

# PERSONAL DATARAM

## *THERMO SCIENTIFIC pDR-1500*



The pDR-1500 personal DataRAM accurately measures aerosol concentration in **real-time**, with relative humidity compensation, true volumetric flow control and legacy pDR nephelometry. An integrated sample filter enables post-gravimetric validation of data.

Superior particle-cut points compared to those achievable using impactors are delivered through volumetric flow control and ACGIH traceable cyclones, available in pairs, for **PM10** and **PM4** or **PM2.5** and **PM1**. A toroidal entrance assures optimized aerosol aspiration and a representative sample even without a cyclone.



### APPLICATIONS

- Site remediation
- Size discrimination
- Mass validation
- Exposure modeling
- Protection of asthma patients



### BENEFITS

- + Particle Size Range of Max. Response: 0.1 to 10  $\mu\text{m}$
- + Portable, low size and weight
- + Real-time aerosol monitor
- + True volumetric flow control
- + Accuracy cut points Personal: aerosol instrument with benchtop performance
- + Full compensation for environmental variables
- + Suitable for NIOSH Methods 0500 and 0600t

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### SPECIFICATIONS

CONCENTRATION MEASUREMENT RANGE	0.001 to 400 mg/m <sup>3</sup> range (auto ranging) <sup>1</sup>
SCATTERED COEFFICIENT RANGE	1.5 x 10 <sup>-6</sup> to 0.6 m <sup>-1</sup> (approx) @ lambda= 880nm (not displayed)
PRECISION/ REPEATABILITY OVER 30 DAYS	± 2% of reading or ± 0.005 mg/m <sup>3</sup> , whichever is larger, for 1 second (2-sigma) <sup>2</sup> averaging time ± 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 1	± 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
FLOW RATE RANGE	1.0 to 3.5 liters/minute
AERODYNAMIC PARTICLE CUT-POINT RANGE	1.0 to 10 µm
CONCENTRATION DISPLAY UPDATING INTERVAL	1 second
CONCENTRATION DISPLAY AVERAGING TIME	1 to 60 seconds (user selectable)
DATA LOGGING AVERAGING PERIODS	1 second to 1 hour
TOTAL OF DATA POINTS THAT CAN BE	> 500,000
NUMBER OF DATA TAGS	99 (maximum)
LOGGED DATA	Averaging concentration, temperature, RH, barometric pressure, time/date, and data point number
READOUT DISPLAY	LCD 16 characters (4 mm height) x 2 lines
SERIAL INTERFACE	USB / RS-232, 19, 200 baud
COMPUTER REQUIREMENTS	IBM-PC compatible, 486 or higher, Windows 95® or higher, ≥ 8 MB memory, hard disc drive 3.5" floppy, VGA or higher resolution monitor
REAL TIME ANALOG SIGNAL	0 to 2V and 4 to 20 mA. Selectable full scale ranges of: 0 - 0.1, 0 - 0.4, 0 - 1.0, 0 - 4.0, 0 - 10, 0 - 40, 0 - 100, and 0 - 400
INTERNAL BATTERY RUN TIME	4 AA alkaline, > 24 hr run time, 5 V peak-to-peak @ 1.2 L/min; > 6 hour @ 3.5 L/min
RUN TIME @ 25° C	Run time may vary with temperature
CURRENT CONSUMPTION	70 to 450 mA (in Run Mode); 32 mA (in Ready Mode)
OPERATION ENVIRONMENT	-10° to 50°C (14° to 122°F), 10 to 95% RH, non-condensing
STORAGE ENVIRONMENT	-20° to 70°C (-4° to 158°F)
DIMENSIONS (MAX EXTERNAL) AND WEIGHT	181 mm (7.1in) H X 143mm (5.6in) W x 84mm (3.3in) D / 1.2kg (41oz)



Réf.F19 V2