

# aplanoXX



High NA objectives with protective window, compensating spherical aberration when focusing laser beam inside media

## Applications:

- Microprocessing sapphire, fused silica, glass, Si, SiC
- 3D micro- and nanofabrication
- Nanostructuring in optical data storage and recording polarization converters
- Selective Laser Etching
- Waveguide recording
- Dicing
- Microscopy

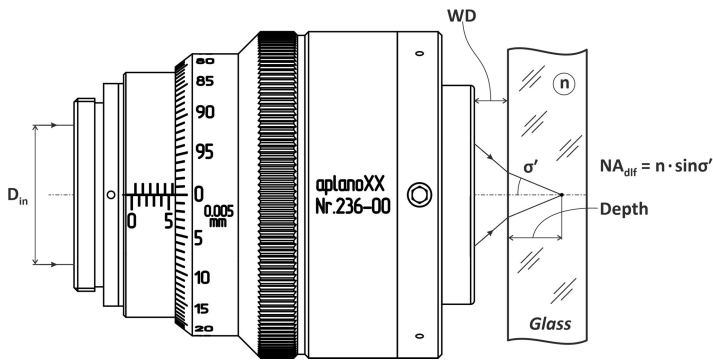
## Specifications

		aplanoXX_NA0.8_D20	aplanoXX_NA0.5_D9
Description		Objectives of aplanatic design with <ul style="list-style-type: none"> <li>• function of compensation of spherical aberration that occurs when focusing laser radiation in transparent media</li> <li>• replaceable protective window</li> </ul>	
Accessories		<ul style="list-style-type: none"> <li>• Window in Holder L9333.06</li> <li>• Protective Window D12_1064, D12_515/1030</li> <li>• Spanner Wrench K-26-0.4x0.4</li> </ul>	
Numerical aperture (NA)		0.8	0.5
Clear Aperture, mm		20	9
Focal length, mm		12.5	8.5
Protective Window		D12, replaceable, installed in Holder L9333.06	
Working Distance, mm	- with window	1.6	4.4
	- without window	2.5	5.5
Range of focusing depth in fused silica*, $\mu\text{m}$		0 ... 4000	0 ... 1000
Spectral band, nm		_1030: 1020 – 1100 _800: 770 - 900 _515: 510 – 545 _800 / 1030: 770 – 900 / 1020 – 1100	
Angular field of view *		$\pm 0.3^\circ$	$\pm 1^\circ$
Recommended maximum pulse energy		100 mJ at 5 ns 300 $\mu\text{J}$ at 1 ps	25 mJ at 5 ns 100 $\mu\text{J}$ at 1 ps
Mounting		C-Mount (1"-32 UN 2A), external other threads available on request	
Diameter, mm		44	32
Length with window holder, mm		54	36 42 with Adapter C-Mount Ext/Int 6mm

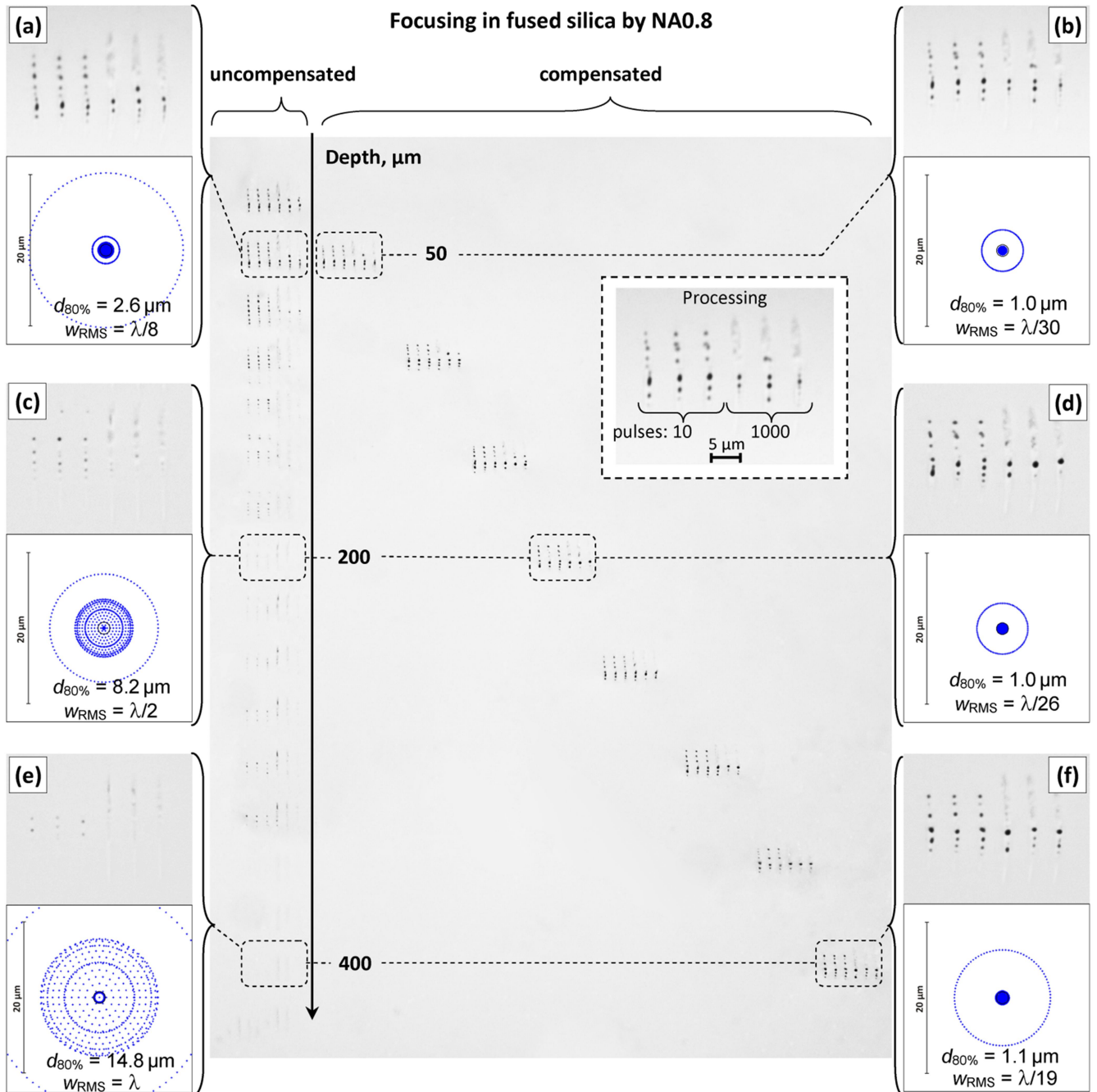
\* - by diffraction limited focusing.

Specifications are subject to change without notice

**In-depth focusing inside transparent media never was so easy!**



## Application example focusing fs laser beam inside fused silica



Views of calculated spots and microphotographs of processed areas:

on the left – *no* compensation of spherical aberration, on the right – *with* aberration compensation.

Layout of pulse groups is shown in the image inserted in central microphotograph.

(Courtesy of University of Southampton)