

Cleanroom Particle Analyzer

CPA 341



Cleanroom Particle Analyzer CPA 341.

The CPA 341 cleanroom particle analyzer is the successor product to the PZG series from RR Elektronik GmbH. The device is a mobile or stationary single particle scattered light counter for measuring low-concentration aerosols in gaseous samples. The airborne particles are analysed in terms of particle number and size.

The CPA 341 is specially designed for monitoring ventilation systems with high purity requirements and covers the particle size range from 0.3 to 10 µm at a sampling flow rate of 28.3 L/min.

Applications

- cleanroom qualification and validation according to ISO 14644-1/-3, GMP Annex 1 and VDI 2083
- acceptance measurements of clean rooms and workbenches
- fractional efficiency tests of filters and separators

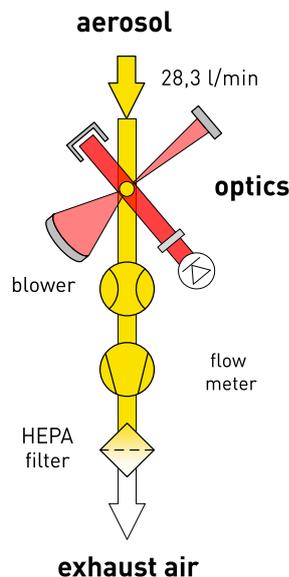
Features

- portable particle counter for stationary and mobile use
- powerful and stable air flow rate generation

- easily readable, clear structured and intuitive user interface
- highly sensitive touch display, can be operated with multi-layer gloves

Principle of operation

For testing gaseous samples with particles, the measuring device sucks in a sampling volume flow of 28,3 L/min via an internal side channel blower. The entire sample is fed into the measuring cell and exposed to light from a laser diode. A photodetector detects the light scattered by the particles. The signals are processed and classified into different classes according to the pulse height. A calibration function is used to correlate the pulse height classes to the respective particle size. Based on the number of signals, the number of particles in the examined sample is determined.



Schematic drawing of the operating principle of the CPA 341 cleanroom particle analyzer

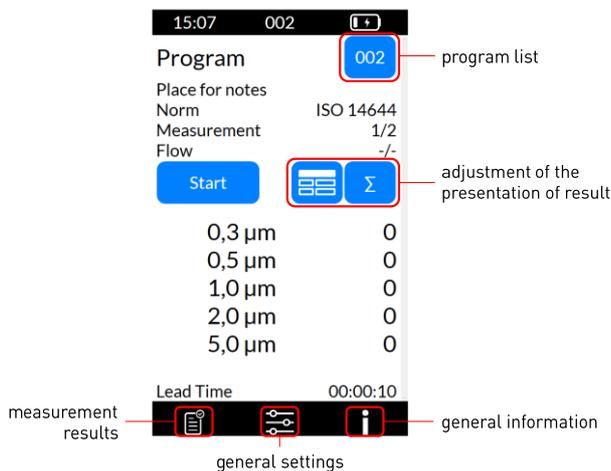


Specifications

Details

The particle counter is capable of storing up to 999 individual measurement programs. For each program, key parameters such as measurement sequence, measurement and pause times, number of measurement positions, number of measurement cycles, and alarm functions for cleanroom class determination can be configured individually.

During operation, the touch display provides an overview of relevant measurement information, like particle size channels, time, standard, measurement time, measurement position, and the number of the current measurement. An optional acoustic alarm function alerts the user immediately if a predefined limit value is exceeded. The measurement results are displayed in tabular form. After the measurement is complete, the data, including limit value exceedances and sample identification, can be printed out using a thermal printer. For advanced data analysis and documentation, the CRQWin software developed by Topas enables the transfer and further processing of measurement data on a Windows-based PC.



Control elements CPA 341

The particle counter is calibrated with certified latex particles. For the smallest particle size of 0.3 µm, a counting efficiency of at least 50% ± 20% is guaranteed.

For maximum mobility and flexibility, an optional battery operation will be available in the future and can be retrofitted at any time.

Optional accessories

- data acquisition software: CRQWin
- dilution system DIL 544 or DIL 554
- measuring instrument case
- sampling probe SYS 529
- aerosol generator ATM 228

Technical specifications

flow rate	28,3 L/min (1 cfm)
flow generation	side channel blower
optical system	90° light scattering optics
measuring range	0,3 ... 10 µm
number of size classes	5, preset
alarm level	programmable for each cleanroom class
zero count rate (ISO 21501-4)	< 1 count/5 min
counting efficiency (ISO 21501-4)	50% ± 20% bei 0,3 µm
display and controll	touch display
measuring modes	single measurement repeat measurement continuous measurement
measuring and pause time	1 s...99 h
connector	Ø 8 mm
computer interface	Ethernet
power supply	100 - 230 V AC, 50/60 Hz,
dimensions (w x d x h)	225 x 255 x 220 mm
weight	4 kg
normative references	ISO 14644-1/-3; GMP Annex 1; VDI 2083

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