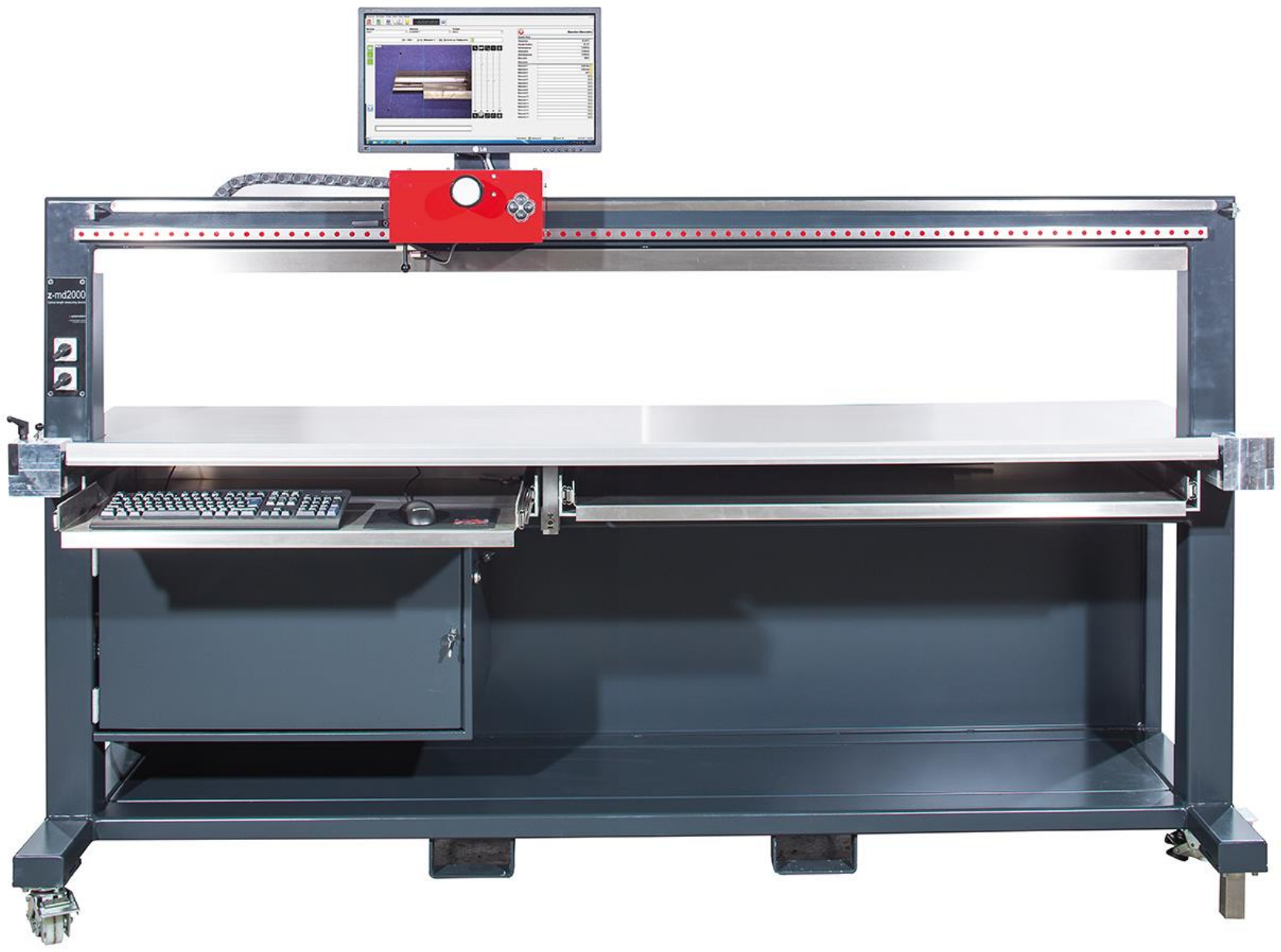


**z-automation**<sup>®</sup>  
INSPIRING PARTNER

OPTICAL LENGTH MEASURING DEVICE

**z-md2000 / z-md3000**



## **z-measuring device: z-md2000 / z-md3000**

The universal measuring device for  
the quality proof of automotive sealings

### **Optical measuring method**

Measurement method based on digital image processing combined with precision glass scale

### **Highest measuring accuracy in the sealing industry**

Measuring system resolution 0,01 mm

Measuring equipment capable for product length tolerances of  $\geq \pm 0,4$  mm

### **Capability analysis based on measuring rows**

Comfort due to extensive software package

### **Monitoring of the serial production process**

Periodical measurements – e.g. of several products in a manufacturing cell – during the working shift

### **Easy & fast communication of facts**

Easy integration into the company's network (WLAN or Ethernet) due to the Windows based control system

Therefore trouble-free transmission of measuring row data or immediate measuring results as screenshots – e.g. directly via e-mail

### **All from one source**

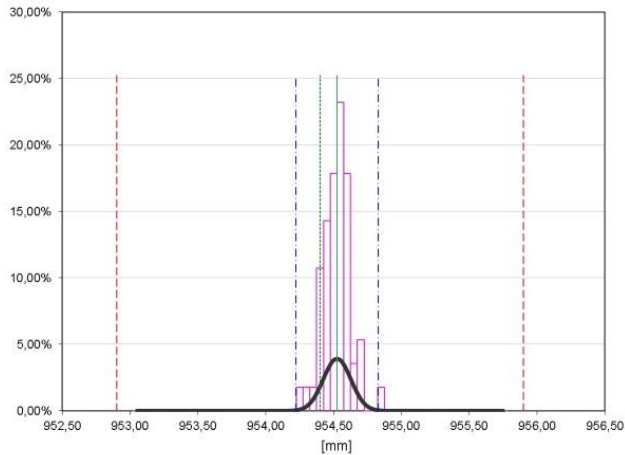
Universal measuring device and product specific measuring guide

## z-measuring device specification

Resolution	0,01 mm
Measuring area	2000 mm (z-md2000) 3000 mm (z-md3000)
Technology	<ul style="list-style-type: none"><li>- Measuring value admission by camera and image processing system</li><li>- Measurement system capability proved for product tolerances <math>\geq \pm 0.4</math> mm</li><li>- Resolution of measuring element <math>\sim 3</math> <math>\mu</math>m</li><li>- Control by Windows-PC standard</li><li>- Torsion-free three-point support on steering rollers</li><li>- Plane measuring supporting area, <math>\sim 2200 \times 750</math> mm (z-md2000), <math>\sim 3200 \times 750</math> mm (z-md3000) height <math>\sim 930</math> mm</li><li>- Pivoting angle admission as standard measuring admission</li><li>- Indexing preparation for centring measuring admissions</li><li>- Component height inclusive measuring admission at most <math>\sim 250</math> mm</li><li>- Headroom portal / camera <math>\sim 300</math> mm</li><li>- Length x depth x height <math>\sim 2470 \times 760 \times 1830</math> mm (z-md2000) <math>\sim 3470 \times 760 \times 1830</math> mm (z-md3000) Weight <math>\sim 350</math> kg</li><li>- Calibration certificate, periodical calibration service on request</li></ul>
Manufacturer	z-werkzeugbau-gmbh, Dr.-Walter-Zumtobel-Straße 9, 6850 Dornbirn, Austria



## z-measuring device optional features



- Full extension drawer for depositing drawings: width x depth = 1200 x 530 mm
- Broadening of measuring support by 400 mm, pluggable
- Pin board, pluggable ~2400 x 800 mm (z-md2000)  
~3400 x 800 mm (z-md3000)
- Guiding slots for defined lifting with a fork lift
- Hardcopy / screenshot (camera picture as well as full screen)
- 2D measuring + measuring of angles (optical)  
Module for the additional auxiliary-wise measuring in y-direction as well as for the measuring of angles purely about image processing  
Measuring area y: ~15 – ~70 mm, depending on object distance and zoom adjustment of the camera,  
Accuracy y:  $\leq \pm \sim 0,1$  mm with vertical camera axis to the measuring plane  
Accuracy angle:  $\leq \pm \sim 0,1^\circ$
- Auxiliary lines and auxiliary radius for better identification of difficult measuring points
- Data base module for documenting measuring data  
Software system for pre-definition and documentation of measuring rows of products with up to 16 measuring values per product and several reference points for measures. Data bank archiving with time stamp, ambient temperature, measuring equipment ID and user ID. Export of measuring row data in .csv format
- Label print for marking measured products in measuring rows
- Prescription image for additional definition of measuring points in measuring rows
- Save screenshots of measurements per measuring point of measuring rows as additional documentation
- WLAN module for the integration of the system into the enterprise network
- Software for capability verification  
on standard Excel base for the evaluation of the exported measuring row data for machine or process capability proofs: Upload of z-md export data and graphic evaluation according to ISO/TS 16949 concerning capability potentiality (cm/cp) and critical capability (cmk/cpk).
- Measuring guide - product-/work piece specific, built up on lightweight building board with index bolts for centring on z-md2000 or z-md3000

**z-automation**

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