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.

Single-Grating Raman Spectroscopy System

Spex Industries has introduced the Raman 500, a new single-grating Raman system that can supply spectra in seconds. The Raman-500, we are told, is suitable for almost any molecular crystalline application, semiconductor evaluation, ceramic and composite study and polymer identification.

The system is based on a Spex half-meter spectrometer coupled to Spex sampling optics and CCD detectors. It can be used for both micro- and macroanalysis. For macro work, the Spex illuminator provides a variety of sample schemes from ultraviolet to infrared. For microanalysis, high spatial resolution is achieved with the Spex 1482 confocal microscope. *Spex Industries, 3880 Park Avenue, Edison, New Jersey 08820*

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Furnaces for Testing Ceramic Fibers

CM Furnaces has introduced a newly developed series of furnaces for materials testing. They are specifically designed for the testing of ceramic fibers. The new CM furnaces are available in two models: with horizontal or vertical orientation. Both models provide a maximum temperature of 1600 °C. The horizontal furnace has an outer diameter of 3″, with a $1\frac{1}{2}$″ hot zone. The vertical model is 4″ high, with a 2″ hot zone.

Both new furnaces employ molybdenum disilicide heating elements, and they are engineered with graded fiber insulation. Plugs and special adaptations are also available.

The programmable power supply is housed in a separate console. The furnaces also have state-of-the-art overtemperature instrumentation. *CM Furnaces, 103 Dewey Street, Bloomfield, New Jersey 07003*

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Instructional Scanning Tunneling Microscope

Burleigh Instruments has introduced a new scanning tunneling microscope system designed as a teaching tool for colleges and industry. It is offered for less than $15 000 in the hope of making atomic-resolution imaging affordable for undergraduate instruction.

The Burleigh Instruction STM operates with a user-supplied IBM/AT-compatible computer. It comes with sample set and a comprehensive workbook. In industrial research, the instrument lets first-time users experience scanning tunneling microscopy while they investigate its feasibility and usefulness for their materials and surface analysis applications. Burleigh is offering a free video. *Burleigh Instruments, Burleigh Park, Fishers, New York 14453*

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5-Kilovolt Modulator and Pulser

The Instrument Research Company has introduced a new 5-kilovolt high-power modulator and pulser for research and industrial applications. The Model 5k-2500 produces voltage pulses up to 5 kV, with peak current to 10 amps. The repetition rate goes up to to 10 kHz, with duty cycles as

high as 10%. Pulse widths are continuously variable from 1 to 100 microseconds. Options are available for higher amplitudes and peak currents.

The instrument is designed to maintain high-fidelity pulses while driving dynamic loads, we are told. A microprocessor controls safety features such as: 2-minute warm-up before high voltage can be enabled, shut down when the duty cycle or peak current exceeds a specified envelope, and shut down with excessive temperature or when the external interlock is opened. The pulser employs a hard tube high-voltage switch and an active "tail biter" that insures fast fall times when capacitive loads are driven.

Applications of the Model 5k-2500 include driving high-power vacuum tubes, aiding plasma and materials research, and generating electric fields in nonlinear aqueous solutions. It can also drive laser-diode series arrays for pumping Nd–glass lasers. *Instrument Research, PO Box 2729, Columbia, Maryland 21045*

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Largest InGaAs Photodiode

Epitaxx has introduced a new high-performance InGaAs PIN photodiode with an active area 5 mm in diameter. This device is now the world's largest commercially produced InGaAs detector, we are told. It complements the company's preexisting line of 0.5-mm, 1-mm, 2-mm and 3-mm diameter InGaAs photodiodes. Applications include fiber optic test and measurements, near-infrared laser detection, radiometry and spectroscopy.

Shunt resistance for these devices is typically 400 kΩ. Responsivity is greater than 0.8 A/W at a wavelength of 1300 nm, and capacitance is less than 700 pF at −1.0 V. The photodiode is delivered in a hermetically sealed TO-8 window package. *Epitaxx, 7 Graphics Drive, West Trenton, New Jersey 08628*

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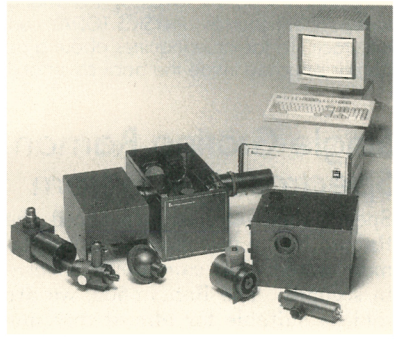
Automated Spectroradiometric Measurement System

Optronic Laboratories has introduced its new OL Series 750 automated spectroradiometric measurement system. The OL Series 750 can measure a number of optical parameters over all or part of the wavelength range from 200 nm in the ultraviolet wavelength range to 30 microns in the infrared. The firm's modular building block approach lets users tailor a system to meet their present measurement requirements, knowing that the system can be expanded to meet future requirements.

The series includes both single and



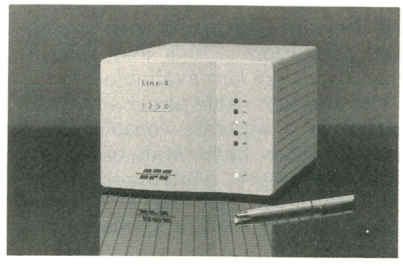
double monochromator systems. They can be configured to perform one or more of the following tasks: source spectral analysis, detector spectral response, diffuse and specular measurement and the measurement of regular and diffuse transmittance. *Optronics Laboratories, 4470 35th Street, Orlando, Florida 32811*

Circle number 185 on Reader Service Card

Power Conditioner for Brownouts and Overvoltages

American Power Conversion is offering its new Line-R power conditioners, designed to prevent data loss and hardware damage by automatically correcting for brownouts and overvoltages. The Line-R accomplishes its power conditioning and surge protection by means of automatic voltage regulation, multistage surge suppression and noise filtering.

The Line-R can correct for a brownout or overvoltage indefinitely, we are told. If, for example, a user is continously running at 90 V, the Line-R will automatically increase that voltage to 110 V. ANSI C84.1 specifications recommend that com-



puter power be between 106 and 127 V. The Line-R can accept input voltages from 88 to 150 V and put out a continuous output voltage within the ANSI specifications. The Line-R is available in 600- and 1250-volt amp models that sell for $179 and $269, respectively. Each model has an input voltage meter that displays line voltage, a site-wiring fault indicator and a surge protection indicator. *American Power Conversion, 132 Fairgrounds Road, West Kensington, Rhode Island 02892*

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Image Intensifier Lenses

Rodenstock Precision Optics is now offering a new series of high-precision collimating lenses intended for use with the recently introduced HX series of image intensifier tubes produced by Thomson Tubes Electroniques. Five different lenses with focal lengths and maximum apertures ranging from 83 mm and $f/1.2$ to 100 mm and $f/1.5$ were designed for used with the 9″ and 12″ HX tubes, and four lenses ranging from 100 mm and $f/1.6$ to 120 mm and $f/1.8$ are intended for the 16″ HX tube.

This new series of lenses is corrected for the thick output window of the image intensifiers. Avoiding internal reflections on the phosphor screen allows the image intensifiers of this new generation to produce images of higher contrast. *Rodenstock Precision Optics, 4845 Colt Road, Rockford, Illinois 61109*

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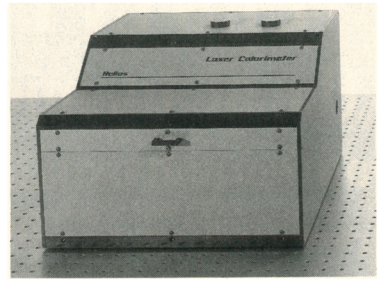
High-Precision Automated CO_2 Laser Calorimeter

Helios has developed a new CO_2 laser calorimeter that the firm describes as "an advance in precision optical metrology. It is capable of measuring absorption lower than the current state of the art in CO_2 optics."

Applications include quality control for vendors of CO_2 optics and coating, for manufacturers of CO_2 lasers and for makers of CO_2 beam delivery systems. The instrument offers high precision for users of CO_2 lasers and optical systems in industrial material processing. Its precision and sensitivity also suit the instrument for research and development work on the optics and coatings of CO_2 lasers.

The Helios Model LC-1 CO_2 Laser



Calorimeter requires only a low-power 30-W laser to measure absorption down to 500 ppm. The instrument is computer controlled for automatic measurement, analysis and documentation. It accepts eight 2″diameter or sixteen 1″-diameter samples for a single measurement run. *Helios, 1822 Sunset Place, Longmont, Colorado 80501*

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New Literature

Optical positioners—A new 155-page catalog from New England Affiliated Technologies covers NEAT's complete line of optical positioning components and systems. Stage configurations include single-axis, x–y, multi-axis, air-bearings, high-vacuum and rotary. There is also a broad line of stepping and servomotor drives and controls. NEAT can do custom design, and it can configure turnkey solutions for optical inspection and measurement applications. Stages travel from 2″ to 30″ with a repeatability of 1 micron. *New England Affiliated Technologies, 620 Essex Street, Lawrence, Massachusetts 01841*

Monochromators—Acton Research is offering its newly updated 32-page catalog, *Monochromators, Systems and Accessories*. It includes the firm's complete line of air-path and vacuum monochromators and spectrographs, ranging in focal length from 0.2 to 3.0 meters. Ultrahigh-vacuum monochromators and accessories are also included, as are sample testing systems for spectral transmission, reflectance and absorption measurements. All standard monochromators and spectrographs are available with the firm's SpectraDrive stepping-motor wavelength scanning system. The catalog also presents a variety of spectroscopic accessories, including light sources, detectors, data acquisition software, fiber optic light guides, filter wheels and gratings. *Acton Research, PO Box 2215, Acton, Massachusetts 01720* ■