

smartWLI



portableLA

Optical 3D Surface Measuring Device

Typical Areas of Application

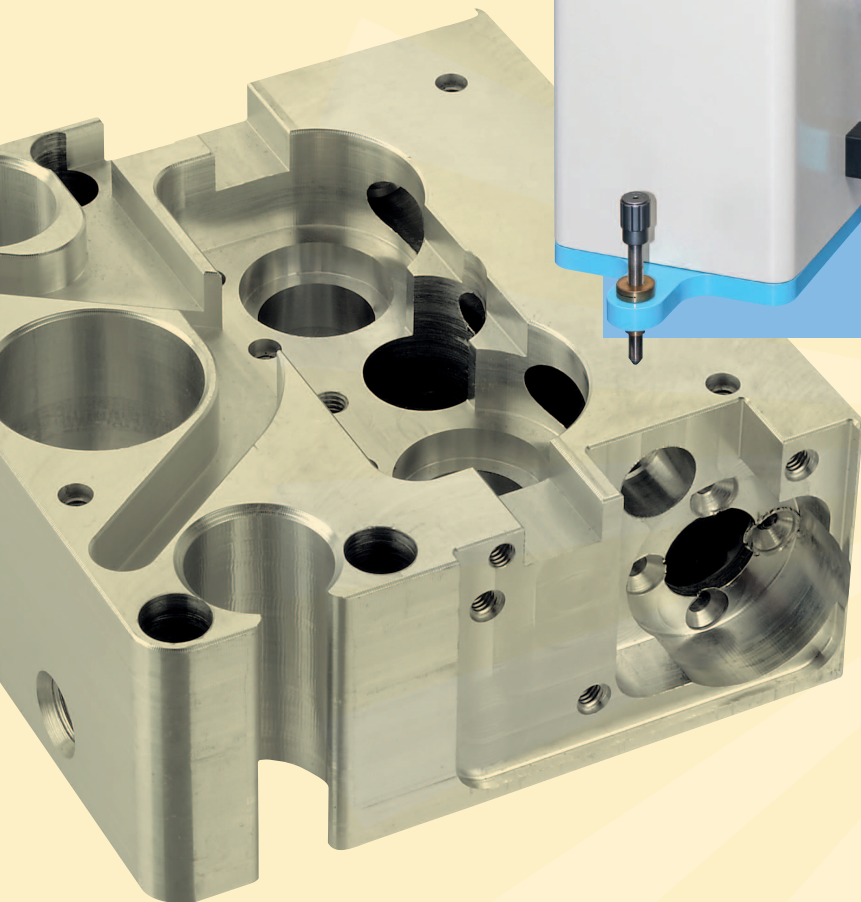
- Quality control
- Process control
- Research and product development



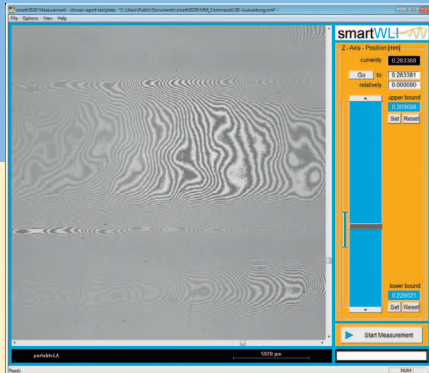
- **Portable**
- **Large measurement field**
- **Easy to use**
- **High-precision**

The smartWLI-portableLA portable optical 3D surface measuring device was primarily designed to inspect large objects in production areas, such as auto bodies, print rollers and solar cells. The measurement method used in the smartWLI-portableLA is white light interferometry. In order to carry out measurements, the smartWLI-portableLA is simply placed onto the surface to be measured. A 3-point micro-screw distance adjustment setup also allows the device to be used on curved surfaces. An innovative 3-beam leveling instrument integrated into the smartWLI-portableLA makes it possible for the user to find the focal point quickly and reliably. After the measurements have been completed, the user can carry out data analysis directly on site with the included laptop.

The smartWLI-portableLA can be safely transported to different sites in the carrying case. The measuring device can be set up on location within minutes, allowing the user to perform fast, nanometer-precise measurements of relatively large surface regions in a single measurement cycle.



smartVIS-3D software



3D topography of a 2 € coin



Analysis

- Graphical representation of the 3D topography of the surface under test
- Geometric analysis (measurement of lengths, angles, areas, the volumes of uneven regions and holes as well as the step heights of surfaces and profile cross-sections)
- Roughness analysis (roughness and waviness of components)
- Functional analysis for determining friction and wear behavior
- Calculation of relevant area and profile parameters in accordance with ISO 25178: S_a , S_z , etc. and ISO 4287: R_a , R_z , etc.

| Measurement system | | | |
|--------------------------------------|--|--|------------------------|
| Measurement principle | White light interferometry, VSI or PSI mode | | |
| z-Positioning system | piezo-based | | |
| Height measuring range | up to 800 μm | | |
| Camera type, image resolution | CCD camera, 1624 x 1234 pixels | | |
| Leveling | using a 3-beam laser | | |
| Objective magnification | Meas. field in mm x mm | Smallest laterally resolvable interval in mm | Working distance in mm |
| | 35 x 35 | 0.28 | 10 |
| Vertical resolution | < 10 nm | | |
| Light source | LED | | |
| Meas. head outer dimensions | 295 x 180 x 245 mm (h x w x d) | | |
| Vertical adjustment screw distance | approx. 5 ... 30 mm | | |
| Measuring head mass | approx. 3.5 kg | | |
| Computer hardware, OS | Laptop PC with Windows 7 | | |
| Measurement time | Typically < 1 min. | | |
| Operating temperature | 10 - 35 °C | | |
| Recommended working temp. | 18 - 22 °C | | |
| Software | | | |
| smartVIS3D www.gbs-ilmenau.de | Software for performing topography measurements; data results can be exported to the MountainsMap® analysis software over a direct interface. | | |
| MountainsMap® www.digitalsurf.com | Comprehensive analysis software package for visualizing measurement data in 2D and 3D as well as for performing DIN EN ISO roughness and height determination, for series processing and for logging measurement data. | | |
| Data storage (file formats) | ASCII, SUR, BCR-STM, BMP, JPEG, TIFF | | |

Further information on the smartWLI-portableLA and the entire smartWLI product family can be found under: www.smartWLI.de

Apr. 2013. Technical specifications subject to change without notice

Gesellschaft für Bild- und Signalverarbeitung (GBS) mbH

Werner-von-Siemens-Str. 10 • D-98693 Ilmenau • phone: +49 3677 623618 • fax: +49 3677 6897682
email: info@pbs-ilmenau.de • www.gbs-ilmenau.de