



Knowledge Beyond Measure.

# Condensation Particle Counter

Model 3750



## The gold standard in nanoparticle counting for decades: the Standard CPC

As our only full-flow Condensation Particle Counter (CPC), the 3750 provides optimal counting statistics, making it ideal for low-concentration applications.

For decades, TSI® Condensation Particle Counters (CPCs) have been the gold standard in nanoparticle counting. The CPC 3750, our latest innovation, continues this legacy of excellence.

Using industry-standard butanol as the working fluid, the CPC 3750 is the next generation of a CPC design that has served the nanoparticle counting community for decades. Its D50 of 7 nm provides visibility into concentrations of sub-10 nm particles, granting you invaluable insights into your nanoparticle samples. Its single flow mode – 1 L/min – simplifies your operation.

The CPC 3750 offers flexibility in operation—it can be utilized with software or independently. When used without software, data is stored directly on the CPC for future access.

Furthermore, the CPC 3750 is an important component in the most common Scanning Mobility Particle Sizer™ (SMPS™) configuration (along with TSI's Long DMA (3081A)). This established configuration has a proven track record across a wide range of measurement applications.

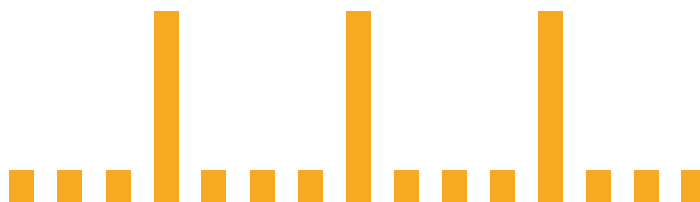
In summary, the CPC 3750 offers an extended concentration range, optimal counting statistics, and seamless compatibility with SMPS™ technology. As the ultimate choice for researchers, scientists, and professionals in various fields, it's your key to advancing nanoparticle counting in your work. Trust in the reliability and precision that TSI® instruments have consistently delivered through the years.

## Features and Benefits

- Extended concentration range up to 100,000 particles/cm<sup>3</sup>
- Extended size range down to 7 nm (D50) - improved counting efficiency for SMPS™ spectrometer
- Data rate up to 50 Hz - capture highly dynamic processes
- Reliable internal memory storing weeks of data for continuous measurement
- Improved diagnostics with Pulse Height Monitoring
- Fast response to rapid changes in aerosol concentration (T10-90 < 1 sec)
- Automatically shuts off of flow when inlet is blocked
- Upgradeable to 1nm-CPC with compatible Nano Enhancer

## Applications

- Filter testing
- Basic aerosol research
- Combustion
- Health and atmospheric studies



## Specifications

# Condensation Particle Counter

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### Particle Size Range

7 nm minimum detectable particle size (D50),  
verified with monodisperse sucrose particles

>3 µm max. detectable particle size

### Particle Concentration Range

Up to 100,000 (1x10<sup>5</sup>) particles/cm<sup>3</sup>

Single particle counting with continuous  
live-time coincidence correction

### Particle Concentration Accuracy

±5% at <100,000 particles/cm<sup>3</sup>

### False Background Counts

<0.001 particles/cm<sup>3</sup> based on 12-hour average

### Response Time

(Response time is described as a percentage  
of a concentration step change)

<1 second for 90% to 10% (T10-90, T90-10)

~2 seconds for 0 to 95% (T95)

### Flow System

1.0 ± 0.05 L/min inlet and counting flow (volumetric)

Requires external vacuum source capable of 60 kPa (18 in Hg)  
minimum gauge (below atmospheric pressure); Pump model 3032  
and 3032-EC, listed under 'Accessories', meet this requirement

### Liquid System

Butanol (n-Butyl alcohol, not included) used as working fluid

Internal water removal pump to remove condensate; beneficial  
in humid environments

### Data Storage

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

### Communication Interfaces

Embedded touch-display

USB-C

Ethernet

Pulse output

USB-B- a wifi adapter can be used

### 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)

### Electrical

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

### Accessories

3333-10

RHT3000

3750200

375X-2LBOTTLE

3750200AIM11CPCMONTRIAL

AIM11CPCMONITORING

Aerosol Diluter 10:1

Aerosol Humidity and

Temperature Sensor

Sampling System for

Atmospheric Particles

2L fill bottle

CPC Monitoring Software Trial:

permits current TSI® customers

already using AIM 11 to temporarily

access monitoring specific

software features

Aerosol Instrument Manager

(monitoring license)

### Dimensions (H x W x D)

27.5 cm x 18.3 cm x 29.9 cm (10.83 in. x 7.21 in. x 11.76 in.),  
not including fill bottle and bracket

### Weight

~6.6 kg (~14.6 lbs)

### To Order

#### Specify

3750

3750-MKIT

3750-WKIT

3032

3032-EC

3032-1

#### Description

Condensation Particle Counter

Maintenance Kit for CPC

Wick Replacement Kit for CPC

Vacuum pump 110 V (US)

Vacuum pump 230 V (EU)

Vacuum pump 230 V (UK)

Specifications are subject to change without notice.

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