

# PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

***Environmental DustTrak™ Aerosol Monitor EDTPM2.5M***

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 MC160317/00  
Initial Certification : 02 December 2016  
This Certificate issued : 02 December 2016  
Renewal Date        : 01 December 2021

Joe Prince MSc, MInst MC  
Certification Manager

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 of 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 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:

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

## Product Certified

The measuring system consists of the following parts:

- 8540-M Environmental DustTrak Photometer;
- 854030 Environmental Enclosure;
- 854040 Omni Directional Inlet with water trap;
- 854021 PM2.5 Impactor;
- 854041 Heated Inlet Sample Conditioner.

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 $\mu\text{g}/\text{m}^3$<br>Note 1   | $\leq 5\mu\text{g}/\text{m}^3$   |
| Intra-instrument uncertainty for the candidate method   |   | $\leq 5\mu\text{g}/\text{m}^3$   |
| All data (n = 94)<br>$\geq 18 \mu\text{g}/\text{m}^3$ (n = 14)<br>$\leq 18 \mu\text{g}/\text{m}^3$ (n = 80) | 0.29 $\mu\text{g}/\text{m}^3$<br>0.65 $\mu\text{g}/\text{m}^3$<br>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><br>Measurement uncertainty defined as 50% for indicative instruments |
| Maintenance Interval  | >Two weeks<br>Note 2  | >Two weeks   |

Note 1: Only one Reference Method was used during the testing of the EDTPM2.5M. 0.38  $\mu\text{g}/\text{m}^3$  was calculated during operation of two identical Reference Methods during 2014.

Note 2: During the 3 months of operation no maintenance was required. The manufacturer recommends the monitoring system is serviced annually.

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## Description

The Environmental DustTrak™ Aerosol Monitor (TSI Model 8540-M) is a data-logging, single-channel 90° light-scattering laser photometer 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 EDTPM2.5M includes automatic zeroing which minimizes the effect of zero drift. The EDTPM2.5M measures size-segregated mass fraction concentrations corresponding to PM<sub>2.5</sub>. 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 V00 for certificate No. Sira MC160317/00
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.

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