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PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

PG-250 Portable Gas Analyser Pre-conditioner PS200

manufactured by:

Horiba Limited

*Miyano Higashi
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 Emission Monitoring Systems, Version 2, Revision 1 (April 2003)

Certification Ranges :

CO	0 to 95 mg/m ³
NO/NO _x	0 to 125 mg/m ³
SO ₂	0 to 460 mg/m ³
CO ₂	0 to 20 % vol
O ₂	0 to 25 % vol

Project No: 674/0191
Certificate No: Sira MC 050056/04
Initial Certification: 11 February 2005
This Certificate Issued: 23 September 2009
Renewal Date: 10 February 2010

Technical Director

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service

12 Acorn Industrial Park, Crayford Road, Crayford
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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.environment-agency.gov.uk

On the basis of these tests and the ranges required for compliance with EU Directives this instrument is considered suitable for use on large combustion plant applications.

The PG250 is designed for operation under normal conditions and environment and has not been designed for use in extreme conditions.

Note: The instrument should not be subjected to rainfall or water droplets

Note: The manufacturer states that samples must not contain any corrosive or reactive gas

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 No. 936/809014 dated 20.01.01
TÜV Köln	Report No. 936/21205608/A dated 09/05/06
TÜV Köln	Report No. 936/21206693/C dated 18/06/08
Scientific	Report No. LAB 06550 V1 dated 01/11/06

TÜV reports are accepted on the basis of the Environment Agency's document 'MCERTS – Guidance on the acceptance of German type approval test reports for CEMS' Version 2 (October 2003)

Product Certified

The PG250 measuring system consists of the following parts:

- PG250 analyser with sampling pump
- Built-in electronic cooler
- A condensate separator
- NO₂ to NO converter (manufactured after October 2005)
- Heated sample probe and filter
- 5 meter heated line
- A supplementary cooler PS200

This certificate applies to all instruments fitted with software version P1000500001A onwards (serial number 41554990101 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

Unless otherwise stated the evaluation was carried out on the certification range CO 0 to 95 mg/m³, CO₂ 0 to 20%vol, NO_x 0 to 125mg/m³, SO₂ 0 to 460mg/m³, O₂ 0 to 25%vol.

Test	Results expressed as % of max of certification range				Other results	MCERTS specification
	<0.5	<1	<2	<4		
Linearity	CO, NO	-0.4				<±2%
	SO ₂		0.8			<±2%
	CO ₂		-0.6			<±2%
	NO ₂			1.3		<±2%
	O ₂	0.13				<±0.3%vol
Cross sensitivity (H ₂ O, CO, CO ₂ , CH ₄ , N ₂ O, NO, NO ₂ , NH ₃ , SO ₂ , HCl)						
	CO				2.9	<±4%
	SO ₂			1.5		<±4%
	NO			1.2		<±4%
	NO ₂		0.7			<±4%
	CO ₂	0.0				<±4%
	O ₂		0.56			<±4%
Temperature dependent zero shift						
	CO	0.05				<±0.3%/°C
	SO ₂ , NO, NO ₂ , CO ₂	0.01				<±0.3%/°C
	O ₂	-0.03				<±0.5%vol/°C

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Test	Results expressed as % of max of certification range				Other results	MCERTS specification
	<0.5	<1	<2	<4		
Temperature dependent upper reference point shift						
CO	0.05					<±0.3%/°C
SO ₂	0.15					<±0.3%/°C
NO	0.18					<±0.3%/°C
NO ₂	0.13					<±0.3%/°C
CO ₂	0.04					<±0.3%/°C
O ₂	-0.07					<±0.5%vol/°C
Response time						
All gases except SO ₂					60s	<200s
SO ₂					160s	<200s
Detection limit						
CO	0.14					<±2%
SO ₂	0.11					<±2%
NO, CO ₂	0.01					<±2%
NO ₂	0.02					<±2%
O ₂	0.01					<±0.2%vol
Vibration (10 to 60Hz (±0.3mm), 60 to 150Hz at 19.6m/s ²)					See Note 1	To be reported
Mains voltage (190V to 250V)					Pass	Not specified
Sample gas pressure					See Note 2	To be reported
Sample gas temperature					See Note 2	To be reported
Converter efficiency for NO _x					97.4%	>95%
Analysis function ^{Note 3}						
CO					98.7%	>95%
CO ₂					97.8%	>95%
O ₂					99.9%	>95%

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Test	Results expressed as % of max of certification range				Other results	MCERTS specification
	<0.5	<1	<2	<4		
Integral performance ^{Note 3}						
SO ₂ , NO ₂					<10%	<10%
NO					<10%	<10%
Availability ^{Note 3}					99.3%	>95%
Maintenance interval ^{Note 3}						
All gases except O ₂					8 days	To be reported
O ₂					3 weeks	To be reported
Zero drift ^{Note 3}						
CO			1.8			<±2%/week
SO ₂ , NO			2.0			<±2%/week
CO ₂		0.8				<±2%/week
O ₂	-0.09					<±0.2%vol/week
Span drift ^{Note 3}						
CO			2.0			<±4%/week
SO ₂ , NO			1.9			<±4%/week
CO ₂			1.7			<±4%/week
O ₂	0.20					<±0.2%vol/week

Note 1: A visual examination did not identify any stack-mounted components that are likely to be effected by vibration. Hence the test was not performed.

Note 2: Tests not applicable.

Note 3: Field test was performed over 3 months on a refuse incineration plant.

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Description:

The PG250 is a portable gas analyser that uses an extractive system for measuring CO, NO or NO_x, SO₂, CO₂ and O₂. The analyser uses three measurement principles, chemiluminescence for NO, non-dispersive infrared (NDIR) for the measurement CO, CO₂, SO₂. O₂ is measured using a zirconia cell. The instrument measures a maximum of five gas components.

The PG250 system contains the analyser unit with sampling pump; a built-in electronic cooler for the removal of water vapour where the levels of moisture are low; a condensate separator; an NO₂ to NO converter for NO_x measurement; a heated sample probe; a 5 metre heated line and a supplementary cooler (the PS 200).

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 050056/03.
2. If certified product is found not to comply, Sira Certification Services 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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