorescence (UVF) and this allows continuous measurement.

The fluorescent chamber design allows measurements with minimum influence from moisture. The unit has a built in long life aromatic hydrocarbon cutter with a selective transmission membrane. This reduces the influence of interfering compounds.

The analyser also has internal data storage capacity for three different mean value periods.

The addition of an RS-232C port (optional) allows direct data communication to be performed.

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'. The design of the product certified is defined in the Sira Design Schedule for certificate No. Sira MC070091/04
2. If certified product is found not to comply, Sira Certification Service should be notified immediately at the address shown on this certificate.
3. 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'.
4. This document remains the property of Sira and shall be returned when requested by the company.

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