

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

AMESA D
Isokinetic Dioxin Sampling System

Manufactured by:

Environnement S.A. Deutschland
Benzstraße 11
61352 Bad Homburg
Germany

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

**MCERTS Performance Standards and Test Procedures for Automatic
Isokinetic Samplers, Version 3 dated September 2016**

Certification Ranges :

Velocity 1.1 m/s to 30 m/s

Project No.: 70117064
Certificate No: Sira MC120194/01
Initial Certification: 15 March 2012
This Certificate issued: 15 March 2017
Renewal Date: 14 March 2022

Joe Prince MSc, MInst MC
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 this evaluation the isokinetic sampling system is considered suitable for continuous sampling of dioxins, furans and other persistent organic pollutants (POPs) on any process where the stack conditions are within the performance of the certification range of this instrument.

The AMESA D sampling system was assessed on the basis of a five-month field trial, mounted on a municipal waste incinerator under the following conditions:

- Velocity range 1.1 to 30 m/s
- Stack temperature range 140 to 150 °C
- Dust concentration < 2 mg/m³
- Humidity 12 – 17 Vol.-% f_r

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 No. 936/21212537/A Cologne 10th October 2011
TÜV Rheinland	Report No. 936/21221445/A Cologne 9th October 2013

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Product Certified

The AMESA D sampling system is a fully automatically controlled sampling system which consists of the following parts:

- Cooled Sampling Probe with integrated Pitot- or Prandtl-tube.
- Cartridge box with adsorber cartridge and cartridge box
- Control cabinet with process control computer

The unit can also be fitted with the following options:

- Heater – control cabinet and cartridge box (integral heater) and line between sampling probe and cartridge box (self-regulating heating cable)
- Air conditioner – control cabinet (sidewall air conditioner) cartridge box (air conditioner or Vortex cooler)
- Additional dust filter implemented in the adsorber cartridge or mounted after the adsorber cartridge.

This certificate applies to all instruments fitted with software version P86.013.0 (Serial number 209 onwards).

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Certified Performance

The instrument was evaluated for use under the following conditions:

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Accuracy of Isokinetic sampling rate response to changes in flue gas velocity				3.8		±5%
Accuracy of determination of volume of gas sampled		-0.8				±2%
Linearity of Isokinetic sampling rate				-2.0		±5%
Response time T ₉₀ (seconds)					25 s	<100 s
Flow repeatability under laboratory conditions	0.49					±5%
Minimum operational velocity					≤1.1 m/s	2 m/s
Short term drift		0.7				±2%
Accuracy of the determination of volume gas sampled calculated as an average of ten runs performed during the first and last month test			1.6			±5%
Flow reproducibility under field conditions calculated from ten independent measurement results at one fixed location within the duct				3.6		±5%
Availability over three months continuous use					>99 %	>95%

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Description

The AMESA D dioxin/furan monitoring system is designed to monitor dioxin (PCDD)/ furan (PCDF) and other POPs emissions in the flue gasses of incinerators. One of the features of this unit is fully automated sampling over a period of up to 6 weeks. Precipitation of all the substances to be analysed takes place in a single adsorber cartridge.

The AMESA D system consists of a control cabinet and a cooled sampling probe as described in the cooled probe method of CEN/TS 1948-5 which is connected to the cartridge box. The cooled probe extracts a sample from the flue gas stream under isokinetic conditions. Dioxins and furans are collected by the integrated dust filter (quartz wool followed by fine dust filter) and adsorber resin in the cartridge.

The AMESA D system was validated for

- a maximum sampling period of 6 weeks
- a dioxin concentration of 0.5 ng/m³ TEQ (by a sample volume of 260 m³ and 70 gr XAD-2) and
- a maximum adsorber cartridge temperature of + 50 °C.

In the control cabinet there is a process control computer with which the system is controlled and operated. The menu-assisted software enables the system to be operated and monitored with a minimum of staff time. The data necessary for analysis is recorded automatically during the up to 6 weeks long period of measurement. The probe gas flow volume is determined by means of a calibrated mass flow meter which is monitored by an additional built-in gas meter.

In the cartridge box there is the adsorber cartridge and a second process control computer which handles all measurement and control applications on the stack. The controller of the cartridge box and the control cabinet communicate by TCP/IP protocol. It is possible to connect up to 4 cartridge boxes on 1 control cabinet. This allows the control of a sequential sampling on up to 4 different stacks.

The cartridge and the USB-flash disk must be evaluated in a laboratory that is familiar with the analysis of PCDD/PCDF adsorber cartridges.

The manufacturer states that the temperature range for the equipment is as follows:

- Cartridge box: 0 to +45 °C (-20 to +55°C with heater and/or air conditioner)
- Flue gas temperature: up to 400 °C
- Control unit: 5 to +40°C (-20 to +50°C with heater and/or air conditioner)

The complete system can be also remote controlled by an internet access. The manufacturer states also that the system can handle higher dust loads until 150 mg/m³ and flue-gas velocities of more than 40 m/s.

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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 MC120194/01
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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