Capacity is Key
Spectro™ (Multi-model electrochemical impedance spectroscopy) opens the door to an entirely new way of battery testing. Instead of measuring capacity by discharging, the Spectro CA-12 injects 24 excitation frequencies and analyses the fine nuances to get a full picture of the battery. Harmful and time-consuming discharges are a thing of the past.

How does this apply to my batteries?
Conventional battery testers rely on conductance or load checks. While these systems can verify current flow, capacity is unknown.

In addition to capacity, the leading health indicator, Spectro CA-12 provides impedance (Z) and state-of-charge (SoC) readings.

Why was this not done earlier?
Electrochemical impedance spectroscopy has been in use for many years but equipment size, high cost and long test times made the technology prohibitive outside a laboratory environment. Spectro CA-12 solved this with a high-speed DSP that compiles 40 million transactions during the short test. The key to Spectro, however, lies in the patented algorithm.

Easy to use
Simply connect the Spectro CA-12 to the battery terminals and read the test results. The batteries don’t need to be disconnected or fully charged. If below 40% SoC, the unit prompts to charge and retest. The Spectro CA-12 also reads CCA of starter batteries.

Superior in all aspects
Fast: The 15-second test eliminates the need to discharge. This allows more frequent battery testing, enhancing dependability.

Safe: There is no heat, sparks or fumes. You can use the CA-12 continuously without cool-downs.

Simple: Requires minimal technical knowledge. Reverse polarity and high voltage protection prevent damage; rubberized housing avoids breakage.

Economical: Identifies low capacity batteries before a problem is noticed. This enhances reliability and allows for scheduled replacements.

What are typical battery problems?
Many golf car batteries exhibit irregularities that conventional testers cannot find; the Spectro CA-12 spells them out in seconds. Some of these are:

Low charge
CA-12 reads low SoC. Capacity estimation is correct in spite of low charge.

Low capacity
Battery has good drive but short runtimes. CA-12 reads good impedance but low capacity.

Faulty set
CA-12 finds low performing and shorted blocks in a string. Good batteries can be regrouped and reused.
The Spectro CA-12 comes with PC-Companion software to store records, download test results, print reports and upgrade firmware. The unit includes RS232, Bluetooth and an infrared link for an optional label printer. Pencil Probes are standard; battery clamps are optional.

The Company

Since 1980, battery users have turned to Cadex for advice on how to improve battery life and reliability. The success of the Cadex products is based on superior quality and first-class customer support. Cadex products are sold in 100 countries.

Customer Satisfaction

When purchasing a Cadex product, you are assured of advanced design, superior quality and competitive pricing. Cadex combines engineering strength with 25 years of manufacturing excellence. We stand behind our products.

Specifications

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| Tests            | - Capacity; 10-500Ah (with suitable test resistance) in percent, amps or minutes  
                   - State-of-charge; in percent and volt  
                   - CCA (for starter batteries)  
                   - Impedance in milliohm  
                   - Resistance of battery cables in milliohm |
| Test Time        | Approximately 15 seconds |
| Power Source     | Li-ion battery provides ~150 tests per charge; charge indicator; 3-hour charge with internal charger. |
| Physical Dimensions |
| Weight:          | 1.10 kg (2.45 lbs) |
| Ports            | RS232, Bluetooth and infrared port for printer. |
| Environmental    | Operating temp: 0 to 40°C (32 to 104°F); Storage temp: -20°C to 70°C (-4 to 158°F) |
| Safety           | UL3101, CSA 1010, EN61010 EMI/EMC: FCC part 15 Class A, EN55011 Level A, EN61000-6-3:2001 for EMC |
| Warranty         | One (1) year from the original purchase date. |
| PC-Software      | PC-Companion on CD-ROM, provides PC-interface to update firmware, download test results, print data, store and review historical data. |

Specifications subject to change

World leader in quality and innovation for power systems

North America
Cadex Electronics Inc.  
22000 Fraserwood Way  
Richmond, BC, Canada V6W 1J6  
Tel: 604 231-7777; 800 565-5228  
Fax: 604 231-7755  
info@cadex.com www.cadex.com www.cadex.com/golf

Europe
Cadex Electronics Inc.  
Sprottauer Strasse 12,  
90475 Nürnberg, Germany  
Tel: +49 (0) 911 2403 32-0  
Fax: +49 (0) 911 2403 32-29

Printed in Canada

Until now, capacity of golf car batteries could only be measured by applying a full discharge. The Spectro CA-12 changes this.

- Read battery capacity in seconds
- Use vehicle immediately after testing
- Get consistent electronic results

www.cadex.com/golf