

EdgeMasterX

Multiple edges in only one measurement run

The EdgeMasterX originates from the Alicona product line for optical, automatic tool measurement in high resolution. It is a fully automated cutting edge measurement system for quality assurance of drills, millers and other round tools to be applied in production. Specifically, the EdgeMasterX enables automated multi-edge measurement. When utilized in combination with a motorized rotation unit, users benefit from the measurement of multiple tool edges, even chamfered edges, in one single measurement run. Deviations from a CAD file or reference geometry are indicated through a traffic light system. Measurements are initiated by a single button solution allowing for measurements to be performed without any further user interaction.



Real3D Rotation Unit G2



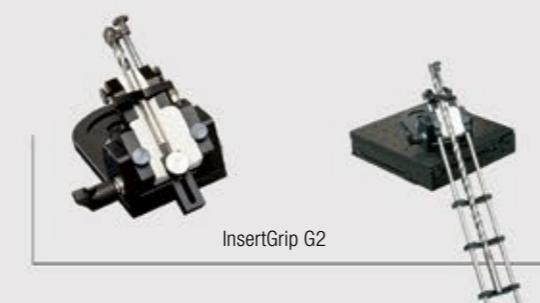
RotationGrip



AdvancedInsertGrip



ToolGrip



InsertGrip G2

GENERAL SPECIFICATIONS

| | | | | | | | | | |
|---------------------------------------|--|--|--|--|--|--|--|--|--|
| Positioning volume (X x Y x Z) | RL objectives: mot.: 50 mm x 50 mm x 155 mm (Z: 25 mm mot., 130 mm man.) = 387500 mm ³ SXRL/AXRL-objectives: mot.: 50 mm x 50 mm x 120 mm (Z: 25 mm mot., 95 mm man.) = 300000 mm ³ | | | | | | | | |
| Max. specimen weight | 4 kg; more on request | | | | | | | | |

OBJECTIVE SPECIFIC FEATURES

| Objective magnification (*) | | 10x | 20x | 50x | 2xSX | 5xAX | 10xAX | 20xAX | 50xSX |
|---|-----------------|------|-----|------|------|------|-------|-------|-------|
| Working distance | mm | 17.5 | 16 | 10.1 | 34 | 34 | 33.5 | 20 | 13 |
| Lateral measurement area (X,Y) (X x Y) | mm ² | 2 | 1 | 0.4 | 10 | 3.61 | 2 | 1 | 0.4 |
| Measurement point distance | µm | 1 | 0.5 | 0.2 | 5 | 2 | 1 | 0.5 | 0.2 |
| Measurement noise | nm | 40 | 20 | 10 | 1240 | 165 | 45 | 25 | 15 |
| Vertical resolution | nm | 100 | 50 | 20 | 3500 | 460 | 130 | 70 | 45 |
| Vertical measurement range | mm | 16 | 15 | 9 | 25 | 25 | 25 | 19 | 12 |
| Accessibility | ° | 31 | 29 | 19 | 40 | 51 | 51 | 39 | 26 |

(*) Objectives with longer working distance available upon request

RESOLUTION AND APPLICATION SPECIFICATIONS

| Objective magnification | | 10x | 20x | 50x | 2xSX | 5xAX | 10xAX | 20xAX | 50xSX |
|---------------------------------------|----|------|-------|------|------|------|-------|-------|-------|
| Min. measurable radius | µm | 5 | 3 | 2 | 20 | 10 | 5 | 3 | 2 |
| Min. measurable roughness (Ra) | µm | 0.3 | 0.15 | 0.08 | n.a. | n.a. | 0.45 | 0.25 | 0.15 |
| Min. measurable roughness (Sa) | µm | 0.15 | 0.075 | 0.05 | n.a. | n.a. | 0.25 | 0.1 | 0.08 |
| Max. bevel length | µm | 800 | 400 | 160 | 4000 | 2000 | 800 | 400 | 160 |
| Min. measurable wedge angle | ° | 20 | | | | | | | |
| Max. measurable slope angle | ° | 87 | | | | | | | |

ACCURACY

| | | |
|--------------------------|-------------------------------|---|
| Profile roughness | Ra = 0.5 µm | U = 0.04 µm, σ = 0.002 µm |
| Area roughness | Sa = 0.5 µm | U = 0.03 µm, σ = 0.002 µm |
| Wedge angle | β = 70 ° - 110 ° | U = 0.15 °, σ = 0.02 ° |
| Edge radius | R = 5 µm - 20 µm R > 20 µm | U = 1.5 µm, σ = 0.15 µm U = 2 µm, σ = 0.3 µm |