



# Environmental Monitoring

SOLUTION SNAPSHOT

# How do you shorten the path between monitoring and informed action?

For more than 50 years Acoem has been designing and manufacturing class-leading multi-parameter environmental monitoring and industrial reliability solutions.

We offer our global customers a complete range of integrated measurement technologies and services, ensuring that your data is always accurate and your equipment operates with maximum efficiency.

We believe in helping you find the right balance between progress and preservation.

Empowering industries, government authorities, scientists and communities to make knowledgeable decisions based on reliable data, our holistic solutions lead to operational excellence and better outcomes.











At Acoem, we create environments of possibility.



## Gas Analysers & Calibrators



## Dust & Particulates

- 
- |  |   |   |  |   |
|--|---|---|--|---|
| <br>Construction    | <br>Wind Turbine | <br>Transport & Mobility | <br>Scientific Research | <br>Metal & Mining |
| <br>Health & Safety | <br>Government   | <br>Industries           | <br>Nuclear             | <br>Energy         |



## Aerosols





**Indoor & Controlled Environments**



**Tunnels & Emissions**



**Noise & Vibration**



**Integrated Systems**



**Meteorological**



**Operation & Maintenance**



# Gas Analysers & Calibrators

## REFERENCE QUALITY GAS ANALYSERS

The Acoem range of Serinus<sup>®</sup> gas analysers has been designed using our experience and knowledge gained from operating large air quality monitoring networks.

### Serinus<sup>®</sup> 10

Ozone Analyser (O<sub>3</sub>)

### Serinus<sup>®</sup> 30

Carbon Monoxide Analyser (CO)



### Serinus<sup>®</sup> 44

Ammonia Analyser (NO, NO<sub>2</sub>, NO<sub>x</sub>, NH<sub>3</sub>)

### Serinus<sup>®</sup> 51

Sulfur Dioxide & Hydrogen Sulfide Analyser (SO<sub>2</sub>, H<sub>2</sub>S)

### Serinus<sup>®</sup> 57

Total Reduced Sulfur Analyser (TRS)

### Serinus<sup>®</sup> 31

Carbon Dioxide Analyser (CO<sub>2</sub>)

### Serinus<sup>®</sup> 50

Sulfur Dioxide Analyser (SO<sub>2</sub>)

### Serinus<sup>®</sup> 55

Hydrogen Sulfide Analyser (H<sub>2</sub>S)

### Serinus<sup>®</sup> 60

Direct Nitrogen Dioxide Analyzer (NO<sub>2</sub>)

### Serinus<sup>®</sup> 40

Oxides of Nitrogen Analyser (NO, NO<sub>2</sub>, NO<sub>x</sub>)

### Serinus<sup>®</sup> 56

Total Sulfur Analyser (TS)

### Serinus<sup>®</sup> 30T

Trace Carbon Monoxide Analyser

### Serinus<sup>®</sup> 40T

Trace Oxides Of Nitrogen Analyser

### Serinus<sup>®</sup> 50T

Trace Sulfur Dioxide Analyser



## Serinus® Cal 1000

The Serinus Cal 1000 performs gas dilution calibrations and is used in conjunction with regulatory traceable gases and a zero air generator.

## Serinus® Cal 2000

With all the features of the Serinus Cal 1000, the Serinus Cal 2000 includes additional essential elements for calibrations of NO<sub>x</sub> and O<sub>3</sub> analysis equipment. An internal ozone generator enables regular ozone checks and Gas Phase Titrations (GPT).

## Serinus® Cal 3000

With all the features of the Serinus Cal 1000 and 2000, the Serinus Cal 3000 adds an ozone photometer for the accurate creation and delivery of ozone concentrations when calibrating ozone analysers.

## Serinus® Cal 300

Includes a built-in ozone generator and internal zero-air source as well as a compact reference photometer, providing precise feedback control for accurate ozone generation and measuring in one unit.

- **Highly flexible:** Gas dilution calibrations, ozone analyser precision checks, gas phase titrations and ozone transfer calibrations
- **Updated user interface,** conceived and designed using customer input, is simple to configure and intuitive to use
- **Class-leading performance:** Accuracy, traceability, repeatability.



# ☐☐☐☐☐☐☐☐ Dust & Particulates Monitoring

Acoem offers more than 25 particulate monitors that can function in a variety of settings, ranging from bustling urban areas to remote forests. Among our flagship particulate monitoring technologies are the BAM 1020 and BAM 1022. These cutting-edge solutions are equipped with advanced features, including:

- Solar or mains-powered
- Unbiased monitoring
- Totally self-contained system
- Short time average continuous data
- Integrated weatherproof enclosure
- 1 min intervals if required
- Portable and rapid redeployment
- TSP, PM<sub>10</sub>, PM<sub>2.5</sub> size selective inlets
- Remote communications
- Cloud-based data options.
- Minimal site preparation



## E-BAM Plus

- US EPA Designation, PM<sub>10</sub>
- Emergency responder
- Deployable in 15 mins
- Fenceline monitoring
- Lightweight & rugged construction.

## BAM 1020

- Compliance monitoring
- US EPA Designation, PM<sub>2.5</sub>, PM<sub>10</sub> & Coarse
- Air quality networks
- TSP, PM<sub>10</sub>, PM<sub>2.5</sub> sample inlets available
- Easier to service, enhanced reliability & lower power consumption than competing instruments
- Almost 60 mins of sampling per hour delivers improved sensitivity & time resolution.

## Swift 25.0 Flow Calibrator

- Accurate flow rate measurements
- Average flow, ambient or flow temperature
- Relative humidity (RH) and ambient pressure
- Flow accuracy is traceable to NIST standards.



## BAM 1022 & BAM 1022 PLUS

- Real-time, portable Beta Attenuation Mass monitors.
- US EPA Class III FEM Designation, PM<sub>2.5</sub>.
- In-situ measurement of PM with high accuracy & minimal measurement artifacts.
- Unsurpassed performance under high ambient dew point operation.
- Advanced communications features allowing remote operation & cloud-based communication.
- Superior diagnostics.
- Meteorological & other sensor inputs.
- Improved sensitivity compared to other in-line Beta Attenuation Mass monitors.
- Our new BAM 1022 PLUS is the most sensitive BAM instrument manufactured, with nearly double the sensitivity of the standard BAM 1022.



## MicroVol™ 1100 Low Volume Air Sampler

- $PM_{10}$ ,  $PM_{2.5}$  or TSP
- Flexible sampling platform for particulates & basic meteorological parameters
- Lightweight, rugged weatherproof indoor & outdoor applications
- Wind direction & speed used to activate / deactivate sampler
- Quiet operation, ultra-efficient, long-life DC pump
- Optional battery or solar power.



## HiVol™ 3000 High Volume Air Sampler

- $PM_{2.5}$ ,  $PM_{10}$  or TSP
- Remote unattended sampling along with basic meteorological parameters
- US EPA approved & only high volume sampler with CE & C-tick approval
- Volumetric flow control automatically corrected to standard reference temperature
- Programmable reference temperatures
- Industrial brushless motors (100k hours continuous field operation)
- Weatherproof marine-quality anodised aluminium cabinet
- Wind direction & speed used to activate / deactivate sampler
- Simple programming of sampling periods & remote control from PC.





## SASS-Speciation Sampler

- Portable integrated ambient particulate sampling system
- Inlet for PM<sub>2.5</sub> at 6.7 liter/minute sample rate
- Solar shield maintains cassettes to less than <5°C over ambient temperature
- Canister provides data integrity – contamination proof
- New multi-cell denuder & multiple filter media.



## Super SASS-Speciation Sampler

- Up to 8 channel operation
- 1 to 8-day sampling, sequential
- Automatic volumetric flow controllers
- Each channel may be operated independently
- Advanced field audit screens.

## Black Carbon Monitors

- Exhaust & Emissions
- Wildfires & Smoke
- Affordable and easy to use
- Black carbon & brown carbon
- Source apportionment monitor with 1-min time resolution
- Flow dilution system for high concentration environments.

## Air Quality Monitors

- PM<sub>10</sub>, PM<sub>4</sub>, PM<sub>2.5</sub>, and PM<sub>1</sub>
- Ideal for fugitive emissions & neighborhood-scale community monitoring projects
- Simple operation, portability & modest cost
- Real-time data reporting LIVE on a custom dashboard
- Wind speed & direction; temperature; relative humidity; barometric pressure; & historical device data
- Near reference data using light scatter technology.

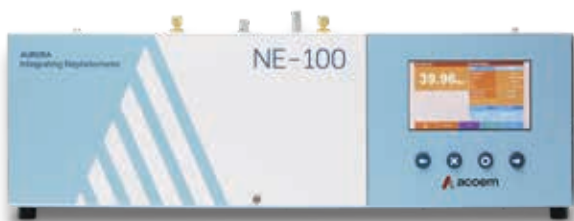




# Aerosol Monitoring & Measurement

A comprehensive line of Aurora™ integrating nephelometers: from single or three wavelength to polar three wavelength

- Total remote control including calibration
- Rugged & robust
- Proven capability in remote, unattended locations for long-term monitoring
- Fully integrated with Airodis™ data collection, validation & reporting software by Acoem
- User-friendly & easy to maintain in the field
- Uncompromising performance with low cost of ownership.



## Aurora™ NE-100

### AFFORDABLE EXCELLENCE

Easy to use and maintain, the Aurora NE-100 uses a single wavelength LED for light scattering coefficient and visibility measurements which are selectable from the menu.



## Aurora™ NE-300

### ENHANCED CORRELATION

Simultaneous measurement across 3 wavelengths, enabling wide and in-depth analysis of the interaction between light and particles.

The Aurora NE-300 integrates measurements of full scatter and backscatter, making it a perfect instrument for climate change research.





## Aurora™ NE-400 Polar

### BEST-IN-CLASS

The Aurora NE-400 provides measurements of light scattering in up to 18 user-selectable angular sectors, using varied backscatter shutter positioning.

This can help determine the phase function of aerosols, which is crucial to climate research and modelling.



## ACS™ 1000

### INNOVATION IN HYGROSCOPIC STUDY

The Aerosol Condition System (ACS) 1000 can be used with most aerosol monitoring instruments, adjusting relative humidity with minimal particle loss to measure the effect of water uptake on the properties of aerosols.

The ACS 1000 simultaneously controls differing relative humidity levels in two sample channels, allowing real-time measurement by parallel instruments for comparison.



# Indoor Air Monitoring

Acoem offers a wide selection of portable and bench-top particle counters and dust monitors. Our units provide a convenient and efficient way to monitor indoor air quality. These devices are cost-effective and reliable. Their one-touch monitoring feature makes them user-friendly.



Public Places



Air Filtration Manufacturers



Hospitals



Child Care



Manufacturing Facilities



## Aerocet 380

### PORTABLE DUST MONITOR

- Accurate, Real-time airborne Total Suspended Particulate (TSP) concentration levels
- Optional cyclones to monitor  $PM_{10}$ ,  $PM_{2.5}$ , or  $PM_{10}$
- Simple operation
- Built-in data logger
- Purge air system / automatic zero
- WiFi, RS-485 & USB communication.



## Aerocet 831

### HANDHELD DUST MONITOR

- Five mass ranges ( $PM_{10}$ ,  $PM_{2.5}$ ,  $PM_{4}$ ,  $PM_{10}$  & TSP)
- Handheld mass monitor that is fully portable & battery operated
- Sample history
- Low cost with data logging
- Portable and lightweight, it can assist in identifying particles of varying sizes.





# Clean Room and Controlled Environment



Our handheld and bench-top units are perfect for clean room applications that fall within ISO 14644-1:2015 Class Class 3-9. These units can be seamlessly integrated into existing facility software and building automation systems, ensuring the highest level of data integrity.



Biotechnology



Life Science



Aerospace



Electronics & Optics



Packaging Industries

## BT-620

### BENCH-TOP PARTICLE COUNTER - 6 CHANNEL



- Easily integrate with existing facility software
- Built-in digital & analogue connectivity
- 21 CFR Part 11 compliance
- ISO 21501-4 compliant with calibration
- Built-in printer for data integrity
- Volumetric flow control for improved accuracy
- Selectable count units (TC, /L, CF, M<sup>3</sup>)
- User-friendly, menu-driven setup
- User-adjustable sample time
- User-assigned location ID
- Data storage of 8000+ sample events
- Battery & AC-powered
- Audible alarms.

## DR-528

### HANDHELD PARTICLE COUNTER - 8 CHANNEL



- Large, full-color LCD display
- Menu-driven multi-function rotary scroll wheel
- User-identifiable alphanumeric location IDs
- Integrated RH & temperature sensor
- Intuitive navigation
- Integrated tools menu to optimize device capabilities.



Scan, download, & explore our complete indoor monitoring solutions.

# 🎯 Noise & Vibration Monitoring



## Fusion™

### 4G SMART SOUND & VIBRATION ANALYSER

With IEC 61672 certification and built-in 4G modem, GPS and WiFi, the all-weather, hyperconnected Fusion sound level meter guarantees accuracy and high-speed connectivity.

Add a vibration sensor to record/store 3-axis vibrations in parallel, or connect a camera for real-time audio and video alongside pushed data.



Powered by Cadence™



## ACT-400

### MICROPHONE & MONITORING STATION

The Acoustic Connect Terminal (ACT-400) combines the precision of a Class 1 microphone with the maximum protection of an outdoor kit and full connectivity via the Cadence noise management system as well as other open-source platforms.





## Orion™

### SMART VIBRATION MONITORING TERMINAL

An all-in-one vibration monitoring system with integrated sensor, modem, WiFi and GPS.

It is robust, waterproof, easy to configure and use, and features 7 measurement channels and smart integration of vibration standards.

## Cube™

### 4G SMART NOISE MONITORING TERMINAL

Combining functionality with high-speed connectivity, the versatile Cube can be mounted or carried in a portable weatherproof case.

It features inbuilt 4G modem, externally accessible WiFi/GSM/GPS antennae and IEC 61672 certification, guaranteeing data accuracy. Connect to a camera for real-time audio and video event detection.



Airport Monitoring



Vehicular Noise Monitoring



Construction Site Monitoring



Mining Monitoring



Windmill Farm Monitoring



Industrial Monitoring



Community Area Monitoring



## Meteorological Sensors



Our meteorological systems comprise of our time-tested, rugged weather sensors and accessories, including:

- Wind speed & direction sensors
- Relative humidity & temperature sensors
- Solar radiation sensors
- Barometric pressure sensors
- Precipitation sensors
- Visibility monitors.

Standard packaged meteorological systems include:

- General purpose weather station
- Industrial weather station
- Rapid response weather station
- Air quality weather station
- System Contamination and Meteorological Platform(SCAMP).







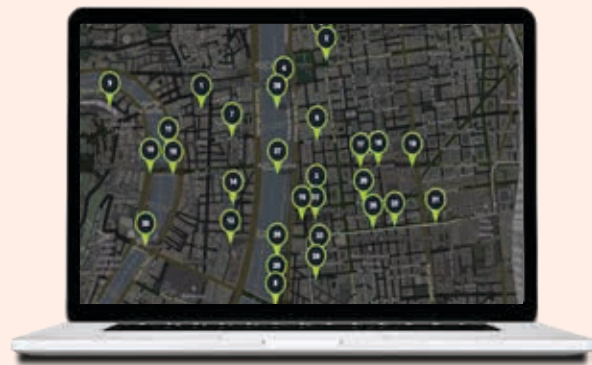
## Technology Platforms

### Cadence™

#### NOISE AND VIBRATION MONITORING ECOSYSTEM

A responsive, ready-to-use monitoring platform that seamlessly integrates with all Acoem noise measuring devices.

The Cadence IoT platform is available 24 x 7 x 365 enabling access to data on an intuitive interface via any connected device.



### Asset Management System

#### PREVENTATIVE AND UNSCHEDULED MAINTENANCE TASK MANAGEMENT SOLUTION

AMS™ has been designed to meet individual operator requirements of complex monitoring networks with tens or hundreds of individual pieces of environmental monitoring equipment.

It provides a critical tool to manage maintenance scheduling down to task level as well as a central point where all relevant calibration and equipment maintenance records can be stored.

This helps facilitate any internal or external audit process and improves access to records for data validation.

### Congrego®

#### TOTAL DATA CONTROL & LOGGING FOR AIR QUALITY & CEMS

Congrego provides data control and logging for air quality and continuous emission systems. With a simple set up, it is easy to install and features an intuitive and customizable user interface.

Compatible with a wide range of analogue and digital monitoring instruments, Congrego fulfills the “traceability of records” requirement of ISO 17025.

### Airodis

#### DATA COLLECTION, VALIDATION & REPORTING FOR ENVIRONMENTAL DATA MANAGEMENT

Airodis is an environmental data management software package that automates the process of retrieving data from multiple data loggers allowing you to validate data and generate a wide range of reports.

Airodis is designed to easily manage valuable data and maximise your productivity while ensuring accuracy and traceability.



# Tunnel Sensors

## SMART SOLUTIONS FOR TUNNEL ATMOSPHERE MONITORING

Accurate and efficient monitoring of atmospheric conditions in tunnels is critical to ensuring the safety, health and wellbeing of those who use them.

Monitoring is mandatory for regulatory compliance and integral to maintaining the longevity of the asset for road owners / operators.

Acoem designs, manufactures, commissions and maintains a wide range of tunnel atmosphere monitoring sensors for measuring:



Visibility



Toxic gas emissions



Air speed & direction



Tunnel luminance & illuminance

## Airflow MkII

FIXED POINT  
TUNNEL ANEMOMETER

## ECOM, ENOX & ENOM

SINGLE PARAMETER GAS SENSORS  
FOR CO, NO<sub>2</sub> / NO

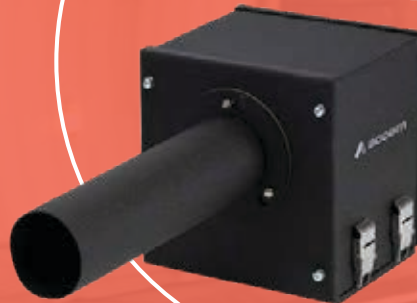
## Illios & Luminos MkIII

ILLUMINANCE ANALYSER



## Crossflow

MULTI-LANE, BIDIRECTIONAL  
TUNNEL ANEMOMETER



## Viconox

COMBINED CO, NO, NO<sub>2</sub>  
& VISIBILITY TUNNEL MONITOR





## Continuous Emission

Our innovative range of monitors are specifically designed for various continuous emission applications such as:



Boiler



Filter Bag Houses



Industrial & Marine processes



Incinerators



### DSL-2XX Series (220, 230 & 240)

Single pass opacity monitors for measuring opacity, smoke and particulate & dust emissions.

### DSL-3XX Series (320, 330 & 340)

Double pass opacity monitors for measuring opacity, smoke and particulate & dust emissions.

### DSL-460

Double pass opacity monitor for measuring the visual opacity and/or concentration of dust/particulate emissions.

### DSL-610

Laser backscatter monitor for measuring particulate matter concentration.

### SM-202M

Single pass opacity monitor for measuring visible opacity of marine smoke emissions.

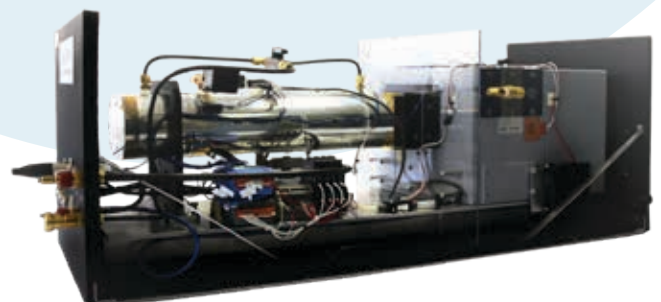


## Greenhouse Gas Measurement

**Spectronus™ FTIR – Trace Greenhouse Gas & Isotope Analyzer: Simultaneous & real-time measurement of CO<sub>2</sub> (incl.  $\delta^{13}\text{C}$  &  $\delta^{18}\text{O}$ ), CH<sub>4</sub>, N<sub>2</sub>O & CO.**

The Spectronus FTIR analyzer combines a Fourier Transform Infrared (FTIR) spectrometer, multi-pass gas sample cell and a high performance detector to provide simultaneous measurement of multiple greenhouse gas species with high repeatability and excellent reproducibility without the need for frequent gas calibrations.

The ICOS-compliant Spectronus gives precision values for greenhouse gas measurement that exceed World Meteorological Organization (WMO) standards and has been designed to fit comfortably in a standard 19-inch instrument rack.



# Integrated Systems

Designed to withstand the toughest environments from urban and industrial sites to tropical rainforests and frozen tundras, Acoem designs, manufactures, installs, commissions and maintains bespoke integrated systems throughout the world including:

- Integrated noise monitoring systems
- Ambient air quality monitoring systems
- Trace/background air monitoring systems
- Tunnel & roadside monitoring systems
- Blast monitoring systems
- Continuous Emissions Monitoring Systems (CEMS)
- Solar, battery or mains-powered particulate monitoring systems
- Custom-designed shelters to house monitoring systems
- Integro™ LIDAR Network 3D dust monitoring systems
- Healthy Schools Monitoring (HSM) network
- Customisable speciation samplers.



Noise Monitoring



Ambient Air Monitoring



Trace Air Monitoring



Tunnel Monitoring



Blast Monitoring



Emission Monitoring



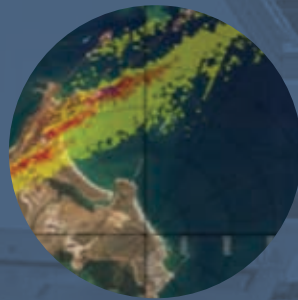
Particulate Monitoring



OEM Particulate Monitoring



Solar BAM



Integro™ LIDAR radar scan



Large walk-in shelter



Portable shelter



Noise monitoring systems



Polar Shelter





## Manufacturing and R&D Facilities

Our aim of finding the right balance between quality and the environment also applies to our manufacturing facilities. Following the highest global standards of excellence, our high-technology business operations are equipped with state-of-the-art capabilities to manufacture products for local and international markets.



### 10 Countries

- Australia
- Brazil
- Canada
- France
- Germany
- India
- Thailand
- Sweden
- USA
- UK



### 5 Factories\*

- Australia
- France
- India
- USA
- UK



### 4 R&D Centres\*

- Australia
- France
- USA
- UK





## Operations & Maintenance

Acoem offers a range of environmental monitoring services including:

- Service & Calibration Centre – COFRAC, NATA & MEASNET accredited (France & Australia)
- Technical support & training
- Inhouse training
- Onsite service & maintenance
- Field service
- Data reporting
- NUPIC Certified 10CFR50, Appendix B
- Wind Tunnel Calibration System
- ISO 9001 certified manufacturing facilities
- ISO/IEC 17025 accredited testing laboratories, calibration laboratory & blast monitoring services.





## Services & Calibration

### ACCREDITED CLASS-LEADING TECHNICAL SERVICES

Nobody knows your instruments better than the technical team that helped to create them.

Regularly servicing and calibrating your instruments optimises their life and ensures they operate with maximum precision and efficiency, whenever you need them.

Protect your environmental hardware investment by having your Acoem branded equipment serviced, repaired and calibrated at our global ISO 17025 accredited Service & Calibration Centres.

- Wind sensors & anemometers
- Meteorological sensors
- Acoem noise & vibration equipment
- Gas analysers
- Blast monitors
- Emissions systems
- Gas & isotope analysers
- Nephelometers
- Beta Attenuation Monitors (BAM)
- Filter-based air quality samplers
- Black carbon monitors
- Calibration of Swift 6.0 & Swift 25.0 flow standards
- Handheld & bench top particle counters
- Onsite training
- Indoor air quality monitors.



ISO 9001  
Quality  
Management  
Systems  
CERTIFIED

ISO 45001  
Occupational  
Health and Safety  
Management  
CERTIFIED



NATA & COFRAC accredited facilities & services comply with the requirements of ISO/IEC 17025:2017 and include the French laboratory for acoustics testing & calibration and the Australian laboratory for testing, calibration for noise & blast monitoring services.

## About Acoem

At Acoem, we **create environments of possibility** – helping organisations find the right balance between progress and preservation – safeguarding businesses and assets, and maximising opportunities while conserving the planet’s resources. We deliver unrivalled, interoperable AI-powered sensors and ecosystems that empower our customers to make enlightened decisions based on accurate information.

Together with 220 distributors, our 850+ employees work across 28 offices, 6 manufacturing facilities and 5 R&D centres in 10 countries, to provide trusted, holistic data solutions for customers worldwide.

**Acoem links possibilities with protection.**

For more information visit [acoem.com](https://acoem.com)



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