

# new products

The items listed have been selected from among those appearing concurrently in "New Instruments" or "New Materials and Components" in *Review of Scientific Instruments*. We gratefully acknowledge the cooperation of the editor of *RSI*, J. B. Horner Kuper, the associate editor for New Instruments, Joshua Stern, and the associate editor for New Materials and Components, R. K. Eby.

These descriptions are based on information supplied by the manufacturer and in some cases from independent sources. Neither *Review of Scientific Instruments* nor PHYSICS TODAY assume responsibility for their correctness.

## Chemical laser system

Model CLIII, third in a line of continuous wave HF/DF chemical lasers, is an integrated, portable laser system, designed for simple, routine operation. The low power version produces 3W with HF and 1W with DF. Consumables are feed gases, 1 to 2 scfm; electrical power 5kVA; and cooling water, 0.3 gpm. The standard system, priced at \$28 000, offers such options as single line cavities for HF or DF, field installation of the laser, and an "exhaust pack" for gas exhaust.—*Helios Inc., 1242 Bramwood Place, Longmont, CO 80501.*

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## Spectrum analyzer

The model 1995 integrating real-time analyzer includes a built in cathode ray tube and operates from an internal battery pack, 12-V automotive type battery, or ac line power. It is a one-third and full-octave analyzer that measures



from 25 Hz to 20 kHz, or 2.5 Hz to 20 kHz. Display range is 50 dB, with full scale sensitivity selectable in 10 dB steps from 70 to 140 dB. An integration feature with times selectable from 1/8 s to 24 h permits the instrument to function as an integrating analyzer or integrating sound level meter. In level versus frequency mode, a bar graph of one-third and full-octave band levels,

plus A-weighted and flat response levels, are displayed. In level versus time mode, a bar graph of up to 32 sequential time periods is displayed. Results can also be numerically listed, with standard deviations calculated for one-third octave listings. All measurement parameters are displayed on the screen at all times. A spectrum comparison feature allows storage and recall of a spectrum for reference.—*GenRad, Inc., 300 Baker Ave., Concord, MA 01742.*

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## Frequency stability analyzer

Frequency stability of very precise sources such as atomic time standards can be measured with the model 5390A frequency stability analyzer with option 010, dual mixer time difference, that automates the process of measuring instability of non-offsettable sources. Components of the basic system include a high-resolution electronic counter, a desktop programmable computer, a printer-plotter, a measurement storage plug-in, a mixer-amplifier, and a system test 10-kHz tone generator. Option 010 adds a second mixer-amplifier to provide a second channel, a timing generator, a power splitter for the difference oscillator (0.1 to 400 MHz), and rack space for the H66-105A/B quartz frequency standard and additional memory. Measurements can be taken from 0.01 Hz to 10 kHz from the carrier. Original source input range is 500 kHz to 18 GHz. Sensitivity is typically greater than 150 dBc at 1 Hz offset. The system gathers data in the time domain, then mathematically transforms those data into the frequency domain. Time

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## new products

domain stability measurements are made using the two-sample variance. Averaging times from  $10^{-5}$  to  $10^6$  s are possible.—*Hewlett-Packard Company, 1507 Page Mill Rd., Palo Alto, CA 94304.*

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## Beam expanding telescope

Beam expanding telescopes with 1.5% loss at 632.8 nm are said to show negligible change in beam direction during fine focus adjustment. The beam expanders, which use antireflection



coated pyrex optical elements, are available with magnifications of 5, 10, 15, and 25 power. They are suitable for visible and near infrared regions, 400 to 900  $\mu$ m. The telescopes have a 1-in.-32 thread for securing to a laser or optical fixture.—*Morel International, 21583 Castleton St., Cupertino, CA 95014.*

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## Signal generator

The model 3002 1-kHz to 520-MHz signal generator provides 0.001% frequency accuracy and 0.2 ppm/h stability over the entire frequency range. Frequency programming is standard, and the instrument is compatible with the IEEE 488-1975 general purpose interface bus when used with the model 3911 GPIB converter. Options include level programming, external frequency reference, reverse power protection, and low-level leakage. The instrument offers cw, AM, and FM operation with internal 400 and 1000 Hz or external modulation capabilities.—*Wavetek, 66 North First Ave., Beech Grove, IN 46107.*

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## Feedthroughs

A new line of low profile double ended electrical instrument feedthroughs are designed for OEM and laboratory applications which require electrical connections across a hermetic seal. The line includes models with screw terminals, pins, BNC and SHV connec-

tors, and others with up to three pairs of thermocouples. Double ended, they have rigid integral high-strength terminals for direct captive solderless wiring on both sides. Wide pin spacing affords low pin-to-pin capacitance and high stand-off voltage. A floating ground provides for electrical isolation. These single body units are said to be impervious to vacuum and pressure. They are designed for installation in standard 26-mm-i.d. clearance holes without additional machining. O-ring sealed, and installation is helium mass spectrometer leaktight. The leak rate is less than  $1 \times 10^{-11}$  std cm<sup>3</sup> helium per second at  $10^{-8}$  Torr. The terminals are open and accessible for clean connection, and other strain relief is usually not required.—*Physicon Corp., 221 Mount Auburn St., Boston, MA 02138.*

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## Vacuum inlet valve

Valves with a straight-through loading configuration are now being manufactured. A clear aperture of  $\frac{5}{8}$  in. permits simple, contamination-free loading and unloading of gas, liquid, or solid samples. The valves are of 304 stainless steel construction and available with Viton and O.F.H.C. gasket seals. Large apertures are available. The new type configuration for sample inlet valves makes unnecessary letting vacuum systems back to air and re-pumping when loading samples.—*Huntington Mechanical Labs., Inc., 1400 Stierlin Rd., Mountain View, CA 94043.*

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## Inspection kit

A new 12-in. fiber-optic light guide for lighting and inspecting small, awkward to reach areas has been included in the improved version of the Syte-Ayde inspection kit. This flexible guide plus five assorted Lucite rods,



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# Applied Physics Letters

The following is the Table of Contents from a recent issue of APPLIED PHYSICS LETTERS:

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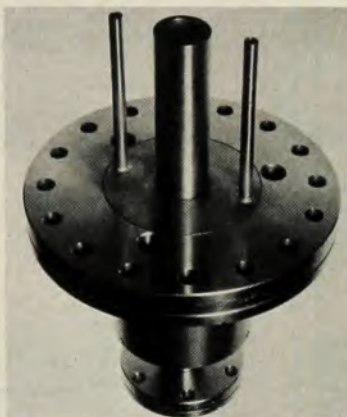


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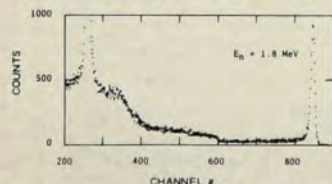
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## Photometer-radiometer

The model 301 portable photometer-radiometer uses a single probe with interchangeable filters to measure illuminance, luminance, irradiance, radiance, and integrated energy for both continuous and pulsed light sources. Absolute values are read directly over six decades of light intensity from a direct reading LCD display.



play with floating decimal point. A built-in integration capability permits measurement of pulse sources with pulse widths 1  $\mu$ s or longer, as well as integrated energy measurement of continuous light sources of exposure control or dosimetry. The precalibrated system is NBS traceable and the silicon cell probe provides  $\pm 1\%$  repeatability. Full scale sensitivity is 0.1999 foot candles or  $\mu$ W and resolution 0.00001 foot candles or  $\mu$ W. Auto ranging is provided and readout is keyed to a measurement parameter switch to insure correct units. Automatic ambient light compensation permits measurement of pulsed light sources without a dark room. Transient readings can be held for inspection.—*Kollmorgen Corporation, 3000 North Hollywood Way, Burbank, CA 91505.*

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## New Literature

**Data acquisition**—A 600-pp. catalog contains tutorial sections and full data sheet information on a product line of precision data acquisition components,

data converters, signal conditioning components, temperature transducers, digital panel meters and instruments, computer interface products, and microcomputer-compatible analog I/O subsystems. Pricing is included.—*Analog Devices, Inc., P.O. Box 280, Rt. 1 Industrial Pk., Norwood, MA 02062.*

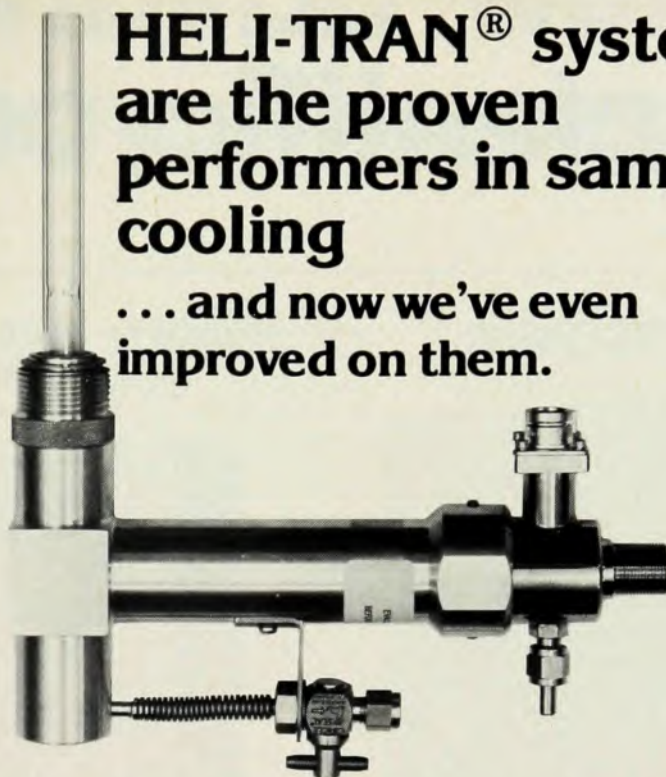
**Power supply tests**—STP 783, describes high-voltage power supply loading methods for both constant and changing load; test setups and procedures for voltage calibration; and test setups and methods for both static and dynamic output voltage regulation. It also contains instructions for checking output current regulation, ripple, temperature coefficient and stability. Charts show applications and features of typical high voltage power supplies.—*Spellman High Voltage Electronics Corp., 7 Fairchild Ave., Plainview, NY 11803.*

**Photodetection equipment**—A 12-pp. booklet provides up-to-date information on high speed detectors, low speed tubes, optical receiver systems, and photocathode materials. It details the specifications and operation of static crossed field photomultipliers, all electrostatic field photomultiplier, low dark current photomultipliers, and two newer products for spectroscopy and high speed signal detection, the 18-mm GaAs photocathode end window PMT, and the microchannel PMT, respectively. The illustrated brochure also lists additional technical data sources available for further information in the field.—*Varian LSE Div., 601 California Ave., Palo Alto, CA 94304.*

**Electronic materials**—A 16-pp. brochure provides such technical information about electronic materials. The brochure tabulates data on 85 different materials, for example. A two-page table ranks each glass or glass-ceramic according to its thermal expansion. It also gives data on softening, annealing and strain points, density, and the forms in which the materials are available, such as powder, or tube envelopes, or tubing, cane and sheet, or blown, pressed and dry-pressed parts. Six titled sections, devoted to specific fields such as displays, semiconductors and sealing applications, identify typical glasses for particular uses. In the section on displays, for instance, there are two dozen materials recommendations for 13 different applications to meet requirements of five common systems: CRT, gas discharge, liquid crystal, electroluminescent and electrochromic displays.—*Electronic Materials Dept., Corning Glass Works, Corning, NY 14830.* □

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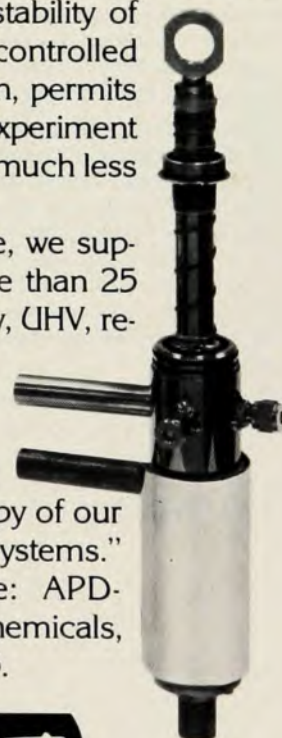


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