
Superthin 3-Channel Handheld Particle Counter



HAL-HPC300

Features

- **Simultaneously measures 3 user configurable particle sizes**
- **Counting modes with cumulative / differential / concentration / average / auto-repeat / timer**
- **Up to 1500-data (500 sets) internal memory**
- **Excess-count-limit warning**
- **USB interface for data downloading and upgrading**
- **External digital temperature and humidity probe**

HAL-HPC300 Handheld Laser Particle Counters measures particles suspended in the air in real time with applications such as microelectronics, fine mechanics, optics, pharmaceutical, medical device, food processing, and aerospace. Because of its low-cost affordability, it is also widely used for indoor/outdoor air quality (IAQ) application. The basic operating principle of the HAL-HPC300 is that pulse signals generated from laser light scattering off aerosol particles are processed and counted, based on digital signal processing. The settings of measurement parameters as well as results displayed in **total counts**, **number concentration** or/and **mass concentration** (*new feature for IAQ application*) are all controlled and realized by an internal microprocessor (MCU). The HPC300 simultaneously measures three channel sizes that are configurable by a user. The data recorded in the embedded flash memory can be downloaded with supplied software through either a USB or RS232 interface.

The HAL-HPC300 was designed in the USA and is in compliance with the international standards (JIS B 9925:1997 and ISO14644-1) and has CE certification. The HPC300 instrument is very unique compared to other manufacturers in the market; it features high sensitivity, multiple functional capabilities, and is slim, lightweight and very user friendly.

Applications

- Clean environment monitoring
- Indoor air quality
- Test/Check filter seal and efficiency
- Trace contamination source
- Analysis of particle size distribution

Specifications

Light Source	Laser diode (>100,000 hours)
Sensitivity	0.3 μ m
Size Range	0.3 μ m~10 μ m
Channels	All three channels are user configurable (size selections from 0.3 μ m, 0.5 μ m, 0.7 μ m, 1.0 μ m, 2.0 μ m, 2.5 μ m, 5.0 μ m and 10 μ m)
Counting Efficiency	50 \pm 20% @0.3 μ m 100 \pm 10% @0.45 μ m
Coincidence Loss	<5% @70,000 Particles/Liter or <5% @2,000,000 particles/ft ³
Zero Count	<1 count per 5 minutes
Flow Rate	2.83 L /min (0.1cfm)
Sampling Time	User defined: (up to 59m59s) and auto repeat (up to 99 times)
Count Limit Warning	FED STD 209E (Class 1 ~ 100,000) or ISO 14644-1 (Class 2 ~ 9)
Sampling Mode	Cumulative, differential, concentration (counts/liter), mass concentration (optional), μ g/m ³ , can be interpreted as PM1, PM2.5, PM10 or TSP)
Error Indications	Excess count limit, optics contamination, loss of laser power, insufficient battery power
Interface	USB, RS232
Internal Memory	1500 measurement data (500 sets)
Power	Li-ion polymer rechargeable battery (7.4V/2800mAH) or 9VDC AC Adapter (100~240V input)
Max. Operating Time	Continuous operation > 5 hours with Li-ion battery
Dimensions	180 (H) x93 (W) x 46 (D) mm
Weight	< 950 grams (including battery)
Environmental Conditions	Operating: 5 ~ 45 °C, < 90%RH Storage: -20 ~ 65 °C, < 90%RH
Standard Accessories	AC adaptor, isokinetic probe, USB data cable, data download software (CD), NIST-traceable calibration certificate
Optional Accessories	Zero-count filter, digital temperature and humidity sensor probe, mini printer, printer cable, tripod, portable carry case
Mass Concentration Option	HAL-HPC300MS is capable of displaying particle concentration in μ g/m ³