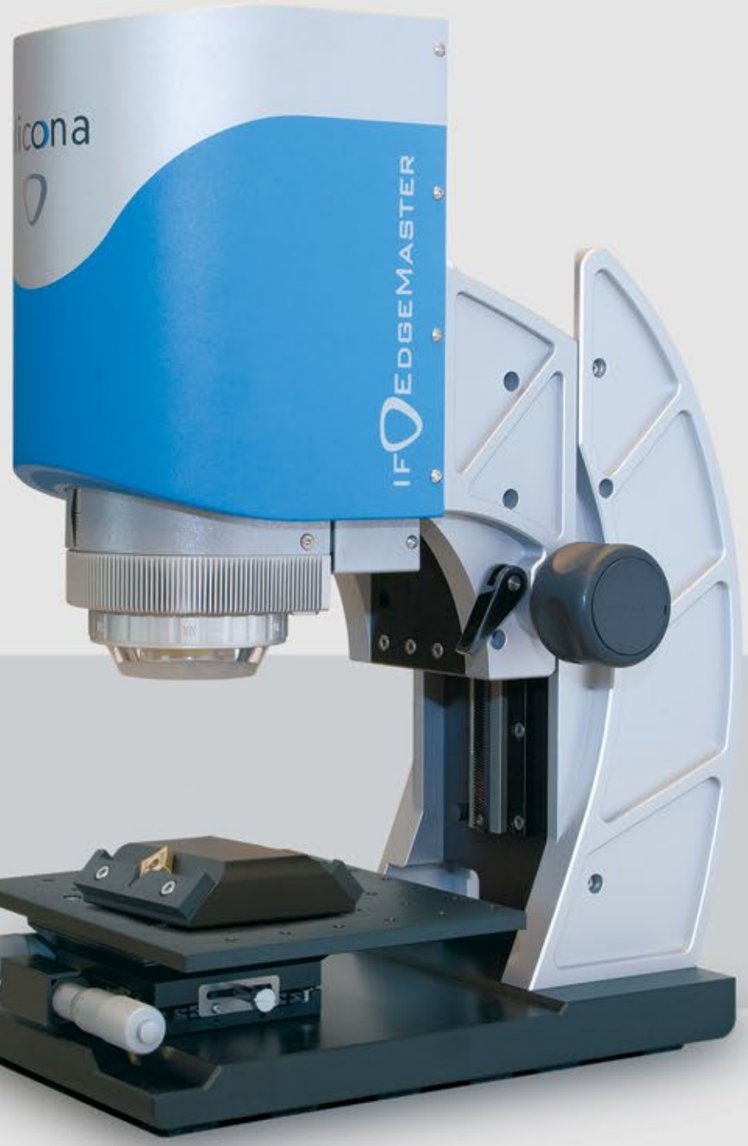
EdgeMaster

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 >2µm 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

ToolGrip

InsertGrip G2

alicona

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 mm³ SXRL/AXRL objectives: man.: 25 mm x 25 mm x 120 mm (Z: 25 mm mot., 95 mm man.) = 75000mm³
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 mm²	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 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

Initiative **Fair Data Sheet**

Specifications in blue mark Alicona specific values.