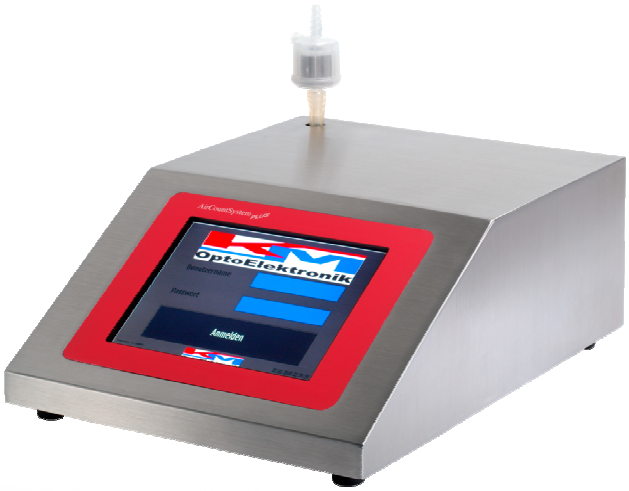
OptoElektronik GmbH

ACS *Plus*
High End Counter



User friendly - Easy to handle - Efficient

- Size range from 0.1 µm with a maximum of 16 freely selectable particle size channels
- Flow rate 1 CFM, optionally with 50 L/ min. or 100 L/ min.
- Built-in measuring data memory for 50.000 measurements
- Access authorization concept with password protection
- Software PAS for evaluation of the measured data via PC
- 8.4“ LCD TFT display
- Optionally with removable/ rechargeable Li-Ion batteries for easy operation at various measuring points
- CAN-BUS Interface for management of a network spanning up to 32 particle sensors (slaves) without need of additional hardware
- Weight: approx. 10 Kg
- Made in Germany by KM OptoElektronik GmbH

Hidden talents

Not every feature is obvious at first sight:

Bottom

- Grip plate for easy and comfortable transportation, thus enhancing cleansing due to improved surface design

Back

- USB host port 1.1 for FFD or memory stick for subsequent evaluation of measuring data, in particular for operation at various measuring points
- RS232 for service and firmware updates
- Ethernet remote diagnosis administration
- Connections for air velocity, differential pressure and Temp/RH probes
- Control of a measuring point switch
- Firmware download via CAN port
- Potential-free alarm output
- Thermal printer 58 mm

OptoElektronik GmbH
Mollenbachstr.14 • 71229 Leonberg • Tel: +49 (0)7152 357250 • Fax: +49 (0)7152 339856
E-Mail: info@km-optoelektronik.de • Homepage: www.km-optoelektronik.de

OptoElektronik GmbH

Ergonomics
For the development of the high-end counter, flexibility in function and reliability were of particular importance, with special focus on application and handling ergonomics. The compact and sturdy construction allows easy transport and safe installation of the particle counter ACS *Plus*.

Easy handling
The large-size display with touch-screen function and concise menu navigation ensures a simple and trouble-free implementation even of major settings. Furthermore, the built-in access authorisation concept offers an easy way to grant specific access permissions for individual operators. In addition the non-reflecting display surface allows a data reading from greater distance.

GMP conforming Design
One of the main conditions for the application of equipment within a GMP controlled area is a surface design being suitable for the pharmaceutical industry. This of course also applies to particle counters. In this regard the capabilities for clean room applications as well as the resistance to detergents and disinfectants are most important technical features which have been implemented with the design of the surface characteristics.

Flexible monitoring
Adapted to application requirements the high-end counter ACS *Plus* may be used as a stand-alone unit or as a network monitoring system. Via device interface with appropriate sensors it is always possible to monitor and record temperature patterns, relative humidity, differential pressure and volume flow, if desired. The implementation of an alarm panel has also been considered.

Always a correct configuration
An intricate device re-configuration for standard measuring tasks is no longer necessary. The high-end counter ACS *Plus* allows storing a multitude of measuring point basing master data, e.g. measuring point denotation or alarms and thresholds. In particular, this ensures a significant setup time saving for routine measurements as well as a minimisation of error risks caused by incorrect data entries.

Flexible functionality
Yesterday: US Federal Standard 209 E. Today: ISO 14644-1 and Annex 1 to EU-GMP Guide. And tomorrow?
What ever happens, you are always up-to-date due to the learning aptitude of the high-end counter ACS *Plus*. The firmware update is provided via the integrated CAN interface, i.e. you can entirely comply with future requirements.

At a glance
With regard to the measurement evaluation the high-end counter ACS *Plus* is unequalled as well. Numerous functions are available to facilitate further processing and evaluation of measured values. The large-sized display allows both a table form and graphical presentation of raw data.

Evaluation and processing
Furthermore, you may choose between a distributive and a cumulative output of measured values. The data export feature facilitates further computerised evaluation and filing of the recorded measurement data. The chosen data format is compatible with most commonly-used spreadsheet programs.

OptoElektronik GmbH

Optional accessories

- Aerosol generator AG250, AG2500
- Isokinetic probe
- Remote Start/ Stop
- Hard shell case PELI™
- Dilution system VD100
- High-Pressure-Diffuser
- Air velocity, differential pressure and Temp/RH probes
- Wheeled stand
- **And much more accessory you can find on our homepage or simply give us a call**

Specifications*

Features	ACS *Plus* 128	ACS *Plus* 228	ACS *Plus* 328	ACS *Plus* 528
Size Range [µm]	0.1 - 2 (5)	0.2 - 5	0.3 - 10 (25)	0.5 - 10 (25)
Particle Channels	Standard setting or a maximum of 16 freely selectable particle size channels			
Counting Efficiency per ISO 21501-4	50% at 0.1 µm 100% at > 0.15 µm	50% at 0.2 µm 100% at > 0.3 µm	50% at 0.3 µm 100% at > 0.45 µm	50% at 0.5 µm 100% at > 0.75 µm
Concentration Limit	1 Mio./ 1 CFM			
Light Source	Laser diode			
Optical System	90° scattered light cumulating optics			
Zero Count	Per ISO 21501-4: < 1 count/ 5 min.			
Flow Rate	1 CFM; 28.3 L/ min.	1 CFM; 28.3 L/ min.	Standard 1 CFM; 28.3 L/ min. ***Optional with50 L/ min. or 100 L/ min.***	
Flow-Generator	Vacuum pump			
Flow-Control	Electronically monitored			
Calibration	Per ISO 21501-4: Latex-Aerosol			
Sampling Modes	Single measuring with 1 - 9 measurements for each cycle and automatic averaging, or continuous measuring with automatic averaging of 2 - 9 measurements each			
Sampling/ Rinsing Time	1s to 99h, 59min, 59s			
Communication Mode	Standard RS 232 for single application, RS 485 for networking			
Data Storage	50.000 sample records			
Display and Operation	Robust and bright 8.4“ LCD TFT display SVGA, 800x600 pixel, luminous intensity 350cd/ m², sunlight readable transmissive TFT active-matrix screens with cold cathode backlighting (CCFL), wide viewing angle			
Languages	German/ English/ French/ Turkish			
Data Content per Record	Date, time, ID number, alphanumeric key, measuring and rinsing time, 16 particle size channels with cumulative particle count			
Software	PWIN for single application, PMULTI for networking			
Printer	Thermal printer 58 mm			
Environmental Sensor Interface	Air velocity (0 - 2 m/s), differential pressure (0 - 50 Pa), Temp/RH (T: 15 - 35 °C, H: 0 - 100 %)			
External Surface	Stainless steel, anodized aluminium optional			
Dimension D x W x H [cm]	34,5x26,5x14,5 at 1 CFM flow rate 41x30,5x14 at 50 L/ min. or 100 L/ min. flow rate			
Weight [Kg]	8 at 1 CFM flow rate 10 at 50 L/ min. or 100 L/ min. flow rate			
Power Supply	230/ 115 VAC, 50/ 60 Hz, max. 400 Watt			
Battery	Removable/ rechargeable Li-Ion batteries optional			
Battery Life	< 4 h			
Battery Recharge	Approx. 4 h			
Audible Alarm	Single particle detection by acoustics, threshold exceeding alarm adjustable			
Standards	ISO 14644-1, VDI 2083, DIN 1946-4, EU-GMP, Fed-209 E			
Operating Range	5 - 35 °C, 10 - 80 % RH, noncondensing			
Delivery Contents	Particle counter, isokinetic probe with 3 m antistatic tubing, power supply, 10 rolls thermal paper, software, manual, certificate			

* All information is non-binding; specifications are subject to change without notice.

OptoElektronik GmbH
Mollenbachstr.14 • 71229 Leonberg • Tel: +49 (0)7152 357250 • Fax: +49 (0)7152 339856
E-Mail: info@km-optoelektronik.de • Homepage: www.km-optoelektronik.de