

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

D-CEM2100 Dust Monitor

manufactured by:

Codel International Ltd

Station Building
Station Road
Bakewell
Derbyshire, DE45 1GE
UK

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

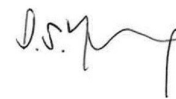
Environment Agency Guidance
“MCERTS for stack emissions monitoring equipment at industrial installations”
- Continuous emissions monitoring systems (CEMS)
Published 20 October 2020
EN 15267-1, EN15267-2, EN 15267-3
& QAL 1 as defined in EN 14181: 2004

Certification ranges :

Dust	0 to 0.1 Ext.*
	0 to 0.3 Ext.
	0 to 1 Ext.

*0 to 0.1 Ext. \equiv 0 to 15 mg/m³ dust at 5m optical path length

Project number: 70044336/80057534
Certificate number: Sira MC150283/01
Initial certification: 06 October 2015
This certificate issued: 09 November 2020
Renewal date: 05 October 2025



Andrew Young
Environmental Team Manager

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service

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*The MCERTS certificate consists of this document in its entirety.
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To authenticate the validity of this certificate please visit www.csagroupuk.org/mcerts*

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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 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 incineration plants, and not more than 2.5 times the ELV for other types of application.

The field test took place for six months in the exhaust gas of a waste incineration plant over a range of 10 mg/m³ at a 5m path length.

The measuring device can be used in exhaust gases that are not steam-saturated.

At each installation a check must be carried as to whether the required measuring range can be set for the testing of the limit value.

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 Rheinland Report No.: 936/21216335/A dated 2nd October 2014

Certificate number : Sira MC150283/01
This certificate issued : 09 November 2020

Product certified

The D-CEM2100 measuring system consists of the following parts:

- 2 transceivers with 10 m cable (standard length)
- 2 mounting flanges
- 2 Air Purges
- 2 ball valves (pneumatically operated)
- 1 power supply unit (PSU)
- 1 signal processing unit (SPU)
- 1 display and control unit with data output (DDU)
- Telescope for alignment of the light beam

This certificate applies to all instruments fitted with software version DDU 507-120A, SPU 507-028A & 507-069A (serial number DCEM2100-1000 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 (transceiver)
 IP67 (other components)

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					37s	< 200s
Repeatability standard deviation at zero point	0.0003					<2.0%
Repeatability standard deviation at reference point	0.0003					<5.0%
Lack-of-fit		-1				<3.0%
Influence of ambient temperature zero point			1.8			<5.0%
Influence of ambient temperature reference point				2.3		<5.0%
Influence of voltage variations						
Zero Point	0.1					<2.0%
Reference Point	-0.2					<2.0%
Influence of vibration						
Zero Point	0.1					To be reported
Reference Point	0.3					To be reported

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Measurement uncertainty					Guidance - at least 25% below max permissible uncertainty 6.0%	(30%) 22.5%
Calibration function (field)					0.8 to 0.9 Note1	>0.90
Response time (field)					40s	<200s
Lack of fit (field)				2.8		<3.0%
Maintenance interval					3 months	>8 days
Zero and Span drift requirement	A record of the zero and reference point drift is possible and corresponds to the requirements of QAL3 in accordance with EN 14181.					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			1.8			<3.0%
Change in reference point over maintenance interval				2.3		<3.0%
Availability					99.2%	>95%
Reproducibility				2.8		<3.3%

Note 1: The CEM passed the variability test throughout the field tests. When the spread of emissions was relatively high and wide, the correlation coefficient of the calibration function was 0.9. When the emissions were clustered or low, the value was just above 0.8. However, this is a result of the emissions data and not the performance of the CEM. Therefore, it is determined as compliant with the specifications.

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Description

The AMS Codel DCEM2100 is an in-situ dust monitor operating on the principle of transmission measurement. Emitted light is weakened on the measuring path. The detected weakening of light represents the measured value, which, apart from dust loading, also depends on other properties of dust such as particle size, distribution and colour.

The AMS consists of two identically constructed transceivers that both emit and receive light. During a measurement procedure two measuring light pulses alternately pass the measuring path in opposite direction with high frequency. Located between each of the two transceivers and the process gas is a pneumatically operated ball valve. A diffusing mirror is situated on the ball. In shut-off position the mirror is located in the ray path and reflects the emitted light. Herby, contaminations of the optical interfaces can be detected and compensated.

For zero and span point checks the AMS must be installed on a dust-free reference junction. Span point checks are carried out by means of optical filters.

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 Rheinland for certificate No. Sira MC150283/01
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.

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