



® Knowledge Beyond Measure.

Water-Based Condensation Particle Counter

Model 3789



Expand your research capabilities.

Water-Based Condensation Particle Counters (WCPCs) deliver accurate concentrations of particles in gases while making use of safe, eco-friendly and easily available distilled water. When combined with a particle sizer, nanoparticle size distributions and concentration can be quantified from <2 nm to nearly 1,000 nm.

The 3rd generation of WCPCs comes with numerous enhancements:

- Unprecedented reliability
- Low maintenance
- Adjustable counting efficiency

Features and Benefits

- Selectable counting efficiencies
- Predefined setpoints of 50% counting efficiency for 2.2 nm and 7 nm (sucrose)
- Single particle counting up to 2×10^5 particles/cm³
- Distilled water as convenient, eco-friendly and safe working fluid
- 50 Hz data acquisition
- Built-in Scanning Mobility Particle Sizer™ (SMPS™) compatibility
- Large internal memory for 1+ year of data
- Remote control and data download through Ethernet

Applications

TSI's versatile WCPC is suitable for most particle counting applications, but its ability to detect down to 2.2 nanometers make this WCPC ideally suited for:

- Particle formation and growth studies
- Nanotechnology research or process monitoring
- Inhalation or exposure chamber studies
- Long-term, uninterrupted air quality monitoring
- Parts cleanliness testing in semiconductor manufacturing
- High-purity process gas testing in semiconductor manufacturing

Specifications

Water-Based Condensation Particle Counter

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Particle Size Range

User-selectable 2.2 nm and 7 nm min. detectable particle size (D50), verified with monodisperse sucrose particles

Custom setpoint for growth section temperatures

Particle Concentration Range

Up to 200,000 (2x10⁵) particles/cm³

Single particle counting with continuous live-time coincidence correction

Particle Concentration Accuracy

±5% at <200,000 particles/cm³

False Background Counts

<0.01 particles/cm³ based on 12 hour average

Response Time

Response time described in percentage to concentration step change ~0.6 s for 90% (T10-90, T90-10)

Flow System

0.3 L/min aerosol flow

0.6 or 1.5 L/min inlet flow

2.5 L/min inlet flow option

Liquid System

Distilled water is used as working fluid

Water consumption approx. 43 mL per 24 h

Communication Interfaces

Embedded touch-display

Pulse output: BNC connector, TTL level pulse, nominally 350 nanoseconds wide

USB type C to connect CPC directly to computer operating control software Aerosol Instrument Manager (included)

Ethernet port (8-wire RJ-45 jack, 10/100 BASE-T, TCP/IP) for remote connection. Automated configuration (DHCP) of network settings

Ambient Operating Conditions

Temperature 10 to 35°C (50 to 95°F)

Humidity 0 to 90% RH, noncondensing

Pressure 75 to 105 kPa (0.75 to 1.05 atm)

Specifications are subject to change without notice.

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Accessories

Required

Electrical: 100 to 240 VAC, 50/60 Hz, 200 W maximum

Auto recovery from power failure built in

Included

Fill and drain bottles

Aerosol Instrument Manager for count products license

USB C to A cable for connecting to a computer

Data Storage

Internal memory lasts for approx. 1 year of data at 50 Hz data rate

Dimensions (H x W x D)

30.7 cm x 18.3 cm x 40.4 cm (12.1 in. x 7.2 in. x 15.9 in.) without fill and drain bottle attached

Weight

8.2 kg (18.2 lbs)

To Order

Water-Based Condensation Particle Counter

Specify	Description
3789	WCPC

Optional Accessories

Specify	Description
3789-WKIT	Wick replacement kit
3750200	Sampling System for Atmospheric Aerosol
RHT3000	Aerosol Humidity and Temperature Sensor



Knowledge Beyond Measure.

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