

Semiconductor Applications Systems



Acton Research, an optical-coating manufacturer specializing in deep UV (DUV) wavelengths, has announced it is now providing unique capabilities for DUV semiconductor applications, including microlithography laser systems and thin-film measurement systems. Components available include maximum reflectance beam-turning mirrors, beam splitters, cavity-optics and laser-alignment mirrors, and antireflectance-coated lenses and windows. Acton Research provides optical coatings in a variety of DUV wavelengths, including 248 nm, 193 nm, 157 nm, and 126 nm. Its optics services include custom design, OEM capabilities, and in-house calibrated DUV measurement services. *Optics & Coatings*, a 52-page catalog, and *Commercial Optics Solutions*, a 6-page brochure, are available.

Acton Research Corp.
525 Main Street/ P.O. Box 2215
Acton, MA 01720-6215
Circle No. 180 on Reader Service Card

Pressure Transducers

Sensotec has introduced two new pressure transducers for ultrahigh-purity gas applications, both intended to meet the stability, reliability, and accuracy requirements of demanding semiconductor industry applications. Model UPT boasts a $\pm 0.1\%$ full-

scale accuracy and full-scale ranges from 0–10 in. of water to 0–3,000 psi. It is machined from high-quality, corrosion-resistant 316L VAR stainless steel and Hastelloy C-276. Its fully isolated strain-gauge bridge maximizes long-term stability and makes it virtually insensitive to the Joule-Thomson cooling effect. Its amplifier is field-replaceable. Model UPF offers a flow-through design, internal surface finish of less than 7 microinch roughness average with zero dead volume, and no weld seams. Its body and fittings are machined from a single piece of high-quality 316L VAR stainless steel. Sensor electronics are hermetically sealed at full vacuum with a welded header. Model UPF provides stable $\pm 0.18\%$ full-scale accuracy and full-scale ranges from as low as 0–100 psi up to 0–3,000 psi.

Sensotec, Inc.
1200 Chesapeake Avenue
Columbus, OH 43212
Circle No. 181 on Reader Service Card

Three-Gear Microscope

Leica's new DM LM microscope, designed for routine use in modern materials technology and demanding materials-research tasks, offers an innovative five-function focus system with three-gear focusing. This allows switching on an additional gear with the press of a button between the coarse focus and fine focus, a particularly useful function in the low- and medium-magnification ranges. The DM LM offers flexibility, mechanical and thermal stability, and optimal ergonomics.

Leica, Inc.
111 Deer Lake Road
Deerfield, IL 60015
Circle No. 182 on Reader Service Card

Industrial Workstation

Nortech has brought its CL1700 series industrial workstation to market. Its integrated industrial personal computer, available with 17-in. video monitor or touch-screen monitor, is housed in a sheet-metal enclosure built for use on the factory floor. A self-contained assembly unit allows easy access

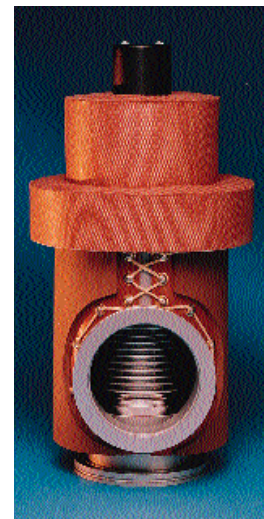


to or removal of the PC for servicing. Nortech says the CL1700 will meet NEMA 4 standards and is the only industrial workstation with a failure-tolerant option that prevents data loss or system malfunction from a failure of the components most prone to failure—hard drives and power supplies. A manual switch allows degaussing of the CRT should it become magnetized. Software drivers are provided for DOS, Windows 3.1, Windows 95, Windows NT, and OS/2. Unix drivers are available as an option.

Nortech Engineering, Inc.
153 Washington Street/ P.O. Box 266
East Walpole, MA 02032-0266
Circle No. 183 on Reader Service Card

Heated Vacuum Valve

The HPS Division of MKS Instruments has introduced its new NW 100 VacuComp



Heated Vacuum Valve. It is designed for use in vacuum systems, primarily in semiconductor processing, where production by-products can condense and build up. Heating the 4-in. valve maintains an elevated internal temperature and leaves by-products in the

gaseous state. Available in angle and in-line models, with limit-switch and solenoid options, the valve includes Viton seals, a heater jacket, and a bonnet insulator.

HPS Division, MKS Instruments
5330 Sterling Drive
Boulder, CO 80301
Circle No. 184 on Reader Service Card

Digital Vacuum Gauge

Terranova Scientific claims that its new Model 924 digital thermocouple vacuum gauge, packaged in a 1/8 DIN enclosure, is half the size of most controllers. The device gives pressure measurements from 1 mtorr to 1,000 torr, a capability valuable for monitoring system pressure during pumpdown from atmospheric pressure. Applications include the manufacture of refrigeration coils, freeze-drying, vacuum ovens, and foreline measurement. It has a high-resolution digital-to-analog converter, which gives a precise logarithmic analog output over the full range of operation. The 924 interfaces to the Varian 531 or 536 thermocouple vacuum gauges. A millibar version is also available.

Terranova Scientific, Inc.
5841 Bell Road
Auburn, CA 95602
Circle No. 185 on Reader Service Card

High Vacuum Valves

VAT offers a new line of bellows-sealed aluminum angle valves as an alternative to more expensive stainless steel valves for use in harsh processing environments. The anodized aluminum bodies of the series 26 HV angle valves resist corrosion and are suitable for use in semiconductor etching systems from 1 atm to 10^{-7} torr. The valves are rated for 1 million operation cycles between maintenance and are designed for rapid disassembly to simplify seal replacement.

VAT Inc.
500 West Cummings Park
Woburn, MA 01801
Circle No. 186 on Reader Service Card

Helium Leak Detector

Varian Vacuum Products has introduced its fully automated model 979 portable heli-

um-leak detector, which it says offers a unique combination of features. The 979 is engineered for the installation and maintenance of vacuum vessels and lines in scientific apparatus used in particle physics, space science, and other forms of advanced research. Its features include a touch-screen panel that guides the operator through system set-up and control; a multiframe-mode vacuum system that provides leak testing down to 5×10^{-12} atm-cc/s; and a single-pump, gross leak check capable of test pressures up to 5 torr. A high-speed vacuum system and signal amplification design allows an internal leak-rate response time of 0.5 s. An optional hand-held remote control allows operation within a range of 50 ft.

Varian Vacuum Products
121 Hartwell Avenue
Lexington, MA 02173-3133
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Portable Magnetometer

Walker Scientific's new hand-held fluxgate magnetometer measures low-level magnetic fields from dc to 100Hz. The Walker FGM-3DI is aimed at a variety of uses, including



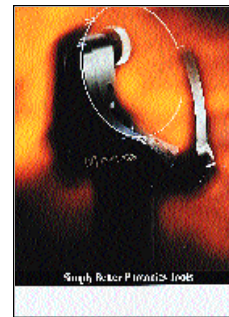
package inspection, magnetic signatures, MRI field mapping, and shield effectiveness. It measures magnetic fields from 1 gamma to 2 gauss on three full-scale ranges: $\pm 2,000$, ± 200 , and ± 20 mG; it provides 0.01-mG resolution on the 20-mG range, and linearity of greater than $\pm 0.02\%$ on all ranges. The 9V battery-powered FGM-3DI incorporates a 3.5-digit LCD display and a buffered $\pm 2V$ analog output capable of driving a strip-chart recorder or connecting to a data-acquisition system. An optional nulling feature allows the user to offset or neutralize magnetic fields, ambient or Earth's, up to ± 600 mG.

Walker Scientific, Inc.
Rockdale Street
Worcester, MA 01606
Circle No. 188 on Reader Service Card

New Literature

Lasers, Optics Catalog

New Focus, a supplier of photonics research tools, offers its 164-page 1997/1998 catalog. New products include innovative



mirror mounts, single-frequency tunable lasers built to the user's desired wavelengths, auto-balancing photoreceivers, aspheric lenses, and optical choppers. Also offered: super-stable optical mounts, dc to

60 GHz photodetectors, optical modulators, motorized positioners, and polarization components and mirrors.

New Focus, Inc.
2630 Walsh Avenue
Santa Clara, CA 95051-0905
Circle No. 190 on Reader Service Card

Vacuum Products Catalog

Pfeiffer Vacuum Technology's new 266-page catalog lists the company's extensive line of products for vacuum generation, measurement, and control. New items include the Rotary Vane M series with integrated magnetic coupling for oil-free performance; a complete series of magnetically suspended bearing turbodrag pumps for corrosive processes; a new process ion gauge; and the MaxiGauge controller for monitoring up to six gauges.

Pfeiffer Vacuum Technology, Inc.
24 Trafalgar Square
Nashua, NH 03063-1988
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The descriptions of new products listed in this section are based on information supplied by the manufacturers, and in some cases by independent sources. *The Industrial Physicist* can assume no responsibility for their accuracy. To facilitate inquiries, a Reader Service Card is attached between pages 42 and 43.