

Lasair[®] III 110

Particle Counter



The Lasair[®] III 110 is a laser diode-based true 0.1 μm 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 μm
- 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 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 μm 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 minienvironment monitoring
- High-sensitivity applications
- Facility certification to ISO 14644-1 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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Specifications

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

Lasair[®] is a registered trademark of Particle Measuring Systems, Inc.
Particle Measuring Systems, Inc. reserves the right to change specifications without notice.

HEADQUARTERS

5475 Airport Blvd
Boulder, Colorado 80301 USA
T: +1 303 443 7100, +1 800 238 1801

Instrument Service & Support
E: +1 800 557 6363
Customer Response Center
T: +1 877 475 3317
E: info@pmeasuring.com

GLOBAL OFFICES

BRAZIL
T: +55 11 5188 8227
E: pmsbrazil@pmeasuring.com

CHINA
T: +86 21 6113 3600
E: pmschina@pmeasuring.com

FRANCE
T: +33 (0)6 82 99 17 98
E: pmsfrance@pmeasuring.com

GERMANY
T: +49 6151 6671 632
E: pmsgermany@pmeasuring.com

ITALY
T: +39 06 9053 0130
E: pmssrl@pmeasuring.com

JAPAN
T: +81 3 5298 8175
E: pmsjapan@pmeasuring.com

KOREA
T: +82 31 286 5790
E: pmskorea@pmeasuring.com

MEXICO
T: +52 55 2271 5106
E: pmsmexico@pmeasuring.com

NORDIC
T: +45 707 028 55
E: pmsnordic@pmeasuring.com

PUERTO RICO
T: +1 787 718 9096
E: pmspuertorico@pmeasuring.com

SINGAPORE
T: +65 6496 0330
E: pmssingapore@pmeasuring.com

TAIWAN
T: 886-3-5525300 Ext: 301
E: pmstaiwan@pmeasuring.com

UNITED KINGDOM
T: +44 1684 581 000
E: pmsemea@pmeasuring.com

