

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.

Molecular-drag vacuum pump with high compression ratio

Alcatel describes its new molecular-drag vacuum pump as "neither a mechanical nor a turbomolecular pump." Rather, we are told, it represents a technology that can improve the ultimate vacuum of an attached backing pump by up to three decades (10^{-6} mbar). It is also designed to increase the efficiency of oil-sealed or dry-membrane pumps. Designated Model MDP-5010, the new pump is most effective in the 10^{-2} to 10^{-5} -mbar range, where turbomolecular and mechanical pumps have limited efficiency. Its potential applications include load locks (soft starts), mass spectrometry, cryogenic regeneration, ultrahigh vacuum roughing and residual gas analysis.

The high exhaust pressure tolerance and compression ratio of the MDP-5010 form an effective barrier against oil backstreaming. The pump is totally oil free. Its design is compatible with clean room installation, its forepumps being remotely located. *Alcatel Vacuum Products, 40 Pond Park Road, Hingham, Massachusetts 01043*
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Low-voltage piezoelectric micropositioning translators

Polytec Optronics is offering new micropositioning piezoelectric translators that operate on standard 100-volt power instead of the 10 000 volts required by conventional units. These low-voltage translators were developed in Germany by Physik Instrumente. The new translators also have a higher resonance frequency than conventional piezoelectric micropositioners. The blocks of canted stacked 0.1-mm piezo sheets that impart the low voltage characteristic also have greater stiffness, yielding up to 30% higher expansion.

Two standard-model lines, designated PZT P-820 and PZT P-840, accommodate 15-, 30- and 45-micron and 90-micron ranges, respectively. A third miniature translator line, P-810, handles positioning of small and medium loads to 60 microns. All units can be provided with compensating feedback loops. These low-voltage piezo translators obviate dedicated high-voltage power supplies. *Polytec Optronics, 3001 Redhill Avenue, Building 5, Suite 102, Costa Mesa, California 92626*

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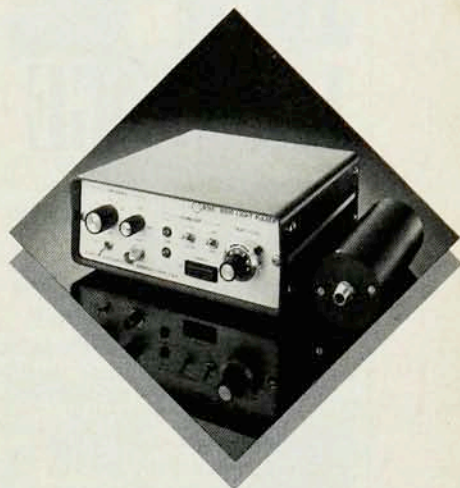
Pulsed light source for testing photomultipliers

Berkeley Nucleonics has introduced a color- and energy-stabilized light pulser for calibrating and testing photomultiplier tubes and other light-detecting systems. The Model 6000 light pulser and the Model 6004 and 6005 optical



source modules are well suited, we are told, for measuring drift and temperature effects. They can be used as part of a gain-stabilizing system. The system consists of the optical source module—a small cylinder that houses the light source, a thermoelectric cooler, and feedback and sensing circuits—and the light pulser, which contains the controls and connectors and provides the drive to the optical source module. BNC describes this as "the only commercially available light source specifi-

The ideal way to stabilize PMT systems and calibrate phototubes.



Use the new BNC Light Pulser.

Now it's a simple matter to calibrate and check out photomultiplier tubes and other light detecting systems. The BNC Model 6000 Light Pulser, with either a 490 or 568 nm optical source (as shown), generates stabilized pulses of light. It's ideally suited for measuring drift and temperature effects, and can be part of a gain stabilizing system.

Light pulses are stabilized for both power output and color. The output is monitored and corrected to maintain a constant energy, and the LED source is thermoelectrically-cooled.

This state-of-the-art instrument can also be used with a variety of programmable instruments, such as amplifiers and power supplies, to form the basis of a stabilizing system. Call John Yee at BNC for more details.



Berkeley Nucleonics Corp.

1121 Regatta Square
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new products

cally designed to test the gain and stability of photomultipliers."

The repetition rate, up to 10 kHz, can be controlled by an internal generator or from an external trigger source. Source modules are available at 490 nm and 568 nm. The light source is temperature stabilized to maintain the color. The output level is monitored and corrected to maintain the energy content, yielding a temperature coefficient of 0.1% per °C. *Berkeley Nucleonics, 1198 Tenth Street, Berkeley, California 94710*

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Large thyratrons with high switching power

EG&G Electronic Components has developed a new family of thyratrons, designated the 5000 series. These 4 1/2" diameter tubes yield twice the power switching capability of 3" thyratrons. The 5000 series comprises four ceramic-to-metal hydrogen thyatron types: The HY-5753 is designed for switching copper vapor lasers; the LS-5002, for excimer laser switching; and the other two, types LS-5101 and LS-5111, for switching lasers or other loads where current reversal is likely. The LS-5101 and LS-5111 can typically carry a reverse current of up to 50% of the peak forward current. *EG&G Electronic Components, 35 Congress Street, Salem, Massachusetts 01970*

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Precision mounts for mirrors and beam splitters

Klinger Scientific has announced the addition of the SL series of mirror and beam splitter mounts to its line of precision optical mounts and supports. The SL series mounts are made of steel for maximum stability. They are designed for optical components having specific diameters from 21 mm to 80 mm, including English as well as metric sizes. A three-point front and back support establishes the gimbal plane that lies in the plane of the reflecting surface of the mirror. Rotation about both gimbal axes is accomplished with no translation error.

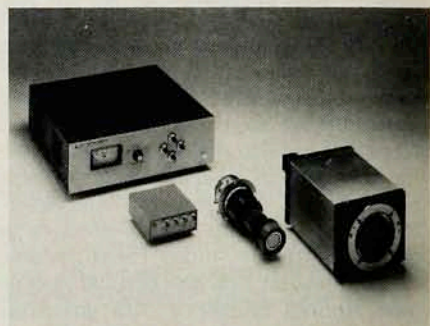
Angles of incidence ranging from 45° to normal incidence are supported for both mirrors and beam splitters. Three adjusting drives are available for each size of mount: a micrometer drive, a differential-screw drive and a locking-screw drive. *Klinger Scientific, 110-20*

Jamaica Avenue, Richmond Hill, New York 11418

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Imaging photomultiplier for low light levels

Surface Science Instruments offers a new optical detector system for ultra-low-light detection and measurement, combining the sensitivity advantages of a photomultiplier with the spatial resolution of one- and two-dimensional multichannel imaging. The system offers 400×400-pixel xy spatial resolution, low dark count (0.15 counts per hour per channel with 10⁶ channels), high single-photon signal-to-noise ratio, spectral coverage from 180 to 850 nm, digital count storage and a large, optically efficient 25-nm-diameter active sensor area. It can replace vidi-



cons, charge-coupled devices and diode array detectors in a wide range of low-light applications, we are told.

The Model 2601A imaging photon detector system includes the imaging photomultiplier sensor, thermoelectric cooler, electronic readout, power supplies, optional incrementing RAM buffer memory and PC-based one-dimensional and two-dimensional display systems.

Applications include Raman spectroscopy, astronomy, atomic emission, fluorescence, photoluminescence and other photon-limited applications. *Surface Science Instruments, 1200 Charleston Road, Mountain View, California 94043*

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Fast waveform digitizer with high bandwidth

Lecroy describes its new Model 6880A as "the world's fastest solid-state waveform digitizer [with] the world's highest solid-state bandwidth." The instrument samples a 400-MHz-bandwidth, single-shot waveform at 1.35 gigasamples/sec. It is expected to find applica-

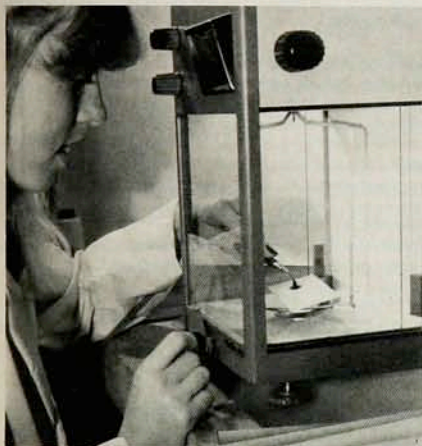
tions in high-energy and laser physics and in circuit testing.

In addition to expanded bandwidth, the 6880A provides 8-bit resolution, a fast sample rate and 7-microsec waveform capture memory. Its 10 000-sample-point waveform memory is 20 times larger, we are told, than the memory in typical scan tube digitizers or charge-coupled device cameras. *LeCroy, 700 South Main Street, Spring Valley, New York 10977*

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Ultrathin high-purity foils for dosimetry and radiography

Reactor Experiments, a manufacturer of equipment for reactors, accelerators and nuclear medicine, is offering ultrathin foils ranging in thickness from 0.25 to 25 microns. Thirty-one different materials are available in sizes ranging from 1" x 1" to 6" x 6". These



materials, claimed to be of the highest available purity, include Ag, Al, Au, Bi, Cd, Co, Cr, Cu, Fe, Hf, In, Mg, Mn, Mo, Nb, Ni, Pb, Pd, Pt, Re, Rh, Sb, Sn, Ta, Ti, V, W, Zn and Zr. Other materials, including fission materials, are available on request. Spectrographic analysis is provided for each material at no extra charge. *Reactor Experiments, 963 Terminal Way, San Carlos, California, 94070*

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Compact magnetic susceptibility balance

The new Johnson Matthey magnetic susceptibility balance is claimed to provide accuracy comparable to that of the traditional Gouy method, but at significantly lower cost. It provides reliable measurements of samples as small as 100 mg. The balance weighs only 7 lb. It can measure diamagnetic and para-



magnetic susceptibilities and offers digital readout and sample tubes for use with solids or liquids. The instrument operates on 115 volts ac. Its price is \$2450. *Johnson Matthey/AESAR, P. O. Box 1087, Seabrook, New Hampshire 03874*

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New literature

Radon—EG&G Ortec has made available an application note entitled *Environmental Radon Measurement by Gamma Spectroscopy* and a data sheet on the company's Airguard measurement system for radon samples. *EG&G Ortec, 100 Midland Road, Oak Ridge, Tennessee 37830*

Nanosecond pulse generators—Avtech's 80-page 1987 catalog of nanosecond waveform generators and accessories describes 150 models of ultrahigh-speed pulse generators, impulse generators, monocyte generators, samplers, delay generators, and accessories such as transformers, power splitters and scope probes as fast as 250 MHz, with rise times as short as 40 psec. A fifth of these models are new. The catalog includes an applications information section. The waveform generators are suitable for optical communications, GHz logic, high-speed semiconductor switching, lasers and nuclear applications. *Avtech Electrosystems, P. O. Box 5120, Station F, Ottawa, Ontario, Canada K2C 3H4*

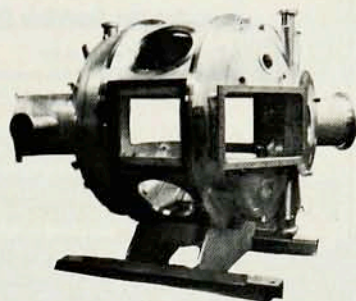
Electronic test equipment—A new 156-page catalog and instrumentation guide gives detailed product specifications for Keithley's electronic test and measurement equipment. The catalog includes 10 pages of tutorial articles. Each section has a selection guide to help the user find the proper instrument for his need. *Keithley Instruments, 28775 Aurora Road, Cleveland, Ohio 44139*

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OF SCIENTIFIC EQUIPMENT -

Customer Design or
Design to Specification in

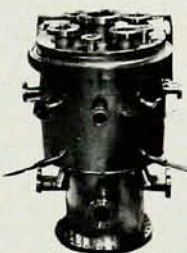
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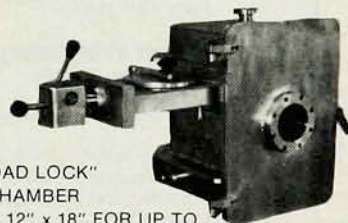
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