



**HEXAGON**  
MANUFACTURING INTELLIGENCE



**TESA**  
TECHNOLOGY

PRODUCT INFO



## RUGOSURF 20 PORTABLE ROUGHNESS TESTER

### RUGOSURF 20 THE ROUGHNESS TESTER FOR EVERY WORKSHOP

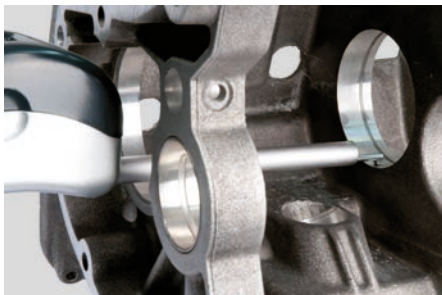
#### Robust and easy to use

The RUGOSURF 20 is popular thanks to its ergonomic design and intuitive graphic user interface.

Suitable for intensive use close to the production line thanks to its autonomy and robust construction: powerful and reliable probe drive mechanism, keyboard with IP67 rating and measurement probe protected against shocks and projections.

The measurement directly on the work piece is facilitated thanks to a pin  $\varnothing 8$  mm for magnetic support or with the extension of the probe by 100 mm.

The RUGOSURF 20 is connected to a computer via the USB connector like a smartphone.



*RUGOSURF 20 with 100 mm probe extension to measure zones of difficult access*

#### KEY POINTS:

- ROBUST – COMPACT – EASY TO USE
- 400  $\mu$ m MEASUREMENT ON Z AXIS
- VISUAL REPRESENTATION OF RESULTS WITH BEARING AREA CURVE AND ROUGHNESS PROFILE
- INTEGRATED MEMORY OF MEASUREMENTS



## FEATURES

MAIN FEATURES	
Cut-off	Choice of 3
Number of cut-offs	1 to 5
Parameters	Customised activation of roughness parameters
Tolerances	Tolerances can be selected for all parameters
Results display	Parameters, graphs and bearing area curve (Abbott) are displayed on the device
Memory	Previous measurements are recorded
Return of probe to measurement position	Automatic after each measurement
Standards and units of measurement	Choice of ISO 4287 or ISO 12085 (CNOMO) and of mm or inch
Calibration	Roughness calibration standard (included)
Measurement delay	None or choice of 6 time-delays
Stand-by mode	Automatic for optimum battery life
Clock	Time and date settings



## CONTENTS OF DELIVERY

TESA RUGOSURF 20 roughness tester (No. 06930013) supplied with	
<b>06960081</b>	SB10 probe with stylus tip R = 2 µm, 90°
<b>06960041</b>	Roughness calibration standard Ra = 2,97 µm (117 µin)
<b>056633</b>	Positioning pin (8-mm diameter)
<b>057655</b>	Vertical V-shaped support for diameter > 80 mm
<b>057653</b>	Removable probe protector
<b>06960045</b>	Rechargeable battery (7.2V, 300 mAh)
<b>06960046</b>	Mains charger (240/110V, 50/60 Hz) with EU/US adapter
<b>056632</b>	Knurled screw (set of 4) for vertical support
-	User manual
-	Carrying case



## TECHNICAL SPECIFICATIONS

Part number: 06930013

Roughness parameters:

ISO 4287-1997/JIS B0601/ASME B46-2002 :

Ra – Rq – Rt – Rz – Rc – Rsm – Rmr – Pt – Pmr

DIN 4768 : Rmax – EN 10049 : R<sub>Pc</sub> – R<sub>Pc</sub>

ISO 12085 (CNOMO) : R – Rx – AR

Graphs: bearing area curve, roughness profile

Measurement range: X-axis = 16 mm, Z-axis = 400 µm

Display range: Ra 0 ÷ 100 µm, (0 ÷ 3937 µin), Rt 0.05 ÷ 400 µm (1.97 ÷ 15748 µin)

Resolution: 0,001 µm

Precision: ISO 3274, Class 1

Units of measurement: mm / inches

Display: 2", black and white LCD (160 x 100 pixels)

Delay before measurement: 0 - 1 - 2 - 4 - 6 - 8 - 10 s

Cut-off length:

0,25 - 0,8 - 2,5 mm (0.010 - 0.030 - 0.100 in)

Number of cut-offs: 1 to 5

Electronic filters:

Gaussian filter as per ISO 11562 and

λs filter as per ISO 3274

Probe type: inductive probe with skid

Diamond stylus tip:

R = 2 µm, 90° (06960081 SB10 standard probe)

Measurement force: 0,75 mN (ISO 3274)

Speed of travel: 0,5 – 1 mm/s (measurement and positioning)

Languages:

English, Spanish, Portuguese, German, French, Italian, Dutch,

Slovakian, Chinese, Japanese

Internal memory:

20 measurements with profile and graphs or

> 1000 measurements with parameters only

Power supply: Internal battery (7.2V, 300 mAh, NiMH PP3)

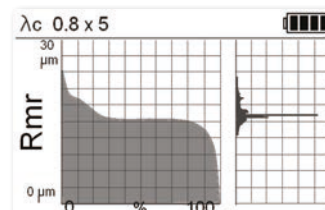
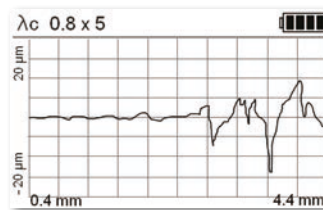
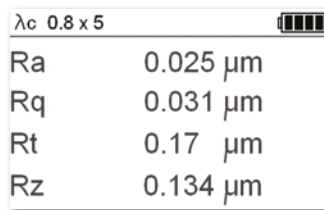
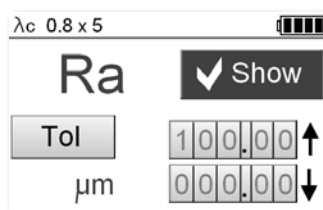
Battery autonomy: Approximately 1000 measurements

Ports: Micro USB (PC)

Operating temperature: 10°C to 40°C

Storage temperature: -10°C to 50°C

Dimensions and weight: 122 x 60 x 62 mm, 650 g

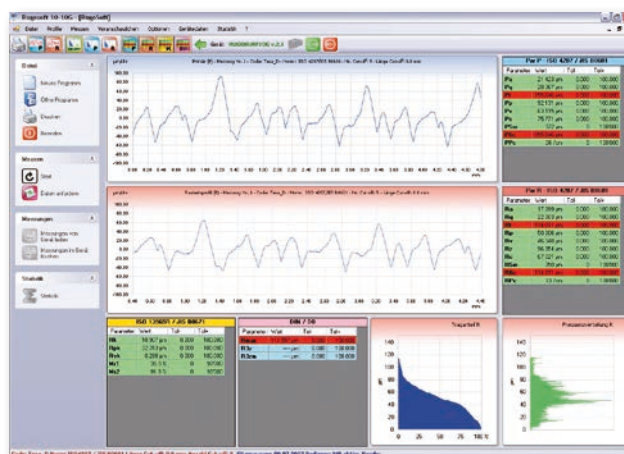


Results display

## ACCESSORIES

### RUGOSOFT software

- Archiving of data and measurement parameters for quality control or for database
- Remote control of the RUGOSURF 20: parameters, tolerances, settings and measurements
- Traceability of results, tolerances, statistics, roughness profiles and Abbott curve in inspection reports
- Data export
- Supplied with a software licence dongle (USB stick).



RUGOSOFT software



**NEW! Free download**  
**Data Connection tool**

<http://go.HexagonMI.com/DataConnectionTool>

## PROBES AND OTHER ACCESSORIES

Probe (stylus tip R = 5 µm, 90° unless stated otherwise)

<b>06960081 (standard)</b>	SB10 probe with stylus tip R = 2 µm, 90°
<b>06960036</b>	SB10 probe – For surfaces, bores and shafts with diameter >10 mm
<b>06960037</b>	SB20 probe – For grooves with a depth <5 mm
<b>06960038</b>	SB30 probe – For small bores of diameter >4 mm
<b>06960039</b>	SB40 probe – V-shaped for cylinders of diameter >1 mm
<b>06960040</b>	SB50 probe – For concave surfaces
<b>06960057</b>	SB110 probe – For concave or convex surfaces with radius >5 mm
<b>06960056</b>	100 mm probe extension

### Roughness calibration specimen

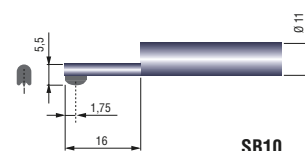
<b>06960041</b>	Roughness specimen Ra = 2,97 µm (117 µin)
<b>06960064</b>	Roughness specimen Ra = 0,1 µm (4 µin)
<b>06960065</b>	Roughness specimen Ra = 0,5 µm (20 µin)
<b>06960066</b>	Roughness specimen Ra = 1 µm (40 µin)

### Software and cable

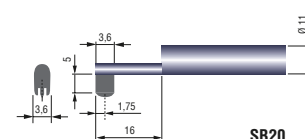
<b>06960034</b>	RUGOSOFT Software
<b>04760099</b>	USB cable for RUGOSURF 20 to PC connection

### Autres

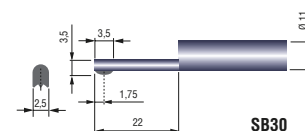
<b>06960035</b>	Granite base, 400 x 250 mm with measurement stand H=150 mm
<b>01639024</b>	Suction-mounted articulated-arm, dovetail clamp with tightening screw Ø 8 mm



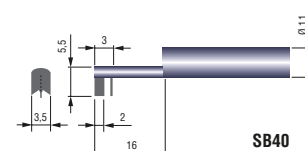
SB10



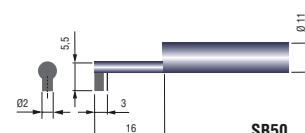
SB20



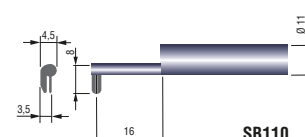
SB30



SB40



SB50



SB110



100 mm probe extension



Roughness specimen Ra = 2.97 µm (117 µin)



Granite base with measurement stand



Suction-mounted articulated arm

## About TESA

For more than 75 years, TESA has distinguished itself in the market through its excellent products, its unique expertise in micromechanics and precision machining as well as its proven experience in dimensional metrology.

The TESA brand is the global market leader in the field of height gauges and a pioneer thanks to its wide range of instruments, including callipers, micrometers, dial gauges, lever-type dial test indicators and inductive probes. TESA is a true benchmark for the inspection of incoming goods, as well as for production workshops and quality assurance laboratories.

## About Hexagon Manufacturing Intelligence

Hexagon Manufacturing Intelligence helps industrial manufacturers develop the disruptive technologies of today and the life-changing products of tomorrow. As a leading metrology and manufacturing solution specialist, our expertise in sensing, thinking and acting – the collection, analysis and active use of measurement data – gives our customers the confidence to increase production speed and accelerate productivity while enhancing product quality.