

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.

Mode scrambler for optical fibers

Newport's FM-1 mode scrambler is designed to achieve a stable mode distribution in optical fibers repeatably and without requiring kilometers of intervening fiber. One can use the mode

displays and for the measurement of transmission and emission in the uv and ir regions.

Light sources, detectors and electronics, including lock-in amplifiers, are available. One can control the system through an IEEE-488 interface bus. A software package available for the HP-85 and other desk-top computers performs analyses of spectra, color and fiber loss. *Bentham Instruments, 2 Boulton Road, Reading, Berks, RG2 0NH, England*

Circle number 141 on Reader Service Card

Miniature arc positioners with vernier scales

A line of microgoniometric arc assemblies for precise leveling and positioning is now available from Charles Supper. The arc assemblies provide up to 25° of travel from center with an accuracy of $\pm 0.005^\circ$. One can lock the setting and read it to 5' on a vernier scale. The units are constructed of aluminum and contain a stainless-steel drive screw. Mounting holes are in the vernier top and arc base; they can also be drilled to customer specifications. The arc assemblies are available in three sizes: 1.25×0.4877 , 1.5×0.4877 and 1.84×0.4877 inches. They are designed never to need lubrication, and they can be used individually or stacked concentrically; each includes a removable adjustment key. The arc assemblies are priced from \$160 to \$180. *Charles Supper, 15 Tech Circle, Natick, Massachusetts 01760*

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scrambler for accurate measurements of fiber properties and of losses due to connectors and splices.

The FM-1 uses a precision translation stage to press a short length of multimode fiber between specially designed corrugated surfaces to achieve microbending in the fiber. This dramatically increases mode scrambling and filtering while keeping insertion losses negligible. The unit is priced at \$275. *Newport Corporation, P.O. Box 8020, Fountain Valley, California 92728*

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Spectroradiometer for the ultraviolet-to-infrared range

Bentham is offering a fully modular spectral-analysis system that can be used over the wavelength range from 200 nm to 30 microns. One can adapt the system for color measurement of

Software and hardware for x-y translation tables

The new Line Drive 3000 software and hardware package from Light Machines permits the IBM PC, XT and AT and compatible computers to operate a

HIGH VOLTAGE OPERATIONAL AMPLIFIERS

- Up to $\pm 20,000V$
- Up to $200V/\mu sec.$
- Up to 200W output power



Model 620A:

- 0 to $\pm 20KV @ 1 mA$
- Gain: $2000V/V$ or $100 \mu A/V$
- Slew: $12V/\mu sec.$



Model 609-5:

- 0 to 1 KV
- 200 mA continuous
- $20 V/\mu sec.$



Model 604A:

- 0 to $\pm 1 KV @ 20 mA$
- $35 V/\mu sec.$
- Discrete amplifier and power supply mounted on separate P.C. boards

- Many other standard models available.
- Special design requirements considered.

Write or call for more information.



P.O. Box 231 3932 Salt Works Road,
Medina, N.Y. 14103
Phone: (716) 798-3140 Telex: 752228

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TOPICAL MEETING ON
**SHORT WAVELENGTH
COHERENT RADIATION:
GENERATION AND
APPLICATIONS**



**MONTEREY
CONFERENCE
CENTER**

MONTEREY,
CALIFORNIA

March 24-27, 1986

The Third Topical Meeting on Short Wavelength Coherent Radiation will deal with the development and application of sources of coherent radiation in the extreme-ultraviolet and soft-x-ray spectral regions. Closely related areas of interest are multiphoton phenomena, soft-x-ray optics, and laser-produced plasma sources.

The Optical Society is the sponsor of the third topical meeting in a series formerly entitled Laser Techniques in the Extreme Ultraviolet.

Papers are solicited dealing specifically with the spectral region extending from vacuum ultraviolet to soft x-ray (roughly 6 eV to several thousand electron volts) in the following areas:

- Short-Wavelength Lasers: Stimulated emission and laser action in the extreme-ultraviolet and soft-x-ray regions.
- Harmonic Generation and Frequency Conversion.
- Free-Electron Generators of Coherent Radiation: Free-electron lasers, optical klystrons, coherence properties of spontaneous undulator radiation.
- Short-Wavelength Optics: Multilayer interference coatings, transmission gratings, zone plates, laser cavities.
- Laser Plasma Radiation Sources.
- Spectroscopic Applications: Novel spectroscopies of atoms, molecules, solids, and surfaces, including high-resolution spectroscopy, picosecond time-resolved studies, excited-state spectroscopy, coherent transients, and laser-synchrotron experiments.
- Lithography and Microscopy.
- Multiphoton Phenomena.
- Phase Coherent Applications: Holography, interferometry, frequency mixing, etc.

Further information is available from
Optical Society of America
1816 Jefferson Place, N.W.
Washington, D.C. 20036
(202) 223-0920

new products

three-axis dc servo positioning system in RS-274D NC code. The system offers simultaneous position and velocity control of all three axes for x-y tables and laboratory equipment.

Line Drive 3000 is an interrupt-driven real-time control system using dedicated microprocessors for each axis to provide instantaneous position and velocity readout and control. It is compatible with CAD and numerical-control software packages for the IBM PC, XT and AT and compatible computers and acts as the link between software and hardware for interactive numerical control.

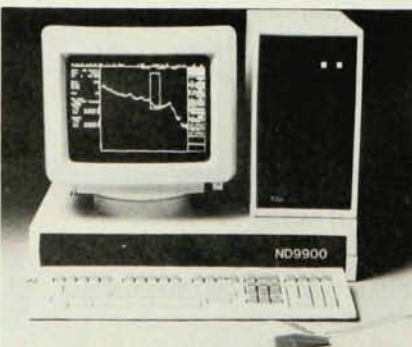
Programs are storable on hard or floppy disks and can include a library of preprogrammed routines. NC programs can be started at any block and provide both linear and circular interpolation. Line Drive 3000 will command any size of dc brushless or brush-type motor. The system consists of software and an interface card that contains eight optically isolated input ports, eight output ports and limit-switch input ports. Servo amplifiers and motors are optional. *Light Machines, 90 Montvale Avenue, Stoneham, Massachusetts 02180*

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Multiple-user acquisition and analysis system

The Genie Model ND9900 is a fully integrated, multiple-user data-acquisition, display and processing system introduced by Nuclear Data. The package includes a DEC MicroVAX II central processor, several independent acquisition and display processors and high-capacity mass storage. We are told that the terminal is designed specifically for laboratory use and features a high-resolution, 12-inch, color CRT, a detached VT-200-style keyboard and a mouse.

Each system supports up to four independent acquisition and display terminals and up to eight acquisition interfaces. Each interface contains four independent ADC ports for simul-



taneously recording data into memory at rates up to 500 000 events/sec/interface, with a resolution of up to 16 000.

Genie software includes the standard DEC Micro-VMS operating system, complete data-acquisition and display software and a library of applications software, including programs for gamma spectroscopy, neutron-activation analysis and whole-body counting. Applications packages available for the DEC VAX are also available to Genie users. These include spreadsheet, database-management, word-processing and statistical-analysis packages. *Nuclear Data, Golf and Meacham Roads, Schaumburg, Illinois 60196*

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Two phase lock-in amplifier for weak signals

The Model SR530 lock-in amplifier from Stanford Research Systems is designed to measure weak signals in the presence of electrical noise. Applications include laser research, fiber optics, semiconductor research, many types of spectroscopy and measurements of cryogenic temperatures and optical absorption.

The instrument amplifies the signal to be measured, mixes it with a reference signal of the same frequency and then filters it to reject noise components at other frequencies. The resulting outputs are then used to calculate the amplitude of the input signal and its phase with respect to the reference signal.

The signal-input specifications include a sensitivity ranging from 10 nV to 500 mV, input noise of 6 nV/Hz^{1/2}, 1% gain accuracy over the operating-frequency range of 0.5 Hz to 100 kHz, harmonic rejection of 55 dB and dynamic reserve of up to 80 dB. Features include differential voltage inputs, a built-in current preamplifier, line-frequency notch filters and a tracking bandpass filter. The reference-signal channel can lock either to sine waves or to pulses of either polarity and is displayed on the front panel. An internal reference oscillator with calibrated output-amplitude and frequency control is also provided. The mixer outputs have a stability of 5 ppm per °C and the output-filter time constants are from 1 millisecond to 100 sec. The filtered mixer outputs, magnitude, phase and noise density can be displayed and are available through front-panel outputs.

Front-panel controls, displays and measurement data are accessible through RS-232 and IEEE-488 computer interfaces. Four analog-digital inputs and two digital-analog outputs are available for measurement and control. Typical uses include ratio

measurements and control of internal-oscillator frequency.

A software package for the IBM PC, XT and AT and compatible computers is included. The software is menu driven and provides virtual front-panel control, data-scan setup and display, math routines, auto-scaling and data storage. The SR530 sells for \$3990. *Stanford Research Systems, 460 California Avenue, Palo Alto, California 94306*
Circle number 145 on Reader Service Card

Microprocessor-controlled rheometer with rotational drive

The Rheomat 135, introduced by Tekmar, is designed to analyze the deformation of a substance and differentiate it into viscous and elastic portions. The Rheomat 135 is microprocessor controlled; the rotational speed and shear-rate range are the input parameters.



The four-quadrant rotational drive is quartz controlled, can exert a maximum torque of 200 mN m and automatically compensates for the mass and inertia of the rotating parts. One can display the value of the viscosity, shear rate, shear stress or torque on the front panel of the control unit. *Tekmar, P.O. Box 371856, Cincinnati, Ohio 45222*
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Air-bearing translation table with ground granite rails

The TCA air-bearing table, introduced by Klinger, is designed for use in long-travel, repetitive and high-accuracy applications. The tracking of the table is provided by ground granite rails and a thin film of air upon which the table glides. A protective bellows protects the tracking guides from dust. A high-precision lead-screw and nut system powered by a stepping motor drives the stage. The load capacity of the unit is over 30 kg. Travel ranges between 200

and 570 mm are available. The unit is also available in an x-y configuration. *Klinger Scientific, 110-20 Jamaica Avenue, Richmond Hill, New York 11418*
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Avalanche photodetector for high-speed applications

The Model AR-G20 ultrahigh-speed photodetector from Antel Optronics is based on a germanium active element. The element is an avalanche type and the detector has a rise time of less than 40 picosec. The gain can be set between 1 and 30. The photodetector is available separately or as part of a complete system comprising a detector head, optical stand, power supply and connection cables. Optical-input options for the head include a flat window, a lens and an optical fiber. The unit is priced at \$3995. *Antel Optronics, 3329 Mainway, Burlington, Ontario, Canada L7M 1A6*

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New software

Symbolic computation—Inference has released version 1.5 of SMP, a high-level mathematical language designed for interactive computation. SMP can generate FORTRAN source code, which can be separately compiled and incorporated into other FORTRAN programs for further calculations outside the SMP environment. The SMP system is available for the DEC VAX series, including MicroVAX, and runs under UNIX or VMS. Versions are also available for Apollo Domain, Sun Microsystems, Ridge and IBM 370 computers with VM/CMS. *Inference Corporation, 5300 West Century Boulevard, Los Angeles, California 90045*

Data acquisition—Cyborg has introduced Discovery, a data-analysis and data-reduction package for IBM computers with a hard disk. It supports the 8087 and 80287 coprocessors; the ISAAC 5000, 91 and 41 systems; and the IBM data-acquisition and control adapter. Data can be transferred to Lotus 1-2-3. *Cyborg Corporation, 55 Chapel Street, Newton, Massachusetts 02158*

Application software—Three software packages linking the Tektronix 7854 digital-storage oscilloscope and 7D20 programmable digitizer to the IBM PC and the HP Series 200 technical computer have been introduced by Tektronix. These packages, the 7854/HP Series 200, 7D20/HP Series 200 and the 7D20/IBM PC time- and amplitude-measurement software, can be used for automating test and measurement functions. *Tektronix, P.O. Box 500, Beaverton, Oregon 97077* □

Cryo

QUALITY

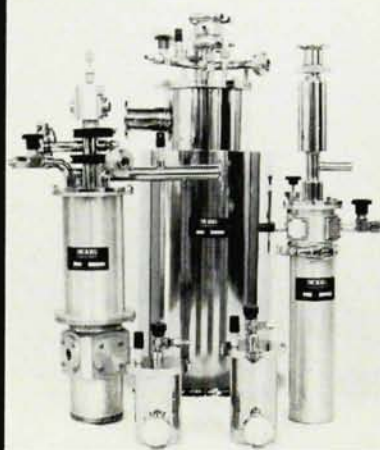
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