



# Simultaneous Particulate & Gas Concentration Measurement

Measures particulates in real-time

## Economical investment.

- Particulate, gas, and photoionization detector (PID) measurement from a single device
- Less equipment to carry to job site; compact, user-friendly design

## Proven process.

- 90 degree light scattering laser photometer measures particulates in real-time
- Proprietary technology for selecting particulate settings; no need for external cyclones
- Built in sampling pump allows for gravimetric analysis

## User Friendly.

- Large, easy-to-read display with trend graphing for measurements
- Time history data logging and compatibility with 3M™ Detection Management Software makes analysis efficient

To find out more about 3M Detection Solutions products, see [www.3M.com/Detection](http://www.3M.com/Detection).



# Dual-Analysis

## Outstanding Efficiency and Value

### Simultaneous measurement

- Measures particulate mass concentrations (0.1-10 µm), select toxic gases\*, select volatile organic compounds\*, carbon dioxide, relative humidity, temperature, air velocity (with purchase of optional accessory).
- Helps control equipment costs, by combining three instruments into one.

\* Refer to Sensor Specifications chart on page 4 for details regarding toxic sensor selection. Visit [www.3M.com/detection](http://www.3M.com/detection) for details regarding volatile organic compounds and toxic gas sensor selection.



### Rotary impactor

- Proprietary “dial-in” technology enables fast, easy selection of 4 different particulate size settings.
- Eliminates the need to switch out cyclones for different measurement parameters.

### Built-in sampling pump

- Allows user to easily capture particulate samples for on/off-site analysis.
- Identify and confirm particulate concentration in question.

### 90° light-scattering laser photometer

- Enables real-time measurement of particulates.



## Choose the Model That Best Meets Your Needs

	EVM-7 Indoor Air Quality/Particulate Monitor (eliminates the need for separate meters)	EVM-4 Indoor Air Quality Monitor (no particulates)	EVM-3 Particulate Monitor (no Indoor Air Quality Monitor)
Temperature	•	•	•
Relative Humidity	•	•	•
Air velocity (with purchase of optional accessory)	•	•	•
Particulates (mass concentration)	•		•
Toxic Gas (choose from nine sensors)	•	•	
Carbon Dioxide	•	•	
Select volatile organic compounds	•		

### 3M™ Detection Management Software DMS

Designed for dosimetry, sound level measurements, heat stress assessments and environmental monitoring, this advanced software helps safety and occupational professionals:

#### Configure.

- Configure instrumentation and save pre-configured setups

#### Analyze.

- Retrieve, download, share, and save instrument data
- Create charts, tables, and panels to intuitively interpret your measurements

#### Report.

- Generate insightful charts and reports
- Export and share recorded data

The software integrates with 3M™ Detection Solutions data logging instruments and will help you improve both operating efficiency and reporting in acoustics, heat stress, and environmental monitoring.



3M Detection Solutions: Brilliantly Intuitive

## EVM Series Specifications

### General

Display Languages:	Chinese, Czech, English, French, German, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, and Turkish
User Interface:	10 pushbuttons and 4 softkeys, menu driven
Display Type:	Transreflective 128 X 64 LCD with backlighting
Software Compatibility:	3M™ Detection Management Software DMS
Standards:	CE Mark and RoHS compliant
Particulate Impactors Size Fractions:	PM2.5, PM4, PM10 or TSP (within the instrument's measurement range)
Flow Rate:	1.67 L/min

### Displayed Data

Measurements:	Level, Minimum, Maximum, Average, Short-Term Exposure Level (STEL), Time Weighted Average (TWA)
Real-Time Measurement:	Once per second display update rate
Time History Data Logging Intervals:	Seconds: 1, 5, 15, 30 / Minutes: 1, 5, 10, 15, 30, 60
Trend Graphing Intervals for All Parameters:	Minutes: 1.5, 3, 15 / Hours: 1.5, 3, 8, 12, 24
Status Indicators:	Battery, Run, Stop, Overload and UnderRange
Averaging Time:	1 to 30 seconds

### Physical Characteristics

Size:	19 cm X 19 cm X 7 cm (7.5" X 7.5" X 2.75")
Weight:	1.3 kg (2.9 lb)
Housing:	Static dissipative ABS Polycarbonate housing
Tripod Mount:	Standard photographic mount on bottom, 1/4" - 20 screw heads

### Operating Conditions

Temperature Range:	0 °C to 50 °C (32 °F - 122 °F)
Pressure Range:	65 kPa to 108 kPa
Relative Humidity Range:	10% to 90% non-condensing

### Storage Conditions

Temperature:	-20 °C to 60 °C (-4 °F to 140 °F)
Humidity:	0% to 95% RH, non-condensing

### Electrical Characteristics

Intelligent Sensors :	Auto-detectable when inserted at power-off mode
Battery Pack:	Rechargeable lithium-ion
Battery Life:	Minimum of 8 hours under continuous operation
External DC Power Input:	10 to 16 Volt power inlet (nominal 12V DC) 1.5A
Power Adapter:	Universal AC adapter 100 to 240 Volt AC, 50-60 Hz

All Specifications Subject to Change.

## Sensor Specifications

Method	Base Units	Display Resolution	Display Range	Accuracy Repeatability
<b>Particulates</b>				
90° Light Scattering / Integrating Photometer	mg / m <sup>3</sup>	0.001	0.000 - 200.0	+/-15% (rel ARD*)
	µg / m <sup>3</sup>	1	0 - 20,000	+/-15% (rel ARD*)
Particulates Size Range	µm	N/A	0.1 - 10	**

### VOC: 10.6eV Photoionization Detector

Low Sensitivity PID	select ppb or mg / m <sup>3</sup>	0.01	0.00 - 2,000	+/-5% / 2%*** at calibration level
High Sensitivity PID	select ppb or µg / m <sup>3</sup>	1	0 - 50,000	+/-5% / 2%*** at calibration level

### CO<sub>2</sub>

NDIR (Non-Dispersive Infrared)	ppm	1	0 - 5,000 ppm; auto-ranging (Non-condensing)	+/-100 ppm @20 deg C, 1 bar pressure at 2,000 ppm applied gas
--------------------------------	-----	---	--	---

### Electrochemical Sensor

CO - Carbon Monoxide Sensor	ppm	1	0 - 1,000	+/-5% / 2% of signal
Cl <sub>2</sub> - Chlorine Sensor	ppm	0.1	0.0 - 20	+/-5% / 2% of signal
EtO - Ethylene Oxide Sensor	ppm	0.1	0.0 - 20	+/-5% / 2% of signal
HCN - Hydrogen Cyanide Sensor	ppm	0.1	0.0 - 50	+/-5% / 2% of signal
H <sub>2</sub> S - Hydrogen Sulfide Sensor	ppm	1	0 - 500	+/-5% / 2% of signal
NO - Nitric Oxide Sensor	ppm	0.1	0.0 - 100	+/-5% / 2% of signal
NO <sub>2</sub> - Nitrogen Dioxide Sensor	ppm	0.1	0.0 - 50	+/-5% / 2% of signal
O <sub>2</sub> - Oxygen Sensor	%	0.1	0.0 - 30	+/-5% / 2% of signal
SO <sub>2</sub> - Sulfur Dioxide Sensor	ppm	0.1	0.0 - 50	+/-5% / 2% of signal

### Temperature

Junction Diode	deg C	0.1	0.0 - 60.0	+/- 1.1 deg C
	deg F	0.1	32.0 - 140	+/- 2 deg F

### Relative Humidity

Capacitive	% humidity	0.1	0.0 - 100	+/-5% RH* of signal between 10%-90%
------------	------------	-----	-----------	-------------------------------------

### Air Velocity

Omni-directional Heated Thermistor Windprobe	meter/sec	0.1	0.0 - 20	+/-0.12 m/s + 4.5% of signal
	feet/min	1	0 - 3940	+/-23.6 ft/min + 4.5% of signal

\* ARD - Arizona Road Dust, RH - Relative Humidity

\*\* The photometer can detect particulates up to 100 µm; however, accuracy is reduced for sizes greater than 10 µm.

\*\*\* Relative Isobutylene

#### ⚠WARNING

This product monitors for the presence and concentration level of certain specified airborne gases, vapors, and particulates (dependent on model). The EVM Series of Environmental Monitors are NOT for use in Explosive or Hazardous locations. This equipment must be operated and serviced by qualified personnel. Read and understand the User Manual, which can be found on [www.3M.com/detection](http://www.3M.com/detection), before operating or servicing. Misuse or failure to follow warnings and instructions may result in erroneous readings. For proper use, see supervisor or User Instructions, or call 3M Detection Solutions at 1-800-245-0779.

#### ⚠WARNING

These instruments help monitor for the presence and concentration level of certain specified airborne gases. Misuse may produce an inaccurate reading which means that higher levels of the gas being monitored may be present and could result in overexposure and **cause sickness or death**. For instruments with an oxygen sensor installed, misuse may produce an inaccurate reading where lower or higher levels of oxygen may be present and **cause sickness or death**. Each person using this equipment must read and understand the information in the User Instructions before use. Use of this equipment by untrained or unqualified persons, or use that is not in accordance with the User Instructions, may adversely affect product performance and **result in sickness or death**. For proper use, see supervisor or User Instructions, or call 3M Detection Solutions at 1-800-245-0779.



### Personal Safety Division

3M Detection Solutions  
ISO 9001 Registered Company  
ISO 17025 Accredited Calibration Lab  
1060 Corporate Center Drive  
Oconomowoc, WI 53066

Customer Service: 262-567-9157  
Toll-free: 800-245-0779  
[www.3M.com/detection](http://www.3M.com/detection)

3M is a trademark of 3M Company, used under license in Canada. Please recycle. Printed in USA. ©2013 3M. All rights reserved. 70-0716-2503-5 1.2013