



® Knowledge Beyond Measure.

Hand-Held Condensation Particle Counter

Model 3007



Designed to measure particle concentrations in the field.

The Condensation Particle Counter 3007 is a hand-held particle counter intended for measuring ultrafine particles in a wide variety of applications. Its small size and ergonomic design make it the best choice for short-term outdoor and indoor air quality monitoring, nanoparticle work area surveys, and mobile aerosol research. This highly portable condensation particle counter (CPC) weighs only 1.7 kg (3.8 pounds).

Features and Benefits

- Battery-powered operation
- Programmable data-logging capabilities
- Particle size range of 0.01 to $>1.0 \mu\text{m}$
- Concentration range of 0 to 100,000 particles/cm³
- Built-in LCD display
- RS-232 serial data port

Applications

TSI® offers the most comprehensive line of CPCs available. Building on a tradition of over 40 years experience, TSI® CPCs have become the standard to which all others are compared.

General Applications Include

- Basic aerosol research
- Filter and air cleaner testing
- Atmospheric and climate studies
- Particle formation and growth studies
- Combustion and engine exhaust studies
- Inhalation or exposure chamber studies
- Health effects studies



Specifications

Hand-Held Condensation Particle Counter

Model 3007

Particle Size Range

Min. Detectable Particle (D₅₀) 10 nm
Max. Detectable Particle >1 μm

Concentration Range

0 to 100,000 particles/cm³

Minimum Displayable Concentration Value

1 particle/cm³

Concentration Accuracy

±20%

False Background Counts

<0.01 particles/cm³

Response Time

<9 sec for 95% response

Environmental Operating Conditions

Ambient Temperature 10 to 35°C (50 to 95°F)
Storage Temperature -40 to 70°C (-40 to 160°F)

Flow Rate

Detected Aerosol 100 cm³/min
Inlet 700 cm³/min (nominal)

Aerosol Inlet Diameter

¼-in. O.D.

Power Requirement

Battery Type 6 AA alkaline or rechargeable
Battery Life 5 hours (alkaline batteries at 21°C)

Alcohol Requirement

Type 99.5%+ reagent-grade isopropyl alcohol
Hours Per Fill 6 hours at 21°C (70°F)

RS-232 Output

9600 Baud rate

Software

Supplied with TSI Aerosol Instrument Manager® software, CPC Module

Calibration check

Recommended annually

Dimensions (L x W x H)

CPC 29.2 cm x 14 cm x 14 cm
(11.5 in. x 5.5 in. x 5.5 in.)
Carrying Case 53 cm x 36 cm x 21 cm
(21 in. x 14 in. x 8.3 in.)

Weight

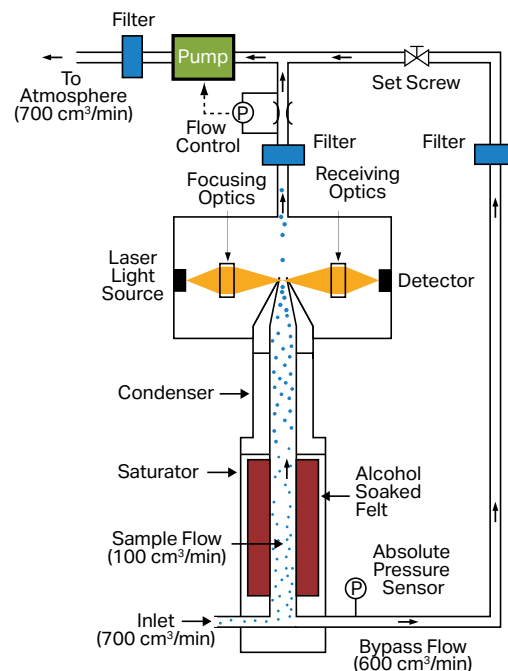
CPC with Batteries 1.7 kg (3.8 lbs)
Instrument with Accessories in Case 7.7 kg (16.8 lbs)

Software

Every model 3007 is supplied with Aerosol Instrument Manager® software designed for use with Microsoft® Windows® operating systems. The software is used for instrument control and provides data collection, management, and export capabilities, as well as several choices for data display.

Operation

In general, laminar-flow CPCs operate by drawing an aerosol sample continuously through a heated saturator, in which alcohol is vaporized and diffuses into the sample stream. Together, the aerosol sample and alcohol vapor pass into a cooled condenser where the alcohol vapor becomes supersaturated and ready to condense. Particles present in the sample stream serve as condensation sites for the alcohol vapor. Once condensation begins, particles grow quickly into larger alcohol droplets and pass through an optical detector where they are counted easily.



Distributed by:

Kenelec Scientific Pty Ltd
1300 73 22 33
sales@kenelec.com.au
www.kenelec.com.au



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TSI Incorporated - Visit our website www.tsi.com for more information.

USA Tel: +1 800 874 2811
UK Tel: +44 149 4 459200
France Tel: +33 1 41 19 21 99
Germany Tel: +49 241 523030

India Tel: +91 80 67877200
China Tel: +86 10 8219 7688
Singapore Tel: +65 6595 6388

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