

ART100 Surface Roughness Tester



General Introduction

The product is a new portable Surface Roughness Tester developed by our company. Featuring high accuracy, wide range of application, simple operation and stable performance. It is widely applicable in testing surfaces of all kinds of metals and non-metals. Integrating pick up with the main unit, it is a hand-held set, especially suitable for use on production sites.

- ◆ Appearance using pull aluminum mould design, durable, anti-electromagnetism interference ability significant, accord with current design new trend.
- ◆ By using high-speed DSP processors for the data processing and calculation, measuring and calculation speed is greatly improved.
- ◆ Liquid crystal adopts popular OLED display, high brightness, no perspective, wide temperature. It is suitable for various applications.
- ◆ Using lithium ion rechargeable batteries, it can work long hours with no memory effect. It also can work with charging. Charging time is short, while the battery life is long.
- ◆ Use the common USB interface to charge and communication. Use special charger or the computer USB port of charge it's convenient and quick.
- ◆ Dot matrix LCD display, interface message is rich.
- ◆ Real-time monitoring of lithium battery power and display, electric charge and timely remind users.
- ◆ Automatic shutdown function, low power consumption and hardware design make

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instrument working hours exceeds. It is suitable for all kinds of field use.

◆ The sensors head has the protect door, which protect the head of the sensors effectively. Guarantee the accuracy of measurement.

Work Principle

When the pickup driven by a driver is making a linear uniform motion along the test surface, the contact stylus in perpendicular with the work surface is moving up and down on the work surface. Its motion is converted into electric signals, which are amplified, filtered and transformed into digital signals through A/D. The signals are then processed by the DSP into Ra and Rz values before displayed on the screen.

Technical Parameters

- Measurement Parameters(μm): Ra, Rz, Rq, Rt
- Stroke Length (mm): 6
- Sampling Length (mm): 0.25 , 0.80 , 2.50
- Evaluation Length (mm): 1.25 , 4.0 ,
- Measurement Range (μm):
Ra: 0.05 ~ 10.0
Rz: 0.1 ~ 50
- Error of Indication: $\pm 15\%$
- Variability of Indication: $< 12\%$
- Touch needle tip arc radius and angle of the sensor
Tip arc radius: $10 \mu\text{m} \pm 1 \mu\text{m}$
Angle: $90^{+5^\circ}_{-10^\circ}$
- The sensor touch needle static force measurement and its rate
Touch needle static force measurement: $\leq 0.016\text{N}$
Force measurement rate: $\leq 800\text{N/m}$
- Sensor guide head pressure: $\leq 0.5\text{N}$
- Battery: 3.7V Lithium Ion battery
- Contour Dimension: 106 mm \times 70 mm \times 24 mm
- Weight: 200g
- Working Environment Conditions
- Temperature: $-20^\circ\text{C} \sim 40^\circ\text{C}$
- Relative Humidity: $< 90\%$



- Surrounding no vibration and no corrosive medium.

Standard Accessories:

- Main unit with sensor (pick-up)
- Charger with USB port
- Test plate / Roughness patch
- Calibration certificate
- Instruction manual
- Durable carrying case

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