

Casella Microdust 880 Real time dust monitor

Introduction

The **Microdust 880** is a true real time dust and particulate monitor that allows the user to accurately and quickly measure the level of concentrations of particles in the air. An optical system is used based on a forward light scattering method and this ensures excellent linearity across a wide range of concentrations and particle sizes. Average, current and maximum levels are calculated and displayed on a clear dot matrix display and the unit features a built in data logger to store the results of up to 30,000 readings. A wide range of useful accessories is readily available to enhance the benefits of this intrinsically safe instrument in any workplace area.

Applications

- ❑ Walk through surveys
- ❑ Workplace monitoring
- ❑ LEV filter efficiency
- ❑ Ambient air quality
- ❑ Indoor air quality
- ❑ OSHA or NIOSH surveys
- ❑ Process monitoring
- ❑ Dust emission checks
- ❑ Boundary emission checks



Microdust 880 display screen



Key benefits

- ❑ Measurement of particle sizes from 0.1 to 12 microns
- ❑ Measurement ranges from 0.1 up to 25,000 depending on application
- ❑ Data logger with up to 30,000 point capacity
- ❑ Field calibration with standard optical insert filter
- ❑ Purging bellows provided for setting instrument zero
- ❑ Rechargeable battery pack
- ❑ Range of adaptors for size specific sampling or respirable sampling
- ❑ 2 line 16 character display
- ❑ 4 large keys for easy operation even with gloves
- ❑ Weight only 16 oz with probe

An 880 nm wavelength infrared light beam is used in the optical probe of the **Microdust 880**.

The system is calibrated in a wind tunnel against a known gravimetric sample and a calibration insert filter is produced. The user can bring the instrument back to its original factory calibration condition at any time using the calibration filter.

Dust particles in the sampled air cause the light beam to be scattered thereby producing a known electrical response that produces an extremely linear output signal across the range of sizes of interest. Each instrument is provided with a high and a low measurement range for ultimate flexibility in measurement possibilities.

The size selective adaptor can be fitted over the probe and various PUF filters used to limit the size sensitivity of the system to look for PM10, PM2.5 or the respirable fraction of the dust. An enclosure is available for fixed site monitoring that incorporates a sampling pump and rechargeable battery pack to give up to 24 hours field operation.



Size selective adaptor

Technical Specification

Detection method	Near forward light scatter using 880 nm wavelength infrared lamp
Particle size sensitivity range	0.1 micron to 12 micron maximum sensitivity (breathing range)
Measurement range	Concentration ranges dependant on model (see table below) Fixed range setting (high or low) Auto range setting (for variable and random concentrations)
Operating temperature	32°F to 122°F (0°C to 50°C)
Power supply	7.2 V 800 mA NiCad rechargeable battery pack
Operating time	Typically >8 hours at room temperature
Analog output	0 to 2.5 Vdc for FSD or digital via RS232
Display	16 characters on 2 lines dot matrix with backlight
Keypad	4 tactile buttons to access all functions and setups
Weight	16 oz (0.5 kg)
Size	14.4 x 6 x 2.2 in (360 x 150 x 55 mm)
Memory capacity	30,000 data points
Logging interval	2 to 600 seconds
Digital interface	RS232 9600 baud fixed rate
PC software	Casella WinDust for Win 98, 2000 and XP



the aspirated adaptor on probe
 for fixed location monitoring



Boundary monitoring for airborne particulates
 around a petrochemical site