The SidePak™ AM520 and AM520i Personal Aerosol Monitors are small, portable, battery-operated, data-logging, light-scattering laser photometers that provide real-time aerosol mass concentration readings of dusts, fumes, mists, smoke and fog within a worker breathing zone. Newly designed inlet conditioners increase the mass concentration capability and provide size fraction cut points for PM$_{10}$, Respirable (PM$_{4}$), PM$_{8}$ (China Respirable), PM$_{2.5}$, PM$_{1}$ and 0.8µm Diesel Particulate Matter (DPM). These monitors are the perfect solution for real-time, personal aerosol sampling in a variety of workplace environments, including but not limited to general industry, foundries, construction sites, chemical plants, refineries, petrochemical, power and utilities, transportation, aerospace, maritime, confined spaces and mining. For monitoring in flammable and explosive environments—MODEL AM520i IS THE SMALLEST INTRINSICALLY SAFE REAL-TIME PHOTOMETRIC PERSONAL EXPOSURE MONITOR CURRENTLY AVAILABLE ON THE GLOBAL MARKET!

New Features
+ Robust impactors for higher mass concentration range
+ Audible and visual alarms
+ 0.8µm DPM impactor
+ High capacity “smart” battery
+ Color OLED display

Features and Benefits
+ Real-time mass concentration measurement and data logging for “in-the-field” data analysis
+ Push button menu operation or programmable through newly improved TrakPro™ v5 Data Analysis Software
+ User-selectable alarm levels to alert workers to high aerosol concentrations
+ Newly designed robust impactors enable reliable size fraction measurements at higher aerosol concentrations over longer run times
+ Model AM520i designed and tested to pass Intrinsic safety requirements as established by IEC (International Electrotechnical Commission)—see TSI App Note EXPMN-017 for a basic understanding of intrinsic safety

Dare to Compare!
User-settable audible and visual alarms as well as newly designed impactors, for more size fraction options, make this instrument a valuable tool for workplace exposure monitoring. The new impactors provide reliable size fraction at a much higher mass concentration, allowing a longer run time with improved accuracy.

DPM Study
November 12, 2013

Time History — Graphically displayed, logged data can display high and low exposure concentrations that cannot be identified with traditional gravimetric sampling. This example of actual customer data illustrates the value of seeing what time peak exposure occurred. This enables an industrial hygienist to investigate the cause of the spike at 12:00 and recommend corrective actions specific to the cause of the exposure without delay.
### Sensitivity

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor Type</td>
<td>90° light scattering, 650 nm laser diode</td>
</tr>
<tr>
<td>Calibration</td>
<td>Calibrated against a gravimetric reference using the respirable fraction of standard ISO 12103-1, A1 Test Dust</td>
</tr>
</tbody>
</table>

### Calibration

Calibrated against a gravimetric reference using the respirable fraction of standard ISO 12103-1, A1 Test Dust.

### Aerosol

- **Concentration Range**: 0.001 to 100 mg/m³
- **Particle Size Range**: 0.1 to 10 µm
- **Minimum Resolution**: 0.001 mg/m³
- **Zero Stability**: ±0.001 mg/m³ over 24 hours using 10 second time constant

### Temperature Coefficient

Approximately +0.0005 mg/m³ per °C (for variations from temperature at which instrument was last zeroed)

### Flow Rate

- **Range**: User-adjustable, 0 to 1.8 liters/min (L/min)
- **Note**: Upper range is dependent on impactor or cyclone attached to the SidePak AM520/520i Monitor

### Temperature Range

- **Operating Range**: 32° F to 120° F (0° C to 50° C)
- **Storage Range**: -4° F to 140° F (-20° C to 60° C)

### Operational Humidity

- **Range**: 0 to 95% RH, non-condensing

### Time Constant (OLED Display)

- **Range**: User-adjustable, from 1 to 60 seconds

### Built-in Inlets

- **Standard inlet**: Not size-specific
- **PM₁₀ impactor**: 50% cut-off at 1.0 µm
- **PM₂.5 impactor**: 50% cut-off at 2.5 µm
- **PM₁.0 impactor**: 50% cut-off at 5.0 µm
- **PM₀.5 impactor**: 50% cut-off at 10.0 µm

### Attachable Cyclones

- **4 µm Dorr-Oliver**: 50% cut-off at 4.0 µm
- **0.8 µm DPM**: 50% cut-off at 0.8 µm

### Alarms

- **Alarm Types**: General, STEL
- **Default Settings**: 0.5 mg/m³, 1 mg/m³, 3 mg/m³, 5 mg/m³, 15 mg/m³, Off
- **Programmable from 0.001 to 999 mg/m³ through TrakPro Software

- **Alarm Indicator**: 95 dB(A) (at one foot) audible horn, blinking red LED, flashing red OLED display
- **Ringback Delay**: 30 sec, 1 min, 3 min, 5 min, 10 min, Off

### Data Logging

- **Data Points**: Approx. 80,000 (55 days logging once per minute)
- **Logging Interval**: User-adjustable, from 1 second to 60 minutes

### User-Select Calibration Factors

- **Factory Setting**: 1.0 (non-adjustable)
- **Ambient Setting**: 0.38 (non-adjustable)
- **User-Defined Settings**: 5, with user-defined labels via TrakPro Software
- **Range**: 0.1 to 10.0, user-adjustable

### Physical

- **External Dimensions**: 5.1 x 3.7 x 3.1 inch
- **Weight**: 22 oz (0.62 kg) with 803322 battery
- **Display**: 160 x 128 resolution color OLED display
- **Tripod Mounting Nut**: ¼-20 female thread

### Power Supply (p/n 803302)

- **Input Voltage Range**: 100 to 240 VAC, 50 to 60 Hz
- **Output Voltage**: 12 VDC @ 3.0A

### Data Logging

Approx. 80,000 (55 days logging once per minute)

### Communications Interface

- **Type**: USB 2.0
- **Connector, Instrument**: USB Micro-B (socket)

### Minimum Computer Requirements for TrakPro Software

- **Communications Port**: Universal Serial Bus (USB) v2.0 or higher
- **Operating System**: Microsoft Windows® 7, 8, or 10 (32-bit or 64-bit) operating systems

### Approvals

- **Immunity**: EN61326-1:2013
- **Emissions**: EN61326-1:2013 Class B
- **Safety**: IEC 60101-2-10:2014

### Intrinsic Safety

- **Certifications**: IECEx, ATEX, CSA, IECEx SIM-19.0009X

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