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No. CEED/CON/ VBV-02-13/2026 Date: 05/02/2026

To,
Mahabal Enviro Engineers Pvt. Ltd.
Plot No. F-7, Road No. 21,
MIDC Wagle Estate,
Thane West - 400604, Maharashtra

Subject: Certificate of Technical Compliance issued to Sensor based Continuous Online Dust Monitoring System model AirMOT-247 using colocation with Standard Manual Sampling method (RDS).

References: Request letter sent for presence during colocation sampling and analysis Dated 05/12/2025

CERTIFICATE OF TECHNICAL COMPLIANCE FOR ON-LINE DUST MONITORING SYSTEM MODEL AirMOT-247

Name of the manufacturer and Supplier	Mahabal Enviro Engineers Pvt. Ltd. Plot No. F-7, Road No. 21, MIDC Wagle Estate, Thane West - 400604, Maharashtra
Name of the Model	**AirMOT-247**
Serial Nos. used for the study	**402424101300399376** **402424101800684777** **402424101800429555**
Dates of Experiment	**10/12/2025 to 11/12/2025** **12/12/2025 to 13/12/2025** **14/12/2025 to 15/12/2025**

The Data verification of Particulate Matter (PM_{10} & $PM_{2.5}$) results measured using Sensor-based Dust Monitoring Systems model AirMOT-247 was carried out against national reference

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method based Respirable Dust Samplers (RDS). The observations regarding Sensor-based Dust Monitoring Systems of Mahabal Enviro Engineers Pvt. Ltd., Thane West are given below for your kind perusal.

Experimental Setup and Procedure followed:

1) Three (3 Nos) AirMOT-247 and Three (3 Nos) Pre-Calibrated Respirable Dust Samplers (RDS) (For PM_{10} & $PM_{2.5}$) are selected for this colocation exercise.

a. Calibration certificates of all AirMOT-247 stations and RDS Samplers were cross checked before starting of the exercise.

b. Calibration certificates of all the tools used to calibrate RDS instruments are cross-checked to confirm calibration authenticity which included certificate for "Top Loading Orifice Flow Calibrator" and "Time Interval Meter".

2) IDs of instruments selected for this exercise are:

Instrument	Serial No
Respirable Dust Samplers (RDS) IDs	AEC/EQ/1673 AEC/EQ/1674 AEC/EQ/1678
AirMOT-247 IDs	402424101300399376 402424101800684777 402424101800429555

3) Before starting the experiment, Air flow of RDS samplers were measured again to cross-check the flow and if required flow is adjusted to match with required standard flow rate.

4) As per NAAQM standard, RDS sampling for PM_{10} (Particulate Matter of 10µ (micron) size) was carried out for 8 hours while for $PM_{2.5}$ (Particulate Matter 2.5µ (micron) size) RDS sampling was carried out for 24 hours.

5) RDS instruments for PM_{10} and $PM_{2.5}$ were setup as per CPCB guidelines (NAAQS 2009) by maintaining distance of 2 meter between them. The AirMOT-247 stations were also kept at a distance of 2 meter from RDS Instruments to maintain procedural authenticity.

6) All standard experimental precautions were taken while carrying out RDS sampling & measurement which included "Pre-conditioning of Filter papers (for both PM_{10} and $PM_{2.5}$), Weighing them, placing them in RDS samplers, retrieving them after experiment, conditioning them before weighing & finally weighing them".

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7) AirMOT-247 stations are automated instruments and did not require any operational procedure. Instruments were in continuous operational condition and they were placed at desired location at-least 1 hour before the starting of the experiment.

8) Eight (8) hours of data acquired at an interval of 1 minute for all three AirMOT-247 stations taken for the experiment was downloaded and averaged to get single value, when RDS sampler performed PM_{10} experiment of Eight (8) hours.

9) Twenty-four (24) hours of data acquired at an interval of 1 minute for all three AirMOT-247 stations taken for the experiment was downloaded and averaged to get single value, when RDS sampler performed $PM_{2.5}$ experiment of Twenty-four (24) hours.

Results are as stated below –

COMPARISON OF COLOCATION DATA Respirable Dust Samplers (RDS) with AirMOT-247				
Date of experiment - 10/12/2025 to 11/12/2025				
AirMOT-247		#9376	#4777	#9555
RDS No.		ACE/EQ/1673	ACE/EQ/1674	ACE/EQ/1678
SAMPLING TIME		PM_{10}		
12.00 to 20.00 (10.12.2025)	ADW Result	72	66	75
	RDS Result	85	77	82
	% Difference	15%	14%	9%
20.00 to 04.00 (10.12.2025 to 11.12.2025)	ADW Result	111	93	104
	RDS Result	128	108	118
	% Difference	13%	14%	12%
04.00 to 12.00 (11.12.2025)	ADW Result	179	150	166
	RDS Result	2030	173	187
	% Difference	12%	13%	11%
SAMPLING TIME		$PM_{2.5}$		
12.00 to 12.00 (10.12.2025 to 11.12.2025)	ADW Result	45	41	47
	RDS Result	53	49	54
	% Difference	15%	16%	13%

COMPARISON OF COLOCATION DATA

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Respirable Dust Samplers (RDS) with AirMOT-247				
Date of experiment - 12/12/2025 to 13/12/2025				
AirMOT-247		#9376	#4777	#9555
RDS No.		ACE/EQ/1673	ACE/EQ/1674	ACE/EQ/1678
SAMPLING TIME		PM_{10}		
12.00 to 20.00 (12.12.2025)	ADW Result	119	99	118
	RDS Result	138	113	133
	% Difference	14%	12%	11%
20.00 to 04.00 (12.12.2025 to 13.12.2025)	ADW Result	139	120	133
	RDS Result	165	138	152
	% Difference	16%	13%	13%
04.00 to 12.00 (13.12.2025)	ADW Result	147	125	139
	RDS Result	161	149	160
	% Difference	9%	16%	13%
SAMPLING TIME		$PM_{2.5}$		
12.00 to 12.00 (12.12.2025 to 13.12.2025)	ADW Result	55	49	56
	RDS Result	66	58	63
	% Difference	17%	16%	11%

COMPARISON OF COLOCATION DATA Respirable Dust Samplers (RDS) with AirMOT-247				
Date of experiment - 14/12/2025 to 15/12/2025				
AirMOT-247		#9376	#4777	#9555
RDS No.		ACE/EQ/1673	ACE/EQ/1674	ACE/EQ/1678
SAMPLING TIME		PM_{10}		
12.00 to 20.00 (14.12.2025)	ADW Result	108	96	112
	RDS Result	132	114	125
	% Difference	18%	16%	10%
20.00 to 04.00 (14.12.2025 to 15.12.2025)	ADW Result	132	115	127
	RDS Result	155	132	144
	% Difference	15%	13%	12%
04.00 to 12.00	ADW Result	190	161	177

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(15.12.2025)	RDS Result	223	186	193
	% Difference	15%	13%	8%
SAMPLING TIME		$PM_{2.5}$		
12.00 to 12.00 (14.12.2025 to 15.12.2025)	ADW Result	61	55	62
	RDS Result	72	63	72
	% Difference	15%	13%	14%

NOTE: AirMOT-247 values are consistently lower than PM_{10} and $PM_{2.5}$ values of RDS by about **8.0% to 18.0%**. The percentage difference between RDS (PM_{10}), FPS ($PM_{2.5}$) and AirMOT-247 for PM_{10} and $PM_{2.5}$ values is lower than **18%** which demonstrates good correlation between their measurements as percentage difference allowed is +/- 25% or lower.

CONCLUSIONS AND REMARKS

1) The PM_{10} and $PM_{2.5}$ data from the AirMOT-247 (Online Dust Monitor) stations were verified against data from Respirable Dust Samplers (RDS) for PM_{10} and Fine Particulate Samplers (FPS) for $PM_{2.5}$, both of which are CPCB-approved reference methods for monitoring particulate matter under NAAQS guidelines. The verification was carried out using the co-location method, wherein the data sets were compared, and the variation observed was within the permissible limit of 25% defined by the respective reference methods.
2) It has been observed that the AirMOT-247 (Online Dust Monitor) manufactured and marketed by Mahabal Enviro Engineers Pvt. Ltd., Mulund – Mumbai East, satisfies all the requirements of colocation comparison method.
3) It can be concluded that the AirMOT-247 system demonstrates performance comparable to that of standard gravimetric samplers, RDS (for PM_{10}) and FPS (for $PM_{2.5}$), in accordance with CPCB approved reference methodologies, based on colocation comparative analysis.
4) Air quality assessment carried out through standard national reference method based on Respirable Dust Sampler (RDS) and Fine Particulate Sampler (FPS) for PM_{10} and $PM_{2.5}$ respectively, are provided by **Ashwamedh Engineers & Consultants, Laboratory Services Division, Nashik, Maharashtra** (NABL Accredited Testing Laboratory vide certificate no. **TC-5509**).
5) AirMOT-247 is a low maintenance air monitoring station and requires maintenance only once in Six months in which internal cleaning of the station and PM sensor can be

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carried out if that is required. Requirement of cleaning depends upon the routine particulate matter concentrations that are measured by station.

6) Third party inspection report is based on the Visual Inspection of set-up, Documents and Certificates provided by the supplier.

This is to certify and conclude that the PM_{10} and $PM_{2.5}$ data generated by the AirMOT-247 (Online Dust Monitor) system is comparable to the data obtained using CPCB-approved reference methods and meets the technical measurement criteria and performance specifications. The data quality and monitoring capability of the instrument are suitable for assessing compliance with the National Ambient Air Quality Standards (NAAQS). The supplier has provided the necessary certifications in accordance with the required standards and features.

Verified and certified by

Dr. Vikas B. Varekar
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