

Acuity Corrosion Technology™

End-to-End Corrosion Monitoring in All Environments



Aerospace | Automotive | Energy
Infrastructure | Marine | Testing

Acuity systems integrate advanced **corrosion monitoring sensors** with **C-DAT analytics** software to deliver **long-term, real-time monitoring** of corrosion and environmental conditions. They continuously track **free corrosion, galvanic corrosion, surface contaminants, temperature, and humidity**, offering a complete atmospheric corrosion management solution—from data collection to actionable insights.

Acuity Product Portfolio

Three sensing systems designed for different applications:

Acuity LS™



- On-asset continuous corrosivity measurement
- In situ coating testing
- Continuous corrosion rates (free/galvanic)
- Materials performance
- Severity classification
- Data driven maintenance

Acuity ES™



- On-asset continuous environmental monitoring
- Severity classification
- Data driven maintenance

Acuity CR™



- Triplicate testing for chamber or outdoor exposure
- High throughput testing
- Continuous corrosion rates (free/galvanic)
- Materials performance
- Coating performance

WHY Acuity?

Real-time corrosion monitoring. Acuity provides continuous free and galvanic atmospheric corrosion rates measures for an assortment of alloys: steels, aluminum, titanium, and more.

✓ **You are not limited to one material**

Early detection of corrosive conditions. Acuity provides corrosivity measures earlier than traditional techniques.

✓ **Detect early onset of corrosion**

Faster coating/material differentiation. Acuity detects performance differences 5 to 10 times faster than traditional methods.

✓ **Get to material selection faster**

Data-driven maintenance. Acuity provides continuous atmospheric corrosion monitoring for smarter, safer operations. Prioritize or defer inspections based on severity.

✓ **Reduce maintenance costs**

Standard compliance:

- ISO 22858
- ANSI/NACE TM0416-2023
- AMPP TM21449-2021
- SAE AIR6970



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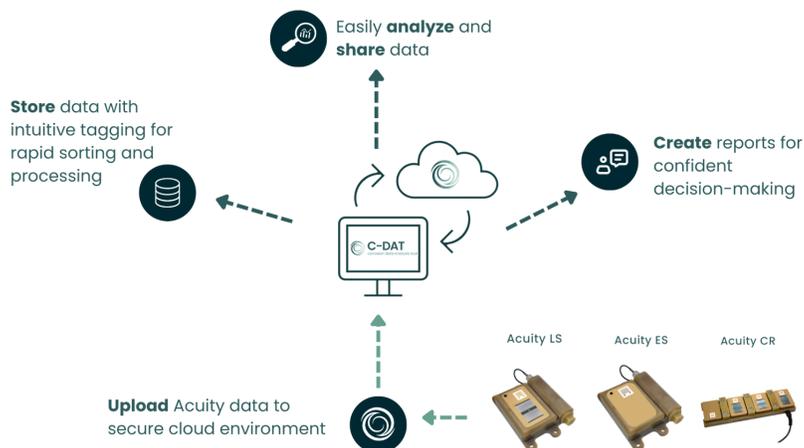
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C-DAT Software Analytics

Pair Acuity sensors with **C-DAT software** to create a comprehensive corrosion monitoring solution. C-DAT securely stores your data in the cloud, enables easy sharing within your enterprise, automates analysis, and turns complex corrosion data into **clear, actionable insights**.



Markets

Test and Measurements/Materials and Processes

- Quickly assess materials or coating performance
- Outdoor laboratory chamber and on-asset testing
- Optimize test conditions to match real-life conditions

Condition Based Maintenance

- Monitor asset specific corrosion over lifetime
- Identify corrosion risks early
- Prioritize or defer inspections based on corrosivity data
- From time based to data driven maintenance.

Acuity Technical Specifications

Environmental Monitoring

- Surface Temperature: $\pm 0.3^{\circ}\text{C}$ (-40 to $+85^{\circ}\text{C}$)
- Air Temperature: $\pm 0.3^{\circ}\text{C}$ (-40 to $+85^{\circ}\text{C}$)
- Relative Humidity: $\pm 2\%$ (0 to 100%)
- Contaminants: Gold IDE conductance (10 Hz and 25 kHz)
- Operating Range: -40 to $+85^{\circ}\text{C}$ continuous (LS/CR), -20 to $+60^{\circ}\text{C}$ (CR Battery Module)

Physical Specifications

- LS/ES: $1.1'' \times 4.7'' \times 3.5'' / 27.9 \times 119.4 \times 88.9$ mm (0.75 lbs/0.34 kg)
- CR: $12.0'' \times 3.5'' \times 3.2'' / 304.8 \times 88.9 \times 81.3$ mm (2.5 lbs/1.1 kg)
- Battery Life (60-min intervals): LS ~ 4.5 years, CR ~ 2.5 years, ES ~ 11 years

Industries

Aerospace and Automotive

- Reduce maintenance costs
- Condition based maintenance actions
- Detect early onset corrosion conditions
- Quickly assess corrosion performance of new materials/coatings
- Measure material performance in situ

Marine and Energy

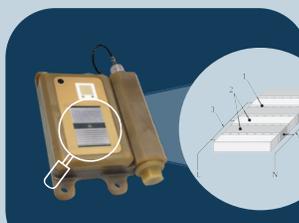
- Continuously track corrosivity on structures, vessels, and offshore assets
- Reduce corrective maintenance
- Detect corrosion and coating failure early
- Map real time corrosivity on a full park of assets or by geographical locations
- Remote monitoring of asset specific corrosivity

Corrosion Measurements

- Free Corrosion: 20 mV peak-to-peak, 0.5 Hz excitation (μA)
- Galvanic Corrosion: Zero resistance ammeter (μA)
- Conductance: 20 mV peak-to-peak, 10 Hz and 25 kHz (μS)
- Cumulative Measurements: Time-integral tracking (coulombs/volt, coulombs)

Sensor Technology

- Two-electrode electrochemical sensors
- Electrode Materials: Al, steel, Ti, CFRP, titanium, zinc (several mm thick)



Acuity products are developed by Luna Labs USA, LLC, a Virginia-based product development company serving defense and healthcare markets.

Initially developed for the US Navy and Air Force with SBIR funding, Acuity is now a trusted partner with worldwide industry and defense organizations.

