Evolutionary Dual-Analysis Design

The 3M™ EVM Series measures both particulates and air quality in one compact instrument. This durable, easy-to-use model helps provide simultaneous worksite area monitoring of:

- Particulate mass concentrations (0.1-10 μm)
- Select volatile organic compounds*
- Relative humidity
- Temperature
- Select toxic gases*
- Carbon dioxide
- Air velocity (with purchase of optional accessory)

* Refer to Sensor Specifications chart on page 5 for details regarding toxic sensor selection. Visit www.3M.com/detection for details regarding volatile organic compounds and toxic gas sensor selection.

From healthcare and manufacturing to construction and military applications, the EVM Series provides a lower cost of ownership by combining three instruments into one. Its user-friendly interface, proprietary dial-in rotary impactor, and advanced reporting and analysis features make it a particulate and IAQ area monitoring instrument of choice for industrial hygienists and safety professionals worldwide.
EVM-7: One Solution, Multiple Measurements

Intuitive, User-Friendly Controls

Its large display and buttons, simple screens, straightforward commands and robust software solutions put all of the EVM-7’s capabilities right at your fingertips.

Simultaneous Measurement of Particulate and Gas Concentrations

Reduces the need for multiple instruments and lowers the cost of ownership.

Dial-in Rotary Impactor

Twist and click selection of particulate settings: PM2.5, PM4, PM10 or TSP.*

90° Light Scattering Photometer

Provides real-time measurement of particulates.

Built-in Sampling Pump for Gravimetric Analysis

Allows user to insert a 25 or 37 mm cassette to capture particulate samples for laboratory testing.

*Durable Design For Real-World Applications

The EVM-7 is a durable yet lightweight instrument designed for real-world use. It can be tripod mounted or hand-held, making it well suited for a variety of area monitoring applications, including:

- Industrial hygiene area surveys
- LEED building clearance screening
- Construction / mining site monitoring
- Engineering studies
- Industrial fence line monitoring
- IAQ walk-through and stationary studies
- Air quality assessment
- VOC screening and monitoring

Within the instrument’s measurement range.
Technical Features and Advanced Monitoring Capabilities

From basic to advanced monitoring, the EVM-7 has the features needed for many air quality and particulate concentration assessments. Here are just a few highlights:

- Factory calibrated to ISO 12103-1, A2 (Arizona Road Dust)
- Site correction factors for various particulates (user supplied)
- Auto run and security code protection for unattended sessions
- Carbon dioxide (CO₂) trending algorithms for calculation of room air exchange rates (with purchase of 3M™ Detection Management Software DMS)
- Dew point readings for analysis of airborne moisture percentage
- Smart sensors which are auto-detectable at power on
- Real-time measurement with once per second update rate
- Time history data logging
- Trend graphing for all parameters
- Standard Quest menu-driven user interface with 10 pushbuttons / 4 softkeys
- User selectable digital and analog output for external functions
- Displayed measurements of Level, Minimum, Maximum, Average, Short-Term Exposure Level (STEL) and Time Weighted Average (TWA)

Removal of the back cover allows for convenient access and customization of gravimetric filter cassette for sample collection.

Removable sensor bar provides easy access to electrochemical sensors.
Easy-to-Read Measurement Screens

Particulate Concentrations Screen
Displays user-adjustable impactor setting and six simultaneous measurements.

Trend Screen
Provides synopsis of logged measurement values in a graphical format. Available for each parameter.

Composite Screen
Displays available parameters for a snapshot overview of measurement values.

EVM-3 and EVM-4 Models
Ideal for organizations that do not require the full functionality of the EVM-7

EVM-3
Specializes in real-time direct reading of particulate concentrations. This tri-sensor instrument utilizes the built-in sampling pump and dial-in impactors for real-time mass concentration readings.

EVM-3 measures:
- Particulates (mass concentration)
- Temperature
- Relative Humidity

EVM-4
Multi-sensor instrument designed for indoor air quality investigations. Simultaneously track, log and monitor multiple indoor air quality parameters, including room air exchange rates and dew point.

EVM-4 measures:
- Gas (choose from nine sensors)
- Relative Humidity
- Carbon Dioxide
- Temperature
# Sensor Specifications

<table>
<thead>
<tr>
<th>METHOD</th>
<th>BASE UNITS</th>
<th>DISPLAY RESOLUTION</th>
<th>DISPLAY RANGE</th>
<th>ACCURACY REPEATABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PARTICULATES:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90° Light Scattering / Integrating Photometer</td>
<td>mg / m³</td>
<td>0.001</td>
<td>0.000 - 200.0</td>
<td>+/-15% (rel ARD*)</td>
</tr>
<tr>
<td></td>
<td>µg / m³</td>
<td>1</td>
<td>0 - 20,000</td>
<td>+/-15% (rel ARD*)</td>
</tr>
<tr>
<td>Particulates Size Range</td>
<td>µm</td>
<td>N/A</td>
<td>0.1 - 10</td>
<td>**</td>
</tr>
<tr>
<td><strong>VOC: 10.6eV Photoionization Detector:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Sensitivity PID</td>
<td>select ppm or mg / m³</td>
<td>0.01</td>
<td>0.00 - 2,000</td>
<td>+/-5% / 2%*** at calibration level</td>
</tr>
<tr>
<td>High Sensitivity PID</td>
<td>select ppm or µg / m³</td>
<td>1</td>
<td>0 - 50,000</td>
<td>+/-5% / 2%*** at calibration level</td>
</tr>
<tr>
<td><strong>CO₂:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NDIR (Non-Dispersive Infrared)</td>
<td>ppm</td>
<td>1</td>
<td>0 - 20,000</td>
<td>+/-2% of signal +/-50 ppm between 0-2,500</td>
</tr>
<tr>
<td><strong>ELECTROCHEMICAL SENSOR:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO - Carbon Monoxide Sensor</td>
<td>ppm</td>
<td>1</td>
<td>0 - 1,000</td>
<td>+/-5% / 2% of signal</td>
</tr>
<tr>
<td>Cl₂ - Chlorine Sensor</td>
<td>ppm</td>
<td>0.1</td>
<td>0.0 - 20</td>
<td>+/-5% / 2% of signal</td>
</tr>
<tr>
<td>EtO - Ethylene Oxide Sensor</td>
<td>ppm</td>
<td>0.1</td>
<td>0.0 - 20</td>
<td>+/-5% / 2% of signal</td>
</tr>
<tr>
<td>HCN - Hydrogen Cyanide Sensor</td>
<td>ppm</td>
<td>0.1</td>
<td>0.0 - 50</td>
<td>+/-5% / 2% of signal</td>
</tr>
<tr>
<td>H₂S - Hydrogen Sulfide Sensor</td>
<td>ppm</td>
<td>1</td>
<td>0 - 500</td>
<td>+/-5% / 2% of signal</td>
</tr>
<tr>
<td>NO - Nitric Oxide Sensor</td>
<td>ppm</td>
<td>0.1</td>
<td>0.0 - 100</td>
<td>+/-5% / 2% of signal</td>
</tr>
<tr>
<td>NO₂ - Nitrogen Dioxide Sensor</td>
<td>ppm</td>
<td>0.1</td>
<td>0.0 - 50</td>
<td>+/-5% / 2% of signal</td>
</tr>
<tr>
<td>O₂ - Oxygen Sensor</td>
<td>%</td>
<td>0.1</td>
<td>0.0 - 30</td>
<td>+/-5% / 2% of signal</td>
</tr>
<tr>
<td>SO₂ - Sulfur Dioxide Sensor</td>
<td>ppm</td>
<td>0.1</td>
<td>0.0 - 50</td>
<td>+/-5% / 2% of signal</td>
</tr>
<tr>
<td><strong>TEMPERATURE:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junction Diode</td>
<td>deg C</td>
<td>0.1</td>
<td>0.0 - 60.0</td>
<td>+/-1.1 deg C</td>
</tr>
<tr>
<td></td>
<td>deg F</td>
<td>0.1</td>
<td>32.0 - 140</td>
<td>+/-2 deg F</td>
</tr>
<tr>
<td><strong>RELATIVE HUMIDITY:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacitive</td>
<td>% humidity</td>
<td>0.1</td>
<td>0.0 - 100</td>
<td>+/-5% RH* of signal between 10%-90%</td>
</tr>
<tr>
<td><strong>AIR VELOCITY:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Omni-directional Heated Thermistor Windprobe</td>
<td>meter/sec</td>
<td>0.1</td>
<td>0.0 - 20</td>
<td>+/-0.12 m/s + 4.5% of signal</td>
</tr>
<tr>
<td></td>
<td>feet/min</td>
<td>1</td>
<td>0 - 3940</td>
<td>+/-23.6 ft/min + 4.5% of signal</td>
</tr>
</tbody>
</table>

* 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
### EVM Series Specifications

#### GENERAL:
- **DISPLAY LANGUAGES**: English, French, German, Italian, Portuguese and Spanish
- **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**: 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

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### Data Management Made Easy

The new 3M™ Detection Management Software DMS makes it easy to export, report, and share data from all 3M Quest data logging instruments.

- Retrieve, download, share and save instrument data
- Generate charts and reports
- Export and share recorded data
- Perform advanced calculations
- The software integrates with 3M Quest instruments, and helps improve both efficiency and reporting from data logging instruments.

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www.3M.com/detection

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**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, 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 Quest Technologies at 1-800-245-0779.

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**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 Quest Technologies at 1-800-245-0779.