

AES-1000 Continuous Particle Monitoring for USP 797 and Modular Clean Room Applications

The AES-1000 particle monitoring system provides near real time stable particle measurements at low cost. Measurement covers the range of ISO class 6 through ISO class 8. It uses a long life semiconductor laser to detect optical scatter by particles and an integral heater to provide continuous flow by thermal convection to provide a long maintenance free life. The AES-1000 is calibrated against JIS B 9921 and ASTM F 328-98 standards.



The AES-1000 System can report the number of particles or the particle concentration with respect to selected particle size limits using its Ethernet connection. Alarm set points may be set locally and alarms cancelled from the front panel for entry vestibules and other active areas.

At a fraction of the cost of traditional particle measuring systems, The AES-1000 can be strategically placed throughout the clean facility, and at all points where unwanted particles may be likely to enter the facility.

Why use the AES-1000?

Wide spread real-time permanently installed monitoring provides a new level of safety and security. With both local indication and alarms to alert operators to potential contamination dangers, and Ethernet connectivity to enhance enterprise visibility and highlight problem areas, the AES-1000 can guide data driven corrective action to improve the overall effectiveness of your particulate management plan.

The AES-1000 is ideal for buffer zone monitoring and management. Ensure active buffer zones meet ISO 6 or 7 before proceeding into ISO 5 space.

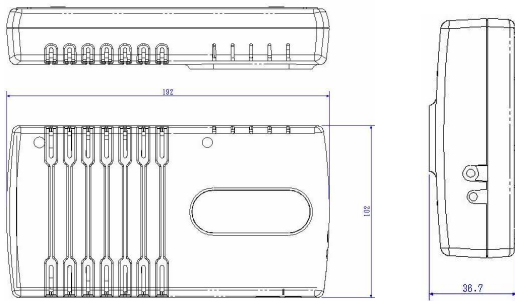
“USP Chapter 797, as it applies to clean room buffer zones, is general in nature but refers to the International Standards Organization, ISO-14644 standard for clean rooms. All Sterile compounding is to be performed in an ISO 5 (class 100) environment that is surrounded by an ISO 8 (Class 100,000) Buffer Zone (clean room), or ISO 7 (Class 10,000). A barrier isolator does not have to be contained in an ISO-rated space unless recommended by the manufacturer.

A “Buffer Zone” in the simplest form, is an environment that separates the compounding room from the surrounding ambient (unrated) area and is to be constructed from low-particle-generating materials that can withstand continuous cleaning. ISO standards require that the buffer zone be maintained under positive pressure and that airborne particles be limited in compliance with ISO 8 - ISO 7”.

Specification AES-1000 Optical Sensor

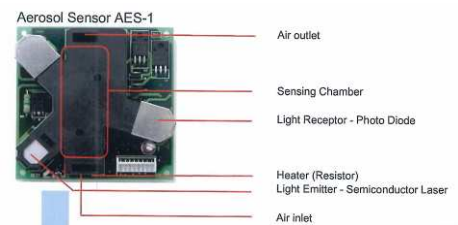
Type-03	Monitoring Particle Size 0.3μ and larger
Display	10 x LED lights shows equivalent of Class: 100(ISO 5), 1,000(ISO 6), 2,000, 3,000,5,000,10,000(ISO 7), 20,000, 30,000, 10,000, 100,000(ISO 8)
Sampling Method	Updraft airflow generated by built-in heater enables air sampling
Optics	Semiconductor Laser, 20,000 hour life
Alarm Display	Alarm LED light comes on when reaching to setting level
Alarm Output	TTL Open collector output in sync with alarm display
Interface	Ethernet X 1 port
Supply Voltage	12VDC+/-10% 500mA
Operating Temp/Humidity	0 to 40 deg. C, 30 to 80%rh

Configuration



AES-1000 = AES-1 + AES-IF-1

The key to the AES-1000 is the Particle measuring Engine. A heater establishes a steady air flow; particles enter at the bottom and exit at the top. A Laser illuminates the particles as they go by, and looks at scattering on two axes. A scattering event indicates a particle has passed through, and in combination with the Laser wavelength, the ratio of scatter determines the size.



Interface AES-IF-1



The AES-IF-1 Ethernet card built into the AES-1000 enables multiple particle monitors on the same network. Diagnostic and particle information can be logged and displayed.

Sample monitor screen

