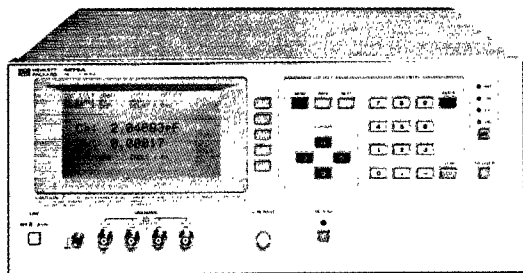


# LCR & RESISTANCE METERS

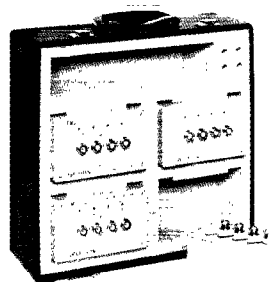
## 1 MHz C-V Meter/Standard Capacitor Sets

HP 4279A, 16380A, 16380C

- Built-in programmable dc bias sweep source with a voltage accuracy of 0.1%
- High-speed C-V measurements: 10 ms, 20 ms, and 30 ms/meas point
- 0.1% basic accuracy and six-digit resolution
- Automatic dc bias polarity control



HP 4279A



HP 16380A



HP 16380C

### HP 4279A 1 MHz C-V Meter

The HP 4279A 1 MHz C-V meter offers the optimal solution for increasing quality and throughput when measuring the capacitance versus bias voltage characteristics of varactor diodes, MOS diodes, and the like. The HP 4279A measures capacitance over a range of 0.00001 pF to 1280.00 pF with a basic accuracy of 0.1% and a six-digit display resolution, while sweeping the accurate dc bias voltage. The automatic bias polarity control feature allows quick selection of the correct polarity bias voltage for the device under test.

#### Specifications

**Parameters Measured:** C-D,Q,ESR,G

**Display:** 4, 5, 6 digits, selectable, maximum display 999999

**Measurement Frequency:** 1 MHz  $\pm 0.02\%$

**Test Signal Level:** 20 mV, 50 mV, 100 mV, 200 mV, 500 mV, and 1 V rms

**Measurement Terminals:** 4-terminal pair

**Test Cable Length Compensation:** 0 m, 1 m and 2 m

**Error-Correction:** OPEN/SHORT/LOAD and temperature compensation

**Measurement Time:** 10 ms/20 ms/30 ms selectable

#### Measurement Accuracy (@ 23° C $\pm 5^\circ$ C) and Range

**Basic measurement accuracy:**  $\pm 0.1\%$  (@  $D \leq 0.1$ )

**Range:** C: 0.00001 pF to 1280.00 pF, D: 0.00001 to 9.99999

**Internal DC Bias:** 0 V to  $\pm 38$  V, up to 51 sweep points are programmable via HP-IB

Bias voltage	Voltage step	Accuracy (at 23° C - 5° C)
$\pm (0.000 \text{ to } 4.000) \text{ V}$	1 mV	$\pm (0.1\% \text{ of setting} + 1 \text{ mV})$
$\pm (4.002 \text{ to } 8.000) \text{ V}$	2 mV	$\pm (0.1\% \text{ of setting} + 2 \text{ mV})$
$\pm (8.005 \text{ to } 20.000) \text{ V}$	5 mV	$\pm (0.1\% \text{ of setting} + 3 \text{ mV})$
$\pm (20.01 \text{ to } 38.00) \text{ V}$	10 mV	$\pm (0.1\% \text{ of setting} + 10 \text{ mV})$

**Bias Polarity Control:** Automatically performed

**External DC Bias:** 0 V to  $\pm 100$  V via rear panel connector

#### General

**Operating Temperature/Humidity:** 5° to 45° C,  $\leq 95\%$  RH at 40° C

**Power:** 100/120/220 V  $\pm 10\%$ , 240 V  $+5\% - 10\%$ ; 48 to 66 Hz; 200 VA max

**Size:** 177 mm H  $\times$  426 mm W  $\times$  498 mm D (7 in  $\times$  16.8 in  $\times$  19.6 in)

**Weight:** Approximately 15 kg (33 lb)

**Accessories Available:** Refer to page 391.

#### Ordering Information

**HP 4279A** 1 MHz C-V Meter

**Opt W30** Extended Repair Service (see page 663)

**Opt 003** 1% Frequency Shift

**Opt 009** Delete Manual

### HP 16380A and 16380C Standard Capacitor Sets

The HP 16380A and HP 16380C precision standard capacitor sets cover the range of 1 pF to 1  $\mu$ F in decade steps. The HP 16380A consists of four discrete air-dielectric capacitors with nominal values of 1 pF, 10 pF, 100 pF, and 1000 pF. Similarly, the HP 16380C consists of four discrete capacitors, but with solid dielectrics and with nominal values of 0.01  $\mu$ F, 0.1  $\mu$ F, and 1  $\mu$ F.

Both the HP 16380A and HP 16380C are furnished with test certification of 0.01% calibration accuracy. Capacitance stability with respect to time varies from capacitor to capacitor but is in the range of  $\pm 50$  or  $\pm 300$  ppm/year.

The HP 16380A and HP 16380C both have the four-terminal pair configuration to allow direct connection to any of Hewlett-Packard's many four-terminal pair impedance measuring instruments. The HP 16380A/C can be easily adapted to two-, three-, and five-terminal configurations.

#### HP 16380A, 16380C Specifications (valid at 1 kHz, 23° $\pm 5^\circ$ C)

Capacitance	1 pF	10 pF	100 pF	1000 pF
<b>Nominal accuracy</b>	$\pm 0.1\%$			
<b>Calibration accuracy</b>	$\pm 0.01\%$			
<b>Stability</b>	$\leq 300$ ppm/yr*			
<b>Dissipation factor</b>	$\leq 0.0001$			
<b>Size</b>	112 mm H $\times$ 142 mm W $\times$ 88 mm D			
<b>Weight</b>	8.0 kg (includes case)			

\*Supplemental performance characteristics.

#### HP 16380C

Capacitance	0.01 $\mu$ F	0.1 $\mu$ F	1 $\mu$ F
<b>Nominal accuracy</b>	$\pm 0.1\%$		
<b>Calibration accuracy</b>	$\pm 0.01\%$		
<b>Stability</b>	$\leq 50$ ppm/yr		
<b>Dissipation factor</b>	$\leq 0.0004$	$\leq 0.0005$	$\leq 0.0007$
<b>Size</b>	117 mm H $\times$ 142 mm W $\times$ 88 mm D		
<b>Weight</b>	6.3 kg (includes case)		

#### Ordering Information

**HP 16380A** Standard Capacitor Set  
(1 pF, 10 pF, 100 pF, 1000 pF)

**HP 16380C** Standard Capacitor Set  
(0.01  $\mu$ F, 0.1  $\mu$ F, 1  $\mu$ F)