

µscan custom



Versatility and modularity enable NanoFocus µscan custom to characterize complex surfaces in the laboratory as well as on the shop floor by means of multi-line scanning optical measurements.

The µscan custom is a modular 3D profilometer system for non-contact surface characterization in the micrometer and nanometer ranges. The advanced software concept allows automated measurement tasks on the shop floor, but also has applications in laboratory research and development. A variety of interchangeable sensors offers a range of advantages and is adaptable to many different measurement problems.

The confocal point sensor with its high dynamic range is ideal for applications in MEMS and micro electronics and is able to address very steep profile flanks. The chromatic aberration white light sensor is compact and with its large working distance is particularly useful for samples with difficult geometry and measuring positions. There is a

range of sensors available from small measuring range with high resolution to several millimeters measuring range with medium resolution. The autofocus sensor is best suited to tasks involving flatness and simultaneous roughness measurements. The holographic sensor offers wide range measurement possibilities in the field of contour mapping, e.g. of cast parts or warpage of PCB.

The standard software module µsoft control activates the system, displays the results and is capable of extensive 2D and 3D calculations. Hard- and software modules offer extended possibilities in calculation and automation of measurement processes and increased ease of measurement. For this, NanoFocus offers the user friendly program µsoft automation.

- ▶ **Modular design**
- ▶ **Fast measurement**
- ▶ **Non-contact, non-destructive**
- ▶ **Flexible hard- and software**
- ▶ **Automated measurement and analysis**

Applications:

- ▶ **IC-Packaging/SMT:** Fast automatic capture of warpage, lead and BGA coplanarity, laser marking, solder paste volume.
- ▶ **Thick film hybrids:** Automated measurement of film thickness on ceramic substrates, substrate warp and print stretch even on freshly printed paste.
- ▶ **Precise machining:** Measurement of form, waviness and roughness compliant with DIN EN ISO for precision metal parts, plastics and semiconductor materials.

NanoFocus AG

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Specifications

Scan modules

| | Measuring range x,y-direction (mm) | Resolution x,y-direction (µm) | Positioning range in z-direction (mm) | Max. measuring speed (mm/s) |
|--------|---------------------------------------|----------------------------------|--|--------------------------------|
| SC 50 | 50x50 | 0.5 | 100 | 50 |
| SC 100 | 100x100 | 0.5 | 100 | 50 |
| SC 150 | 150x100 | 0.5 | 100 | 50 |
| SC 200 | 200x200 | 0.5 | 100 | 50 |

Other dimensions available on request.

Sensors

| | | Resolution z (µm) | Resolution x/y (µm) | Working dis- tance (mm) | Measuring range z-direction (mm) | camera (optional) |
|--------------------------------|---------|--------------------------|------------------------|----------------------------|-------------------------------------|-----------------------|
| Confocal point sensor | CF 4 | 0.02 | 1 | 4 | 1.0 | off-axis (BMT5) |
| | CF 13 | 0.02 | 1 | 13 | 1.0 | |
| Autofocus sensor | AF 2 | 0.025/0.01 ¹⁾ | 1 | 2 | 1.5/0.65 ¹⁾ | integrated (BMT3) |
| | AF 5 | 0.025/0.01 ¹⁾ | 1 | 5 | 1.5/0.65 ¹⁾ | |
| Chromatic sensor ²⁾ | CLA 0.1 | 0.005 | 1.1 | 3.3 | 0.1 | off-axis (BMT5) |
| | CLA 0.3 | 0.012 | 1.3 | 11 | 0.3 | |
| | CLA 1.1 | 0.025 | 2 | 12.7 | 1.1 | |
| | CLA 2.5 | 0.075 | 4 | 16.4 | 2.5 | |
| | CLA 10 | 0.280 | 8 | 29.0 | 10 | |
| Holographic sensor | CP 12 | 3.0 | 12 | 12 | 1.8 | integrated (BMT 4) |
| | CP 42 | 6.0 | 15 | 42 | 8,0 | |
| | CP 65 | 10.0 | 25 | 65 | 18.0 | |

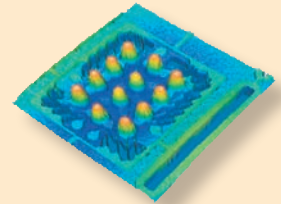
Other sensors available on request 1) with restricted measuring range 2) with 2, 5 or 30 kHz measuring frequency available.

Modules

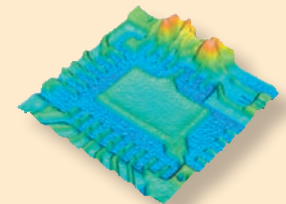
| | |
|-----------------------------------|---|
| Systemcontroller | High performance industrial PC, DVD-RW, network card, Windows XP Professional |
| Container and work table MT 70 | Stable container for electronic modules, work table 1550x800x750 mm (lxwxh) |
| Granite measuring stand MP 100 | Portal construction, 660x450x497 mm (lxwxh) for SC 50 to SC 150 |
| x,y-axis module | Precision scanning module, range: 50/100/150 mm |
| µsoft control | NanoFocus control and analysis software, profile and topography representation, roughness compliant with DIN EN ISO |

Optional

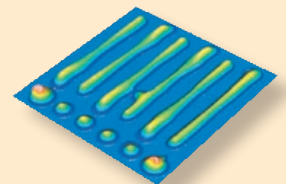
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|-----------------------------------|---|
| Granite measuring stand MP 200 | Portal construction, 680x480x385 mm (lxwxh) from SC 200 |
| z-axis module (positioning) | Motorized positioning module, range: 50/100 mm |
| z-axis module (measuring) | Motorized precision scanning module with glass scale, range: 50/100 mm for stitching in z-direction resolution: 100 nm |
| µsoft automation | Software for automated measurement and analysis (e.g. thick films, micro vias, printed circuits, solder bumps) |
| µsoft analysis | Software to analyse 3D measurement data, layout function, templates for series measurement and analysis |
| Accessories | Vacuum plate, sample fixture, calibration standards, printer |



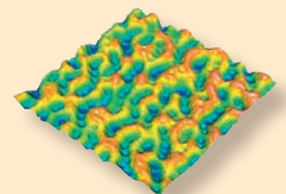
BGA



thick film



dispenser dots



laminate

Are you interested in other NanoFocus-Technologies?
Please call us +49 (0) 208-62 000-0 or write an email to sales@nanofocus.de

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