Indoor Air Quality Tools

In response to the growing importance of air quality in buildings, workplaces and homes, Fluke offers you a range of tools that monitor temperature, humidity, air velocity, particulate, and carbon monoxide levels. These tools help you to quickly and easily troubleshoot and maintain indoor air quality, as well as to verify the efficient operation of heating, ventilation and air conditioning systems.

975 AirMeter

FLUKE ®

Fluke 975

Combined inspection tool for complete air quality inspections

The Fluke 975 AirMeter combines five air monitoring tools into one, rugged and easy-to-use handheld tool. Use the Fluke 975 to verify the efficient operation of heating, ventilation and air conditioning systems, and test for dangerous carbon monoxide leaks in all types of buildings.

- Simultaneously measures, logs, and displays temperature, humidity, CO_2, and CO on a bright, backlit LCD display
- One-touch air flow and velocity measurements with available probe
- Min/Max/Average on all measured and calculated readings
- Audible and visual threshold alarms
- Multi-language user interface
- Extensive discrete or continuous data logging capacity, down-loadable to PC via USB interface

Specifications

(Check the Fluke web for detailed specifications)

Feature	Range	Display resolution	Accuracy
Measured specifications			
Temperature	-20 °C to 60 °C	0.1 °C	± 0.9 °C from 40 °C to 60 °C ± 0.5 °C from 5 °C to 40 °C ± 1.1 °C from -20 °C to 5 °C
Relative humidity	10 % to 90 % RH non-condensing	1 %	± 2 % RH (10 % RH to 90 % RH)
Air velocity	50 fpm to 3000 fpm 0.25 m/sec to 15 m/sec	1 fpm 0.005m/sec	4 % or 4 fpm* 3 % or 0.015 m/sec* whichever is greater *Accuracy specification only valid for velocity readings above 50 fpm.
CO_2	0 to 5000 ppm	1 ppm	Warm up time 1 min (5 minutes for full specification) 2.75 % + 75 ppm
CO	0 to 500 ppm	1 ppm	± 5 % or ± 3 ppm, whichever is greater, @ 20 °C and 50 % RH
Calculated specifications			
Dew point temperature	-44 °C to 57 °C	0.1 °C	± 1 °C when temp: -20 °C to 60 °C RH: 40 % to 90 % ± 2 °C when temp: -20 °C to 60 °C RH: 20 % to 40 % ± 4 °C when RH: 10 % to 20 %
Wet bulb temperature	-16 °C to 57 °C	0.1 °C	± 1.2 °C when RH: 20 % to 90 % temp: -20 °C to 60 °C ± 2.1 °C when RH: 10 % to 20 %
Volume flow rate (in a duct)	0 to 3,965 M^3/m 0 to 140,000 cfm)	0.001 M^3/min (1 cfm)	N/A: The volume flow calculation will be a simple average of the data points times the duct area
% outside air (based on temperature)	0 to 100 %	0.1 %	N/A
% outside air (based on CO_2)	0 to 100 %	0.1 %	N/A

Operating temperature
(CO and CO_2 sensors): -20 °C to 50 °C
Operating temperature
(all other functions): -20 °C to 60 °C
Storage temperature: -20 °C to 60 °C
Humidity: 10% to 90%
Altitude: Up to 2000 m

Shock and vibration: MIL-PRF-28800F, Class 2
Battery: Rechargeable Li-Ion (primary), three-AA (backup)
Weight: 0.544 kg
Size (HxWxD): 28.7 cm x 11.43 cm x 5.08 cm
Data logging: 25,000 records (continuous), 99 records (discrete)
Multilanguage interface: English, French, Spanish, Portuguese and German
Two-year warranty

Included Accessories

A4 alkaline batteries (3), Users Manual, Calibration Cap, FlukeView Forms Software, Power Adapter, International Power Plugs, Air Velocity Probe (Fluke 975V only)

Ordering Information

Fluke 975	AirMeter
Fluke 975V	AirMeter with Velocity
975CK	Airmeter Calibration Kit
975R	Regulator
975VP	Air Velocity Probe

Recommended Accessories

975VP
AirMeter Velocity Probe

922 Airflow Meter

Fluke 922

Measures pressure, air flow and velocity for maintaining balanced and comfortable ventilation

The Fluke 922 makes airflow measurements easy by combining pressure, air flow, and velocity into a single, rugged meter. Compatible with most Pitot tubes, the Fluke 922 allows technicians to conveniently enter their duct shape and dimensions for maximum measurement accuracy.

Use the Fluke 922 to: Ensure proper air flow balance and maintain a comfortable environment; measure pressure drops across filters and coils; match ventilation to occupant loads; monitor indoor vs. outdoor pressure relationships and manage the building envelope; and perform duct traversals for accurate airflow readings.

- Provides differential and static pressure, air velocity and flow readings
- Convenient colored hoses help you properly diagnose pressure readings
- Bright, backlit display for clear viewing in all environments
- Min/Max/Average/Hold functions for easy data analysis
- Auto power off saves battery life

Specifications

(Check the Fluke web for detailed specifications)

Feature	Range	Resolution	Accuracy
Operating Specifications			
Air Pressure	± 4000 Pascals ± 16 in H_2O ± 400 mm H_2O ± 40 mbar ± 0.6 PSI	1 Pascal 0.001 in H_2O 0.1 mm H_2O 0.01 mbar 0.0001 PSI	± 1% +1 Pascal ± 1% + 0.01 in H_2O ± 1% + 0.1 mm H_2O ± 1% +0.01 mbar ± 1% + 0.0001 PSI
Air Velocity	250 to 16,000 fpm 1 to 80 m/s	1 fpm 0.001 m/s	± 2.5 % of reading at 10 m/s (2000 p/min)
Air Flow (Volume)	0 to 99,999 cfm 0 to 99,999 m^3/hr 0 to 99,999 l/s	1 cfm 1 m^3/hr 1 l/s	Accuracy is a function of velocity and duct size
Temperature	0 °C to 50 °C	0.1°C	± 1 % + 2 °C

General Specifications

General specifications	
Operating Temperature	0 °C to +50 °C
Storage Temperature	-40 °C to +60 °C
Operating Relative Humidity	Non condensing (<10 °C) 90% RH (10 °C to 30 °C) 75% RH (30 °C to 40 °C) 45% RH (40 °C to 50 °C) Without Condensation
IP Rating	IP40
Operating Altitude	2000 m
Storage Altitude	12000 m
EMI, RFI, EMC	Meets requirements for EN61326-1
Vibration	MIL-PREF-28800F, Class 3
Max Pressure at Each Port	10 PSI

Data Storage: 99 readings
Size (HxWxD): 175 x 775 x 419 mm
Weight: 0.64 kg
Battery: Four AA batteries
Battery Life: 375 hours without backlight, 80 hours with backlight
Two Year Warranty

Fluke 922/Kit

Included Accessories

Fluke 922: Two Rubber Hoses, Wrist Strap, Four AA Batteries 1.5 V Alkaline, Users Manual and Soft Carrying Case
Fluke 922 Kit Includes: Fluke 922 Airflow Meter, 30.48 cm Pitot tube, ToolPak, Two Rubber Hoses, Wrist Strap, Four AA Batteries 1.5 V Alkaline, Users Manual and Hard Carrying Case

Ordering Information

Fluke 922	Air Flow Meter
Fluke 922/Kit	Airflow Meter with 30.48 cm Pitot Tube

Recommended Accessories

PT12
Pitot Tube, 30.48 cm

TPAK
Toolpak
See page 109

971 Temperature Humidity Meter
Carbon Monoxide Meters

FLUKE ®

Fluke 971

Fluke 971
Temperature Humidity Meter

Quickly take accurate humidity and temperature readings in the air. Temperature and humidity are two important factors in maintaining optimal comfort levels and good indoor air quality. The Fluke 971 is invaluable for facility maintenance and utility technicians, HVAC-service contractors, and specialists who assess indoor air quality (IAQ). Lightweight, rugged, and easy to hold, the Fluke 971 is the perfect tool for monitoring problem areas.

- Simultaneously measures humidity and temperature
- Measures dew point and wet bulb
- 99 record storage capacity
- Min/Max/Avg Data Hold
- Ergonomic design with built-in belt clip and protective holster
- Backlit, dual readings display
- Twist-open protective cap
- Low battery indicator

Specifications

Temperature range	-20 °C to 60 °C
Temperature accuracy 0 °C to 45 °C -20 °C to 0 °C and 45 °C to 60 °C	 ± 0.5 0C ± 1.0 °C
Resolution	0.1 °C
Response time (temperature)	500 ms
Temperature sensor type	NTC
Relative humidity range	5% to 95% R.H.
Relative humidity accuracy 10% to 90% R.H. @ 23 °C <10%, >90% R.H. @ 23 °C	 ± 2.5 % R.H. ± 5.0 % R.H.
Humidity sensor	Electronic capacitance polymer film sensor
Data storage	99 points
Response time (humidity)	For 90% of total range - 60 sec with 1 m/s air movement

Operating temperature:
Temperature: -20 °C to 60 °C
Humidity: 0 °C to 60 °C
Storage temperature: : -20 °C to 55 °C
Battery life: 4 AAA alkaline, 200 hours

Safety: Complies with EN61326-1
Weight: 0.188 kg
Size (HxWxD): 194 mm x 60 mm x 34 mm
One Year Warranty

Other useful tools

Fluke 561
Combined Contact and Non-contact Thermometer
See page 50.

Fluke 416D
Laser Distance Meter
See page 30.

Included Accessories

Fluke CO-220:	C50 soft carrying case and battery

Ordering Information

Fluke 971	Temperature Humidity Meter
Fluke CO-220	Carbon Monoxide Meter
CO-205	Aspirator Kit

Carbon Monoxide Meters

CO-220 Carbon Monoxide Meter
The CO-220 Carbon Monoxide Meter makes it easy to take quick and accurate measurements of CO levels. A large, backlit LCD display shows CO levels from 0 to 1000 PPM. The MAX Hold function stores and displays the maximum CO level.
1 year warranty.

Fluke CO-220

205 Aspirator Kit
Allows flue gas samples up to 371°C to be drawn with the CO-220 for carbon monoxide measurement.
1 year warranty.

Fluke CO-205

983 Particle Counter

Fluke 983

Easy to use tool for troubleshooting and maintaining indoor air quality

The Fluke 983 Particle Counter simultaneously measures and displays six channels of particle size distribution, temperature and humidity. This compact, lightweight, self-contained tool allows for one-handed operation. As the Fluke 983 doesn't require level holding, it can make accurate measurements in any position. The 8 hour rechargeable battery together with a large 5000 sample record allows for complete air quality surveys in one go. The Fluke 983 is the ideal tool for determining size distribution of airborne particles or tracking down a particle source.

- Simultaneously measure and display 6 channels of particle sizes, temperature and humidity
- Measure particle size down to 0.3 µm
- Selectable sample time, count data, programmable delay
- Store 5000 records of date, time, counts, relative humidity, temperature, sample volumes, alarms and location label
- Upload stored data to a PC with included software
- Compact, self-contained package allows for one-handed operation
- Intuitive, easy-to-use user interface
- Always ready to run, with no fluids to refill
- Backlit LCD for use in any lighting condition
- 8 hour rechargeable NiMH battery
- Protective holster

Specifications

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 (per JIS B9921:1997)
Coincidence loss	5 % at 56,000 particles per m^3
Relative humidity	± 7 %, 20 % to 90 %, non-condensing
Temperature	± 3 °C, 10 °C to 40 °C
Data storage	5000 sample records (rotating buffer) of date, time, counts, relative humidity, temperature, sample volumes, alarms, 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
Calibration	PSL particles in air (NIST traceable)

Operating temperature: 10 °C to 40 °C, 20 % to 90 % relative humidity, non-condensing
Storage temperature: -10 °C to 50 °C, up to 90 % relative humidity, non-condensing
Power: AC adapter, 90 to 250 V AC, 50 to 60 Hz
Battery life/recharge time: 8 hours/2 hours
Rechargeable battery: NiMH, 4.8V at 4.5 Ah; replaceable
Size (HxWxD): 209 mm x 114 mm x 57 mm
Weight: 1 kg
Warranty: 1 year

Included Accessories

Certificate of Calibration (NIST)
Isokinetic probe
Zero count filter
Windows-compatible software download utility
DB9 to RS-232 adapter and cable
High purity tubing
1/8 in. hose barb adapter
Power supply
Operation manual
Hard molded carrying case

Ordering Information

Fluke 983 Particle Counter