

# PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

**Dustroid®**

Manufactured by:

**Oizom Instruments Pvt. Ltd**

306, Indraprastha Corporate, Opp. Shell Petrol Pump,  
Prahladnagar,  
Ahmedabad, 380015  
India

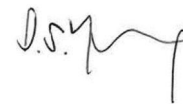
has been assessed by CSA Group  
and for the conditions stated on this certificate complies with:

**MCERTS Performance Standards for Indicative Ambient Particulate Monitors, Environment Agency, August 2017, version 4**

Certification ranges:

PM<sub>2.5</sub> 0-5,000 µg/m<sup>3</sup>  
PM<sub>10</sub> 0-5,000 µg/m<sup>3</sup>

Project No.: 80153474  
Certificate No: CSA MC230419/00  
Initial Certification: 5 October 2023  
This Certificate issued: 5 October 2023  
Renewal Date: 4 October 2028



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MCERTS is operated on behalf of the Environment Agency by

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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 make sure, 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 guidance available at [www.mcerts.net](http://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 on national automatic monitoring networks for compliance reporting against the Ambient Air Quality Directives.

The field tests were carried out from the 1 February 2023 to the 21 March 2023 on two candidate 'Dustroid®' samplers, collocated with a Met One BAM 1020 (the reference method). The location of the field test was in Ahmedabad Textile Industry's Research Association (ATIRA), Ahmedabad 380015, Gujarat, India. The serial numbers of the two 'Dustroid®' monitors were 'PM01D0005' and 'PM01D0006'.

## Basis of Certification

This certification is based on the following test report(s) and on CSA Group's assessment and ongoing surveillance of the product and the manufacturing process:

Bureau Veritas, test report ref. AIR18330458, dated May 2023, "Oizom, Test of the Dustroid for use as an Indicative Monitor for PM<sub>10</sub> and PM<sub>2.5</sub>"

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## Product Certified

The 'Dustroid®' measuring system consists of the following parts:

- An IP66 Grade enclosure
- Particulate matter sensor (OZPM\_1)
- Heated inlet (OZHT)

### *Sensor type and firmware version*

Oizom Dust Sensor model number OZPM\_1 with firmware version 1.1

### *Sensor system*

Dustroid Version 6.0, Firmware version 1.4, Algorithm Version (note 5.)

This certificate applies to all instruments fitted with serial number PM01D0005 onwards.

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**Certified Performance**

Test ( <i>Laboratory</i> )	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Constancy of the sample volumetric flow					Not applicable Note 1	To remain constant within $\pm 3\%$
Tightness of the sampling system	0.34%					Leakage not to exceed 2% of sampled volume

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Test (Field)	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Intra-instrument uncertainty for the reference method						
PM <sub>10</sub>					0.67µg/m <sup>3</sup>	≤2.5µg/m <sup>3</sup>
PM <sub>2.5</sub>					0.67µg/m <sup>3</sup>	≤2.5µg/m <sup>3</sup>
Intra-instrument uncertainty for the candidate method						
PM <sub>10</sub>						
All data (n=48)					1.70µg/m <sup>3</sup>	≤5µg/m <sup>3</sup> for all data as well as for the subsets: < or ≥ 30 µg/m <sup>3</sup>
≥ 30 µg/m <sup>3</sup> (n=48)					1.70µg/m <sup>3</sup>	
< 30 µg/m <sup>3</sup> (n=0)					N/A	
PM <sub>2.5</sub>						
All data (n=48)					0.76µg/m <sup>3</sup>	≤5µg/m <sup>3</sup> for all data as well as for the subsets: < or ≥ 30 µg/m <sup>3</sup>
≥ 18 µg/m <sup>3</sup> (n=48)					0.76µg/m <sup>3</sup>	
< 18 µg/m <sup>3</sup> (n=0)					N/A	
Highest resulting uncertainty estimate comparison against data quality objective (Measurement Uncertainty)						
PM <sub>10</sub>						W <sub>CM</sub> ≤50% W <sub>CM</sub> ≤ W <sub>dpo</sub> (W <sub>dpo</sub> Measurement uncertainty defined as 50% for indicative instruments)
All data (n=48)					48.8%	
≥ 30 µg/m <sup>3</sup> (n=48)					48.8%(note 4)	
PM <sub>2.5</sub>						
All data (n=48)					47.3%	
≥ 18 µg/m <sup>3</sup> (n=0)					47.3%(note 5)	
Maintenance Interval					13 weeks Note 2	≥2 weeks

Note 1 - The Dustroid utilises a fan and not a pump, therefore it was agreed that this test was not applicable.

Note 2 - Maintenance - the manufacturer recommends that users undertake quarterly cleaning of the air inlet and outer mesh. The expected life for the replacement of the dust sensor is 12 months. It is further recommended to change the PM sensor after 12 months operation.

Note 3 - The Dustroid must be set up using the configuration, as follows; i) Oizom Dust Sensor Model Number OZPM\_1 Firmware Version 1.1, and ii) Sensor system – Dustroid Version 6.0 Firmware version 1.4. Algorithm version: 1.0. Any modifications to the algorithm will need approval by the certification committee.

Note 4 – All the PM<sub>10</sub> data points were greater than 30µg/m<sup>3</sup> therefore the expanded uncertainty for high data is the same, 48.8%

Note 5 – All the PM<sub>2.5</sub> data points were greater than 18µg/m<sup>3</sup> therefore the expanded uncertainty for high data is the same, 47.3%

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## Description

Dustroid is an active sampling based, online particulate matter monitor by Oizom. It has the capabilities to monitor up to four different types of particulate matter; PM<sub>1</sub>, PM<sub>2.5</sub>, PM<sub>10</sub> and PM<sub>100</sub> (PM<sub>1</sub> and PM<sub>100</sub> not covered under this certification).

Dustroid monitor is also equipped with capabilities to add a gas sensor box which can integrate up to nine gases in a single enclosure (not cover under this certification). The monitors are built with a processor-based system to conduct compensation and correction algorithms. The system generates data in real time through a variety of communication protocols such as GSM, LTE, 5G, WiFi, LORA, Ethernet, Modbus, LAN, RS485, RS232, NBloT and satellite communication.

Dustroid monitors can run independently on solar powered systems and have an internal memory backup for 120 days or more. The Dustroid has artificial intelligence capabilities which enables over the air calibration, remote diagnosis and troubleshooting.

## 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. CSA MC230419/00.
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.

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