REPSS, Inc.
Instrumentation Specialists

CASELLA

Apex2

Apex2
Personal Air Sampling Pump

The Apex2 range of sampling pumps has class beating performance and all models are Intrinsically Safe for use in flammable atmospheres. Get connected with the Airwave® mobile software and easily send data directly to your laptop.

www.repss.com

REPSS Corporate Office
1656 Townhurst Dr, Suite E
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Sales & Service
866-657-3777
customerservice@repss.com

Apex2
Apex2

Key Features

- Class beating performance
- Bluetooth® connectivity and Airwave software
- High wearer acceptance
- Motion sensing
- Simple operation
- Ingress protection (IP65) for use in harsh environments
- Intrinsically safe for use in flammable atmospheres
- Data logging models available
- ISO13137 compliant

Simple Operation

The Apex2 has a simple user interface and menu structure. Using only 4 buttons you can easily navigate through the color coded set-up menus.

- Single key press to start a run
- Displays flow as well as battery life in remaining hours
- Color coded display e.g. green when pump is running

Easy to use menu

Color coded display
showing remaining battery life

Class Beating Performance

Whatever media you're using, you can be assured that the Apex2 has the power to handle any personal monitoring regime. Optimized at around 2l/min, the flow at which most occupational hygiene measurements are made, the Apex2 has outstanding back pressure capability.

- Pressure and temperature compensation
- Exceptional pulsation control
- High back pressure
- Long battery life

These features all ensure that you can be confident in getting good, accurate samples with various filters.

"We're using lots of membrane filters so excellent back pressure is a must."

Easy To Wear

With its slim, light weight and ergonomic design, the pump is unobtrusive to the wearer being monitored. A sturdy clip with a lifetime guarantee means it's secure and the detachable rubber boot guards against knocks.

- Smooth finish means it's easy to decontaminate
- Lockable keypad to prevent tampering
- Motion detection to show the pump has been worn

A protective rubber
boot is included

Get Connected

Monitor your pump remotely with Bluetooth® and the supporting Airwave software on your phone or tablet.

- Monitor the pump without disturbing the wearer
- Monitor multiple pumps
- Start and stop pumps remotely
- Email data direct to your PC

Intrinsically Safe

All models of the Apex2 are Intrinsically Safe (IECEx). The Apex2 has been designed specifically to be used in potentially explosive areas in the oil and gas, petrochemical and pharmaceutical industries as well as being suitable for use in the mining industry.

Ex ia I Ma
Ex ia IIC T4 Ga
Ex ia IIIC T135^{0}C Da
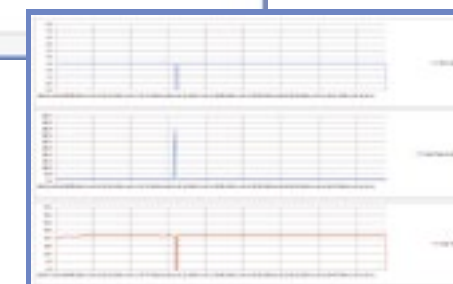(Ta = -20^{0}C to +45^{0}C)

Data And Reporting

The Apex2 can store up to 200 separate runs, storing data including start time and date, duration, volume sampled and motion index.

- Simple to use download utility for PCs
- Graphs flow, motion and back pressure
- Shows events such as blockages
- Downloads into Excel to easily view and share data
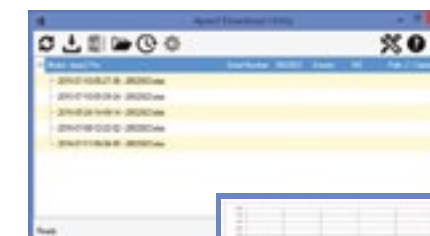
Free download
utility available

Use Airwave software on a mobile device to remotely monitor multiple pumps, without disturbing the wearer.

Start, stop and monitor the pump remotely via an iOS or Android device.

(Airwave is available free in the Apple App Store and Google Play Store)

Technical Specification

Flow Performance

Flow Range ml/min:	1000-5000
Low Flow Range ml/min:	5-500 (requires an adapter)
Flow Control:	< ± 5% at calibrated point
Pulsation:	<10% @ 2l/min
Fault Detector:	Auto Restart

Back Pressure vs Battery Life
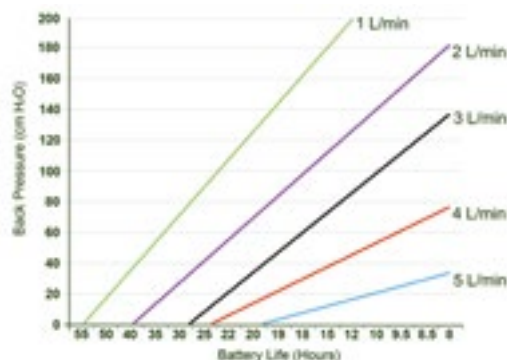
Physical

Dimensions:	112x37x102mm (4.4x1.5x4.0")
Weight including boot:	490g (17oz)

Environmental

Temperature:	Operation 0 to 45°C, Storage -10 to 50°C
Humidity:	30-95% RH (non-condensing)
Barometric Pressure:	Auto-correcting

Electrical

Battery Type:	Li ion with level indicator
Chargers:	Single or 5-way
Charge Time:	Typically <6hrs

Apex2 pump
with 5 way charger

Starter Kit available to include
sampling accessories

Ordering Information

APEX2IS	Apex2 I.S. Standard Pump
APEX2ISPLUS	Apex2 I.S. Plus Pump
APEX2ISPRO	Apex2 I.S. Pro Pump

All pumps include 1m tube, Field Guide, Certificate of Conformity and protective rubber boot.

209152B/KIT	Single Docking Station for Apex2 inc PSU & USB Cable
209156C/KIT	5-Way Docking Station for Apex2 inc PSU & USB Cable
209025C	Protective Rubber Boot (included with pump)

APEX2IS/K5	5-Way Apex2IS Standard Kit
APEX2ISPLUS/K5	5-Way Apex2IS Plus Kit
APEX2ISPRO/K5	5-Way Apex2IS Pro Kit

Additional to the 5 off Pumps, each kit includes, 1m tubing and male luer per pump, plus 1 field guide, Certificate of Conformity, 5-way docking station, PSU, USB cable and air sampling handbook.

Model Selection

Apex2	Standard	Plus	Pro
Intrinsically Safe	●	●	●
Motion Sensor	●	●	●
Bluetooth		●	●
PC Download		●	●
Inlet Pressure Sensing		●	●
Run Duration Timer		●	●
Fully Programmable Timers			●
Logging of Flow and Motion			●

REPSS, Inc.
Instrumentation Specialists

CASELLA≣

Flow Detective™

Digital Air Flow Meter

Your all in one calibrator for air sampling pumps

The Flow Detective™ is designed with ruggedness and accuracy in mind. With Casella's world renowned ease of use, calibration of air sampling pumps just got quicker and easier.

www.casellasolutions.com

FlowDetective™

REPSS, Inc.
Instrumentation Specialists

Instant and average flow rate is displayed and the averaging time can be set as required.

The Flow Detective™ works over a wide range of temperatures and pressures due to it's internal sensors.
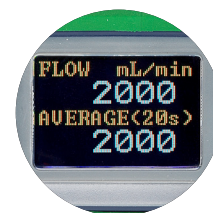
Key Features

- High accuracy calibration
- Pulsation detection
- Simple operation
- Rugged design
- Long battery life
- Wide flow measurement
- Bluetooth connectivity
- Closed loop, wireless calibration with Apex2 pumps

Dependable and Easy to Use

The Flow Detective™ has been designed to be rugged, with no moving parts so it can be used in the field. Performing calibrations is quick and easy, with a simple user interface and colour screen that can be easily viewed from a distance.

- Colour display
- Instant and average flow readings
- Selectable measurement units
- No warm up required
- Saves time compared to traditional calibration methods

Use Airwave on your mobile device to connect remotely to the Flow Detective™ and send calibration information via email
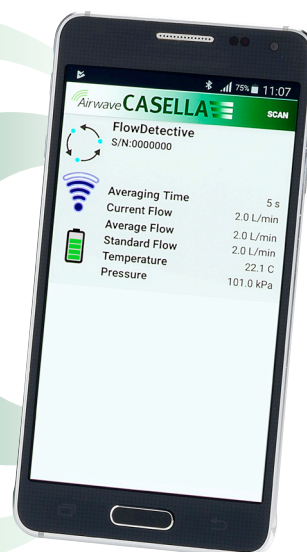
Airwave allows you to connect to both the Flow Detective™ and Apex2 pumps simultaneously

(Airwave is available free on casellasolutions.com and in the Apple App Store and Google Play Store)

Wide Performance

With the longest battery life on the market, there is peace of mind that it is always ready to go. Within a few seconds of switching on the Flow Detective™ is ready to measure, ensuring you can calibrate devices quickly. With it's wide flow range, as well as calibrating dust sampling heads, it can be used to calibrate at low flows for sorbent tube sampling, ensuring you just need one device for all personal air sampling calibration.

- Calibration to within 2% accuracy
- 70 hour battery life
- Flow range from 20mL/min (Plus model) to 5,000mL/min
- Displays standard or actual flow

"Under the pump standard ISO13137, pumps must have a pulsation level of less than 10%, the Flow Detective™ is the only flowmeter to be able to verify this on any manufacturers pump"

Unique Pulsation Detection

As pumps generally use a moving diaphragm, this creates fluctuations in the flow rate on a pump. As sampling heads like cyclones rely on a steady flow to maintain a specific size cut, it is important for pulsation to be as small as possible. The Flow Detective™ displays a red indicator if pulsation is above 10%.

- Displays when pulsation is above 10%
- Helps ensure size selection of sampling heads are accurate

Pulsation indicator when flow fluctuations exceed 10%
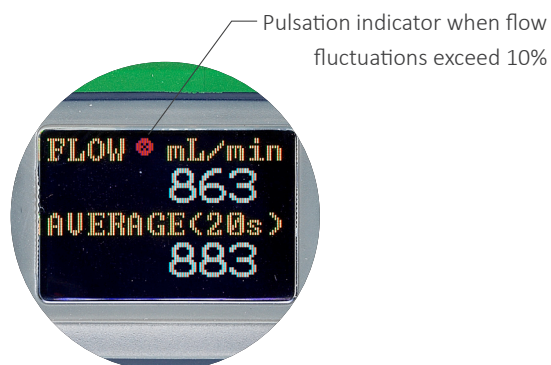
Bluetooth Connectivity

When calibrating any device, the Airwave App can be used to remotely control the Flow Detective™ and wirelessly receive calibration data. When used with an Apex2 pump, closed loop calibration can be achieved so nothing has to be set manually on the pump, which saves time.

- Receive calibration data to your mobile device
- Halves the time to calibrate Apex2 air sampling pumps

Send Calibration Data Easily

The Airwave App allows calibration data to be sent from your mobile devices' email client. This allows you to get calibration traceability data quickly, both before taking a sample run with a pump, and after the sampling period to verify flow is within 5%.

- Send calibration data direct to your inbox
- Specify if the result is a calibration or post measurement check
- Includes environmental and optional location data
- Has the ability to add sample information such as the wearer of the pump

"This will save me lots of time and give me confidence in traceability of my data"

Technical Specification

General:

Flow Range (mL/min):	Normal Range: 500 to 5,000
	Low Flow Range: 20 to 500
Accuracy:	< ± 2% from 500 to 5000mL/min
	±0.8% of reading ±0.2% FSD from 20mL to 500mL/min
Pulsation Indicator:	Flashes when pulsation is >10%
Flow Modes:	Standard or Actual Flow
Volume Units:	mL/min, L/min, cF/min, cc/min
Temperature Units:	C, F, K
Pressure Units:	kPa, mmHg, "H$_2$O, cmH$_2$O, mBar, PSI

Physical:

Display:	Colour OLED
Controls:	4 buttons
Warm Up Time:	<1 second
Dimensions:	112 x 37 x 102 mm (4.41 x 1.46 x 4.02 inches)
Weight:	370g (13oz)

Environmental:

Temperature:	Operation, 0° to 45°C
	Storage, -10° to 50°C
Humidity:	30 to 95% RH (non-condensing)
Barometric Pressure:	Auto-correcting

Electrical:

Battery Type:	Rechargeable Li Ion
Battery Level Indicator:	Yes
Battery Life:	>70 hours
Charge Time:	Typically <6 hours

The Flow Detective™ is available as a kit with a sturdy carry case

Model Selection

FlowDetective™	Standard	Plus
Standard or Actual flow	●	●
Pulsation detection	●	●
Flow rate to 5L/min	●	●
Low flow calibration (<0.5L/min)		●
Bluetooth connectivity®		●
Closed loop calibration with Apex2 pumps		●

Ordering Information

Part Number	Description
Flowdetective	Standard Flow Detective Instrument
Flowdetectiveplus	Flow Detective Plus Instrument

Each instrument comes complete with protective rubber boot, calibration certificate, 1m tube and field guide.

Flowdetectivekit	Flow Detective Standard kit in hard carry case
Flowdetectivepluskit	Flow Detective Plus kit in hard carry case

Kits include: Flow Detective™, Kit Case, Charger, Calibration adaptor

Accessories

209152B/KIT	Single Charging Station for the Flow Detective™ inc PSU
213026D	Kit case to hold Flow Detective™, Charger (inc PSU) and Calibration Adaptor
P109028	Calibration adaptor to attach Flow Detective™ to inhalable sampling heads
213018C	Protective Rubber Boot (included with Flow Detective™)
213028B	Desktop stand

Insight
Management Software

Casella Insight data management software is a powerful yet simple tool to download, analyse and report from either workplace or environmental noise data.

- Analysis of noise level time history
- Replay voice notes and event audio
- Intuitive user interface
- Remove anomalous data from results
- Analysis of time history
- Generate comprehensive reports
- Store data by, person, place, location
- Manage multiple instruments and calibration
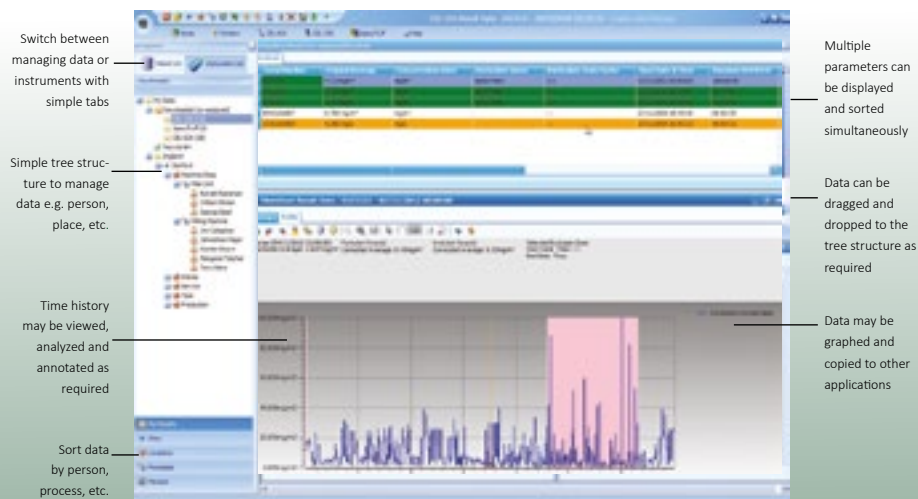
Switch between managing data or instruments with simple tabs

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 **casellasolutions.com**

Technical Specification

Standards:	IEC61672: 2002 Class 1 and 2, ANSI S1.4: Type 1 and 2 (1983)
Filters:	IEC61260: Class 0, ANSI S1.43: (1996)
Note:	IEC61672 replaces 2 obsolete standards, IEC60651 and IEC60804

General

Measurement range:	20-140dB RMS (143.3dB peak)
Total Noise floor:	19dB(A) Class 1, 25dB(A) Class 2
Time weightings:	Fast, Slow and Impulse simultaneously
Frequency weightings:	A, C and Z (un-weighted) simultaneously
Frequency bands:	11 Octave bands 16Hz-16kHz (B&C models)
	33 Octave bands 12.5Hz-20kHz (C models)
Amplitude weighting (Q):	3, 4 and 5 simultaneously
Back erase:	Last 10s in cumulative mode (all models)
Timers:	Duration 1s-24h,
On/Off timers:	6 sets with selectable times and a repeat function

Physical

Tripod mount:	¼" Whitworth socket
Batteries:	3x AA Alkaline, 10-15 hours dependent on back light
External power:	9-14V DC at 150mA
Weight:	332g including batteries
Size:	230x72x31mm inc preamp and microphone

Measured Parameters

Broadband:	L_{XY}, L_{XYmax}, L_{XYmin}, L_{Xeq}, L_{Xpeak}, L_{avg}, LC-LA, L_{Xleq}, L_{TM3}, L_{TM5}, L_{AE}. Workplace dose values are calculated within insight software.
Octaves and ⅓ octaves:	L_{XY}, L_{Xeq}, L_{XYmax}, 5x Ln% (on CEL-633). Where X is the frequency weighting A, C or Z and Y represents time weighting Fast (F), Slow (S) or Impulse (I). All weightings simultaneously measured where appropriate.

CEL-633 model additionally stores 5x L_n values in broadband and octave modes.

For time history data, all parameters are logged for period times plus 6 selectable profile parameters (plus 5x L_n values on CEL-633).

Memory

Memory: 2GB (>1 year logging when set to 1 second interval, 999 runs). All parameters stored and accessible via Casella insight. Total measurement runs: 999.

Events: 999 events/run. 10 hours of audio recording in high quality mode, 60 hours in low quality mode. For long term unattended monitoring the CEL-630 takes a new run daily for up to a total of 400 days.

Audio Recording

Low Quality:	8,000 samples/s @ 8bit (64kb/s), up to 4kHz
High Quality:	24,000 samples/s @ 8 bit (192kb/s), up to 12kHz

Environmental

Operating 0 to 90%RH in the absence of condensation

Conditions: Temperature of -10 to +50°C (Class 1) and 0 to 40°C (Class 2) Atmospheric pressure of 65 to 108kPa.

Languages

User interface can be changed via the menu: English, French, German, Spanish, Italian, Portuguese, Chinese.

CASELLA

dBadge2

dBadge2
Personal Noise
Exposure Meter

Ideal for making noise exposure measurements, the dBadge2 is a shoulder worn dose meter that measures all workplace noise parameters simultaneously.

www.casellasolutions.com

dBadge2

REPSS, Inc.
Instrumentation Specialists

Key Features

- Airwave software to check monitoring remotely
- Multiple 'simulated' dosimeters
- Full colour display
- Motion Sensing
- 1 second time history profiling
- Pause function
- Measures all noise dose parameters simultaneously

Applications

- Complete shift exposure measurements
- Task based measurements
- Measurements in accordance with CFR 1910.95 (USA), ISO9612:2009, L108 Controlling Noise at Work.
- Selection of hearing protection

Intelligent display shows remaining hours of battery life and memory capacity

3 way chargers can be linked together and also act as a download station

Airwave

Use Airwave software on a mobile device to remotely monitor multiple dosimeters, without disturbing the wearer.

Start, stop and monitor the dosimeter remotely via an iOS or Android device.

(Airwave is available free in the Apple App Store and Google Play Store)

Simultaneous Measurements

The dBadge2 has a 'multiple simulated dosimeter' capability to display noise exposure results according to differing regional or international protocols. Regardless of what you have displayed, the dBadge2 always measures all parameters together.

• Simultaneous measurement and storage of all noise dose parameters

• Helps ensure the wrong parameters cannot be measured

• Choose how many parameters to display

Simple Operation

With it's two button operation, the dBadge2 couldn't be easier to use. After switching the dBadge2 on, apply the acoustic calibrator and press one button to perform calibration. Then hold both keys down to start a measurement, it couldn't be simpler!

• Lockable keys and display

• Automatic detection of acoustic calibrator

• Colour coded display

• Easy to mount on employees' shoulder

Intrinsically Safe

For use in flammable atmospheres, intrinsically safe models are available for potentially explosive areas such as in the oil and gas, petrochemical and mining industries.

Ex ia IIC T4 Ga

Ex ia IIIC T135°C Da

EX ia I Ma

Tamb: -20°C to +45°C

Advanced Features

Different models of dBadge2 are available with advanced functions depending on your requirements.

• Audio notes at the start of a run to record measurement details

• Audio recording of level triggered events to identify anomalous noise

• Octave band analysis for the selection of hearing protection

• Motion sensing to assist in measurement validation

Downloading Data & Reporting...

A data Download Utility is freely available to simply download data to Excel, with automatic graphing of time history data. For more sophisticated data analysis and reporting Casella Insight is free with measurement kits. Please refer to Casella Insight Data Sheet for more detail.
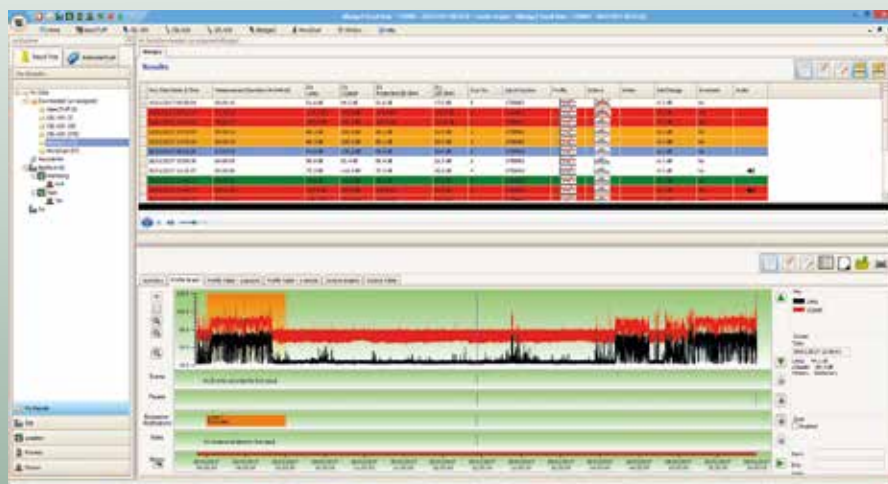
Technical Specification

Standards:	ANSI S1.25:1991 R2007, IEC 61252 Ed 1.1 (2002-3)
Linear Operating Range:	55.0-140.3 dB (A) RMS
Peak Measurement Range:	90.0-143.3dB (C or Z weighted),
Sound Exposure Range:	0.0- 6,100.0 Pa2Hours
Frequency Weightings:	A, C and Z, Type 2
Time Weightings:	Fast, Slow and Impulse
Exchange Rate:	Q=3 or Q=5dB exchange rates
Threshold and Criterion:	70-90dB in 1dB steps
Operating Temperature Range:	0°C to +40°C (for <±0.5dB error limit)
	-10°C to +50°C (for <±0.8dB error limit)
Ambient Pressure Range:	<±0.5dB over 85 - 112kPa,
Humidity Range:	<± 0.5dB over 30% - 90% (non-condensing),
Storage Temperature Range:	-10°C to +50°C,
Battery:	Internal NiMH, 800mAH
Run Time:	Typically 35 hours using Broadband Mode
	Typically 15 hours using Octave mode
Charge Time:	<6 Hours from fully discharged
Maximum Run Duration:	24 hours
Maximum number of Runs:	100
Storage Capacity:	Internal USD Flash memory - 300 hours of run data (including 1 second profile data) and up to 90 minutes of event audio recording.
PC Interface:	USB 2.0 Full speed 12Mbps via Docking Station.
Dimensions:	85L x 54W x 55H mm
Weight:	117g
Environmental I.P. Rating:	IP65 (with permeable air vent)

Ordering Information

dBadge2	dBadge2 Personal Noise Dosimeter
dBadge2Plus	dBadge2 Plus Personal Noise Dosimeter with Audio Recording
dBadge2Pro	dBadge2 Pro Personal Noise Dosimeter with Audio Recording and Real-time Octave Band frequency analysis

All dBadge2 units come complete with a Field Guide and Calibration Certificate. Operation manuals are available to download.
For Intrinsically Safe models add 'IS' to the end of the part number
e.g. dBadge2PlusIS.

Instrument Kits

Instrument Kits are available in a kit case that holds up to 10 dBadge2 units. Kits also include the CEL-120/2 Acoustic Calibrator, docking station, USB download cable and Insight Data Management Software.

Stored Data Sets

The dBadge2 simultaneously records and computes all noise data for every measurement run. The comprehensive set of data containing all of the below parameters is available to view and analyse within the Casella Insight PC application or using the download utility. The Dosimeter Set-ups D1, D2 and D3 define which parameters are displayed on the instrument itself but all values are automatically stored in the memory of the dBadge2 for download.

L_{Avg}

TWA (8hr)	Projected TWA 8hr	
Dose%	Proj Dose %	
L_{AEQ}	L_{CEQ}	L_{AIEQ}
L_{EPd} / LEX, 8h	Proj L_{EPd}/LEX, 8h	
L_{APk} + Time	L_{CPk} + Time	L_{ZPk} + Time
Pa2Hrs	Pa2Secs	

ISO Dose% (using ISO Criterion level)
ISO Proj Dose% (using ISO Criterion level)
Projected Exposure Points (using ISO Criterion level)
Exposure Points (using ISO Criterion level)
Exceedance time (L_{AS} > Exceedance level)
HML (LC-LA)

L_{Cpk} >135 (count)	L_{Cpk} >137 (count)	$L_{Cpk.}$ >140 (count)
L_{AFmx} + Time	L_{AFmin} + Time	
L_{ASmx} + Time	L_{ASmin} + Time	
L_{AImx} + Time	L_{AImin} + Time	
L_{AE}		

Cumulative Motion Index (expressed as % motion detected during a measurement run).

Model Selection

	dBadge2	dBadge2 Plus	dBadge2 PRO
H-M-L (C-A)	●	●	●
Programmable delay timer	●	●	●
Fixed run timer	●	●	●
Pause function	●	●	●
Wireless*	●	●	●
Time history	●	●	●
Audio recording		●	●
Octave band			●

*Bluetooth 'Smart' Wireless may be disabled in any version using the USB utility App

CASELLA

24x series

Casella 24x
Digital
Sound Level Meter

Designed to make noise
measurements with confidence.
The 24x Series is an easy to
use range of instruments,
designed to undertake noise
measurements for a variety
of applications.

www.casellasolutions.com

Applications

- Occupational noise
- Product noise
- Fire alarm testing
- Simple walk through noise surveys

Key Features

- Simple operation
- Rugged design
- High resolution display
- Latest digital technology
- Fully compliant with IEC 61672
- Large measurement range
- Logging and Averaging models
- Greater than 35 hours battery life
- 2 year warranty
- USB output to PC with optional software
- Includes calibration certificate
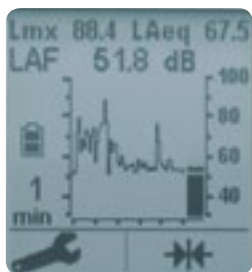
By implementing the latest digital technology, the 24x Series gives excellent repeatability, ensuring the highest levels of accuracy and performance, all housed in a rugged and compact design.

With a high resolution display unparalleled in such an inexpensive unit, the 24x Series can display the time-history of noise levels, allowing an easy assessment of the current noise environment.

Features

The 24x Series has a simple user interface using two 'softkeys', which represent options displayed at the bottom of the screen. This makes the instrument very easy to use and any setup changes are retained the next time the unit is switched on. To accurately measure fluctuating noise levels, the 24x series instruments measure average values, integrated over time; L_{eq} for European Standards and L_{avg} for the USA. In order to quantify how noise varies with time, the 24x series logging variant (24x series stores 419,000 data points) is also available to store the time history of the noise levels as well as the levels for the overall measurement (e.g. maximum and average levels, as detailed in the table opposite).

dB24 Software

This optional software allows the 24x series real-time USB output to be logged and stored on a PC. Sound pressure levels are stored by dB24 every second into a data file compatible with PC based spreadsheet applications. Data stored within the 24x series can also be accessed since these meters act like a memory stick, allowing transfer of data to spreadsheet applications.

Technical Specification

Selectable ranges:	30-100 or 60-130dB
Noise floor:	<33dB(A)
Time weightings:	Fast, Slow and Impulse
Frequency weightings:	A and C
Weight:	245g including batteries
Dimensions:	72x212x31mm
Batteries:	3x AA Alkaline or rechargeable
Battery life:	Greater than 35 hours
External power:	5V via USB 2.0 'Mini B' socket
Tripod mount:	1/4" Whitworth socket
AC output:	0.85V RMS @ FSD 'A' weighted (Optional 0-1.3V DC instead of AC can be specified at the time of ordering)
Operating conditions:	Relative humidity, 5 to 90% (non condensing). Temperature, 0 to 40°C. Atmospheric pressure, 65 to 108kPa.

Model Selection

24x series	CEL-240	CEL-246
Instantaneous and maximum levels	●	●
Logging of 1s levels*		●
Selectable Logging interval of 1-10s*		●
Averaging (L_{eq} or L_{avg})		●
Compliance with ANSI S1.4, IEC 61672, 60651	●	●
Compliance with ANSI S1.43, IEC 60804		●

*requires CasellaDrive to access data stored on 24x series model

Accessories

CEL-6840	Kit case
CEL-6841	Spare windscreen
CEL-6842	Casella Drive Software (optional)
CMC51	PC to USB cable (optional)
CEL-120/2	Acoustic Calibrator (Class 2)

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REPSS, Inc.
Instrumentation Specialists

Sales & Service
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customerservice@repss.com

Casella 62x
Digital
Sound Level Meter

Ideally suited to a wide range of industrial noise measurement applications. The 62x series sound level meters use the latest digital technology to give high standards of performance in a compact design.

www.casellasolutions.com

Applications

- Occupational Noise Measurement
- Workplace noise according to ISO9612 and OSHA 29CFR 1910.95
- Selection of hearing protection
- Calculation of noise exposure
- Ensuring compliance with workplace noise legislation
- Machinery noise tests

Using a high resolution color TFT display, the 62x series is specifically designed to ensure taking noise measurements is quick and easy.

Different models are available depending on your requirements for use in general workplace noise measurements, up to full industrial hygiene requirements where octave band analysis is required for the effective selection of hearing protection.

High Resolution Color Display

The 62X series uses colors of the high-resolution display to aid the user in making measurements. Measurement screens are color coded depending on the mode of operation. For example, during a measurement run, the header and footer of the display is green (shown right), whereas when a run is stopped they are red, similar to traffic lights for 'stop' and 'go'.

Measured parameters are displayed in different colors, and the bar graphs are illustrated with the same colours to give an easy understanding of the noise climate.

- Unique color coding of measurements
- Bright backlight

Broadband measurement screen

Key Features

- Compact, rugged design
- Simple operation
- Single large measurement range
- Large memory
- High resolution color display
- Real-time octave band analysis ('B' models)
- Simultaneous measurement of all workplace noise parameters
- Instrument menu in 9 languages
- Pre-defined and user configurations available
- Automatic calibration function
- Long battery life


Real time octave band measurement

Simple Operation

The 62x series was designed with ease of use in mind. The menu structure is designed to pick up and use without the use of a manual. A simple icon structure is used with word prompts for each selection, available in seven languages.

The instrument has six selectable set-ups. Four pre-defined set-ups can be used to satisfy local workplace noise legislation. Two user set-ups can be defined to display parameters and weightings as required. Regardless of the setup used, the 62x series measures and stores all parameters and weightings even if not selected. These can be viewed if necessary on the software.

Up to 100 measurements can be stored without the need to download. All runs are date and time stamped. When connected to a PC via the USB connection, the 62x series acts like a memory card, so data files can be moved to a PC and easily reviewed without the need for proprietary software.

- Intuitive menu structure
- Multilingual user interface
- Predefined and user selectable set-ups
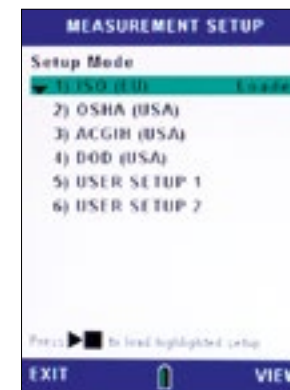
Set-up selection


Multi-lingual Interface

Digital Technology

By using Digital Signal Processing (DSP) technology, the 62x series measures all the workplace noise parameters simultaneously with necessary time and frequency weightings, preventing incorrect setup of the instrument. The instrument has a single large measurement range of 20-140dB, eliminating the need to change measurement range and preventing errors.

On the CEL-620B model, octave analysis is performed in real-time, saving time compared to performing measurements sequentially.

Octave band results are shown in both bar-graph and tabular form with the dominant frequency highlighted. Time history of the broadband noise level is displayed in real-time, so a user can see how the noise level varies with time.

- Large measurement range
- Simultaneous measurement
- Automatic calibration
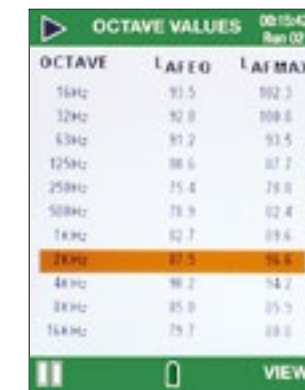
Tabular octave results
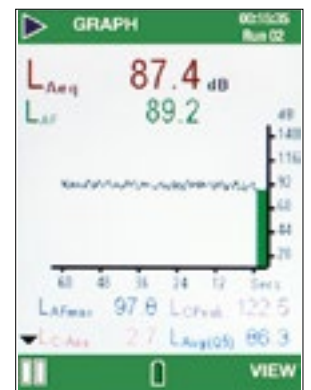
Time history display

Instrument Range & Calibration...

All 62x models are integrating so measure average noise levels as well as peak levels for workplace noise legislation. CEL-620A model also simultaneously measures the L_C and L_A used within the HML method for the selection of hearing protection. In addition, the CEL-620B models performs real-time octave band analysis from 16Hz to 16kHz, values which are used in the octave band method for selection of hearing protection. If future requirements change, any instrument can be upgraded to a higher model without returning to Casella. Complete measurement kits are provided with an acoustic calibrator in a robust kit case complete with field guides and calibration certificates.

- Range of instruments available
- Future proof upgrade ability
- Complete measurement kits
- All models available in Class 1 or Class 2

CEL 120
Calibrator

When the CEL-120 calibrator is attached, the instrument automatically enters calibration mode

Technical Specification

Applicable Standards:

IEC 60651 - 1979
IEC 60804 - 2000
IEC 61672 - 2002
ANSI S1.4 - 1983 (R2006)
ANSI S1.43 - 1997 (R2007)

Octave filters (CEL-620B model only):
IEC 61260 Class 0
ANSI S1.11-2004

Technical:

Total measurement range:	20 to 140dB RMS (single range), 143.0 dB Peak
Frequency weightings RMS:	Simultaneous A, C & Linear (Z)
Frequency weightings Peak:	Simultaneous A, C & Linear (Z)
Time weightings:	Simultaneous Slow, Fast & Impulse
Amplitude weightings:	Q3, Q4 and Q5 (Q4 & Q5 applicable to L_{avg} only)
Thresholds:	70 to 90 (dB) in 1 dB steps (applicable to L_{avg} only)
Noise floor:	<33dB(A) Class 2, <25dB(A) Class 1
Runs stored:	100
Display:	320x240 pixel transmissive colour TFT
Frequency bands:	11 octave bands 16Hz to 16kHz (CEL-620B model only)
Calibration information:	Stores pre and post run calibration date, time and level
Output (P.C.):	USB 2.0 'A' to 'Mini B'
Batteries:	3 x AA Alkaline (supplied) or rechargeable
External power:	9-14V DC at 250mA via 2.1mm connector
Battery life:	11 hours with backlight on, 20 hours backlight off
Tripod mount:	1/4" Whitworth socket
Size mm (in):	72 x 229 x 31mm (2.8 x 9.0 x 1.2")
Weight gm (oz):	295g (10.4oz)

Measured Parameters:

CEL-620A: L_{XY}, L_{XYmax}, L_{XYmin}, L_{Xeq}, L_{Xpeak}, L_{avg}, L_C-L_A, L_{Xleq}, L_{TM3}, L_{TM5}, L_{AE}

CEL-620B: L_{XY}, L_{XYmax}, L_{XYmin}, L_{Xeq}, L_{Xpeak}, L_{avg}, L_C-L_A, L_{Xleq}, L_{TM3}, L_{TM5}, L_{AE}

Octaves: L_{XY}, L_{Xeq}, L_{XYmax}

Where X is the frequency weighting A, C or Z and Y represents time weighting Fast (F), Slow (S) or Impulse (I).
All weightings simultaneously measured where appropriate.

Environmental:

In Operation	Relative humidity of 5% to 90% (non-condensing) Temperature 0 to 40°C (Class 2), -10 to 50°C (Class 1) Atmospheric pressure of 65 to 108kPa
In Storage	0 to 90%RH in the absence of condensation Temperature -20 to 60°C Atmospheric pressure of 65 to 108kPa

Ordering Information

CEL-620A2	Integrating Digital Sound Level Meter (Class 2)
CEL-620B2	Integrating Octave Band Sound Level Meter (Class 2)
CEL-620A1	Precision Integrating Digital Sound Level Meter (Class 1)
CEL-620B1	Precision Integrating Octave Band Sound Level Meter (Class 1)

All instruments and calibrators are provided with calibration certificates.

Instrument Kits

Complete kits are available with acoustic calibrator (CEL-120), kit case, windscreen, field guides and USB cable.
For a complete instrument kit add /K1 to the part number e.g. CEL 620A2/K1. A typical instrument kit is pictured below.

Kits come complete with Casella Insight Data Management Software, see Insight data sheet for more details.

Other Accessories

CEL-6840	Standard kit case
206084D	Executive kit case
CEL-6841	Windscreen
CEL-120/1	Acoustic Calibrator Class 1
CEL-120/2	Acoustic Calibrator Class 2
CEL-6718	Lightweight tripod
CEL-251	Microphone Class 1
CEL-252	Microphone Class 2
CEL-18	Universal power supply
CMC51	USB download cable

REPSS, Inc.
Instrumentation Specialists

CASELLA

63x series

Casella 63x
Digital
Sound Level Meter

With advanced functionality and simple user interface, the 63x range is designed to make occupational and environmental noise measurements quickly and easily.

www.casellasolutions.com

63x series

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63x series

Applications

Occupational Noise Measurement

- Workplace noise assessments according to ISO9612, OSHA 29CFR 1910.95
- Selection of hearing protection
- Calculation of noise exposure
- Ensuring compliance with workplace noise legislation

Environmental Noise Measurement

- Boundary noise assessments
- Noise nuisance complaints
- Measurements according to ISO1996, BS4142
- UK Construction Section 61 notices

Key Features

- Ideal for environmental or occupational monitoring
- Easy to use switch-on-and-go functionality
- Latest digital technology with a high resolution color TFT display
- Pre-configured set-ups for occupational and environmental measurements
- Voice notes to annotate measurements
- Audio (WAV) recording
- Single measurement range up to 140dB, no range adjustment required
- Data markers, back erase function and audio recording
- Level triggered events for transient measurements
- Real-time octave and ⅓ octave measurements
- Simultaneous measurement of all parameters with all frequency and time weightings
- Class 1 or Class 2 models available
- 2GB memory for more than 1 year of data storage
- Removable pre-amp
- Environmental outdoor kit available

Occupational Noise Measurements

The 63x series is designed to make workplace noise measurements as quick and simple as possible. The displayed information can be made as simple or comprehensive as required and all measurement parameters are stored simultaneously, so no incorrect measurements can be made.

When the unit is calibrated with the CEL-120 calibrator, the calibration dates and times are stored and downloaded to Casella insight software, validating the accuracy of measurements.

Average, peak, and octave band measurements are performed at the same time, so only one measurement needs to be made for all workplace noise applications.

- Simultaneous measurements of all workplace noise parameters
- Standard set-ups for workplace noise legislation
- Measures parameters for hearing protection selection by the SNR, HML and octave band method
- Analyse time history of noise levels
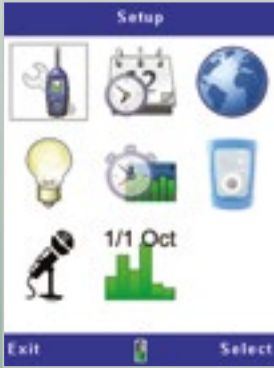- Optional high range microphone, up to 165dB

Lightweight with a bright color display, the 63x makes workplace noise measurements easy
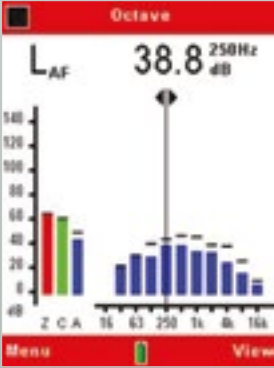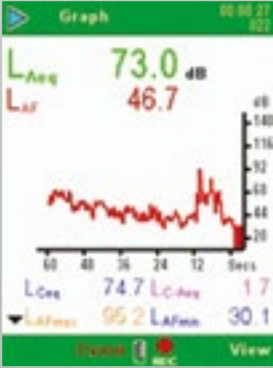
Simple User Interface...

Record voice notes to easily identify measurements

Simple icon based user interface

Octave measurements for the selection of PPE

See the time history of noise levels

Environmental Noise Measurements

Data can be marked to signify any significant events, the data from which can be removed afterwards in insight software.

Up to 60 hours of audio files can be stored, commonly used for noise source identification. Stored audio can be played back on the instrument using headphones or downloaded to Casella insight software.

For unattended monitoring, event mode (CEL-633) allows trigger levels (dB) to be set, so additional data (e.g. L_{eq}, L_{max}) is stored together with the audio file for later play back or analysis, as well as a profile down to 10ms intervals.

An environmental noise monitoring kit is available which protects the instrument and microphone from the weather and allows unattended monitoring for up 10 days.
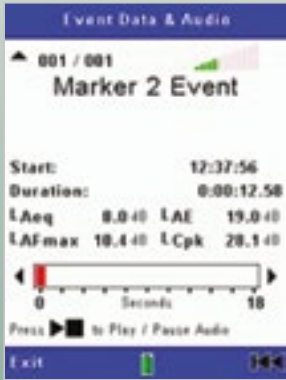
- Simultaneous broadband and frequency measurement
- Data markers
- Back erase function
- Real-time frequency analysis
- Single measurement range
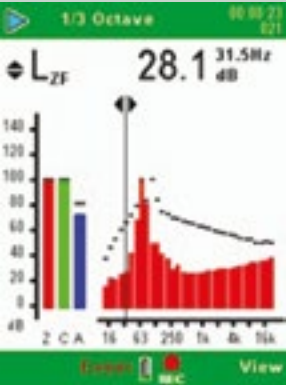- Triggered 'event' capture

A dedicated environmental kit is available
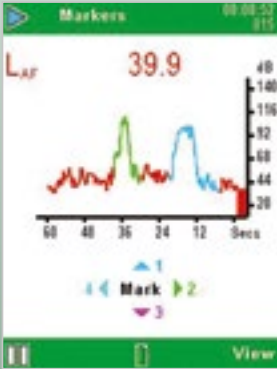
Significant noise events can be marked

Listen to audio files from the 63X Series with headphones

Realtime frequency analysis and single measurement range

Set 2 levels of time history storage

63x Series Model Selection

Model Functionality

There are 2 models available, please see the model selection table below for the one you require (e.g. CEL-632). Then select your frequency analysis requirements by adding 'A' for broadband, 'B' adds octave band and 'C' adds ⅓ octave e.g. CEL-632C. Then add either a 1 or a 2 to denote the accuracy class e.g. CEL-632C1. Each instrument comes complete with a standard kit case, windscreen and calibration certificate.

Instrument Kits

For an instrument kit add /K1 to the instrument part number e.g. CEL-632C1/K1. Instrument kits include the relevant instrument, acoustic calibrator (CEL-120), USB download cable, batteries, calibration certificates and an executive kit case.

63x series	632	633
Cumulative Results	●	●
Period Results	●	●
Profile Results	●	●
Statistical Values (Ln%)		●
Audio Voice Notes	●	●
Marker Events	●	●
Level Events		●
External Events	●	●

Accessories

CEL-6840	Standard kit case*	CEL-6718	Lightweight tripod
196030C	Executive kit case	CMC73	Portable printer kit (fits in 196030 kit case)
CEL-251	Microphone Class 1*		
CEL-252	Microphone Class 2*	MIC1	High range microphone (to 165dB)
CEL-120/1	Acoustic Calibrator Class 1**		
CEL-120/2	Acoustic Calibrator Class 2**	MPA1	High range microphone adaptor (for use with MIC1)
CEL-PC18	Universal power supply		
CMC51	USB download cable*		

* included with instrument
**included with instrument kit (with CEL-63XY/K1 where 'X' and 'Y' represent the model numbers)

Casella 120 Acoustic Calibrator

The Smallest Acoustic Calibrator in the World

Actual Size

System Features

• Compliant with IEC 60942: 2003 and ANSI S1.40:2006

• Class 1 & 2 accuracy versions

• Digital technology ensures highly stable acoustic performance

• Dual calibration level (Class 1 version) of 94dB and 114dB at 1khz

• Rugged, ergonomic design

• Simple to use with incorrect microphone insertion warning

• Automatic power off to conserve life of battery, typically 2 years

Overview

The Casella 120 Acoustic Calibrator is the smallest of its type in the world; with a rugged, over-moulded design for use in field environments.

The field calibration of Sound Level Meters is an essential procedure when carrying out any type of noise survey both before and after each measurement sequence. This ensures that instruments are providing consistently accurate readings necessary for monitoring to ensure compliance with workplace and environmental noise regulations.

The 120 is therefore designed and manufactured to comply with the requirements of IEC 60942: 2003 and ANSI S1.40: 2006. These standards stipulate accurate calibration over a wide range of temperature, humidity and pressure conditions, typical of field work, ensuring accurate calibration in all conditions.

Digital technology for optimum accuracy

The 120 is compact and ergonomically designed with simplicity and ease of use being the highest priorities. Key features include a simple keypad for intuitive control, permitting calibration level changes when required. When used with instruments like the-62X series, calibration routines commence automatically as soon as a calibration tone is detected to further simplify the task.

The 120 uses a MEMS microphone and a digital feedback loop to maintain the acoustic pressure in the cavity at the required level. An indicator shows if the sound level meter microphone is incorrectly inserted into the cavity, removing any potential for calibration error.

The microprocessor control detects when the microphone is removed and automatically switches off the calibration tone. This conserves battery power, allowing batteries to last for up to 2 years of operation.

Both the CEL-120/1 and CEL-120/2 calibrator accept all industry standard 1/2" microphone capsules. Smaller 1/4" microphones may be accommodated using the 1/2" to 1/4" adaptor (CEL-4726). The relevant 120 also comes as standard with our range of noise monitoring kits.

Technical Specification

General

Type:	CEL-120/1: Calibrator to EN (IEC) 60942: 2003, ANSI S1.40: 2006 Class 1
	CEL-120/2: Calibrator to EN (IEC) 60942: 2003, ANSI S1.40: 2006 Class 2
Calibration sound pressure level (over environmental range):	CEL-120/1: 114.0dB ±0.4dB and 94.0dB ±0.4dB
	CEL-120/2: 114.0dB ±0.6dB
Calibration level (at reference conditions):	CEL-120/1: 114.0 dB ±0.25 dB and 94.0 dB ±0.25 dB,
	CEL-120/2: 114.0 dB ±0.35 dB
Calibration Frequency:	1kHz ±1Hz
Harmonic Distortion:	Less than 1.0%
Battery:	2 x 1.5V AAA (LR03)
Battery life:	A typical operational life of 2 years
Dimensions:	75.5 x 54.0 x 37.0mm (2.9 x 2.1 x 1.4")
Weight:	85g (0.19lb) including batteries

Ordering Information

CEL-120/1 Dual level (94dB and 114dB) Class 1 Calibrator. Including batteries, operating instructions and calibration certificate.

CEL-120/2 114dB Class 2 Calibrator. Including batteries, operating instructions and calibration certificate.

Optional
CEL-4726 1/4" to 1/2" coupler for CEL-120 calibrator.

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REPSS, Inc.
Instrumentation Specialists

CASELLA

*Microdust**Pro***™

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.

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MicrodustPro™

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MicrodustPro™

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
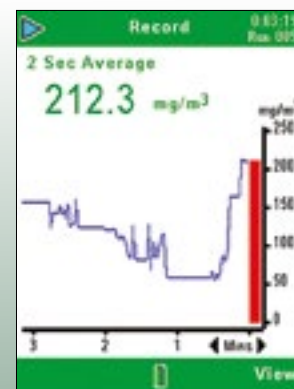- No external power supply required

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

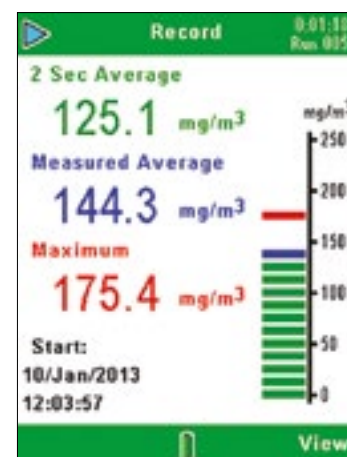## 3 easy steps to taking a measurement...

STEP 1:
Switch the Microdust Pro on
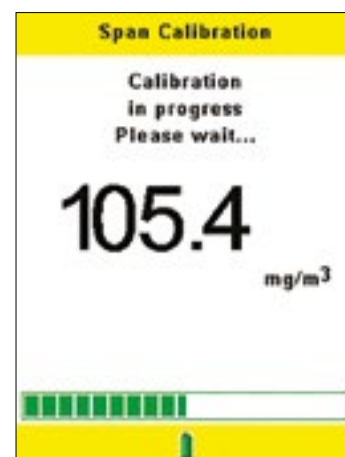
STEP 2:
Enter the calibration menu, then calibrate in 1 button press

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.
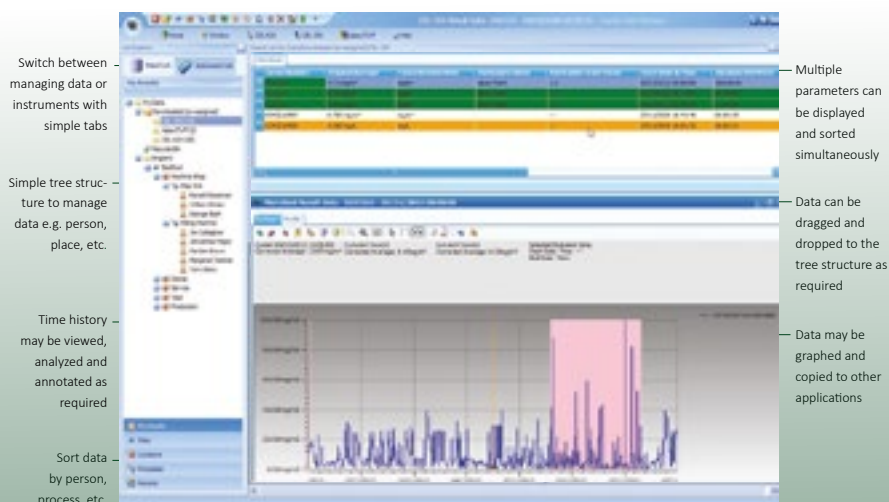
Size selective adaptor

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

REPSS, Inc.
Instrumentation Specialists

CASELLA

Guardian2

Guardian2
Multi-Agent
Monitoring Station

Guardian2 is designed to help you remain compliant with site emission levels, using remote monitoring and reporting of noise, dust and vibration.

www.casellasolutions.com

Guardian2

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1656 Townhurst Dr, Suite E
Houston, TX 77043

R

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customerservice@repss.com

Guardian2

Key Features

- Real-time particulate, noise and ground vibration (PPV)
- Simultaneous PM10, PM2.5 and PM1.0 monitoring
- Web-hosted data with secure, password protected login
- Optional, maintenance free windspeed & direction sensor
- Email and text alerts to designated recipients
- Manual or automatic reports
- IEC 61672-1 compliant sound level meter
- Wall or pole mounted
- Operates over a wide operating voltage 100-250 VAC

Guardian2 is a web-based remote monitoring system for noise, particulates and ground vibration, either as single 'agents' or in multiple combinations. It is ideal for construction & demolition sites plus many more fence-line applications. Where compliance with limits is required and good relationships with neighboring people and businesses are a must, Guardian2 can guarantee the smooth progress of your project or manufacturing operations.

mHUB

With the new mHub, data can be streamed straight to your mobile device...

CASELLA
Cloud Hosting

The Guardian2 advanced mHub datalogger and web connectivity allows data to be continuously sent to the cloud. Alerts and status reports can be seamlessly delivered to your mobile device.

Data Anywhere with
www.casella247.com

The mHUB datalogger incorporates an electronic SIM which means that the system will search for the strongest cellular signal but in the event of a lack of connectivity, the mHUB will continue to log then push the stored data to the server when communication is re-established. The Casella 24/7 Data Management System is accessible via a secure log-in, giving organizational administrators and designated users access rights to data, reports and alerts.

Plug In and Play

Integrated into a small, unobtrusive environmentally sealed housing, Guardian2 can be configured at the time of ordering for a variety of 'agents' depending upon the specific application or requirements. Installation couldn't be simpler; just bolt to a wall or mount on a pole, apply power and then within a few moments begin transmitting data using cellular connectivity to a secure server.

Configure Reports

- For single or multiple agents at once e.g. noise and dust
- Automatic reports can be set to report daily, weekly or monthly data, direct to your inbox
- Graphical or tabular reports

Alert Configuration

- Configure alerts by text or email
- Can be configured for any measured parameter
- Error alerts, e.g. for power loss

User Configuration

- Different levels of access can be configured to casella247.com
- Specify who just receives reports, or administrator access to configure reports and Guardian2 units
- Configure Guardian2 units on different sites remotely

Reporting and alerts

Administrators can choose the number of Users who have access to data and receive alerts while Users themselves can create and edit reports and because there can be multiple sites and Guardians they can easily switch between them. Reports can be created manually or automatically and can be sent by email to multiple recipients if required. Alerts can be generated when specified limits are exceeded as well as notification of power and communications outages should data not be received when expected by the system. Action can then be taken to investigate the causes of these exceedances to head off potential complaints or citations as well as checking for integrity of the Guardian2 itself.

Report showing 15 minute average PM10 levels
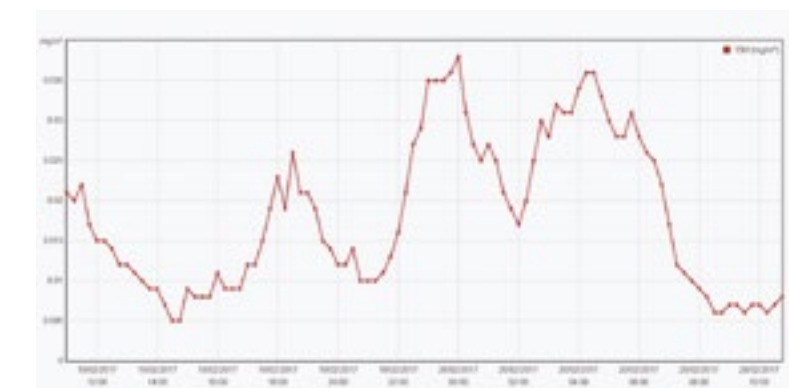
Report showing noise data over two weeks
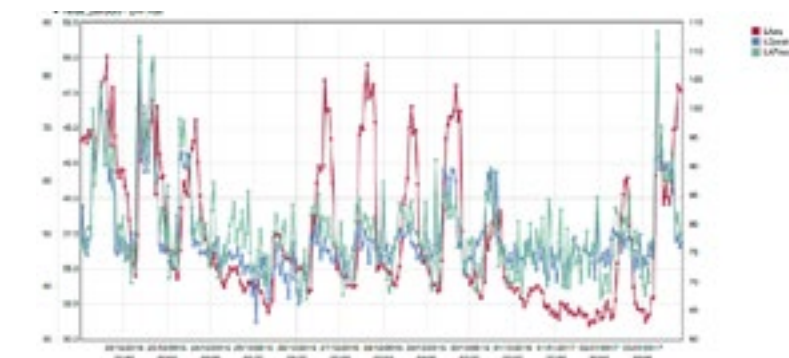
Specification

Noise:

Accuracy:	Class 1 to IEC61672-1
Parameters:	L_{Aeq}, L_{Amax}, $L_{A10\%}$, $L_{A90\%}$
Measurement range:	20-140dB RMS
Calibration:	Via provided acoustic CEL-120/1

Particulate:

Sensitivity:	1ug/m³
Zero stability:	+/-2ug/m³
Size fractions:	Simultaneous PM10, PM2.5 & PM1.0
Inlet:	Heated to reduce moisture affecting measurements

Vibration:

Transducer type:	Geophone
Number of channels:	3-axis
Frequency range:	2-250 Hz
Measurement Range:	+/- 200 mm/s
Resolution:	0.01 mm/s
Environmental rating:	IP65

Winds Speed and Direction Sensor:

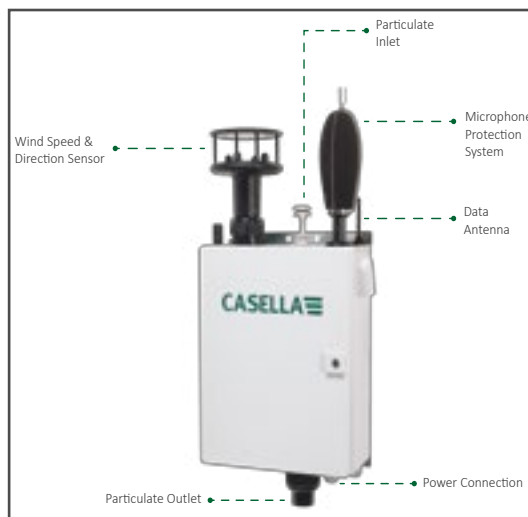|	
Wind Speed:	0-60m/s
Accuracy:	+/-2%
Resolution:	0.01m/s
Threshold:	0.01m/s
Wind Direction:	0-359° (No Deadband)
Accuracy:	+/-3%
Resolution:	0.1 degrees

General:

Enclosure Protection:	IP65
Operating Humidity:	<5% to 100%
Logger:	Built in logger data transmission via GPRS
Power:	100-250VAC
Mounting:	Wall or pole mounted (50mm pole).
Dimensions:	400mm x 300mm x 150mm
Weight:	<13kg

Ordering Information

Guardian2 - Part Numbers

Part Number	Particulate (PM10 & PM2.5)	Noise	Vibration	Windspeed & Direction
208049D			●	●
208052D		●	●	
208054D		●		●
208057D				
208061D			●	
208063D		●	●	●
208170D	●	●	●	●
208171D	●	●		●
208172D	●		●	●
208173D	●			●
208174D	●	●	●	
208175D	●	●		
208176D	●			
208177D	●		●	

Accessories	Part Number
Replacement windscreen enclosure system:	208041C
Windsceen enclosure System extension kit (includes 5m windscreen extension cable, mounting bracket & U-bolt and tripod/pole mounting bracket):	208104D
Spare 5m windscreen extension cable:	208083C
Replacement foam:	208022C

Particulate Inlet

Microphone Protection System

Wind Speed & Direction Sensor

Data Antenna

CASELLA

Particulate Outlet

Power Connection

REPSS Corporate Office
1656 Townhurst Dr, Suite E
Houston, TX 77043

REPSS, Inc.
Instrumentation Specialists

Sales & Service
866-657-3777
customerservice@repss.com

HAVex
Vibration Meter

Make all the measurements necessary for Hand Arm Vibration risk assessment. The HAVex Tri-Axial Hand Arm Vibration Meter has been specifically designed for Hand Arm Vibration Exposure Measurements.

www.casellasolutions.com

Applications

- Hand Arm Vibration Exposure Measurements
- Risk assessment
- Power tool condition and maintenance database
- ISO 5349 : 2001 Mechanical Vibration – Guidelines for Measurement
- ANSI S2.70 (2006) guide for the measurement and evaluation of human exposure to vibration transmitted to the hand

Key Features

- Simple operation
- Robust accelerometer & cable
- Color display
- Stores over 900 measurements
- Large measurement range
- Rechargeable battery
- Easily view, export & report data
- Supplied as a kit with everything you need to begin measuring

It's a simple to use meter that measures the levels of vibration transmitted to the hand from power tools, vehicles, machine controls and other vibration sources.

Casella Vibdata Hand Arm Vibration Software

Tree View
Data Viewing Screen
Tab Buttons
File Image
Instrument Details
File Information
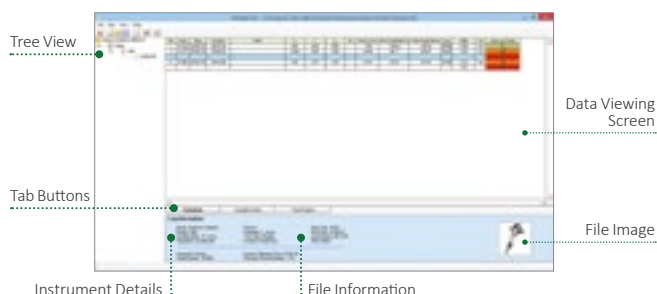
The HAVex meter is supplied with the Vibdata Lite software which allows you to download your measurements via USB for analysis and storage of data as required by the regulations. It is also possible to upgrade to Vibdata Pro which has the following added features:

- Exposure Calculator
- Merge/Combine Results
- Add Images
- Trend Analysis
- Add new records

Technical Specification

Performance:	Conforms to ISO 8041 : 2005 Human Response to Vibration – Measuring Instrumentation
Level Ranges:	Low: 0.05-200m/s^2, 0.005-20.4g
	High: 0.5-2000m/s^2, 0.05-204g
Parameters:	Acceleration: Arms, Aeq, Amax, Peak, Vector Sum, Exposure Points
Frequency Weighting:	W$_H$ - Hand Arm Filter
Memory:	Flash memory storing up to 992 recordings
Display:	Full color, graphic OLED 160 x 128
Batteries:	NiMH re-chargeable (typically 10 hours continuous use)
Connections:	AC Output: 4 pole 3.5mm jack
	Download: USB Micro B (cable incl.)
	Recharge: DC socket (charger & cable supplied)
Environmental:	Temperature: -10°C to +50°C
	Humidity: up to 90% RH non-condensing

Ordering Information

M104006	Casella HAVex kit: Comprising of: HAVex meter, HARM Tri-axial Accelerometer & Cable, Mounting Plate, Carry Case, Vibdata Lite software

Accessories

M104009*	HARM Tri-axial Accelerometer & Cable
M104014**	Vibdata Pro Vibration Analysis Software
M104016*	Mounting Block
M104018*	Charger Unit
M104020*	USB Cable

* Supplied with the Casella HAVex as part of the kit
** Upgrade from the supplied Vibdata LITE software supplied with the instrument