

Optical/Vision Systems

Instruments that fall under the category of optical and vision systems are varied. The one characteristic that they all have in common, however, is their ability to inspect an article using sight. To name a few, there are mountable cameras for coordinate measuring machines, optical comparators, microscopes, and noncontact video and laser systems. Some of these tools are even capable of gathering, storing and analyzing data.

Another characteristic of optical/vision systems is that they're nondestructive. Several testing methods fall under the category of nondestructive evaluation; basically, any technique that doesn't require you to damage the part is considered NDT. This includes everything from detecting edges with an optical comparator to illuminating flaws through liquid penetrant testing. In fact, it's likely that your organization already uses nondestructive testing in some form; think microscopes, magnifying glasses, borescopes, thickness gages or even digital cameras.

The companies listed in the following directories manufacture optical/vision systems and/or offer nondestructive evaluation instruments and services.

Optical/Vision Systems Guide

Optical Dimensional Measurement Systems

Directorypage 74

This directory provides contact information and Web addresses for optical dimensional manufacturers and a brief description of each company's products.

Vision Systems Directorypage 78

The Vision Systems Directory gives the name, address, phone and fax numbers, and Web address of companies that manufacture measuring and detecting microscopes, miniature cameras, high-resolution cameras mounted on CMMs, X-ray equipment and other similar instruments. Brief descriptions of these products are also available at www.qualitydigest.com/directories. (Please note that not all companies provided us with descriptions.)

Nondestructive Testing Directorypage 83

This directory of nondestructive testing providers includes the

company name, city, state, phone and fax numbers, Web address, and a listing of related services, if provided.

As with all *Quality Digest* directories, the Optical/Vision Systems Guide is in no way meant to endorse or exclude a particular organization. Rather, it's meant to be used as the starting point in the data-gathering process. Readers are encouraged to contact the companies directly for more information and to ask for—and check—references.

Glossary

A2LA—American Association for Laboratory Accreditation

ACIL—American Council of Independent Laboratories

ANSI—American National Standards Institute

ASME—American Society of Mechanical Engineers

Brightfield—an illumination technique that provides flat, even lighting of the field of view

Confocal microscope—a visual inspection device that uses white light or lasers to construct a highly detailed map of a 3-D sample, optically sectioning a given sample point-by-point and layer-by-layer

Darkfield—an illumination technique that lights the specimen surface from an oblique angle to highlight surface problems

IEEE—Institute of Electrical and Electronics Engineers

NIST—National Institute of Standards and Technology

Optical comparator—a visual inspection device that uses large ground-glass screens for imaging, offering a larger field of view than microscopes at a somewhat lower resolution

SRM—standard reference material

The information contained in *Quality Digest* directories, plus some additional information, is available online at www.qualitydigest.com/directories.

Absolute Clarity & Calibration LLC
109 Main St.
Terryville, CT 06786
Ph. 860-583-0502 Fax 860-314-1851
www.absoluteclarity.com

Acu-Gage Systems
P.O. Box 6178
Manchester, NH 03108
Ph. 800-422-2283 Fax 603-626-1277
www.acu-gage.com

Acu-Gage Systems manufactures one-, two- and three-axis noncontact video and laser-based measuring systems and touch probe systems. The video/laser combination allows for full 3-D contouring of machined, cast or molded parts. Automation options are field-retrofittable.

AEI North America Inc.
1583 E. Genesee St. Road
Skaneateles, NY 13152
Ph. 315-217-0164 Fax 315-217-0166
www.aeinorthamerica.com

Manufacturer and distributor of remote viewing tools, such as borescopes, fiberoscopes and videoscopes, with a variety of inspection accessories. Repairs on all makes are available.

Ahlegian Precision
10106 Chipmunk Ridge Drive
Concord, OH 44077
Ph. 440-352-9921 Fax 440-352-9929
www.ahlegian.com

Ahlegian Precision provides custom and standard overlay charts and glass replacement screens for any make or model of optical comparator. The company is an exclusive distributor of optical comparators and hard gages for Dorsey Metrology International.

American Technica Inc.
P.O. Box 111
Glen Head, NY 11545
Ph. 800-924-0815 Fax 516-741-7321
www.styltheadquarters.com

Angrave Metrology & Supply
P.O. Box 190
Bethlehem, CT 06751
Ph. 800-827-7487 Fax 203-266-7577
www.angrave.com

Angrave Metrology & Supply calibrates, distributes and repairs measuring tools, including thread and plain gages, optical tools, force and hardness gages, micrometers and calipers. RAM Optical and Dorsey Metrology representative. Surface plate lapping and calibration on-site service.

Applied Technical Services
1280 Field Parkway
Marietta, GA 30066
Ph. 678-662-9018 Fax 478-296-9391
www.atslab.com

Complete optical/vision line representing Mitutoyo, Starrett and S-T Industries.

Basler Inc.
740 Springdale Drive, Ste. 100
Exton, PA 19341
Ph. 610-280-0171 Fax 610-280-7608
www.basler-vc.com

BETA LaserMike
8001 Technology Blvd.
Dayton, OH 45424
Ph. 937-233-9935 Fax 937-233-7284
www.betalasermike.com

Beta LaserMike designs, manufactures and services precision measurement and control systems for the wire and cable, fiber optic, tube/pipe/profile, and piece part inspection markets. We offer noncontact, dimensional measurement gages, process controllers and other products for online and off-line inspection applications.

BLUM Laser Measuring Technology Inc.
4144 Olympic Blvd.
Erlanger, KY 41018
Ph. 859-344-6789 Fax 859-344-6799
www.blumlmt.com

BLUM LMT Inc. features laser systems for tool setting, breakage detection and wear check at full operating speed. Thermal growth of machine and tool are automatically compensated into the CNC control. Work piece probes for setting of work piece coordinate system can withstand up to two G's of travel force without triggering.

Z-NANO probe for tool setting, breakage control and compensation of terminal thermal expansion.

Bobier Tool Supply Inc.
G-4163 Corunna Road
Flint, MI 48532
Ph. 800-288-2871 Fax 810-732-3909
www.bobiertool.com

Optical comparators, horizontal and vertical beam with digital readouts and geometric measuring software. Video measuring systems, CNC, joystick or manual with digital readouts and geometric measuring with video edge detection.

Brown & Sharpe
200 Frenchtown Road
North Kingstown, RI 02852
Ph. 800-766-4673 Fax 401-886-2727
www.brownandsharpe.com

Brown & Sharpe provides coordinate measuring systems, including optical gaging products and multisensor probe systems for fast, accurate inspection of complex parts.

Brown & Sharpe TESA
200 Frenchtown Road
North Kingstown, RI 02852
Ph. 800-283-3600 Fax 401-886-2553
www.brownandsharpe.com

Brown & Sharpe TESAScan and profile machines for round part inspection are fully automatic and easy to program. The system uses opto-electronic projection that enables the measurement of all common round-part geometry including intricate forms like radii and angles. Brown & Sharpe's TESASCOPE line of optical comparators offers accurate measurement of complex parts.

Bytewise Measurement Systems
1150 Brookstone Centre Parkway
Columbus, GA 31904
Ph. 706-323-5142 Fax 706-323-0178
www.bytewise.com

Bytewise offers noncontact measurement systems that meet production, quality control, design and testing needs of rubber, wire, steel, plastic and aluminum extruders, and tire manufacturers. Bytewise currently offers an online system capable of accurately measuring complete, 360-degree profiles of extruded products.

Cincinnati Automation Ltd.
1405 Jamike Ave., Ste. 5
Erlanger, KY 41018
Ph. 800-758-1141 Fax 859-371-4954
www.cincinnatiautomation.com

Supplier of complete machine vision systems for inspection applications. Also provides turnkey automated inspection machines, vision-guided robots, laser-marking systems and automation services.

Coherix
3100 44th St. S.W.
Grandville, MI 49418
Ph. 800-248-9748 Fax 616-257-2555
www.coherix.com

Coherix designs and develops precision process analysis and measuring devices, utilizing patented holographic imaging techniques to make precision parts and measurements. Coherix allows manufacturers to measure surfaces of engineered components, bringing process control capability to manufacturing production on the plant floor.

Corning Tropel Corp.
60 O'Connor Road
Fairport, NY 14450
Ph. 585-388-3416 Fax 585-388-3414
www.tropel.com

Corning Tropel Corp. manufactures optical noncontact surface form metrology instruments. These processes include grinding, honing, polishing, stamping, turning, lapping, superfinishing, boring, reaming and molding.

DALSA
605 McMurray Road
Waterloo, ON N2V 2E9 Canada
Ph. 519-886-6000 Fax 519-886-8023
www.dalsa.com

Data Optics Inc.
115 Holmes Road
Ypsilanti, MI 48198

Ph. 800-321-9026 Fax 734-483-9879
www.dataoptics.com

Data Optics Inc. manufactures precision optical test instruments, including the Model C optical distortion tester, the Super Gage linear measurement gage and miniature visible and UV spectrum spectrometers, spectrophotometers and spectroradiometers. Data Optics also manufactures precision optical research equipment, including optical benches, table rails, carriers, rod mounts, rod-mounted accessories, spatial filters, environmental isolation enclosures and fringe control systems.

Dave Jones Machinists
1815 N. Cedar St.
Mishawaka, IN 46545
Ph. 574-256-5500 Fax 574-256-1543
www.sight-pipe.com

Modular inspection stands offer internal inspection solutions that range from simple hand-held SIGHT-PIPE and Boreview holding fixtures to precision measuring and or positioning devices.

Deltronic Corp.
3900 W. Segerstrom Ave.
Santa Ana, CA 92704
Ph. 800-451-6922 Fax 714-641-0946
www.deltronic.com

Deltronic Corp. produces gaging products for measurement from basic cylindrical plug gages and thread gages to optical comparators and video projectors.

Diagnostic Instruments
6540 Burroughs St.
Sterling Heights, MI 48314
Ph. 586-731-6000 Fax 586-731-6469
www.diagnic.com

Diagnostic Instruments produces micro- and macro-imaging accessories, including scientific-grade digital cameras, optical couplers for camera-to-microscope coupling, substage illuminators and support stands for stereo microscopes. Spot digital cameras for microscopy.

Dimensional Inspection Labs
43154 Christy St.
Fremont, CA 94538
Ph. 510-623-8940 Fax 510-623-8655
www.d-i-l.com

Manual and automated vision systems. Vision system software retrofitting. Calibration and training.

Dorsey Metrology International
53 Oakley St.
Poughkeepsie, NY 12601
Ph. 845-454-3111 Fax 845-454-3888
www.dorseymetrology.com

Dorsey manufactures screens from 12 in. to 80 in., charts, digital readouts, CNC measurement systems, tooling, coordinate X-Y stages with universal mounting abilities, optical CMM, factory repair and calibration services.

DOX Calibration Inc.
23342 Madero Road, Ste. E
Mission Viejo, CA 92691
Ph. 877-236-9225 Fax 949-472-4379
www.doxcalibration.com

Dunkley International
1910 Lake St.
Kalamazoo, MI 49001
Ph. 800-666-1264 Fax 269-343-5614
www.dunkleyintl.com

Turnkey vision systems designed for your specific product. We design, write software, set up the operator interface, build the system and commission it on your floor.

Euro-Tech Corp.
N. 48 W. 14170 Hampton Ave.
Menomonee Falls, WI 53051
Ph. 262-781-6777 Fax 262-781-2822
www.eurotechcorp.com

Euro-Tech represents European-made gages and tooling products such as arbors, chucks, drills, taps, measurement systems and accessories. Euro-Tech also offers a cutting tool inspection system (PG 1000) and tooling accessories (Power Block III and PG 102) manufactured in the United States.

Flexbar Machine Corp.
250 Gibbs Road
Islandia, NY 11749

Ph. 800-879-7575 Fax 631-582-8487
www.flexbar.com

Opti-Flex specializes in manual, semi-automatic and automated video systems. Our product line includes affordable video-zoom scopes and stage-based systems. System features provide image capture, e-mail, video edge detection and CNC control.

Ford Tool & Gage Corp.
5401 N. 118 Court
Milwaukee, WI 53225
Ph. 414-466-4243 Fax 414-466-4270
www.fordtoolandgage.com

Optical comparators and video measurement systems.

Fred V. Fowler Co. Inc.
66 Rowe St.
Newton, MA 02466
Ph. 800-788-2353 Fax 617-332-4137
www.fryerco.com

A supplier of quality measuring and inspection instruments and precision tools. Products focus on height and length measuring, bore gaging and calibration instruments. We also offer quality hand-held tools and gages.

Fryer Co. Inc.
11177 Dundee Road
Huntley, IL 60142
Ph. 800-421-6732 Fax 847-669-2056
www.fryerco.com

Provider of test, measuring and inspection equipment systems. Products include Nikon Nexiv CNC 3-D video measuring systems, Starrett optical comparators and CMMs, Trimos height gages, Bowers bore gages, Ametek force gages, Nikon toolmaker's measurescopes/stereo microscopes/optical comparators, and digital image analysis and archiving/annotation systems. Data collection and SPC.

Gaertner Scientific Corp.
8228 McCormick Blvd.
Skokie, IL 60076
Ph. 847-673-5006 Fax 847-673-5009
www.gaertnerscientific.com

Measuring microscopes for noncontact high-precision industrial measurements of linear dimensions. X axis, Y axis and Z axis. Light sectioning microscope for measuring grooves, step height and small dimensions.

Gage-Line Technology Inc.
121 La Grange Ave.
Rochester, NY 14613
Ph. 800-291-3724 Fax 585-458-0524
www.gage-line.com

Custom and standard comparator chart gages, fixtures, stages, contour tracers, calibration scales, grids and kits. All sizes of plastic, glass or film screens. NIST-traceable. Calibrations available. Customer chart inspection and calibration service. Custom monocular scopes with reticles and pocket comparators.

GENIX Corp.
2911 Emerald Drive
Kalamazoo, MI 49001
Ph. 269-341-4242 Fax 269-341-4242
www.geocities.com/genixcorp

GlobalSpec
350 Jordan Road
Troy, NY 12180
Ph. 518-880-0200
www.globalspec.com

Heidenhain Corp.
333 State Parkway
Schaumburg, IL 60173
Ph. 847-490-1191 Fax 847-490-3931
www.heidenhain.com

Heidenhain offers digital height gages and linear and rotary encoders, CNC controls, and machine tool inspection equipment. Digital readouts and gage stands are also offered.

HYTEC Inc.
110 Eastgate Drive
Los Alamos, NM 87544
Ph. 505-661-3000 Fax 505-662-5179
www.hytecinc.com

HYTEC Inc. offers products and services for nondestructive testing, material analysis, first article inspection, reverse and models-based engi-



neering, and mass customization manufacturing. FlashCT is a high-speed X-ray computed tomography scanning system for generating high-resolution 2-D and 3-D data sets. PRISM, an electronic speckle pattern interferometer, is designed to measure residual stress and small deformations and vibrations.

Infinity Photo-Optical Co.

2530 Frontier Ave.
Boulder, CO 80301
Ph. 877-636-6507 Fax 303-440-4144
www.infinity-usa.com

Infinity Photo-Optical Co. manufactures long-distance and continuously focusable microscopes, macro systems, video inspection lenses and internal-focusing devices for industrial inspection, process/product monitoring, machine vision, quality control, advanced imaging, noncontact gaging/inspection and laser/medical research.

JAI PULNIX

1330 Orleans Drive
Sunnyvale, CA 94089
Ph. 800-445-5444 Fax 408-747-0660
www.pulnix.com

PULNIX offers standard and camera link-format cameras suited for optical gaging. These cameras include the TM-6710 (and camera link version), TM-1020-30 and CL version, and TM-1320 and CL version.

Karl Storz Endoscopy America

600 Corporate Pointe, Fifth Floor
Culver City, CA 90230
Ph. 800-421-0837 Fax 310-410-5527
www.karlstorz.com

Karl Storz remote visual inspection equipment (videoscopes, fiberscopes, borescopes) makes it possible to see inside difficult-to-access areas. Our high-resolution industrial products perform advanced image management, analysis and documentation functions, including image storage, voice annotation and e-mail. Kits and accessories are designed for industrial durability.



Leica Geosystems, Metrology Division

4855 Peachtree Industrial Blvd.
Norcross, GA 30092
Ph. 800-367-9453 Fax 770-734-1394
www.leica-geosystems.com/metrology

Leica Geosystems provides industrial measurement systems, enabling customers to measure large components to tolerances in the hundredth-millimeter range and process the data directly in CAD systems. Metrology products for the industrial environment. Laser trackers, theodolites, laser scanners, inclination sensor, video grammaetry systems and software for industrial metrology.

Lightway Systems Corp.

59 Wellandvale Road
St. Catharines, ON L2S 3Y2 Canada
Ph. 905-688-7102 Fax 905-688-7102
www.lightwaysystems.com

LMI Technologies Inc.

205-7088 Venture St.
Vancouver, BC V4G 1H5 Canada
Ph. 604-940-0141 Fax 604-940-0793
www.lmint.com

Machine vision dimensional and surface inspection of sheet metal, composites, plastics and tools. Noncontact vision gaging of assemblies and subassemblies. In-process monitoring and control of manufacturing operations.

LMI Technologies USA Inc.

562 Lakeland Plaza, Ste. 126
Cumming, GA 30040
Ph. 770-888-6586 Fax 248-355-3283
www.lmint.com

LMI Technologies offers a noncontact laser-based measurement technique to accurately measure part dimensions and tolerances. LMI offers single-point lasers as well as CCD line and sweeping beam technologies for 2-D inspection and on-line monitoring.

Mahr Federal Inc.

1144 Eddy St.
Providence, RI 02905
Ph. 800-333-4243 Fax 401-784-3246
www.mahr.com

Mahr Federal provides dimensional gages, including hand-held measuring tools; dial and digital indicators; mechanical, electronic, air and height gages; length metrology; dimensional standards; gage calibration systems; laboratory gages; geometry and form metrology; surface finish and contour metrology; gear metrology; custom gages; laser, optical and touch-probe CMMs; gage repair and calibration; and rotary stroke bearings.

Marposs Corp.

3300 Cross Creek Parkway
Auburn Hills, MI 48326
Ph. 888-627-7677 Fax 248-370-0621
www.marposs.com

Marposs manufactures gages and instruments for use in measurement of machined parts and on machine tools.

Max Levy Autograph Inc.

220 W. Roberts Ave.
Philadelphia, PA 19144
Ph. 800-798-3675 Fax 215-842-3637
www.maxlevy.com

Max Levy Autograph manufactures patterned optics, reticles, and metrology scales, grids, and targets. MLA specializes in ultra-precision patterned optical and mechanical components, NIST-traceable metrology standards and calibration services, diamond contour machining, electroforming, MIL-SPEC, photochemical etching, and ceramic and flexible circuits.

MetricVision

8500 Cinder Bed Road, Ste. 150
Newington, VA 22122
Ph. 703-541-2623 Fax 703-550-2949
www.metricvision.com

MetricVision's products are based on high-precision coherent laser radar technology. Measurement and inspection systems are precise, noncontact, targetless, automated and fully integratable with CAD/CAM software.

Metris USA

1070 E. Avon Road
Rochester Hills, MI 48307
Ph. 613-258-6271 Fax 613-258-9117
www.metris-usa.com

Metronor Inc.

2354 Browns Point Blvd. N.E.
Tacoma, WA 98422
Ph. 253-896-3000 Fax 253-660-7993
www.metronor.com

Metronor's measuring capability enables accurate shop-floor measurement of both large and small volumes. Metronor can check and verify standards, troubleshoot CNC machine geometries in X, Y, Z, and can be used for in-line process control and end item product verification.

Micro-Technic Instruments Inc.

319 Queen Anne Road
Teaneck, NJ 07666
Ph. 800-692-8252 Fax 201-692-7941

Optical and electro-optical systems for dimensional quality control for industry. Machine vision systems for process control, microscopes, CCTV and coordinate measuring instruments.

Micro-Vu Corp.

7909 Conde Lane
Windsor, CA 95492
Ph. 707-838-6272 Fax 707-838-3985
www.microvu.com

Micro-Vu Corp. manufactures precision measuring systems for inspection and quality control applications. Micro-Vu offers high-accuracy automated vision systems, manual video systems and optical comparators. InSpec metrology software provides a user interface incorporating powerful edge tools, tolerancing and reporting while maintaining an intuitive interface.

Mitutoyo America Corp.

965 Corporate Blvd.
Aurora, IL 60504
Ph. 630-820-9666 Fax 630-820-7403
www.mitutoyo.com

Mitutoyo America Corp. offers metrology products, software, service and support. Products include calipers, micrometers, indicators, quality control software, form-inspection instruments, CMMs, digital readout systems, hardness testing instruments, height gages, optics, vision inspection systems, precision-measuring microscopes, profile projectors, toolmakers' microscopes, vision inspection systems and more.

MSI-Viking Gage LLC

321 Tucapau Road
Duncan, SC 29334
Ph. 864-433-9771 Fax 864-433-9775
www.msi-viking.com

Optical comparators, vision systems, multi-sensor systems.

msiVision

P.O. Box 9028
Scheneectady, NY 12309
Ph. 518-346-7136 Fax 518-346-4134
www.msvision.com

Line-scan and 2-D vision systems, cameras, frame grabbers, lenses, lighting and software. Automated inspection and measurement systems utilizing vision, laser and other noncontact measurement technologies.

MTI Instruments Inc.

325 Washington Ave. Ext.
Albany, NY 12205
Ph. 800-342-2203 Fax 518-218-2506
www.mtiinstruments.com

MTI Instruments offers noncontact sensor gaging systems using optical technologies such as laser and fiber optic sensing to measure displacement, proximity, position, thickness, and runout. Products include the Microtrak 7000 and Microtrak II laser displacement systems, MTI-2000 a noncontact position and vibration sensor.

Mycrona of North America Inc.

1750 B Todd Farm Drive
Elgin, IL 60123
Ph. 847-531-7500 Fax 847-531-7501
www.mycrona.net

The Mycrona product line includes a great variety of measuring ranges and accuracies. Each of our machines is CNC controlled and has a modular construction. A camera, being the optical sensor, is a standard feature of all models. If you require multi-sensor, a touch probe, laser or white light can be added.

Nationwide Gage Calibration Inc.

159 Covington Drive
Bloomington, IL 61018
Ph. 800-883-4243 Fax 630-529-9087
www.natcal.com

Nationwide Gage Calibration Inc. retrofits optical comparators with a digital readout system. NGC technicians fit your comparator with a system that allows you to measure down to 50 millionths of an inch in addition to measuring angle, diameter and radius.

NDT Technologies Inc.

20275 Clark Graham
Baie d'Urfe, Montreal, QC H9X 3T5 Canada
Ph. 514-457-7650 Fax 514-457-7652
www.ndt.ca

Automated nondestructive testing and measuring systems for industrial applications. We design, manufacture, install and service testing and measuring systems. We use eddy currents, laser/optics, ultrasound and radiology testing methods.

Nikon Instruments Inc.

1300 Walt Whitman Road
Melville, NY 11747
Ph. 800-526-4566 Fax 631-547-8559
www.nikonusa.com

Nikon Instruments Inc. is a manufacturer of optical and video inspection and measuring equipment. Products include Nexiv and Nexiv VMR automated video inspection systems, E-MAX metrology software, optical comparators, toolmakers' microscopes, stereo microscopes, auto-collimators, digital height gages and metallurgical microscopes.

Olympus America Inc.

2 Corporate Center Drive
Melville, NY 11747
Ph. 800-446-5967 Fax 631-844-5111
www.olympusamerica.com

Manufacturer of optical microscopes, including metallurgical, stereo, measuring, inspection, LCD, metallographic and photomicroscopes. Also has microscope accessories, optical and mechanical components, digital cameras, and imaging software.

Opticons Technology Inc. (OPTEK)

P.O. Box 408
Blairstown, NJ 07825
Ph. 800-606-7835 Fax 908-362-5966
www.optek.net

Manufacturer of OPTEK VideoMic noncontact video coordinate measuring systems and OPTEK InnerVision X-ray coordinate measuring systems. OPTEK high-speed, high-accuracy video and X-ray measurement systems automatically measure dimensional aspects of flex and rigid PCBs for quality assurance and process control.

Optical Gaging Products Inc.

850 Hudson Ave.
Rochester, NY 14621
Ph. 800-647-4243 Fax 585-544-0131
www.ogpnet.com

Optical Gaging Products Inc. designs and produces metrology systems that use video, laser and touch probe technologies to measure critical dimensions of manufactured parts. Products include video measuring systems, multisensor measuring systems, optical comparators and laser profile scanners. A suite of metrology software applications supports these products.

Optimet

260A Fordham Road
Wilmington, MA 01887
Ph. 877-446-0814 Fax 978-657-6054
www.optimet.com

Optimet develops and manufactures 3-D noncontact measurement equipment. Optimet's product line includes the ConoProbe point sensor, ConoLine line sensor and the MiniConoscan full 3-D noncontact measurement system.

Perception Inc.

47827 Halyard Drive
Plymouth, MI 48170
Ph. 734-414-4735 Fax 734-414-4700
www.perception.com

Pinpoint Laser Systems

3 Graf Road, Ste. 14
Newburyport, MA 01950
Ph. 800-757-5383 Fax 978-462-3561
www.pinpointlaser.com

Pinpoint Laser Systems manufactures and sells precision laser equipment for leveling, measurement and alignment. Standard products and custom solutions are available.

PPT VISION Inc.

12988 Valley View Road
Minneapolis, MN 55344
Ph. 952-996-9500 Fax 952-996-9501
www.pptvision.com

PPT VISION Inc. designs, manufactures, markets and integrates 2-D and 3-D machine vision-based automated inspection systems for manufacturers of automotive and electronic components, semiconductors, packaging, medical devices, pharmaceuticals, consumer goods and plastics.

Precision Calibration Services Inc.

29912 Caltriot Ave.
Roseville, MI 48066
Ph. 586-779-4516 Fax 586-779-9391
www.precisioncalibration.com

Precision Measurement Co.

18 Terrace Road
Plymouth Meeting, PA 19462
Ph. 610-279-4242 Fax 610-279-5169
www.precisionmeasurement.app.com

Optical comparator sales, service and calibration.

Prior Scientific Inc.

80 Reservoir Park Drive
Rockland, MA 02370

Ph. 800-877-2234 Fax 781-878-8736
www.prior.com

Prior's ZoomMaster 65 stereo zoom microscope offers a magnification range of 3.5x to 225x. Image remains in focus throughout the zoom range.



Quality Control Solutions
43339 Business Park Drive, No. 101
Temecula, CA 92590
Ph. 888-355-7274 Fax 909-676-8790
www.qc-solutions.com

Questar Corp.
6204 Ingham Road
New Hope, PA 18938
Ph. 800-247-9607 Fax 215-862-0512
www.questarcorporation.com

The Questar long-distance microscope is the major component of our measuring systems. The systems are optical noncontact. Available in different working ranges from 6 in. to infinity.

R & R Sales
P.O. Box 161
Grand Haven, MI 49417
Ph. 800-847-6045 Fax 616-847-6082
www.cnmfixture.com

RAM Optical Instrumentation, a QVI Co.
615 S. Madison Drive
Tempe, AZ 85281
Ph. 480-505-3506 Fax 480-966-7117
www.ramoptical.com

RAM Optical Instrumentation Inc. offers noncontact inspection and measurement systems. Sprint CNC systems in compact benchtop models perform automatic measurements. Sprint systems with manual translation stages can be configured for inspection or semi-automatic measurement. VDM is a compact visual inspection system. OVP brings video inspection to CMMs.

Reliable Measuring Systems Inc.
P.O. Box 2881
Big Bear Lake, CA 92315
Ph. 909-878-4458 Fax 909-878-5048
www.reliablemeasuringsystems.com

Renishaw Inc.
5277 Trillium Blvd.
Hoffman Estates, IL 60192
Ph. 847-286-9953 Fax 847-286-9974
www.renishaw.com

High-performance solutions for measurement and increased productivity, such as probe systems for inspection on CMMs; laser and automated ballbar systems for performance measurement and calibration; systems for job setup, tool setting and inspection on machine tools; encoder systems or high-accuracy position feedback; and Raman spectroscopy systems.



S-T Industries Inc.
301 Armstrong Blvd. N.
St. James, MN 56081
Ph. 800-326-2039 Fax 507-375-4503
www.stindustries.com

We manufacture a complete range of 14 in., 16 in., and 30 in. optical comparators, vertical beam and horizontal beam models. Most models available with motorized stages and CNC controls.

Sensor Products Inc.
188 Route 10 W., Ste. 307
East Hanover, NJ 07936
Ph. 800-755-2201 Fax 973-884-1699
www.sensorprod.com

Maker and distributor of color-changing sensors and interpretive software for tactile pressure measuring solutions. Pressure-indicating sensor films reveal tactile force distribution and magnitude. Scanning equipment, including real-time systems, used in conjunction with film and other proprietary sensors.

Sight-Pipe Optical Systems
1815 N. Cedar St.

Mishawaka, IN 46545
Ph. 574-256-3500 Fax 574-256-1543
www.sight-pipe.net

Sight-Pipe Optical Systems division offers inspection solutions for viewing and gaging internal surfaces.

Soft Automation Inc.
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Milford, MI 48380
Ph. 877-819-9900 Fax 248-684-5648
www.soft-automation.com

Our software package Automation Manager uses either touch sensors like LVDTs and supports a variety of camera types. Dimensions are logged, SPC charts displayed and pass fail IO can control the manufacturing process.



Solarius Development Inc.
550 Weddell Drive, Ste. 3
Sunnyvale, CA 94089
Ph. 800-731-1220 Fax 408-541-0153
www.solarius-inc.com

Solarius Development manufactures optical and laser-based metrology systems for non-contact 3-D surface measurement with submicron accuracy.

The L.S. Starrett Co.
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Ph. 800-784-2887 Fax 978-249-8495
www.starrett.com

Starrett's broad product line of optical comparators includes benchtop and floor standing machines offered in both horizontal and vertical beam designs, readout options from LCD scales to cutting-edge computer-based measurement systems, viewing screens from 12 to 40 in., manual, motorized or fully automatic machines.

Start International
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Ph. 800-259-1986 Fax 972-248-1911
www.startinternational.com

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Strainoptic Technologies Inc.
108 W. Montgomery Ave.
North Wales, PA 19454
Ph. 215-661-0100 Fax 215-699-7028
www.strainoptic.com

Strainoptic manufactures specialized testing instruments for evaluation of retardation, stress birefringence and residual stress in transparent plastics, glass and other materials. Flatness or roll wave gages are also offered for quality control of optical distortion in flat glass products. Polariscopes, polarimeters, strain viewers and specialized instruments for measuring surface stress and edge stress.

Suburban Tool
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Auburn Hills, MI 48326
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www.subtool.com

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www.taylor-hobson.com

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www.thales-optem.com

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West Conshohocken, PA 19428
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www.vieweng.com

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