

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

STACKFLOW 200

Manufactured by:

PCME Ltd.

60 Edison Road
St Ives
Cambridgeshire
PE27 3GH
United Kingdom

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, Version 3.5 dated June 2016
EN15267-3:2007, EN 16911-2:2013
& QAL 1 as defined in EN 14181: 2014**

Certification Ranges :

Gas Velocity	2 to 30 m/s
	2 to 50 m/s

Project No.:	70102653
Certificate No:	Sira MC160315/00
Initial Certification:	30 November 2016
This Certificate issued:	30 November 2016
Renewal Date:	29 November 2021

Emily Alexander
Deputy Certification Manager

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service

Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
Tel: +44 (0)1244 670 900



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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.

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:

TUV Report No: 936/21228880/A dated 12 October 2016

Product Certified

The measuring system consists of the following parts:

- Measuring probe, StackFlow 200
- ProController MultiController Interface Module

This certificate applies to all instruments fitted with software version 2.4 (serial number 55132) onwards.

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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: IP65

Results are expressed as error % of the certification range 2 to 30 m/s, unless otherwise stated.

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Response time						
2 to 30 m/s					15 seconds	<60 seconds
2 to 50 m/s					15 seconds	<60 seconds
Repeatability standard deviation at zero point	0.0					<2.0%
Repeatability standard deviation at reference point	0.1					<2.0%
Lack-of-fit						
2 to 30 m/s		-1.0				<3.0%
2 to 50 m/s		0.8				<3.0%
Influence of ambient temperature zero point (-20°C to +50°C)	0.3					<5.0%
Influence of ambient temperature reference point (-20°C to +50°C)	0.4					<5.0%
Influence of voltage variations (196V to 253V)	0.1					<2.0%
Influence of vibration (10 to 60Hz (±0.3mm), 60 to 160Hz at 1g)	0.3					<2.0%

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Measurement uncertainty				2.9%	Guidance - at least 25% below max permissible uncertainty (10%)	
Calibration function (field)					Note 1	>0.90
Response time (field)					15 seconds	<60 seconds
Lack of fit (field)		-1.0				<2.0%
Maintenance interval					4 weeks	>8 days
Zero and Span drift requirement	It is possible to record zero and span drift. This complies with the requirements of QAL3 according to EN 14181. The measuring system does not perform any tests or compensations.					Clause 6.13 & 10.13
Change in zero point over maintenance interval		0.7				<2.0%
Change in reference point over maintenance interval		0.9				<4.0%
Availability					99.7%	>95%
Reproducibility			1.6			<3.3%

Note 1: The determination coefficient R^2 of the calibration function was not determined as the range of values was less than 15% of the certification range. The CEM passed the variability test.

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Description

The STACKFLOW 200 Averaging Pitot Flow (APF) sensor combines with a control unit to form a compact system that continuously measures the velocity, temperature, and pressure of flue gas in stacks or ducts. The volumetric flow of the gas that the system determines from these measures is included in the measurement of pollutant mass quantities (dust, HCl, SO₂, NO_x).

The STACKFLOW 200 sensor comprises a probe for measuring the gas velocity using PCME's proven *ProPitot*[™] APF technology. The sensor is suitable for use in non-condensing conditions with high levels of humidity, condensing processes containing droplets (wet stack conditions), aggressive environments (up to 250°C/482°F), and can be deployed in high-temperature processes of up to 500°C (932°F).

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 V00 for certificate No. Sira MC160315/00
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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