

# CONFIRMATION

## about Product Conformity (QAL1)

Number of Certificate: 0000001014

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**Approved AMS:** 4500 MkIII for dust

**Manufacturer:** Land Instruments International Ltd.  
Stubley Lane, Dronfield  
Derbyshire  
S18 1DJ, Großbritannien

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**Test Institute:** TÜV Rheinland Energie und Umwelt GmbH

**We confirm that the AMS has been tested and found to comply with:**

**EN 15267-1: 2009, EN 15267-2: 2009, EN 15267-3: 2007  
and EN 14181: 2004**

The approval of the measuring equipment subject to the above mentioned conditions  
was authorized by the German relevant body (LAI).

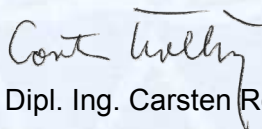
This confirmation is valid up to the official announcement in the Federal Gazette,  
but no longer than 6 months from issuing  
(see also the following pages).



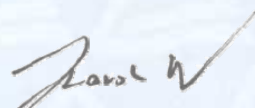
- EN 15267-3 tested
- QAL1 certified
- TÜV approved
- Annual inspection

**The confirmation is valid until: 07 December 2011**

TÜV Rheinland Energie und Umwelt GmbH  
Köln, 08 June 2011



i. A. Dipl. Ing. Carsten Röllig



i. A. Dipl.-Ing. Karsten Pletscher

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Am Grauen Stein  
51105 Köln

Accreditation according to EN ISO/IEC 17025 and certified according to ISO 9001:2008.

**Confirmation:**  
0000001014 / 08 June 2011

**Test report:** 936/21213182/A of 31 March 2011  
**Run of validity until:** 07 December 2011

**Tested application**

The tested AMS is suitable for use at combustion plants according to EC directive 2001-80-EC, at waste incinerations plants according to EC directive 2000-76-EC and other plants requiring official permission. The tested ranges have been chosen with respect to the wide application range of the AMS.

The suitability of the AMS for this application was assessed on the basis of a laboratory test and a three months test on municipal waste facility.

The AMS is approved for the ambient temperature range from -20°C to +50 °C.

Any potential user should ensure, in consultation with the manufacturer that this AMS is suitable for the installation on which it will be installed.

**Basis of the confirmation**

This confirmation is based on the test report 936/21213182/A of 31 March 2011 of TÜV Rheinland Energie und Umwelt GmbH and on the decision of approval by the relevant body (German Umweltbundesamt).

**AMS name:**

4500 MkIII for dust

**Manufacturer:**

Land Instruments International Ltd, Dronfield, Großbritannien

**Approval:**

For measurements at plants requiring official permission (i. e. plants in 2000-76-EC, waste incineration directive and 2001-80-EC large combustion plants directive)

**Measuring ranges during the suitability test:**

Component	Certification range	Supplementary ranges			Unit
Staub	0 - 0,2	0 – 0,1	0 – 0,4	0 – 1,2	Ext.

0 – 0,2 Ext.  $\hat{=}$  15 mg/m<sup>3</sup> dust at 5 m path length

**Software version:**

Control Software Version: 01.03.01,  
HI Software Version: 01.02.01

**Restrictions:**

The measuring device is only suitable when an undercut of the dew point can be excluded.

**Remarks:**

1. The dust concentration is measured in the wet flue gas under operating conditions.
2. The maintenance interval is four weeks.
3. By the measurement path length of 5 m and measurement range of 15 mg/m<sup>3</sup>

- evaluated during the calibration a product of 75 mg m/m<sup>3</sup> results for the field test site.
4. The requirement of the type approval in accordance to the EN 15267-3 for the correlation coefficient R<sup>2</sup> of the calibration function was not fulfilled.

**Test report:**

TÜV Rheinland Energie und Umwelt GmbH, Köln  
Report No.: 936/21213182/A dated 31 March 2011

**Tested product**

This confirmation applies to automated measurement systems confirming to the following description:

The analyser Land 4500 MkIII was developed for the measurement of the dust concentration at emitting plants. The underlying principle is the measurement of the optical transmission.

The Land Model 4500 MkIII has been developed from the Land Model 4500 MkII+. The main light source uses three green LEDs in a special configuration (patent pending) to ensure homogeneity over the entire transmitted light beam. The light source is modulated at a frequency of 1 kHz, to reduce electrical noise and eliminate errors due to ambient light. A second light source, the (patented) "Flood LED" is used to reduce the effect of temperature drift in the detectors to an almost immeasurable low level.

Electronic modulation eliminates the need for a mechanical chopper and so the only moving parts are the motors used in the calibration system. These motors have a very low duty cycle and are very reliable.

The Land Instruments International Model 4500 MkIII Continuous Opacity Monitoring System (COMS) measures opacity by shining a light beam through flue gases. An internal microprocessor calculates dust density and other parameters.

The instrument comprises the following parts: The Transceiver which contains all of the optical and electro-optic components; the Retro-Reflector containing a glass reflector and the air purge system.

The air purge system can take several forms depending upon individual site requirements. Single and dual electric blowers are available, as are compressed-air driven devices. Continuous purge air supply is essential to prevent dust and corrosive gases from affecting the optical system. Automatic fail-safe shutters can also be fitted for temporary protection in the event of a purge air failure.

The analyser is basically composed of the following components:

Transceiver:	Containing all of the major electronic and electro-optic components.
Retro-Reflector:	Containing a corner cube reflector.
Air Purge System:	A continuous supply of purge air is essential to prevent dust and corrosive gases from affecting the optical system. Single and dual electric blowers or compressed-air driven devices are available to suit individual site requirements. Automatic fail-safe shutters can also be fitted for temporary protection in the event of a purge air failure

Measuring path length and concentration:

0 – 0,2 Ext.  $\hat{=}$  15 mg/m<sup>3</sup> dust at 5 m path length