

# Surface Roughness Tester JITAI 8103



The surfaces roughness tester is suitable for shop floor use and mobile measure to need of a small handheld instrument, its operation is simple, function overall, measure fast, accuracy stability, take convenience. This tester applies to production site and can be used to measure surface roughness of various machinery-processed parts. This tester is capable of evaluating surface textures with a variety of parameters according to various national standards and international standard. The measurement results are displayed digital/graphically on the OLED, and output to the printer.

## Main features

- Composite structure of main display unit ,driver unit and Sensor.Electromechanical integration design, small size, light weight, easy to operation;
- Support Bluetooth printing and mobile APP wireless operation.
- Multiparameters:Ra,Rz,Rq,Rt,Rp,Rv,R3z,R3y,Rz(JIS),Rs,Rsk,Rsm,Rku,Rc,Ry,Rmax,Rmr; R<sub>Pc</sub>、 R<sub>k</sub>、 R<sub>pk</sub>、 R<sub>vk</sub>、 Mr1、 Mr2
- In addition to calculation results, the tester can display primary profiles and assessed roughness profiles and load curves.
- 320μm Large measurement range;
- The 3.5-inch color graphic LCD provides excellent readability and an intuitive display that is easy to negotiate. The LCD of 480\*320 dot matrix includes a adjustable backlight for improved -visibility in dark environments. Wide angle of view;
- DSP chip control and data processing, high speed, low power consumption;
- Display full information, intuitive and graphical displays all parameters;
- The tester Complies with the following standards: ISO4287,ANSI b46.1,DIN4768,JISb601
- 4 Profile Filter: Gauss RC PC-RC D-P
- Built-in 3000mAh lithium-ion rechargeable battery and control circuit, high capacity, no memory effect;
- The tester can graphically display the remaining battery power.
- The tester can be animated to show that it is charging and filling., the operator can readily understand the level of charge
- Can work more than 50 hours while the power is enough;
- Large capacity data storage, can store 100 item of raw data and measured profile;
- Real-time clock setting and display for easy data recording and storage;
- With automatic sleep, automatic shutdown power-saving features;
- Reliable circuit and software design of prevent the motor stuck;
- Instrument can display a variety of information tips and instructions. For example Measurement result display, the menu prompts and error messages;
- Can connected to the computer and printer ;
- All parameters can be printed or print any of the parameters which set by the user ;
- Optional curved surface pickup sensor, holes sensor, minuteness holes sensor, measurement stand, Sheath of sensor, extension rod, printer and analysis software ;

## Technical Parameters

| Name                     |                         | Content                                                                                                                       |
|--------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Measurement Range        | The Z axis (vertical)   | 320μm (-160μm~160μm) / 12600μin (-6300μin~+6300μin)                                                                           |
|                          | The X axis (horizontal) | 17.5mm/0.69"                                                                                                                  |
| Resolution ratio         | The Z axis (vertical)   | 0.002μm/±20μm 0.004μm/±40μm                                                                                                   |
|                          |                         | 0.008μm/±80μm 0.02μm/±160μm                                                                                                   |
| Measurement item         | Parameter               | Ra Rz Rq Rt Rc Rp Rv R3z R3y Rz(JIS) Ry Rs Rsk Rku Rmax Rsm<br>Rmr R <sub>Pc</sub> Rk R <sub>pk</sub> R <sub>vk</sub> Mr1 Mr2 |
|                          | Standard                | ISO4287,ANSI b46.1,DIN4768,JISb601                                                                                            |
|                          | Graphic                 | Primary profile, Roughness profile, load curves                                                                               |
| Filter                   |                         | RC,PC-RC,Gauss,D-P                                                                                                            |
| LCD dimensions           |                         | 3.5-inch 480*320                                                                                                              |
| The sampling length(/r)  |                         | 0.25,0.8,2.5mm                                                                                                                |
| Assessment length(/n)    |                         | $L_n = l_r \times n$ n=1~5                                                                                                    |
| Sensor                   | Principle               | The displacement differential inductance                                                                                      |
|                          | Stylus                  | Natural Diamond, 90B cone angle, 5μm tip radius                                                                               |
|                          | Force                   | <4mN                                                                                                                          |
|                          | Skid                    | Ruby,Longitudinal radius 40mm                                                                                                 |
|                          | Traversing speed        | $l_r=0.25$ , $V_t=0.135\text{mm/s}$                                                                                           |
|                          |                         | $l_r=0.8$ , $V_t=0.5\text{mm/s}$                                                                                              |
|                          |                         | $l_r=2.5$ , $V_t=1\text{mm/s}$                                                                                                |
|                          |                         | Return, $V_t=1\text{mm/s}$                                                                                                    |
| Accuracy                 |                         | ±(5nm+0.1A) A: Ra of calibration test block                                                                                   |
| Repeatability            |                         | No more than 3%                                                                                                               |
| Power supply             |                         | Built-in3.7VLithium ion battery,Charger :DC5V,800mA/3hour                                                                     |
| Working Time             |                         | More than 50 hours                                                                                                            |
| Size( L*W*H)             | Display Unit            | 158*55*52mm                                                                                                                   |
|                          | Drive Unit              | 115*23*27mm                                                                                                                   |
| Weight                   |                         | About 400g                                                                                                                    |
| Working Environment      |                         | Temperature:- 20°C ~ 40°C                                                                                                     |
|                          |                         | Humidity:< 90% RH                                                                                                             |
| Store and Transportation |                         | Temperature:- 40°C ~60°C                                                                                                      |
|                          |                         | Humidity:< 90% RH                                                                                                             |

### Standard Configuration

| Number | Name                           | Quantity | Remarks         |
|--------|--------------------------------|----------|-----------------|
| 1      | Main Unit                      | 1        |                 |
| 2      | Sensor                         | 1        | Precision parts |
| 3      | Adjustable height support feet | 1        |                 |
| 4      | Calibration block              | 1        |                 |
| 5      | Block bracket                  | 1        |                 |
| 6      | Extension cable                | 1        |                 |
| 7      | Touch pen                      | 1        |                 |
| 8      | Charger                        | 1        |                 |
| 9      | USB charging cable             | 1        |                 |
| 10     | Operating manual               | 1        |                 |
| 11     | Certificate                    | 1        |                 |
| 12     | Guarantee card                 | 1        |                 |
| 13     | Instrument container           |          |                 |

### Optional configuration

|                                   |                                                                                                  |
|-----------------------------------|--------------------------------------------------------------------------------------------------|
| <b>JITAI55</b>                    | – Extension rod. Used to extend length of sensor when testing deep hole (55mm)                   |
| <b>JITAI90</b>                    | – Right angle measuring mechanism.                                                               |
| <b>JITAI100</b>                   | – standard sensor, plane & shaft & inner surface of hole>6mm, depth <22mm                        |
| <b>JITAI120</b>                   | – small hole sensor, cylindrical& plane & inner surface of hole>2 mm, depth <9mm                 |
| <b>JITAI110</b>                   | – sensor for curved surface & plane, cylindrical, curvature radius>3 mm                          |
| <b>JITAI131</b>                   | – sensor for deep groove, cylindrical & plane & groove width>3 mm, depth<10mm                    |
| <b>JITAI520</b>                   | – Metal(Al)working platform, elevating, convenient and stable for test process.                  |
| <b>JITAI620</b>                   | – Marble substrate working platform, elevating, V groove, high accuracy to test tiny work piece. |
| <b>Roughness comparison block</b> | – High quality comparison block of surface roughness                                             |
|                                   | – Strict anti-rust treatment process                                                             |
|                                   | – 27 comparison block/set                                                                        |
| <b>Mini Pinter</b>                | – External printer                                                                               |