

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.

Holographic grating

The McPherson model 275 from GCA is a compact holographic grating monochromator. The in-line optical system of this 20-cm, portable monochromator includes a concave holographic grating, two folding mirrors and a fast $f/4.2$ aperture ratio. This is said to provide high efficiency and low stray light. With manual drive reading to 0.1 nanometers, three sets of interchangeable fixed-width slits, slit-height occulters and a 1200 G/mm grating, this monochromator has a spectral range from 185 to 950 nm, with a resolution of 0.15 nm. With easily accomplished grating changes, one can extend the range of the instrument to 4 microns. An optional stepping motor is also available. *GCA, 209 Burlington Road, Bedford, Mass. 01730*

Circle number 140 on Reader Service Card

Photoacoustic cell

The model 6003 from EG&G Princeton is a photoacoustic sample cell for applications in infrared, ultraviolet and visible-light Fourier-transform spectroscopy. The sample cell includes a built-in condenser microphone, matching low-



noise preamplifier, and valve-adjusted input/output ports for the coupling gas.

The basic model 6003 can be enhanced by a variety of accessories. Several general-purpose sample cups are

available, with various rectangular and circular receptacle shapes. The window of the sample carrier can be provided with several materials to cover the spectral range from ultraviolet to infrared. An adjustable 45° mirror mount is available to direct the light beam into the sample chamber. Plane and spherical 25-mm aluminum mirrors with enhanced dielectric coatings are also offered.

The model 6003 is claimed to offer good acoustic/vibration isolation, high signal-to-noise ratio and simplicity of operation. The model 6005 preamplifier/power supply can be added, to increase the output of the 6003 to a level suitable for the standard input of most infrared Fourier-transform spectrometers. The model 6003 is priced at \$4945. *EG&G Princeton Applied Research, P. O. Box 2565, Princeton, New Jersey 08540*

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Fast scalars

LeCroy has a new family of scalars that are said to have exceptionally fast counting rates. This 8590 series of multichannel latching scalars, with data-taking rates up to 100 MHz, can transfer scalar values directly to a computer or store them sequentially in local memory. Local memory permits storage of data from multiple-shot events without computer supervision. The achievement of 100-nanosecond deadtime is accomplished by latching scalar values into internal registers. With LeCroy's model 8801 memory modules one has up to 16 K of memory storage.

The 8590 series was designed for general fast-counting applications where computer reading or storage of data must not perturb counting. The models 8590 and 8591 each have eight identical 16-bit binary scalars with parallel storage latches. Each can be used as an independent eight-channel scalar or in a system consisting of multiple

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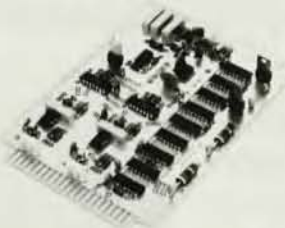


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new products

modules and a single associated buffer memory module (the 8810). The 8591 (a 2-CAMAC package) has separate stops for each channel, while the 8590 uses a common stop for all channels. The model 8594 has four 32-bit scalars and a common latch/stop. TTL/ECL/NIM inputs assure compatibility with most pulse-generating instrumentation. These scalars can be used, among other applications, for multichannel scaling in time-resolved spectroscopy, real-time clock latching, frequency logging, and digitization of the output of fiber-optics isolated voltage-to-frequency converters. *LeCroy Research Systems, 1806 Embarcadero Road, Palo Alto, California 94303*

Circle number 142 on Reader Service Card

Xenon flashtubes

EG&G Electro-optics has introduced a family of compact, metal-cased xenon flashtubes, operating at high average power for applications requiring high-efficiency, short-arc, bulb-type flashtubes. Models FX-193, -224 and -249 are said to have precise, stable arc patterns, producing short flash durations of high radiance. The arc discharge lengths are 3 mm for models FX-193 and -224, and 1.5 mm for the FX-249. For all models, the maximum energy per flash is 15 joules, with up to 40 watts average power. The operating voltage range is 300 to 1500 V dc, with heat-sink tubes that can be operated up to 80 watts.

To provide the high-voltage trigger pulses required to operate these flashtubes, EG&G offers its Lite-Pac trigger modules. The FY-703, -704 and -705 Lite-Pac modules trigger respectively the FX-193, -224 and -249 xenon flashtubes. *EG&G Electro-optics, 35 Congress Street, Salem, Mass. 01970*

Circle number 143 on Reader Service Card

Lock-in amplifier

The model SP5020 lock-in amplifier from Spectra Physics is a synchronous, autotracking, phase-sensitive, narrow-band detector. It is designed to detect ac signals masked by broadband noise. The amplifier is said to provide a highly stable, low-noise dc output. The manufacturer claims that the 0.01%/°C stability of the dc output is an order of magnitude better than that of other comparably priced instruments. The price is \$1800. The model SP5020, we are told, incorporates operating functions that simplify spectroscopic data collection with the SP5000 laser source spectrometer, while maintaining sufficient instrument generality to be use-

ful for a variety of other demanding signal-handling applications.

The sensitivity of the amplifier ranges from input voltage of 30 micro-



volts to 3 volts. The second harmonic content of the input signal can be measured with switch selection of fundamental and double-frequency operating modes. The model SP5020 offers dual reference inputs with front panel reference selector switch, reference-unlock-indicator LED and input-overload LED. *Spectra Physics, Laser Analytics Division, 25 Wiggins Avenue, Bedford, Mass. 01730*

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Gas flow calibrators

Brooks announces a comprehensive line of gas-flow calibration instruments, with measuring ranges from 1 to 24 000 cm³/minute. An accuracy of $\pm 0.2\%$ of indicated volume is said to be provided by the Brooks mercury-sealed system, which provides precise flow into the gas collection cylinders, and by the use of borosilicate glass tubes with precision bore characteristics and long lifetime. An activated charcoal filter prevents the escape of harmful mercury vapors.

Seven single-tube gas flow calibration models are offered. They are provided with mounting stands and easily read scale graduations in various increments. Readout is facilitated by a detachable scale mounted next to the cylinder. A constant, low back pressure insures an uninterrupted flow of gas. *Brooks Instruments of Emerson Electric Co., Hatfield, Pennsylvania 19440*

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Pulse generator

Avtech's new model AVL-2, a high-voltage, nanosecond pulse generator, provides up to 350 volts of output to a 50-ohm load, with a risetime of one nanosecond. It is designed to serve as a pulse generator or amplifier for appli-

cations in nuclear physics, laser optics, chemistry etc., and as a switching and propagation device. The output pulse width can be varied from 4 to 100 nanoseconds by means of a one-turn, front-panel control. The output amplitude is also variable from a front-panel control—from 0 to 350 volts. The fall time is 3 nanoseconds. Both output polarities are available.

A variable-risetime option is available, up to 10 nsec. An output pulse is produced by each trigger pulse. The AVL-2 requires low-level, slow-speed triggers—for example, TTL pulses. The unit uses a +15-volt power supply, but a line-powered option (115–230 V, 50–60 Hz) is available. Model AVL-2A is similar to the AVL-2, but it offers output pulse widths as long as 400 nsec, with amplitudes up to 180 V. All units are mounted in 6×4×5-inch chasses, with BNC connectors. Prices range from \$1210 to \$1498 (US). *Avtech Electronics Ltd., P. O. Box 5611, Station F, Ottawa, Ontario, Canada K2C 3M1*
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Xenon lamps

Optical Radiation Corp. now has a broad line of pre-focused xenon lamp modules, designed for applications where interchangeable, plug-in, fixed-focus light sources are desirable. These compact modules can be adapted to spectral photometers, analytical instrumentation and fiber-bundle illumination. One has the choice of either short-arc xenon or mercury-xenon light sources.

The user can block the infrared radiation to minimize heating with a newly



developed coating. A patented aspheric collection system is said to be capable of delivering twice as much energy to the second focus as an elliptical collection system can. This design, we are told, also provides excellent beam uniformity and maximum energy transfer. *Optical Radiation Corporation, 6352 Irwindale Avenue, Azusa, California 91702*

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Magnetic field meters

LDJ Electronics has developed a new series of microprocessor-controlled B - H meters to measure the magnetic induction (B) and field intensity (H) in magnetic materials. This 7500 series is said to provide expanded capacity for data storage and measurement in soft, semi-hard and hard materials. The B - H meters are also useful for measuring fields in toroids, tape-wound cores, transformer laminations and cores, and magnetic recording media such as floppy and rigid disks, and recording tapes.

The 7500 series is said to incorporate state-of-the-art technology, capable of measuring full ac and dc hysteresis curves as well as specific data points. The instruments provide statistical analysis and a printout of the full range of magnetic parameters. The microprocessor can be programmed to measure BH_{max} , squareness, core loss, and the maximum, remanent and coercive parameters B_r , B_m , H_c and H_m . Analog B and H signals are digitized, stored, sorted and scaled to provide the desired critical parameters. All data and curves are shown on a CRT display.

A complete set of complex test procedures can be programmed and placed under microprocessor control. Dual floppy disks are provided for program entry. *LDJ Electronics, P. O. Box 219, 1280 East Big Beaver, Troy, Michigan 48099*

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New literature

Optical research equipment and accessories are described and illustrated in Ealing's new, 400-page, comprehensive catalog. The list of more than 4000 products includes tables, a new line of computer-controlled micropositioners, mirrors, windows, beam splitters, lasers and fiber optics. Extensive introductions to each section clarify usage and setup. *Ealing, 22R Pleasant Street, South Natick, Mass. 01760*

Surface chemistry—A 27-page brochure describes in detail the multiple capabilities of the Perkin-Elmer PHI 560—a scanning Auger microscope and x-ray photoelectron microscopy system. Its synergistic combination of analytic techniques, including (as options) secondary-ion mass spectroscopy and ultraviolet photoelectron spectroscopy, is said to provide a powerful system for the elemental and chemical analysis of surfaces and thin films. *Perkin-Elmer, 6509 Flying Cloud Drive, Eden Prairie, Minnesota 55344* □

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