



# Lasair<sup>®</sup> III 110

Aerosol Particle Counter



The Lasair<sup>®</sup> III 110 is a laser diode-based true 0.1  $\mu\text{m}$  particle counter with 1.0 CFM flow rate.

With a comprehensive set of features and unequalled accuracy, the Lasair III 110 offers reduced operating costs and the reliability and longevity to support its three-year laser warranty.

## FEATURES

- Diode laser
- 8 user-adjustable sizing channels from 0.1 – 5.0  $\mu\text{m}$
- Saves up to 10,000 samples for review, sorting, data filtering, and printing
- USB data download to flash memory key
- Built-in thermal printer
- Large, 8.4" color touchscreen display for simplified use
- Quiet carbon-free blower/pump for portable applications
- Integrates up to 4 environmental sensors
- Optional high-efficiency exhaust filter for ISO Class 1 – 2
- Optional onboard batteries for over 6 hours of continuous mobile use

## BENEFITS

### Reduce Defects

- Real-time measurement of yield-impacting particles
- Use as mobile counter to localize source of particles
- Patented smart flow technology eliminates traditional undercounting errors in manifold sampling
- Full range of accessories for monitoring in different applications
- Actual detection of 0.1  $\mu\text{m}$  particles

### Increase Productivity

- Industry-leading battery life for continuous mobile use
- Saving/reloading recipes reduces time to certify cleanroom
- Control cleanroom monitoring remotely via web browser: set-up, sample, display, print, download data, and upload sample recipes
- Quiet operation improves work environment
- Calculations and reports for ISO 14644-1 or FS 209E
- Interfaces with Facility Net software for comprehensive data management
- Data download to Excel or USB flash memory key

### Cost-Effective

- Use same particle counter for ISO Class 1 – 9 applications
- Eliminates need for frequent, costly laser cleaning
- Easy to clean/wipe down; designed to minimize particle traps
- Rugged, chemical-resistant, stainless steel casing
- Long-lasting cooled diode with 3-year laser warranty
- Optional critical orifice configuration can use house vacuum for aerosol manifold applications

## APPLICATIONS

- Cleanroom and mini-environment monitoring
- High-sensitivity applications
- Facility certification to ISO 14644-1 (including 2015 revision) or FS 209E
- Troubleshooting/mobile applications
- Manifold sampling (with Aerosol Manifold II)
- Process gas monitoring (with High Pressure Diffuser)
- Ultraclean zones (ISO 1–2)

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## Aerosol Particle Counter

## Specifications

<b>Channel thresholds</b>	0.1, 0.15, 0.2, 0.25, 0.3, 0.5, 1.0, and 5.0 $\mu\text{m}$ by default – All 8 channels are user-adjustable
<b>Counting efficiency</b>	50% @ 0.1 $\mu\text{m}$
<b>Flow rate</b>	1 CFM (28.3 LPM); monitored and adjusted electronically for portable applications
<b>Calibration</b>	Materials traceable to US National Institute of Standards and Technology (NIST); ISO 21501-4 Compliant
<b>Test methodology</b>	0.1 $\mu\text{m}$ particles verified by Differential Mobility Analysis; larger sizes verified by transmission electron microscopy
<b>Maximum concentration</b>	@ 10% coincidence loss: > 950,000/ft <sup>3</sup> (optional diluter required for ISO Class 8+); automatic coincidence alarm
<b>Zero count level</b>	Exceeds JIS (Japanese Industrial Standards), allowing use in ISO Class 1 and ISO Class 2 rooms
<b>Laser source</b>	Laser diode, 6 W (de-rated to 2.5 W), 810 nm, infrared
<b>Laser cooling</b>	Thermoelectric chilling (Peltier cooler), heat sink, dedicated cooling fan
<b>Warranty</b>	3-year warranty on laser module, 2-year warranty on other components
<b>Communication modes</b>	Ethernet (PMS Protocol, Modbus, Web Server) or RS-232; four 4-20 mA outputs (3 particle, 1 status); TTL/pulse output; USB key for CSV data download
<b>Environmental sensors</b>	Optional Temp/RH probe; integrates up to 4 external sensors via 4-20 mA input
<b>Display</b>	8.4" color VGA display (640 x 480); IR touchscreen CIP65 rated
<b>Display languages</b>	English, French, German, Italian, Japanese (Kanji), Korean, Spanish, Chinese (traditional or simplified), Russian, Polish, Portuguese
<b>Printer</b>	Built-in thermal printer
<b>Reports</b>	Sample print strips; final reports for ISO or FS 209 cleanroom qualification; averages of multiple runs; print-on-alarm; sampling configuration printouts
<b>Remote operation</b>	Use web browser to operate unit; save or load recipes
<b>Key software features</b>	Recipes, scheduled sampling, historical data filtering, sorting and review, password protection
<b>Data storage</b>	10,000 data sets (includes particle and environmental data, plus location, time, etc.)
<b>Data and sampling security</b>	Stored data records cannot be altered; sampling recipes can be password protected
<b>External surface</b>	Stainless steel chassis, glass display screen, and anodized aluminum bottom all ESA/ESD compliant
<b>Cleaning materials</b>	Bleach, ethyl/isopropyl alcohol, peroxide/quaternary ammonium solutions
<b>Monitor cleanliness</b>	Internally filters pump exhaust (99.99+% @ 0.1 $\mu\text{m}$ )
<b>Dimensions (l, w, h)</b>	11.6 x 19.3 x 13.7 in ( 29.5 x 49.0 x 34.8 cm)
<b>Weight</b>	34.5 lb (15.6 kg) without batteries; 38.5 lb (17.5 kg) with 4 optional batteries
<b>Power</b>	100 – 240 V, 3 A, 50 – 60 Hz; optional on-board batteries and external charger
<b>Operating environment and sample conditions</b>	Temperature: 59 – 86 °F (15 – 30 °C) Humidity: 1 – 95% non-condensing Ambient pressure @ altitudes from 0 – 7,000 ft (0 – 2,134 m)

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