

# PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

***Environmental DustTrak™ Aerosol Monitor 854001-M1***

Manufactured by:

***TSI Incorporated***

500 Cardigan Road  
Shoreview  
MN  
USA

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 3, dated August 2015**

Certification Ranges :

PM<sub>2.5</sub> 0 to 10,000 µg/m<sup>3</sup>

Project No. : 70085195  
Certificate No : Sira MC160317/02  
Initial Certification : 02 December 2016  
This Certificate issued : 19 December 2018  
Renewal Date : 01 December 2021

Emily Alexander  
Environmental Project Engineer

MCERTS is operated on behalf of the Environment Agency by

**Sira Certification Service**

Unit 6, Hawarden Industrial Park  
Hawarden, Deeside, CH5 3US  
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*The MCERTS certificate consists of this document in its entirety.  
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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 Monitoring Technical Guidance Notes available at [www.mcerts.net](http://www.mcerts.net)*

On the basis these tests this certificate is valid when the instrument is used for urban air quality monitoring and similar applications.

The field test was conducted on a site representative or 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:

Bureau Veritas Report ref AGGX6339002/BV/2987, dated September 2016

## Product Certified

The measuring system consists of the following parts:

- 854001-M1 or EDTPM2.5M Environmental DustTrak Aerosol Monitor ;
  - 8540-M Environmental DustTrak Photometer;
  - 854038 or 854030 Environmental Enclosure;
  - 854041 Heated Inlet Sample Conditioner and Omni Directional Inlet with Water Trap;
  - 854021 PM2.5 Impactor;

This certificate applies to all instruments fitted with software version 3.5 (serial number 8540152101) onwards.

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### Certified Performance

Test	Result	MCERTS specification
Constancy of the sample volumetric flow	<3%	Remain constant within $\pm 3\%$ of rated value
Tightness of the sampling system	0%	Leakage not to exceed 2% of sampled volume
Intra-instrument uncertainty for the reference method	0.38 $\mu\text{g}/\text{m}^3$ Note 1	$\leq 5\mu\text{g}/\text{m}^3$
Intra-instrument uncertainty for the candidate method		
All data (n = 94)	0.29 $\mu\text{g}/\text{m}^3$	$\leq 5\mu\text{g}/\text{m}^3$
$\geq 18 \mu\text{g}/\text{m}^3$ (n = 14)	0.65 $\mu\text{g}/\text{m}^3$	
$\leq 18 \mu\text{g}/\text{m}^3$ (n = 80)	0.16 $\mu\text{g}/\text{m}^3$	
Highest resulting uncertainty estimate comparison against data quality objective (Measurement Uncertainty)	16.7%	WCM $\leq$ Wd <sub>qo</sub> Measurement uncertainty defined as 50% for indicative instruments
Maintenance Interval	>Two weeks Note 2	>Two weeks

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## Description

The Environmental DustTrak™ Aerosol Monitor (TSI Model 854001-M1 or EDTPM2.5M) includes a data-logging, single- channel 90° light-scattering laser photometer (8540-M) that gives real-time aerosol mass readings. It uses a sheath air system that isolates the aerosol in the optics chamber to keep the optics clean for improved reliability and low maintenance.

The 854001-M1 or EDTPM2.5M includes automatic zeroing which minimizes the effect of zero drift. The monitor measures size-segregated mass fraction concentrations corresponding to PM 2.5. Each unit includes an environmental enclosure, a DustTrak photometer, Omni directional inlet with water trap, a heated inlet sample conditioner to reduce humidity effects and a PM2.5 impactor.

## 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 V02 for certificate No. Sira MC160317/02
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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