

# CEL-712 Microdust Pro



## Typical 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

## The CEL-712 Microdust Pro is a rugged, hand-held, data logging instrument for the real-time detection of airborne dusts, fumes and aerosols.

It has a large colour display and a graphical facility, allowing the user to instantly view the dust level and trends. It is ideal for walk-through surveys of ambient and indoor workplace environments.

A quick, easy to use instrument, giving the user additional qualitative data which cannot be gained by gravimetric air sampling methods alone. This extremely versatile instrument can also be used with a range of accessories for static and size selective sampling applications.

The CEL-712 Microdust Pro has the highest measurement range of any occupational dust measurement instrument available on the market. Up to 500 measurements can be taken and stored with the large memory. This data can be downloaded into Casella Insight Data Management Software, where it can be stored and analysed as necessary. Reports can easily be generated by location or person using the intuitive report wizard.

## Key Features

- Real-time graphical display of dust levels
- Simple icon driven user interface
- Extensive range: 0.001mg/m<sup>3</sup> to 250g/m<sup>3</sup> (Auto-ranging)
- Unique removable sampling probe
- Rugged design for harsh environments
- Multi-language operation
- Sampling for total, respirable, PM2.5 or PM10 with optional adaptor
- Unique on-site calibration insert
- Environmental enclosure available for boundary monitoring applications

## Ideal for use in the following industrial sectors:

Open Cast Mining & Quarrying • Construction & Demolition • Pharmaceutical Manufacturing • Chemical Processing • Environmental Health & Safety Consultancy • Public Sector Applications (such as Defence and Utilities)

## Quick and Easy Dust Measurements

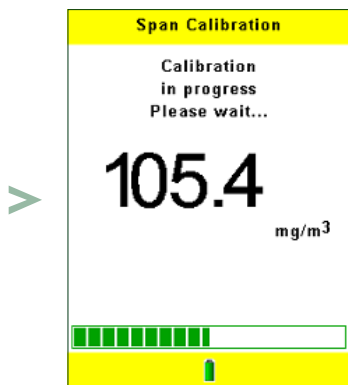
The CEL-712 Microdust Pro can be used for spot checks and walk-through surveys with the advantage of seeing instantly when and where excessive dust levels are occurring. The CEL-712 Microdust Pro is incredibly easy to use with a simple interface. A user can be taking a measurement within seconds of starting the instrument.

A calibration filter is used on site that provides a spot check of the instrument's linearity. This is unique to the marketplace as no other device currently has this capability. The screens are colour 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.

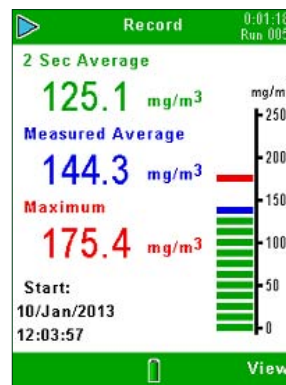
### 3 easy steps to taking a measurement



**Step 1:** Switch the CEL-712 on



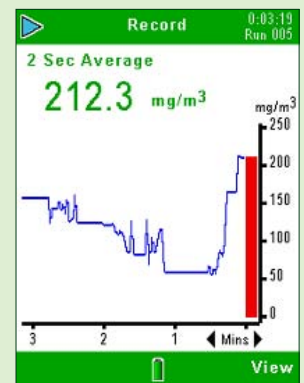
**Step 2:** Calibrate in 1 button press



**Step 3:** Press play key to start a measurement



Multi-lingual Interface



Real-time graphical dust display

## 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.

Whilst the CEL-712 Microdust Pro comes factory calibrated, by using an optional TUFF 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.



On-site calibration device

Measurement Settings	
Particle Type	Factor
Default	1.000 ✓
User 1	1.000
User 2	1.000
User 3	1.000
User 4	1.000
Range	Auto
Display Averaging	2 Secs
Logging Interval	1 Mins
Synchronise Log. Time	X

Press ▶ to Select Particle

Exit Edit

Single setup screen



Gravimetric calibration to calibrate for specific dusts



## Casella Insight Data Management Software

The CEL-712 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, analysed 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

Serial Number	Original Average	Concentration Units	Particulate Name	Particulate Scale Factor	Start Date & Time	Operation ID/ID#/ID#
0232221	9.11 mg/m <sup>3</sup>	mg/m <sup>3</sup>	Spray Paint	1.5	01/11/2012 00:00:00	268:00:00
0232221	9.29 mg/m <sup>3</sup>	mg/m <sup>3</sup>	Spray Paint	1.5	01/11/2012 00:10:00	27:30:00
0232221	0.28 mg/m <sup>3</sup>	mg/m <sup>3</sup>	Spray Paint	1.5	01/11/2012 00:20:00	11:30:00
454322987	0.763 mg/m <sup>3</sup>	mg/m <sup>3</sup>		1.0	27/11/2009 18:43:40	00:00:35
454322988	0.289 mg/m <sup>3</sup>	mg/m <sup>3</sup>		1.0	27/11/2009 18:46:53	00:00:31

## Accessories and 'Dust Detective'

A number of accessories are available for use with the CEL-712 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.

The Dust Detective enclosure transforms the Microdust Pro into a short term environmental dust monitor. The Microdust Pro and a TUFF air sampling pump (purchased separately) are housed inside and can therefore provide continuous real-time and gravimetric dust measurements. PUF filters can be used with the Dust Detective to give PM<sub>10</sub>, respirable or PM<sub>2.5</sub> size fractions.



Size selective adaptor

Gravimetric Adaptor



Dust Detective environmental enclosure

## Technical Specification

### General

Measuring range: 0.001mg/m<sup>3</sup> - 250g/m<sup>3</sup>

Zero stability: < 2ug/m<sup>3</sup>

Batteries: 3 x AA

External power: 12VDC (via -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/m<sup>3</sup>

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

Part number 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 PM2.5 (Pack 10)

P118208 PUF filters for respirable (Pack 10)

P118206 PUF filters for PM10 (Pack 10)

P314221 Tuff 4 Plus I.S. Sampling Pump with Charger

PC18 Universal power supply

CMC51 USB download cable\*

CEL-6718 Lightweight tripod

196030C Briefcase style lockable case\*

206105D Dust Detective Environmental enclosure  
(order CEL-712/K1 and pump separately)

\* included with instrument kit



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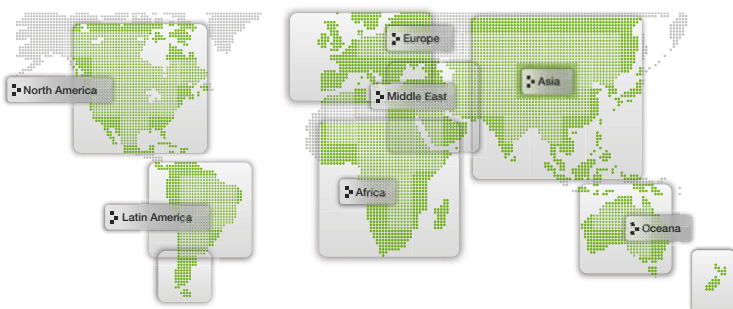
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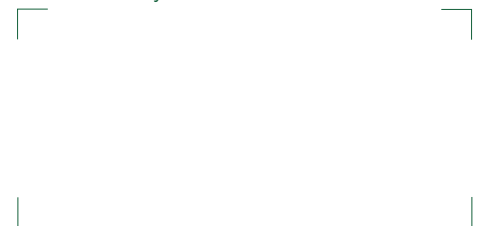
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