

Mikrosize®

iSurfa-520 Surface Roughness Tester



Video



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Feature and Application

iSurfa-520 Surface Roughness Tester is a handheld instrument suitable for production site environments and mobile measurement needs. It can measure the surface roughness of various machined parts, calculate corresponding parameters according to selected measurement conditions, and display all measurement parameters and contour graphics on the display screen. The instrument is easy to operate, comprehensive in function, fast in measurement, stable in precision and easy to carry. It can measure the main parameters of the latest international standards, fully and strictly implement international standards, and its measurement parameters comply with the national standard GB/T 3505, and are also compatible with the standards of the United States, Germany, Japan, Britain and other countries, suitable for workshop verification stations, laboratories, measurement rooms and other environments.

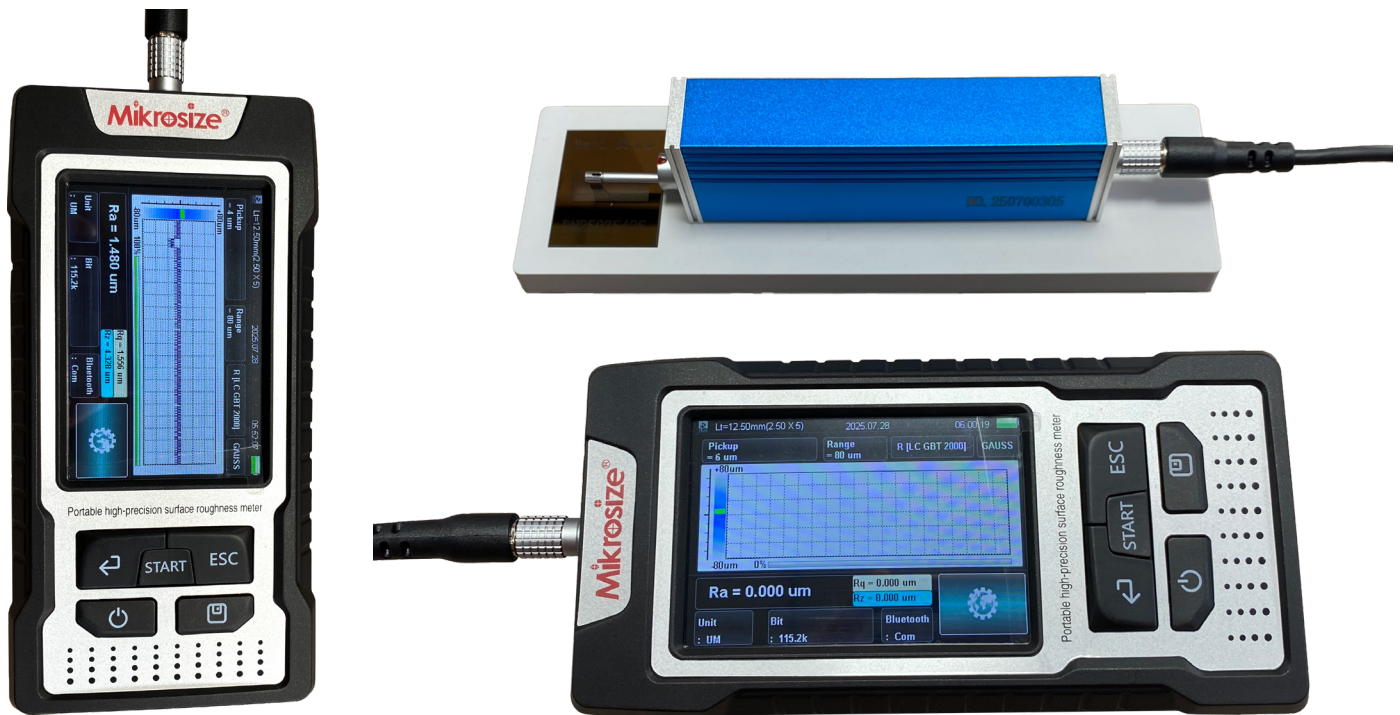
Product Feature

- It adopts a composite structure of main display unit, drive unit and sensor, integrates mechanical and electrical systems, and is controlled by a DSP chip, featuring fast data processing and low power consumption.
- It can measure 14 parameters, is compatible with multiple international standards such as ISO and DIN, and has a large measurement range of 160 μ m, meeting diverse requirements.
- 480*320 TFT color display screen, no viewing angle limitation, intuitive display of parameters and contour graphics;
- Built-in 6000mAh lithium battery, with a battery life of over 20 hours, equipped with an electricity indicator, and supports continuous charging at any time.
- It can store 100 sets of original data and waveforms. It supports connection to a computer and a printer, and the operation is very convenient.
- Ergonomic design, sturdy and portable, with automatic power-saving functions, etc., and It has the functions of automatic power-saving and automatic shutdown for energy conservation. The circuit and software design can prevent the motor from getting stuck, and it has strong reliability.
- Support for multiple languages including Chinese, English, French, German, Italian, etc., for users in different regions.
- Multiple specialized sensors and measurement brackets are available, enabling the solution to meet the requirements for measuring surfaces of complex shapes.

Feature and Application

Product Application

- Suitable for use in production sites and mobile measurements, capable of measuring the surface roughness of various mechanical processing parts;
- Compatible with multiple national standards, it can meet the testing requirements in scenarios such as workshop verification stations, laboratories, and measurement rooms.
- Equipped with a variety of optional sensors, it can measure special surfaces such as curved surfaces, small holes, and deep grooves.
- It can be connected to a computer and a printer, facilitating the upload of data, analysis, and the printing of measurement results.
- It can store 100 sets of data and waveforms, with a real-time clock, making it convenient for data recording and management.



Product Details



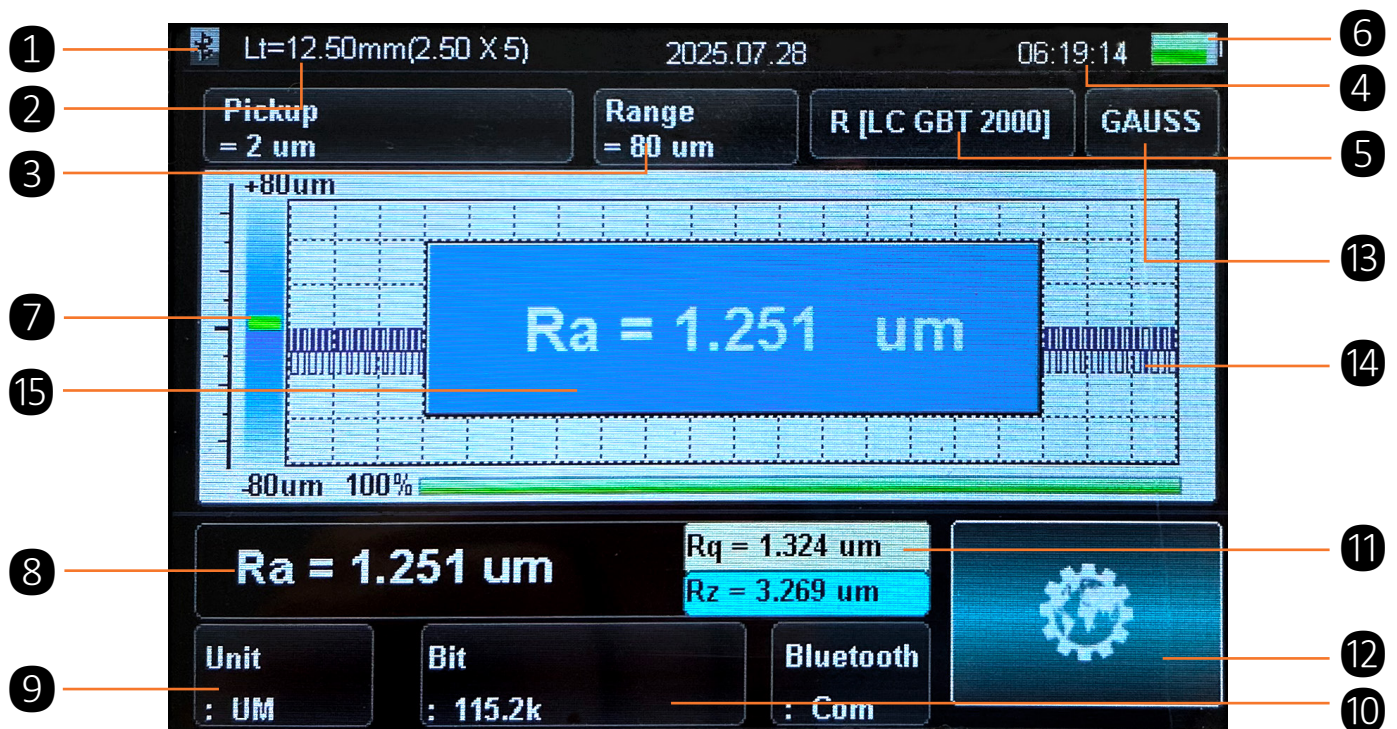
1. Display Screen
4. Confirm Button

2. Switch Button
5. Start Measuring Button

3. Save Button
6. Return Key

Operation Interface

Display Interface



1. Bluetooth Logo

2. Sampling Length

3. Range

4. Time

5. Criterion

6. Battery Power

7. Pointer Position

8. Main Parameter Display Area

9. Parameter Unit Information

10. Baud Rate

11. Auxiliary Parameter Display Area

12. Menu Button

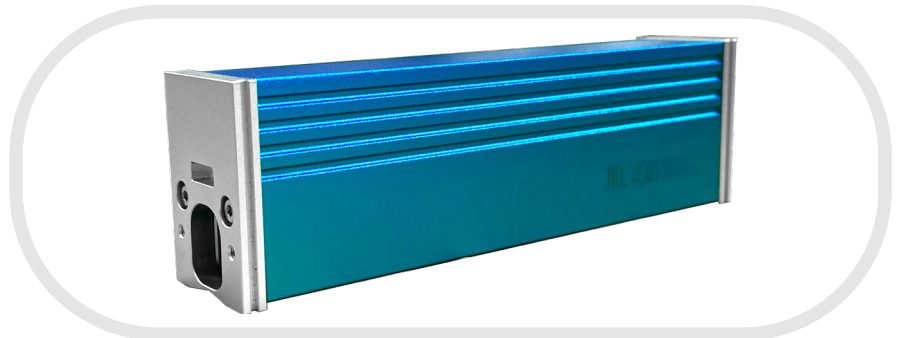
13. Filtering Method

14. Waveform Display Area

15. Measurement Results Show Area

Product Details

Advantages



- Obvious identification: Red dots are marked on the sides of each interface, facilitating users to connect the extension cables correctly.
- The right size, convenient for users to hold and use;
- The outer layer is wrapped with soft rubber to prevent the instrument from being damaged by bumps.
- There is a main switch to prevent users from accidentally turning on the instrument.
- USB-C universal charging port.

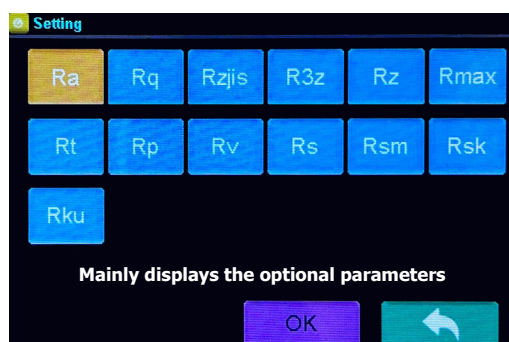
Product Details

Calibration Function



- The calibration process of the iSurfa-520 surface roughness tester is simple and convenient.
- Calibration steps:
- Set the calibration value by pressing the "+" or "-" keys according to the standard sample values.
- After setting the calibration value, press the "STAR" or "START" button to conduct a complete measurement.
- After the measurement is completed, press the "SAVE" button to store the calibration parameters in the instrument.
- Finally, press the "ESC" key to exit.

Calibration Function



- Main Disp: Display main parameters
- Vice Disp1: Auxiliary display parameters.
- Vice Disp2: Auxiliary display parameters
- BT mode: The working modes of the Bluetooth module are two types: printing mode and data transmission mode.
- BT power: The options for turning on and off the Bluetooth module.
- Baud bps: The default value is 115.2K.

Product Details

Measurement Parameter Setting



- The iSurfa-520 surface roughness tester has rich parameter settings.
- Cutoff can be selected as 0.25mm, 0.80mm or 2.50mm.
- N*Cutoff can be selected between 1 and 5.
- The Range is wide, with 4 options: $\pm 20\mu\text{m}$, $\pm 40\mu\text{m}$, $\pm 80\mu\text{m}$ and $\pm 160\mu\text{m}$.
- Unit can be selected as Inch or mm.
- There are various filtering methods, including RC, PC - RC, Gauss and D-P.

Data Storage And Printing



- The data storage and printing processes of the iSurfa - 520 Surface Roughness Tester are convenient. It can store 100 pieces of data. Users can select the required measurement data for viewing and printing.

Product Details

Stylus



Measurement Principle	Linear Variable Differential Transformer
Stylus	Natural diamond, 60° cone angle, 2µm tip radius
Force Measurement	<4mN
Guide Head	Cemented carbide, with a radius of 40mm in the sliding direction
Sliding Speed	Lr=0.25, Vt=0.135mm/s
	Lr=0.8, Vt=0.5mm/s
	Lr=2.5, Vt=1mm/s
	Return, Vt=1mm/s

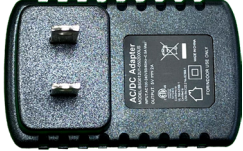



Technical Specification

Measurement Range		The Z axis (Vertical): $\pm 160\mu\text{m}$; The X axis (Horizontal):17.5mm
Resolution ratio		0.01 μm / $\pm 20\mu\text{m}$
The Z axis (vertical)		0.02 μm / $\pm 40\mu\text{m}$
		0.04 μm / $\pm 80\mu\text{m}$
Measurement Item	Parameter	Ra,RzRq,Rt,Rc,Rp,Rv,R3z,R3y,Rz(JIS),Ry,Rs,Rsk,Rku,Rmax,Rsm,Rmr,Rpc,Rk,Rpk,RvkMr1,Mr2
	Standard	ISO4287,ANSI B46.1,DIN4768,JISB601
	Graphic	Primary profile, Roughness profile, load curves
Filter		RC,PC-RC,Gauss,D-P
The sampling length(lr)		0.25,0.8,2.5mm
Assessment length(ln)		$Ln = lr \times n$ $n = 1 \sim 5$
Weight	Principle	The displacement differential inductance
	Stylus	Natural Diamond, 60B cone angle, 2 μm tip radius
	Dynamometry	<4mN
	Skid	Ruby,Longitudinal radius 40mm
	Taxiing speed	lr=0.25, Vt=0.135mm/s lr=0.8, Vt=0.5mm/s lr=2.5, Vt=1mm/s Back, Vt=1mm/s
Accuracy		0.001 μm
Indication error		No more than 10%
Indication variability		No more than 6%
Power supply		6000mAh Lithium ion battery,Charger :DC5V
Weight	Display Unit	161*80*40mm
	Drive Unit	22*26*114mm
Weight		About 320g
Working Environment		Temperature:-20 $^{\circ}\text{C}$ ~40 $^{\circ}\text{C}$ Humidity:<90%RH
Store and Transportation		Temperature:-40 $^{\circ}\text{C}$ ~60 $^{\circ}\text{C}$ Humidity:<90%RH

Standard Delivery

Name	Qty	Photo
Main Unit	1pc	
Sensor	1pc	
Calibration Block	1pc	
Block Bracket	1pc	
Extension Cable	1pc	
Screwdriver	1pc	

Standard Delivery

Name	Qty	Photo
Main Unit	1pc	
Sensor	1pc	
Instrument Manual	1copy	
Qualified Certificate	1copy	
Warranty Card	1copy	
Instrument case	1pc	

Recommended Table of Sampling Lengths

Ra(μm)	Rz(μm)	Sampling Length
>5~10	>20~40	λc(mm) 2.5
>2.5~5	>10~20	
>1.25~2.5	>6.3~10	0.8
>0.63~1.25	>3.2~6.3	
>0.32~0.63	>1.6~3.2	
>0.25~0.32	>1.25~1.6	
>0.20~0.25 >0.16~0.20	>1.0~1.25 >0.8~1.0	0.25
>0.125~0.16 >0.1~0.125 >0.08~0.1	>0.63~0.8 >0.5~0.63 >0.4~0.5	
>0.063~0.08 >0.05~0.063 >0.04~0.05	>0.32~0.4 >0.25~0.32 >0.2~0.25	
>0.032~0.04 >0.025~0.032 >0.02~0.025	>0.16~0.2 >0.125~0.16 >0.1~0.125	