CASELLA

MicrodustPro™

Microdust Pro
Real Time
Dust Monitor

The Microdust Pro is a rugged, hand-held, data logging instrument for the real-time detection of airborne dusts, fumes and aerosols.

www.casellasolutions.com

Applications

- Risk assessments for dusts and aerosols
- Monitoring dust levels within the workplace
- Industrial process monitoring
- Testing air filtration efficiency
- Environmental dust assessments
- Boundary monitoring for construction and demolition

Key Features

- Real-time graphical display of dust levels
- Simple icon driven user interface
- Extensive range: 0.001mg/m³ to 250g/m³ (Auto-ranging)
- Unique removable sampling probe
- Rugged design for harsh environments
- Multi-language operation
- Sampling for total dust, (respirable, $PM_{2.5}$ or PM_{10} with optional adaptor)
- Unique on-site calibration insert
- Environmental enclosure available for boundary monitoring applications

On-site calibration device

Single setup screen

Dust Detective

For site operators and managers who have a requirement for area monitoring, the Dust Detective is an ideal survey tool, which is quick to assemble, easily deployed and provides data which can be downloaded for evaluation and reporting purposes. The unit uses a Microdust Pro real time dust monitor, Apex2 air sampling pump and operates off internal batteries for up to 13 hours.

Both gravimetric and real-time dust data can be obtained, and foam inserts can also be used which allow size selection of PM_{10}, $PM_{2.5}$ and respirable fractions to be taken.

- Gravimetric & real-time dust data
- Ideal for site surveys
- Operates up to 13 hours
- Samples for PM_{10}, $PM_{2.5}$ and respirable fractions
- No external power supply required

Quick and Easy Dust Measurements

The Microdust Pro can be used for spot checks and walk-through surveys with the advantage of seeing instantly when and where excessive dust levels are occurring. The Microdust Pro is incredibly easy to use with a simple interface. A user can be taking a measurement within seconds of starting the instrument.

An optical insert is used on site that provides a spot check of the instrument's calibration response. The screens are color coded to ease navigation, once a measurement is started they turn green (shown below) or red when stopped. When taking a measurement, real-time instantaneous and average levels are shown and subsequently stored to the memory for review later.

Multi-lingual Interface
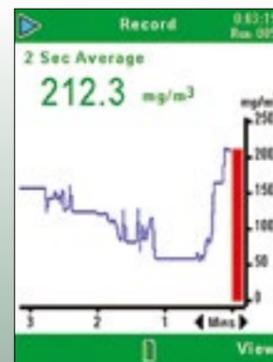
Real-time graphical dust display

Gravimetric calibration to calibrate for specific dusts

Dust Detective environmental enclosure

3 easy steps to taking a measurement...


STEP 1:
Switch the Microdust Pro on
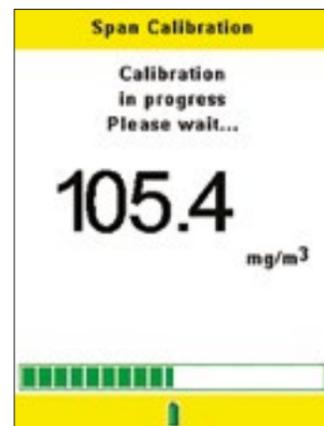
STEP 2:
Enter the calibration menu, then calibrate in 1 button press
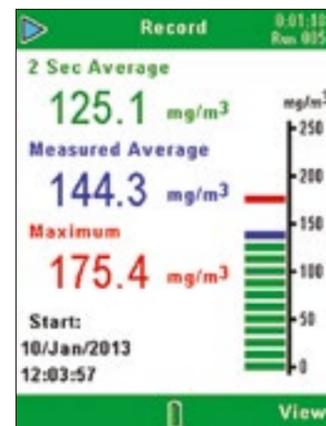
STEP 3:
Exit the menu, then press play key to start a measurement

On-Site Calibration

The instrument is factory calibrated using a method traceable back to isokinetic techniques and is conducted in a custom-built wind tunnel using ISO 12103-1 A2 Fine test dust (Arizona road dust equivalent). Each probe is also supplied with its own unique Calibration Insert, which creates a known optical scattering effect in the probe's sampling chamber. This fixed reference can be used to confirm the original factory calibration point, although annual factory recalibration is recommended.

While the Microdust Pro comes factory calibrated, by using an optional Apex2 Air Sampling Pump and gravimetric adaptor, user-defined dust-type settings may be obtained.

This means that the user can calculate a correction factor for the actual type of dust being measured and ensures maximum accuracy for their particular application.

Accessories

A number of accessories are available for use with the Microdust Pro. The size selective adaptor can be used in conjunction with an air sampling pump and PUF filters, such that the real time measurement will be of the required size fraction of dust. If just gravimetric calibration is required then the gravimetric adaptor can be used with an air sampling pump.

Size selective adaptor

Gravimetric Adaptor

Insight

Management Software

The Microdust Pro can be downloaded to Casella Insight Data Management Software using the USB cable provided. Once downloaded, the time history of the dust level can be displayed and analysed as necessary, so the times and extent of particularly 'dusty' events can be seen.

Measurements can be stored in relation to the person or area they were measured and reports can be produced showing the relevant data for multiple people or places as required.
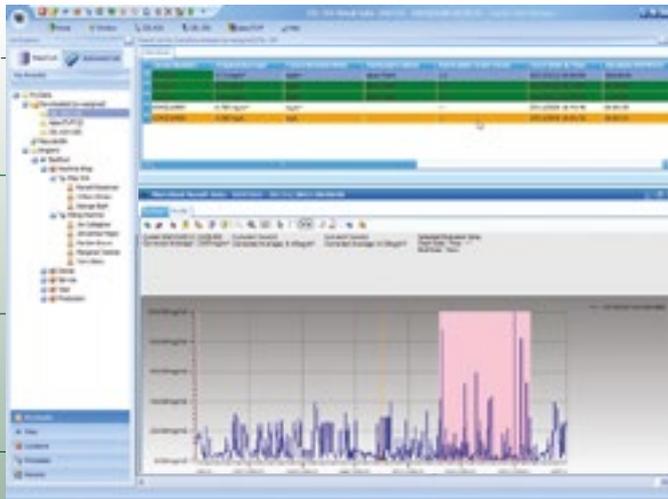
Switch between managing data or instruments with simple tabs

Simple tree structure to manage data e.g. person, place, etc.

Time history may be viewed, analyzed and annotated as required

Sort data by person, process, etc.

Multiple parameters can be displayed and sorted simultaneously

Data can be dragged and dropped to the tree structure as required

Data may be graphed and copied to other applications

For more detail on Casella Insight Data Management Software, please visit the 'Products' section of **www.casellasolutions.com**

Technical Specification

Measuring range:	0.001mg/m³ - 250,000 mg/m³
Zero stability:	< 2ug/m³
Batteries:	3 x AA
External power:	12VDC (via CEL- PC18 supply)
Logging interval:	1 sec to 60 minutes
Communication:	Mini B USB
Size (instrument):	172 x 72 x 33mm (6.8 x 2.8 x 1.3")
Size (probe):	35 x 205mm (1.4 x 8.1")
Tripod mount:	1/4" Whitworth
Resolution:	0.001mg/m³
Operating temp:	0 - 55°C
Battery run time:	Approx 13 hours
Weight:	< 600g including batteries (<22oz)
Memory:	86,000 data points (500 measurement runs)
Analogue output:	0 - 2.5V DC FSD
Alarm output:	Switched open drain <15V & 500mA DC

Ordering Information

CEL-712/K1	Instrument kit contains CEL-712 Microdust Pro, calibration insert, cleaning bellow, USB cable, 3 x AA batteries, Insight Data Management Software, instruction manual (on flash memory drive) and field guide. All housed in a briefcase style lockable case.

Optional Accessories

206101B	Gravimetric adaptor
206102B	Size selective adaptor (requires PUF filters)
P118204	PUF filters for PM$_{2.5}$ (Pack 10)
P118208	PUF filters for respirable (Pack 10)
P118206	PUF filters for PM$_{10}$ (Pack 10)
APEX2ISPLUS	Apex2IS Plus Pump, no docking station
209152B/KIT	Single Docking Station for Apex2IS Pump inc power supply and USB Cable
CEL-PC18	Universal power supply
CMC51	USB download cable*
CEL-6718	Lightweight tripod
206084D	Briefcase style lockable case*
206105D	Dust Detective Environmental enclosure (order CEL-712/K1 and pump separately)

* included with instrument kit

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