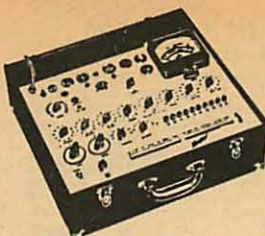




580



539C



752A



6000A



800



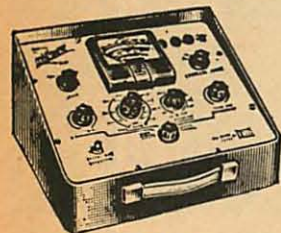
123R



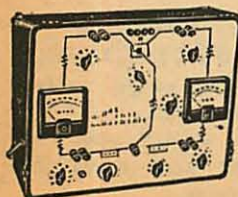
CA-4



870



890



850P

### MODEL 580 INDUSTRIAL AND LABORATORY PORTABLE TUBE TESTER

Can be set up directly to any tube test condition without having to rely on the built-in roll chart. All tube test potentials are individually variable. Pushbutton speeds dual section tube checks. Accepts 4-, 5-, 6-, and 7-pin standard bases, octal, loctal 7-, 9-, and 10-pin miniatures, 7- and 8-pin subminiatures, 5- and 7-pin nuvistors, novars, and compactrons. Gm range to 60,000  $\mu$ hos. Gas test detects grid current to 0.05  $\mu$ a. Leak test sensitivity to 50 megohms. Black leatherette-covered wood case, 19" w. x 15 $\frac{1}{2}$ " d. x 7" h. Shipping Weight, 35 lbs.

Model 580 Tube Tester—Net Each. . . . . \$585.00

### MODEL 539C INDUSTRIAL AND LABORATORY TUBE TESTER

Portable unit for testing all the latest tubes, including compactrons, novars, 5- and 7-pin nuvistors, and 10-pin types. Tests on new types are complete and accurate: No paralleled elements. Also tests VR tubes and low power thyristors, "4-digit" types. Voltage regulator tubes are evaluated under actual operating conditions. Includes provision for separate monitoring of plate current. Panel terminals provide access to grid, plate, cathode and heater circuits for direct measurement of voltages and current. Six ranges cover 600 to 60,000  $\mu$ hos. Line voltage and grid voltage are metered. Dual leakage readings, either directly on meter or by neon short indicator; sensitivity to 50 megohms. Black leatherette case with lead compartment and detachable lid; 16 $\frac{3}{4}$ " x 18 $\frac{3}{8}$ " x 7 $\frac{1}{2}$ " d. Shipping Weight, 35 lbs.

Model 539C Tube Tester—Complete with socket savers. Net Each. . . . . \$485.00

### MODEL 752A INDUSTRIAL, COMMUNICATIONS PORTABLE TUBE TESTER

Designed for use in maintaining communications equipment and industrial electronic apparatus. Voltage regulator test circuit tests VR tubes to handbook specifications (including firing point, regulating voltage and current range). Tests all the latest tubes; Compactrons, novars, 5- and 7-pin nuvistors, 10-pin types. All tests are complete—no paralleled elements. Handy pushbutton test for balanced or matched characteristics on dual-section tubes. Covers 0-1500 to 30,000  $\mu$ hos in 5 ranges. Reads interelement leakage directly on meter (sensitivity to 10 megohms). Illuminated meter, roll chart, socket savers and pin straighteners. Black leatherette case with lead compartment and detachable lid; 18 $\frac{3}{4}$ " x 16 $\frac{3}{4}$ " x 7 $\frac{1}{2}$ " d. Shipping Weight, 27 lbs.

Model 752A Industrial and Communications Tube Tester—Net Each. . . . . \$355.00

### MODEL 6000A HIGH SPEED PORTABLE TUBE, TRANSISTOR, DIODE TESTER

Test all the latest tubes, including compactrons, novars, 5- and 7-pin nuvistors, 10-pin types. Tests on new types are complete and accurate: No paralleled elements. Sensitive, instantaneous interelement leakage and shorts test. Three ranges cover 0-3000 to 15,000  $\mu$ hos. Also tests transistors and diodes. Supplied complete with test leads. Red leatherette case with detachable lid; 16 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ " x 7 $\frac{1}{2}$ " d. Shipping Weight, 21 lbs.

Model 6000A Portable Tube, Transistor and Diode Tester—Net Each. . . . . \$239.50

### MODEL 800A PORTABLE TUBE AND TRANSISTOR TESTER

Provides direct meter reading of interelement leakage and shorts. New filament continuity test speeds test of transistors, diodes; 4-, 5-, 6-, 7-pin, octal, loctal, nuvistor, 7- and 9-pin miniature, compactron, novar, 5- and 7-pin nuvistors, and 10-pin type tubes. Complete with test leads. Size: 16 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ " x 7 $\frac{1}{2}$ ". Shipping Weight, 22 lbs.

Model 800A Tube and Transistor Tester—Net Each. . . . . \$199.50

### MODEL 123R CARDMATIC<sup>®</sup> AUTOMATIC TUBE TESTER

Laboratory accuracy in a revolutionary card type tube tester. The most accurate portable tube tester available. Code cards make all test settings—test any receiving tube with highest accuracy. All indications are automatic and instantaneous by use of two pushbuttons. Ideal for production line use. Permits special engineering tests to meet any exact tube specifications for special circuit use. Ranges: Gm 500-26,000  $\mu$ hos; current, 100  $\mu$ a to 510 ma. 55 watts, 105-125 v., 50-60 cps. In black leatherette carrying case, 19 $\frac{1}{2}$ " x 16 $\frac{1}{2}$ " x 9 $\frac{1}{4}$ " d. Shipping Weight, 57 lbs. Includes 500 selected cards, pin straighteners and socket savers.

Model 123R Cardmatic Tube Tester—Net Each. . . . . \$585.00

Model 123R Cardmatic Tube Tester—Less cards. Shpg. Wt., 52 lbs. Net Each. . . . . \$45.00

### MODEL 121 HIGH SPEED AUTOMATIC CARDMATIC TUBE TESTER

Technician's portable Cardmatic tube, transistor and semiconductor diode tester; instantaneous and automatic high sensitivity shorts test. Heater to cathode leakage is automatically indicated directly on the meter. Measures: 320 heater voltages; 140 fixed bias potentials; 640 plate voltages; 640 screen voltages; 100 self-bias settings; and 1000 quality-value sensitivity ranges—all set automatically. Accurately checks horizontal and vertical amplifier tubes for pulse operation. 50 watts, 105-125 v., 60 cps. Baked gold finished panel. 19 $\frac{3}{4}$ " x 13 $\frac{1}{4}$ " x 8" d. Shipping Weight, 39 lbs.

Model 121 Portable Tube Tester—Includes 342 selected cards. Net Each. . . . . \$359.50

### MODEL CA-4 SOCKET ADAPTER

Adapter for 10-pin tubes, 5- and 7-pin nuvistors, novars and compactrons. For most older tube testers.

Model CA-4 Adapter—Net Each. . . . . \$49.50

### MODEL 870 DYNAMIC BETA TRANSISTOR TESTER

Variable collector voltage and collector current permit tests according to manufacturer's specifications. Tests switching transistors; measures large signal DC beta on power transistors, small signal AC beta on low and medium power transistors. Collector test current variable up to two amperes permits beta measurement on power transistors rated five amperes or more. Ranges (Ic/I<sub>bo</sub>): 0-100  $\mu$ a, 0-1 ma, 0-10 ma. Beta Ranges: 0-100, 0-300. Requires 40 watts, 115 v. AC, 60 cps. Black leatherette case 14 $\frac{1}{2}$ " x 11 $\frac{3}{4}$ " x 7 $\frac{3}{8}$ ". Shipping Weight, 22 lbs.

Model 870 Portable Dynamic Beta Transistor Tester—Complete with roll chart. Net Ea. . . . . \$355.00

### MODEL 890 DYNAMIC BETA<sup>®</sup> IN-CIRCUIT TRANSISTOR TESTER

Utilizes unique new test circuit to measure AC beta in or out of circuit with 5% accuracy. Measures these in-circuit parameters: AC beta, Ic, Rin, (transistor input impedance), impedance ohms (base-emitter circuit impedance). Measures AC beta, Ic and I<sub>bo</sub> out of circuit. Portable, self-contained and fully transistorized. Battery operated. Size: 10 $\frac{3}{4}$ " x 9" x 6 $\frac{1}{2}$ ". Shipping Weight, 8 lbs.

Model 890 Transistor Tester—Net Each. . . . . \$139.50

### MODEL 850P PORTABLE TRANSISTOR ANALYZER

Low-cost, accurate, easy-to-use transistor analyzer that can never become obsolete. Panel selector quickly sets choice of circuit use conditions. Checks parameters in any of three configurations: common base, common emitter, common collector. Checks power transistors with collector current up to 1 amp. Checks collector leakage, C base or C emitter; beta (current) gain; input and output resistance; power gain; linearity. Battery operated. Black leatherette case with aluminum panel; 16 $\frac{1}{2}$ " x 13 $\frac{1}{2}$ " x 8" d. Shipping Weight, 20 lbs.

Model 850P Portable Transistor Analyzer—Net Each. . . . . \$169.50



## MODEL 770A LABORATORY 5-INCH OSCILLOSCOPE

For industrial and laboratory use. Built-in voltage calibrator; choice of recurrent or driven sweep. Wide response vertical amplifier, DC to 5 Mc within 3 db. Narrow band sensitivity, 10 mV/in. rms; rise time, 0.07  $\mu$ sec. Horizontal amplifier response, DC to 500 kc within 3 db; sensitivity, 75 mV/in. rms. Flat face tube for increased linearity; illuminated, calibrated screen. Size: 12" w. x 18" d. x 14" h. Shipping Weight, 61 lbs.

Model 770A Laboratory Oscilloscope—Net Each.....\$585.00

## MODEL 677 WIDE BAND 5-INCH OSCILLOSCOPE

AC response, 5 cps to 4.5 Mc within 3 db. Pre-set horizontal and vertical sweep positions. Sharp, bright trace with full automatic correction; illuminated, calibrated screen. Vertical sensitivity, 40 mV/in. rms; rise time, 0.08  $\mu$ sec or better. Horizontal response, 5 cps to 350 kc within 3 db; high gain for detailed observation of TV sync waveforms, including color burst. Sweep generator covers 10 cps to 500 kc, with pre-set frequencies of 30 cps to 7875 cps. Size: 9 $\frac{1}{2}$ " w. x 18 $\frac{1}{2}$ " d. x 14" h. Shipping Weight, 36 lbs.

Model 677 Wide Band Oscilloscope—With instruction book and test leads. Net Each. . \$199.50

## MODEL 675A 5-INCH OSCILLOSCOPE

Late design TV service 'scope covers DC to 4.5 Mc, flat through color burst frequency; 20 mV rms per inch sensitivity. Time base generator with 4 calibrated decade ranges with 10-1 vernier. Frequencies: 10-100 cps, 100-1000 cps, 1-10 kc, 10-100 kc. Portable. Size: 13" x 10" x 16". Shipping Wt., 45 lbs.

Model 675A Oscilloscope—Complete with low capacity probe and ground lead. Net Ea. . \$299.90

## MODEL 209B CAPACITANCE TESTER AND TRUE VACUUM TUBE VOLT-OHM-MILLIAMMETER

Provides eight separate functions, with easy-to-read non-glare black 9" scale. Capacitance measurement as low as 50 pF, high as 2000  $\mu$ F. Zero center DC voltage position for null balance circuits. Extended range to 200 Mc, 100 mV sensitivity. Power supplies regulated to  $\pm$ 1%. Measures inductance from 50 mH to 100 H with conversion chart. DC Volts: 0-0.1, 0.3, 1, 3, 10, 30, 100, 300, 1000. AC Volts: 0-1, 3, 10, 30, 100, 300. mADC: 0-0.1, 0.3, 1, 3, 10, 30, 100, 300, 1000. Ohms: x1, x10, x100, x1K, x10K, x100K, x1 meg. (Design center 10 ohms.) Capacitance: x10, x1, x0.1, x0.01, x0.001  $\mu$ F; x10, x100 pF. (Design center 38.) Frequency Response: 20 cps to 1 Mc,  $\pm$ 3%; to 100 Mc,  $\pm$ 1 db, full scale. Accuracy: Volts and mA  $\pm$ 3%, full scale; ohms and capacitance,  $\pm$ 3%. Input Impedance: DC Volts, 11 meg; DC Null, 22 meg; AC Volts, 10 meg; shunted by approx. 5 pF. Power Required: 30 watts, 117 VAC  $\pm$ 10%; 50-60 cps. Enamelled steel portable case, chrome meter case. Size: 18" w. x 8" d. x 13 $\frac{1}{2}$ " h. Shipping Weight, 26 lbs.

Model 209B Tester—With AC and DC probe assemblies, test leads, book. Net Each. . \$239.50

## MODEL 470A PORTABLE ELECTRONIC VOLT-OHMMMETER

Advanced UNI-SCALE design provides increased ranges in all functions while simplifying readability, with only two basic scales. AC and DC values read from same scales, eliminating low range AC error due to crowding. High sensitivity, low voltage range for transistor bias testing. Single unit AC-DC-Ohms probe simplifies operation, eliminates need for multiple leads. For both field and laboratory applications. Large, 7" easy-to-read meter with 100  $\mu$ A movement and clear plastic window; DC zero center. Scale Arcs: 0-1.5 and 0-5 for AC rms and DC; 0-1.4 and 0-4, p-p. AC-DC Volts: 0-0.5, 1.5, 5, 15, 50, 150, 500, 1500. AC Volts Peak-to-Peak: 0-1.4, 4, 14, 40, 140, 400, 1400, 4000. Ohms: x1, x10, x100, x1K, x10K, x100K, x1 meg, x10 meg. Frequency Range: 15 cps to 2.5 Mc. Input Impedance: DC volts, 17.7 meg; AC volts, 17.7 meg; paralleled with approx. 150 pF. Power Required: 15 watts, 115 VAC, 50-60 cps; ohmmeter uses 1.5 V "C" cell. Metal case, 6 $\frac{1}{2}$ " x 7 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ ". Shipping Weight, 10 lbs.

Model 470A Electronic Volt-Ohmmeter—Complete with single-unit probe, test leads and instruction book. Net Each. . \$79.50

## MODEL 455A VOLT-OHM-MILLIAMMETER

Exclusive overload cut-out and fuse system provides complete protection for meter, resistors, shunts, and other components. Any high voltage or current can be applied directly across any function without danger or damage. Sensitivity: 20,000 ohms/VDC-AC. Volts: 0-3, 15, 60, 150, 600, 1200 DC-AC. Ohms: 0-100 meg (5, 500, 5000, 50000 ohms—center scale). Current: 50 microamps; 1, 10, 100, 1000 mA; 10 amps. Single Function-and-Range switch. Full-wave bridge-type rectifier circuit. Streamlined case with curved face and slanted dial; batteries housed in special compartment—just snap in. Portable case, 8 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " x 3" (inclined to 1 $\frac{1}{4}$ " h.). Shipping Weight, 6 lbs.

Model 455A Volt-Ohm-Milliammeter—Complete with leads. Net Each. . \$89.50

Model 457 Portable Volt-Ohm-Milliammeter—Same features as 455A, but without burnout protection. Sensitivity: 20,000 ohms/VDC, 1000 ohms/VAC. Shpg. Wt., 6 lbs. Net Each. . \$45.00

Carrying Case—For Models 455A and 457. Net Each. . \$2.50

## MODEL 288AX AM-FM SWEEP AND MARKER GENERATOR

Complete alignment instrument provides signal voltages for servicing AM, FM and TV receivers, plus crystal-controlled 100 kc and 1000 kc oscillator provides accurate frequency standard. Eight bands from 35 kc to 180 Mc, including ultrasonic range of 35 kc to 110 Mc. Built-in decibel meter with range of -10 to +38 db. External or internal modulation on both AM and FM ranges; internal FM sweep width continuously variable up to 450 kc; choice of 60 or 400 cps sweep rate. Audio output, 20-15,000 cps variable, 400 cps fixed. Size: 16" w. x 7" d. x 13" h. Shipping Weight, 33 lbs.

Model 288AX Sweep and Marker Generator—Net Each. . \$315.00

## MODEL 656XC TV COLOR BAR GENERATOR

Fully saturated 100% NTSC color bar standard for complete color TV alignment. Highest quality obtainable. Portable. Size: 16 $\frac{1}{2}$ " x 18 $\frac{1}{2}$ " x 7 $\frac{1}{2}$ ". Shipping Weight, 45 lbs.

Model 656XC TV Color Bar Generator—Complete with cable. Net Each. . \$549.50

## MODEL 661 NTSC COLOR BAR-WHITE DOT GENERATOR

Chrom-All-gener generator provides individual 100% saturated color bars to NTSC standards. Also provides the following demodulator alignment signals: R-Y, B-Y, -G-Y, G-Y at 90° and RF output on channels 3 or 4. Crystal-controlled chroma and sync. Video output 1.5 V p-p across 75 ohms. With leads. For 110 VAC, 60 cps. Shipping Weight, 20 lbs.

Model 661 Color Bar-White Dot Generator—Net Each. . \$349.50

## MODEL 660 WHITE DOT-BAR COLOR DISPLAY

White line crosshatch, white dot (small size) color display sequence of orange, red, magenta, blue, cyan, green. All frequencies crystal controlled and locked together with extreme stability. Portable. Size: 10 $\frac{1}{2}$ " x 10 $\frac{1}{2}$ " x 5 $\frac{1}{4}$ ". Shipping Weight, 21 lbs.

Model 660 White Dot-Bar Color Display—Complete with 2 crystals and cable. Net Each. . \$245.00

## MODEL 725 STEREO STANDARD FM MULTIPLEX GENERATOR

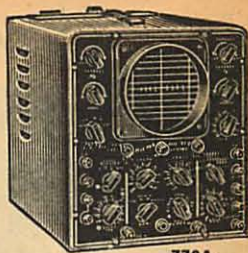
Generates complete composite FM multiplex signal to FCC specifications. Self-contained, requires only an oscilloscope or AC voltmeter for complete stereo alignment. Composite output of L+R, L-R, plus 19 kc pilot carrier. RF output tunable, 92-104 Mc; variable, 2-1000  $\mu$ V. Separation, 35 db or better. Fully compensated for external modulation including standard pre-emphasis and L-R, L+R delay. Size: 16 $\frac{1}{2}$ " w. x 7" d. x 13 $\frac{1}{4}$ " h. Shipping Weight, 27 lbs.

Model 725 Stereo Standard FM Multiplex Generator—Net Each. . \$495.00

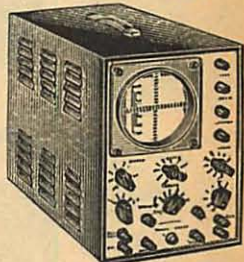
## MODEL 295X MICROVOLT AND CRYSTAL-CONTROLLED GENERATOR

Provides continuous frequency coverage in 8 bands, 125 kc to 175 Mc. Calibrated, metered output from 0.1 to 100,000 microvolts. Dial calibration accuracy, 1%. Built-in 1 Mc crystal. Precision step attenuator; direct reading, vernier tuning. 90 watts, 105-125 V, 50-400 cps. Steel case, 19" x 12 $\frac{1}{2}$ " x 9". Shipping Weight, 47 lbs.

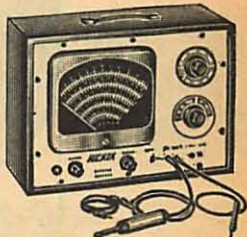
Model 295X Generator—Complete with crystal; 48" output cable with two connectors. Net Each. . \$655.00



770A



677



209B



470A



455A



288AX