

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.

X-ray tube producing a 10-micron spot

KeveX has introduced a compact micro-focus x-ray tube, the KM10005S, producing a 10-micron spot suitable for high-resolution magnified images. The tube operates at 20-125 kV, draws 0.5 mA and produces a continuous output of up to 10 W. The vacuum envelope is housed in a nickel-plated cylinder 3.5 inches in diameter and 17 inches long; the radiation emerges from a side window. One can use the x-ray tube for radiographic and real-time inspection of components such as semiconductors or printed circuit boards, or for any purpose requiring high-resolution images. *KeveX Corporation, 320 El Pueblo Road, Scotts Valley, California 95066*
Circle number 140 on Reader Service Card

Digital fluxmeter with IEEE-488 bus interface

Dowty RFL has announced the RFL Model 916 digital fluxmeter, which is capable of operation over the IEEE-488 bus. The accuracy of the instrument is $\pm 0.25\%$ of range. The unit has 24 full-scale ranges, each with 100% over-range, from 10^3 maxwell-turns to 2×10^9 maxwell-turns. A $3\frac{1}{2}$ -digit bipolar LED display is mounted on the



front panel. In addition to the IEEE-488 bus option, a BCD-output option and a rack-mounting kit are available. *Dowty RFL, Powerville Road, Boonton, New Jersey 07005*
Circle number 141 on Reader Service Card

Sensitive pulse preamplifier and discriminator

Modern Instrumentation Technology has introduced the Combo-100, an expanded version of their F-100T pulse preamplifier and discriminator. The unit is designed for use with photomultiplier tubes or electron multipliers in the detection of low-level light, x rays, electrons or ions. The combined unit allows one to do pulse counting as well as analog dc-coupled current sensing. It consists of the F-100T preamplifier and a dc-current preamplifier and converter that extends the range of detectable signals from photo- or electron multipliers beyond the range of the F-100T. The pulse-counting range is limited to about 50 MHz or by the selected output-pulse width. The dc preamplifier and converter has a range of 0.1 nanoamp/V to 10 microamps/V, covering the operation ranges of most photomultiplier tubes. The dc output is capable of driving a strip-chart recorder or x-y plotter without additional amplification. The pulse output can drive a counter or rate meter without any additional signal processing.

The unit is housed in a $2 \times 4 \times 1.2$ -inch metal enclosure and is provided with one BNC-type input connector and a nine-pin standard mini-D output connector. The unit functions with any 8- to 20-V dc power source. A small power unit is available as an option. *Modern Instrumentation Technology, Matternville Center, R. D. #1, Box 262, Port Matilda, Pennsylvania 16870*

Circle number 142 on Reader Service Card

Cryogenic system for cooling tunable lead-salt lasers

The new cryogenic vacuum system from the Laser Analytics Division of Spectra Physics is designed for the cooling of tunable lead-salt lasers and Ge:Cu infrared detectors and other applications that require temperatures as

MAXIMIZED VALUE 50 MHz PHOTON DISCRIMINATOR



**Model 511
\$600.00**

- Fast Amp-Disc for Single Photon Counting Applications
- 18 Nanosecond Resolving Time at all Sensitivities
- Unique Gain/Threshold Controls provide 30uV to 20mV Threshold Range
- NIM Fast Negative and Slow Positive Outputs provided
- Optional Power Connection for Remote Preamp i.e., Model 406

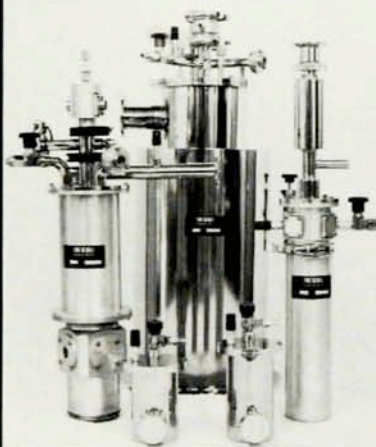
Mech-Tronics
NUCLEAR
1701 N. 25th Ave., Melrose Park, IL 60160
(312) 344-0202

Circle number 45 on Reader Service Card

Cryo

QUALITY

STEP BY STEP BY STEP



CUSTOM MANUFACTURE, DESIGN,
AND THEORETICAL ANALYSIS -
PERFORMANCE BY DESIGN.

FLOW CRYOSTATS AND CRYO
WORKSTATIONS

STORAGE DEWAR MOUNT
WORKSTATIONS

RESEARCH DEWARS AND
CRYOSTATS

LIQUID HELIUM TRANSFER LINES
HIGH VACUUM CHAMBERS
TEMPERATURE SENSORS
ELECTRONIC DIP STICK
CRYO CONTROLLER
DETECTOR DEWARS
PLUS MORE!!!!

CRYO

INDUSTRIES

of America, Inc.

24 Keewaydin Drive
Salem, NH 03079
(603) 893-2060

QUALITY CONSTRUCTION WITH
LOWER PRICES THROUGH
EFFICIENT MANUFACTURING.

Circle number 46 on Reader Service Card

new products

low as 9 K. The unit can be set to operate at any temperature between room temperature and 9 K; the temperature stabilization is better than 0.0003 K. Amplitude-modulation noise is beneath measurable levels, we are told, because of improved vibration isolation. Frequency-modulated noise has also been reduced substantially. *Spectra Physics, 25 Wiggins Avenue, Bedford, Massachusetts 01730*

Circle number 143 on Reader Service Card

Scanning laser microscope with 0.15-micron resolution

Lasersharp, a laser microscope now available from Ion Beam Technologies, scans a specimen with a very small spot and detects the reflected light to produce a video image. The advantages of an optical scanning system over an electron-based one are that it requires no vacuum and that specimens do not become damaged by electrical-charge build-up. The laser microscope uses an optical-beam-induced contrast technique to achieve a scanning resolution of 0.15 micron: The incident laser beam induces a current in the specimen, and this current is then used as a signal to sharpen the image.

The instrument can also operate in a confocal mode, in which the height of surface features (on a microchip, for example) can be measured to an accuracy of 0.1 micron by detecting changes in the phase of the reflected light. A detector for transmitted light is optional. *Ion Beam Technologies, 123 Brimbal Avenue, Beverly, Massachusetts 01915*

Circle number 144 on Reader Service Card

Dye laser with Q-switched Nd:YAG pump source

Coherent has announced the Model 740 dye laser, which operates with a Q-switched cw Nd:YAG pump source. This design increases the energy per pulse and peak power obtainable from a picosecond system. Because the pump source is Q-switched, its frequency may be tripled, providing a 355-nm source to the dye laser and producing a final output in the violet-blue end of the spectrum.

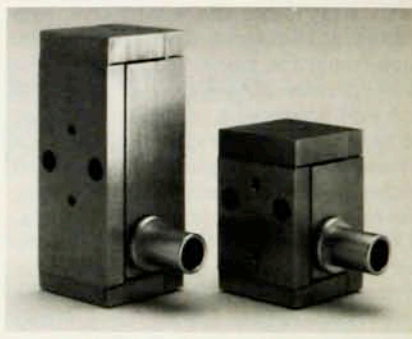
The Model 740 uses a flowing-dye cell in place of a jet assembly, and a grating instead of birefringent tuning because of the high gain obtained with Q-switched pumping. Single pulses are selected from the Q-switch envelope by the Model 7200 Cavity Dumper. Pulse synchronization is achieved with the

Model 7700 Synchronization Module. The laser produces 5 mJ in rhodamine 6G and 1 mJ in stilbene 3; the pulse widths are 40 picosec. *Coherent, 3210 Porter Drive, P.O. Box 10321, Palo Alto, California 94303*

Circle number 145 on Reader Service Card

Low-voltage microstage with piezoelectric actuation

Burleigh Instruments has made available a series of low-voltage piezoelectric microstages that provide precise translation over travel ranges of 50 or 100 microns at a drive voltage of up to 150 V. The stages may be configured for single-axis translation or for x-y motion with either travel distance available on each axis. The total movement



is proportional to the applied voltage. The microstages consist of spring-steel bodies with piezoelectric elements that are mounted internally. Each microstage is delivered with the hardware necessary for surface mounting and two axis connections. Applications include the positioning of optical fibers and micromachining. *Burleigh Instruments, Burleigh Park, Fishers, New York 14453*

Circle number 146 on Reader Service Card

Power supply with regulated voltage, current or power

A.L.E. Systems has introduced the TM5 and TM10 Trimode series of high-voltage power supplies, available in seven output voltages between 1 and 40 kV. The output power is 5 kW for the TM5 and 10 kW for the TM10. The current, voltage or power can be regulated during operation, and crossover from one mode to another is possible. The third mode limits the output power to programmed levels and allows the voltage, current or both to vary within set limits. This power mode is appropriate for high-voltage dc sputtering applications, high-power electron-beam guns and evaporators, and high-power amplifier and transmitter tubes.

A "strike-voltage" feature is available for the operation of magnetrons. One can set an initial output voltage that is high enough to start the magnetron; the supply then automatically drops down to a preset voltage between zero and full scale. A display on the front panel shows the programmed voltage, current and power levels and limits; a second display shows the actual output levels. The power supplies are short-circuit proof. The TM5 costs \$9000 and the TM10 \$17 000. *A.L.E. Systems, Ashland Technology Centre, 150 Homer Avenue, Ashland, Massachusetts 01721*

Circle number 147 on Reader Service Card

Miniature electrostatic energy analyzer

Comstock's Model AC-900 double-focusing electrostatic energy analyzer is a miniature version of the compact AC-901 analyzer. Its resolution for electrons or ions is 0.1 eV or better. The bakeable unit is constructed entirely of oxygen-free copper and other nonmagnetic materials suitable for ultra-high-vacuum applications. Its dimensions are $5.5 \times 3 \times 3$ cm. The unit is available with three sets of interchangeable apertures and is priced at \$2950. Options include electrostatic and magnetic shield boxes and a flange mounting. *Comstock, P.O. Box 199, Oak Ridge, Tennessee 37831.*

Circle number 148 on Reader Service Card

Imaging system for high-speed motion analysis

Kodak has introduced the Ektapro 1000, a portable electronic imaging system that can record up to 1000 pictures per second. These pictures can be played back instantly in various slow-motion modes. The system consists of a processor, an imager and a keypad for controlling the system.

The processor weighs 80 lb and is designed for bench-top use or rack mounting. It incorporates a tape drive for half-inch high-density instrumenta-

tion tape. One can record data at 30, 60, 125, 250 and 1000 frames/sec. Up to six images can be recorded on a single frame for split-screen display, giving the system a 6000-picture/sec recording capability. The system includes also a 16-bit processor with detachable keyboard and menu-driven software.

The electronic imager weighs approximately 5 lb and contains a sensitive NMOS array of 192×240 pixels and 256 gray-scale levels. Power for the imager is derived from the processor. Optional accessories include an automatic-exposure-control lens with remote control for power zoom and focusing, a removable electronic viewfinder, a gamma control unit for adjusting contrast, a video monitor and a strobe-lighting kit that allows the recording of events at 5-microsecond intervals. A computer-interface board is also available. Recorded data can be transmitted for computer analysis or for image enhancement. In addition, an event trigger can turn the analyzer on and off so recordings are made only when necessary. *Eastman Kodak Company, 3099 Science Park Road, San Diego, California 92121*

Circle number 149 on Reader Service Card

Miniature cryogenic unit producing 2.8 W

Cryodynamics has introduced the Model M14 lightweight cryogenic refrigerator, which can be used with infrared sensors and laser systems, low-noise amplifiers and antennae, and range instrumentation; it can provide both surface cooling in vacuum apparatus and spot cooling. The hermetically sealed unit uses a modified Stirling cycle and comes ready to run. It requires no purging, replenishment of coolant or lubrication and is said to be virtually maintenance free. The Model M14 weighs 5.5 lb and produces 2.8 W net usable refrigeration at 75 K. It operates from a 400-Hz, 208-V power source. *Cryodynamics, 191 Mill Lane, Mountainside, New Jersey 07092*

Circle number 150 on Reader Service Card

New software

Voltage measurement—Vernier Software has announced a new laboratory interfacing program for the Apple II computer. The program, **VOLTAGE PLOTTER**, allows the measurement, recording and graphic representation of voltages when used with the Voltage Input Unit or Advanced Interfacing Board available from Vernier Software. *Vernier Software, 2920 S.W. 89th Street, Portland, Oregon 97225* □

3rd Annual Physics Today's Buyers Guide

... A revised and expanded directory of equipment for physics research, offering easy access to over 1,500 "physics" products, many of which have not appeared elsewhere.

Designed and edited for physicists, and counseled by a select Advisory Committee, the Guide will draw from the many thousands of items available from North American and European sources.

This third edition will be an integral part of the August '86 issue of *Physics Today*.

For information on listings (product and company), write to Ms. Elaine Cacciarelli, % American Institute of Physics. For advertising info, write or call the AIP Advertising Division.

**AMERICAN INSTITUTE
OF PHYSICS**
335 East 45th Street
New York, NY 10017
(212) 661-9404

