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Mahr Federal Introduces MarSurf LD 130/260 Aspheric High-Precision 2D/3D Measuring Station for Optical Components

- Features high measuring speed, horizontal travel up to 260 mm, vertical resolution to 0.8 nm
- Designed for checking topography during multi-step grinding/polishing operations
- Backed by Mahr worldwide network for service and application support

PROVIDENCE, RI – Mahr Federal has introduced a new high-precision 2D/3D measuring station for checking contour and surface topography of aspheric optical lenses and other components during multi-stage grinding and polishing operations. The MarSurf LD 130 and 260 Aspheric units feature high measuring speed, measuring range of up to 260 mm, vertical resolution of 0.8 nm, and form deviations of less than 100 nm. As with all Mahr metrology systems, the MarSurf LD 130 and 260 Aspheric are backed by Mahr's extensive worldwide service and application support network.

"The market for high precision optics is growing very rapidly," said Pat Nugent, Vice President for Metrology Systems at Mahr Federal, headquarters of the Mahr group's US operations. "We see tremendous opportunities both to support existing applications and to apply Mahr's extensive metrology expertise in developing new systems to meet future needs. To this end, Mahr has dedicated an entire division to R&D, custom programming, and support at its manufacturing facility in Jena, Germany, a world renowned center for optics and the home of optics pioneers like Ernst Abbe."

The MarSurf LD 130 and 260 Aspheric facilitate the multi-set grinding and polishing manufacturing process for high precision optics by providing fast accurate 2D and 3D measurements for the evaluation of contour and surface topography. The system can be used for spherical and aspherical lenses, as well as many types of cylinder lenses, lens mounts, housings, and other mechanical components. Measuring speed is up to 10 mm/s for large lenses, and down to 0.02 mm/s for micro lenses.

For 2D measurement the system generates a linear scan over the zenith of the lens. Collected data is compared to the nominal aspheric lens contour and presents results as PV or RMS values and slope error. For 3D measurements, the system generates several linear profiles across the center of the lens. The lens is then rotated and several circular profiles gathered. Combined, these measuring points create the surface profile,

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which can be compared to the nominal shape via a sagitta table or 3D-point cloud. The differential profile can be output as a color-coded height picture, and both 2D scans and 3D topography can be exported in machine-readable format for closed loop process control.

The MarSurf LD 130/260 Aspheric includes a new probe system with a biomimetic probe arm design that provides increased stiffness, damping, and lower moment of inertia. A chip integrated in the probe arm provides probe identification and parameters, and verification of correct mounting position, allowing probe arms to be changed without recalibration. Automatic probe positioning allows even discontinuous surfaces to be measured.

Mahr Federal Inc., a member of the Mahr Group, has been providing dimensional measurement solutions to fit customer application needs for over 150 years. The company manufactures and markets a wide variety of dimensional metrology equipment, from simple and easy-to-use handheld gages to technically advanced measurement systems for form, contour, surface finish and length. Mahr Federal is also well known as a producer of custom-designed gages and a provider of calibration and contract measurement services. Mahr Federal's calibration laboratories are accredited to ISO/IEC 17025:2005 NVLAP Lab Code 200605-0 (see our Scope of Accreditation for accredited calibration processes). For more information visit <http://www.mahr.com>

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