

# ADR-1500 Area Dust Monitor

Real-time ambient dust monitor designed for continuous monitoring

The Thermo Scientific™ ADR-1500 Area Dust Monitor utilizes highly sensitive light-scattering photometer (nephelometer) technology, as used in the Thermo Scientific pDR Series monitors.

## Features

- Volumetric flow control
- Modular optics and long-life primary HEPA filter for simple servicing
- Multiple power and communications capabilities
- Durable weather-proof IP65 enclosure
- Designed for ease of transport and installation

## Introduction

The intensity of light scattered by airborne particles passing through the sensing chamber is linearly proportional to their concentration. This optical configuration produces optimal response to particles providing continuous measurements of the concentrations of airborne particles for total particulate and cut-points ranging from PM-10 down to PM-1.

The ADR-1500 monitor incorporates a temperature and relative humidity (RH) sensor coupled with an internal heater to mitigate the positive bias with elevated ambient RH. Additionally, the flow control is truly volumetric and is maintained



through digital feedback of the onboard barometric pressure sensor, temperature sensor, and calibrated differential pressure across a precision orifice. The principles of true volumetric flow, as incorporated by the ADR-1500 monitor, result in an accurate sample volume and precise particle cut-point. The measured concentration of particulate matter is displayed in real-time on the twoline LCD readout display. Additional values can be displayed, such as run start time and

date, time averaged concentrations, elapsed run time and many more.

The flexible power capabilities allow the ADR-1500 monitor to operate on AC, external DC, or an internal battery. Communications options are available for USB, RS-232, analog and wireless capability.

The ADR-1500 monitor is housed in a weather-proof IP65 enclosure producing a compact and durable instrument that is ready for rapid deployment and unattended operation.



Thermo Scientific™ ADR-1500  
Area Dust Monitor

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Specifications	
Concentration measurement range	0.001 to 400 mg/m <sup>3</sup> (auto-ranging)
Flow rate	1.1 × 10 <sup>-6</sup> to 0.6m <sup>-1</sup> (approximately) @ λ = 880nm
Precision/Repeatability	+/- 2% of reading or +/- 0.005 mg/m <sup>3</sup> , whichever is larger, for 1-second averaging time
2-sigma <sup>2</sup> with heater off and RH correction disabled (over 30 days)	+/-0.5% of reading or +/- 0.0015 mg/m <sup>3</sup> , whichever is larger, for 10-second averaging time +/-0.2% of reading or +/- 0.0005 mg/m <sup>3</sup> , whichever is larger, for 60-second averaging time
Accuracy	+/- 5% of reading (+/- precision) traceable to SAE fine test dust
Resolution	0.1 µg/m <sup>3</sup>
Particle size range of maximum response	0.1 to 10 µm
Flow rate range	1.0 to 3.5 liters/min.
Aerodynamic Particle Cut-Point Range	1.0 to 10 µm, with optional cyclone accessories
Alarm averaging time	Real-time (1-60 seconds) or STEL (15 minutes)
Data logging averaging periods	1 second to 1 hour
Logged data	Averaged concentrations, temperature, RH, barometric pressure, time/date, and data point number
Run summary	Site number, average and max. concentrations, time/date of maximum, number of logged points, start time/date, elapsed time (run duration), averaging (logging) period, calibration factor and tag number

## Ordering information

ADR-1500 Area Dust Monitor	
Choose from the following configurations/options to customize your own ADR-1500 monitor	
<b>1. Power cords</b>	
A	110v power cord
B	220v power cord
<b>2. Relay kit</b>	
A	Relay kit
N	No relay kit
<b>3. Pole mounting</b>	
A	Pole mount kit, 2" DIA
B	Pole mount kit, 3" DIA
C	Pole mount kit, 4" DIA
N	None
<b>4. External cables</b>	
A	Analog external cable assembly
B	12/24 Vdc external cable assembly
C	Both cables
N	None
<b>5. 37mm cassette filter holder assembly</b>	
A	37mm cassette filter holder assembly with filter support & holder
N	None
<b>6. Cyclone and the cyclone adapter</b>	
A	Blue cyclone assembly (PM 1-2.5 Micrometer CP) with cyclone adapter
B	Red cyclone assembly (PM 4-10 Micrometer CP) with cyclone adapter
C	Both cyclones with cyclone adapter
N	None

### Your Order Code: ADR1500-

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