PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

AQM DM11

Manufactured by:

Air Quality Monitors Ltd

Innovation Centre
University of Exeter
Rennes Drive
Exeter
EX4 4RN
UK

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

MCERTS Performance Standards for Indicative Ambient Particulate Monitors, Version 2 dated July 2012

Certification Range :

PM_{10} 0-150µg/m^3

Project No.	:	16A27887
Certificate No	:	Sira MC140236/00
Initial Certification	:	06 February 2014
This Certificate issued	:	06 February 2014
Renewal Date	:	20 October 2018

R Cooper I Eng MInst MC
Technical Director

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service
12 Acorn Industrial Park, Crayford Road, Crayford
Dartford, Kent, UK DA1 4AL
Tel: +44 (0)1322 520500 Fax: +44 (0)1322 520501

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

The field test was conducted on a site representative of urban background particulate loading.

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:

BECA Report Aeroqual MCertification Requirements dated 31/07/2013
Sira Report 16A27887 dated 25/09/2013

Product Certified

The measuring system consists of the following parts:

- DS 10 V1.1
- PM10 cyclone

This certificate applies to all instruments fitted with software version 3.4 and serial number -061 onwards.

Certified Performance

Test	Result	MCERTS specification
Constancy of the sample volumetric flow	<±3%	Remain constant within ±3% of rated value
Tightness of the sampling system	0.9%	Leakage not to exceed 2% of sampled volume
Intra-instrument uncertainty for the reference method All data ≥ 30 µg/m3 ≤ 30 µg/m3	 0.46 µg/m^3 0.43 µg/m^3 0.46 µg/m^3	≤5µg/m^3
Intra-instrument uncertainty for the candidate method All data ≥ 30 µg/m3 ≤ 30 µg/m3	 1.39 µg/m^3 2.21 µg/m^3 1.18 µg/m^3	≤5µg/m^3
Highest resulting uncertainty estimate comparison against data quality objective (Measurement Uncertainty)	23.5%	WCM≤Wdqo Measurement uncertainty defined as 50% for indicative instruments
Maintenance Interval	Two weeks	Two weeks

Description

The AQM DM11 employs a near forward light scattering nephelometer and PM_{10} sharp cut cyclone to measure PM_{10}.

The nephelometer uses a collimated beam of light from a laser operating at 670 nm to illuminate the incoming sample air. Light scattered by particles in the air is collected and focused on to a photodiode which converts the light intensity to an electrical signal. The signal is amplified and calibrated to provide an output in terms of particulate mass. The nephelometer has an on-board temperature sensor which corrects for thermal drift and sheath air to keep the optics clean.

Automatic baseline drift correction is achieved using a regular air purge cycle which pushes filtered air into the nephelometer to enable a particle-free background to be measured and subtracted from the mass signal. A 10 W inlet heater on the sample inlet tube reduces the humidity of sampled air to prevent particle growth and fogging of the nephelometer optics.

A diaphragm pump is used to provide a 2.0 LPM sample flow which is matched to the sharp cut cyclone design to ensure particles with diameters larger than 10 micron are removed.

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 MC130235/00

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.