



GLOBAL ENERGY INNOVATIONS

## Measure Battery Chemical and Electrical Properties and REDUCE COST AND RISK

Battery experts agree, just measuring battery voltage and impedance is not enough. Voltage and impedance are only gross electrical indicators of battery function. Plus, they only provide limited information about battery health and are less than 100% reliable in detecting batteries that are near failure. This increases the cost and risk of battery ownership.

Reduce the cost and risk of ownership by simultaneously measuring both the electrical and chemical properties of batteries. This can be done by measuring,

Sulfation, Dryout, Voltage and Impedance (SDVI).

Battery sulfation and dryout are chemical properties of a battery and are precise, leading indicators of battery health. They provide essential information about when a battery will fail, but more importantly, they show when and how to apply corrective action when caring for batteries and extending battery service life.



## EC1000™ & EC2000™

### Measures Battery Chemical and Electrical Properties

The new EC1000™ and EC2000™ are the only ElectroChemical battery analyzers that measures all four electro-chemical parameters (SDVI) of a battery in a single measurement.

EC1000™ and EC2000™ are able to do this because CELScan™ Technology\* is built in. This is a patented, broadband, swept frequency response analysis technique that accurately measures the electro-chemical states found in batteries.

This type of advanced measurement technique has historically only been available in the laboratory because it required large, bench-top, frequency response analyzers which are 25 times larger and often over 8 times more expensive than the EC1000™ and EC2000™.

This technology has been put in the palm of your hand. It is easy to use and simple to understand for technicians and engineers. It's an analyzer with break-through performance, ElectroChemical portability and value pricing for use in the field, on the production line and in the lab.

### Measure Battery Chemical and Electrical Properties with the EC1000™ & EC2000™ and

- Identify more bad batteries before they fail
- Reduce battery replacement costs by caring for your batteries and not replacing them too soon.
- Reduce labor costs by not over testing your batteries
- Reduce or eliminate the need to measure specific gravity
- Reduce the need for load testing
- Reduce lost revenue by avoiding system shut down due to battery failures.
- Reduce risks to capital and personnel



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**BATTERY TEST** → **REPORTING** → **MANAGEMENT**

The EC1000™, EC2000™ and IBMS™ (Intelligent Battery Management System™) Software is a COMPLETE Universal Intelligent Battery Test and Management Solution.

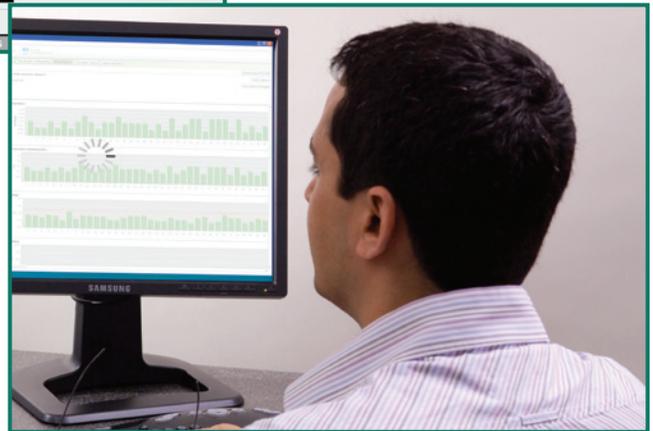


In order to maximize better measurement accuracy and repeatability, the EC1000™ and EC2000™ automatically calculates the proper Battery Calibration Factors (Baselines) during testing. Also, during the battery measurements, measurement limits (Alarms), preset by the user, provide automatic Pass, Warning and Fail visual and audible feedback as to the progress in measuring each cell or block in a battery string.

The EC1000™ and EC2000™ measure each cell or battery and store the test data for well over 50,000 batteries including string configuration and other site details (16 GB of data) before the data should be downloaded to a computer using IBMS™ (Intelligent Battery Management System™) Reporting and Archiving (Database) Software.

Battery test data is stored, analyzed and automatically formatted into a variety of presentation-ready reports using IBMS (Intelligent Battery Management System™) Reporting and Archiving (Database) Software. With IBMS™, the EC1000™ and EC2000™ stay up to date with the latest, new measurement performance features and capabilities. This is because IBMS™ can download the latest EC1000™ and EC2000™ application software and firmware including new features from Global Energy Innovations' website and install it in the EC1000™ and EC2000™ at any time.

MEM	25 Jan 2009 18:25	BATTERY 1 / CELL 2: READY		AUTO
2 OF 96 TESTS COMPLETED				
IMP(mΩ)	VOLT(V)	SULF(%)	DRY(%)	
0.124	**2.329	0	*6	
STRAP 0:1-1		----- ▲		
STRAP 0:1-2		PASS		
BATTERY 1 / CELL 1:		PASS		
BATTERY 1 / CELL 2:		FAIL ▼		
RETURN		DATA LOG		



The EC1000™ and EC2000™ are the only ElectroChemical (CELScan™) battery analyzer available for your complete battery and management needs.

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Global Energy Innovations is a global, electrochemical diagnostic software and instrumentation company. Leading companies around the world are advancing their business in rapid battery test, reporting and management through the benefits of the EC1000™ and EC2000™.

Contact Global Energy Innovations or visit our website for more information.

EC1000™ & EC2000™

ElectroChemical Battery Analyzer - Product Brief