

Personal Dust Monitor, PDM3600

Real-time, respirable dust monitor for use in mining applications



Key Features

- Bright, low power consuming LED primary work light with dual low power secondary LED lights
- Waterproof cap lamp battery protection
- Mine-proven power take-off connector
- PC-based software for data downloading and review of status flags
- Integral charger with download station for PC interface

* U.S. based mining applications only

The Thermo Scientific Model PDM3600 is a real-time, respirable, personal dust monitor designed specifically for U.S. based mining applications. Engineered for timely, high-quality personal dust exposure information, the PDM3600 protects miners' health by ensuring that the shift-average respirable dust exposure does not exceed regulatory limits. Providing mine workers and management with the tools to personally monitor and reduce their exposure, the PDM3600 is the first line of defense in preventing long-term health effects.

The PDM3600 provides three primary real-time measurements; primary current mass concentration (30 MIN CONC), primary cumulative mass concentration (CUM1) and percent of limit (PERCNT OF LIMIT). Two secondary user-initiated measurements are also available and can be performed without interfering with the primary sample. A PC-based software is used to program, save and review results as well as to support the calibration and audit of other environmental data.

The battery operated PDM3600 starts by drawing a continuous sample of air from the breathing zone. It then removes any particles that are larger than respirable in size and measures the mass of the dust, which is collected on an exchangeable filter.

The dust exposure results are automatically computed eliminating the need for filter transport and handling steps connected with the manual gravimetric method. This automatic method leads to a significantly lower per-sample cost than with manual sampling and has the added benefit of continuous information availability.

The PDM3600 offers the battery and lighting functions of a traditional belt-mounted cap lamp system carried by miners, while adding the benefit of accurate, continuous, personal respirable dust exposure information. Capable of satisfying the typical mine environment, the durable, belt-mounted case is made of static-dissipating housing.

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 air quality products.

Product Specifications

Measurement Range	0 - 200 mg/m ³
Accuracy	±25% of the reference method (for concentrations greater than 0.2mg/m ³)
Minimum Dust Loading	0.1mg (to achieve specifications)
Maximum Dust Loading	4mg (to achieve specifications)
Mass Concentration Sensitivity	0.05 mg/m ³ (1σ) (30 second averaging)
Operating Temperature	-4°F to 104°F (-20°C to +40°C)
Mass Transducer Temperature	32°F to 140°F (0°C to 60°C) (depending on ambient conditions)
Relative Humidity	0 to 100%
Sample Flow Rate	2.2 l/min.
Flow Accuracy	(2σ) ±2% (lab conditions), ±5% (mine conditions)
Physical Dimensions	
<i>Enclosure</i>	9.57" (24.31cm) W x 3.25" (8.26cm) D (without belt clip) or 3.42" (8.69cm) D (with belt clip) 6.75" (17.15cm) H (without PTO port) or 7.60" (19.30cm) H (with PTO port) 5lbs, 2.27kg
<i>Umbilical Cable</i>	66" (167cm) Length, 1.13lbs (0.51kg)
<i>TEOM mass sensor</i>	2.29" (5.82cm) W x 1.93" (4.9cm) D x 6.05" (7.75cm) H (Included in enclosure weight above)
<i>Charging module</i>	2.84" (7.21cm) W x 6" (15.25cm) D x 7.63" (19.38cm) H, 3.13lbs (1.42kg)
Power Requirements	Two internal, lithium-ion battery assemblies

Information

Real-Time Primary Measurements

- **"30 MIN CONC"** = Primary current mass concentration (mg/m³)
Represents the latest 30-minute running average of dust exposure
- **"CUM1"** = Primary cumulative mass concentration (mg/m³)
Equals the total dust loading since the beginning of the working shift
- **"PERCENT OF LIMIT"** = Indicates percent of exposure limit for primary sample run

Secondary User-initiated Measurements

For engineering purposes, the PDM3600 is designed to perform user-initiated secondary measurements without interference to primary sample measurements.

- **"15 MIN CONC"** = Secondary current concentration (mg/m³)
Represents the last 15-minute running average of dust exposure since user initiated activation
- **"CUM2"** = Secondary mass concentration (mg/m³)
Represents the dust loading since user initiated activation

* Items in quotation marks represent actual screen display

Safety / Electrical Designations

The PDM3600 is for use in the United States and complies with the following requirements:

- Certified intrinsically safe by the Mine Safety Health Administration (MSHA) (19-A040002-0)
- EN61326-1:2005
- FCC Part 15 subpart B
- UN T1-T8 (shipment of lithium ion batteries)

The PDM3600 Charger complies with the ANSI/UL 1012 standard for power units other than Class 2, 7th Edition (4/29/05).

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This product is manufactured in a plant whose quality management system is ISO 9001 certified.

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