

Digital storage oscilloscopes



With an analog bandwidth of 1GHz, LeCroy claims that the 9370 family of digital storage oscilloscopes (DSOs) will deliver measurement accuracy that is beyond the reach of lower bandwidth DSOs. All instruments feature 500 megasample/s single-shot audio/digital conversion per channel, with 2 gigasample/s in single-channel mode for the 4-channel version. The 9370 family boasts an acquisition memory of up to 2 million points per channel

with a maximum of 8 million points in single-channel mode (4 channel DSO). Application areas are: high-energy physics research, industrial electronics (9370); test and measurement industry, electronic components (9370M); lasers, local area network, radar and general telecommunications (9370L); semiconductor design/test, automotive design/test (9374); telecommunications, aerospace electronics (9374M); and magnetic media, power supply design, TV/broadcasting (9374L). The company tells us that all instruments offer a full-feature set, including Smart Trigger, pass/fail testing, the most powerful waveform processing available and extensive interfacing options.

LeCroy Corp., 700 Chestnut Ridge Road, Chestnut Ridge, NY 10977-6499

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Thin-film reactors

Atomic layer epitaxy (ALE) thin-film reactors produced by Microchemistry Ltd. of Finland are now available to the U.S. flat-panel display (FPD) industry. Unique features of the ALE process promise a significant improvement in both manufacturing yields and display quality. The reactors are said to deposit virtually defect-free films on a large number of FPD substrates stacked into dense packages while retaining atomic layer uniformity over large substrate areas. The surface-controlled nature of the ALE process makes it insensitive to fluctuations in precursor flux, a common difficulty with any conventional chemical-vapor-deposition or evaporation process. Sequencing also eliminates simultaneous presence of mutually reactive precursors in the growth space, thus eliminating gas phase reactions and powder formation, a common particulate source in other processes. Applications

that require multiple thin-film structures may benefit from ALE's ability to switch from one material to the next "on-the-fly."

**Advanced Thin Films
12623 Cambridge Drive
Saratoga, CA 95070**

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Stabilized light source

The new SLP 120 portable laser-light source, from the French company Equipements Scientifiques, is claimed to provide constant, calibrated output regardless of temperature. As a result, field measurements of optical fiber properties are no longer affected by laser parameter variations due to temperature changes. Output of the SLP 120 is claimed to be stable to within 1% over a temperature range of 5-45°C for up to 72 h, and to within 0.2% for any 20-min-period. Weighing just 1 lb and measuring 7.9 by 3.9 by 1.6 in., the SLP 120

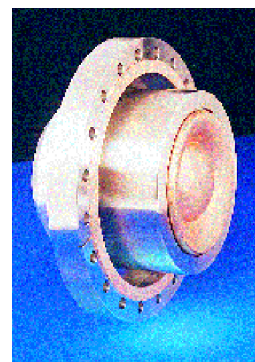
comes with a battery charger in a carrying case and is easy to use in the field. The SLP 120 can be equipped with any light-emitting diode or laser that does not require thermoelectric cooling. Single-mode emitters are available at nominal powers of 100, 200 or 500 μ W and wavelengths of 1,300 or 1,550 nm. Multimode emitters are available at a nominal power of 1 mW and wavelengths of 835 or 1,300 nm.

**French Technology Press Office
401 N. Michigan Ave.
Suite 1760
Chicago, IL 60611**

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Magnetron sputtering source

The Eterna 100-UHV is a new ultra-high-vacuum-compatible magnetron sputtering source, designed for operation over a wide range of power densities and gas pressures. Typical operating pressures for most materials are in the 10^{-2} - to 10^{-4} -torr range for conventional sputtering with an ionized inert



gas. The new source also can be operated in the self-sputtering mode for certain materials where ionized metal-target species (rather than inert gas) comprise the sputtering medium.

Self-sputtering can be carried on at the background pressure of the chamber in which the source is installed. The company feels that this will create new frontiers for research in thin-film deposition, especially in the ultraclean environment of UHV chambers. The source is mounted to an 8-in. con flat flange and extends only 40 mm into the chamber. Targets are indirectly water-cooled. The source can be baked with the chamber at temperatures up to 150°C,

provided water-cooling is maintained; the source is compatible with conventional DC/RF power supplies and can be retrofitted easily to existing UHV systems.

Mat-Vac Technology, Inc.

P.O. Box 160

Flagler Beach, FL 32136-0160

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Diffuse reflectance system

A new fiberoptic remote, near-IR reflectance system from Galileo is intended to be used with virtually any IR spectrometer. It was designed to achieve high sensitivity and excellent photometric accuracy and covers the spectral range of 0.9-2.5 μm

using low-OH silica fiber. The system is said to excel at analyzing highly scattering samples such as powders, emulsions, slurries, papers, fabrics, nonwovens and pharmaceutical tablets.



These samples are frequently difficult to analyze with traditional transmission or internal reflectance techniques. Both contact and noncontact measurements are possible. The system incorporates an optimized light-delivery and recovery optical design to provide the highest sensitivity for demanding applications. It eliminates the specular component of the reflection, leading to excellent photometric accuracy and facilitating quantitative analysis, the company claims. Constructed of 316 stainless steel and with a sapphire window, it is extremely robust and inert, permitting use in most process-monitoring situations.

Galileo Electro-Optics Corp.

Galileo Park, P.O. Box 550

Sturbridge, MA 01566

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Flexible borescope

Titan has modified its well-known F series borescope by adding a high-powered

halogen light source, fiberoptic bundle, video camera and adapter. The video adapter option is designed to be used with 95% of all competitive borescopes presently on the market. The basic borescope, normally supplied with a flashlight handle for portability, includes an adjustable, focusable eyepiece and a 24-in. flexible viewing tube with both straightforward and 90° vision. Having excellent optical resolution and capable of withstanding temperatures up to 200°F, these borescopes are useful in

shop applications where internal inspections and quality control functions require optical viewing inside parts with aperture openings as small as 0.312 in. Typical applications include the internal viewings of engines and inspection of foundry castings and machine parts.

Titan Tool Supply Co., Inc.

P.O. Box 569

Buffalo, NY 14207-0569

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UHV gate valves

Series 75.2 UHV gate valves from VAT are designed to protect the vacuum integrity of beam lines, accelerators and complex storage rings by preventing accidental air intrusions from entering other system components. These fast-closing ultra-high-vacuum gate valves close within 7 to 10 ms from signal sensing, and seal leaktight to 1×10^{-9} mbar x l/sec. Measuring only 70 mm flange-to-flange, they can be provided complete with vacuum sensors and a modular controller that can be integrated easily into beam-line safety systems. Rated for 2,000 cycles before maintenance, the valves are bakeable to 250°C in the open position and allow the gate and bellows to be serviced without breaking the system down. Available with flange sizes from 2.75 to 8 in. OD and custom slit sizes from 1.97 to 4.72 in. wide, the valves seal vacuum-tight against atmosphere in either direction.

VAT Inc.

500 West Cummings Park
Woburn, MA 01801

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Portable oxygen analyzer



The Thermo CG1000, a portable oxygen analyzer designed for industrial and laboratory applications, is claimed to provide a wide operating range (0.1

ppm to 100%), fast response time and advanced digital I/O capabilities. An electronic flow sensor with digital indication eliminates the need for flowmeters. This improves accuracy and cuts down on maintenance. You can even view the sample gas flow on the front panel display. Automatic pressure compensation improves the accuracy of readings, especially when you run calibration gases

from a positive pressure and then sample a process under vacuum. The CG1000 also includes an optional built-in pump to pull samples from processes under vacuum. This saves time because you do not need separate analyzers or to change your analyzer setup to switch between positive pressure samples and samples under vacuum.

**Ametek, Process & Analytical
Instrument Div.
150 Freeport Road
Pittsburgh, PA 15238**

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Data acquisition module

LabCom Version 2.0, an RS-232 data-acquisition module, joins the Data Acquisition System, a family of modules providing data acquisition support for Origin. Now RS-232 instruments can be connected to your computer easily. In LabCom, the RS icon and associated dialog boxes provide a user-friendly environment for RS-232 application development. Also included is the User Interface Module (UIM), an object-oriented tool that provides controls and displays to enhance the data acquisition application. UIM objects possess user-defined properties, allowing complete control over the appearance and function of each object. As with the RS icon, these properties are configured in associated dialog boxes. UIM and RS objects may also be controlled using Origin's powerful scripting language, LabTalk, providing further development of custom applications.

**Microcal Software, Inc.
One Roundhouse Plaza
Northampton, MA 01060**

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New literature

Specialty chemicals catalog

The "Advanced Specialty Inorganics Catalog" highlights Cerac's complete line of specialty inorganic chemicals, metals, alloys and ceramics. It includes information on both R&D lots and production quantities; a new section has been added with special pricing

on more than 900 items. An alphabetical product listing allows for quick chemical referencing; each chemical is identified by formula, particle size and purity level. This 30th anniversary, 390-page reference book also features information on the company's full range of manufacturing capabilities and quality control processes, including sophisticated analytical testing.

**Cerac, Inc.
P.O. Box 1178
Milwaukee, WI 53201**

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Optics catalog

The new Rolyn catalog contains 130 pages of optics data, performance graphs and ordering information, with many new items added in the past year. Included in the product categories are: simple and compound lenses, prisms, optical flats/flat glass, flat and concave mirrors, absorption and thin-film filters, beamsplitters, reticles, instruments and hundreds of other items. Claimed to be the largest and oldest supplier of "off-the-shelf optics" in the world, Rolyn offers 24-h delivery on stock items. The firm also provides custom cutting, coating, edging and complete fabrication if necessary. Introductory pages include useful 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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The description of the 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 about a particular product, a Reader Service Card is attached between pages 38 and 39.