



**A FEW PRACTICAL BENEFITS:**

- Particle counter with durable laser diode
- Conforms with ISO 21501-4
- 6 particle size channels from 0.3 to 10 µm
- Detects size fractions and concentrations of air particles
- Integrated gas detector for formaldehyde and carbon monoxide concentrations (PC220 only)
- Direct conversion and display of the concentrations of inhalable and alveolar dust fractions contained in the room air stated in µg per m³ of air (PC220 only)
- Also measures environmental climate parameters such as air temperature, humidity, dew point and wet-bulb temperature
- Data logger for 5,000 measurements on the internal memory (can be expanded with a MicroSD card)
- Integrated digital camera for photo and video documentation of the measured environment
- Additional colour indicator display with automatic acoustic alarm for the quick detection of critical particle concentrations
- 2.8-inch colour LCD display with background illumination to simultaneously display all measured parameters
- Ergonomic single-handed operation
- Tripod thread for non-stop measuring on a tripod
- PC measurement data export via USB interface
- Incl. calibration certificate (optional)

# Particle counters PC200 and PC220

**Portable environmental measuring devices for testing the indoor air quality, for efficiency and leak tests of HVAC and HEPA filters as well as for testing the technical cleanliness in the field of process engineering**



Ideal for air particle monitoring and climate data logging – the ergonomic laser particle counters PC200 and PC220 with integrated environmental measuring device and built-in photo and video function for documentation purposes.

**Mobile measuring stations to determine the:**

- particle purity of the air with 6 particle sizes at the same time ranging from 0.3 to 10 µm
- relative humidity
- air temperature
- dew point temperature
- wet-bulb temperature

**PC220 additionally with:**

- gas detector for formaldehyde (HCHO)
- gas detector for carbon monoxide (CO)
- a quantitative concentration determination of E-dust (PM10) and A-dust (PM2.5) in the room air in µg per m³ of air
- Particulate mass conversion and indication of HCHO and CO in mg per m³ of air

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Whether it's a new model you are looking for or a reconditioned one, whether you are thinking of buying or leasing – Trotec provides you the ideal solution for every demand: Visit the Trotec Shop to find out more about great deals on our new products, our super special offers and our wide selection of demonstration, reconditioned and specially-priced products. For more information go to [www.trotec.com](http://www.trotec.com) or directly use the QR Code.

The particle counters PC200 and PC220 – further information ...

## Ideal for monitoring, securing and assessing the air quality to ensure productivity, health and safety

The numerous measuring functions of our particle counters and their conformity to ISO 21501-4 provide users with flexible application possibilities – from testing cleanrooms and filter efficiency to monitoring the workplace exposure or measures for quality assurance.

All measured values of the 6 particle size channels can be easily read simultaneously on the 2.8-inch colour LCD of PC200 and PC220.



An additional colour indicator display with automatic acoustic alarm makes it easier to quickly detect critical particle concentrations.

In addition to the number and size fractions of air particles both measuring devices also determine environmental climate parameters such as air temperature, humidity, dew point and wet-bulb temperature.



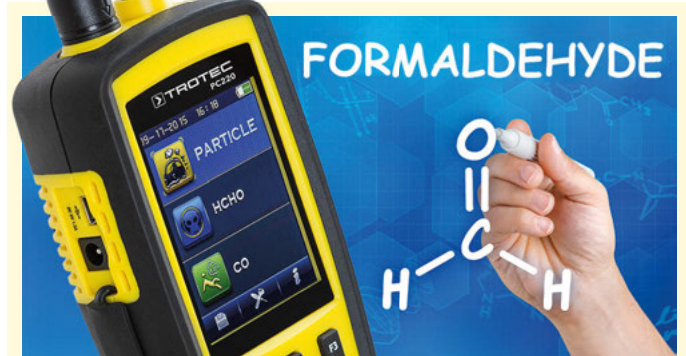
Furthermore, a digital camera is integrated to document the measuring environment by means of photos and videos.

The particle counter's data logging function can store up to 5,000 measurement records on the internal memory. This can be expanded by up to 16 GB using a MicroSD card, which significantly raises the memory capacity.

After measuring, all detected data can be transmitted quickly and easily to a PC for the purpose of documentation or analysis via a USB interface.

A handy mini tripod for non-stop measurements is already included in the PC200's and PC220's scope of delivery.

## PC220 with integrated HCHO detector – ideal to analyse the risk posed by formaldehyde



Methanal – also known as formaldehyde – is the chemical precursor for many industrial products ranging from varnishes or paints to adhesives and binding agents, even preservatives.

Many materials containing formaldehyde, e.g. wood-based materials, flooring or textiles, can contaminate the breathing air in closed rooms for a long time through outgassing.

### Reclassified as carcinogenic

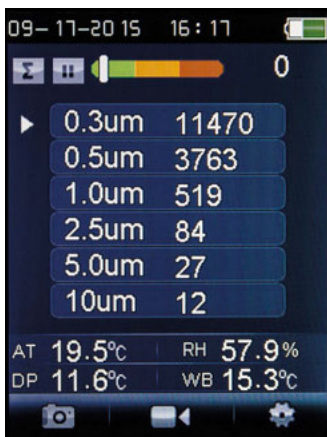
Owing to its particular toxicity the responsible organization in Germany adopted a new maximum allowable concentration (MAC) for formaldehyde; at the same time the substance was classified as carcinogenic in the European Chemicals Directive (CLP). This necessitates certain precautionary and protective measures.

The reclassification is effective as of 01/01/2016 and entails new duties of documentation and information for employers such as the obligation to keep an exposure register.

### PC220 for the precise detection of formaldehyde

The particle counter PC220 comes with an integrated HCHO detector which reliably detects formaldehyde concentrations of as low as 0.01 ppm in the room air.

Combined with the additional CO detector, the quantitative particle mass display conforming to PM standard and many further measuring functions for particle purity and room climate data, the PC220 is the ideal solution for detecting and documenting formaldehyde concentrations in the room air.



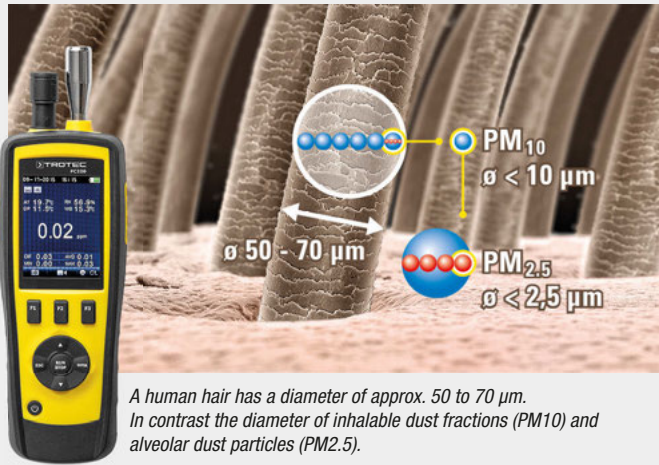
All particle counters determine the size fractions and concentrations of air particles on six different channels from 0.3 µm to 10 µm with additional colour indicator display. Perfect for contamination control for instance in isolation areas with vacuum or overpressure conditions.



With the PC220 it is also possible to detect carbon monoxide concentrations in the air.

← The particle counters PC200 and PC220 – further information ...

**Quantitative detection of particulate emissions  
PC220: digital display of particle masses**



A human hair has a diameter of approx. 50 to 70 μm. In contrast the diameter of inhalable dust fractions (PM10) and alveolar dust particles (PM2.5).

Quantitative statements regarding the particulate emission ratio for the assessment of potential health risks at the workplace are not only required according to applicable legal protective regulations.

To be measured are not only inhalable dust fractions, i.e. all dust particles with an aerodynamic diameter of less than 10 μm, but especially ultrafine alveolar particles, which are so minute that they can reach the pulmonary alveoli.

With the PC220 these dust fractions can be registered as PM10 and PM2.5 according to the PM standard; their percentage per cubic metre room air is indicated numerically on the colour display of the PC220.

The process is based on the customary international PM classification in categories as per United States Environmental Protection Agency: air particles are differentiated by their aerodynamic diameter of less than 10 micrometres (PM10) and 2.5 micrometres (PM2.5).

**Finally one software for basically all measuring devices:  
MultiMeasure Studio Professional**



Along with the ever-growing number of fully compatible Trotec measuring devices this software is also suited for use with the partially compatible particle counters PC200 and PC220 – you can even benefit from this software in case of isolated devices, for it enables the analysis and administration of all measuring projects and customer data across multiple devices in a single application!

**Create professional measurement reports in next to no time!**

The unique report generating function of MultiMeasure Studio Professional already comes with completely formulated boilerplate texts for the fields of building diagnostics, moisture measurement, leak detection and thermography.

*All information regarding MultiMeasure Professional Studio from page 44 onwards ...*



Both particle measuring devices are delivered in a carry case incl. mini tripod, zero filter and connection hose, power adapter, USB connection cable and software

**Using PC200 and PC220 for inspecting the air quality in various fields of application:**

**Filter leak check**

Suspended matter filters used in industrial processes must be regularly checked for correct functionality and tightness. These checks are particularly important during acceptance tests or when filters have been replaced in order to prevent possible leaks.

Owing to the high sensitivity and counting accuracy these ISO-21501-4 compliant particle counters are ideally suited for testing the efficiency and tight fit of industrial HEPA filters.

**Technical facility management**

Heating, ventilation and air-conditioning technicians regard the PC200 as an ideal measuring instrument for all maintenance and control operations at various ventilation systems. Faulty installations can quickly lead to noticeable air quality problems in connecting rooms.

The PC200 allows sources of hazardous contamination to be located, filter efficiency to be determined and particle concentrations in the indoor air to be evaluated.

Restoration companies can also use the PC200 to quickly and reliably detect partition leaks in areas of restoration.

**Technical cleanliness in process engineering**

In sensitive production environments, contaminations attributable to micro- and nanoparticles such as aerosols, dust, soot or bacteria can gather on products in such a consistent manner that both appearance and functionality will be impaired. In such a case, PC200 and PC220 represent the ideal means to rule out quality losses due to particle contaminations.

**Indoor air quality measurements**

The inhabitants of developed countries spend an average of 90 % of their time indoors. Thus, the quality of the room air is of particular importance for health and productivity.

Using the PC200 or PC220, problematic concentrations and sources of pollutant particles can be reliably determined and the compliance with statutory regulations can be documented.



Technical data		Particle counter PC200	Particle counter PC220	
Article number		3.510.006.010	3.510.006.015	Trottec
Particle counter	Channels	6		Temperature
	Channel sizes	0.3 µm, 0.5 µm, 1.0 µm, 2.5 µm, 5.0 µm, 10.0 µm		
	Counting modes	concentration, cumulative, differential		
	Counting efficiency	50 % at 0.3 µm; 100 % for particles > 0.45 µm		
	Flow rate	2.83 l/min (0.1 ft <sup>3</sup> /min), controlled by internal pump		Multi-function
	Zero check	< 1 particle / 5 min		
	Coincidence loss	5 %, 2 million particles per ft <sup>3</sup> (28.3 litres)		Climate
	Light source	laser class 3B, wavelength 780 nm, 90 mW		
Air temperature	Sample inlet	isokinetic probe		Moisture
	Measuring range	0 °C to 50 °C (32 °F to 122 °F)		
Humidity	Accuracy	±0.5 °C (0.9 °F) at 10 °C to 40 °C (50 °F to 104 °F), ±1.0 °C (1.8 °F) at other temperature ranges		Data loggers
	Measuring range	0 to 100 % RH		
Dew point temperature	Accuracy	±3 % at 40 % to 60 %, ±3,5 % at 20 % to 40 % and 60 % to 80 %, ±5 % at 0 % to 20 % and 80 % to 100 %		Software
	Measuring range	-30 °C to 100 °C (-22 °F to 199 °F)		
Wet-bulb temperature	Accuracy	±0.5 °C (0.9 °F) at 10 °C to 40 °C (50 °F to 104 °F), ±1.0 °C (1.8 °F) at other temperature ranges		Emission
	Measuring range	0 °C to 80 °C (32 °F to 176 °F)		
Formaldehyde (HCHO)	Accuracy	±1.0 °C (1.8 °F)		Velocity
	Measuring range	–	0.01 to 5.00 ppm	
Carbon monoxide (CO)	Accuracy	–	±5 % of terminal value	Optical inspection
	Measuring range	–	10 to 1,000 ppm	
Particle mass conversion	Accuracy	–	±5 % of terminal value	Leak detection
	PM2.5	–	0 to 2,000 µg/m <sup>3</sup>	
	PM10	–	0 to 2,000 µg/m <sup>3</sup>	Tracing and detection
	HCHO	–	0 to 6.13 mg/m <sup>3</sup>	
Functions	CO	–	0 to 1,145 mg/m <sup>3</sup>	Planning and survey
	Minimum, maximum and average value display	■	■	
	Hold function	■	■	
	Alarm function	■	■	
	Language selection	■	■	
	°C/°F switching	■	■	
	Photo or video recording	■	■	
	Automatic display switch-off <sup>1</sup>	■	■	
Automatic device switch-off <sup>2</sup>	■	■		
Data storage	Measurement data	5,000 data records on the internal flash memory (optional memory expansion via MicroSD card: max. 16 GB)		
	Photo	JPEG format, resolution 640 x 480 pixels		
	Video	3GP format, resolution 320 x 240 pixels		
Equipment	Display	2.8-inch colour LCD, 320 x 240 pixels, with background illumination		
	Menu languages	German, English, French, Turkish, Italian, Spanish, Portuguese, Dutch, Danish, Swedish, Finnish, Norwegian		
	Memory expansion	slot for removable MicroSD memory card		
	Tripod thread	¼ inch – 20 UNC		
	PC interfaces	USB connection		
Power supply	Battery type	NiMH battery		
	Operating time	approx. 4 hours of continuous operation		
	Charging time	approx. 2 hours with an alternating current adapter		
Physical characteristics	Dimensions	L 57 x W 75 x H 240 mm		
	Weight	570 g		
Scope of delivery	Standard	measuring device, mini tripod, transport case, zero filter and connection hose, power adapter, USB connection cable, software, operating manual		
	Optional	measuring device with calibration certificate (article number 3.510.006.011)	measuring device with calibration certificate (article number 3.510.006.016)	

<sup>1</sup> variably adjustable to 90 seconds, 2 minutes or 4 minutes; <sup>2</sup> variably adjustable to 3 minutes, 15 minutes or 60 minutes