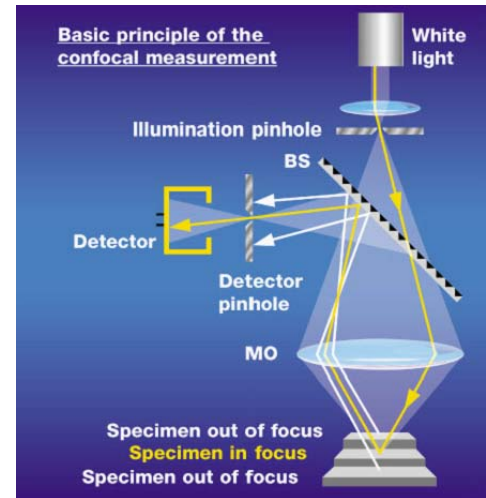
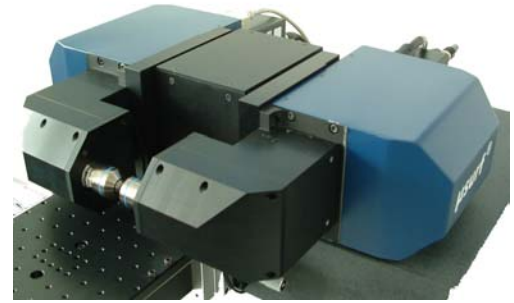


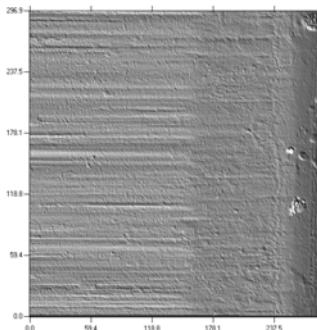
NanoFocus μ Surf[®]-Twin

The μ surf[®]-Twin has been developed for the measurement and evaluation of the geometries of sharp cutting edges up to a thickness of 0.8 mm. By means of the specific arrangement of two measuring heads, nanometer precision in height (z) is achieved.

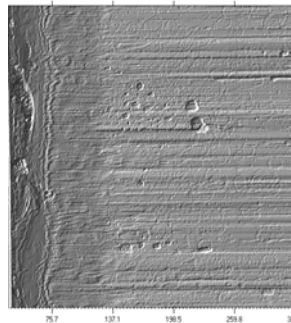
The topography of both sides of the sample is captured simultaneously using the principles of the confocal 3D microscope μ surf[®]. The evaluation software uses coordinate transformation, i.e. vector summation of the values of the absolute thickness values, to calculate the entire 3D image. By means of fully automatic internal calibration of the system (patented process), reliable measurement results are always obtained. The calibration – in which the relative position of the measuring heads is established – lasts only one minute and the system can therefore be used in industrial control applications close to the point of production.



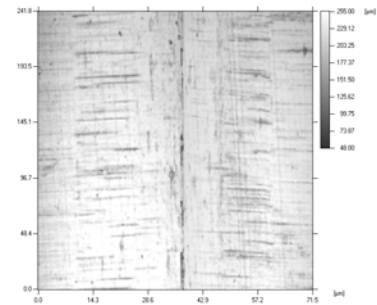
Confocal principle



Blade side 1

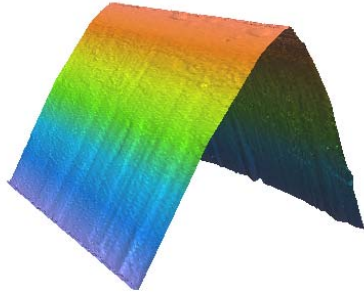


Blade side 2



Composed image of the cutting edge

NanoFocus μ Surf[®]-Twin



3D image of the blade

NF Bladenmaster

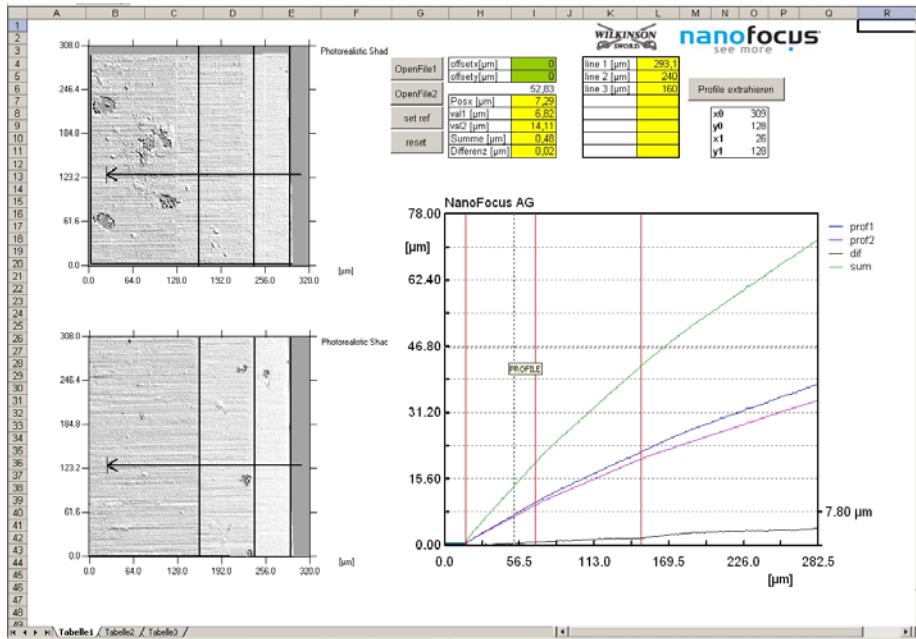
With the NF Bladenmaster, the user has available applications software for simple and rapid quality control of cutting edges.

The measured data are loaded directly into the overview template and displayed as a 2D image. To create the display of the double-sided profile, the desired edge line is drawn directly on the image or manually input as values. The cutting edge can be divided into up to nine segments for the evaluation.

The output report contains :

- Thickness distribution: Measurement of thickness at fixed points
- Face angle: Measurement of the face angles and widths at individual points
- Roughness: Roughness parameters of the individual segments

NanoFocus μ Surf[®]-Twin



Results display from NF Blademaster

NanoFocus μ Surf[®]-Twin

Specifications

Optic module	800S	320S
Measurement area [μm]	800×800	320×320
Numerical aperture	0,46	0,80
Working distance [mm]	3,1	0,66
Lateral resolution in x,y [μm]	1,5	0,7
Vertical resolution in z [nm]	100	50
Measurable flank angle [°]	21*/36**	42*/58**
Vertical measuring range [μm]	220	
Unsharp area*** [μm]	1,5	0,7
Sample thickness [mm] (with 250 μm Piezo)	0,4	
Standard modules		
μ soft [®] -Standardssoftware	NanoFocus measuring and evaluation software with automatic calibration	
NF Blademaster	Evaluation software for cutting edges, display and evaluation of measured data, geometries (thickness distribution, flank angles roughness parameters)	
Camera module 512	Fast progressive scan camera with up to 55 fps, 512x512 pixel CCD, Firewire	
Light source LX 100	High power light source with light cable, dimensions 550×112×160 (B×H×T)	
Positioning module, manual PM	Manually positionable x,y table	
Z measurement module NV 250	High resolution, rapid, precision piezo drive unit. 250 μm z range, scan speed 10 $\mu\text{m}/\text{s}$	
System controller	Industrial PC to latest standard, DVD-burner, network card with Windows XP-Professional operating system plus Office 2003	
Granite block	Customer-specific, horizontal or vertical mounting possible	
Elektronics container	Container for the electronics modules 1000×750×800 (H×B×T) [mm]	
Optional		
Z measurement module NV 500	High resolution, rapid, precision piezo drive unit. 500 μm range for samples up to 0.8mm thick	
Positioning module PM 300	Motorised x,y table, 300mm range in either	
Work bench WT 75	For expansion of the working area, with the electronics module, 1000×750×800 [mm]	

* valid for mirror-reflecting surfaces

** valid for surfaces with $R_a > 0,2\mu\text{m}$

*** valid for flank angles below the stated limits depending on the surface consistency