Environmental Monitoring

SOLUTION SNAPSHOT

acoem

CREATING ENVIRONMENTS OF POSSIBILITY

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

For more than 50 years we have 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.

Environmental Monitoring Solution Snapshot

1 | Gas Analysers

Serinus® 10	Ozone (O_3)
Serinus® 30	Carbon Monoxide (CO)
Serinus® 31	Carbon Dioxide (CO_2)
Serinus® 40	Oxides of Nitrogen (NO, NO_2, NOx)
Serinus® 44	Ammonia (NO, NO_2, NOx, NH_3)
Serinus® 50	Sulfur Dioxide (SO_2)
Serinus® 50T	SO_2 Trace
Serinus® 51	Sulfur Dioxide & Hydrogen Sulfide (SO_2, H_2S)
Serinus® 55	Hydrogen Sulfide (H_2S)
Serinus® 56	Total Sulfur (TS)
Serinus® 57	Total Reduced Sulfur (TRS)
Serinus® 60	Nitrogen Dioxide (NO_2)
Kunak™	Small Sensor Air Quality Monitoring

2 | Gas Calibrators

Serinus® Cal 1000
Serinus® Cal 2000
Serinus® Cal 3000
Serinus® Cal 300

3 | Dust & Particulate monitoring

Neighbourhood Monitor
Exactus™ BAM / E-BAM Plus (PM_{10})
Spirant™ BAM
Microvol™ 1100 Low Volume Air Sampler
HiVol™ 3000 High Volume Air Sampler
DustRover™

4 | Aerosol Monitoring & Measurement

Aurora™ NE-100	Clear choice for visibility monitoring
Aurora™ NE-300	Proven results for long-term monitoring
Aurora™ NE-400 Polar	Measuring the aerosol phase function
ACS™ 1000	Innovation in hygroscopic study

5 | Greenhouse Gas Measurement

Spectronus™ FTIR
CO_2 (incl. $\delta^{13}C$ & $\delta^{18}O$), CH_4, N_2O & CO

ACOEM OFFICES

DISTRIBUTORS

MANUFACTURING FACILITIES

acoem

1 | Gas Analysers

REFERENCE QUALITY GAS ANALYSERS

The Acoem range of Serinus® gas analysers (formerly known as Ecotech® Serinus®) has been designed using our experience and knowledge gained from operating large air quality monitoring networks for more than 40 years.

Serinus® 10

Ozone Analyser (O_3)

Serinus® 30

Carbon Monoxide Analyser (CO)

Serinus® 44

Ammonia Analyser (NO, NO_2, NO_x, NH_3)

Serinus® 51

Sulfur Dioxide & Hydrogen Sulfide Analyser (SO_2, H_2S)

Serinus® 57

Total Reduced Sulfur Analyser (TRS)

Serinus® 31

Carbon Dioxide Analyser (CO_2)

Serinus® 50

Sulfur Dioxide Analyser (SO_2)

Serinus® 55

Hydrogen Sulfide Analyser (H_2S)

Serinus® 60

Nitrogen Dioxide Analyser (NO_2)

Serinus® 40

Oxides of Nitrogen Analyser (NO, NO_2, NO_x)

Serinus® 50T

SO_2 Trace

Serinus® 56

Total Sulfur Analyser (TS)

SMALL SENSOR NEAR-REFERENCE AIR QUALITY MONITOR

Kunak™ is a cost-effective near-reference air quality monitoring solution designed for cities, industries and researchers.

Developed for easy installation, operation and maintenance to realise lower cost of ownership when measuring targeted pollutants using small sensors.

- **Multi pollutant: Measure up to 5 gases & particulate matter at once**

- **Gas sensors: CO, CO_2, NO, NO_2, O_3, SO_2, H_2S, NH_3 & VOCs**

- **PM sensor: PM_1, $PM_{2.5}$ & PM_{10}**

- **Smart gas cartridges: Replace & combine cartridges with a plug & play cartridge system**

- **Easy calibration: Adjust the baseline & span remotely**

- **Air quality platform: Visualise, analyse & manage your data in the cloud**

- **Real-time data: Access to your data & alarms in real time**

- **Fully autonomous: Independent operation with built-in battery & solar panel.**

2 | Gas Calibrators

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 NOx and O_3 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.

3 | Dust & Particulate Monitoring

With more than 25 different particulate monitors to choose from in the range, the Neighbourhood Monitor, Exactus™ BAM and Spirant™ BAM are three examples of the latest particulate monitoring technology to incorporate the following features:

- Solar or mains-powered
- Totally self-contained system*
- Integrated weatherproof enclosure*
- Remote communications
- Nomadic relocation

- Rapid redeployment
- Minimal site preparation
- Cloud-based data options
- Short time average continuous data
- 1 min intervals if required
- TSP, PM_{10}, $PM_{2.5}$ size selective inlets.

* Excluding Spirant™ BAM

Palas Fidas® 200S

- EN certified

- Compliance & research monitoring

- Simultaneous TSP, PM_{10}, $PM_{2.5}$, PM_4, PM_1

- Almost 60 mins of sampling per hour delivers improved sensitivity & time resolution

- 64 size channels

- Adjustable time resolution from > 1 sec to 24 hrs

- Reliable function

- Very high data availability > 99 %

- Remote monitoring, maintenance & control

- No consumables

- IP65 enclosure.

Exactus™ BAM / E-BAM Plus

- Compliance monitor for PM_{10}

- US EPA designation

- Emergency responder

- Deployable in 15 mins

- Fenceline monitoring

- Lightweight & rugged construction.

Spirant™ BAM / BAM 1020

- Compliance monitors

- US EPA designation

- Air quality networks

- TSP, PM_{10}, $PM_{2.5}$ 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.

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

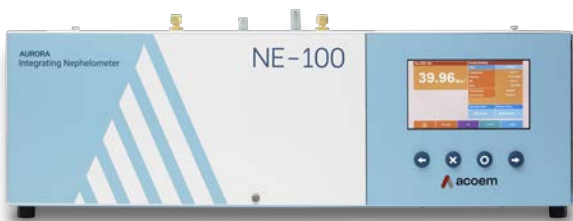- Simple programming of sampling periods & remote control from PC.

DustRover™ system

- 1st hazardous dust monitoring system for mining industry

- Developed to withstand extreme environments

- Compact & lightweight robust stainless-steel enclosure

- Simple traffic light alert system

- 4G router / modem + GPS

- Data logger

- Optional ambient temperature & relative humidity sensor

- Trending tool for accurate location & monitoring information

- 24 x 7 x 365 support.

Neighbourhood Monitor

- Low-cost dust management monitor

- Rugged & lightweight

- Highly portable

- Internal GPS

- Minimal servicing

- Plug & play set up.

Comprehensive range 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.
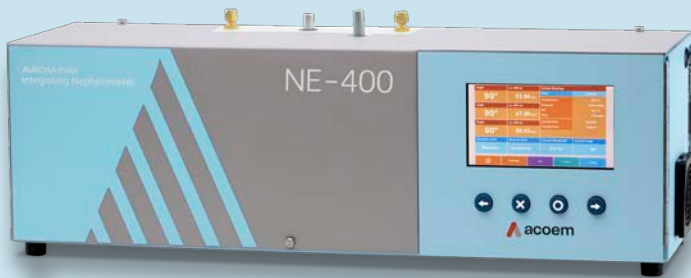
Aurora™ NE-300

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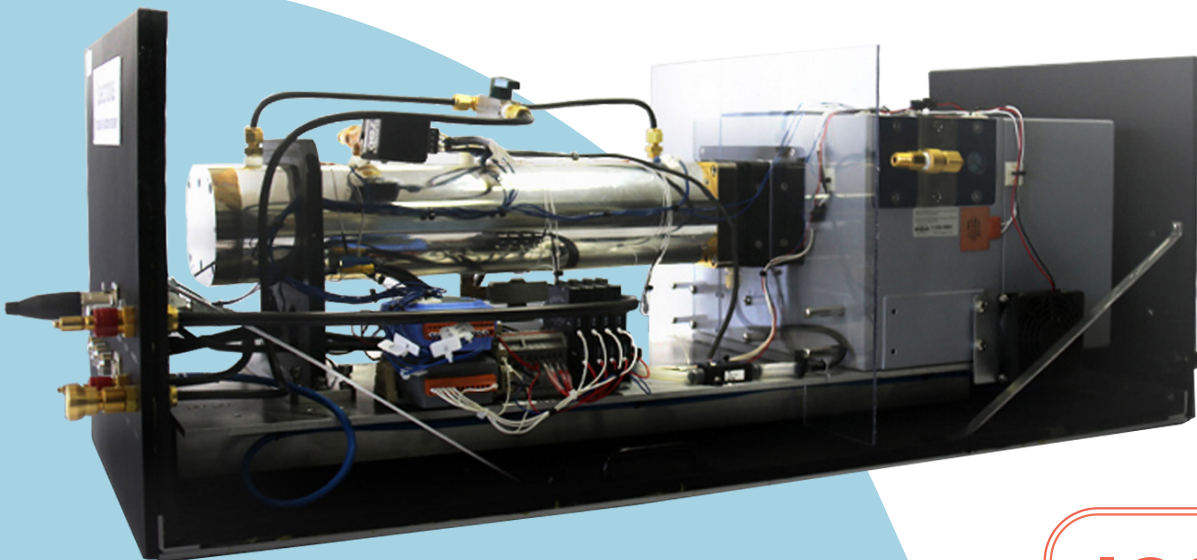
The ACS™ 1000 simultaneously controls differing relative humidity levels in two sample channels, allowing real-time measurement by parallel instruments for comparison.

Spectronus™ – Trace Greenhouse Gas & Isotope Analyser: Simultaneous & real-time measurement of CO_2 (incl. $\delta^{13}C$ & $\delta^{18}O$), CH_4, N_2O & CO.

The Spectronus™ FTIR analyser 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.

ICOS
NETWORK
APPROVED
AS AN
ICOS COMPLIANT
GHG ANALYSER
★

6 | Meteorological Sensors

Meteorological sensors that suit the climatic and weather conditions of any country.
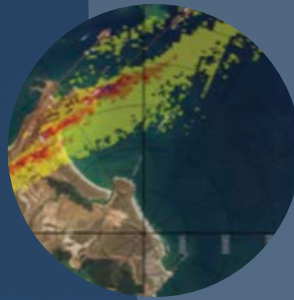
Meteorological sensors include:

- Wind Speed & Direction Sensors
- Relative Humidity & Temperature Sensors
- Solar Radiation Sensors
- Barometric Pressure Sensors
- Precipitation Sensors
- Visibility Monitors.

7 | Integrated Systems

Designed to withstand the toughest environments from urban and industrial sites to tropical rainforests and frozen tundras, Acoem develops integrated systems to meet the demands of specific environmental monitoring applications.

Solar BAM

Integro™ LIDAR radar scan

Polar Shelter

Large walk-in shelter

Portable shelter

Noise monitoring systems

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

- Water quality 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 system

- Healthy Schools Monitoring (HSM) network.

Noise Monitoring

Ambient Air Monitoring

Trace Air Monitoring

Water Quality Monitoring

Tunnel Monitoring

Blast Monitoring

Emission Monitoring

Particulate Monitoring

Cadence™

NOISE MONITORING & CONTROLLING MANAGEMENT SYSTEM

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.

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.

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, Wi-Fi and GPS.

It is robust, waterproof, easy to configure and use, and features seven 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.

9 | 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_2 OR NO

Illios & Luminos MkIII

ILLUMINANCE ANALYSER

Viconox

COMBINED CO, NO, NO_2 & VISIBILITY TUNNEL MONITOR

Crossflow

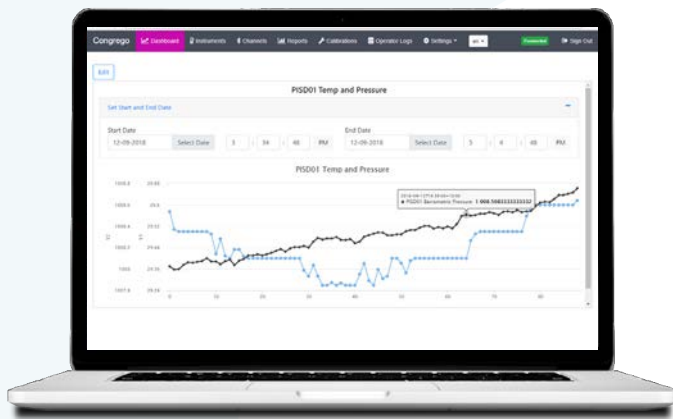**MULTI-LANE, BIDIRECTIONAL TUNNEL ANEMOMETER**

Congrego®

TOTAL DATA CONTROL

Total data control and logging for air quality and continuous emission systems. Simple set up and easy to install. Intuitive and customisable 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

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

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

AMS™

ASSET MANAGEMENT SYSTEM

Designed to meet the individual operator requirements of complex monitoring networks with tens or hundreds of individual pieces of environmental monitoring equipment.

AMS™ 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.

11 | Operations & Maintenance

Acoem offers a range of environmental monitoring services including:

- Service & Calibration Centre – NATA & MEASNET accredited

- Technical support & training

- Expert onsite service & maintenance

- Third party audits

- In-house service & repairs

- Data reporting

- ISO 9001 certified manufacturing facilities

- ISO/IEC 17025 accredited testing laboratories, calibration laboratory & blast monitoring services.

NATA
WORLD RECOGNISED
ACCREDITATION

ACCREDITED FOR
COMPLIANCE
WITH ISO/IEC 17025
CALIBRATION

ACCREDITATION
NO. 14184

12 | Services & Calibration

**ACCREDITED CLASS-LEADING
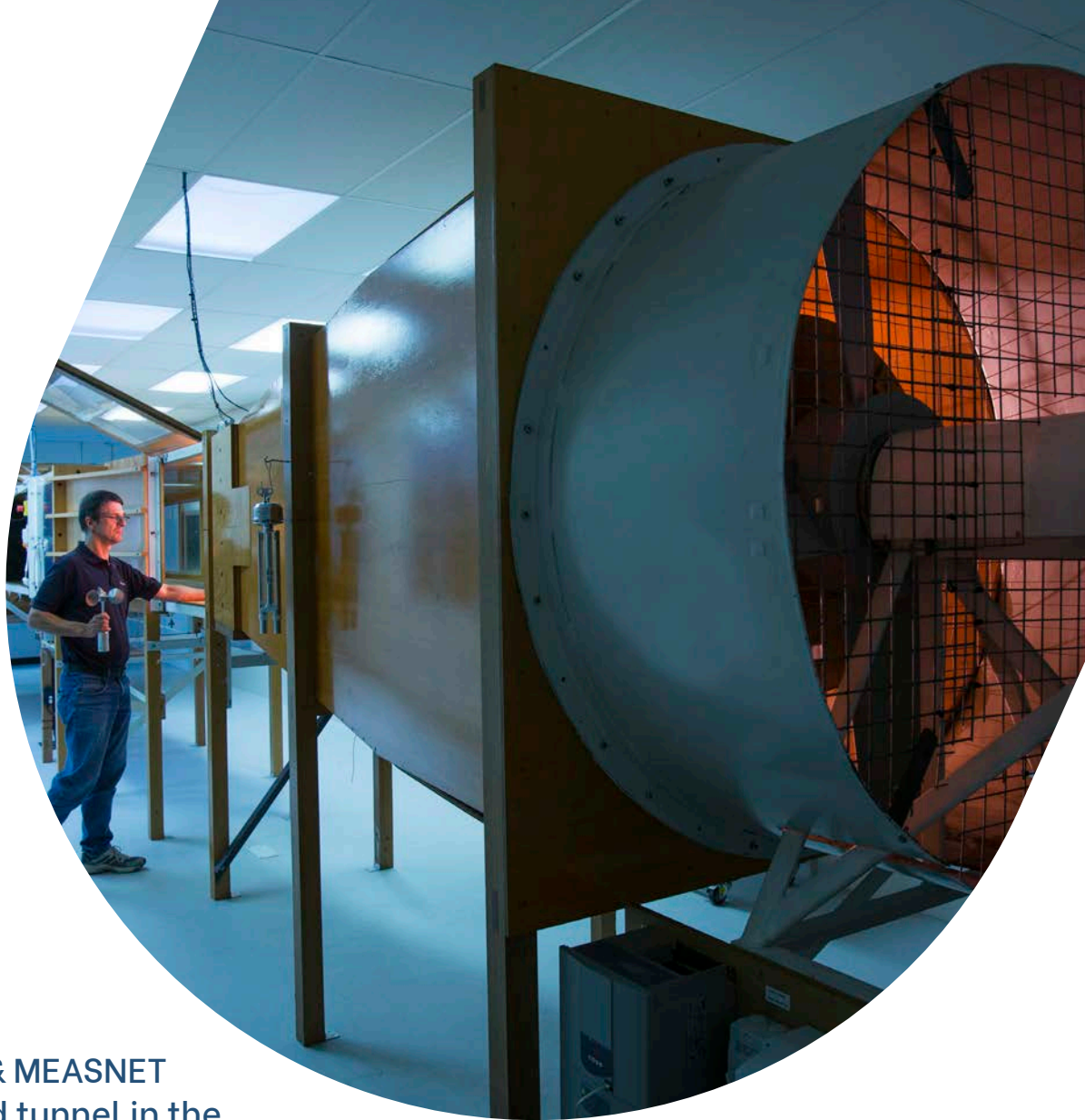TECHNICAL SERVICES**

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 and non-Acoem branded equipment serviced, repaired and calibrated at Acoem's NATA and ISO 17025 accredited Service & Calibration Centre.*

- **Wind sensors & anemometers**

- **Acoem noise & vibration equipment**

- **Ozone (O_3) analysers**

- **Mercury (Hg) analysers**

- **Pyranometers**

- **Blast monitors**

- **Emissions systems**

- **Gas & isotope analysers**

- **Meteorological sensors**

- **Nephelometers**

- **Water samplers.**

* NATA accredited facilities & services comply with the requirements of ISO/IEC 17025:2017 & include Acoem Australasia (Ecotech Pty Ltd) testing laboratories, calibration & blast monitoring services.

The only NATA & MEASNET accredited wind tunnel in the Southern Hemisphere

Regular maintenance and calibration of anemometers and wind sensors is critical to guaranteeing accuracy of measurements and ensuring longevity for the instruments.

Acoem specialises in the service and calibration of all types of wind speed and wind direction sensors, including conventional vane, hot wire, cup, propeller, ultrasonic and pitot tube anemometers, regardless of manufacturer.

The Acoem wind tunnel located at the Acoem Service & Calibration Centre in Melbourne is the only facility in the Southern Hemisphere that is accredited by the International Network for Harmonised and Recognised

Measurements in Wind Energy (MEASNET). MEASNET is the global authority on wind sensor calibration and wind energy measurement.

The MEASNET accredited wind tunnel is also the only NATA* and ISO 17025 accredited wind tunnel for the calibration of all types of anemometers in Australia.

* NATA accredited facilities & services comply with the requirements of ISO/IEC 17025:2017 & include Acoem Australasia (Ecotech Pty Ltd) testing laboratories, calibration & blast monitoring services.

NOISE & VIBRATION

Accredited calibration, service & repair centres

As the designers and manufacturers of Acoem (previously known as 01dB) noise and vibration monitoring sensors, meters, terminals, devices and software solutions expertly trained and certified technicians at Acoem facilities in France and Australia provide expert service, repair and calibration to keep your instruments in field ready condition.

Acoem Service & Calibration centres also provide equipment software and firmware upgrades, so all your Acoem hardware and software repairs and services can be conducted at one time, in one location.

SERVICING CUSTOMERS FROM AROUND THE WORLD

The Acoem Service & Calibration Centre tailors solutions to a variety of industries including:

- Aviation
- Construction
- Environmental consultants
- Environmental Protection Authorities (EPAs)
- HVAC & air purification
- Military / defence
- Mining
- Oil & gas / petrochemical
- Ports
- Research
- Solar farms
- Water.

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 9 countries, to provide trusted, holistic data solutions for customers worldwide.

Acoem links possibilities with protection.

For more information visit acoem.com

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