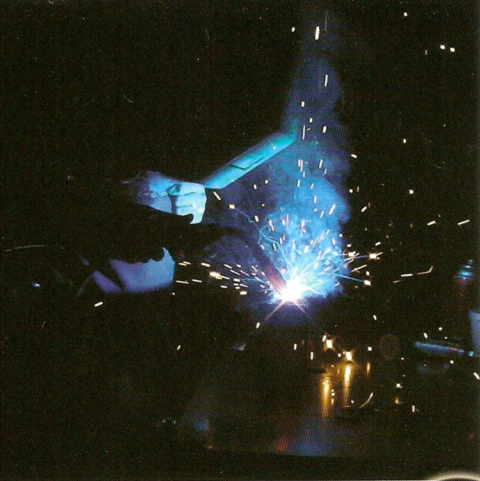


HAZ-DUST®

Real-Time Particulate Air Monitors

www.hazdust.com



Model HD-1004

Personal Direct Reading Aerosol Monitor for Measuring Lung Damaging Airborne Particles

Calibrated to use for United States OSHA/NIOSH Occupational Health Reference Methods



The only dust monitor that allows true size selective breathing zone measurements & comprehensive graph reporting

Exposure monitoring of all dusts & aerosols including:

- lead
- concrete/cement
- pharmaceuticals
- toxic soil remediations
- cadmium
- construction dusts
- welding fumes
- nuisance dusts
- paint spray
- silica
- chromate
- dry chemicals
- coal
- grinding dusts
- grain
- wood/paper
- tobacco smoke
- oil mists

Haz-Dust® IV identifies potential dust problems before they become a health concern

Airborne particulate matter or dust is becoming an increasing concern and making current headlines due to its adverse effect to human respiratory health. Lung damaging particulates in the work place can be detrimental to a worker's health as well as a company's legal responsibility.

The **Haz-Dust® IV** is a Real-Time Personal Dust Monitor with an internal air sampling pump that is microprocessor controlled. This allows for large data storage and on screen statistical calculations. The detached sensor is miniaturized and easily attaches to the individual's lapel for true breathing zone measurements. The sensor is further improved by the addition of optional interchangeable sampling heads for OSHA defined respirable, thoracic and inhalable particulates. An in-line 37mm filter cassette, after the optical sensor, allows the user to collect concurrent filter based air samples consistent with gravimetric methods. The unique internal "smart" microprocessor mathematically corrects for difference in particulate size.

Haz-Dust® IV provides comprehensive graphs of time vs. dust concentration that allows the investigator a more accurate state-of-the-art technique for defining and analyzing workplace exposures to lung damaging particulates. While a real-time profile of dust loading is impossible with the traditional pump/filter gravimetric method alone, the addition of a miniature optical dust sensor provides a more dynamic assessment that could never be obtained before.

When used as part of a routine air-monitoring program **Haz-Dust® IV** can significantly reduce the number of filter gravimetric tests and laboratory analysis. For example: OSHA compliance air monitoring program may dictate air monitoring for particulates on a monthly basis to determine that work practices are below Federal Regulations. If a company has 10 or more employees at risk of exposure this can result in as many as 10 to 20 tests per month and subsequent lab analysis. By implementing a **Haz-Dust® IV** real-time dust monitor, particulate concentrations can be determined immediately and in real-time. No special skills are needed and no laboratory analysis is required. **Haz-Dust® IV** actually pays for itself by reducing the number of filter gravimetric tests by 25 to 50%. **Haz-Dust® IV** alerts you in seconds and allows you to take immediate corrective action.

Haz-Dust® IV is a valuable tool for industrial hygienists and health safety professionals in reducing potential health liabilities, reducing the cost of acquiring data for regulatory compliance and assists in complying with federal regulations for respiratory safety.

Benefits of Using Haz-Dust® Monitors

Haz-Dust® IV can be used for a variety of applications that aid the air quality investigator in complying with federal regulations for respiratory safety and reduces the cost of acquiring data for regulatory compliance. **Haz-Dust®** Air Monitors provide the fastest way possible to determine the concentration of airborne particulates and reduce potential health liabilities.

Other benefits include:

- Easy set-up and operation – User friendly design allows monitor to be set up and ready to use within 15 seconds.
- Automatically stores data and prints graphs of the dust profile – this is impossible to obtain with using only traditional filter based methods.
- Reduces the number of filter based manual tests – which reduce total air monitoring costs for regulatory compliance.
- Upgradeable concurrent video exposure monitoring to link work tasks to dust exposures.
- **Haz-Dust®** monitors allow the investigator more accuracy in defining and analyzing human exposures to lung damaging particulates.

Haz-Dust® IV - Personal

The **HD-1004** Real-Time Personal Dust Monitor is a completely portable package that allows true breathing zone measurements and comprehensive graph reporting. The product is designed for aerosol and dust monitoring for industrial Hygiene and Environmental air investigations. HD-1004 is individually worn and offers immediate determination and data storage of airborne particulate concentrations in milligrams per cubic meter. The patent pending sensor design that allows the interchange of sampling heads for inhalable, thoracic and respirable separations. The in-line disposable cassette allows the user to simultaneously collect filter samples for further gravimetric or chemical analysis.

The signal processing electronics and microprocessor are enclosed in a compact case that attaches to the individual's waist. A real-time display reports concentrations in milligrams per cubic meter. Statistics such as: TWA, STEL, Max and Minimum can instantly be viewed on the display. The internal user adjustable alarm can be preset to alert the user of approaching threshold limits.

HD-1004 can be used for a variety of applications including lead, silica, welding fumes, pharmaceutical and construction dusts. Accompanying software provides management ready graphs and reports. HD-1004 is an excellent OSHA survey compliance tool for determining worker exposure to airborne contaminants, evaluating levels of respiratory protection, or any application that requires immediate and accurate air monitoring of lung damaging particles.

Applications

- Determine levels of worker respiratory protection for OSHA compliance
- Compliance program reviews
- Evaluating work practices and controls of any dust generating practice
- Safety audits
- Can be combined with NIOSH video exposure monitoring for real-time graphical overlays and interfaces with Haz-Dust model VDM-7500
- Welding fume exposures
- Air quality studies in occupational health and industrial hygiene
- Haz-Mat air quality investigation and waste site remediation
- The **Haz-Dust® IV** Monitor is a useful tool for all air monitoring applications involving lung-damaging particulates

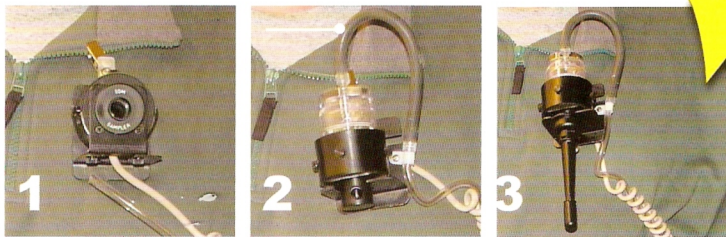
Features

- Comfortable Light Weight
- Miniaturized Sensor Design
- Easy to Operate
- On Screen Display of Statistics
- Splash-Proof
- Optional Wireless Data Transmission
- Adjustable Alarm Signal
- Enhanced Accuracy
- RFI/EMI Protection
- Data Logging

Personal Real-Time Dust Monitor Model HD-1004

Three interchangeable size selective sampling inlets

To match OSHA defined size selective regions of the lungs



1 Inhalable

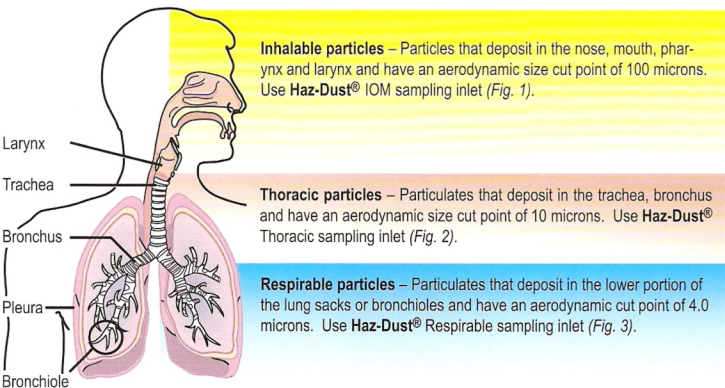
2 Thoracic

3 Respirable

OSHA Defined Size Selective Regions of the Lungs

The human respiratory system is divided into three regions where particles of certain sizes or aerodynamic diameter are likely to be deposited. OSHA (Occupational Safety and Health Administration) sets strict guidelines and methods for these different particle sizes.

An understanding of how and where particles are deposited is necessary to properly evaluate the hazards. The **Haz-Dust® IV** has the proper size selective features for measuring the three respiratory regions that are applicable to both EPA and OSHA standards.



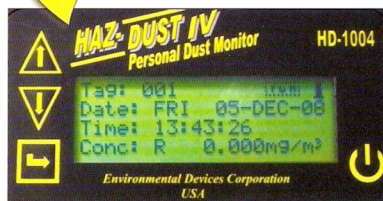
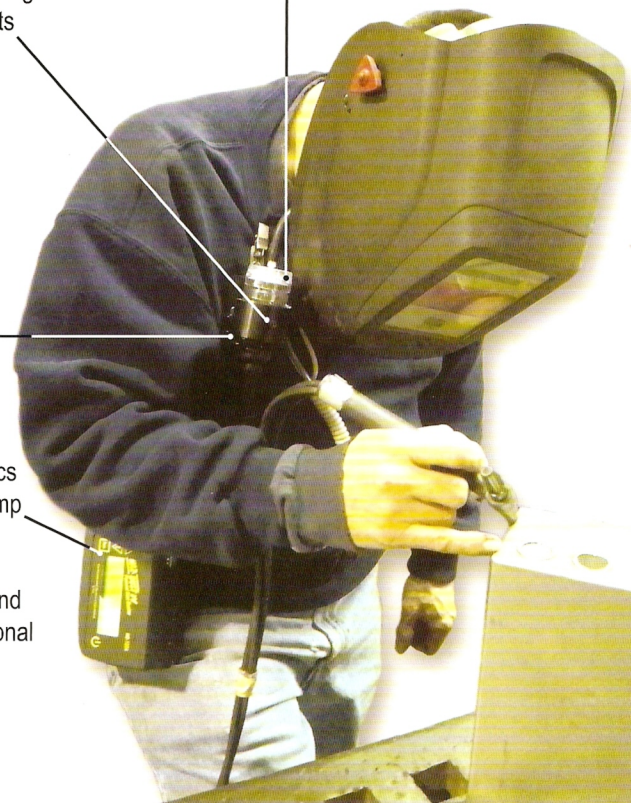
Miniature optical infrared sensor. True breathing zone measurements

OSHA in-line 37mm gravimetric filter cassette

OSHA defined interchangeable sampling inlets

"Smart" micro-processing electronics and air sampling pump

Real time display of dust concentration and data logging of personal exposures



Real time display of dust concentration and statistics; TWA, STEL, MAX, MIN.



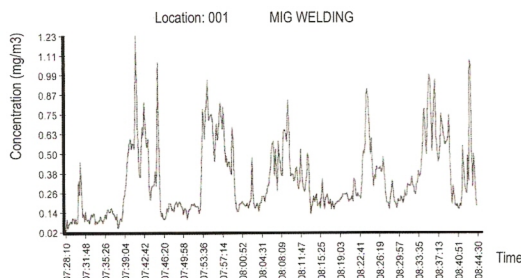
"Smart" micro-processor allows mathematical correction for different particle sizes.

Superior Benefits... Two Instruments in One

A Personal Air Sampling Pump with filter cassette & Real-Time Direct Reading Dust Monitor in one E-Z to use package:

- Immediate display of airborne particulate concentration
- OSHA Interchangeable sampling heads
- Early warning audible alarm signal of approaching threshold limits
- In-line 37mm filter can be weighed or analyzed
- Accurate size selective separation
- Comprehensive time vs. concentration graphs with supplied DustComm Pro Software
- Fast documentation for compliance
- Complete profile of dust patterns
- Reduced traditional sampling time & costs

Welding Fume Exposure



The Haz-Dust® IV monitor being worn by a welder to monitor welding fume exposure during welding operations (left).

Photo courtesy of Rooney Welding - Plaistow, NH

Data is easily downloaded to a PC (right).



Environmental Devices Corporation is a manufacturer of scientific instrumentation specializing in real-time monitoring of particulates, gases, and meteorological equipment. Since its incorporation in 1990, EDC has designed and commercialized several advanced product lines of air monitoring equipment. All Products are highly portable, light weight and compact. EDC has gained worldwide recognition and is committed to ISO-9001 quality standards in accordance with requirements and procedures of ANSI/ASQC.

Particulate Monitors Also Available:



Hand Held Dust Survey Tool
Haz-Dust I HD-1100 Particulate Monitor



Direct Reading Ambient PM-10 and PM-2.5 Air Sampling
EPAM-5000 Real-Time Environmental Particulate Air Monitor



Indoor Air Quality Monitor
Air-Aide AA-3500 Airborne Particulate Monitor



Fix Point Continuous Aerosol Monitor
AQ-10 Industrial Air Quality Monitor



Low cost Filter Based PM-2.5 and PM-10 Air Sampler
Dust-Sol DS-2.5 Portable Particulate Ambient Air Sampler



Direct Reading Dust & Video Monitor to Record Visual Proof of Exposure
VDM-7500 Wireless Video Dust Monitoring System



Personal Direct Reading Diesel Particulate Monitor
Haz-Dust DPM-4000 Diesel Particulate Monitor

See Our website for gas and meteorological product information
www.hazdust.com

Custom Manufacturing Design Services Available

ISO-9001 Certified



HD-1004 Specifications

Display: Alpha-numeric LCD-4line, 20 character mg/m3 concentration reading
Operations: Four key splash proof membrane switch – menu driven
Calibration: Gravimetric reference NIST Traceable - SAE fine test dust-ISO12103-1
Accuracy: +/- 10% to filter gravimetric SAE fine test dust
Sensing range: 0.001-200 mg/m3
Particulate size range: 0.1 to 100 µm
Precision: +/- 0.02-mg/m3
Real-time clock and data display: Hours, min., sec., day, month, year
Data display: concentration in mg/ m3 & TWA, MAX, MIN, STEL, date, time
Sampling Flow Rate: 1.0 – 3.5 liters/minute
Sampling rate: 1 sec., 1 min. and 10 min. intervals
Filter cassette: 37mm disposable
Analog output: 0-2 vdc
Alarm output: 90db at 3ft
Recording time: 1 second to 21 weeks
Data storage: 21,500 data points
Security code: 4 digit combinations
Memory & time storage: > 5 years
Digital output: RS-232
Operating temperature: 0 to 50° C
Storage temperature: -20 to 70° C
DustComm Pro Software: Windows™ driven
Power: NiMH rechargeable battery
Operating time: > 8 hours
Charging time: 10-12 hours
Humidity: 95% non-condensing
Dimensions (case): 5.4" x 3.3" x 2.7"
Sensor Dimensions: 1.75" x 1.5"
Weight: 1.5 lbs.

Optional Wireless Radio Modem

Standard Frequency: 916.50 MHz (USA)

Standard Frequency: 868.35 MHz (Euro)

Radio: Up to 300 Feet line-of sight or Optional 1500ft

Receive Sensitivity: -95 dBm

Addresses: Up to 253 User assignable addresses (01 to FF Hex)

Data Rate, over-the-air: 20Kbp

Dimensions: 3.85"L x 0.60" Body dia. X 0.25" Neck dia. D9 base 1.34"W

Operating Temperature: "Industrial Temperature Range" -40C to +85C (-40F to +185F)



Manufactured by:

Environmental Devices Corporation

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