

PRODUCT SPECIFICATIONS

# Personal DataRAM pDR-1000AN Monitor

Passive, real-time, personal aerosol monitor/datalogger

The Thermo Scientific™ Personal dataRAM pDR-1000AN Monitor is a passive sampling, light-scattering nephelometer that measures real-time mass concentrations of dust, smoke, mists and fumes in industrial as well as other indoor and outdoor environments.

## Features

- Measures airborne particulate concentration in real-time
- Highest measurement range of any real-time personal particulate monitor
- Simple zeroing and calibration
- No moving parts, silent operation
- Compact, durable, and self-contained

## Introduction

Nephelometry, a light-scattering technology, is highly sensitive and incorporates a pulsed, high output, near-infrared light emitting diode source, as well as a silicon detector/hybrid preamplifier, collimating optics and a source reference feedback PIN silicon detector.



The pDR-1000AN monitor features a high measurement range of 0.001 to 400 mg/m<sup>3</sup> (auto-ranging), a 400,000-fold span. An optical feedback and stabilized sensing system, sets the standard for sensitivity, long-term stability and reliability.

Simple zeroing, with particle-free air, is quick using the included zeroing kit. The internal firmware controls an automatic calibration check. A gravimetric

calibration can be performed by weighing a separate filter sample and programming in the calibration constant to provide the same reading. There are no moving parts which provides for silent, dependable operation.

Selectable alarm levels with built-in audible signal and switched output, a RS-232 communications port, and a programmable analog concentration output are all part of this versatile instrument.



Thermo Scientific™ Personal dataRAM  
pDR-1000AN Monitor

## Thermo Scientific Personal dataRAM pDR-1000AN Monitor

Specifications	
Concentration measurement range	0.001 to 400 mg/m <sup>3</sup> range (auto ranging) <sup>1</sup>
Scattering coefficient range	1.5 × 10 <sup>-6</sup> to 0.6m <sup>-1</sup> (approx.) @ lambda = 880nm (not displayed)
Precision/repeatability over 30 days	±0.5 of reading or ± 0.015 mg/m <sup>3</sup> , whichever is larger, for 1 second averaging time ±0.5 of reading or ± 0.015 mg/m <sup>3</sup> , whichever is larger for 10 second averaging time ±0.2% of reading or ± 0.005 mg/m <sup>3</sup> , whichever is larger for 60 second averaging time
Accuracy <sup>1</sup>	±5% of reading ± precision (traceable to SAE Fine Test Dust)
Resolution	0.1% of reading or 0.001 mg/m <sup>3</sup> , whichever is larger
Particle size range of max. response	0.1 to 10 µm
Aerodynamic particle cut-point range	10 µm nominal
Concentration display updating interval	1 second
Concentration display averaging time <sup>2</sup>	1 to 60 seconds (user selectable)
Data logging averaging periods <sup>3</sup>	1 second to 1 hour
Total number of data points logged in memory	13,391
Number of data tags	99 (maximum)
Logged data	Average concentration, time/date, and data point number
Readout display	LCD 16 characters (4 mm height) × 2 lines
Serial interface	RS-232/4,800 baud
Computer requirements	IBM-PC compatible, 486 or higher, Windows 95 <sup>®</sup> or higher, ≥ 8 MB memory, Hard disc drive 3.5" floppy, VGA or higher resolution monitor
Elapsed time readout range	1 sec. to 100,000 hrs. (over 11 yrs.), in sec., min., and hrs.
Digital communications	RS232/RS485; full duplex, 9600 baud, software-controlled, filtered
Computer requirements	IBM-compatible PC, Windows™ 95 or higher; 8 MB memory or more
Analog outputs	0 - 5V and 4-20mA
Physical dimensions	6" (153mm) H x 3.6" (92mm) W x 2.5" (63mm) D
Weight	18 oz. (0.5 kg)

To maintain optimal product performance, you need immediate access to experts worldwide, as well as priority status when your air quality equipment needs repair or replacement. We offer comprehensive, flexible support solutions for all phases of the product life cycle. Through predictable, fixed-cost pricing, our services help protect the return on investment and total cost of ownership of your Thermo Scientific products.

## Instrument accessories

### Standard accessories

- Soft shell carrying case
- Digital communications cable
- Z-Pouch zeroing kit
- Belt clip kit
- AC power supply and charger
- Analog signal output cable

### Optional accessories

- Rechargeable (NiMH) battery pack
- Remote alarm unit
- Active sampling kit
- Portable pump unit
- Shoulder strap
- Wall mounting bracket

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