

## A Service Offensive

Carl Zeiss Industrielle Messtechnik GmbH has acquired a 55 % share in the metrology service provider 3D-Quality Systems GmbH Aalen. The new company Carl Zeiss 3D Metrology Services GmbH, Aalen has set its sights on acting as an international complete service provider in the field

## Carl Zeiss **3D** Metrology Services

of measuring technology. After focusing the competences and combining the metrology services of the two companies, the newly founded company will be the world's biggest service company in industrial measuring technology. The product portfolio in-

cludes training and seminars on length measuring technology and start-up support in new production lines in industry. Artifact calibration, contract measurement and programming, fixtures, development and construction of clamping and loading systems are other features. The

program of providing clients with complete turn-key systems also includes the integration of the software for quality management systems in corporate networks and the creation of special, customized software.

## Partnership in the PC



Fig. 1: Even unusual lens shapes can be produced without risk and with excellent quality via the remote edging service.

With the Zeiss Partner Network, an online information, communication and order forum for ophthalmic products, Carl Zeiss has taken a totally new, innovative approach to the way it communicates with some of its most important customers: eyecare professionals. The dramatic increase in the number of participants testifies to the high level of interest in information and marketing support. The Partner Network offers many different possibilities: lens ordering online, product information, a Newsletter service, photographic material, and a lot more besides.

The ZOO® Zeiss Online Order System provides eyecare professionals with a simple means of placing standard lens orders and ordering edge lenses. Transmission takes only

## Well Worth Looking Through: Compendium Online

Since the introduction of the Lens Compendium Online on the Carl Zeiss website, this "virtual handbook for eyecare professionals" has continued to grow.

A Newsletter, which can be easily ordered via the Internet, keeps anyone interested up to date by e-mail. All updates are also listed in chronological order on the Update page.

How do contrast-enhancing sun-glass lenses work? How do you work out the Abbe number? These and many other questions are answered clearly and succinctly by the Compendium Online, also using easy-to-understand illustrations.

Under the headings "All About Spectacle Lenses" and "The All-round Supplier", eyecare professionals and interested consumers can find a large amount of detailed information far exceeding the Carl Zeiss product line.

The Compendium Online can be found at [www.zeiss.de/kompendium](http://www.zeiss.de/kompendium).

a few seconds, and its receipt is immediately acknowledged. A special display provides information on the status of ordered lenses. The current version of the software can be downloaded directly from the Zeiss Partner Network.

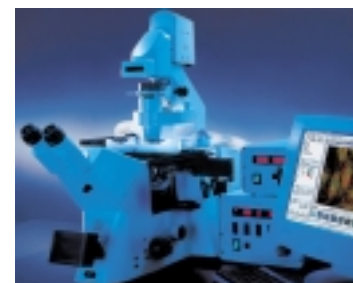
Need an ad for a club newsletter? Or posters for a window display? Or maybe brochures for a mailing campaign? No problem with the Zeiss Partner Network. This and other marketing material are available – needless to say, with an appropriate preview capability – in the Marketing/Service area of the network right around the clock. The Partner Network also provides a description of the seminars offered by the Carl Zeiss Academy, along with important details required for enrolment.

### Light Microscopy

Its excellent optics and the wide spectrum of ICS objectives, its innovative condensers and optimized fluorescence, its unusual diversity of documentation and attachment possibilities, as well as its exceptional stability and unique ergonomic design make the Axiovert® 200 microscope ideal to meet the increased demands now being made on microscopy workstations. The new LD condensers for DIC, phase and Varel contrast cover all applications. For fluorescence applications, the Axiovert® 200 offers currently the best signal-to-noise ratio thanks to the patented Light Trap®. The Aqua Stop feature uses silicon rings to protect the objectives and the nosepieces from contact with liquids.



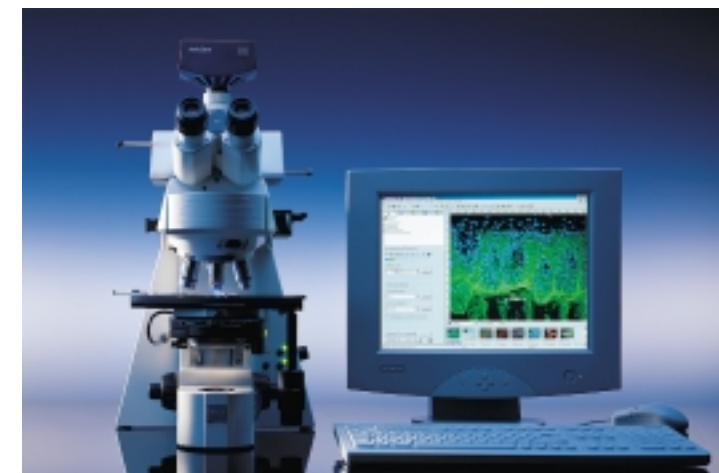
Axiovert® 200 and Axiovert® 200 M Inverted Microscopes.



Cell Observer complete system.

The Cell Observer is a complete system specially designed for Live Cell Imaging. The system, consisting of high-end microscopes, components for cell cultivation, the AxioCam® digital camera and the AxioVision® software, permits all functions required today: Time lapse, Multichannel, Z-Stack and Mark&Find. Distance measurements, angle calculations, statistics, and many more are additionally possible. The Cell Observer

truly provides new dimensions beyond 2D and 3D, with image handling/processing at different wavelengths, over time, at specific locations in the Petri dish.



Digital microscope workstation with Axioplan® 2 imaging.

The second generation of the Axioplan® 2 imaging MOT microscope offers reproducible results more quickly and conveniently. This specifically applies to fluorescence examinations. With an optimized light path, the integrated high-speed shutter permits exposure times of down to 20 ms in fluorescence. This protects the specimens against bleaching. The new motor control enables the fast, vibration-free positioning (SoftStop) of objectives, reflector modules and filter wheels to prevent pixel shift in multi-channel fluorescence, for example. Further benefits include better acceleration, higher resolution and the improved reproducibility of the Z-drive. Furthermore, the motor control permits optimized automated processes.

The Axioplan® 2 imaging can be fitted with the ELISPOT image analysis system for the automatic evaluation of Elispot assays, and integrated into the AxioPath telemicroscopy system. For multidimensional image recording, it is available with the Cell Observer. In the LSM PASCAL® or LSM 510 systems, it is also available for confocal microscopy. The many benefits which the new AxioVision® "Mark&Find" software module offers not only to microscopists in the life sciences, but also to users in the fields of materials analysis and quality control, include the ergonomic evaluation of speci-

mens, the reproducibility of measurements and the optimum utilization of the automated microscope. The software module can be used to mark positions on microscope slides and to reposition marked objects for further processing. A database is available for case-related management of the data

of several specimens and position lists. The AxioVision® software offers a particularly high level of convenience when used in conjunction with the AxioCam® digital camera and an automated microscope, such as Axioplan® 2 imaging, Axiovert® 200 M, Axioskop® 2 MOT with a motorized or encoded stage.



"Mark&Find" AxioVision® software module.

The AxioVision® "Autofocus" software module, with which the system is automatically focused on a microscope specimen, is a useful aid for the safe and reliable documentation of microscopic examinations both in the life sciences and in materials analysis and quality inspection using a digital camera. This benefit is especially useful for fluorescence photography. The software can be used in reflected and transmitted light, and in brightfield

and darkfield, without any need for special hardware. It offers the user all the outstanding benefits of automated and reproducible imaging. Optimum results are obtained when the AxioVision® "Autofocus" software is used with the AxioCam® digital camera and an automated microscope from Carl Zeiss, such as Axioplan® 2 imaging, Axiovert® 200 M or Axioskop® 2 MOT.

The new software release 4.3 for the KS ELISPOT complete systems for the microscopic examination and measurement of a wide variety of Elispot protocols meets all requirements, from high sample throughput to optimum measuring accuracy. The possibility of using various evaluation patterns for each microtiter plate is a special benefit. Since identical software is used for all system configurations, both fast routine evaluations and highly precise measurements for research can be performed at one and the same workstation. The new result report with overview images permits the correctness of the measuring results to be checked at all times.

### Surgical Products

The OPMI® pico diagnostic microscope heralds the dawn of a new generation of microscopes in ENT. This microscope provides the maximum mobility required for examinations in ENT. OPMI® pico can be reliably positioned and exactly focused. The examining physician enjoys razor-sharp images with high contrast and a visual comfort otherwise only provided by surgical microscopes. The high-intensity fiber optic illumination provides a totally homogeneous illuminated field currently unparalleled in this price category. The mobility and the tube of OPMI® pico allow convenient, ergonomic examination, and the extremely compact design ensures excellent contact between doctor and patient. The design of the microscope has been precisely tailored to meet the current requirements of innovative, patient-oriented ENT offices. A video camera can be integrated as an option to allow doctors to explain the possibilities of therapy to informed patients on a monitor and to document findings. Needless to say, powerful, state-of-the-art video technolo-



OPMI® pico diagnostic microscope.

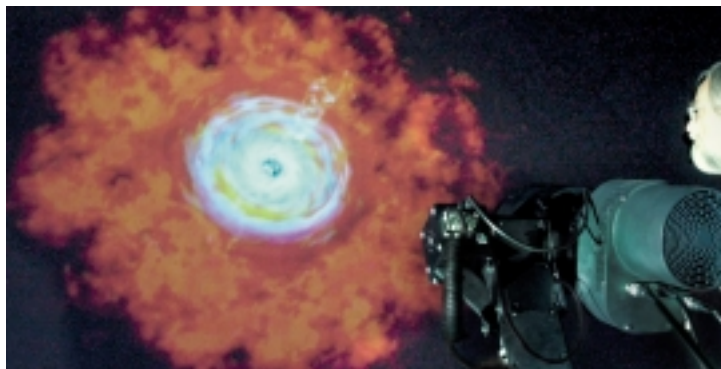
gy has been used, and operation of the camera functions is easy. Special accessories extend the application range of OPMI® pico for examinations performed in ENT. For optimum office integration, the OPMI® pico microscope can be combined with different suspension systems. The suspension system includes the power supply for the coaxial cold-light illumination and the integrated video camera.

### Spectral Sensor Systems

The CleanScan™ system permits highly sensitive, online measurement of absorption in the UV range, and at the same time direct analysis of traces of residues in the cleaning solution when cleaning processing equipment in pharmacy. The system meets the requirements of the US Food and Drug Administration (21 CFR, Part 11). The advantages of CleanScan™ include shorter conversion times in the production process and, as a result, high production capacity and lower consumption of reactor cleaning agents. The system consists of a UV diode array spectrometer from Carl Zeiss which is connected to an external flow cell via fiber optics. The cell is either integrated in the bypass or mounted on the housing with an integrated industrial computer. Safe operation is therefore also guaranteed in the vicinity of the reactor. The portable system can be transported from one reactor to the next. The CleanScan™ software supplies complete data for analysis and system management. It includes real-time presentation of concentration, absorption, diagnosis, reference libraries, online handbook and multi-point calibration. A special advantage of the software is the automatic selection of the absorption range. With this, the entire cleaning process can be monitored without changing the optical layer thickness of the flow cell.

### Planetariums

The Zeiss Universal LaserImage Projector ZULIP is a projector for digital images (stills, videos, computer graphics, animations) specially developed for the use in planetariums on the basis of Laser Display Technology (LDT). Carl Zeiss has been working for years on the development of this innovative projection technology which avoids the current drawbacks of image projection onto a dome. Laser light provides brilliant colors with a high level of saturation, and the depth of focus is virtually unlimited. The combination of the laser with special scanning technology permits a high level of brightness and superb contrast. The laser and image sources are located outside the planetarium dome. The projector head is installed near the dome center and is rotatable through 260° in azimuth and 140° in elevation. Carl Zeiss has developed a special



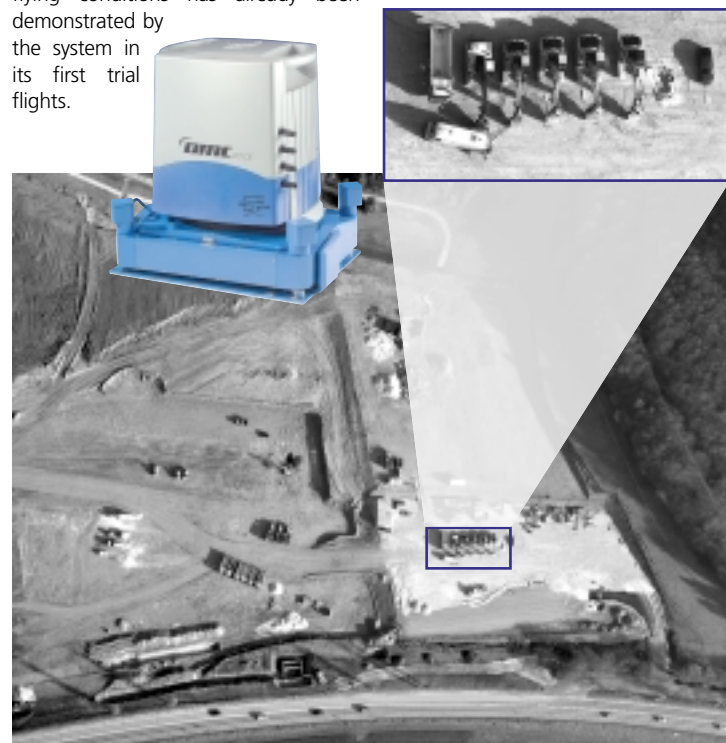
ZULIP Zeiss Universal LaserImage Projector. (Photo: Kasper).

cial wide-angle zoom system for the projector, featuring projection angles between 30° and 90°. The projector sits on a 2.50 m high column and has a footprint of only 0.6 m in diameter. Not only can ZULIP replace conventional video projectors, but its functionality also permits a wide range of further applications such as astro-

nomical simulations (animated and moving objects), computer animations (from science and technology), remote visualization (environment, medicine, space research, education), video conferences/remote control, cultural and artistic applications (media arts, music, theme projects, ...).

### Photogrammetry

The digital aerial survey camera of the joint venture company Z/I Imaging GmbH is the core element of the digital modular camera system (DMC) which ensures high-precision geometric imaging and provides an in-flight ground resolution of as high as a few centimeters. This performance level which must be maintained even in extreme flying conditions has already been demonstrated by the system in its first trial flights.



The prototype of the Digital Modular Camera System (DMC) has been subjected to extensive flight testing by the team of Z/I IMAGING GmbH in cooperation with the Institute of Photogrammetry of Stuttgart University and the company Hansa Luftbild. In a detailed section of the original photo showing the large building site of the new Carl Zeiss lithography lens optics plant in November 2000, even the tire prints of the construction vehicles are discernible.

### Industrial Measuring Technology

With mainstream Contura®, a coordinate measuring machine with VAST® scanning technology, Carl Zeiss offers a budget-priced high speed scanning system providing high accuracy and flexibility. It is suitable for very different applications such as the measurement of plastic materials, brake components, medical implants and instruments, wheels, casts and punching tools, for example. Contura® is delivered with the new VAST®XT probe based on VAST® probing technology and specially designed for this coordinate measuring machine. VAST® scanning technology opens up new possibilities when it comes to the measurement of form and location tolerances on coordinate measuring machines. It often eliminates the need for time-consuming form measurement on single-purpose instruments and, as a result, reduces inspection costs and throughput times.



VAST® XT probe on mainstream Contura® scanning coordinate measuring machine.

A new calibration technique has been developed for the RDS rotary dynamic sensor which greatly simplifies RDS handling and shortens the stylus calibration times required. Instead of calibrating every angular position needed – today's probes can be oriented in more than 20,000 different positions – the probe is calibrated in a few positions only and can then be used in all 20,736 angular positions. This simplifies not only the actual calibration procedure, but also the measurement itself. The RDS can now be turned into whatever the optimum position may be without having to consider which of the calibration positions can be used for measurement.



RDS Rotary Dynamic Sensor with new calibration procedure.

The easy-to-use, powerful ScanWare<sup>PRO</sup> software is now available for the ScanMax® coordinate measuring machine under a new-look Windows environment. With modern communication possibilities, it offers full integration into data processing and computer networks. It is designed to allow the operator to solve measuring problems by intuition, directly and quickly. All major function elements are available in pairs and easily identifiable: configurable function registers with icons, interactive graphics windows for the workpiece, easy to edit program list, configurable status information and measuring force display. ScanWare<sup>PRO</sup> also provides the measuring record as an additional HTML file.



ScanWare<sup>PRO</sup> software for ScanMax® coordinate measuring machine.

### Camera Lenses

Four new lenses are now available for the 35 mm SLR Contax® N1 autofocus camera.

The standard 50 mm Planar® T\* f/1.4 lens is the fastest and at the same time the smallest and lightest lens for the Contax® N1. Special high-index optical glass ensures superb image quality, even at full aperture. The lens can be particularly



Contax® N1 autofocus camera with 24-85 mm Vario-Sonnar® T\* f/3.5-4.5.

recommended as an all-purpose lens for documentation, available-light photography, traveling, editorials and the flash-free photography of interiors. The compact 24-85 mm Vario-Sonnar® T\* f/3.5-4.5 autofocus zoom lens provides the most popular focal lengths in 35 mm photography, even including extremely wide angles up to 84 degrees. Particular emphasis was placed on the very effective suppression of scattered light. The lens has a diameter of 87 mm and, depending on the zoom setting, a length of 96 to 125 mm. The lens weighs 610 g. The non-rotating filter thread has a diameter of 82 mm. It is possible to use high-quality optical filters and also a combination of two filters without vignetting.

The compact 70-300 mm Vario-Sonnar® T\* f/4.5-6 autofocus zoom lens has been designed in such a way that it is suitable for most telephoto subjects. Its zoom range covers all focal lengths which normally allow good results to be obtained without the use of a tripod. The optical and mechanical designs provide high performance combined with small dimensions: diameter 88 mm, length 153 mm and weight 1.09 kg. The non-rotating filter thread has a diameter of 72 mm. Scattered light is effectively suppressed. The optical quality of the lens is such that it can be used for product photography.

First-class close-ups are possible with the 100 mm Makro-Planar® T\* f/2.8 lens. The lens covers the full focusing range from infinity to 1 : 1 without

any accessories. In addition, the lens features automatic correction compensation which adapts to the reproduction ratio set, maintaining image quality at a constantly high level throughout the focusing range. If used in slide duplication or similar applications, the lens provides results whose definition and brilliance are far higher than those obtained with commercial duplication equipment.

All Zeiss lenses supplied to Sony are now provided with T\*-multicoating. The first is the 4.2-42 mm Vario-Sonnar® f/1.8 zoom lens in the digital DCR-PC 110 camcorder. Thus, the excellent brilliance and color rendition resulting from the anti-reflective multicoating system is now also available to the users of top-of-the-line digital still and video cameras from Sony.



DCR-PC 110 Camcorder with 4.2-42 mm Vario-Sonnar® f/1.8.

Four new lenses are now available for Arriflex 35-mm-movie cameras. The 65 mm Planar® f/1.2 lens complements the line of super high-speed lenses and closes the gap between the 50 mm Planar® f/1.2 lens and the 85 mm Planar® f/1.2 lens. With the three new 28 mm Distagon® f/1.7, 40 mm Distagon® f/1.7/ and 100 mm Sonnar® f/1.7 lenses, the ULTRA PRIME lens set now provides 12 different focal lengths from 10 mm to 135 mm.



ULTRA PRIME lenses for Arriflex 35-mm movie cameras.

### Ophthalmic Products

The cold-light illumination system is now equipped with a liquid light guide which replaces the glass fiber bundle used until now. The higher transmission in the UV and visible spectrum yields "whiter light" and increased light intensity; the wear and tear caused by broken glass fibers is now a thing of the past. The light guide can be connected to different cold-light sources by means of an adapter. The almost 50% decrease in weight substantially increases wearing comfort. The new cold-light illumination system is compatible with the Head-worn Loupe KS, the Head-worn Loupe KF, and the Teleloupe Eyeglasses G2.



Cold-light illumination for magnifying visual aids.

The Multi ET® coating is now also available for glass eyeglass lenses. This is a multilayer antireflective coating with a lilac-colored residual reflection and a residual reflectance of only 1.2 %. This guarantees outstanding visual clarity, even in difficult light conditions. The Multi ET® for glass lenses also features Clean Coat for easier lens care. Multi ET® is available on all plastic lenses with the refractive index 1.5 and on all glass lenses with the indices 1.5 and 1.6. Carat® Multi is offered for all plastic single vision and progressive lenses with the refractive index 1.5 or 1.6.



Multi ET® coating now also on glass lenses.