



® 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/cm³
- 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 1 nm-CPC with compatible Nano Enhancer

Applications

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



Specifications

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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 (1x10⁵) particles/cm³

Single particle counting with continuous live-time coincidence correction

Particle Concentration Accuracy

±5% at <100,000 particles/cm³

False Background Counts

<0.001 particles/cm³ 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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Knowledge Beyond Measure.

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