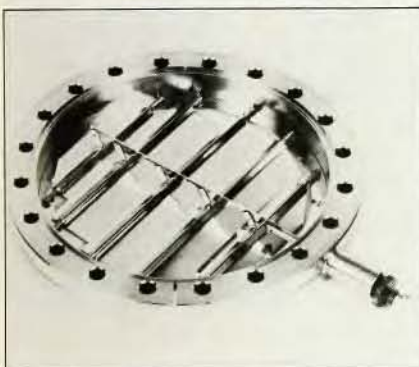


new products

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.

Compact ultrahigh-vacuum viewport shutter

Vacuum Generators Ltd has made available a new series of compact ultrahigh-vacuum viewport shutters. These shutters are of all-metal, bellows-sealed design. They are mounted on standard 4½-inch, 6-inch or 8-inch (outer diameter), doubled-sided, cooper-gasket, knife-edge flanges that can be fitted



directly to any compatible vacuum vessel and appropriate viewport. The "venetian" shutter is operated by an edge-mounted screw control, calibrated to allow its use as a variable conductance limiter. Available in the USA through Kurt J. Lesker Company, 5635 Horning Road, Pittsburgh, Pennsylvania 15236.

Fast optical link between CAMAC crates

The LeCroy model 5211 Optical Link is a fiberoptic receiver/driver used to provide high-speed communication between CAMAC crates. It replaces the firm's multiconductor cable CAMAC Serial Highway with a single optical fiber. This optical link, we are told, offers speeds up to 8 times faster (40 megabits/sec) than other serial systems, and drive capability over greater distances (to 1 km).

The model 5211 is claimed to oper-

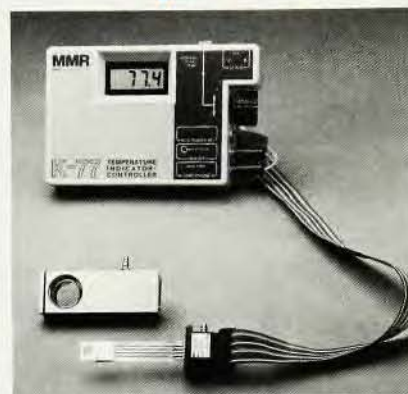
ate reliably without regard to CAMAC system clocks. Its specialized automatic threshold control does away with setup and problems resulting from degradation of optical couplings of the optical fiber. A battery backup mode serves to bypass a crate that has lost power, leaving the rest of the system intact and operating. The optical link is suited to applications that require high-speed data transfer between widely dispersed crates, especially when there is an abundance of rf interference or when it is necessary to eliminate the electromagnetic radiation a conventional cable would generate. It connects directly to the D-ports of the Serial Highway Driver or the L2 Crate Controllers. Connecting between a pair of 5211s is made by a single optical fiber. The price is \$2250. *LeCroy Research Systems, 700 South Main Street, Spring Valley, New York 10977*

Compact, pulsed Nd:YAG laser

The Quanta-Ray Division of Spectra-Physics offers a compact new pulsed Nd:YAG laser, designated the DCR-11. It is claimed to provide greater reliability than the firm's 10-Hz DCR-2 oscillator in a package about one third the size.

The DCR-11 requires no external water cooling and no bottled purge gas. It is specified to produce 275 mJ of 1.06-micron light in a nine-nanosecond, Q-switched pulse at 10 pulses per second. Second, third and fourth harmonic energies are 135, 60 and 30 mJ, respectively. The output bandwidth of one wavenumber at 1.06 microns can be reduced to 0.2 cm⁻¹ with the addition of the ELN-2 electronic line-narrowing option. The laser head measures 84 × 23 × 26 centimeters and weighs 25 kilograms. The power supply fits easily under most laser tables, or it can be rack-mounted. The DCR-11-based sys-

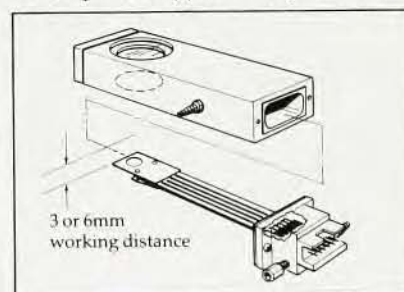
Model K-770T Low Temperature Transmission System



The K-770T Transmission System is a Joule-Thomson, gas expansion temperature characterization system designed for low temperature optical transmission experiments. It allows the spectroscopist or microscopist to selectively cool small samples over a temperature range of +100°C to -196°C (77K).

Features

- Small, compact size
- Temperature range from +100°C to -196°C (77K)
- Temperature stability to ±0.1°C
- Temperature accuracy better than ±2°C from +50°C to -196°C
- Temperature response 1°C/sec
- Refrigerator capacity, minimum of 250 mw over the temperature range
- Cold pad size approximately 1 cm x 1 cm



Applications

- Sample cooling for FTIR for IR spectrometers
- Microscope cold stage
- Diode laser cooling and tuning
- Fluid inclusion

For more information, contact

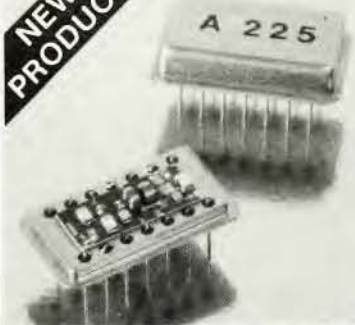
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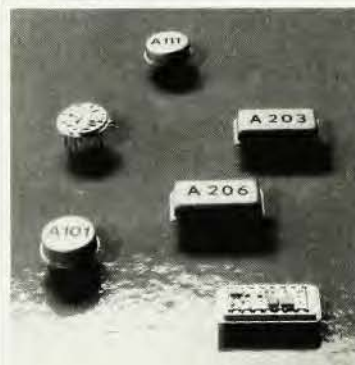
- Thin film hybrid technology
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- Low noise
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- 168 hours of burn-in time
- MIL-STD-883/B
- One year warranty

APPLICATIONS

- Aerospace
- Portable instrumentation
- Mass spectrometers
- Particle detection
- Imaging
- Research experiments
- Medical and nuclear electronics
- Electro-optical systems

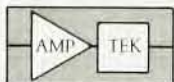
ULTRA LOW NOISE < 280 electrons r.m.s.!

Model A-225 Charge Sensitive Preamplifier and Shaping Amplifier is an FET input preamp designed for high resolution systems employing solid state detectors, proportional counters etc. It represents the state of the art in our industry!



Models A-101 and A-111 are Charge Sensitive Preamplifier-Discriminators developed especially for instrumentation employing photomultiplier tubes, channel electron multipliers (CEM), microchannel plates (MCP), channel electron multiplier arrays (CEMA) and other charge producing detectors in the pulse counting mode.

Models A-203 and A-206 are a Charge Sensitive Preamplifier/Shaping Amplifier and a matching Voltage Amplifier/Low Level Discriminator developed especially for instrumentation employing solid state detectors, proportional counters, photomultipliers or any charge producing detectors in the pulse height analysis or pulse counting mode of operation.



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new products

tem can produce tunable wavelengths from 190 nm in the ultraviolet to 4.5 microns in the mid-infrared. The DCR-11 is priced at \$22 500. *Quanta Ray, 1250 Charleston Road, Mountain View, California 94043*

Amplified photodetectors for weak optical signals

The new series AD200 amplified photodetectors from Opto-Electronics are designed to monitor weak, high-frequency, optical waveforms or weak, short optical pulses. There are two models: model AS210 for the wavelength range 300–1100 nm, and model AD220 for 500–1800 nm. Both models have a bandwidth greater than 1 GHz and a pulse response time of less than 600 psec. Minimum detectable optical power is typically 6 microwatts. Optical input can be either a beam focused onto the large-area photodiode or a fiber-optic signal by way of a fiber connector attachment supplied with the instrument. The series AD200 is available with either a line-operated power supply or a rechargeable, battery-operated power supply. Prices start at \$2900 (US) for the AD210 and \$4600 (US) for the AD220. *Opto-Electronics, Unit 9, 2538 Speers Road, Oakville, Ontario L6L 5K9, Canada*

Data-acquisition system for IBM personal computer

Qua Tech has introduced a family of modular data-acquisition and control products for the IBM PC. The line includes 8- and 12-bit analog-to-digital and digital-to-analog converter modules, and a parallel expansion board. The parallel expansion board, with 72 I/O lines, can accept up to three converter modules. With the modular approach, the user can specify the configuration that meets the needs of a particular application.

The 8-bit A/D module has a conversion time of 16 microseconds and a sampling frequency of up to 32 kHz, while the 12-bit A/D has a 25- μ sec conversion time and a sampling frequency up to 25 kHz. Both modules have either 16 single-ended or 8 differential-input channels as well as a provision for an external clock. The 8-bit D/A module includes 8 independent, software-selectable converters. The 12-bit D/A module has 2 independent outputs with a typical conversion speed of 3 μ sec under a 5-k Ω load. A software package is provided, containing drivers for all the modules. Application programs can be written in BASIC, assem-

bler or other languages. The price of the 8-bit A/D converter system (parallel expansion board and 8-bit A/D module) is \$390. The 12-bit system costs \$690. All the modules and the board are silkscreened and solder-masked. *Qua Tech, 478 East Exchange Street, Akron, Ohio 44304*

Optical spectrometric multichannel analyzers

Princeton Instruments have introduced a complete line of optical multichannel detection systems based on photodiode arrays as sensors. One can have either unintensified detector heads (model RY, with 512 or 1024 diodes) or microchannel-plate intensified detector heads (model IRY, with 512, 700 or 1024 diodes). Spectral response and other performance characteristics of the IRY detectors can be tailored to the user's need. These detectors are gateable down to 5 nsec with



the pulse generator, model FG-100. All detectors are cooled to -25°C or below.

The detector heads are operated by detector controllers, model ST-100 or ST-110, both of which allow an easy interface to most computers. Model ST-110 allows real-time storage of a large number of spectra. Prices for detector head-controller systems begin at \$13 500. *Princeton Instruments, PO Box 2318, Princeton, New Jersey 08540*

Precision compact translation stages

The new UT50 group of very compact translation stages from Klinger Scientific provide precise linear motion over a 20-mm travel range, with positioning accuracies to 0.1 micron. Available in manual, dc-motor-driven models and in stepping-motor drives with 1-micron or 0.1-micron step sizes, these precision translation stages are stackable in xy or xyz assemblies. An incremental en-

coder output for position feedback is among the options available for all models.

The UT50 translation stages have a load-carrying capacity of 5 kg. They are claimed to be well suited for fiber-optic alignment, microscopy, interferometry and many microelectronic applications. They exhibit minimal differential thermal drift, we are told, and they are free of backlash; nor will they creep or bind. The design incorporates a stainless-steel body, hardened steel guides and compatibility with all Klinger micropositioners. Prices start at \$930. Power supplies and programmable indexers are also available. *Klinger Scientific, 110-20 Jamaica Avenue, Richmond Hills, New York 11418*

Two high-speed photodetectors

Newport has introduced two new high-speed photodetectors. The model 875 high-speed PIN photodetector has broad spectral sensitivity from 400 to 1060 nm, and sub-nanosecond risetime. The detection area is large and easy to align in a beam. An optional optical fiber input is available. The model 877 ultra-high-speed APD photodetector has rise and fall times of less than 200 picoseconds. Designed to detect and resolve ultra-short pulses of visible light, it is useful for characterizing laser diodes. Both models offer rechargeable battery power supplies, and they are compatible with Newport's optical mounts. The price is \$950 for model 875 and \$1125 for model 877. *Newport Corporation, PO Box 8020, Fountain Valley, California 92728-8020*

GaAlAs diode laser with up to 100 mW power

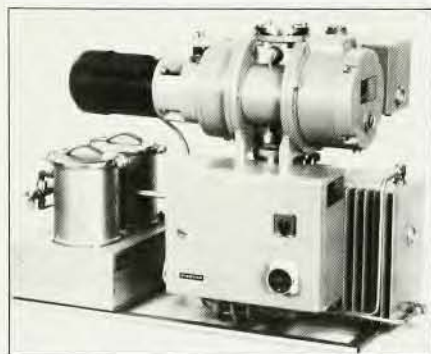
A new firm, Spectra Diode Laboratories, an independent corporation formed by Spectra-Physics and Xerox, announces what it describes as "the most powerful commercial GaAlAs laser to date." This new diode laser, model SDL-2410, offers 100-milliwatt cw operation at room temperature. Low threshold and high front-facet differential efficiency are characteristically above 50%. Lasing wavelength is typically in the range of 790–840 nm. Intrinsic device rise time is less than 500 psec.

The new laser, we are told, is well suited to applications requiring high power, high repetition rates and high efficiency. Typical applications include fiber and point-to-point communication, optical pumping of Nd:YAG or glass lasers, illumination and printing.

Options for the hermetically sealed TO-3 package include fiber coupling, photodiode monitoring and thermoelectric cooling. The laser is also available in a copper-stud package for highest modulation and direct access to the laser facet. Prices start at \$1950. *Spectra Diode Laboratories, 3333 North First Street, San Jose, California 95134*

Corrosion-resistant plasma pumping system

Balzers has introduced a compact, self-contained plasma pumping system for plasma etching and liquid-phase chemical vapor deposition. It is designed to resist corrosion and minimize the use of elastomers in corrosive gas pumping operations. This plasma pumping unit, model WOD 220P, includes a corrosion-resistant roots pump and a two-stage rotary pump with po-



lyamine/polyamide vanes. The built-in safety valve closes when the pump is off and opens when pressure is equalized. The self-contained package includes the pumps, an oil filtration and neutralizing system, exhaust filter, and a switch box, all on one frame.

Integrated into a 39"×23"×27" package, the plasma pumping unit provides a pumping speed of 4.5 m³/min at 10⁻¹ Torr and an ultimate pressure below 10⁻⁴ Torr. Incorporating a DN 63 ISO inlet flange, the quiet-running low-vibration system is available with a canned motor on the roots to minimize maintenance. The model WOD 220P is priced from \$12 000. *Balzers, 8 Sagamore Park Road, Hudson, New Hampshire 03051*

New literature

The JCPDS-International Centre for Diffraction Data announces the availability of two new publications: *Powder Diffraction File Sets 25–26* (in book form), and *Crystal Data-Determinative Tables Volumes 5 and 6*. *JCPDS-International Centre for Diffraction Data, 1601 Park Lane, Swarthmore, Pennsylvania 19081* □

DANCE

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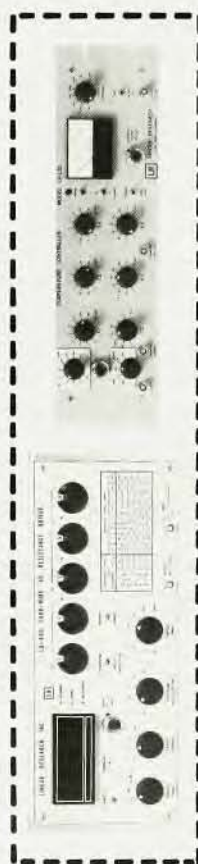
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