

EdgeMaster

Automatic cutting edge measurement in production

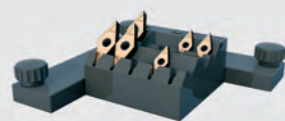
The EdgeMaster is an optical 3D measurement device for automatic cutting edge measurement. Edges of inserts, drills, millers and other round tools are measured regardless of type, size, material, or surface finish. Users measure radii $>2\mu\text{m}$ as well as rake, wedge and clearance angle of tools. Different types, including both waterfall and trumpet, are precisely measured. Traceable and repeatable results are delivered in high vertical resolution even at vibrations, variations in temperature and ambient light. In addition to chipping measurement, the high vertical resolution also enables traceable roughness measurement on the rake face.



RotationGrip



AdvancedInsertGrip



InsertGrip G2



ToolGrip



GENERAL SPECIFICATIONS

Positioning volume (X x Y x Z)	RL objectives: man.: 25 mm x 25 mm x 155 mm (Z: 25 mm mot., 130 mm man.) = 96875 mm ³ SXRL/AXRL objectives: man.: 25 mm x 25 mm x 120 mm (Z: 25 mm mot., 95 mm man.) = 75000mm 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	50xSX
Min. measurable radius	μm	5	3	2	20	10	5	3	2
Min. measurable wedge angle	°	20							
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
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