PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

iFiD Rack

manufactured by:

Testa GmbH
Kathi-Kobus-Str. 15
80797 Munich
Germany

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

"Performance standards and test procedures for continuous emission monitoring systems (CEMS) and transportable-CEMs (T-CEMS), Version 4, July 2018
EN15267-2:2007, EN15267-3:2007,
& QAL 1 as defined in EN 14181: 2014

Certification ranges:

Total organic carbon (TOC)	0 to 15mg/m^3
	0 to 30mg/m^3
	0 to 150mg/m^3
	0 to 500mg/m^3

Project number:	80056139
Certificate number:	Sira MC200361/00
Initial certification:	29 September 2020
This certificate issued:	29 September 2020
Renewal date:	28 September 2025

Andrew Young
Environmental Team 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

Form 1335
Issue 8

Certificate contents

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 technical guidance on monitoring, available at www.mcerts.net

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

The field test was performed over a period of more than 3 months (102 days) at a waste incineration plant.

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:

Test Report: TÜV Süd Industrie Service GmbH, Munich, report no. 3003564, 9th March 2020.

Product certified

The TESTA iFiD Rack measuring system consists of the following parts:
iFiD Rack - the analyser with
iFiD line - the heated sample gas line
iFiD filter - the heated pre-filter
iFiD sample gas probe - the sampling probe

1. Sample probe	2. Heated filter	3. Heated sample line	4. Analyser
Model: iFiD sample gas probe	Model: iFiD filter – heated titanium filter cartridge	Model: iFiD line – 10m heated to 180°C with Teflon hose	Model: iFiD Rack with Testa Operation and datalogging software

Allowable variations could include:

- A different brand or model of sampling system of the same type, provided that there is evidence the alternative system works with similar types of CEMS.
- Additional manifolds and heated valves used to allow more than one analyser to share a sampling system.

This certificate applies to all instruments fitted with software version: Testa CE 1.76, DGA 2.0, I/O 2.0 and QPC 2.0, and serial number - 1810017 onwards.

Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient temperature range: 5°C to +40°C
Instrument IP rating: IP40

Note: The area of use is restricted to locations with protection from the temperatures within the tested temperature range(5-40ºC). A roof over the point of assembly and protection from precipitation or spray are mandatory.

Results are expressed as error % of certification range, unless otherwise stated.

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Response time						
TOC 0 to 15mg/m^3					13s	<200s
0 to 30 mg/m^3					13s	<200s
0 to 150mg/m^3					15s	<200s
0 to 500mg/m^3					19s	<200s
Repeatability standard deviation at zero point						
0-15mg/m^3	0.05					<2.0%
Repeatability standard deviation at reference point						
0-15mg/m^3	0.07					<2.0%
Lack-of-fit						
TOC 0 to 15mg/m^3	0.4					<2.0%
0 to 30mg/m^3		0.6				<2.0%
0 to 150mg/m^3	-0.4					<2.0%
0 to 500mg/m^3			-1.1			<2.0%
Influence of ambient temperature zero point (5°C to 40°C)						
0-15mg/m^3				2.7		<5.0%
Influence of ambient temperature reference point (5°C to 40°C)						
0-15mg/m^3		0.5				<5.0%

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Influence of sample gas flow for extractive CEMS 0-15mg/m^3		-0.96				<2.0%
Influence of voltage variations at zero (196V to 253V) 0-15mg/m^3	-0.06					<2.0%
Influence of voltage variations at span (196V to 253V) 0-15mg/m^3	0.13					<2.0%
Cross-sensitivity at zero with interferents: O_2, H_2O, CO, CO_2, N_2O, NO, NO_2, NH_3, SO_2, HCl 0-15mg/m^3				3.8		<4.0%
Cross-sensitivity at reference with interferents: O_2, H_2O, CO, CO_2, N_2O, NO, NO_2, NH_3, SO_2, HCl 0-15mg/m^3				3.9		<4.0%
Effect of oxygen for TOC CEMS			1.98			<2.0%
Response factors for TOC CEMS:						
Methane					1.05 to 1.08	0.9 to 1.2
Aliphatic hydrocarbons					0.90 to 1.10	0.9 to 1.1
Aromatic hydrocarbons					0.85 to 1.06	0.8 to 1.1
Dichloromethane					1.01 to 1.07	0.75 to 1.15
Aliphatic alcohols					0.7 to 0.8	0.70 to 1.0
Ester and ketones					0.8 to 0.8	0.7 to 1.0
Organic acids					0.6 to 0.6	0.5 to 1.0
Measurement uncertainty					Guidance - at least 25% below max permissible uncertainty	
0-15mg/m^3					9.0	<22.5% (30%)

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Calibration function (field) 0-15mg/m^3					0.99	>0.90
Response time (field) 0-15mg/m^3					23s	<200s
Lack of fit (field) 0-15mg/m^3		-0.86				<2.0%
Maintenance interval					4 weeks	>8 days
Zero and span drift requirement	All deviations at zero point were < +/-3% from the certification range during the entire period of the field test. All deviations at the span point were < +/-3% from the certification range during the entire period of the field test. These results demonstrated there were no deviations >3% from the calibration range during the 102 days. The maintenance interval was set based on the drift behaviour during the field test suitability test. A maintenance interval of 4 weeks was therefore defined for checking adjustment. The CEMS should be adjusted at an interval of 24 hours using the automatic adjustment function at zero and span point. Zero gas can be provided by connecting synthetic air or using the internal zero gas generator.					Clause 6.13 & 10.13 Manufacturer shall provide a description of the technique to determine and compensate for zero and span drift.
Change in zero point over maintenance interval 0-15mg/m^3	-0.4					<3.0%
Change in reference point over maintenance interval 0-15mg/m^3			1.9			<3.0%
Availability 0-15mg/m^3					97.8	>95%
Reproducibility 0-15mg/m^3		0.8				<3.3%

Description

The TESTA **iFiD Rack** flame-ionization-detector uses a heated detector which measures continuously the total organic carbon concentration in the sample gas. For this purpose organic substances are ionized in a hydrogen flame. A current is produced by these ions, which is proportional to the organic carbon content. The analyser is heated up to a maximum of 300°C and can be directly connected to a heated sample-line or sample prefilter.

The TESTA **iFiD Rack** consists of:

- Testa iFiD Rack
- Testa Operation and Datalogging Software 2.0
- Testa iFiD Line 10m (Usually 1m to 30m long) with teflon hose
- Testa iFiD Filter

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'.

2. The design of the product certified is held and maintained by TÜV Süd Industrie Service GmbH for certificate No. Sira MC200361/00

3. If a certified product is found not to comply, Sira 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 Sira certificates'.

5. This document remains the property of Sira and shall be returned if requested by Sira.