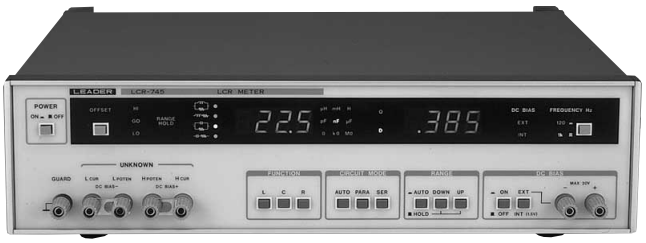
Digital LCR Meter



LCR-745(G)

- *Measures L, C, R and D or Q*
- *Automatic Ranging and Circuit Mode Selection*
- *Offset Function Cancels Fixture L, C and R*
- *+1.5 V Internal DC Bias*
- *0 to +30 V External DC Bias*
- *2, 4 or 5 Terminal Measurements*
- *120 Hz or 1 kHz Test Frequencies*
- *0.35% Basic Accuracy*
- *Full Listener/Talker GPIB*

The LCR-745 is a CPU controlled digital LCR meter with automatic and manual ranging. Direct resistance, capacitance and inductance measurements of components in equivalent series and parallel modes can be made with Quality (Q) and Dissipation (D) displayed simultaneously with inductance and capacitance. The unit's wide automatic measurement range greatly reduces the time associated with performing these component measurements compared with a manual LCR bridge. This makes the LCR-745 an ideal instrument for incoming inspection or final production test of components where ease of operation and high throughput are necessary. An offset function is available which can be used to cancel any residual resistance, capacitance or inductance of the test leads of fixtures being used. In addition, the offset function can be used to normalize the value of a component under test to zero. The deviation (including polarity) from this normalized value of succeeding components will be displayed simplifying testing. Test frequencies of 120 Hz and 1 kHz are provided. In addition, an internal dc bias of 1.5 V is available with provision for the use of an externally applied bias of up to 30 V for the testing of electrolytic capacitors.
Note: Existing LCR-745 units may be converted to GPIB operation (G Model). Call the factory for details.

Test Fixtures (Optional)

LF-2350

The LF-2350 test fixture has a 1 meter test cable with gold plated Kelvin clips that handle components with large terminals.

LF-2351

The LF-2351 test fixture has low-insertion force connectors for the rapid testing of both axial and radial lead components.

LC-2067/LC-2068

LC-2067 1 meter GPIB Cable
LC-2068 2 meter GPIB Cable

KEY SPECIFICATIONS LCR-745(G)

MEASURED PARAMETERS
Resistance
Capacitance/Dissipation Factor
Inductance/Quality Factor

RESOLUTION
Inductance
1 kHz: 0.1 µH - 199.9 H in 7 ranges, 3½ digits
120 Hz: 0.001 mH - 199.9 H in 6 ranges, 3½ digits
Capacitance
1 kHz: 0.1 pF - 1999 µF in 8 ranges, 3½ digits
120 Hz: 1pF - 1999 µF in 7 ranges, 3½ digits
Resistance
0.001 Ω - 19.99 MΩ in 8 ranges, 3½ digits
Dissipation
0.001 - 1.999 in 8 ranges, 3½ digits
Quality
0.5 - 99.9 in 8 ranges, 3 digits

GENERAL
Measured Method
2, 4, or 5 terminal
Measurement Mode
Auto, series or parallel
Ranging
Auto or manual with over- and under-range indication
Test Frequencies
1 kHz and 120 Hz
Test Conditions
Parallel measurement: 1V rms
Series measurement: Constant current
DC Bias (Capacitance Measurements)
Internal: +1.5V
External: 0 to +30 V
Deviation Measurement
Indicates (measured value-reference value) ±1 count
Measurement Time
Auto-ranging
<0.2 s - 2 s maximum
Manual Ranging
Maximum time within correct range

	TEST FREQUENCY	
Parameter(s)	120 Hz	1 kHz
RLC	0.4 s	0.25 s
L and Q C and D	0.6 s	0.4 s

KEY SPECIFICATIONS LCR-745(G) (cont'd.)

POWER REQUIREMENTS

100, 120, 220, 240 V ac ± 10%
50/60 Hz, 26 VA

PHYSICAL

Size (W x H x D)
15 3/4 x 4 x 11 7/8 in.
400 x 100 x 300 mm
Weight
12 lbs., 5.5 kg

SUPPLIED ACCESSORIES

AC Cord
Spare Fuse

OPTIONAL ACCESSORIES

Fixture (LF-2350)
Fixture (LF-2351)
1 Meter GPIB Cable (LC-2067)
2 Meter GPIB Cable (LC-2026)

Accuracy

L		1 kHz	199.9 µH	1.999 mH	19.99 mH	199.9 mH	1999 mH	19.99 H	199.9 H
		120 Hz	1.999 mH	19.99 mH	199.9 mH	1999 mH	19.99 H	199.9 H	
(1) L Accuracy		1 kHz	± (1% ± 3 counts)	± (0.35% ± 2 counts)					
		120 Hz	± (1.5% ± 3 counts)	± (0.4% ±3 counts)					
		1 kHz				± (0.5% ± 3 counts)		± (1% ± 3 counts)	
		120 Hz				± (0.5% ± 3 counts)		± (1.5% ± 3 counts)	
	AUTO	1 kHz/120 Hz	Same as				Same as		
(2) Q Accuracy		1 kHz/120 Hz	± 5 x (1 + Q) % ± (10 + 2000/L) counts	± 2 x (1 + Q) % ± (10 + 2000/L) counts					
		1 kHz				± 2 x (1 x Q)% ± (10 + L/50) counts		± 5 x (1 + Q)% ± (10 + L/50) counts	
		120 Hz				± 3 x (1 + Q)% ± (10 + L/50) counts		± 5 x (1 + Q)% ± (10 + L/50) counts	
	AUTO	1 kHz/120 Hz	Same as				Same as		

Notes: (1) When Q ≥ 1 (2) L count is above 50, Q ≤ 50, L in the specifications denotes number of counts

C		1 kHz	199.9pF	1999 pF	19.99 nF	199.9 nF	1.999 µF	19.99 µF	199.9 µF	1999µF
		120 Hz	1999 pF	19.99 nF	199.9 nF	1.999 µF	19.99 µF	199.9µF	1999 µF	
(3) C Accuracy		1 kHz	± (1% ± 3 counts)	± (0.35% ± 2 counts)						
		120 Hz	± (0.5% ± 3 counts)	± (0.4% ± 2 counts)						
		1 kHz				± (0.5% ± 3 counts)		± (1% ± 3 counts)	± (2% ± 5 counts)	
		120 Hz				± (0.5% ± 3 counts) x (1+D)		± (1% ± 3 counts) x (1 + D)	± (2% ± 5 counts) x (1 + D)	
	AUTO	1 kHz/120 Hz	Same as				Same as			
(4) D Accuracy		1 kHz/120 Hz	± 5% ± (10 + 2000/C) counts	± 2% ± (10 + 2000/C) counts						
		1 kHz				± 2% ± (10 + C/50) counts		± 5% ± (10 + C/50) counts		
		120 Hz				± 2% ± (10 + C/50) counts		± 5% ± (10 + C/50) counts		
	AUTO	1 kHz/120 Hz	Same as				Same as			

Notes: (3) When D ≤ 1,000 (4) C count is above 50, D ≤ 1,000, C in the specifications denotes number of counts

R	1.999Ω	19.99Ω	199.9Ω	1999Ω	19.99kΩ	199.9kΩ	1999kΩ	19.99MΩ
R Accuracy	± (1% ± 3 counts)	± (0.35% ± 2 counts)						
				± (0.5% ± 3 counts)				± (1% ± 3 counts)
AUTO	Same as				Same as			