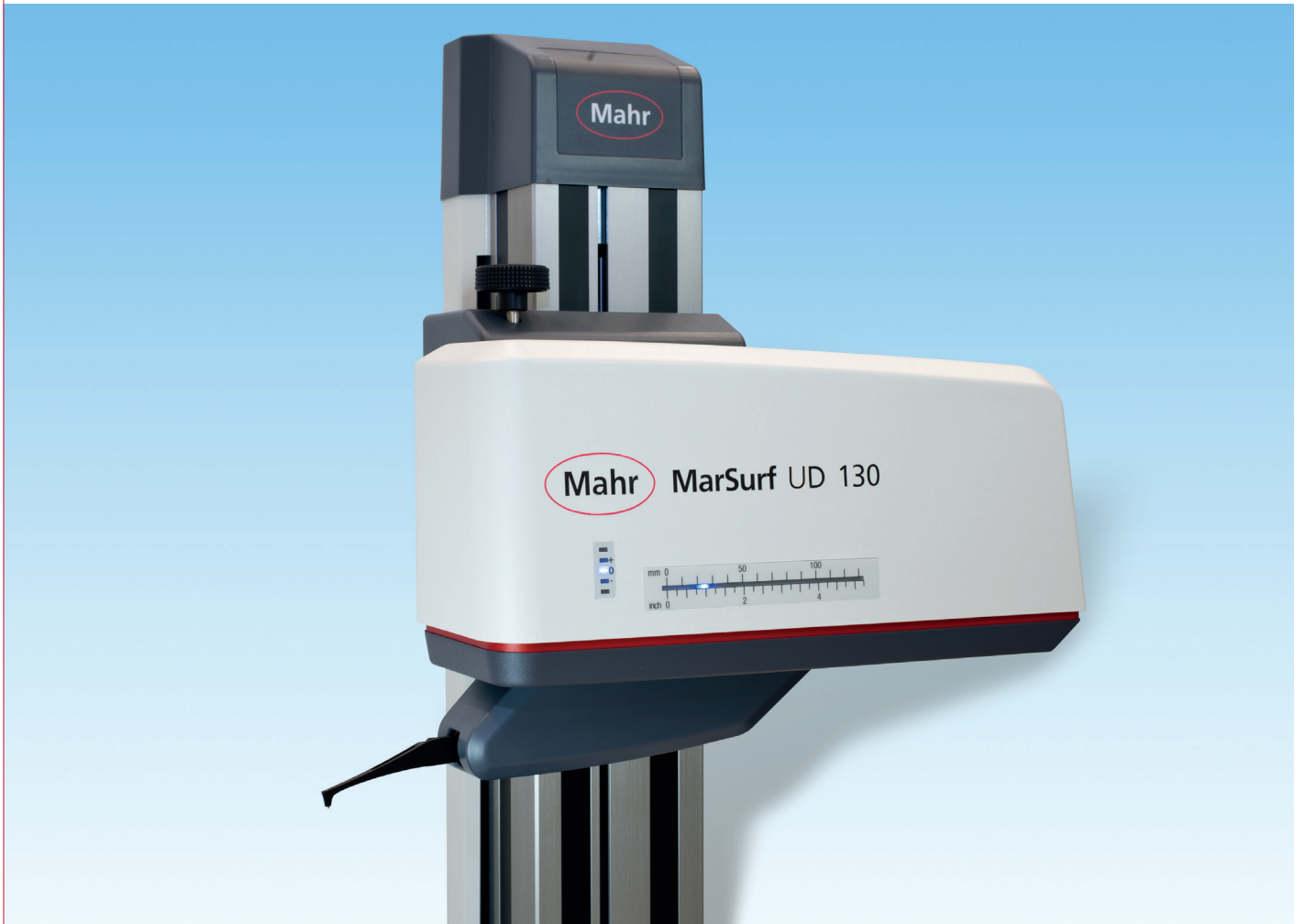


# MarSurf



## MarSurf UD 130

The first step into high-precision roughness and contour metrology

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EXACTLY

## MarSurf UD 130 - The first step into high-precision roughness and contour metrology



With the **MarSurf UD 130**, Mahr has created the successor to the successful MarSurf UD 120 and closes the gap between the high-end solution MarSurf LD 130 / LD 260 and the standard combination measuring station MarSurf XCR 20 with two drive units.

The technical data of the MarSurf UD 130 have been decisively improved, especially the measuring and positioning speeds enable the reduction of the measuring times per workpiece.

Different probe arms and probe tip geometries are available for different measuring tasks. Depending upon the measuring tasks, diamond tips with 2  $\mu\text{m}$  and 5  $\mu\text{m}$  radius can be used for roughness measurements, carbide tips with 25  $\mu\text{m}$  for contour measurements or ruby balls.

The MarSurf UD 130 and the MarSurf LD 130 / LD 260 enable high-precision measurements in the nm range.

Patented solutions, such as the probe arm changing unit make these measuring stations also suitable for automated measuring operations.

### **Roughness and contour in one measurement**

You only need a fraction of the time and yet you measure faster, more precisely and more efficiently.

After only one measurement, you have all the results of the roughness and contour analysis at your finger tips.

***More time for other tasks!***

**The most modern measuring technology for small tolerances** enables a high, constant accuracy over a large measuring range with high resolution.

### **High measuring and positioning speed greatly minimize the measuring times**

Positioning speed up to 30 mm/s

Measuring speed up to 5 mm/s

### **Innovative probe arm solution**

Bionic design of the probe arms and new materials ensure higher rigidity, reduced vibration behavior, higher dynamics.

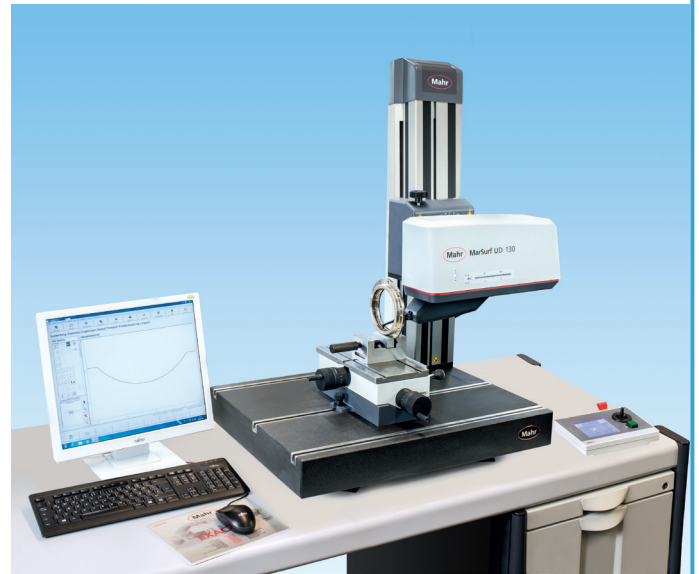
**Faster and safer exchange of the probe arms with simultaneous probe arm recognition** through magnetic holder and reliable recognition due to the chip in the probe arm.

### **Service-friendly thanks to modular concept**

Maintenance without complete disassembly of the measuring stand possible.

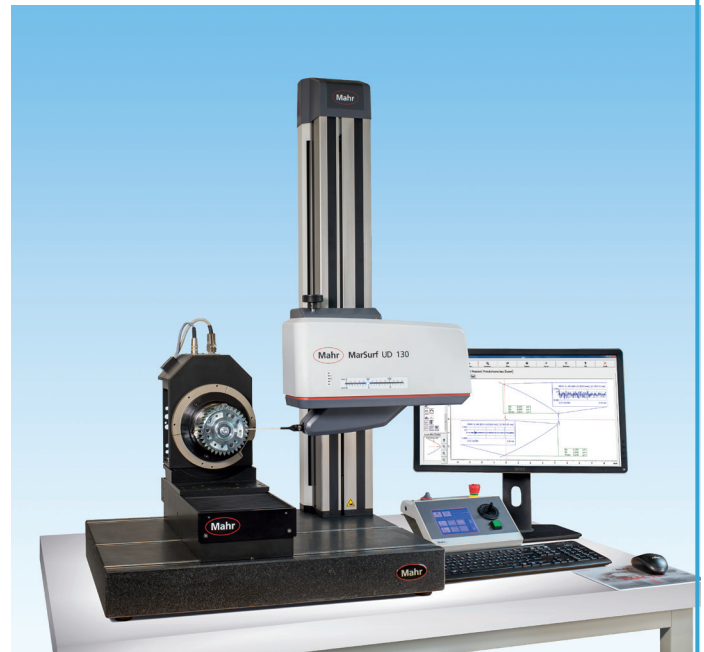
## MarSurf UD 130 with measuring stand ST 500 CNC

MarSurf XCR 20 consisting of: Midrange LD Software XCR 20 MarSurf License Key	6268385
MarWin PC International WIN 7 (64 bit)	9054901
TFT monitor 24"	3027221
MCP 21 advanced	7033935
Drive unit UD 130 incl. probe system	6720823
Calibration standard 1 for contour with two balls (45 mm and 4 mm) Accuracy class 1	6820121
Cross table CT 300	6710549
Measuring stand MarSurf ST 500 CNC with granite base 700 x 550 mm	6710254
Control for HZ	6851376
Damping elements	6851399



## MarSurf CNC modular with MarSurf UD 130 and two CNC axes

MarSurf XCR 20 consisting of: Midrange LD Software XCR 20 MarSurf License Key	6268385
MarWin PC International WIN 7 (64 bit)	9054901
TFT monitor 24"	3027221
MCP 21 advanced	7033935
Drive unit UD 130 incl. probe system	6720823
Calibration standard 1 for contour with two balls (45 mm and 4 mm) Accuracy class 1	6820121
Measuring stand MarSurf ST 500 CNC with granite base 700 x 550 mm	6710254
Control for HZ	6851376
Damping elements	6851399
Table axis T1S L with Table axis T1S-R as TB axis	6710598
Rim chuck up to 100 mm diameter	6710620
(Alternatively: Customized workpiece mount)	



## MarSurf UD 130. Technical Data

The technical data apply to the standard probe arm LP D 14-10-2/60°

### Features of the horizontal axis

Tracing length (Lt)	0.1 mm to 130 mm
Safety contacts of the motorized method to switch off the respective feed motor	front, back
Positioning speed	0.1 mm/s to 30 mm/s
Measuring speed	0.1 mm/s to 5 mm/s; for roughness measurements 0.1 mm/s to 0.5 mm/s are recommended
Profile point distance in X	0.25 $\mu\text{m}$ to 10 $\mu\text{m}$
Max. number of measuring points per measurement	520 000 points
Resolution in X	2 nm
Tracing force	1 mN up to 30 mN, adjustable via software

### Features of the probe system (w)

	Measuring direction Z+ / Z-
Probe measuring range	10 mm
Resolution	2 nm
Measuring force	1 mN to 30 mN, adjustable via software

### Residual value Rz<sub>0</sub>, Rq<sub>0</sub>

Measuring and evaluation conditions as per DIN EN ISO 3274, Lc = 0.25 mm, Lc/Ls = 100

Residual value for vt = 0.1 mm/s	Rz < 40 nm
Residual value for vt = 0.5 mm/s	Rz < 50 nm

### Contour

All information as per VDI/VDE 2629 Sheet 1 – MPE Maximum Permissible Error  
Measuring conditions as per the probe arm data sheet.  
Values for distance L and radius R in mm

Display deviation for distance measurement <b>EA</b> (MPE <sub>EA</sub> )	$\pm (1.0 + 2  l  / 150) \mu\text{m}$ ; l in mm
Display deviation for radius measurement <b>R<sub>K</sub></b> (MPE <sub>R</sub> )	(R ≤ 10 mm) $\pm 1.5 \mu\text{m}$ (10 mm < R ≤ 300 mm) $\pm (3R / 20) \mu\text{m}$ R in mm

### General data

Operating temperature	+15 °C to +35 °C
Working temperature to attain the technical data	20 °C ± 2 K
Recommended measuring room class according to VDI/VDE 2627	2 or better

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