

# Specifications

## Specifications

Concentration Ranges (Auto-ranging)	0-.5, 0-1, 0-10 0-100 mg/m <sup>3</sup>
Sensitivity	.001mg/m <sup>3</sup>
Sample period	1 sec
Sample Flow Rate	1 to 3.5 LPM
Accuracy	8% of NIOSH 0600
Precision	.003 ug/m <sup>3</sup> or 2% reading
Particle size sensitivity range	.1-100 micron
Long term Stability	5% reading
Sensor Type	Forward Light Scatter
Average Period	.1 – 60 minutes
Display	4X20 LCD
Power	12 VDC 12 Amp-Hr Internal
Consumption	400 mA
Internal Battery Operation	>30 Hours
Battery Type	Lead Acid
Size	10.5 (267) X 9.25 (235) X 5.7 (145) inches (mm)
MOI service Period	2 yrs
Programmable Auto-Zero	15min to 24 hours
Programmable Auto-Span	15min to 24 hours
Traceable testing	Gravimetric
Sample Line Heater	Configurable RH controlled
Outputs	Analog 0-1,0-2.5,0-5,0-10 VDC, RS232
Data Storage Capacity	10000 Records
Temperature Compensation	Standard
Temperature Range	-10 to 50 C
RH Measurement	Internal
Ambient Temperature	-30 to +50 C
Ambient Pressure	1040 to 600 mbars
Alarm	Contact Closure
Available Cut Points	TSP,PM10, PM2.5, PM1



## Standard Equipment

Universal Voltage Power Supply/Battery Charger  
47 mm Filter Holder  
TUS Software  
TSP Inlet  
Digital Output Cable  
External Battery Cable  
Instruction Manual

## Options

PM10, PM2.5, PM1 Sharp Cut Cyclone  
Extra 47 mm Filter Holders  
Aluminum Tripod  
Air and Air Plus Software  
Radio Modem  
Phone Modem  
GOES Satellite  
Wind Speed/Direction Sensor  
Ambient RH

# E-SAMPLER™



## The New Standard in Real-Time Aerosol Monitoring.

The E-SAMPLER is the most feature-packed light-scatter Aerosol Monitor available. Whatever your monitoring need the E-sampler will provide accurate, dependable and relevant data.

## Features

- Programmable Auto-Zero
- Programmable Auto-Span
- Auto-ranging (1 to 100000 µm/m<sup>3</sup>)
- Adjustable Ambient Flow Control 1-3.5 LPM
- Internal Battery (30HRS Operation)
- Laser-Diode Precise Optical Engine
- Integral 47mm Analysis Filter
- Ambient Pressure and Temperature
- Internal Datalogger
- PM<sub>10</sub>, PM<sub>2.5</sub>, PM<sub>1</sub>, TSP Monitoring
- Aluminum Weatherproof Enclosure
- Sheath-Air protected Optics
- Completely Self-Contained
- No Tools Filter Replacement

## Applications

- Ambient Air Monitoring
- Remediation Site Perimeter Monitoring
- Indoor Air Quality Monitoring
- Source Monitoring
- Visibility Monitoring
- Mobile Monitoring



Met One Instruments, Inc.

Sales & Service: 1600 Washington Boulevard, Grants Pass, Oregon 97526 ☎ Tel 541/471-7111, Fax 541/471-7116  
Regional Sales & Service: 3206 Main Street, Suite 106, Rowlett, Texas 75088 ☎ Tel 972/412-4747, Fax 972/412-4716  
<http://www.metone.com>



Met One Instruments, Inc.

# E-SAMPLER

## Dual Technology

The E-SAMPLER is a dual technology instrument that combines the unequalled real-time measurement of light scatter with the accuracy standard of filter methods. The simple filter loading process testifies to the seamless blending of both technologies. Filters can be extracted and replaced in less than one minute and filter medium can be selected based on laboratory analysis. Particulate loading on the filter does not reduce performance due to the Met One actual flow control protocol. Ambient temperature and pressure are measured and actual flow is calculated and controlled by the E-SAMPLER microprocessor independent of filter loading change.

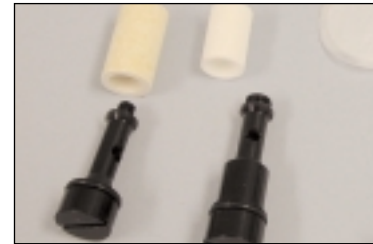
## Principle

The E-SAMPLER provides real-time particulate measurement through near-forward light scattering. An internal rotary vane pump draws air at 1 to 3.5 LPM into the sensing chamber where it passes through visible laser light. Aerosols in the air scatter light in proportion to the particulate load in the air. Scattered light is collected by precise glass optics and focused on a PIN diode. Rugged state of the art electronics measure the intensity of the focused light and output a signal to the CPU. The output is linear to concentrations greater than 100,000 ug/m<sup>3</sup>. Every E-SAMPLER is

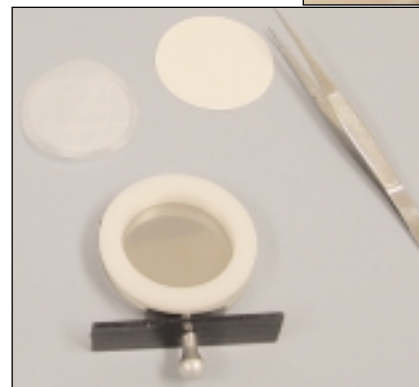
factory calibrated using Polystyrene Latex Spheres of known index of refraction and diameter at multiple points to validate linearity.

## Maintenance

Each E-SAMPLER has two internal filters (not the 47mm Analysis Filter) to protect sensitive optics and prevent damage to the flow components. Both filters are accessible from



the front panel. Coin slots enable these filters to be removed and checked or replaced without any tools. Filter life for both will exceed 1 year in the harshest of conditions. All E-SAMPLERs have sheath air from the internal filters that continually curtain the optics. This sheath air protection allows the E-SAMPLER to



aerosol



monitoring

be used in adverse environments without performance degradation. Even in harsh conditions the E-SAMPLER will operate to specifications for 2 years without need of recalibration.

## Operation

The Esampler is rugged, portable and easy to use. The all aluminum enclosure is not only rugged but provides electronic stability by filtering potential RF interference. Setup is a snap with the quick connect ratchet system which works with many different pipe sizes. For other mounting applications, holes are provided to fasten to any structure. Simply turning the monitor on will start a sample using the most recent parameters. The unit will continue to operate until user intervention or battery failure. Auto-Zero and Auto-Span ensure that the data collected will be of the highest quality. Both Zero and Span can be operated manual-



and data reporting tools. This software supports modem, radio, direct connection and the G1002 Data transfer module. Both programs generate summary reports and Air Plus provides graphic recordings and charts.

ly or individually programmed at varying time bases (15 minutes to 24 hours). The E-SAMPLER can also be configured for start/stop times, recording periods, averaging time and other parameters.

## Data Collection and Software

Air Software™ and Air Plus Software™ are complete communications, data collection

