

# PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

## ***D-R 300-40 Dust Monitor***

Manufactured by:

### ***DURAG GmbH***

Kollastrasse 105  
22453 Hamburg  
Germany

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 3.3 dated January 2011**

EN15267-3:2007,  
& QAL 1 as defined in EN 14181: 2004

Certification Ranges:

Particulate Concentration	0 to 3 mg/m <sup>3</sup>
	0 to 15 mg/m <sup>3</sup>
	0 to 34 mg/m <sup>3</sup>
	0 to 77 mg/m <sup>3</sup>

Project No. : 16A25325 Rev 2  
Certificate No : Sira MC060074/02  
Initial Certification : 16 June 2006  
This Certificate issued : 30 August 2012  
Renewal Date : 15 June 2016

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MCERTS is operated on behalf of the Environment Agency by

### **Sira Certification Service**

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*To authenticate the validity of this certificate please visit [www.siracertification.com/mcerts](http://www.siracertification.com/mcerts)*

## 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](http://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 LCPD and WID 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 WID applications, and not more than 2.5X the ELV for LCPD and other types of application.

The field test was conducted on a lignite and fuel oil combustion 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:

TÜV Rheinland Report: 936/21212470/D-R300-40/TP Köln 28/06/2011

## Product Certified

The D-R 300-40 measuring system consists of the following parts:

- Measuring head
- Light trap (stacks <2 metres)
- Control unit
- Purge air system

**This certificate applies to all instruments fitted with software version 3.5 (standard) onwards and version 4.7 (with auto range function) onwards (serial number 28855 onwards).**

Certificate No : Sira MC060074/02  
This Certificate issued : 10 August 2012

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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

Unless otherwise stated the evaluation was carried out on the certification range 0 to 3 mg/m<sup>3</sup>

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Response time					10s	<200s
Repeatability standard deviation at zero point	0.0					<2%
Repeatability standard deviation at reference point	0.1					<2%
Lack-of-fit						
0 to 3 mg/m <sup>3</sup> :	0.33					<3%
0 to 15 mg/m <sup>3</sup> :	0.07					<3%
0 to 34 mg/m <sup>3</sup> :		0.59				<3%
Influence of ambient temperature zero point	0.3					<5%
Influence of ambient temperature reference point		0.7				<5%
Influence of voltage variations 190 to 250V	-0.1				Note 1	<2%

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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	
0 to 3mg/m <sup>3</sup>					- 0.9%	22.5%
0 to 34mg/m <sup>3</sup>					- 8.0%	22.5%
Calibration function (field)					Note 2 0.7476 – 0.9776	>0.90
Response time (field)					<10s	<200s
Lack of fit (field)		-0.59				<2%
Maintenance interval					Note 3 4 Weeks	>8 days
Change in zero point over maintenance interval	0.3					<3%
Change in reference point over maintenance interval			-1.75			<3%
Availability					99.8%	>95%
Reproducibility		0.9				<3.3%

Note 1: Influence of voltage should be tested at +15% and -10% according to EN15267. Testing was conducted at +10% and -15% (Test range was 196v to 253v).

Note 2: The calibration function/R<sup>2</sup> values are between 0.75 and 0.98 due to relatively constant dust levels during the field test. The CEMS pass the EN14181 criteria, but not the requirement for EN15267-3 under these circumstances.

Note 3: The D-R 300-40 has a maintenance interval of 4 weeks. The field test was conducted on a lignite and fuel oil combustion plant. The work described below must be carried out every 4 weeks:

- Regular inspection and cleaning of the lenses and reference filters. (Higher levels of dust may require shorter inspection intervals)
- Check the fasteners, seals and connections.
- Review of the external device components and the fast-closing flap.
- Visual check of filters and depending on their condition, clean or replace as required.
- Checking the zero and reference point drift and contamination with the help of the internal control cycle.

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## Description

D-R 300-40 is a monitor for the measurement of extremely low to medium and higher dust concentration in various application processes with a very high accuracy. D-R 300-40 dust concentration monitor operators according to the scattered-light principle. The modulated light of a halogen bulb is sent into the measuring duct. The light is reflected by the particles in the measuring volume (scattered). The reflected scattered light is received in the receiving optic under a defined angle and led to an optical receiver. Temperature and pressure measurements are not part of the standard system and the uncertainty associated with these measurements is not included in the MCERTS calculations.

The instrument monitors a volume of stack gas approximately 80 to 280 mm from the stack wall. The maximum resolution being 150 mm from the stack wall. For checking the correct function of the D-R 300-40 an automatic check cycle is performed. During this cycle, the zero point, the contamination of the optical boundary surfaces as well as a reference value are automatically measured and indicated.

The approved version of D-R 300-40 consists of the transceiver unit D-R 300-40, the electronic connection unit D-R 300-40, the light trap and the air purge unit. During the automatic zero point and span check cycle a contamination measurement of all optical components is performed and the measurement values are corrected automatically.

The manufacturer states that the monitor is suited for monitoring low to medium dust concentration or soot values (e.g. toxic dust limit values), i.e. power plant, steel and cement industry, asbestos industry, food industry and waste incinerators.

## 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 MC060074/02
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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