

# new products

The items listed have been selected from among those appearing concurrently in "New Instruments" or "New Materials and Components" in *Review of Scientific Instruments*. We gratefully acknowledge the cooperation of the editor of *RSI*, J. B. Horner Kuper, the associate editor for New Instruments, Joshua Stern, and the associate editor for New Materials and Components, R. K. Eby.

These descriptions are based on information supplied by the manufacturer and in some cases from independent sources. Neither *Review of Scientific Instruments* nor PHYSICS TODAY assume responsibility for their correctness.

## Spectrum analyzer

The model 3585A analyzer offers 3 Hz resolution at 40 MHz with up to 0.5 dB absolute amplitude accuracy. Frequency range is 20 Hz to 40.1 MHz over a measurement range -137 dBm to +dBm. Power line sidebands more



than 80 dB down can be measured and dynamic range is greater than 80 dB with full scale inputs -25 dBm to +30 dBm. Center frequency and span settings have 0.1 Hz resolution and  $10^{-7}$  per month stability. Automatic calibration provides up to  $\pm 0.5$  dB accuracy over most of the measurement range. The detected video signal is digitized and stored in memory to bypass limitations of the CRT display. Essential frequency, amplitude, and resolution parameters are displayed alphanumerically. When a tunable marker is set to a signal peak, signal amplitude and frequency are displayed with counter accuracy. A second marker makes relative measurements available. Amplitude and frequency may be offset to normalize values to

a reference signal. As many as three sets of settings may be stored and recalled with a short key sequence. Two different traces, each of 1001 horizontal points, may be stored and then shown separately or together, while comparisons may be calculated and displayed digitally. All functions are remotely programmable and the instrument can also be commanded to feed its measurements to a computing controller.—*Hewlett-Packard Company, 1507 Page Mill Rd., Palo Alto, CA 94304.*

Circle No. 140 on Reader Service Card

## Laser

The model 250XR rare-gas halogen laser features higher average power by offering higher repetition rates and reduced power falloff. At 20 pulses per second, the laser yields average powers of 600 mW at 193 nm, 800 mW at 350 nm, and a full 2 W at 248 nm. Other wavelengths are available from 193 nm to  $10.6 \mu\text{m}$ . Use of faster energy discharge techniques and optional gas circulation reduce consumption of gas per millijoule energy out.—*Tachisto Incorporated, 13 Highland Circle, Needham, MA 02194.*

Circle No. 141 on Reader Service Card

## Multimeter

The model 8502A microprocessor based digital multimeter features 6 ppm dc accuracy and also measures ac volts, ac/dc current, and resistance. Front panel pushbuttons permit the user to program basic functions and enter data for production testing, such as limit and percent error. Full mathematical capability can be utilized by pushbutton entry. The standard unit



## The most stable optical tables by far

NRC tables let you get the most out of your experiments, and make lab work more enjoyable. They are the choice of those familiar with optical table alternatives.

32 pages of our 100-page catalog are devoted to a frank discussion of table performance to help you plan your experiments more thoroughly.



## The largest selection of off-the-shelf precision mirrors

We now produce our own optics and offer you quality previously unavailable. We simply will not ship a part unless it meets all specifications. In the long run, it makes life simpler for us and for you.

Like others, you will be impressed by the performance of our all-band dielectric mirrors, with greater than 99% reflectivity covering almost the entire visible spectrum.

Circle number below for 1977-78 catalog. Or write Newport Research Corporation, 18235 Mt. Baldy Circle, Fountain Valley, CA 92708, or phone (714)963-9811.



**newport  
research  
corporation**  
A Dole Company

A-3-78-1

Circle No. 54 on Reader Service Card



# HIGH RESOLUTION MONOCHROMATOR

mercury vapor spectra

1st Order Spectrum  
Grating: 1180 g/mm  
4000 Å Blaze  
Slits: 100µm x 12.7mm

1st Order Spectrum  
Grating: 1180 g/mm  
4000 Å Blaze  
Slits: 10µm x 5mm

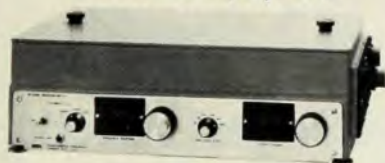
3021.5 Å  
3023.5 Å  
3025.6 Å  
3027.5 Å  
(Left to Right)

3650.1 Å  
3654.8 Å  
3663.3 Å  
(Left to Right)

Hg 3021 -  
3027  
Quadruplet

Hg 3650 -  
3663  
Triplet

**UNDER \$2,000**



MODEL MP-1018B CZERNY-TURNER MONOCHROMATOR for UV, Visible, and Near-Infrared. 1180 grooves/mm standard. Wavelength readout directly in angstroms. Variable slit width readout in microns. Six switch-selectable scanning speeds; bidirectional. Computer compatible. Brochure available.

## PACIFIC PRECISION INSTRUMENTS

Formerly McKee Pedersen Instruments

1040 Shary Court  
Concord, California 94518  
(415) 827-9010

Circle No. 55 on Reader Service Card

## new products

provides five math functions including the processing of input data to read out in directly usable data and the ability to read out in percentage of error. A zero storage feature allows pushbutton selection or setting of zero point about which measurements are to be made. Calibration is achieved by pushbutton using a calibration memory feature.—*John Fluke Mfg. Co., Inc., Box 43210, Mountlake Terrace, WA 98043.*

Circle No. 142 on Reader Service Card

## NMR spectrometer

The IGC/CMU/600 experimental MHz high resolution proton NMR spectrometer has achieved 0.9 Hz resolution without use of shims and 0.4 Hz resolution with addition of field compensating shim coils. The superconducting solenoid composed of modules of niobium-tin tape generates a field of 140 900 G in a 3-in.-diam room temperature access bore. It is operated in the regulated, non-persistent mode. Adaptation of the magnet for NMR spectroscopy involved increasing the stability of the static field by using low shunt resistance across the solenoid, voltage feedback stabilization, and homonuclear field-frequency lock. The use of a set of room temperature shim coils inserted in the bore improved the homogeneity of the field at the sample.—*Intermagetics General Corp., Box 566, Guilderland, NY 12084.*

Circle No. 143 on Reader Service Card

## X-ray dosimeter

The model 35055 digital dosimeter is designed for use with a nominal 15 cm<sup>3</sup> ion chamber for diagnostic x-ray measurements. It measures either exposure



or exposure rate from 19.99 mR (mR/min) full scale to 199.9 R (R/min) full scale when used with the model 96035 ion chamber supplied. When used with an optional 900 cm<sup>3</sup> ion chamber, the instrument automatically displays

exposure rate in mR/h units with 0.01 mR/h resolution. The instrument is portable and may be operated from line power or from contained rechargeable batteries. The battery pack provides 6 h operation following an overnight charge and the instrument automatically shuts down when the battery pack discharges below a preset value. Other features include 3½-digit display, electronic ionization potential, autoranging, and digital display of an adjustable correction factor. Basic accuracy is stated to be ±1% on most ranges exclusive of ion chamber energy response. Typical energy response of the ion chamber supplied is ±3% between 30 and 130 kV. A three-point calibration at energies having a half value layer of 0.35, 2.7, and 4.89 mm Al is supplied.—*Keithley Instruments, Inc., 5895 Harper Road, Cleveland, OH 44139.*

Circle No. 144 on Reader Service Card

## Multichannel analyzer

The series 80 multichannel analyzer provides simultaneous high count rate data acquisition, spectrum analysis, input-output, and spectral display by use of three independent LSI processes.



sors. Overall system control is provided by the multitasking software system. The use of dual bus architecture allows the instruments to be expanded to 16k data channels plus 65 kilobytes of program memory. A selection of signal processing modules allows the analyzers to be configured to meet specific requirements. A 12-in. cathode ray tube is used for display.—*Canberra Industries, Inc., 45 Gracey Ave., Meriden, CT 06450.*

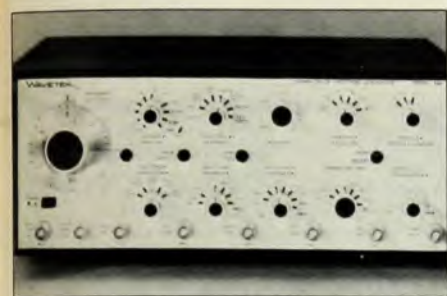
Circle No. 145 on Reader Service Card

## Pulse-function generator

The model 166, a 50 MHz combination pulse and function generator, operates over the frequency range 0.0001 Hz to 50 MHz and delivers 30-V peak-to-peak output with sine, square, triangle, ramp, and pulse waveform. As a pulse generator, the instrument fea-



tures independent repetition, width, and rise and fall transition time control. Fixed TTL outputs are available simultaneously with the variable output. The pulse baseline can be ad-



justed and the main output can be switched from normal to inverted. As a function generator, the unit features linear and logarithmic sweep capability, trigger, gate, and double trigger modes of operation, as well as external AM and FM modulation capability.—*Wavetek, 9045 Balboa Ave., San Diego, CA 92112.*

Circle No. 146 on Reader Service Card

## Laser diode pulser

The model 25 pulser is designed for laser diode pumping for fiber-optic communications research, current injection testing, timing signal generation, and high voltage calibration. The



pulser has an output voltage up to 1000 V, into 50  $\Omega$ , with a rise time of 0.5 ns. Pulse width is 1 to 500 ns, depending on length of charge cable. Pulse repetition rate is single shot to 300/s. Peak power is 20 kW.—*Spire Corporation, Patriots Park, Bedford, MA 01730.*

Circle No. 147 on Reader Service Card

## Gamma radiation detectors

Available in three models these semiconductor counters of cadmium telluride are compatible with low-voltage solid state circuitry and require no cooling. The 2-mm-thick CdTe crystal absorbs more than 85% of all 100 keV radiation incident on the active area and uses, typically, bias less than 60 V. The three models provide a choice of cross section to match individual counting requirements. Model A-101, a disk with 44 mm<sup>2</sup> active area, is offered for general use, particularly for

maximizing counting rates from relatively weak or remote gamma sources. The model A-103, the smallest, uses a cube of cadmium telluride measuring 2 mm on a side, and is designed for tight geometries and stronger sources, or where cost is an important factor. All models are available as platinum metallized crystals or fabricated in any of three standard package styles including complete epoxy encapsulation or incorporation of the hermetically sealed crystal into the body of a BNC connector.—*Radiation Measuring Devices, Inc., 44 Hunt St., Watertown, MA 02172.*

Circle No. 148 on Reader Service Card

## Mass spectrometer

The MM622 isotope ratio mass spectrometer measures automatically the concentration of <sup>15</sup>N. Reproducibility between samples better than 0.005% of <sup>15</sup>N is said to be achieved after a 1-min measuring period per sample. Correction factors are at least one order of magnitude less than reproducibility and are therefore not necessary. In operation, the sample is introduced into the ion source where it is charged by electron bombardment and accelerated out of the source by high potential, usually 3 kV. The two ions of interest, <sup>14</sup>N<sub>2</sub><sup>+</sup> and <sup>14</sup>N<sup>15</sup>N<sup>+</sup>, are detected separately by the collectors and the ion currents produced are compared to measure <sup>15</sup>N/<sup>14</sup>N ratio. Typical sample size is 0.1 cm<sup>3</sup> at normal temperature and pressure. Maximum size is 4 cm<sup>3</sup>. Through-put capacity is ten seconds per sample, measuring time, plus 1-min for manual sample introduction.—*The Kearns Group, 58 Buckingham Drive, Stamford, CT 06902.*

Circle No. 149 on Reader Service Card

## Power supply

The model CRT-30 includes three highly regulated power supplies assembled in one unit to supply high voltages for cathode ray tube test. Three independent ten-turn dials provide fine adjustment of anode output from 0 to 30 kV at 2 mA, focus output from 0 to 8 kV at 1 mA, and grid output 0 to 1 kV at 1 mA. Output voltages and currents are displayed by 3½-digit meters. Ripple and regulation are specified at 0.01% maximum. Optionally available features include high-speed dynamic focus control and remote digital or analog programming and monitoring. All outputs are protected against failure due to arcs or shorts within the tube under test.—*Bertan Associates, Inc., 3 Aerial Way, Syosset, NY 11791.*

Circle No. 150 on Reader Service Card

# NOW

## 4 Watts Linear 1 to 1000 MHz Only \$2700



Model 4W1000

## ULTRA- WIDEBAND AMPLIFIER

It's fact! Model 4W1000 is the only ultra-wideband, solid-state power amplifier that supplies a minimum of 4 watts of RF power from 1 to 1000 MHz. It's probably all the bandwidth and power you'll ever need.

You can use this versatile, unconditionally stable amplifier with frequency synthesizers or swept signal sources to provide high-level outputs. Applications include RFI susceptibility testing, NMR spectroscopy, antenna and component testing as well as general lab use.

Very likely, the 4W1000 will satisfy all your ultra-wideband power amplifier needs. However, if the 4W1000 offers more power than you need, consider the more economical 1W1000, priced at only \$1,250. For complete information, write or call:

Amplifier Research  
160 School House Road  
Souderton, Pa. 18964  
215/723-8181

# AR AMPLIFIER RESEARCH

See us at Wescon Booth #839

Circle No. 56 on Reader Service Card