

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 mm ²	2 4	1 1	0.4 0.16	10 100	3.61 13.03	2 4	1 1	0.4 0.16
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	50SX
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