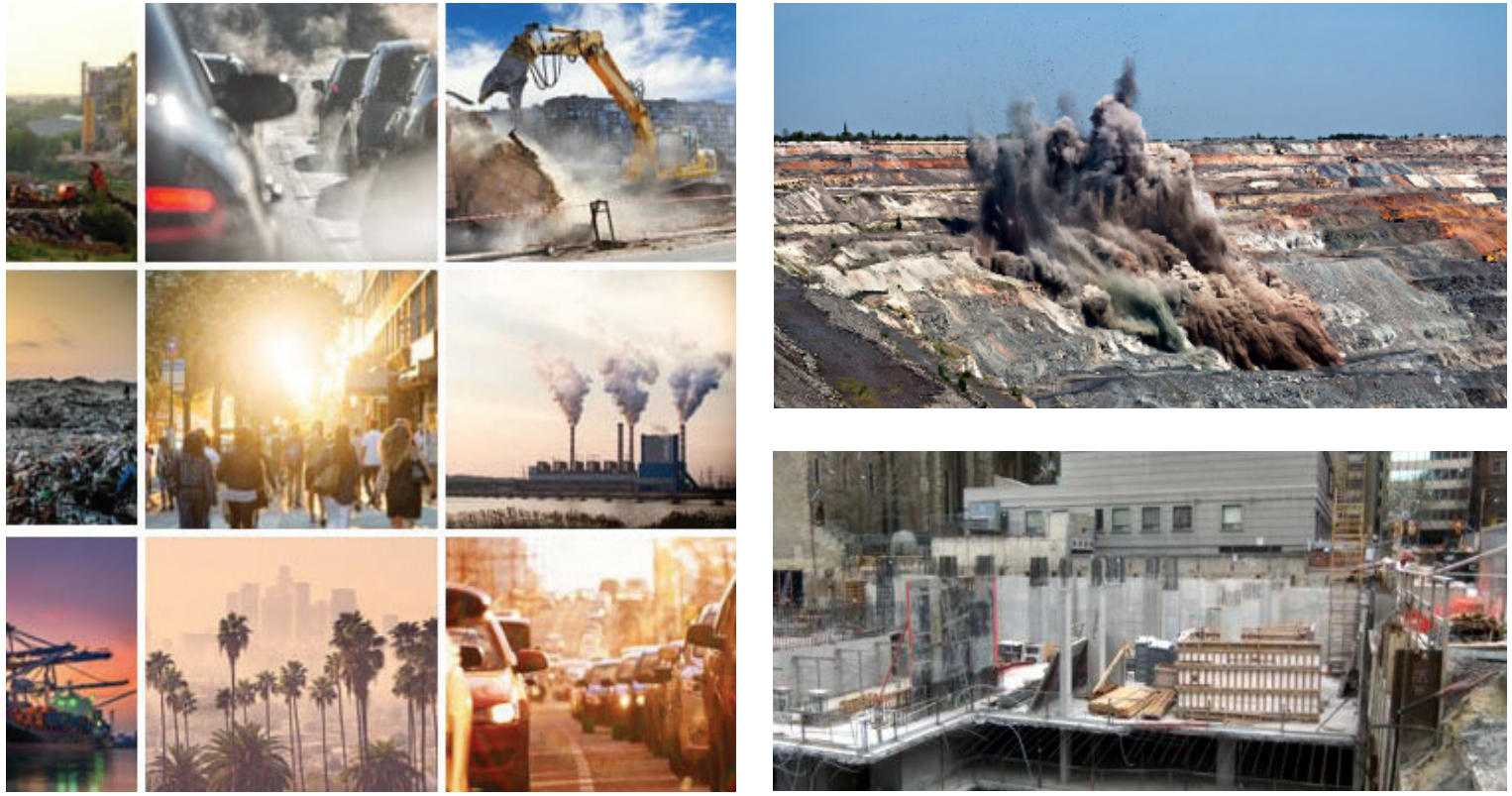


# Vibration, Dust and Sound Monitoring



[www.hoskin.ca](http://www.hoskin.ca)

Supplying Testing & Monitoring Instruments Since 1946



For seventy-five years, Hoskin Scientific has been a supplier of testing and monitoring instrumentation to the Canadian market. With offices in Vancouver, Oakville, and Montréal our customers are able to receive local sales and technical support in our three major departments.

Our Environmental Department provides solutions for monitoring and sampling biological and chemical parameters in the environment. Our team of environmental sales representatives and diverse product range guarantee that you will find the right products for your application. Specific areas include: water quality, water quantity, soil moisture, plant science, weather stations, indoor air quality, aquatic sampling, and oceanography.

Our Materials Testing Department offers testing equipment for soil, asphalt, petroleum, concrete and cement. Our qualified sales associates focus on providing a sophisticated range of testing equipment complying with the various test methods, ensuring that accurate and consistent test results are always obtained.

Our Instrumentation Department focuses on a wide range of products including optical camera systems, transducers and transmitters, data acquisitions and loggers, signal conditioners and indicators, automation sensors and measurement systems. We have technical sales associates that are trained in various areas and willing to help you with your instrumentation requirements.

## Rentals

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We offer high quality, proven equipment that will provide the user with valuable data as well as numerous ways of retrieving, filtering and viewing that data. We carry a wide range of instrumentation, including: water quality, portable gas monitors, soil sampling instruments and more.

Rental Equipment:

- Single and multi-parameter instruments that can be setup for spot checks or extended deployment/data logging
- Water sampling instruments
- Water velocity and stream profiling instruments
- Soil sampling instruments
- Soil vapour sampling instruments
- Portable gas monitoring instruments

Customer satisfaction is our goal and we make an effort to ensure that all our customers are satisfied with their rental. All rental instruments are cleaned and calibrated before being sent to the user (please note that we also require equipment to be returned clean). If a rental instrument requires recalibration, please return the instrument to us and we will recalibrate at no charge. Any instrument not functioning properly can be exchanged at no cost.

Hoskin Scientific offers technical support over the phone and can also provide hands on demonstrations.

We are constantly expanding and looking for new equipment to add to the rental inventory and welcome all suggestions.

Check our website [www.hoskin.ca](http://www.hoskin.ca) for current offerings.

Daily, weekly and monthly rental rates available – please call for a quote.





## Automatic Vibration Measurement

With the AVA Monitoring System for vibration measurement, important infrastructure, people, buildings and sensitive habitats can easily be protected from negative impact. The system has unparalleled operating time and is ideal for situations that call for remote-controlled field monitoring of vibrations with high availability over time.

Measurement and uploading of measurement data are fully automated, and you always have direct access to up-to-date information from your PC, tablet or smartphone.

The AvaTrace M80 vibration measurement field instrument with sensors records, processes and temporarily stores measurement data from vibrations and air shock overpressure locally in the instrument. Measurement data is automatically transmitted over the mobile phone network to the cloud based measurement system AvaNet, according to an individual and adjustable timetable.

### Simple field handling and superior project economy

The system is designed to work unattended around the clock, without external power sources, for an extended period of time in demanding outdoor environments. In the field, measurements are started and stopped with one push of a button. Close the lid and leave the battery-operated instrument out in the snow, cold, rain and bad weather for the long term. A very energy-efficient design provides up to eight months of battery operation, which together with the simple handling provides for superior project economy.

### OPEN WEB-BASED SYSTEM

The web-based measurement system AvaNet is the hub of our product package and takes care of all data collection, communication, processing, monitoring and storage of measurement data. Here you can also set alerts that automatically send an e-mail or SMS to those responsible if a measurement exceeds permitted limits or if a failure occurs. With AvaNet Vibration you can operate the vibration instrument remotely and keep an eye on your measurement data in real time, wherever you are.

# Field Instrument

# AvaTrace M80

## Data Acquisition



### Channels

- Four independent user defined channels with individual filter and sensor configuration

### Triggered Recording

- Synchronized waveform recording on all active channels
- Periodic Recording
- Continuous recording of peak values with configurable time interval

### Environment Recording

- Periodic recording of temperature and battery voltage

### Waveform Length

- Max waveform length configurable up to 5 minutes. Automatically adjusted based on signal behavior.

### Trigger Level

- Configurable within entire measurement range

### Pretrigger

- Configurable up to 10 seconds

## Local Storage

### Waveforms

- Up to 240 minutes of filtered data or 120 minutes of raw data.

### Periodic Measurements

- 4000 periodic measurement records (all active channels)

### Periodic Measurements

- 1000 triggered measurement records (all active channels)

## Signal Processing

### Sample Rate

- 6 kHz (down-sampled to 3 kHz in collected waveforms)

### Frequency Range

- 1 Hz to 500 Hz (filter profile dependent)

### Filter Profiles

- Blasting (SS 460 48 66)
- Blasting (NS 8141-1)

- Blasting (DGMS 1997-7)
- Blasting (AS 2187.2)
- Blasting (BS 7385-1)
- Blasting (ISO 4866)
- Piling (SS 02 52 11)
- Piling (BS 7385-1)
- Piling (NS8141-2:2013)
- Piling (ISO 4866)
- Comfort (SS 460 48 61, ISO 8041)
- Airblast (SS 02 52 10, NS 8141-1)

- Structural Damage, 1-80 Hz (DIN 4150-3, DIN 45669-1)
- Structural Damage, 1-315 Hz (DIN 4150-3, DIN 45669-1)
- Structural Damage, 4-80 Hz (DIN 4150-3, DIN 45669-1)
- Structural Damage, 4-315 Hz (DIN 4150-3, DIN 45669-1)
- Structural Damage (SN 640 312)

## Sensors

### Sensor Interface

- Analog sensor interface, 4 TNC ports

### Selftest

- Automatic selftest for geophone sensors

### Supported Sensors

- Geophone (horizontal, vertical and triaxial), 0 – 250 mm/s (0 – 10 mm/s RMS for comfort measurements)

- Accelerometer, 0 – 40 m/s<sup>2</sup>
- Airblast Microphone, 10 – 1000 Pa

## Physical Specifications

### Dimensions

- 302 x 247 x 125 mm

### Weight

- 3.6 kg including batteries

### Supported Sensors

- Geophone (horizontal, vertical and triaxial), 0 – 250 mm/s (0 – 10 mm/s RMS for comfort measurements)

- Accelerometer, 0 – 40 m/s<sup>2</sup>
- Airblast Microphone, 10 – 1000 Pa

## Power Supply

### Batteries

- 6 x LR20 (D cells)

### Battery Runtime

- Up to 240 days depending on configuration, temperature and communication patterns

### External Power

- AC/DC adapter

## Communication

### Ethernet

- 10/100 Mbit, RJ45 port

### Mobile Networks

- GPRS 2.5G, EDGE 2.75G, UMTS 3G, HSPA 3.75G
- 2 internal antennas
- RX Diversing
- 900 MHz, 1800MHz, 2100Mhz
- ESIM

### External HW Alarm

- 2 signal pairs can be used to connect external alarm equipment

### User Interface

- Remote configuration and data analysis using AvaNet. Simple MMI with push buttons and LED indicators

## Operating Environment

### Temperature

- -20 °C to +50 °C

### Air Pressure

- 86 kPa to 108 kPa

### Relative Humidity

- 10% to 90%

### IP Code

- IP65



## Dust Monitoring

Dust Sentry is a robust particulate and dust monitor with cutting edge air monitoring software, that makes outdoor dust monitoring easy:

- Purpose designed for outdoors
- Fully integrated hardware and software system
- Real-time continuous PM10, PM2.5, PM1 or TSP
- Access air quality data 24/7/365
- SMS and email alerts within <1 minute of event
- Remote WIFI and cellular connectivity
- Optional plug-in wind, weather and noise sensors
- Battery/solar power compatible



aeroqual<sup>®</sup>



# Specifications | Dust Sentry PM10, PM2.5, and TSP Dust Monitor

Particle Module	Sizes	Range	Accuracy	Resolution	Lower Detectable Limit (2 $\sigma$ )
Nephelometer	PM <sub>1</sub> , PM <sub>2.5</sub> , PM <sub>10</sub> or TSP	0 to 60,000 $\mu\text{g}/\text{m}^3$	$<\pm(2 \mu\text{g}/\text{m}^3 + 5\%$ of reading)	0.1 $\mu\text{g}/\text{m}^3$	$<1 \mu\text{g}/\text{m}^3$
System Specifications					
Control System	Embedded fanless PC (Intel Celeron® N3350, 1.1GHz, dual core, 4GB RAM, 32GB SSD hard drive), Ubuntu Linux Operating System				
Communications <sup>1</sup>	Standard: WIFI, Ethernet (LAN) Optional modem: Cellular IP 3G HSPA or 4G LTE				
Software	<p><b>Aeroqual Connect</b> instrument operating system.  <b>Aeroqual Cloud</b> instrument monitoring, management and technical support via secure cloud servers, accessed via web browser (IE, Firefox, Chrome, Safari).</p> <ul style="list-style-type: none"> <li>Cloud standard features; configuration, calibration, diagnostics, remote technical support.</li> <li>Cloud optional features; text (SMS) and email alerts, 3rd party sensor measurements, full data visualisation with charts, wind and pollution roses, data reporting with auto data export via FTP and API, full instrument event journal capture.</li> </ul>				
Data Logging	32 GB Hard Drive (> 5 years data storage)				
Outputs	2 x Relay (optional), 4 x 4-20 mA (optional)				
Averaging Period	1 min, 5 min, 10 min, 15 min, 20 min, 30 min, 1 hr, 2 hr, 4 hr, 8 hr, 12 hr, 24 hr				
Power Requirements <sup>2</sup>	100-260 VAC (standard): 30a W / 24.7b W, Regulated 12 VDC (if required): 33a W / 27.2b W				
Enclosure	Lockable IP65 GRP cabinet with integrated aluminum solar shield armor				
PM Sampling System	<p><b>Inlet:</b> Omni-directional 36 cm (14.1 inches) heated inlet; Optional sharp cut cyclones for PM<sub>10</sub>, PM<sub>2.5</sub> or PM<sub>1</sub> size selection  <b>Pump:</b> 12 V brushless DC diaphragm  <b>Optics:</b> 670 nm laser, near-forward scattering nephelometer with sheath air protection</p>				
Dimensions	483 H x 330 W x 187 D mm (19 H x 13 W x 7.4 D inches) Includes solar shield armor & mounting brackets				
Weight <sup>3</sup>	< 13 kg (28.6 lbs)				
Environmental Operating Range	-10 °C to +50 °C (14 °F to 122 °F)				
Mounting	Pole, tripod and wall mounting brackets included				
47mm Sample Filter (Optional)	47 mm filter for particle loading analysis				
Factory Integrated & Tested Sensors (Optional)	Gill WindSonic (ultrasonic wind sensor), Vaisala WXT536 (weather transmitter), Met One MSO (weather transmitter), Cirrus MK427 Class 1 (noise sensor), Novalynx Pyranometer (solar radiation), BSWA 308 (sound level meter) Met-One BC-1060 (black carbon monitor), Met-One E-BAM PLUS (Beta-Attenuation Mass Monitor)				

<sup>1</sup> 4G LTE not available in all markets.

<sup>2,3</sup> Configuration used for power and weight calculations: base unit, nephelometer, PM<sub>10</sub> sharp cut, modem, heater on.

a Configured as per note 2, and incl. Moxa modem.

b Configured as per note 2, and incl. Sierra modem.

<sup>4</sup> Dimensions are for enclosure. PM sampling inlet with cyclone adds 360 mm (14.17") to total height.

# Specifications | Dust Sentry Pro

Particle Module	Sizes	Range	Accuracy	Flow Rate	Lower Detectable Limit (2 $\sigma$ )
Profiler (Optical Particle Counter)	PM <sub>1</sub> , PM <sub>2.5</sub> , PM <sub>10</sub> or TSP	PM <sub>1</sub> 200 $\mu\text{g}/\text{m}^3$ PM <sub>2.5</sub> 2000 $\mu\text{g}/\text{m}^3$ PM <sub>10</sub> 5000 $\mu\text{g}/\text{m}^3$ TSP 5000 $\mu\text{g}/\text{m}^3$	$<\pm(5 \mu\text{g}/\text{m}^3 + 15\%$ of reading)	1.0 LPM	$<1 \mu\text{g}/\text{m}^3$
Optional Particulate Counts	0.3, 0.5, 0.7, 1.0, 2.0, 3.0, 5.0, 10 microns	0-1000000 particles/L			
System Specifications					
Control System	Embedded fanless PC (Intel Celeron® N3350, 1.1GHz, dual core, 4GB RAM, 32GB SSD hard drive), Ubuntu Linux Operating System				
Communications <sup>1</sup>	Standard: WIFI, Ethernet (LAN) Optional modem: Cellular IP 3G HSPA or 4G LTE				
Software	<p><b>Aeroqual Connect</b> instrument operating system.  <b>Aeroqual Cloud</b> instrument monitoring, management and technical support via secure cloud servers, accessed via web browser (IE, Firefox, Chrome, Safari).</p> <ul style="list-style-type: none"> <li>Cloud standard features; configuration, calibration, diagnostics, remote technical support.</li> <li>Cloud optional features; text (SMS) and email alerts, 3rd party sensor measurements, full data visualisation with charts, wind and pollution roses, data reporting with auto data export via FTP and API, full instrument event journal capture.</li> </ul>				
Data Logging	32 GB Hard Drive (> 5 years data storage)				
Outputs	2 x Relay (optional), 4 x 4-20 mA (optional)				
Averaging Period	1 min, 5 min, 10 min, 15 min, 20 min, 30 min, 1 hr, 2 hr, 4 hr, 8 hr, 12 hr, 24 hr				
Power Requirements <sup>2</sup>	100-260 VAC (standard): 30aW / 24.7bW, Regulated 12 VDC (if required): 33aW / 27.2bW				
Enclosure	Lockable IP65 GRP cabinet with integrated aluminum solar shield armor				
PM Sampling System	<p><b>Inlet:</b> Omni-directional 36 cm (14.1 inches) heated inlet  <b>Pump:</b> 12 V brushless DC diaphragm</p>				
Dimensions	483 H x 330 W x 187 D mm (19 H x 13 W x 7.4 D inches) Includes solar shield armor & mounting brackets				
Weight <sup>3</sup>	< 13 kg (28.6 lbs)				
Environmental Operating Range	-10 °C to +45 °C (14 °F to 113 °F)				
Mounting	Pole, tripod and wall mounting brackets included				
47mm Sample Filter (Optional)	47 mm filter for particle loading analysis				
Factory Integrated & Tested Sensors (Optional)	Gill WindSonic (ultrasonic wind sensor), Vaisala WXT536 (weather transmitter), Met One MSO (weather transmitter), Cirrus MK427 Class 1 (noise sensor), Novalynx Pyranometer (solar radiation), BSWA 308 (sound level meter) Met-One BC-1060 (black carbon monitor), Met-One E-BAM PLUS (Beta-Attenuation Mass Monitor)				

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<sup>4</sup> Dimensions are for enclosure. PM sampling inlet with cyclone adds 360 mm (14.17") to total height.



The EM2030 is a fully automated, remote sound level monitor. The unit is designed for simple operation and reliability in tough environments. The EM2030 is the latest in our series of automated noise monitoring systems. With an extended measurement range and automatic audio capture options, the EM2030 provides a reliable measurement system for all environmental and industrial applications.



**Automated operation and simple online analysis**

**Continuous remote monitoring with no manual interaction**



**Extended measurement range with remote controlled setup**

**Reliable measurement for any application**



**Frequency analysis tools for detailed sound source investigation**

**1/1 and 1/3 octave analysis options**



**Flexible and automated audio sample recording options**

**Remotely capture audio clips to identify noise sources**



**Low power mode to extend battery life**

**Ready for long term remote measurement projects**



## Technical Specifications

### Sound Level Measurement

**Accuracy:** IEC 61672 Class 1

**Dynamic range:** 17 to 121dB(A)

**Frequency range:** 20Hz to 20kHz

**Frequency weighting:** A and C weighting

**Parameters:** LEQ, L05, L10, L50, L90, L95, LMAX

### Logging

**Measurement period:** 1, 5, 10, 15 or 30 minutes

**Data storage capacity:** 5 years (5 minute logging)

**Procedure:** Automatic measurement and logging

### Interface

The EM2030 and online interface are accessed using any standard web browser

### Power Requirements

**Power input:** 110V-240V AC

**EM2030:** 8 - 16V DC (battery option)

**Power consumption:** 2.4W

### Communications

Wi-Fi (user interface)

3G SIM card supplied with each monitor

### Microphone

**Sensitivity:** 50mV/Pa

**Connection:** BNC to BNC (3m cable as standard)

**Power supply:** Constant current ICP, 18V 4mA







Hoskin Scientific Limited has been supplying testing and monitoring instruments since 1946. Although our range is broad, we focus on three major markets including:

Geotechnical & Materials Testing  
Environmental Monitoring  
Test & Measurement Instrumentation

Hoskin Scientific operates out of three offices within Canada with an additional service centre in Edmonton, AB :

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