

EdgeMasterHOB

Optical cutting edge measurement of hob cutters

The EdgeMasterHOB is one of Alicona's optical tool measurement systems and a market-specific adaption of the optical cutting edge measurement system EdgeMaster. Like all Alicona tool measurement systems, the EdgeMasterHOB is used for automated quality assurance. The hob measuring device is particularly applied in e.g. regrinding centers. A working distance of 33mm allows effortless measurement of cutting edges even in areas that are hard to access. Users measure, amongst other features, chipping and edge defects, chamfer as well as edge roundness at the tooth flank, tooth root and tooth tip.



GENERAL SPECIFICATIONS

Positioning volume	Z: 25 mm (mot.), 92 mm (man.) Lifting table: 120 mm (man.) Rotation table: +/- 30° (man.)
Max. specimen weight	30 kg; more on request

OBJECTIVE SPECIFIC FEATURES

Objective magnification (*)		5xAX	10xAX	20xAX
Numerical aperture		0.14	0.28	0.42
Working distance	mm	34	33.5	20
Lateral measurement area (X,Y) (X x Y)	mm mm ²	3.61 13.03	2 4	1 1
Measurement point distance	µm	2	1	0.5
Calculated lateral optical limiting resolution	µm	2.33	1.17	0.78
Finest lateral topographic resolution	µm	4	2	1
Measurement noise	nm	165	45	25
Vertical resolution	nm	460	130	70
Vertical measurement area	mm	25	25	19
Accessibility	°	51	51	39

(*) Objectives with longer working distance available upon request

RESOLUTION AND APPLICATION SPECIFICATIONS

Objective magnification		5xAX	10xAX	20xAX
Min. measurable radius	µm	10	5	3
Min. measurable wedge angle	°	20		
Max. measurable slope angle	°	87		
Max. bevel length	µm	2000	800	400

ACCURACY

Wedge angle	$\beta = 70^\circ - 110^\circ$	U = 0.15 µm, $\sigma = 0.02^\circ$
Edge radius	R = 5 µm - 20 µm R > 20 µm	U = 1.5 µm, $\sigma = 0.15 \mu\text{m}$ U = 2 µm, $\sigma = 0.3 \mu\text{m}$