

NEW PRODUCTS

The descriptions of the new products listed in this section are based on information supplied to us by the manufacturers, and in some cases by independent sources. PHYSICS TODAY can assume no responsibility for their accuracy. To facilitate inquiries about a particular product, a Reader Service Card is attached inside the back cover of the magazine.

Multiprocessor System for VME

CSPI's newly introduced RTS-860 real-time multiprocessor system for VME-bus applications can process at 80-1280 megaflops and offers 2-256 megabytes of memory.

The RTS-860 combines the high performance of a vector processor with real-time software and software development tools, including a debugger, simulator and automatic system generator. The RTS-860's operating systems support a multitasking operating-system kernel, UNIX-like system calls and interfaces for NFS and other network software.

The RTS-860 is available as a desk-side or rack-mountable unit. The system contains one 68030 CPU (for control and input-output), multiple SuperCard SC-2/VME vector processors, a 760-Mbyte SCSI disk and QIC-150 1/4-inch cartridge tape. The RTS-860 uses a high-speed VSB inter-processor communication bus by grouping processors into clusters. Each cluster sustains continuous throughput rates of 40 Mbytes/sec.

A key feature of the RTS-860's software is the debugger, which uses a point-and-click windows-based interface. CSPI, 40 Linnell Circle, Billerica, Massachusetts 01821

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Fast-Response CO₂ Analyzer

The LI-6252, introduced by Li-Cor, is a fast-response, nondispersive infrared analyzer designed to measure gas-stream CO₂ concentrations in the range of 0-3000 ppm. The analyzer can operate in absolute or differential mode.

Response times range from 1 to 30 seconds and can be selected by the user. Typical signal noise for a 1-sec response is less than 0.2 ppm peak-to-peak at 350 ppm. (The instrument can be factory modified for a 0.1-sec



response by sacrificing some signal-noise suppression.) Power consumption is 8 W, and the instrument can be operated from either a 12-volt dc battery or 100-260 V ac.

Data can be displayed or output as mole fractions, partial pressures or mass fractions. All calculations compensate for gas temperature and atmospheric pressure. Pressure can be input via the keypad, the RS-232C port or an external, user-supplied pressure sensor. For on-line measurement applications, the LI-6252 can be controlled by any RS-232C terminal or computer. Li-Cor, P. O. Box 4425, 4421 Superior Street, Lincoln, Nebraska 68504

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Ion Laser with Long-Term Pointing Stability

Coherent has introduced the Innova 400, a new series of ion lasers. Compared with previous large-frame argon-krypton ion laser systems, this series claims enhanced single-frequency performance, increased output power in both single-line and single-frequency modes and improved stability. For long-term operation, the Innova 400 is specified to provide a beam-pointing stability of 10 μ rad/°C.

The new series features an actively stabilized optical cavity, which is now compatible with single-frequency operation. This new configuration allows the optical cavity to be used with active-mode stabilization to eliminate mode hops in single-frequency appli-

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Introducing the HC220. A complete photodetector assembly for optical lab research.

The Hamamatsu HC220 is an economical tool ready to go to work on the bench or in the field. It can be used with light meters, oscilloscopes and PCs with an A-D card. A rugged housing contains the silicon photodiode and a built-in amplifier. The HC220 operates on ± 15 V for output of 0-10V using a standard nine-pin D-subminiature connector.

- ☐ Spectral range 190-1000 nm
- ☐ Active area 2.4 X 2.4 mm
- ☐ Response at peak .8V/nW
- ☐ Electrical band width 10Hz
- ☐ Noise R.M.S. input current 10fa
- ☐ Baseline drift (20°-40°C) 3fa/°C
- ☐ Sensitivity Coefficient 0.1%/°C
- ☐ Standard 1/4" threaded mount

*\$395 complete when using Visa or check with order. For information or to order by phone call 908-231-0960.

HAMAMATSU

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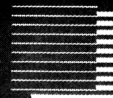
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cations. Major single-line power specifications have been increased by 10% and single-frequency output power specifications by 20%.

In the current-regulation mode, the long-term power stability specification has been improved from ± 3.0 to ± 1.0 ; the optical-noise specification has been reduced from 0.5% to 0.3% (rms). *Coherent, 3210 Porter Drive, P. O. Box 10321, Palo Alto, California 94303*

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Four-Channel Digital- Oscilloscope Plug-In

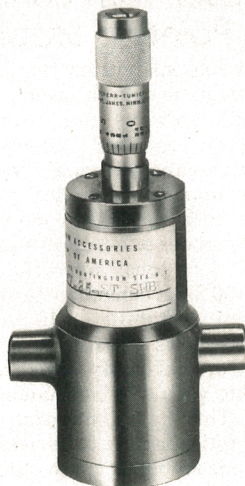
LeCroy has introduced Model 7234, a four-channel plug-in for its 7200 series of precision digital oscilloscopes. Two 7234 plug-ins can be used simultaneously, permitting synchronous data acquisition on each of eight independent channels. The 7234 features a sampling rate of 200 megasamples per second, memories of 50 000 words per channel, and large-bandwidth, flexible-signal processing.

The digitizers are located in the plug-in instead of the mainframe, so the plug-in may be used in combination with other plug-ins available for the 7200 series. *LeCroy, 700 Chestnut Ridge Road, Chestnut Ridge, New York 10977-6499*

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High-Vacuum Gas-Metering Valves

Vacoa announces its Series MV-25 line of precision gas-metering valves. The valves can meter He and other gases at rates as low as 1×10^{-9} std cm^3/sec at standard pressure and temperature and can control pressure at rates as low as 1×10^{-10} std cm^3/sec .



The units' micrometer actuators ensure reproducible results. Valve components are made from low-vapor-pressure materials and permit baking to 225 °C. In a closed position, the MV-25 valves are guaranteed to be leak tight to a sensitivity of 5×10^{-11} std cm^3/sec . Other features include straight-through or angle-type flow, bellows seals, positive shut-off, ball-bearing drive and easy disassembly for cleaning and adjustment. The valves are available in stainless steel or chrome-plated brass. *Vacoa, P. O. Box 160, Bohemia, New York 11716*

Circle number 144 on Reader Service Card

Spectrum and Network Analyzer

Hewlett-Packard has introduced the HP3589A, which enables complete spectrum and network analysis, including measurement of frequency, distortion, phase, group delay, return loss and impedance. The HP3589A covers frequencies of 10 Hz to 50 MHz; 50- and 75-ohm, S-parameter test sets are available for use with the analyzer. The time-gated spectrum analysis option provides such standard measurements as noise level, signal-to-noise and distortion of time-varying signals.

The HP3589A provides group-delay, polar- and Smith-chart formats for measurements made in 50- and 75-ohm environments. For audio or broadband analysis, the analyzer also performs log sweeps. HP Instrument BASIC can be used with the HP3589A. *Hewlett-Packard, 19310 Pruneridge Avenue, Cupertino, California 95014*

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Permittivity and Permeability Data Measurements

Wiltron has announced a new materials-measurement package for its Model 360 vector network analyzer system. It includes a Wiltron MS-DOS computer-controller with software and a GPIB interface.

The software allows the user to measure and analyze permittivity and permeability of materials at microwave frequencies. Wiltron's method is claimed to offer easy sample preparation and fixturing and to provide accurate measurements at the extreme temperatures often needed.

Material analysis is based on reflection measurements of two small but differently sized samples of a solid, powder or liquid material inserted in

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user-prepared coaxial cable or waveguide transmission-line test fixtures. Software menus take the user through calibration and test steps. Complex values of permittivity and permeability are displayed as a function of frequency; the impedance ratios and transmission factors are also displayed.

The computer-controller includes a 20-MHz 80386 microprocessor, an 80387 numeric coprocessor, 2 Mbytes of RAM, a 3.5-inch, 1.44-Mbyte floppy drive, a 40-Mbyte hard-disk drive, a 14-inch VGA monitor, a 101-key enhanced AT-type keyboard, a parallel printer port and an RS-232 serial port. A National Instruments PC2 IEEE-488 card interfaces the computer-controller and the vector network analyzer. *Wiltron, 490 Jarvis Drive, Morgan Hill, California 95037-2809*
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Electrostatic Quadrupole Plasma Probe

The new electrostatic quadrupole plasma probe from Hiden Analytical is designed for the direct analysis of positive or negative ions, radicals or neutrals from plasmas.

The probe's key component is its integral 45-degree electrostatic energy analyzer, which eliminates the inherent disadvantages of matching a CMA or Bessel box device to a quadrupole mass filter. Hiden's system includes ion-extraction optics, an electron-impact ion source, electrostatic energy analyzer, quadrupole mass filter and microcomputer-controlled electronics package. *Hiden Analytical, 231 Europa Boulevard, Gemini Business Park, Warrington WA5 5TN England*

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Large-Area Avalanche Photodiodes

RMD has introduced the SH10H and SH8S large-area avalanche photodiodes (active areas 90 and 64 square millimeters, respectively), which can be close packed in arrays. The diodes are packaged with the silicon detector surface optically coupled to quartz and with a hard epoxy encapsulant for anchoring the circuit-board pin connectors. These optical sensors operate with optimal S/N at 1300 and 1500 volts bias and avalanche gains of 100-200. The APDs feature a capaci-

tance of 1.2 pF/mm², low noise and high quantum efficiencies—60% at 450 nm and 80% at 900 nm. *RMD, 44 Hunt Street, Watertown, Massachusetts 02172*

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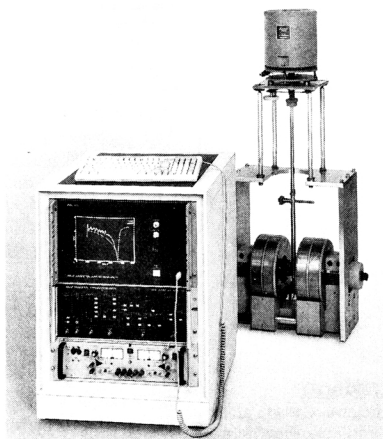
Periodic-Table Database

Intellibase Engineering Software has introduced Proelement, a periodic-table database and management system. Proelement contains more than 12 000 data entries, including physical, isotopic, electronic, chemical, spectral, nuclear, bonding and nmr properties; it encompasses 103 elements and 481 isotopes. The software is IBM PC/PS-2 DOS compatible; 640 K RAM and a hard drive are needed. *Intellibase Engineering Software, 4053C Bates Creek Park, Suite 190, Lexington, Kentucky 40517*

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Full-Featured Compact Magnetometer

EG&G Princeton Applied Research has introduced Model 4500-30, a compact, low-cost magnetometer offering most of the features of larger, more expensive models without their power, water-cooling and space require-



ments. The smallest version, for example, uses 20 amps at 115 watts.

The 4500-30 is designed for use where space is at a premium. With its small 300-pound magnet, the unit is comparatively lightweight, and its modular configuration allows design flexibility. *EG&G Princeton Applied Research, P. O. Box 2565, Princeton, New Jersey 08543-2565*

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NEW the eV-252A

Charged Particle Detector

Size: 1.50"L X 1.25" dia.

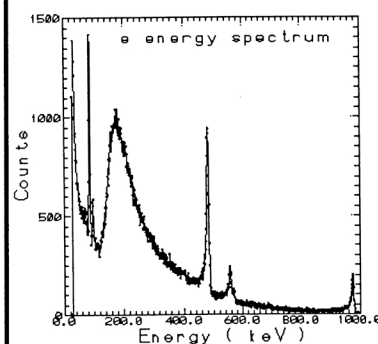
Replaces PMTs

30 Day evaluation period!

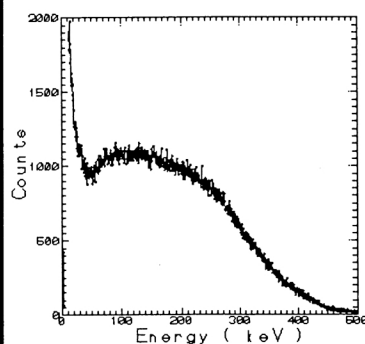
- One year warranty -

The eV-252A is a complete package: photodiode and preamplifier

- Works in Magnetic Fields
- Low Voltage Operation
- Low Power Consumption
- No Gain Drift



Bi²⁰⁷ Electrons
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Na²² Positrons
Photodiode - 10 x 10 x 0.5mm³

eV Products

Division of Electron Control Corp

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Australia: Gammasonics Pty Ltd, New South Wales 7131122; India: Con-Serv Enterprises, Danabundar, Bombay 8725589; Italy: Data Max s.r.l., Catania 441203; Japan: Niki Glass Co., Ltd, Tokyo 4564700

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