

SIDEPAK™ PERSONAL AEROSOL MONITOR MODELS AM520 AND AM520i



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 PM₁₀, Respirable (PM₄), PM₅ (China Respirable), PM_{2.5}, PM₁ 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

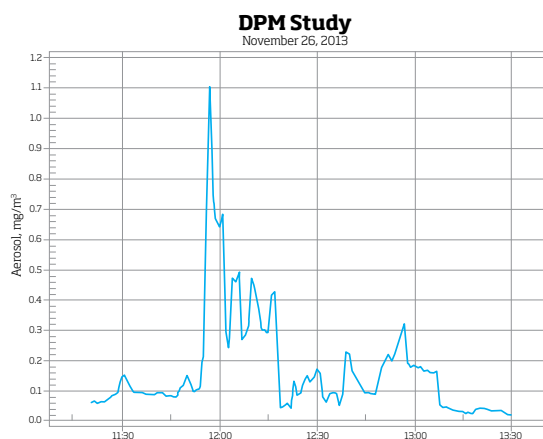
- + Robust impactors for higher mass concentration range
- + Audible and visual alarms
- + 0.8µm DPM impactor
- + High capacity "smart" battery
- + Color OLED display

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.



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.



UNDERSTANDING, ACCELERATED

SPECIFICATIONS

SIDEPAK™ PERSONAL AEROSOL MONITOR MODELS AM520 AND AM520i

Sensitivity

Sensor Type 90° light scattering, 650 nm laser diode
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 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
PM_{1.0} impactor 50% cut-off at 1.0 µm
PM_{2.5} impactor 50% cut-off at 2.5 µm
PM_{5.0} impactor 50% cut-off at 5.0 µm
PM₁₀ 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 dBA (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
129.5 mm x 94 mm x 78.4 mm with 803322 battery
Weight 22 oz (0.62 kg) with 803322 battery
Display 160 x 128 resolution color OLED display
Tripod Mounting Nut ¼-20 female thread

Battery Pack (Model AM520 p/n 803300, Model AM520i p/n 803322)

Rating 5100 mAh Li-Ion Pack
Run Time Greater than 20 hours at 1.7Lpm with a PM_{2.5} impactor
Charge Time 4.0 hours (typical with a fully depleted battery)

Power Supply (p/n 803302)

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

Maintenance

Factory Clean/Calibrate Recommended annually
User Zero Calibration Before each use
User Flow Calibration As needed with use of inlet conditioner

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 61010-1:2010
IEC 60825-1:2014

INTRINSICALLY SAFE SIDEPAK AM520i PERSONAL AEROSOL MONITOR

See specifications sheet for more details. Rated for use in atmospheres known to contain flammable gases and vapors, flammable fibers and flammable dust.

Explanation of intrinsic safety rating – Global Zone Rating: Ex ia IIC T4 Ga (see TSI App Note EXPMN-016 for further explanation of Model AM520i intrinsic safety rating and see TSI App Note EXPMN-017 for a basic understanding of intrinsic safety)

Certifications – IECEx, ATEX, CSA, IECEx SIM-19.0009X



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