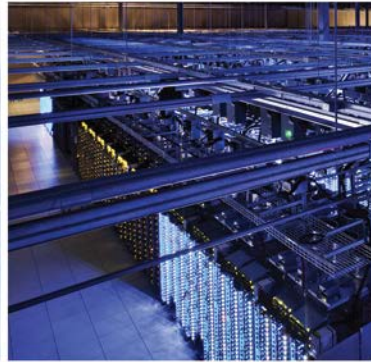


# Product Catalog



BATTERY EQUIPMENT AND ACCESSORIES [WWW.GLOBALEI.COM](http://WWW.GLOBALEI.COM)

**GEI**  
GLOBAL ENERGY INNOVATIONS®

# About Us

## Global Energy Innovations



Global Energy Innovations develops and manufactures precision battery test, monitoring and conditioning equipment and software for the stored energy and electrochemical test and measurement markets.

Located in Santa Clara, California, the core technology team at Global Energy Innovations are electrochemists, electronics designers, design engineers and enterprise software engineers with years of experience in commercializing electrochemical diagnostic and monitoring systems – batteries, sensors, power systems, as well as electrochemical materials development.

The EC-Series™ Handheld ElectroChemical Battery Analyzers and CM-Series™ Continuous Monitoring Systems use CELScan® (Chemical Electrical Layer Scan) algorithms for accurately accessing the health of battery and battery systems. IBMS™ (Intelligent Battery Management System™) battery inventory management enterprise software is used for both presenting the EC-Series™ and CM-Series™ test results and accurately and efficiently managing your battery infrastructure.

Global Energy Innovations' products are used worldwide by mobile telecommunication operators, power generation plants and utilities, uninterrupted power systems operators, automobile manufacturers, industrial battery manufactures and many other battery users.

All of our products are designed and manufactured entirely in the United States of America. We have representatives located globally with trained technical support engineers to assist you with all of our products.

President and CEO  
***Kurt Salloux***

# EC-Series™

## ElectroChemical Battery Analyzer



### 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 to prevent costly downtime, while at the same time extending battery service life.



### Measures Battery Chemical and Electrical Properties



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

The EC-Series™ Analyzers 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 ElectroChemical state properties of 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 much larger and greatly more expensive than the EC-Series™ Analyzers.

This technology has finally been put into 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 and speed, unmatched accuracy and repeatability, ElectroChemical CELScan® technology, extreme portability and value pricing for use in the field, on the production line and in the lab.





In order to maximize better measurement accuracy and repeatability, the EC-Series™ Analyzers automatically calculate 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 EC-Series™ Analyzers 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. IBMS™ is a complete, enterprise solution with a free, optional Oracle® database appliance that is compatible with SAP® Crystal Reports and much more.

## **The EC-Series™ and IBMS™ (Intelligent Battery Management System™) is a Complete Universal Intelligent Battery Test and Management Solution**

*Oracle® Based Enterprise Software Compatible with SAP® Crystal Reports*

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 EC-Series™ Analyzers stay up to date with the latest, new measurement performance features and capabilities. This is because IBMS™ can be configured to automatically download the latest application software and firmware, including new features from Global Energy Innovations' website and install it on the EC-Series™ Analyzer at any time.

The EC-Series™ Analyzers are the only ElectroChemical (CELScan®) battery analyzers available for your complete battery test and management needs.



### **Key Features**

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

# Dynapulse®

## Battery Conditioning System

### Condition your Lead Acid Batteries Eliminate Sulfation Buildup

The patented Dynapulse® 1224 and 3648 Systems both condition and charge your battery while removing sulfation buildup. The Dynapulse® system safely and quickly eliminates sulfation using our low-frequency battery conditioning method.

When the Dynapulse® is used with our EC-Series Handheld Battery Analyzers, you can accurately monitor the degree of battery desulfation and conditioning before and after running the Dynapulse® system.

**Dynapulse 1224 System** – 12 and 24 Volt Batteries

**Dynapulse 3648 System** – 36 and 48 Volt Batteries

**Dynapulse 248 System (3 and 6 kW)** – 2 to 48 Volt Batteries



### Product Features

- High-impact, low-frequency pulses up to 250 amps quickly break up crystallized sulfate to restore batteries to full service.
- Selectable for 12, 24, 38 and 48 Volt batteries. 24 Volt position with automatic pulse reduction designed for in-vehicle battery conditioning.
- Selection for small (30 - 60 Amp Hour) and Large (Above 60 Amp Hour) Batteries.
- Simple intuitive controls for easy operation.
- LED indicator for highly sulfated battery.
- Short Circuit and Reverse Polarity detection and protection.
- Robust, heavy-duty construction, portable and ergonomic handle with rugged wheels.
- Reduce labor costs by not over testing your batteries.
- Reduce battery replacement costs by caring for your batteries and not replacing them too soon.
- Reduce lost revenue by avoiding system shut down due to battery failures.
- Reduce risks to capital and personnel.



# CM-Series™

## Continuous Monitoring System

### Seamless Continuous Access. From Anywhere.

The CM-Series™ (CM1000™ and CM2000™) Continuous Monitoring Systems works seamlessly with the EC-Series™ Handheld Battery Analyzer hardware and IBMS™ (Intelligent Battery Management System) Software. Test results may be shared between the two systems – Data from both systems is aggregated into one Enterprise reporting and archiving (database) software. IBMS™ is a complete, enterprise solution with a free, optional Oracle® database appliance compatible with SAP® Crystal Reports and much more.

Since the EC-Series™ Analyzers and the CM-Series CELSender™ Modules can be configured to both report to the same database and run with the same software, inventory management, event handling (alarms), report generation and much more are easily performed. IBMS™ also has a free option to sync your results to the Cloud, where data can be backed up and stored using our secure, Oracle® Cloud-based solution.



### Data Aggregator & CELSender™ Module

The Data Aggregator, receives information from the CELSender™ Modules. Data is processed, stored and transmitted to the IBMS™ enterprise software for processing and reporting.

The Continuous Monitoring, CELSender™ Modules are commanded and controlled by the Data Aggregator, which creates the multifrequency CELScan® signals and performs all impedance, voltage and other testing. The CELSender™ Modules attach to individual cells or batteries and measures voltage, impedance, temperature, as well as the various CELScan® parameters (sulfation, dryout and life fraction).



### Data Aggregator Features

- 1 to 256 CELSender™ Modules per String with up to 8 Strings per Data Aggregator, Maximum 1024 cells total per Aggregator.
- Voltage: 0 to 900 ( $\pm$  450 VDC) and Current: 0 to 2500 Amp per String.
- AC Ripple Detection.
- 16 Analog, 4 Digital and 4 Relay Aux. Inputs on Data Aggregator.
- 30 GB Internal Solid State Drive for redundant data backup.
- Ethernet Communication (10/100 Mbps) compatible with RS232, Modbus and others.

### CELSender™ Features

- Cell / Battery: Impedance, Voltage, Temperature, Current.
- CELScan® parameters (sulfation, dryout and life fraction).
- Strap Impedance.
- Temperature: Pos. and Neg. Strap plus 6 additional optional locations available (Cells 1 to 6 for 12 V Battery).

# IBMS™

## Intelligent Battery Management System



### A Complete Battery Test and Management Solution

Oracle® Based Enterprise Software Compatible with SAP® Crystal Reports

The EC-Series™ Analyzers and CM-Series™ Systems, combined with IBMS™ (Intelligent Battery Management System) Enterprise Software, is a complete battery testing and management solution. IBMS™ enables you to review your entire inventory at a glance and immediately identify bad batteries or cells, sort batteries by date and view any test parameter. (All, Impedance, Voltage, Sulfation, Dryout, Temperature, etc.).

IBMS™ is a complete, enterprise solution with a free, optional Oracle® database appliance that is compatible with SAP® Crystal Reports and much more.

For a complete list of IBMS™ and Oracle® database features, please reference the Software Feature List and/or the EC-Series™ Handheld Battery Analyzer and CM-Series™ Continuous Monitoring Datasheets.

### System Requirements

<b>Processor:</b>	Intel Pentium 2.7 GHz or Similar
<b>Operating System:</b>	Windows XP, Vista, 7 or 8
<b>System Memory:</b>	2 GB RAM minimum (4 GB recommended)
<b>Hard Drive Space:</b>	200 GB Recommended
<b>Communication:</b>	CD/DVD for Installation (Not required for Digital Download)
<b>Display:</b>	1600 x 900 pixels recommended

System Requirements are for a Laptop or PC used to run IBMS™. Hard drive size requirements will vary depending on users selection of Cloud-based storage or local option settings.





## Software Feature List

IBMS MAIN FEATURES	
Inventory Overview	Immediate view of fault conditions with individual batteries or cells. Rapidly review hundreds of battery strings with a glance.
Advanced Report Generation	String and Cell History Reporting for Impedance, Voltage, Sulfation, Dryout, Temperature and Other. Export to PDF format. View your results as Impedance or Admittance (Conductance) in IBMS™. Our free Oracle® Appliance is compatible with SAP® Crystal Reports.
Define & Setup Inventory Structure	Define your inventory structure - Company, Region, Site, String, Battery, Cell. Personalize the naming of batteries and cells to your industry standards, and change the names of the inventory levels to fit your personal and company requirements.
Rapid Configurations	Use IBMS™ to setup the configuration of Battery Types, Alarm Settings, String Configurations General Test Settings & Inventory Configurations.
Basic & Advanced Views	Select between Basic and Advanced user settings (views). The Advanced user view allows for advanced functions such as Baseline Adjustment.
U.S. & European Conventions and Language Modules	Select between U.S. and European conventions such as Date, Temperature (°F/°C), and others. Various Language Modules available - French, Spanish, German.
Automated Baseline Adjustment	Use our patent pending baseline adjustment tool for adjusting the baseline values of batteries and cells in new and aged strings. Our patent pending algorithms rapidly calculate correct impedance, sulfation and dryout baseline values so you don't have to guess anymore.
Rapid Database Backup	Backup your entire IBMS™ database at any time using the Backup Data feature. Sync to the Cloud using our Free Optional Oracle® Database Sync feature.
Data Export	Export Test Results and Configurations effortlessly to Microsoft Excel or XML formats. Also export in IBMS™ format and re-import into any other IBMS™ Continuous Monitoring System database.
Data Import	Import Test Results and Configurations from other devices and other IBMS™ installations.
Event Handling	Automated notifications via SMS and E-mail for critical events (alarm conditions).
Firmware Updates	Automated firmware updates via the internet and IBMS™ Enterprise Software. Firmware updates carry the latest features for your System.
Rapid Online Feature Activation	Purchase and activate new features for your System using IBMS™ Software and our Online Feature Activation Server. Upgrade at the click of a button from the CM1000™ to the CM2000™ System. Trial features may be activated for testing.
CM-Series™ Data Sharing	Test results, configurations and data may be shared between the EC-Series™ Handheld Analyzers and the CM-Series™ Continuous Monitoring (CM1000™ and CM2000™) Systems. Data from both systems are aggregated into one database (repository) for easy access. Since data from both Systems are interoperable, switching back and forth or upgrading to Continuous Monitoring is seamless at any site or across your entire organization.
Local and Remote (Enterprise) Database Setup Options	Local and remote (Enterprise) database setup options. Switch between local and remote database at the click of a button. Access your remote database through any internet connection. Multiple users may access the same database simultaneously. Users may setup and configure multiple remote or local databases. Sync to the Cloud and / or use our Oracle®-based Enterprise feature at no additional cost. Our Oracle® Enterprise Appliance is compatible with SAP® Crystal Reports.



# Accessories

replacement parts, and more...



## Spare Parts and Accessories

The EC-Series™ Analyzers and CM-Series™ Systems are supplied as a kit with standard accessories. All kit accessories and optional accessories can be found in our Product Catalog at [www.globalei.com/where-to-buy/gei-sales](http://www.globalei.com/where-to-buy/gei-sales) or on our Online Store at [www.globalei.com/bms](http://www.globalei.com/bms).

We also supply replacement parts, optional software/firmware modules (which increase the EC-Series™ Analyzers and CM-Series™ Systems functionality and utility), as well as extended warranties, calibration certificates and other materials for Global Energy Innovations' products. For a detailed list of all available items, please visit our Online Store or download our Product Catalog.

Please visit your local Distributor or Representative, our Online Store or contact our Sales Group to review a complete list and order these Accessories, Parts and other materials.

We supply a host of Fluke® accessories with the EC-Series™ Handheld Battery Analyzers. If you find an accessory that you would like to use with the EC-Series™ Analyzer and cannot find it at our Online Store, please do not hesitate to contact your local Distributor or Representative or our Technical Support Group for compatibility and up-to-date accessory information.

## How to Order

For all Global Energy Innovations direct sales of accessories only, please contact us at our US Headquarters. For the sale off all other Global Energy Innovations' products, please contact your local Distributor or Representative. Please send all requests for quotes and purchase orders via e-mail or facsimile.

## Contact Information

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