

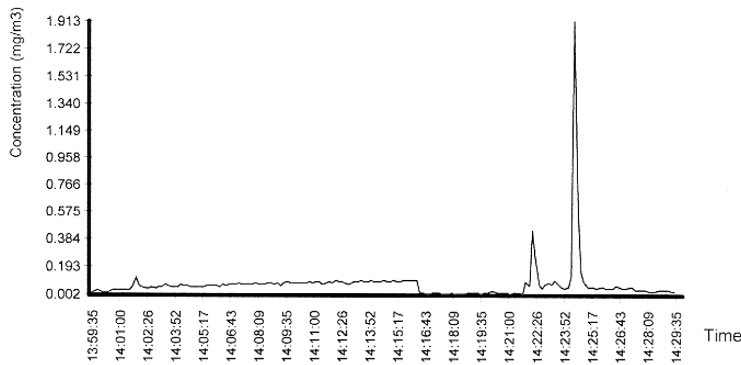


## Actual field study of worker exposure during building demolition

Several EPAM-5000 units were deployed to measure worker and the perimeter of a construction site for dust migration during demolition of a factory building

### Worker Dust Exposure - Demolition

Location: 001 Date: FRI 16-JUN-00

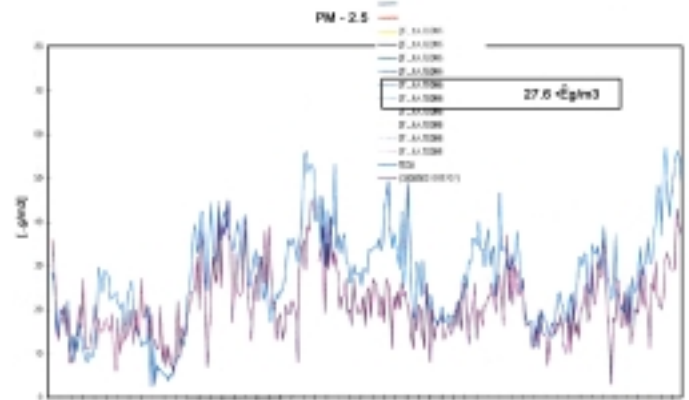


## Comparison of two real-time particulate monitors

EPAM-5000 has high correlation to TEOM monitor US EPA equivalency method designation EQPM-1090-079

 EPAM-5000

 TEOM



Data courtesy of R&P Co., Inc.

**Environmental Devices Corporation** is a manufacturer of scientific instrumentation specializing in real-time monitoring of airborne particulates. Since its incorporation in 1990, EDC has designed and commercialized several advanced product lines of air monitoring equipment. A product of significant importance is the **HAZDUST® III** model HD-1003 Personal Dust Monitor which was jointly developed with the Occupational Health Foundation for measuring a worker's exposure to lung damaging aerosols. All products are highly portable, light weight and compact. EDC has gained world wide recognition and is committed to ISO-9001 quality standards in accordance with the requirements and procedures of ANSI/ASQC.

### Also available:



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



**Breathing Zone Measurements**  
**Haz-Dust III HD-1003 Personal Real-Time Dust Monitor**



**Indoor Air Quality Monitor**  
**Air-Aide AA-3000 Airborne Particle 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**



**Multi Sensor Weather Station**  
**Air Scan AS-2000 Multi Modular Weather Station Monitoring**

### Custom manufacturing design services available

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**[www.hazdust.com](http://www.hazdust.com)**



## EPAM-5000 Specifications

- Display:** Large alphanumeric LCD-4 Line, 20 character display
- Operation:** Four key splash proof membrane switch – menu driven
- Calibration:** Gravimetric reference NIST traceable – SAE fire test dust
- Accuracy:** ± 10% to filter gravimetric SAE fine test dust
- Sensing range:** .001-20.0 mg/m<sup>3</sup> or .01-200.0 mg/m<sup>3</sup> (optional)
- Particle size range:** .1-100µm
- Precision:** ± .003 mg/m<sup>3</sup> (3µg/m<sup>3</sup>)
- Sampling flow rate:** 1.0 – 5.0 liters/minute
- Filter cassette:** 47mm FRM style
- Alarm output:** 90 db at 3 ft
- Analog output:** 0-2 vdc
- Recording time:** 1 sec. to 15 months
- Sampling rate:** 1 sec., 10 sec., 1 min., and 30 min.
- Data storage:** 21,600 data points
- Memory & time storage:** > 5 years
- Real-time clock & data display:** Hours, min., sec., day, month, year
- Data display:** Concentration in mg/m<sup>3</sup> & TWA, MAX, MIN, STEL, Date, Time
- Digital output:** RS-232
- Operating temperature:** -10°C to 50°C
- Storage temperature:** -20°C to 70°C
- DUSTCOMM PRO software:** Windows™ driven for graphical and data translation
- Power:** Rechargeable and interchangeable battery
- Operating time:** ≥ 24 hours on battery
- Charging time:** approximately 22 hours
- Humidity:** 95% non-condensing
- Dimensions (case):** 14.0" x 6.0" x 10.0"
- Weight:** 12 lbs

*Distributed by*

ISO-9001 Certified



**HAZ-DUST<sup>®</sup>** Real-Time Particulate Air Monitors



# Model EPAM 5000

Portable Size Selective Aerosol Monitor for Measuring Lung Damaging Airborne Particles



*"Monitoring the air you breathe"*



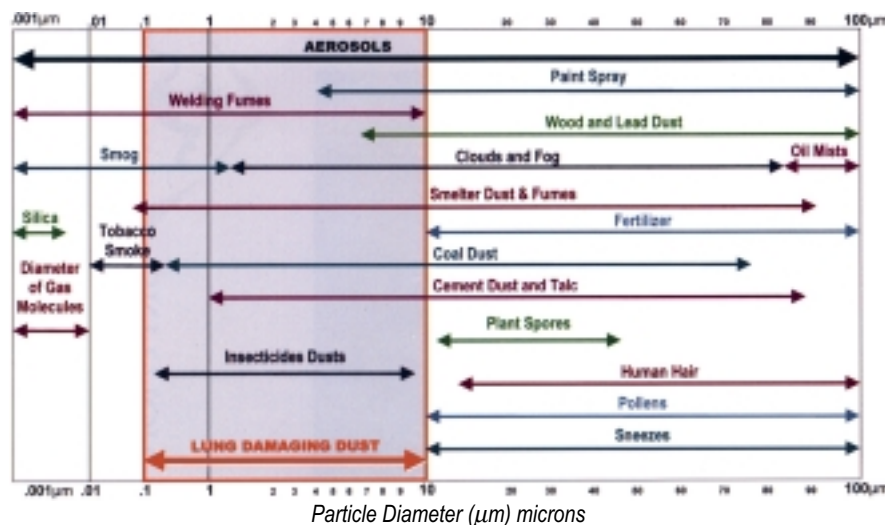
# Environmental Pa

**Particulate Matter (PM)** is becoming an increasing concern and making current news headlines due to its adverse link to human respiratory health and environmental danger. These lung damaging particles called aerosols, are found everywhere; inside commercial and residential buildings, industrial work places and the outside ambient environment. Tiny particles are affecting the health of industrial workers, children, the elderly and all individuals who are over exposed. The need for surveying and tracking the quality of air has never been greater. The new **EPAM-5000 direct reading Environmental Particulate Air Monitor** can identify potential problems with airborne contaminants, before they become a health concern.



**Aer•o•sol** (âr'e sol'), *n.* 1. a suspension of solid or liquid particles in a gas (*air*). These particles range from .001 to 100 microns and include dust, smoke, fume and mists.

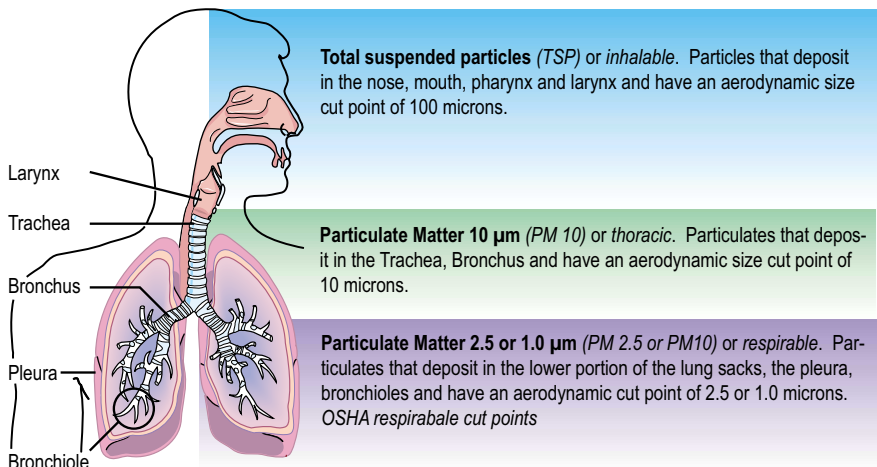
## Relative Size of Lung Damaging Particles



## 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. Both the United States EPA (*Environmental Protection Agency*) and OSHA (*Occupational Safety and Health Administration*) set 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 EPAM-5000 has the proper size selective features for measuring the three respiratory regions that are applicable to both EPA and OSHA standards.



**EPAM-5000** is an innovative light scattering nephelometer and filter gravimetric air sampler combined in one portable compact and lightweight design.

The unique design allows the air quality investigator to collect size selective particulate matter using two proven techniques: light scattering and filter gravimetric. Size selective sampling is achieved by a single jet impactor for PM-10, PM-2.5, PM-1.0µm and TSP.

## Applications

- Survey sampling for lung damaging ambient PM-10 µm and PM-2.5 µm particulates
- EPA Saturation Monitoring studies to define problem areas
- Complements fix monitoring sites with real-time graphical reports
- Waste site fence line monitoring for qualifying off site particulate migration
- Evaluating pollution controls and equipment
- Trend Analysis data for particulate air quality
- Emergency Response and fugitive emissions
- Particulate indoor air quality studies
- Wild fire and controlled burning studies
- Urban transportation air quality studies
- Determining levels of respiratory production
- A useful tool in all environmental and occupational health and safety studies

## Features

- Immediate display and data storage of lung damaging aerosols
- Unique aerodynamic particle sizing real-time sensor and in line 47mm filter cassette which allows concurrent gravimetric samplings
- High correlation to EPA PM-10 methods and TEOM\*
- Easy to use data analysis software
- Easy to clean optical sensor with self-purging capabilities
- 5.0 Lpm flow compensated sampling pump
- True 24 hour battery capacity or continuous A/C power operation
- Audible alarm siren
- Optional accessories such as: solar power panel, strobe light, inlet heater & wireless data transfer enhance EPAM-5000 performance

## Advantages

- One compact instrument provides two sampling techniques:
  - Light scattering
  - Filter gravimetric
- Immediate display and data logging of particulate concentrations
- Data provides a graphic profile of PM sample
- Added-value survey sampler for Saturation Monitoring studies
- Identify problem areas at a reasonable cost
- Easy set-up and operation – ready to use within 15 seconds

\*TEOM is a trademark of Rupprecht & Patashnick Co.

# Particulate Air Monitor Model EPAM 5000



## Portable Real-Time & Direct Reading

The Environmental Particulate Air Monitor model EPAM-5000 provides a complete real-time profile and graphical representation of airborne particulate levels and exposures with data read out in milligrams per cubic meter ( $mg/m^3$ ). This dynamic capability is not possible with using only a gravimetric particulate sampler. The EPAM-5000 combines both the real-time and gravimetric technique, which allows the investigator more accuracy in defining and analyzing the nature and magnitude of potential health risk resulting from the inhalation of lung damaging particulates.

When the EPAM-5000 is deployed the sample air stream first passes by the light scattering sensor where particulate concentration is registered electronically, then the air stream is deposited directly onto a 47mm gravimetric filter located directly behind the optical sensor as shown above. The 47mm filter cassette is designed in accordance with the United States Environmental Protection Agency's standards.

The EPAM-5000 offers a 24-hour rechargeable battery for portable flexibility and runs as a continuous monitor when used with the supplied AC power transformer.

All is housed in a rugged watertight carrying case for ambient air monitoring.

The EPAM-5000 requires no special skills or tools and can be easily setup in minutes for measuring Particulate Matter PM-10, PM-2.5, PM-1.0 or Total Suspended Particulates (*optional PUF foam sampling inserts allows for OSHA respirable and thoracic separations*). All real time data is immediately stored in the instrument's computer memory and can be viewed on the LCD display or downloaded to a PC using the provided graphical and statistical software package.

The EPAM-5000 complements both EPA and OSHA reference methods. By offering an inexpensive and fast means to define problem areas and to "pin-point" where more study is needed.

The EPAM-5000 reduces the cost of acquiring data for regulatory compliance program support and safety audit reporting. The benefit of real-time data collection allows for immediate and permanent documentation and assists in reducing the number of manual filter gravimetric tests. This reduces labor costs and associated lab analysis and results in a cost saving for any air monitor program.