

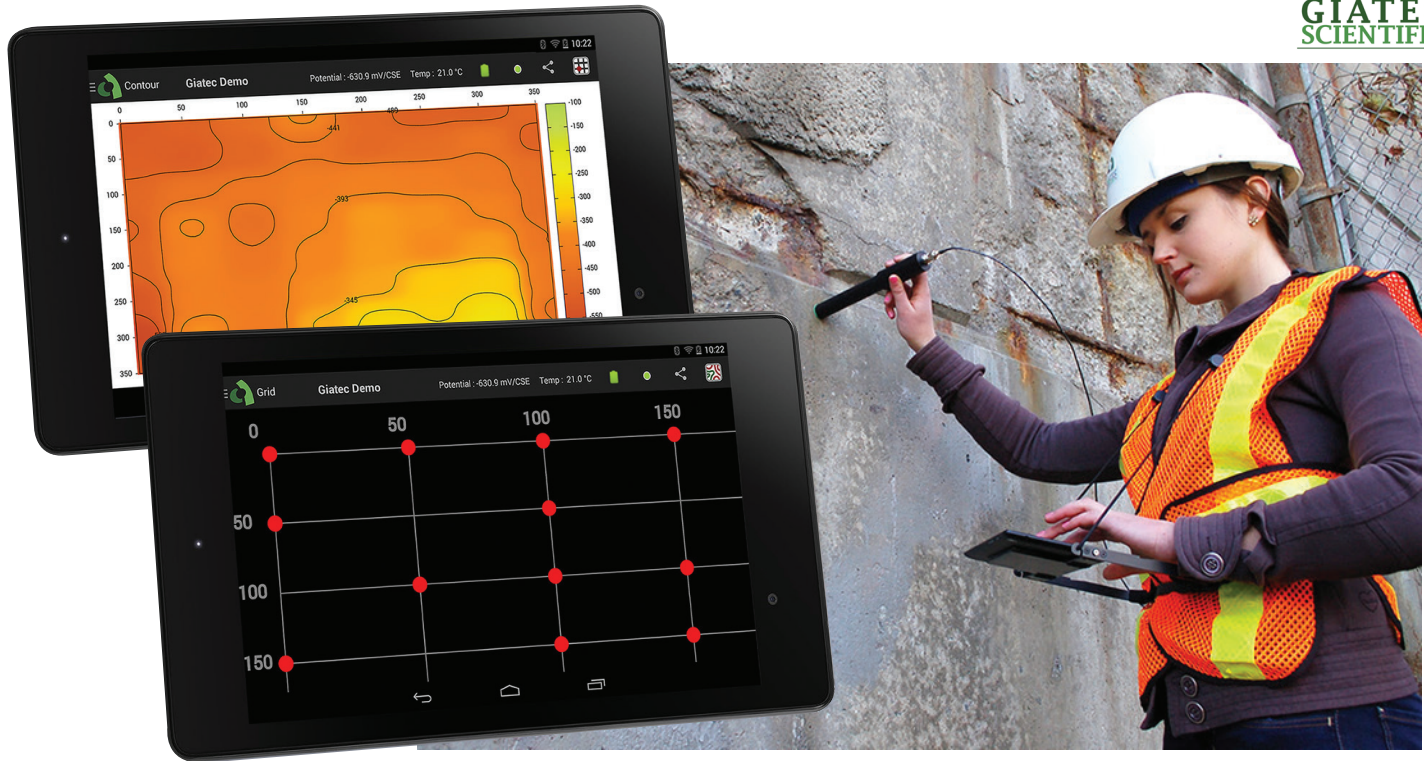


HUMBOLDT

Giatec CELL™ Half-Cell Corrosion Mapping



GIATEC
SCIENTIFIC



Features:

- Single-person operation device
- Maintenance-free electrode
- Tablet/Smart phone operation device
- Easy grid generation (on Tablet or Smartphone)
- Fast data assignment to grid points
- Real-time contour plotting
- Automated temperature correction
- Easy data sharing
- Bluetooth V4.0 LE technology

Giatec Cell™ is a novel tablet/smartphone-based NDT probe for fast, accurate and efficient detection of in-situ analysis of corrosion in reinforced concrete structures based on ASTM C876. Giatec Cell™ benefits from an advanced Bluetooth-enabled maintenance-free sensor that measures the corrosion potential and sends it wirelessly to a tablet for generating half-cell contour plots (i.e. corrosion maps) in real-time. The results can be shared easily with the engineering office. Giatec Cell™ significantly reduces the labor cost associated with the data collection and subsequent contour plot generation and reporting.

Giatec Cell™ can be used for efficient and accurate corrosion mapping according to the ASTM C876, "Standard Test Method for Half-Cell Potentials of Uncoated Reinforcing Steel in Concrete". The results are analyzed using the Android-based application on site for the identification of locations with high probability of corrosion. The output includes an equipotential contour map for the examined area. The measured potential values are indicative of corrosion probability as presented in Table 1. The contour plots are color coded for more clarity.

Three models of the Giatec Cell™ are available. They include the HG-9049, which is essentially the half-cell electrode. With this model the user can download an App from the Google Play Store for free and installs it on their Android smartphone. The mobile App records the measurements sequentially, but does not generate contour plots. The HG-9050 adds to this: a tablet and tablet App contour plot generation, carrying support, and basic extension arm. The HG-9051 adds an advanced extension arm instead of the basic model, a verification kit (an accurate reference electrode and filling solution), and an extension reel, all in a larger carrying case.

CELL™ Half-Cell Corrosion Mapping

Table 1:
Relationship between the potential values (CSE) and corrosion probability

Measured Potential (mV)	Probability of Steel Corrosion Activity
> -200 mV	Less than 10%
-200 mV to -350 mV	uncertain
< -350 mV	More than 90%

Technical Specifications

General

Type	Value
Voltage Measurement Range	± 1,000 mV
Measurement Accuracy	1 mV
Sampling Rate	1 s
Input Impedance	>10 M ohm
Temperature Measurement Range	14 ~ 122°F (-10 ~ 50 °C)
Temperature Measurement Accuracy	0.9 °F (0.5 °C)
Communication Protocol	Bluetooth V4.0 LE
Probe Weight	8.8 oz (250g)
Probe Dimensions	1.26 x 10.2" (32 x 260mm) DxL
Operating temperature	0 ~ 113°F (0 ~ 45°C)
Operating humidity	20 ~ 90%
Storage temperature	-4 ~ 158°F (-20 ~ 70°C)
Storage humidity	10 ~ 90%

Note: Specifications are subject to change without notice.

Ordering Information

Model#	Description
HG-9049 Essential Package	Cell™ Probe, Data Recording App. for Android Smart Phone, Alligator Test Clip, BNC Measurement Cable, BNC Charging Cable, Contact Sponge, Electrode Storage Solution, User Manual, Carrying Case. (Smartphone is not included)
HG-9050 Enhanced Package	Cell™ Probe, Tablet with hands-free carrying support, Data Analysis App., Alligator Test Clip, BNC Measurement Cable, BNC Charging Cable, USB cable, Extension Arm, Contact Sponge, Electrode Storage Solution, User Manual, Carrying Case.
HG-9051 Comprehensive Package	Cell™ Probe, Tablet with hands-free carrying support, Data Analysis App., Alligator test clip, BNC Measurement Cable, BNC Charging Cable, USB Cable, Contact Sponge, Electrode Storage Solution, Extension Arm, Verification Kit, Extension Reel, User Manual, Carrying Case.



CELL™ is a trademark of Giatec Scientific, Inc.

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