

foXXus_0-0.21_q



afocal systems to generate multiple foci in zone of focal plane of an F-theta lens

Applications:

- Glass Cutting
- Cutting of Sapphire, other transparent brittle materials
- Micromachining where multi-layer processing is preferable



Specifications

Description		Afocal system to provide 1, 2, 4, 8 foci near focus of F- θ lenses			
Focal length of F- θ lenses (examples)		$f' = 100$ mm		$f' = 160$ mm	
ΔF , μm (8 foci layout)		step	total, from 1 st to 8 th	step	total, from 1 st to 8 th
	air	30	210	77	538
	Glass (x1.5)	45	315	115	805
	Al ₂ O ₃ (x1.76)	53	370	135	945
Clear Aperture, mm		20			
Numerical aperture (NA)		0.1		0.063	
Spectral band, nm		_1030: 1020 - 1080 _343/515: 335 - 365, 510 - 540 other wavelengths on request			
2ω , μm waist in air by $D_{1/e^2} = 14$ mm, $M^2 = 1$	1030 nm	9.4		15.0	
	515 nm	4.7		7.5	
	343 nm	3.1		5.0	
Angular field of view		$\pm 3^\circ$			
Working Distance		focal plane of F- θ lens			
Recommended maximum pulse energy		25 mJ at 5 ns			
Mounting		C-Mount (1"-32 UN 2A), at entrance and exit			
Diameter, mm		54			
Length, mm		59			

Comments:

- ΔF in material is n times larger than in air (n is refractive index): $n \approx 1.76$ for sapphire and $n \approx 1.5$ for glass,
- the foXXus systems create 1, 2, 4 or 8 along the optical axis in focus zone of a focusing lens,
- change in ΔF through rotation of adjustment rings,
- the crack inside material is typically longer than ΔF defined by optical design,
- Denomination: foXXus_0-0.21_q_1030
 ΔF in air, mm _____ wavelength, nm
 index "quasi-afocal" _____



