Mikrosize®

iSurfa-360

Surface Roughness Tester

Video

Contact us

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Features and Applications

The iSurfa-360 surface roughness measuring instrument has remarkable advantages. It is a handheld design, with a small size, light weight, portability, and suitability for production sites and mobile measurements. It uses a DSP chip, featuring fast data processing, low power consumption, and a wide range of measurement parameters, including basic parameters such as Ra and Rz, as well as advanced models' RPc. It is compatible with multiple national standards. With a large range of 160μm, a 128×64 OLED screen displays all parameters and graphics, it has a built-in lithium battery that lasts for over 20 hours, can store 100 sets of data, and can be connected to a computer and printer. It offers multiple dedicated sensors and features a full metal casing that is durable and easy to operate.

Product Features

- Portability and environmental adaptability are strong: The handheld design is small in size (141×55×40mm) and weighs approximately 400g. It is suitable for various scenarios such as workshops and laboratories, and can operate stably in an environment ranging from -20°C to 40°C.
- Excellent measurement performance: 160 μm large range, maximum resolution of Z-axis 0.001 μm, indication error ±(5 nm + 0.1 A), indication variation ≤ 3%, reliable accuracy;
- Wide compatibility with parameters and standards: Includes basic parameters such as Ra and Rz, as well as advanced parameters like RPc and Rk. Compatible with multiple national standards including ISO, ANSI, DIN, and JIS, meeting diverse measurement requirements.
- Easy operation and display: 128×64 OLED screen shows all parameters and graphics. The key definitions are clear. It supports switching between Chinese and English. It can automatically enter sleep mode and shut down for power saving.
- Long battery life and storage capacity are excellent: The built-in lithium battery can provide up to 20 hours of power, supports USB charging, and can store 100 sets of raw data and waveforms, with real-time clock recording.
- Extensive functionality and durability: The all-metal housing is sturdy and can be connected to computers / printers. Optional curved surfaces, small holes, and other specialized sensors and measurement platforms are available, making it suitable for complex measurement scenarios.

Features and Applications

Product Applications

- Routine testing in workshops and laboratories: Applicable to workshop calibration stations and laboratories, used to measure the surface roughness of various machined parts;
- Special surface measurement: Equipped with sensors for curved surfaces, small holes, and deep grooves, to measure the roughness of special surfaces such as curved surfaces, small holes, and deep grooves.
- On-site mobile detection: The handheld design is portable and suitable for the production site environment, meeting the requirements for mobile measurement.
- High-precision measurement in the measurement room: With small indication error and low variability, it enables high-precision roughness detection in the measurement room.
- PC machine data in-depth analysis: Using dedicated software for PC machines, upload data, analyze waveforms and process measurement information;
- Real-time output of on-site results: The printer can print all or specific parameters, enabling quick acquisition and recording of measurement results.

Product Details

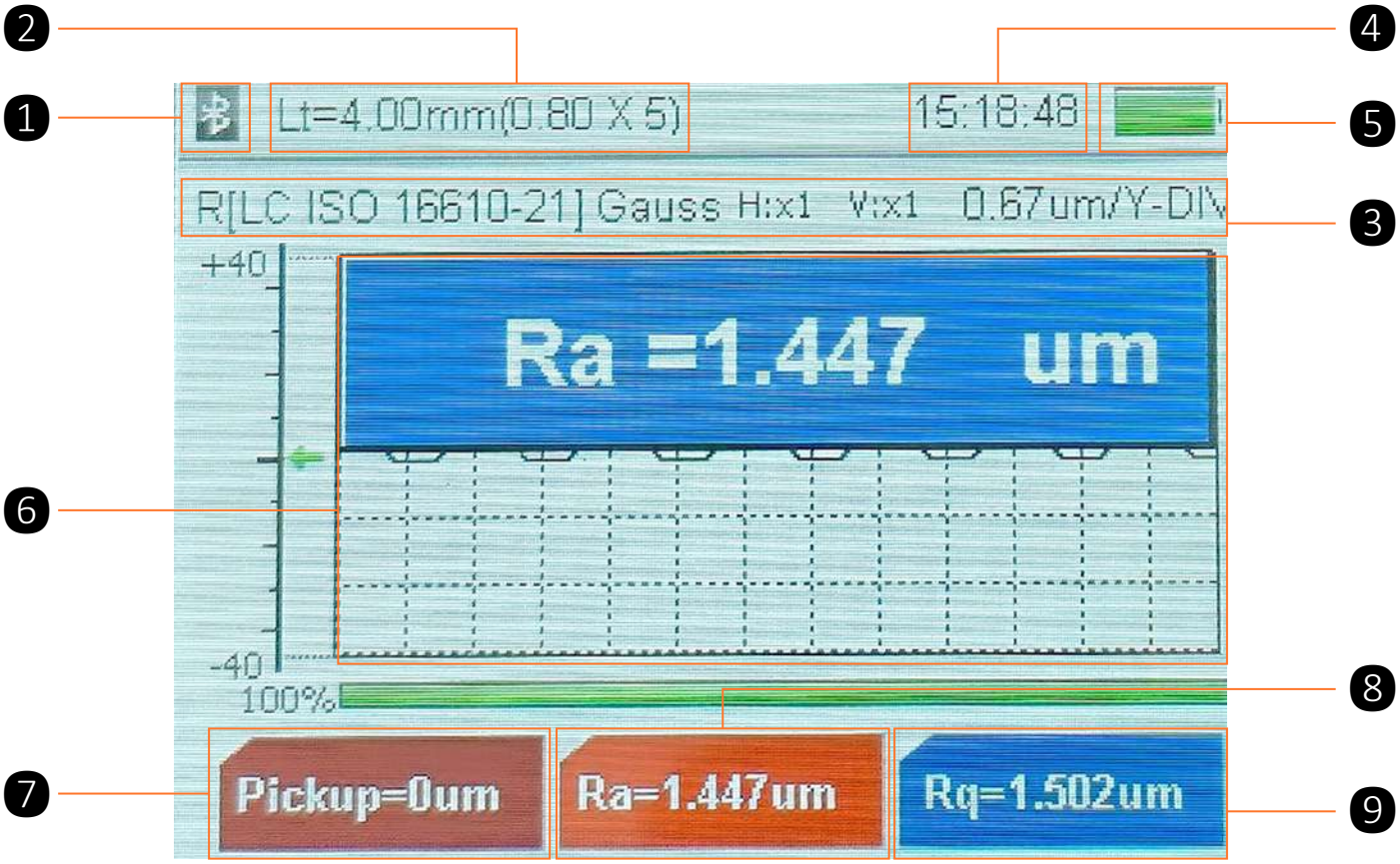
Structure

1.Screen	2.Keypad Area	3.Measurement Button
4.Power Switch	5.Charging Port	

1.Guide Head	2.Protective Sleeve	3.Main Body	4.Socket

Product Details

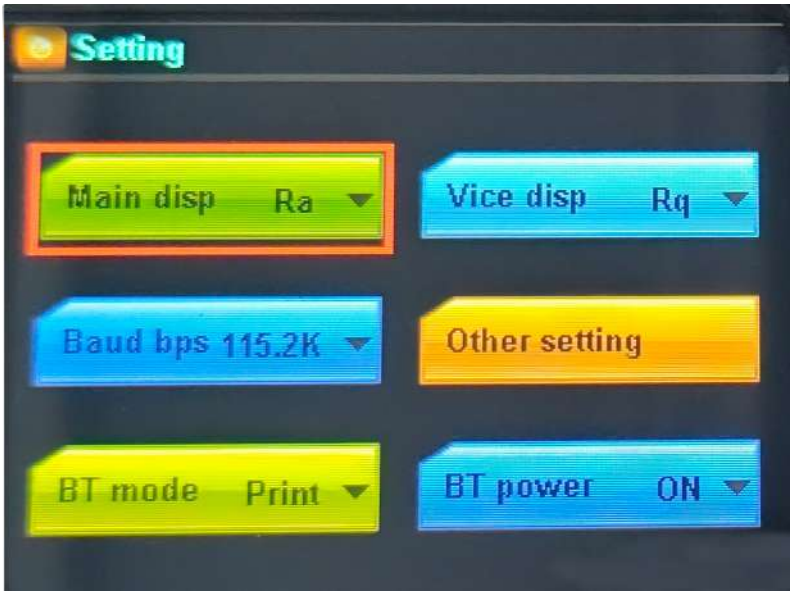
Screen Content

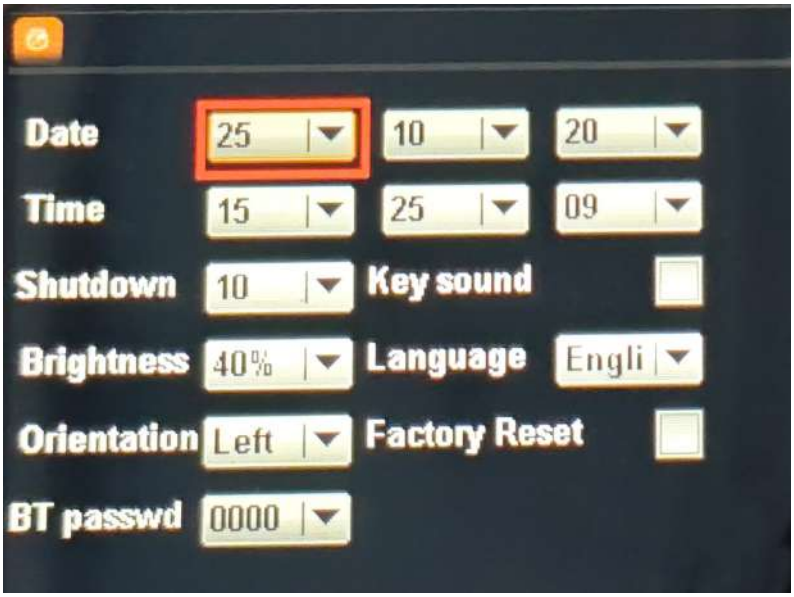


1.Bluetooth	2.Sampling Length	3.Filtering Method
4.Time	5.Battery Level	6.Waveform Display Area
7.Needle Position	8.Parameter Value	9.Auxiliary Display

Operation Interface

Parameter Settings

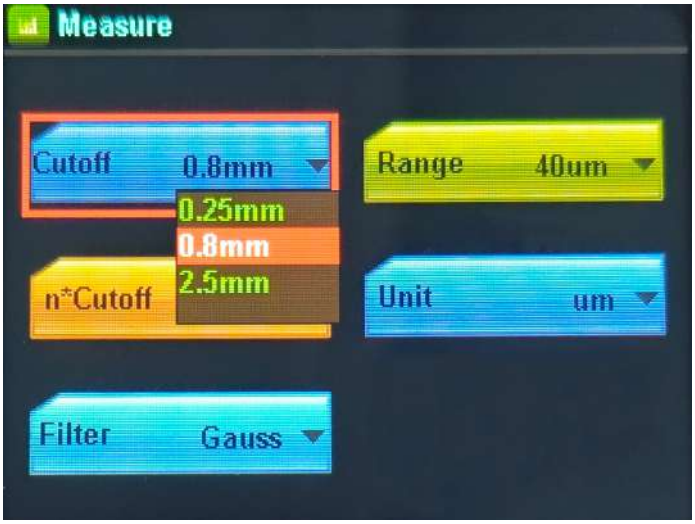




- Main Disp: Display main parameters
- Vice Disp: Auxiliary Display Parameters
- Baud rate: Default value is 115.2K
- BT mode: There are two working modes for the Bluetooth module, namely printing mode and data transmission mode.
- Other settings: The settings are comprehensive, including date and time settings. Users can customize the automatic shutdown time, screen brightness, and key sound switch. The instrument supports both Chinese and English.

Operation Interface

Measurement Conditions

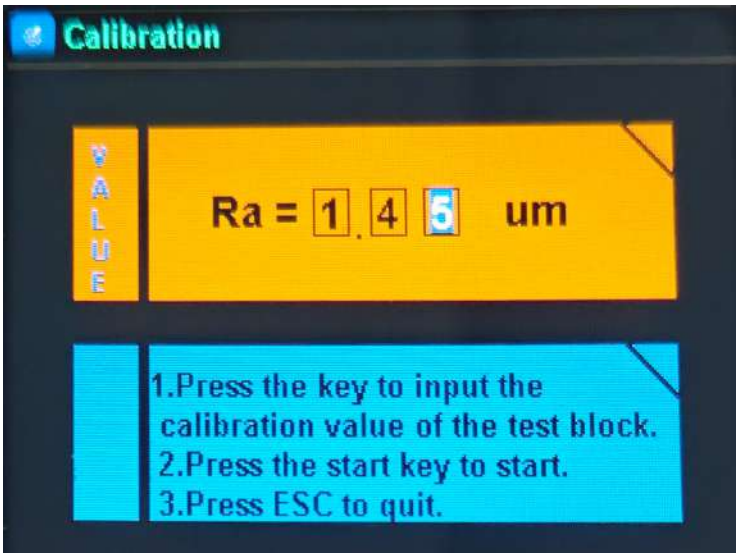


The iSurfa-360 surface roughness tester offers a wide range of measurement conditions settings.

- The cutoff options available are 0.25mm, 0.80mm and 2.50mm.
- The N*Cutoff value can be selected within the range of 1 to 5.
- The range is wide, with four options: ±20μm; ±40μm; ±80μm; ±160μm;
- The unit can be either "uin" or "um".
- The filtering methods are diverse, including RC; PC-RC; GUASS; D-P multiple filtering methods.

Operation Interface

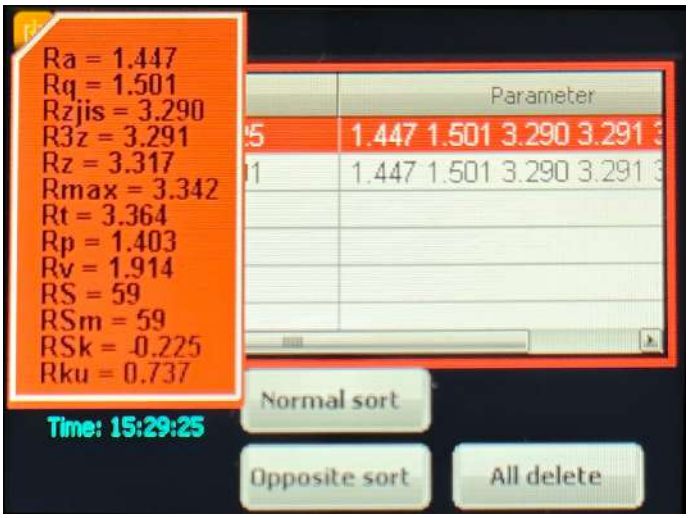
Calibration Function

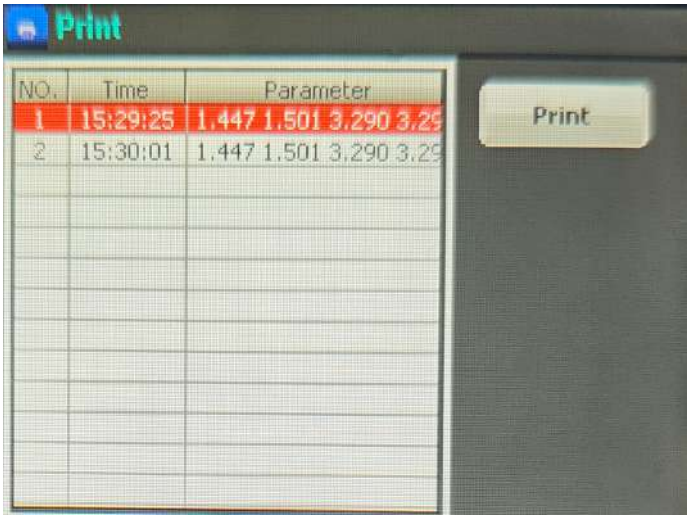


The calibration process of the iSurfa-360 surface roughness meter is simple and convenient.

- Set the calibration value according to the standard sample's values.
- After setting the calibration value, press the "START" button to conduct a complete measurement.
- After the measurement is completed, simply press the confirmation button to save the calibration values.

Measurement Conditions





- The process of storing and printing data is convenient. It can store up to 100 pieces of data. Users can select the required measurement data for viewing and printing.

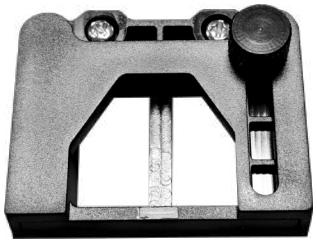
Technical Specification

Measurement Range	**Z-axis (vertical)**	160um
	X-axis (horizontal)	17.5mm（0.71 inch）
Resolution	**Z-axis (vertical)**	0.001um/±20um
		0.002um/±40um
		0.004um/±80um
Measurement Items	**Parameters**	Ra Rz==Ry(JIS) Rq Rt==Rmax Rp Rv R3z R3y Rz(JIS) Rs Rsk Rku Rsm Rmr RPc、Rk、Rpk、Rvk、Mr1、Mr2
	Standard	ISO 4287 international standard; ANSI B46.1 American standard; DIN 4768 German standard; JIS B601 Japanese standard
	Graphics	Supporting rate curve, roughness, original contour, filtering waveform
Filter		RC,PC-RC,Gauss,D-P
Sampling length (Lr)		0.25,0.8,2.5mm
Evaluation length (Ln)		Ln= lr×n n=1~5
Measure The Run Length		3L-7L
Sensor	**Measurement Principle**	Displacement-type differential inductor
	Contact Pin	Natural diamond, with a 90-degree cone angle and a 5-micron tip radius

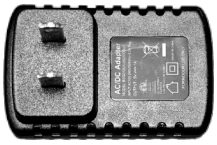
Technical Specification

Sensor	**Force Measurement**	<4mN
	Guide Head	Hard alloy, sliding direction radius 40mm
	Sliding Speed	lr=0.25, Vt=0.135mm/s
		lr=0.8, Vt=0. 5mm/s
		lr=2.5, Vt=1mm/s
		Return Vt = 1 mm/s
Indication Accuracy		0.001um
Indication Error		±(5nm + 0.1A) A: Standard value of Ra for multi-line template parameters
Indication Variation		No more than 3%
Remainder Of The Outline		No more than 0.010 micrometers
Power Supply		Built-in lithium-ion rechargeable battery, charged by a DC5V, 800mA charger
Dimensions Of The Shape		141×55×40mm
Weight		About 400 grams
Work Environment		Temperature: -20℃ ~ 40℃ Humidity: < 90% RH
Storage And Transportation Environment		Temperature: -40℃ ~ 60℃ Humidity: < 90% RH
Optional Accessories		Surface sensor, small hole sensor, deep groove sensor, extension rod, adapter rod, micro printer, 200mm measurement platform, 300mm marble measurement platform

Standard Delivery

Name	Qty	Photo
Roughness Measuring Instrument Main Unit	1pc	
Roughness Sensor	1pc	
Height-Adjustable Support Bracket	1pc	
Sensor Protective Cover	1pc	
Calibration Test Block	1pc	
Test Block Support	1pc	

Standard Delivery

Name	Qty	Photo
Charger	1pc	
Usb Charging Cable	1pc	
Screwdriver	1pc	
User Manual	1pc	
Certificate Of Conformity	1pc	
Warranty Card	1pc	
Instrument Box	1pc	

Optional Delivery

Optional	Thermal printer
	Surface sensor
	Deep groove sensor
	Small hole sensor

Recommended Table of Sampling Lengths

Ra(μm)	Rz(μm)	Sampling Length λc(mm)
>5~10	>20~40	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	0.25
>0.20~0.25 >0.16~0.20	>1.0~1.25 >0.8~1.0	
>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	