

## Roughness measurement with TR 110

### Application

Designed for quick and accurate measurements, the pocket-sized electronic roughness tester TR110 is suitable for use in the workshop, for incoming inspection, quality control or in the laboratory.

With its large measuring range and safe and easy handling the gauge is used for measuring the roughness of external surfaces and grooves.

### Description

Working on the same piezoelectric micro-stylus system as laboratory instruments, TR 110 provides the following special features:

- Determination of the roughness parameters  $R_a$  and  $R_z$
- Three user-adjustable cut-off lengths

For measurement, TR 110 is simply placed onto the measuring surface. When pressing the start button, the

micro-stylus scans over the surface to be measured within a few seconds. Depending on the selected cut-off length, the roughness value is immediately displayed as  $R_a$  or  $R_z$  value.

### $R_a$ and $R_z$

$R_z$  = Surface roughness depth

$R_z$  is the mean of five maximum peak-to-valley roughness depths in five successive sampling lengths.

$R_a$  = Arithmetic mean surface roughness

$R_a$  is the generally accepted and most frequently applied roughness Parameter.  $R_a$  is the arithmetical mean of the profile deviations from the mean value.

When measuring surface roughness, the numerical value of the  $R_a$  parameter is always smaller than its  $R_z$  value.



### Standard supply

- Roughness tester TR 110
- Protection cover for tracer
- Roughness test plate  $R_a$
- Mains unit
- Soft carrying case
- Carrying case
- Operating instructions
- Certificate

### Accessories

- UKAS certified roughness test plates

Technical Data	
Roughness parameter	$R_a$ , $R_z$
Measuring units	$\mu\text{m}$ , $\mu\text{inch}$
Measuring range	$R_a$ : 0.05..10 $\mu\text{m}$ $R_z$ : 0.1 $\mu\text{m}$ .. 50 $\mu\text{m}$
Cut-off lengths	0.25 mm; 0.8 mm, 2.5 mm
Filter	RC
Functions	dynamic display during testing, sound signal start-test-ready, Auto-off 90 seconds, backlight LCD
Calibration	by CAL function
Min. curvature of cylindrical surface	40 mm diameter (V-grooved based)
Tracing length	6 mm
Tracing speed	1.00 mm/sec
Accuracy	$\leq \pm 15\%$ , conforms to ISO Class 3
Pick-up stylus	piezo-electric
Tracer tip	diamond, radius : $10 \pm 2.5 \mu\text{m}$ Angle: $90^\circ$ ( $+5^\circ$ or $-10^\circ$ )
Operating temperature	$0^\circ\text{C} \dots 40^\circ\text{C}$
Power supply	3,6 V / Li-ion battery / low battery indication
Charger	6 V DC
Dimensions	110 mm x 70 mm x 24 mm
Weight	200 g

### Portable Roughness Tester

- Pocket-sized and handy
- Selectable cut-off lengths
- Piezo-electric pick-up stylus
- Large measuring range suitable for most materials

