

# AEROCET 531S Particle Mass Profiler & Counter

Two Aerosol Measurements in One Handheld Instrument

The AEROCET 531S is a full-featured, battery operated, handheld **mass monitor** or **particle counter**. This amazing unit simultaneously measures 6 mass concentration ranges (PM1, PM2.5, PM4, PM7, PM10 and TSP) or five particle count sizes (0.3µm, 0.5µm, 1.0µm, 5.0µm and 10µm). View sample history data in either mode.

## Key Features:

### Aerosol Mass and Particle Count Measurements in a Single Handheld Unit

The AEROCET 531S is a small, handheld, battery operated, and completely portable unit. This unit provides both particle counts and mass PM measurements.

### Six Mass Ranges and Five Particle Sizes

Six important mass size ranges (PM1, PM2.5, PM4, PM7, PM10, and TSP) are displayed in mass mode as well as five popular particle sizes in count mode.

### Tailored Mass Conversion

The particle counts from eight size ranges are converted to mass using a proprietary algorithm for typical-density aerosols. Accommodation for special particulate with different densities is provided through user-programmable "K-factors."

### Flexible Data Interfaces

The AEROCET 531S stores over 6,000 records. These records can be viewed on the display, or transferred to a computer via USB or RS232. Our included Comet download utility makes file transfers easy. Import sample data into a spreadsheet or print hard copies using the optional G3115 printer.

### Temperature and Relative Humidity Option

A plug-and-play option that immediately adds ambient temperature and relative humidity capabilities to the displayed and logged data.



## Applications:

- Controlled Environments
- Indoor Air Quality
- Industrial/Occupational Hygiene
- HVAC Applications
- Hospitals & Clinics
- Filter Testing

Note: Not recommended for continuous outdoor use.  
Avoid sampling in rainy or foggy conditions.



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## Measurements & Specifications:

### OPERATING PRINCIPLE

Counts individual particles using scattered laser light and calculates the equivalent mass concentration using a proprietary algorithm

### PERFORMANCE

#### Mass Mode

Mass Concentration Ranges PM1, PM2.5, PM4, PM7, PM10, and TSP  
Sensitivity High = 0.3 $\mu$ m, Low = 0.5 $\mu$ m  
Concentration Limit 0 – 1,000  $\mu$ g/m<sup>3</sup>  
Sample Time 1 minute

Note: Measurement accuracy requires use of appropriate K-Factor for the material being measured.

#### Particle Count Mode

Particle Size Ranges High sensitivity: 0.3 $\mu$ m, 0.5 $\mu$ m, 1.0 $\mu$ m, 5.0 $\mu$ m and 10 $\mu$ m  
Low sensitivity: 0.5 $\mu$ m, 1.0 $\mu$ m, 5.0 $\mu$ m and 10.0 $\mu$ m  
Concentration Limit 0 – 3,000,000 particles per cubic foot (105,900 particles/L)  
Sample Time 1 minute  
Size Accuracy  $\pm$  10%  
Sensitivity User selectable (0.3 $\mu$ m / 0.5 $\mu$ m)  
Flow Rate 0.1 cfm (2.83 lpm)

### ELECTRICAL

Light Source Laser diode, 90 mW, 780 nm  
Battery Pack 7.4V Li-ion battery pack  
Battery Life 6 hours continuous operation  
Up to 20 hours of typical (intermittent) operation.  
AC Adapter/Charger Li-ion battery charger, 100 – 240 VAC, 50/60Hz, 0.2A  
Communications RS-232, USB  
Certifications Meets or exceeds CE and ISO 21501

### INTERFACE

Display / Keyboard 16-character  $\times$  4-line LCD / 7-key membrane keypad

### PHYSICAL

Size Height = 6.25" (15.9 cm) Width = 4.0" (10.2 cm)  
Thickness = 2.1" (5.4 cm)  
Weight 2.0 lbs - 32oz (0.9 kg)

### ENVIRONMENTAL

Operating Temperature 0° to +50°C  
Relative Humidity < 95% (non-condensing)  
Storage Temperature -20° to +60°C

### SUPPLIED ACCESSORIES

User Manual	Comet Communications Software	USB Cable
Isokinetic Sample Probe	Zero Particulate Filter	AC Adapter / Battery Charger
Carrying Case		

### OPTIONAL ACCESSORIES

RH & Temperature Probe	(PN G3120)
Portable Printer	(PN G3115)
Flow Meter	(PN 9801)
Custom Serial Cable	(PN 3228)
Wall/Tripod Mount	(PN 8956-1)

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