

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.

Photomultiplier supply

Spellman's Photon 1500 is a modular power supply intended for photomultiplier tubes and other applications requiring a stable, low-noise source of high voltage. It is claimed to provide laboratory-grade high performance at low cost (\$100 in quantity). This regulated, dc-to-dc high-voltage module is offered in two models—with positive or negative output voltage. The output range is 0 to 1500 volts at current levels up to 3.3 milliamps. The user controls the output voltage by means of a 20-turn potentiometer, remote resistance or remote programming. Output voltage monitoring has a ratio of 1000:1.

Ripple and noise are claimed to be only 2 mV (peak-to-peak) at fully rated output. Regulation is 10 parts per million for 10% line-voltage variation and full load variation. We are told that the output is stable to within 0.02% over a period of eight hours. The power supply requires an input of +22 to +30 volts dc at 500 milliamps (maximum). The Photon 1500 is suitable for use with scintillation counters, photometers and optical equipment. *Spellman High Voltage Electronics, 7 Fairchild Avenue, Plainview, New York 11803*

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Signal averagers

T. G. Branden offers two new signal averagers: the four-input model 2485 and the two-input model 2285. These units combine the functions of a signal averager with those of a waveform recorder and a digital-processing oscilloscope. The signal-averager functions include normal and peak averaging, and a 4096×32-bit memory, with memory partitioning for the storage of 3 to 4096 words into as many as 8 memory channels. The signal averager also

provides artifact reject limits for each signal input channel, and up to 30 000 sweeps.

The units offer independent 12-bit, analog-to-digital converters for each input channel, with 15-microsecond sample time. The CRT display provides dual cursors, digital readout of time



and amplitude, and the opportunity to annotate the display. "Powerful" software is included for processing and manipulating waveforms. Waveforms may be integrated, differentiated, smoothed, added, divided and so on, and acted upon by most of the common transcendental operators. The 2285 and 2485 are priced at \$7495 and \$9495. *T. G. Branden Corp., 5565 S. E. International Way, Portland, Oregon 97222*

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Fluorescence radiometer

Photodyne's model 88XL-F is a fluorescence radiometer—designed to measure the fluorescent power of various materials. The device includes an ultraviolet source, emitting in the wavelength region 300 to 400 nm. The solid-state detector that picks up the induced fluorescent signal registers only in the visible internal 450 to 680 nm. Thus it avoids spurious fluorescence measurements by being blind to the inducing ultraviolet irradiation. The rejection ratio is better than 1×10^{-5} .

The ultraviolet source produces a 6-mm-diameter illuminating spot on the

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new products

sample surface with a power of about 50 microwatts. The fluorescence detector is sensitive to fluorescent power as low as 10 picowatts. The readout is a large 3½-digit LCD display—with backlighting for darkroom use. The price of the model 88XL-F is \$3800. *Photodyne Inc., 5356 Sterling Drive, Westlake Village, California 91361*
Circle number 142 on Reader Service Card

Temperature controller

Notwithstanding the fact the Lake Shore's new cryogenic temperature controller (model DRC-80C) is basically a digital instrument, it is said to offer continuous analog control. Purely digital instruments, we are told, have trouble achieving sufficient control to prevent excessive temperature fluctuations in cryogenic applications. The DRC-80C attempts to solve this problem by employing a microcomputer to generate an analog error voltage, which is then used in an analog control loop. The microcomputer then linearizes both the temperature sensor signal (for display or output) and the temperature set-point signal (for comparison with the analog sensor voltage).

The instrument permits concurrent use of two independent input sensors. One can choose either one as the control or the display sensor. Thus one can do monitoring and control at different locations. The silicon-diode sensors provide measurement accuracy to ± 0.5 K. An optional programmed read-only-memory improves this accuracy to ± 0.1 K. The price of the DCR-80 is \$1395. *Lake Shore Cryotronics, 64 East Walnut Street, Westerville, Ohio 43081*

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Small dye laser

PRA, a Canadian firm, describes its model LN102 nitrogen-pumped dye laser as a "mini-laser system." The weight of this portable system (including the nitrogen pump laser) is less than 30 lb. The dye laser puts out peak pulse power up to 100 kilowatts, with typical pulse widths of about 200 picoseconds.

Pumping efficiencies of up to 25% are said to have been achieved with dyes ranging from 357 to 710 nanometers. Repetition rate is continuously variable from single shot to 100 pulses per second. The systems uses standard fluorescence cells. It requires no external accessories, such as vacuum or dye pumps. The size of this

compact dye laser (without the LN100 nitrogen pump laser) is 10×8×5 inches. *Photochemical Research Associates, 45 Meg Drive, London, Ontario, Canada N6E 2V2*

Circle number 144 on Reader Service Card

RF power amplifier

ENI's model 2100L is a broadband power amplifier, covering the radiofrequency range from 10 kHz to 12 MHz with a class A linear output of more than 100 watts. This solid-state amplifier is intended primarily as a radio-frequency driver for ultrasonics, laser modulation and other laboratory applications. For applications where extreme linearity is not important, the 2100L can deliver up to 250 watts of output, without regard to load imped-



ance. It will operate continuously into any load impedance—from open to short circuit.

The amplifier is drive-compatible with all laboratory signal generators, synthesizers and function generators. It will accurately reproduce all waveforms within its output and bandwidth capability. Output of voltage and power (into 50 ohms) are monitored by a front-panel meter. An integral power supply permits operation directly from the ac line (115 or 230 V). The price is \$2990. *Electronic Navigation Industries, 3000 Winton Road South, Rochester, New York 14623*

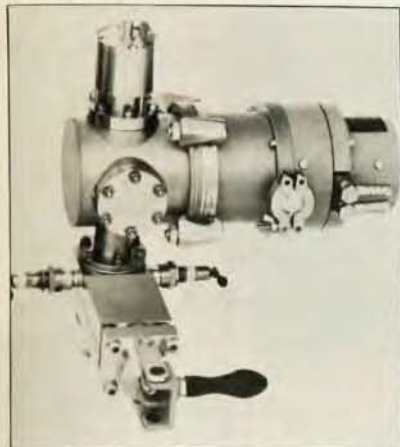
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Gas analyzer

The new Balzers gas analyzer and monitoring system for vacuum processes is intended for ion etching, sputtering, evaporation and related processes carried out in the range from high vacuum to atmospheric pressure. Because analysis of condensable gases is conducted quickly and without adulteration, the system is said to be well suited for closed-loop operations and process characterization. It employs a microprocessor-controlled quadrupole mass spectrometer—Balzer's model QMG 112/QDP 101. The analyzer offers fully integrated turbomolecular pumping.

The system can be ordered in con-

figurations for pressure ranges specified by the buyer from an overall range extending from 10^{-4} mbar to one atmosphere. The microprocessor lets the user select the operational mode he wants from as many as 15 measurement parameters in each of eight channels. One also has the choice of KF or CF flange mounting, grid or axial ion sources, and three filament materials



(tungsten, rhenium, and thoriated iridium). The system is 13" high and 12" across (in the three-range option). Balzers, 8 Sagamore Park Road, Hudson, New Hampshire 03051

Circle number 146 on Reader Service Card

Electrostatic analyzer

Comstock's model AC-901 is a double-focusing electrostatic energy analyzer, for use in fields such as atomic, molecular and chemical physics, photoelectron spectroscopy, surface analysis and



plasma diagnosis. The device analyzes the energy distribution of electrons, positrons or ions incident on its entrance aperture. Particles within a predetermined energy range are transmitted between the inner and outer spherical surfaces of the analyzer and refocused on the exit aperture. One gets the incident energy spectrum by sweeping the reference potential. The

device measures $10\text{ cm} \times 4\text{ cm} \times 3\text{ cm}$.

The analyzer can be used as a diagnostic tool or as a monochromatic beam source. If the input of charged particles is pulsed, the time-resolved output provides a means of mass identification. With a 1-mm (0.5-mm) aperture diameter, the energy resolution of the analyzer is 0.8% (0.4%). The acceptance angle is 0.002 steradians. The basic price of the AC-901 is \$2500. Comstock, P. O. Box 199, Oak Ridge, Tennessee 37830

Circle number 147 on Reader Service Card

Photodiode

A new ultrafast photodiode (model FND-100) from EG&G Electro Optics is said to have "remarkably high" immunity to radiofrequency interference and other electromagnetic noise. This immunity is attributed to the electrical isolation of the detector from the TO-5 mounting package. The photodiode has a bandwidth of 350 megahertz, with a risetime of less than a nanosecond at 50 ohms. Its spectral response ranges from 350 to 1100 nanometers, with a responsivity of 0.62 amp/watt at 900 nm. An optical Suprasil window extends the ultraviolet range down to 185 nm.

The FND-100 is described as a very-low-noise device, with a noise equivalent power of 2.9×10^{-13} watts/Hz^{1/2} at 900 nm, and an active area of 5.1 mm². The combination of high speed, noise immunity, wide spectral response and low noise power suit the FND-100 for applications such as fiber optics, laser pulse detection, analytical instrumentation and communications. EG&G Electro-Optics, 35 Congress Street, Salem, Mass 01970

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New Literature

Connectors—Ceramaseal's catalog 8008 describes the firm's new line of ceramic-metal, high-density instrumentation connectors. The units are available with either 10 or 20 conductors per connector. They have been developed for use in demanding environments. Ceramaseal Inc., New Lebanon Center, New York 12126

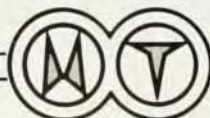
Correction

October, page 107—Describing the new monochromator from Minuteman Laboratories, we erroneously stated that "all units are calibrated on an NBS synchrotron." We should have said that all units can be thus calibrated—at the buyer's expense.

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