

Lasair® III 110 Inline

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.

BENEFITS

Reduce Defects

- Real-time measurement of yield-impacting particles
- Full range of accessories for monitoring in different applications
- Actual detection of 0.1 µm particles

Increase Productivity

- Quiet operation improves work environment
- Interfaces with Facility Net software for comprehensive data management

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
- Critical orifice configuration can use house vacuum for aerosol manifold applications

FEATURES

- Diode laser
- 8 user-adjustable sizing channels from 0.1 – 5.0 µm
- Integrates up to 4 environmental sensors

APPLICATIONS

- Cleanroom and minienvironment monitoring
- High-sensitivity applications
- Manifold sampling (with Aerosol Manifold II)
- Process gas monitoring (with High Pressure Diffuser)
- Ultraclean zones (ISO 1–2)
- Filter testing

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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)
Calibration	Materials traceable to US National Institute of Standards and Technology (NIST) ISO 21501-4 Compliant
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
Vacuum	1/4" barbed fitting. Requires > 15 in Hg
Warranty	3-year warranty on laser module, 2-year warranty on other components
Communication modes	Ethernet (PMS Protocol, Modbus TCP) or RS-232; four 4-20 mA outputs (3 particle, 1 status) Pulse/TTL Output
Environmental sensors	Optional Temp/RH probe; integrates up to 4 external sensors via 4-20 mA input
Remote operation	Use Facility Net software to control remotely
Data and sampling security	Stored data records cannot be altered; sampling recipes can be password protected
External surface	Stainless steel chassis and anodized aluminum chassis all ESA/ESD compliant
Cleaning materials	Bleach, ethyl/isopropyl alcohol, peroxide/quaternary ammonium solutions
Dimensions (l, w, h)	11.0 x 12.5 x 18.5 in (28.0 x 31.8 x 47.0 cm)
Weight	29.6 lb (13.4 kg)
Power	100 – 240 V, 3 A, 50 – 60 Hz
Operating environment and sample conditions	Temperature: 15 – 30 °C (59 - 86 °F); Humidity: 1 – 95% non-condensing; Ambient pressure @ altitudes from 0 – 7,000 ft (0 – 2,134 m)

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HEADQUARTERS

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

Instrument Service & Support
T: +1 800 557 6363

Customer Response Center
T: +1 877 475 3317
E: info@pmeasuring.com

www.pmeasuring.com
info@pmeasuring.com



**PARTICLE
MEASURING
SYSTEMS®**
a spectris company

GLOBAL OFFICES

AUSTRIA
T: +43 512 390 500
E: pmsaustria@pmeasuring.com

BENELUX
T: +32 10 23 71 56
E: pmsbelgium@pmeasuring.com

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

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

FRANCE
T: 33(0)1 60 10 32 96
E: pmsfrance@pmeasuring.com

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

ITALY
T: +39 06 9053 0130
E: pmsrl@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

SWITZERLAND
T: +41 71 987 01 01
E: pmsswitzerland@pmeasuring.com

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