

Air Composition Particle Counter



Fluke 983 Particle Counter **Troubleshoot and maintain** **indoor air quality.**

The new Fluke 983 Particle Counter, the preferred choice for HVAC and IAQ professionals, measures temperature and relative humidity as well as particle size. With expanded data logging and six-channel particle size display, the Fluke 983 allows users to run more tests quickly, with less time spent cycling through screens to obtain data. The Fluke 983 is lightweight and easy to use in any position, with a comfortable hand strap and rugged holster.

Use it to:

- Monitor HVAC filter efficiency
- Assess duct cleanliness per NADCA ACR 2006 Particle Profiling procedure
- Verify compliance to cleanroom standards
- Locate particle sources and report back on post-remediation conditions

The Fluke 983 Particle Counter offers:

- Selectable sample time, count data, and programmable delay
- User-defined sample size (cubic feet or liters) and temperature measurements (°C or °F)
- Data displayed in totalize or concentration modes
- Logged samples include date, time, particle counts, sample volume, temperature, and relative humidity

Quick Tips

Particle counts

Particle counts vary according to a number of factors such as location, time of year, and occupants. When taking particle counts, always establish an outside baseline reading to compare indoor particle levels against. Ideally, indoor particle levels will be less than outdoor levels.

Filter bypass

When testing for filter bypass, take particle counts before and after sealing the edges of the filter with duct tape. This will provide an indication of how much particulate matter is bypassing the filter due to poor fitment or compromised sealing surfaces.

Fluke TP120 Thermal Printer **Kit includes:**

- Thermal printer
- (2) rolls paper
- Battery pack
- Serial adapter



Ordering information

Fluke-983 Particle Counter

Includes: Certificate of Calibration (NIST), Windows-compatible software download utility, DB9 to RS-232 adapter and cable, Isokinetic probe, zero count filter, high purity tubing, 1/8 in. hose barb adapter, power supply, hard molded plastic case, and users manual



Class		Number of Particles per Cubic Meter by Micrometer Size					
Federal Std 209E	ISO 14644	0.1 µm	0.2 µm	0.3 µm	0.5 µm	1 µm	5 µm
	ISO 1	10	2				
	ISO 2	100	24	10	4		
1	M1.5	ISO 3	1,000	237	102	35	8
10	M2.5	ISO 4	10,000	2,370	1,020	352	83
100	M3.5	ISO 5	100,000	23,700	10,200	3,520	832
1,000	M4.5	ISO 6	1,000,000	237,000	102,000	35,200	8,320
10,000	M5.5	ISO 7				352,000	83,200
100,000	M6.5	ISO 8				3,520,000	832,000
	ISO 9					35,200,000	8,320,000

Summary of cleanroom classification standards

Cleanroom particle concentrations

The above table presents airborne particle limits for cleanroom applications per Federal Std 209E and ISO 14644 standards. The number of particles per cubic meter represent the maximum concentration limits for particles equal to and larger than the size

tested for. For example, an ISO class 5 cleanroom certified at 0.3 microns should have no more than 10,200 particles 0.3 microns and larger. There are other requirements regarding sample volumes, locations and procedures that must be adhered to. Refer to the applicable cleanroom standard for more information.

Summary specifications

Feature	Description
6 size channels	0.3, 0.5, 1.0, 2.0, 5.0, 10.0 µm
Flow rate	0.1 cfm (2.83 L/min) controlled by internal pump
Count modes	Concentration, totalize, audio
Counting efficiency	50 % @ 0.3 µm; 100 % for particles > 0.45 µm (per JIS B9921:1997)
Zero count	1 count/5 minute (JIS B9921:1997)
Coincidence loss	5 % at 2,000,000 particles per ft
Relative humidity	± 7 %, 20 % to 90 % non-condensing
Temperature	± 3 °C, 10 °C to 40 °C (50 °F to 104 °F)
Data storage	5000 sample records (rotating buffer) of date, time, counts, relative humidity, temperature, sample volumes, alarms, and label
Alarms	Counts, low battery, sensor fail
Delay time	0 to 24 hours
Sample inlet	Isokinetic probe
Interface	RS-232 and RS-485 via RJ-45
Environmental	Operating: 10 °C to 40 °C (50 °F to 104 °F), 20 % to 90 % relative humidity, non-condensing Storage: -10 °C to 50 °C (14 °F to 122 °F), up to 90 % relative humidity, non-condensing

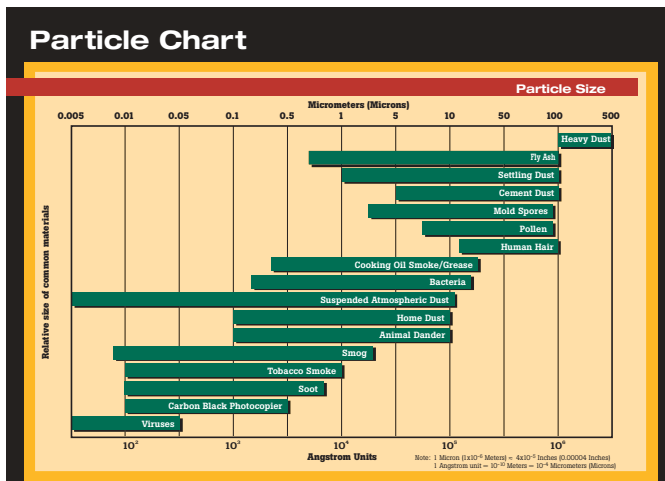


Growing your business through indoor air quality particulate profiling

You've probably heard mold referred to as the "new asbestos" for HVAC/R.

Concern about mold and its health effects is driving consumers to have their indoor air quality (IAQ) situation assessed and, if necessary, repaired.

If you're the contractor they call, keep in mind that mold isn't the only issue to consider when assessing the IAQ of a commercial building or residence. Many different kinds of particulates in a work or living environment can cause Sick Building Syndrome and aggravate allergy and respiratory conditions. Read a detailed application note on www.fluke.com/iaq



Common airborne particles and their sizes.

For more product information and detailed specifications, go to www.fluke.com