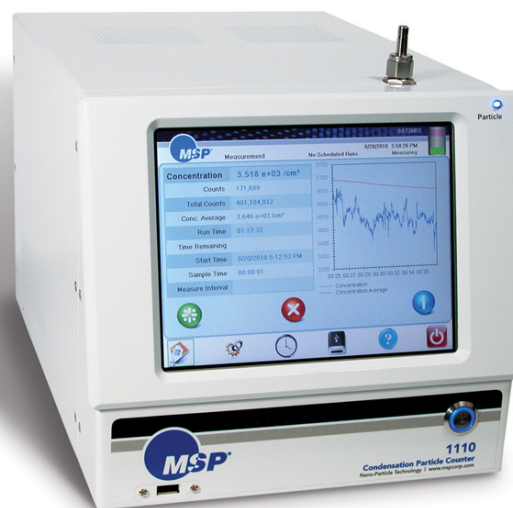




PRODUCT INFORMATION

Models 1110 and 1120 — WCPC

- General-purpose, water-based condensation particle counters (WCPC).
- Available in two models for counting single particles to 10^6 particles per second over a wide range of concentrations:
 - M1110 with 3.0 L/min sampling flow rate
 - M1120 with 1.0 L/min sampling flow rate
- Touch-screen control, advanced software and many user-friendly features.



DESCRIPTION

The Model 1110 and 1120 WCPC are condensation particle counters using water as the working fluid. The M1110 has a lower detection limit of 12 nm at a sampling flow rate of 3.0 L/min, while the M1120 can detect particles as small as 8 nm at a sample flow rate of 1.0 L/min. Both operate on the unique single-flow mixing approach using a rotating flow of warm saturated aerosol in a cold-wall condenser to create cooling, mixing and condensation particle growth.

Both instruments are available in a package of a modest size. With a large 8" touch-screen interface, a robust fluid handling system and water as a benign working fluid, the Model 1110 and 1120 are user-friendly and environmentally-friendly instruments for contaminant particle detection in cleanroom and high purity gas systems as well as for aerosol measurement in laboratory research and ambient air monitoring applications.

BENEFITS

Superb Counting – Single-particle counting with real-time coincidence correction for accurate measurement at high particle number concentrations.

Low Maintenance – Continuous operation for 10 to 20 days with just 1 L of water. Simple, robust water management minimizes accidental drying of wick material and virtually eliminates flooding, thereby minimizing downtime.

User-Friendly – Touch-screen control of advanced software facilitates measurement, data analysis, PDF report generation, and data transfer via USB.

Environmentally Friendly – With water as the working fluid and HEPA-filtering of the exhaust, these CPCs are suitable for use in the cleanest indoor or outdoor environments.

FEATURES

- Large 8" (200 mm) touch-screen color display
- Low water consumption (~ 2 to 4 mL/hr)
- Simple, robust water management system
- Removable wicking material
- Advanced, GUI-based software

SPECIFICATIONS (Subject to change without notice)

Particle Detection

Min. Detectable Particle Diameter (D ₅₀)	M1110: 12 nm, verified with DMA-classified Ag aerosol M1120: 8 nm, verified with DMA-classified Ag aerosol (4 nm for NaCl aerosol)
False Count Rate	<0.0001 particles/cm ³ (<0.1 particles/L), 1-hour average
Particle Concentration Range	M1110: 0 to 2x10 ⁴ particles/cm ³ with real-time coincidence correction M1120: 0 to 6x10 ⁴ particles/cm ³ with real-time coincidence correction
Particle Concentration Accuracy	M1110: ±10% at <2x10 ⁴ particles/cm ³ M1120: ±10% at <6x10 ⁴ particles/cm ³
Response Time	M1110: <6 seconds to 95% for step change in concentration M1120: <3 seconds to 95% for step change in concentration

Aerosol Flow

Sampling Flow Rate	M1110: 3.0 L/min M1120: 1.0 L/min
Aerosol Medium	Air, N ₂
Connection	¼" Swagelok (stainless steel), top of cabinet
Flow Source	Internal rotary vane pump
Flow Control	Internal pump controlled to calibrated pressure drop across optics nozzle.

Liquid

Condensing Fluid	Ultra-pure water
Filling System	Internal reservoir filled by internal micro-diaphragm liquid pump, external supply bottle connected via rear panel
Liquid Consumption Rate	M1110: 4 mL/hr; M1120: 2 mL/hr

Operating Environment

Ambient Temperature Range	10 to 40°C (41 to 104°F)
Ambient Humidity Range	0 to 90% RH, non-condensing
Inlet Pressure (Absolute)	80 to 110 kPa
Inlet Pressure (Gauge)	±10 kPa

User Interface

Communications	RS-232 (9-pin, D-sub connector), Ethernet (RJ45 connector)
Front Panel Display	8.4" touch screen, SVGA
LED Indicators	Particle
Buttons	Power switch (front panel)
Front Panel Connections	USB
Rear Panel Connections	Power, com port, Ethernet port, water supply, water drain, pump exhaust
Software	GUI-based software with Measurement, System Status, Schedule, Datalog, and Alarm user interfaces.

Facility

Dimensions (WxDxH)	260 x 380 x 250 mm (10 x 15 x 10 in.)
Weight	M1110: 11kg (25 lbs) M1120: 9kg (20lbs)
Power Requirements	M1110: 90-264 VAC, 47-67 Hz, 200 W M1120: 90-264 VAC, 47-67 Hz, 150 W

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