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.

Multichannel UV and Visible Radiometers

Biospherical Instruments has introduced two new systems of five-channel ultraviolet radiometers: the GUV-510 and the GUV-511. These radiometers are designed for field applications requiring measurements of biologically harmful ultraviolet radiation, total column ozone or cloud cover. The systems offer precision, low-noise filter photodetection at wavelengths of 305 (ozone sensitive), 320, 340 and 380 nm, as well as broad-band photosynthetic radiation (400 to 700 nm), all of this with a single Teflon and quartz diffuser. The radiometers can be deployed individually or in a network of instruments for unattended monitoring at a variety of sites.

GUV radiometers have been tested in polar environments. The 510 model is the standard design, and the 511 offers internal temperature stabilization for use under adverse conditions. These systems come complete with multichannel ultraviolet radiometer, 50 meters of cable, deckbox interface and MS-DOS compatible software. A complementary submersible system (PUV-500) is available for limnologic or oceanographic applications. *Biospherical Instrument, 5340 Riley Street, San Diego, California 92110-2621*

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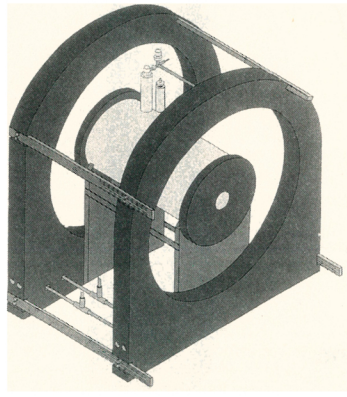
Cancelling Stray Fields from Air-Core Solenoids

Walker Scientific has developed a magnetic-field cancellations system designed for builders of systems that generate high fringe magnetic fields, for example spectrometers, plasma confinement devices or nuclear-magnetic-resonance systems. This new



field-cancellation coil system is an array of coils custom built to surround a superconducting or resistive air-core solenoid that generates fields up to 15 kilogauss.

The cancellation system is engineered to the user's specific requirements. It can reduce fringe fields to 1 gauss at 3 meters from the center of the solenoid in an axial direction and 2 meters radially. These self-contained systems include a power supply and a controller that can be set to user specified limits, or it can automatically sense varying fringe fields generated by the primary solenoid. *Walker Scientific, Rockdale Street, Worcester, Massachusetts 01606*

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Fiber Optics for Infrared Interferometry

The French firm Le Verre Fluoré has introduced a new line of polarization-maintaining optical fibers for infrared applications. Designated IRguide PM1, these fibers are designed for applications involving interferometry in the wavelength regime from 1.7 to 2.5 microns. Fabricated from zirconium fluoride glass, the IRguide PM1 fibers have low attenuation in that near-infrared range, with a short beat length that insures proper decoupling of the two polarization components of the fundamental transmission mode.

The firm is also offering a new line of fiber-optic couplers for infrared applications. Designated IRguide CP, these couplers are intended for applications ranging from fiberoptic sensing and infrared interferometry to lasers and telecommunications devices. Made from a combination of fluoride glasses, the IRguide CP fibers are available in single-mode, polarization-maintaining and multimode versions, in either X or Y configuration.

Splitting wavelength and splitting ratio can be adjusted to the user's requirements. Insertion losses are low, we are told, with typical insertion loss less than 0.3 dB for a 3 dB (50:50) coupler at the splitting wavelength. The couplers are pigtailed with standard IRguide fluoride-glass fibers. They can be terminated with cylindrical or SMA connectors. In the US, contact *Le Verre Fluoré, 612-H North Irena Avenue, Redondo Beach, California 90277*

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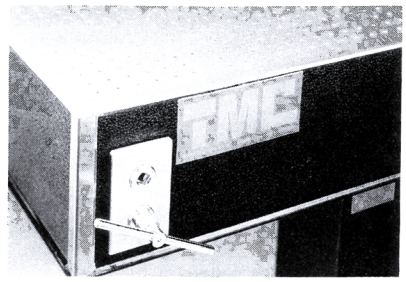
Tuneable Damping for Vibration Isolation of Optical Tables

TMC, a new tuneable damping sytem for vibration isolation of optical work surfaces lets the user tune his optical top to optimize damping at its resonant frequency, regardless of changes in resonance due to loads, equipment or coupling.

The new UserTuneable dampers, so called, are claimed to overcome the limitations of conventional tuned dampers. They are preset at the factory to maximize the damping of the top for a light load, but they can be adjusted by means of a manual adjustment wrench to optimize damping for altered situations. UserTuneable damping is available with TMC's Series-79 ClassOne, CleanTop



and Series-78 CleanTop optical tops.

Four common situations in which UserTuneable damping is claimed to be especially desirable are: when a load is added to the table; when large, resonant structures are mounted on the table; when noisy, motorized equipment is mounted and when optical tops are coupled together. Each of these cases, we are told, requires a table that can alter its damping to maintain optimal performance. *TMC, 15 Centennial Drive, Peabody, Massachusetts 01960*

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Global Relief Data on CD-ROM

Global Relief CD-ROM is a new disk intended to consolidate a number of digital data bases that the National Geophysical Data Center has offered for some time only on standard half-inch mainframe computer tape, as well as several data bases that are being offered for the first time. The data are recorded in their original formats where appropriate, and in easily accessible forms for many types of personal computers and workstations.

Also on this new disk are a number of digitally produced example images derived from some of the data. The images are compatible with standard desktop-publishing software. Some programming may be required to access some of the data.

The CD-ROM contains several digital gridded data bases of global topography and bathymetry at various scales, digitized continental coastlines, gridded oceanic gravity anomalies, ocean-floor gazetteers and digital topographic relief images in a variety of formats. Software or program code for PC-DOS, Macintosh and UNIX workstations is provided to give access to the major topographic and geographic data bases. There is a "Mac only" area of the disk devoted to topographic imaging, including software to generate full-color relief images. There are also several shareware programs for Mac and PC, for displaying the stored images. Of

the disk's 630 megabytes of data and programs 500 Mb are accessible to all types of hardware, while the remainder is in specific Macintosh image and software formats. *National Geophysical Data Center, NOAA, EGCH, 325 Broadway, Code 17, Boulder, Colorado 80303–3328*
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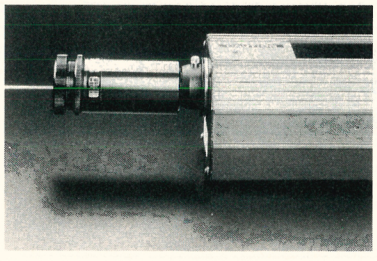
Expander Reduces Laser Beam Divergence

Edmund Scientific's new beam expander, designed to reduce laser-beam divergence at long distances, is basically a precision Galilean telescope mounted in reverse. It shrinks the diameter of the beam from a distant helium–neon laser. The device provides a smooth, continuous zoom from 10× to 20×. The design is conveniently compact: 5″ length × 1.625″ diameter. The input end has a 1.00″-diameter external thread (32 turns per inch).

Applications include holography, long-distance illumination and targeting. A rough estimate of beam diameter at long distances is given



by: beam diameter (mm) = L (ft.) × laser divergence (mrad) / (3 × expander power). The price is $450. *Edmund Scientific, Code 14B1, N999, Edscorp Building., Barrington, New Jersey 08007*
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Amplitude and Line-Stabilized CO_2 Lasers

Helios is now offering its frequency- and amplitude-stabilized CO_2 lasers for research use. They come in 5-watt and 20-watt models. These lasers were originally designed to meet the need for high stability in the firm's CO_2 optics metrology program. But Helios engineers found that frequency shifting or line hopping in CO_2 lasers precluded precise measurement on CO_2 optics.

Active frequency and amplitude stabilization are provided by means of a microprocessor that monitors and adjusts the laser. The control pad on the enclosure selects local control functions and output power from 1 watt up to the maximum available. The microprocessor can be interfaced to a PC via a standard RS-232 port. An electronic shutter, also activated by the control pad, is available.

Both the 5-W and 20-W lasers are stabilized to the P20 mode at the wavelength of 10.59 mm. They are housed in cabinets with complete safety interlocks. Their small footprints facilitate installation on optical benches. *Helios, 1822 Sunset Place, Longmont, Colorado 805021*
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New Literature

Optics—Oriel is offering its new Volume-II product guide, *Light Sources, Monochromators & Detection Systems*. This 528 page book is both a reference manual and product catalog. It lists many new products for making, moving and measuring light, from the ultraviolet to the near infrared, including pulsed sources, nitrogen and tunable dye lasers, calibrated irradiance sources, single and dual-beam scanning spectrophotometers, imaging monochromators with multiple grating turrets, cooled ultraviolet and infrared detectors, CCDs for spectroscopy and digital lock-ins. The publication also provides technical information, application notes, spectral irradiance data for the light sources, and comprehensive specifications and diagrams for the other products. *Oriel, 250 Long Beach Boulevard, P. O. Box 872, Stratford, Connecticut 06497*

Optics—JML Direct's new second-edition optics catalog presents more than a thousand new stock items, including multi-element lens systems, microscope objectives and eyepieces, reticles, filters, prisms and other components. The catalog includes complete design information for all singlets and achromats, giving radii, glass type, thickness and other parameters needed for optical design programs. That makes it easy to do optical analysis using such design programs. The catalog's offering of thin-film coatings has also been increased significantly. *JML Direct Optics, 690 Portland Avenue, Rochester, New York, 14621–5196* ■