

# Specifications

Measurement Mode: Measures R series or parallel; L and Q series or parallel; C and D series or parallel. All measurement modes are pushbutton selectable.

Displays: LED-type numerical display with automatically positioned decimal points and illumination of units. For R LC, five digits (99999) and simultaneously for DQ, four digits (9999).

Measurement Speed: Greater than 3 measurements per second.

Test frequencies: Pushbutton selection between 2. Accuracy re panel legends: +2%, -.01%. Actual frequencies: for 1657-9700, 1020.0 Hz +/- .01% (panel legend "1 kHz") and 120.00 Hz +/- .01%; for 1657-9800, 1000.0 and 100.00 Hz +/- .01%.

Applied Voltage: 0.3 V rms maximum.

Ranges: Pushbutton selection with automatic front-panel guidance. Three basic ranges (best accuracy, see table) of 2 decades each, for each parameter. Automatic extensions to min and max, as tabulated.

Parameter	Minimum	Basic ranges	Maximum
R; 120 Hz*	00.001 Ω	2 Ω to 2 MΩ	99.999 MΩ
R; 1 kHz	00.001 Ω	2 Ω to 2 MΩ	9.9999 MΩ
L; 1 kHz	0.0001 mH	0.2 mH to 200 H	999.99 H
L; 120 Hz*	00.001 mH	2 mH to 2000 H	9999.9 H
C; 1 kHz	0.0001 nF	0.2 nF to 200 μF	999.99 μF
C; 120 Hz*	00.001 nF	2 nF to 2000 μF	99999 μF
D (with C)	.0001	(fully automatic)	9.999
Q (with L)	00.01	(fully automatic)	999.9

\*120 Hz or 100 Hz, depending on the instrument.

Accuracy: For R, L, and C: +/- 0.2% of reading in basic ranges, if quadrature component is small (D < 0.1, Q > 10, etc). See table. D accuracy: +/- .001 in basic ranges, for D < 0.1 (otherwise, see table). Q accuracy: +/- .01 in basic ranges, for Q < 1 (otherwise, see table).

Parameter	Basic accuracy			Cross-term factor
	Low extension	Basic ranges	High extension	
R; either frequency	±[ 4 mΩ,	0.2% of rdg,	(R/10 MΩ)% of rdg	] (1 + Q)
L; 1 kHz	±[ 0.4 μH,	0.2% of rdg,	(L/1000 H)% of rdg	] (1 + 1/Q)
L; 120 Hz*	±[ 4 μH,	0.2% of rdg,	(L/10 kH)% of rdg	] (1 + 1/Q)
C; 1 kHz	±[ 0.4 pF**,	0.2% of rdg,	(C/1000 μF)% of rdg	] (1 + D)
C; 120 Hz*	±[ 4 pF**,	0.2% of rdg,	(C/.01 F)% of rdg	] (1 + D)
D (with C)	±[	.001 + 0.2 (1 + D)% of rdg		] K <sup>†</sup>
Q (with L)	±[	.01 + 0.2 (1 + Q)% of rdg		] K <sup>†</sup>

\*120 Hz or 100 Hz. \*\*Fixed offset "zero" capacitance is < 1.5 pF.  
<sup>†</sup>K = (LC basic accuracy as % of rdg) / 0.2%. Therefore, K = 1 on basic ranges.

Environment: TEMPERATURE: 0° to 50°C operating, -40° to +75°C storage. HUMIDITY: 0 to 85% R.H., operating.

Supplied: Power cord, axial-lead adaptors, instruction manual.

Power: 90 to 125 or 180 to 250 V, 50 to 60 Hz. Voltage selected by rear-panel switch. 25 W maximum.

Mechanical: Bench mounting. DIMENSIONS: (wxhxd): 375x112x343 mm (14.8x4.4x13.5 in.). WEIGHT: 5.6 kg (12.3 lb) net, 10 kg (22 lb) shipping.

Description	Catalog Number
<b>1657 RLC Digibridge<sup>®</sup></b>	
120-Hz and 1-kHz Test Frequencies	<b>1657-9700</b>
100-Hz and 1-kHz Test Frequencies	<b>1657-9800</b>
<b>Accessories</b>	
Extender Cable with banana plugs/alligator clips	<b>1657-9600</b>
Extender Cable with type 874 coaxial connectors	<b>1688-9600</b>
Remote Test Fixture (requires BNC adaptor)	<b>1689-9600</b>
BNC Adaptor	<b>1689-9601</b>
BNC Cable Assembly (for 1689-9600, 1689-9601)	<b>1689-9602</b>