

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

AQS 1

Manufactured by:

Aeroqual Ltd

460 Rosebank Road
Auckland 1026
New Zealand

has been assessed by CSA Group
and for the conditions stated on this certificate complies with:

**MCERTS Performance Standards for Indicative Ambient Particulate Monitors, Version 4
dated August 2017**

Certification range :

PM₁₀ 0 - 150µg/m³

Project No.: 80063235
Certificate No: Sira MC210385/00
Initial Certification: 19 May 2021
This Certificate issued: 19 May 2021
Renewal Date: 18 May 2026



Andrew Young
Environmental Team Manager

MCERTS is operated on behalf of the Environment Agency by

CSA Group Testing UK Ltd

Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
Tel: +44 (0)1244 670 900



*The MCERTS certificate consists of this document in its entirety.
For conditions of use, please consider all the information within.
This certificate may only be reproduced in its entirety and without change
To authenticate the validity of this certificate please visit www.csagroupuk.org/mcerts*

Certificate Contents

Approved Site Application.....	2
Basis of Certification	2
Product Certified.....	3
Certified Performance	4
Description.....	5
General Notes	5

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 indicative dust monitoring analyser(s) can be operated in one of two ways:

For qualitative measurements: Providing qualitative measurement data for the analysis of particulate pollution trends, and source identification studies based for example on pollution roses etc. Such application can rely on instrument factory calibration only.

For quantitative measurements: Providing measurement data with the uncertainty defined for indicative instruments (+/- 50%). This can be achieved on condition that each instrument used for measurement has been calibrated on the specific site where monitoring is taking place against a standard reference method for a period of two weeks and the resulting slope and intercept have been used for instrument calibration. Using non-standard filters and procedures for this purpose is not acceptable. To maintain the validity of data this calibration has to be repeated at least every twelve months or when the instrument is moved to a different site.

They **cannot** be used as a substitute for continuous ambient air quality monitoring systems (CAMs) employed in national air quality monitoring networks for the EU Air Quality Directive

Basis of Certification

This certification is based on the following Test Report(s) and on CSA Groups's assessment and ongoing surveillance of the product and the manufacturing process:

BECA report, ref. 3294480//NZ1-7350542-20 0.20, dated 31 July 2013
Sira Evaluation report, dated 25th September 2013
Sira GAP analysis report, dated 28th September 2018
CSA Evaluation report 80063235, dated 23 April 2021

Certificate No: Sira MC210385/00
This Certificate issued: 19 May 2021

*This certificate may only be reproduced in its entirety and without change
To authenticate the validity of this certificate please visit www.csagroupuk.org/mcerts*

Product Certified

The AQS 1 measuring system consists of the following parts:

- AQS 1
- PM 10 Cyclone

This certificate applies to all instruments fitted with software version 1.8 and serial number 457 onwards.

Certificate No: Sira MC210385/00
This Certificate issued: 19 May 2021

*This certificate may only be reproduced in its entirety and without change
To authenticate the validity of this certificate please visit www.csagroupuk.org/mcerts*

Certified Performance

Test	Result	MCERTS specification
Consistency 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/m ³ ≤30 µg/m ³	0.46 µg/m ³ 0.43 µg/m ³ 0.46 µg/m ³	≤2µg/m ³
Intra-instrument uncertainty for the candidate method All data ≥30 µg/m ³ ≤30 µg/m ³	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≤Wd _{qo} Measured uncertainty defined as 50% for indicative instruments
Maintenance Interval	Two weeks	>Two weeks

Certificate No: Sira MC210385/00
This Certificate issued: 19 May 2021

*This certificate may only be reproduced in its entirety and without change
To authenticate the validity of this certificate please visit www.csagroupuk.org/mcerts*

Description

The AQS 1 employs a near forward light scattering nephelometer and PM₁₀ sharp cut cyclone to measure PM₁₀.

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. An 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 the cut point (D₅₀) is at 10 µm for the PM₁₀ measurement.

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 CSA Group Testing UK Ltd Certificates'.
2. The design of the product certified is defined in the CSA Group Design Schedule V00 for certificate No. Sira MC210385/00
3. If a certified product is found not to comply, CSA Group 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 CSA Group Testing UK Ltd Certificates'.
5. This document remains the property of CSA Group and shall be returned when requested by CSA Group.

Certificate No: Sira MC210385/00
This Certificate issued: 19 May 2021

*This certificate may only be reproduced in its entirety and without change
To authenticate the validity of this certificate please visit www.csagroupuk.org/mcerts*