

Product Datasheet - Technical Specifications



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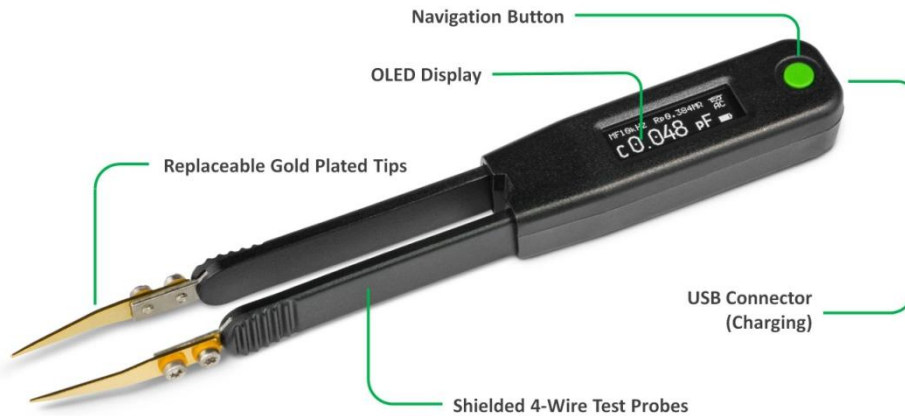
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LCR Elite2

Protected by the Aegis Technology

The LCR Elite2 is our latest tweezer-style LCR meter from the Elite series. It provides better accuracy, wider measurement range and more features to improve your experience on LCR measurements.

The LCR Elite2 comes with the Aegis Technology which is our patent pending solution to automatically protect your meter from being damaged by energized components.



Made in Canada

Key Features and Benefits

- **Fully auto/manual selection**
- **One hand operation with shortcuts**
- **Protected by Aegis Technology**
 - Over voltage protection up to $\pm 48\text{Vdc}$ (or $\pm 34\text{Vac}$)
- **High accuracy**
 - R: 0.2% , C: 0.2%, L: 0.4%
- **4 test frequencies**
 - 100Hz, 120Hz, 1kHz, 10kHz
- **Wide measurement range**
 - R: 20m Ω to 10M Ω
 - C: 0.1pF to 5mF
 - L: 100nH to 1H
- **Small size**
 - L * W * H: 151 x 19 x 14.5mm
- **Bright OLED display**
 - 0.91", 128 * 32 resolution
- **Precise gold plated tips**
- **Rechargeable battery with USB charging**
 - 180mAH lithium-ion polymer battery
 - 2.5 hours charging time, all day battery life



Innovative Aegis Technology – Protect Your LCR Meter



The LCR Elite2 is protected by the Aegis Technology, our patent pending solution to automatically protect the meter from being damaged by energized components.

The traditional LCR meters have a common vulnerability to high voltage and current from the component they are measuring. In many cases, the component under testing can have stored energy, for example a charged capacitor or a powered on board. The energy in the component is a common problem that causes damage to LCR meters, thus requiring expensive and time-consuming repairs.

The Aegis Technology solves this problem. It provides over voltage protection up to +/-48Vdc (or +/-34Vac). In normal operation, it is transparent and doesn't affect the measurement results thanks to the low parasitic design. When an abnormal voltage is applied on the meter's test tips, no matter positive or negative, the Aegis Technology detects it right away and automatically disconnects it from the meter. The "OVER VOLT" message is shown on the display to remind the user to de-energize the component under testing. To return the LCR Elite2 to normal operation mode, simply remove the meter from the component and press the button. No components are damaged and no fuse replacement is required.

An Accurate LCR Meter with Self Calibration



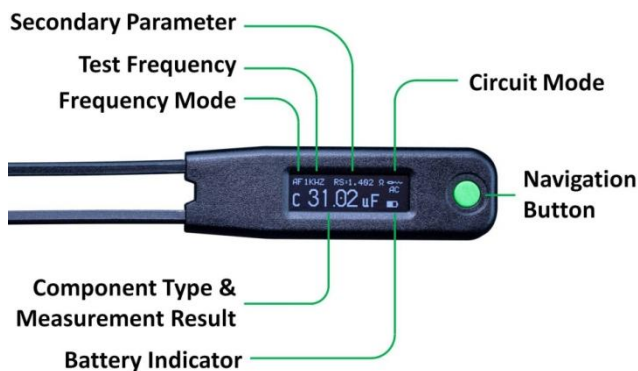
Built with more advanced chipset and algorithm, LCR Elite2 greatly improves measurement accuracy. It delivers a basic accuracy of 0.2% for both resistance and capacitance and 0.4% for inductance. Each meter is fully calibrated during production and shipped with a NIST (National Institute of Standards and Technology) traceable calibration certificate.

The LCR Elite2 provides self calibration function that can be done in less than 30 seconds by simply shorting and opening two test tips. The self calibration significantly reduces the device's internal and external parasitic parameters for better accuracy, especially for measuring smaller resistance, capacitance or inductance where the parasitic parameters may greatly influence the test results.

User Friendly Interface

The LCR Elite2 allows you to switch between the measurement screen and menu screen easily by pressing down the navigation button for around half a second. In the menu screen, you can configure different parameter settings, start self calibration or view device information.

The LCR Elite2 provides a full set of shortcuts to help you switch between all kinds of parameters quickly and with ease during measurement. You can single or double click the navigation button to quickly select different measurement types and test frequencies.



Tech Specs

Product Characteristics

Dimensions (L x W x H)	151 x 19 x 14.5 mm
Weight	30 grams
Display	0.91-inch, 128x32 OLED display
Battery	3.7V, 180 mAH internal lithium-ion polymer battery
Battery Life	1 day in typical measurement ⁽¹⁾
Charging Source	USB port USB power adapter (output voltage DC 5V ± 5%)
Charging Time	2.5 hours (typical)
Safety and EMC Compliance	FCC15/EN 55011/ICES-003 - Class B, Radiated Emissions FCC15/ICES-003 - Class B, Conducted Emissions EN 55011: Mains Terminal Disturbance Voltage, Class B EN 61000-3-2: Harmonics Current Emissions, Class A EN 61000-3-3: Voltage Fluctuations and Flicker EN 61000-4-2: ESD (4 kV Contact, 8 kV Air) EN 61000-4-3: Electromagnetic Field EN61000-4-4: Burst, EN61000-4-5: Surge EN61000-4-6: Conducted RF EN61000-4-11: Voltage Dips / Short Interruptions

Testing Signal Specifications

Testing Frequency	100Hz, 120Hz, 1kHz, 10kHz
Testing Frequency Accuracy	50 ppm (0.005%)
Testing Signal Level	0.5Vrms, +/- 5% sine wave
Source Impedance	100Ω ± 1%

Measurement Ranges and Optimal Testing Frequency

Parameter	Measurement range	Optimal testing frequency
Resistance	20mΩ to 10MΩ	1kHz
Capacitance	0.1pF to 40nF	10kHz
	40nF to 40uF	1kHz
	40uF to 1mF	100Hz
Inductance	100nH to 1mH	10kHz
	1mH to 100mH	1kHz
	100mH to 1H	100Hz

Over Voltage Protection Specifications

Maximum Range	Conditions
± 48Vdc (or ± 34Vac sine wave)	The voltage is applied between two test tips.

LCR Elite2 Resistance Accuracy Specification

Range	Resolution	Accuracy = $A_z + \text{Offset}$			
		100Hz	120Hz	1kHz	10kHz
1000m Ω	0.01m Ω	0.5% + 20m Ω	0.5% + 20m Ω	0.5% + 20m Ω	0.5% + 20m Ω
10 Ω	0.0001 Ω	0.5% + 0.02 Ω	0.5% + 0.02 Ω	0.5% + 0.02 Ω	0.5% + 0.02 Ω
100 Ω	0.001 Ω	0.3% + 0.03 Ω	0.3% + 0.03 Ω	0.3% + 0.03 Ω	0.3% + 0.03 Ω
1000 Ω	0.01 Ω	0.3% + 0.3 Ω	0.3% + 0.3 Ω	0.3% + 0.3 Ω	0.3% + 0.3 Ω
10k Ω	0.0001k Ω	0.3% + 0.003k Ω	0.3% + 0.003k Ω	0.2% + 0.003k Ω	0.3% + 0.003k Ω
100k Ω	0.001k Ω	0.3% + 0.05k Ω	0.3% + 0.05k Ω	0.2% + 0.05k Ω	0.3% + 0.05k Ω
1000k Ω	0.01k Ω	1.0% + 0.5k Ω	1.0% + 0.5k Ω	0.3% + 0.5k Ω	1.0% + 0.5k Ω
10M Ω	0.0001M Ω	2.5% + 0.008M Ω	2.5% + 0.008M Ω	2.5% + 0.008M Ω	---

LCR Elite2 Capacitance Accuracy Specifications

Range	Resolution	Accuracy = $A_c + \text{Offset}$			
		100Hz	120Hz	1kHz	10kHz
10pF	0.0001pF	---	---	---	1.0% + 0.1pF
100pF	0.001pF	---	---	---	0.5% + 0.2pF
1000pF	0.01pF	---	---	0.5% + 0.5pF	0.3% + 0.3pF
10nF	0.0001nF	---	---	0.3% + 0.003nF	0.2% + 0.003nF
100nF	0.001nF	---	---	0.2% + 0.03nF	0.3% + 0.03nF
1000nF	0.01nF	---	---	0.2% + 0.3nF	0.5% + 0.3nF
10uF	0.0001uF	0.4% + 0.003uF	0.4% + 0.003uF	0.3% + 0.003uF	---
100uF	0.001uF	0.3% + 0.03uF	0.3% + 0.03uF	0.5% + 0.03uF	---
1000uF	0.01uF	0.5% + 0.5uF	0.5% + 0.5uF	0.5% + 0.5uF	---
5mF	0.0001mF	0.7% + 0.005mF	0.7% + 0.005mF	---	---

LCR Elite2 Inductance Accuracy Specifications

Range	Resolution	Accuracy = $A_l + \text{Offset}$			
		100Hz	120Hz	1kHz	10kHz
1000nH	0.01nH	---	---	---	---
10uH	0.0001uH	---	---	---	1.5% + 0.1uH
100uH	0.001uH	---	---	---	0.7% + 0.1uH
1000uH	0.01uH	---	---	0.5% + 0.3uH	0.7% + 0.3uH
10mH	0.0001mH	---	---	0.4% + 0.003mH	0.5% + 0.003mH
100mH	0.001mH	0.5% + 0.03mH	0.5% + 0.03mH	0.4% + 0.03mH	0.7% + 0.03mH
1000mH	0.01mH	0.4% + 0.3mH	0.4% + 0.3mH	0.7% + 0.3mH	---