

# WATER-BASED CONDENSATION PARTICLE COUNTER MODEL 3789

EXPAND YOUR RESEARCH CAPABILITIES

Water-based CPCs 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 3<sup>rd</sup> generation of water-based CPC 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)
- + User-defined counting efficiency setting saved
- + Single particle counting up to  $2 \times 10^5$  particles/cm<sup>3</sup>
- + Distilled water as convenient, eco-friendly and safe working fluid
- + 50 Hz data acquisition
- + Built-in SMPS™ spectrometer compatibility
- + Large internal memory for 1+ year of data
- + Remote control and data download through Ethernet

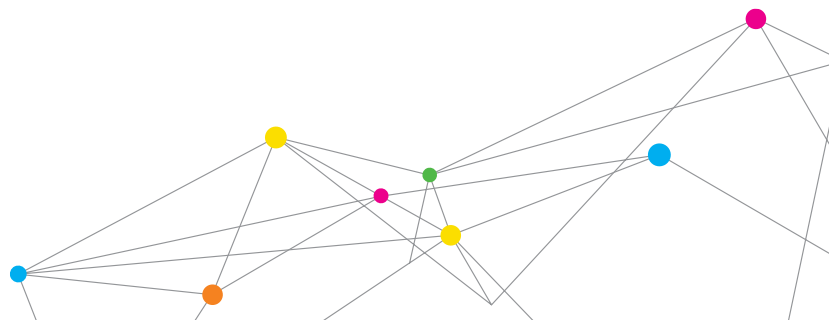
## Applications

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

- + Particle formation and growth studies
- + Nanotechnology research or process monitoring
- + Inhalation or exposure chamber studies
- + Long-term, uninterrupted air quality monitoring



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# SPECIFICATIONS

## WATER-BASED CONDENSATION PARTICLE COUNTER MODEL 3789

### 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 (2x10<sup>5</sup>) particles/cm<sup>3</sup>

Single particle counting with continuous live-time coincidence correction

### Particle Concentration Accuracy

±5% at <200,000 particles/cm<sup>3</sup>

### False Background Counts

<0.01 particles/cm<sup>3</sup> 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 24h

### 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)

### 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	Versatile W-CPC

#### Optional Accessories

Specify	Description
3789-WKIT	Wick replacement kit
3772200	Environmental sampling system

Specifications are subject to change without notice.

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