



PRODUCT INFORMATION Model 1110 — WCPC

- Water-based condensation particle counter (WCPC) optimized for particle measurements in high-purity gases.
- High flow of 3.0 L/min for rapid gas collection.
- Low false count rate optimized for cleanroom and high purity gas systems.
- Touch-screen control, advanced software and many user-friendly features.



DESCRIPTION

The Model 1110 condensation particle counter uses water as the working fluid. It has a lower detection limit of 14 nm at a sampling flow rate of 3.0 L/min. It operates on the unique, patented, 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.

With a large 8" touch-screen interface, a robust fluid handling system and water as a benign working fluid, the Model 1110 is a user-friendly and environmentally-friendly instrument for contaminant particle detection in cleanroom and high purity gas systems.

BENEFITS

Superb Counting – Single-particle counting with real-time coincidence correction for accurate measurement and an ultra-low false count rate optimized for high purity gas applications.

Low Maintenance – Continuous operation for 10 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 (~ 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)	14 nm, verified with DMA-classified Silica (NanoSilica™) aerosol
False Count Rate	< 2.22e-05 particles/cm ³ (< 4 particles/hr of operation)*
Particle Concentration Range	0 to 2x10 ⁴ particles/cm ³ with real-time coincidence correction
Particle Concentration Accuracy	±10% at <2x10 ⁴ particles/cm ³
Response Time	<6 seconds to 95% for step change in concentration

Aerosol Flow

Sampling Flow Rate	3.0 L/min
Aerosol Medium	Air, N ₂ , Argon
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	Distilled water
Filling System	Internal reservoir filled by internal micro-diaphragm liquid pump, external supply bottle connected via rear panel
Liquid Consumption Rate	4 mL/hr

Operating Environment

Ambient Temperature Range	10 to 28°C (50 to 82.4°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	11kg (25 lbs)
Power Requirements	90-264 VAC, 47-67 Hz, 200W

*False Count Rate test performed using triple-filtered compressed air and an isokinetic gas sampler in a low-vibration environment over 24 hour period of time at 70 °F.

MSP Corporation

5910 Rice Creek Parkway, Suite 300

Shoreview, Minnesota 55126, U. S. A.

Phone: 651.287.8100; Fax: 651.287.8140

sales@mspcorp.com; www.mspcorp.com

MSP Product Information Bulletin, MSP-PI-1110, Rev. B; Copyright © 2011, US Patent 8,465,791 B2; The MSP Logo is a Registered Trademark of MSP.