

## Multichannel Detector Heads

Hamamatsu has introduced the C6990 and C6991 multichannel detector heads, designed to operate with its InGaAs linear image sensors in the near-infrared

region. Coupled with the image sensors, the C6990 and C6991 enable precision multichannel spectrophotometry and can serve as radiation thermometers, as nondestructive inspection devices, and for optical fiber transmission measurement. Both detector heads

include a low-noise driver-amplifier circuit and temperature controller that require only an external power supply connection for operation. Applying power cools the image sensor to a preset temperature to ensure a stable output. The C6990 provides temperature regulation of  $\pm 0.1^\circ\text{C}$  and a cooling temperature of  $-35^\circ\text{C}$ . The C6991 offers the same temperature regulation of  $\pm 0.1^\circ\text{C}$  and a cooling temperature of  $-45^\circ\text{C}$ .

**Hamamatsu Corp.**

360 Foothill Road, P.O. Box 6910  
Bridgewater, NJ 08807

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## Diode Laser Modules

LaserMax, under a recent licensing agreement, will now manufacture and market the diode laser measurement system of Gradient Lens Corp. under the name Nano-Trak. The Nano-Trak system is unique in eliminating the need for separate laser, interferometer, receiver, and electronics modules associated with other distance-measuring interferometer systems. LaserMax also has added two new configurations to its existing LAS series of ultraminiature laser diode systems, at

wavelengths of 980 nm and 1,064 nm, for use with detection equipment and with sensing and inspection systems.

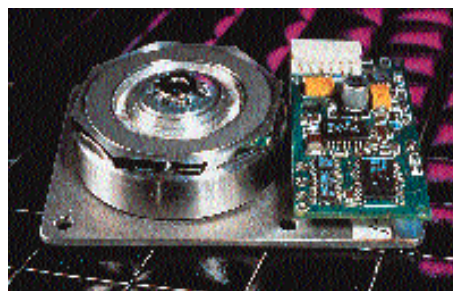
**LaserMax, Inc.**

3495 Winton Place, Building B  
Rochester, NY 14623  
1-800-LASER-03

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## Laser Scanning Motor

Lincoln Laser has brought to market its new motor polygon assembly model MPC-32, an integrated motor controller assembly that uses Lincoln's patented air-bearing design. The company says the MPC-32 is the smallest scanner and controller assembly of its type commercially available. It is designed for low-cost, high-volume laser scanning applications. It offers a speed range of 16,000 to 32,000 rpm, a speed stability of  $<0.015\%$  over 1,000 revolutions, a compact size (about one-quarter that of other standard motor polygon assemblies), and a low



cost resulting from integration of the polygon and drive system. Lincoln also has expanded its coating capabilities for its polygon mirror line to include protected gold, which provides durability and higher reflectivity for near-infrared and infrared wavelengths, and enhanced aluminum, ideal for visible and ultraviolet wavelengths.

**Lincoln Laser Co.**

234 East Mohave  
Phoenix, AZ 85004

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## Digital Camera

Merchantek Electro-Optics has introduced Vision1024, a low-cost, 10-bit digital camera that features high dynamic range and



capture rates to 120 Hz. It employs fuzzy-logic triggering to detect instantaneous, random events. Applications include machine vision, high-speed motion and stop-action imaging, remote sensing, microscopy, and laser-beam analysis. Vision1024's microprocessor can be programmed for image subtraction, morphing, colorizing, and other enhancement and analytic techniques. Its palm-size CPU connects directly to a printer and external monitor. The digital camera is available with RS232 or GPIB interface.

**Merchantek Electro-Optics**

6150A Yarrow Drive  
Carlsbad, CA 92009

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## Laser Cutting System

New Wave Research announces EzLaze, a small, solid-state laser cutting system designed for flexible and simple operation and available in single- and multiwavelength modes. Its uses include semiconductor failure analysis, design verification, LCD repair, and other micromachining applications. EzLaze features single-shot, 1-Hz or 5-Hz burst pulse repetition rates. It mounts on the Mitutoyo FS60 or A-zoom microscopes and produces uniform, repeatable cuts ranging from  $1 \times 1 \mu\text{m}$  to  $50 \times 50 \mu\text{m}$ . Users can choose from three wavelengths—1,064 nm, 532 nm, and 355 nm—with a flip of a switch. The cutting system comes with an interface that allows users to select the laser's cut size, triggering, and wavelength through Windows 95 or Windows NT.

**New Wave Research**

495 Mercury Drive  
Sunnyvale, CA 94086

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## Industrial Scan Cameras

Sony Electronics has just marketed its XC-55 and XC-55BB monochrome miniature camera modules for use in industrial monitoring and machine vision applications. Each can capture high-resolution images in  $1/30\text{ s}$  and functions in two shutter modes: normal

and trigger. The XC-55 is housed in a single unit of  $29 \times 29 \times 75$  mm and weighs 110 g. The XC-55BB's remote camera head measures  $22 \times 22 \times 30$  mm and weighs 40 g. The ultracompact scan CCD cameras are designed for use where space is limited and for easy integration into a spectrum of image processing applications. These include bottle and food inspection, optical character recognition, and highway monitoring.

**Sony Electronics, Inc.**

1 Sony Drive

Park Ridge, NJ 07656

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## Laser-Beam Camera

Spiricon offers its new Silicon Pyrocam camera as useful for large laser beams. Model PY-128  $\times$  128-100Si uses a  $124 \times 124$  matrix of silicon sensors on  $100\text{-}\mu\text{m}$  spacing, which provides a  $12.4 \times 12.4$  mm overall area. This allows direct analysis of laser beams twice the size of 6-mm CCD sensors. Spiricon claims other advantages for its camera over CCD units: less attenuation is required on the laser beam to be able to operate within the linear dynamic range of the Silicon Pyrocam, and the camera has a dynamic range of 1,000, about 10 times greater than that of the typical CCD camera. The Silicon Pyrocam can display beam profiles directly on a VGA monitor without an additional beam-analyzer computer, and beam profiles can be displayed in either two or three dimensions.

**Spiricon, Inc.**

2600 North Main

Logan, UT 84341

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## Atomic Force Microscope

Digital Instruments now offers its new, completely automated Dimension 9000 atomic force microscope (AFM) as an on-line process monitoring tool for use within semiconductor-fabrication facilities. The new AFM automates the entire measurement process, including determining when the probe is worn, replacing it, and then resuming operations without the need for operator intervention. Other Dimension 9000 features include wafer handling, pattern recognition,

automated measurement sequences and data reduction, and a reduced footprint. It can measure 2-nm features.

**Digital Instruments**

112 Robin Hill Road

Santa Barbara, CA 93117

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## Miniaturized Instrument

Keithley Instruments has created a new addition to its SmartLink series of miniaturized instruments. The KNM-DYN12 is designed to make laboratory-grade measurements of force, acceleration, and dynamic pressure at almost any place in a plant. The 9.6 cu. in. device can be placed only inches away from demanding signals and sensors, minimizing lead length errors and induced electrical noise. Measurements made by the KNM-DYN12 can be linked to a remote personal computer or controller, or the user can display and store them for on-site monitor-



ing. Intended applications include measurements of general purpose force, pressure, and acceleration; cutting-force and biomechanical-force measurements; plastics processing; and process-monitoring and distributed-measuring systems.

**Keithley Instruments, Inc.**

28775 Aurora Road

Cleveland, OH 44139

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## New Literature

### Off-the-Shelf Optics

Rolyn Optics' 1998 catalog, "Optics for Industry," is now available. Its 140 pages contain product data, photos, and perfor-



mance graphs, as well as handy listings of the most commonly

used optical formulas and the physical properties of common optical materials. Product categories include simple and compound lenses, prisms, optical flats and flat glass, flat and concave mirrors, absorption and thin-film filters, beam splitters, reticles, and instruments. Rolyn also provides custom cutting, coating, edging, and complete fabrication if necessary. Introductory pages include handy listings of the most commonly used optical formulas and physical properties of common optical materials.

**Rolyn Optics Co.**

706 Arrowgrand Circle

Covina, CA 91722

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## Fiber Optics Brochure

Chiu Technical, a maker of fiber optic illuminating equipment, offers a new brochure featuring detailed data on its standard, custom, and prototype products. Chiu's line includes high-quality light sources for a host of borescopic, endoscopic, and microscopic applications. The four-page color brochure, "A World of Fiberoptic Products," includes data on the company's R-90 and R-90M "Munchkin" ring lights, quartz halogen light sources, single and double fiber optic illuminators, high-performance short-arc xenon and mercury power supplies, and a full line of fiber optic light guides.

Chiu Technical Corp., Marketing Dept.

252 Indian Head Road

Kings Park, NY 11754

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This section is based on information supplied by the manufacturers, and in some cases by independent sources. *The Industrial Physicist* can assume no responsibility for its accuracy. To facilitate inquires, a Reader Service Card is attached between pages 42 and 43.