

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

OPM 19 ED

Manufactured by:

Dr. Födisch Umweltmesstechnik AG

Zwenkauer Str. 159
04420 Markranstädt
Germany

has been assessed by CSA Group
and for the conditions stated on this certificate complies with:

Environment Agency Guidance
“MCERTS for stack emissions monitoring equipment at industrial installations”
- Continuous emissions monitoring systems (CEMS)
Updated 28 August 2024
EN 15267-1:2023, EN15267-2:2023, EN 15267-3:2023
& QAL 1 as defined in EN 14181: 2014

	Certification range:	Supplementary ranges:
Dust	0 to 7.5 mg/m ³	0 to 15 mg/m ³ 0 to 50 mg/m ³ 0 to 500 mg/m ³

Project number: 80228401
Certificate number: CSA MC240444/00
Initial certification: 9 January 2025
This certificate issued: 9 January 2025
Renewal date: 8 January 2030



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MCERTS is operated on behalf of the Environment Agency by

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Approved Site Application

Any potential user should make sure, 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 guidance available at www.mcerts.net

This instrument is considered suitable for use on waste incineration and large combustion plants. This CEMS 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. The lowest certified range for the determinand shall not be more than 1.5 times the daily average emission limit value (ELV) for incineration plants, and not more than 2.5 times the ELV for other types of applications.

The field test took place between 27th October 2023 and 31st January 2024 and was performed using two complete measuring systems (ref. No. 1: 23001 and No. 2: 23002) over a total period of 2294 hours (95.6 days) in the flue gas of a lignite-fired power plant.

Basis of Certification

This certification is based on the following test report(s) and on CSA Group's assessment and ongoing surveillance of the product and the manufacturing process:

TÜV Rheinland Energy & Environment GmbH, Report ref: EuL/21257032/A/B, Cologne, 14.02.2024

Product Certified

The OPM 19 ED particle monitor measuring system consists of the following parts:

- Weatherproof casing (with optical sensor OPM 19 ED OS and control box)
- Heated probe tube with flange (optional 1500mm)
- Air inlet filter
- Exhaust connection
- Plug in connector for terminal box

This certificate applies to all instruments with serial numbers 23001 onwards. The measuring system is operated and controlled using the PC_Dux_ED software, which is run on a Windows PC.

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Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient temperature range: -20°C to +50°C
Instrument IP rating: Probe unit (IP55), Control box (IP65)

Results are expressed as error % of certification range (0 to 7.5 mg/m³), unless otherwise stated.

Test	Result expressed as % of the certification range (*emission limit value)				Other results	MCERTS specification
	<0.5	<1	<2	<5		
LABORATORY TESTS						
Response time						
Dust (0 - 7.5 mg/m³)					15 s	≤200 s
Dust (0 - 15 mg/m³)					16 s	≤200 s
Dust (0 - 50 mg/m³)					14 s	≤200 s
Dust (0 - 500 mg/m³)					15 s	≤200 s
Repeatability standard deviation at zero point						
Dust (0 - 7.5 mg/m³)	0.0					≤2.0 %
Repeatability standard deviation at span point						
Dust (0 - 7.5 mg/m³)	0.2					≤5.0 %
Lack of fit						
Dust (0 - 7.5 mg/m³)		0.53				≤3.0 %
Dust (0 - 15 mg/m³)		-0.67				≤3.0 %
Dust (0 - 50 mg/m³)		0.60				≤3.0 %
Dust (0 - 500 mg/m³)		-0.60				≤3.0 %
Influence of ambient temperature zero point (-20°C to +50°C)						
Dust (0 - 7.5 mg/m³)	0.30					≤5.0 %
Influence of ambient temperature span point (-20°C to +50°C)						
Dust (0 - 7.5 mg/m³)		-0.70				≤5.0 %
Influence of voltage variations (196V to 230V) - zero						
Dust (0 - 7.5 mg/m³)		0.50				≤2.0 %
Influence of voltage variations (196V to 230V) - span						
Dust (0 - 7.5 mg/m³)		0.40				≤2.0 %
Influence of vibration (10 to 60Hz (±0.35mm), 60 to 150 Hz at 0.5g)						
Dust (0 - 7.5 mg/m³)		0.50				≤2.0 %
Measurement uncertainty					Guidance - at least 25% below max permissible uncertainty	
Dust (0 - 50 mg/m3) - for an ELV of 5 mg/m³					8.8%	≤22.5 (30%)

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Test	Result expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
FIELD TESTS						
Coefficient of determination of calibration function, R ²						
Dust (0 - 7.5 mg/m ³)					0.9046	≥0.80
Response time						
Dust (0 - 7.5 mg/m ³)					16 s	≤200 s
Lack of fit						
Dust (0 - 7.5 mg/m ³)		-0.80				≤3.0 %
Minimum maintenance interval						
Dust (0 - 7.5 mg/m ³)					4 weeks	8 days
Zero and span drift requirement						
Dust (0 - 7.5 mg/m ³)	It is possible to record zero and span drift. This complies with the requirements for QAL3 according to EN 14181. An operational status signal is generated when the set limits of the automatic zero and span point checks are reached. The system is not equipped with automatic drift or contamination correction.					cl. 6.13 & 10.13 Manufacturer shall provide a description of the technique to determine and compensate for aero and span drift.
Drift at zero point within maintenance interval						
Dust (0 - 7.5 mg/m ³)	0.00					≤3.0 %
Drift at span point within maintenance interval						
Dust (0 - 7.5 mg/m ³)	0.40					≤3.0 %
Availability						
Dust (0 - 7.5 mg/m ³)					99.7	≥95.0%
Reproducibility, Rf (for concentrations ≤20 mg/m ³)						
Dust (0 - 7.5 mg/m ³)				2.2		≤3.3 %
Contamination check of in-situ systems						
Dust (0 - 7.5 mg/m ³)	0.40					≤2.0 %

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Note 1: The OPM 19 ED has a maintenance interval of 4 weeks. The work detailed below should be carried out at regular intervals, depending on local conditions:

- Visual inspection and cleaning of the probe and control unit (externally)
- Perform a zero and span point check using the reference filter set
- Perform a plausibility check of the internal parameters (sample gas volume flow, dilution air, temperature)
- Performing the necessary maintenance as per the manufacturer's recommendations

Note 2: The following procedure is recommended for the functional test or before calibration:

- Visual inspection of the equipment and the sampling system
- Perform a plausibility check of the internal parameters (sample gas volume flow, dilution air, temperature)
- Perform a zero and span point check using the reference filter set
- Perform a linearity check with reference filters
- Determine lag and response time
- Check data transmission to the evaluation system (analogue and status signals)
- Check the documentation/ logbook

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Description

The OPM 19 ED measuring device is a system for continuous, optical, extractive dust concentration measurement. A defined partial flow is extracted from the exhaust gas flow. This partial flow is continuously heated and diluted with dust-free, tempered ambient air in a defined manner (exhaust gas proportion 30 to 80 %). The diluted sample gas is optically measured in the measuring cell.

The OPM 19 ED measuring system uses the principle of scattered light measurement (forward scattering). The modulated light of a laser runs through the measuring volume. The scattered light formed on the dust particles is converted by a photodiode into a measuring current, which is processed into a dust-proportional signal.

For diagnostic reasons, the OPM 19 ED automatically carries out a zero and reference point check. During this time, all gas paths carrying sample gas are purged with dust-free and tempered ambient air. In addition, the dust-free scattered light value and the reference value of the optical sensor are determined. If the deviations are too large, a status signal is set. A set of reference filters is available for QAL3 activities.

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 CSA Group Testing UK Ltd Certificates'.
2. The design of the product certified is held and maintained by TÜV Rheinland for certificate No. CSA MC240444.
3. If a certified product is found not to comply, CSA Group 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 CSA Group Testing UK Ltd Certificates'.
5. This document remains the property of CSA Group and shall be returned when requested by CSA Group.

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