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PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

SM200 Particulate Analyser with PM₁₀ Head

manufactured by:

OPSIS AB
P.O. Box 244
S-244 02 Furulund
Sweden

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 5 (May 2007)**

Certification Range :

Particulate matter (PM₁₀) 0 to 200 µg/m³

Project No: 674/0167
Certificate No: Sira MC 070109/00
Initial Certification: 21 May 2007
This Certificate Issued 21 May 2007
Renewal Date: 20 May 2012

Technical Director

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service

12 Acorn Industrial Park, Crayford Road, Crayford
Dartford, Kent, UK, DA1 4AL

Tel: 01322 520500 Fax: 01322 520501

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Approved Site Application

Any potential user should ensure, in consultation with the manufacturer, that the emission monitoring system is suitable for the process on which it will be installed. For general guidance on stack emission monitoring techniques refer to Environment Agency Technical Guidance Note M2: Monitoring of stack emissions to air. This is available on the Agency's website 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 Rheinland Report ref: 936/801013 dated 29/01/03
DEFRA Report ref: BV/AQ/AD202209/DH/2396 dated 05/06/06

Product Certified

The SM200 measuring system consists of the following parts:

- SM200 analyser
- Pump module
- PM₁₀ inlet head

This certificate applies to all instruments fitted with software version 1.04 onwards (serial number 1001 onwards).

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Certified Performance

Unless otherwise stated the evaluation was carried out on the certification range 0 to 200 $\mu\text{g}/\text{m}^3$.

Test	Results expressed as % of measured value				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Constancy of the sampling volumetric flow					Deviations of daily averages found to be <3%. All instantaneous flow measurements were <5%.	<3% Averaged sample volumetric flow <5% Instantaneous values
Tightness of the sampling system		0.82				<1% Leakage
Between sampler uncertainty for the reference samplers ^{Note 1}					1.05 $\mu\text{g}/\text{m}^3$	<2 $\mu\text{g}/\text{m}^3$
Between sampler uncertainty (all sampling runs) ^{Note 1}					2.14 $\mu\text{g}/\text{m}^3$	<3 $\mu\text{g}/\text{m}^3$
Highest resulting uncertainty estimate comparison with the data quality objective (annual limit value of 40 $\mu\text{g}/\text{m}^3$, $W_{\text{d}qo} = 25\%$) ^{Note 1}					Run 1 17.77% Run 2 13.77% Run 3 17.82% Run 4 24.83% Run 5 18.25%	$W_{\text{cm}} < W_{\text{d}qo}$ $W_{\text{cm}} < W_{\text{d}qo}$ $W_{\text{cm}} < W_{\text{d}qo}$ $W_{\text{cm}} < W_{\text{d}qo}$ $W_{\text{cm}} < W_{\text{d}qo}$
Highest resulting uncertainty estimate comparison with the data quality objective (daily limit value of 50 $\mu\text{g}/\text{m}^3$, $W_{\text{d}qo} = 25\%$) ^{Note 1}					Run 1 15.87% Run 2 11.46% Run 3 15.41% Run 4 20.71% Run 5 16.07%	$W_{\text{cm}} < W_{\text{d}qo}$ $W_{\text{cm}} < W_{\text{d}qo}$ $W_{\text{cm}} < W_{\text{d}qo}$ $W_{\text{cm}} < W_{\text{d}qo}$ $W_{\text{cm}} < W_{\text{d}qo}$

Note 1: The SM200 was assessed on the basis of four field trials on the following applications; two suburban, urban background and roadside. The field trials were performed over a time period of 2, 3 and four months.

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Description:

The SM200 measures the attenuation of beta radiation through an un-sampled filter, and then takes a 24-hour sample before again measuring the beta attenuation.

The SM200 samples the particulate matter onto a 47mm filter. By use of beta attenuation of sampled and unsampled filters, the mass of the particulate matter can be measured. The sampling time is 24 hours.

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 MC 070109/00.
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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