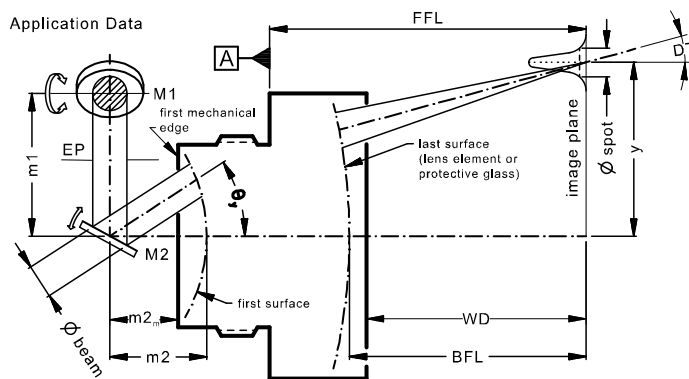


LINOS F-Theta-Ronar Lens

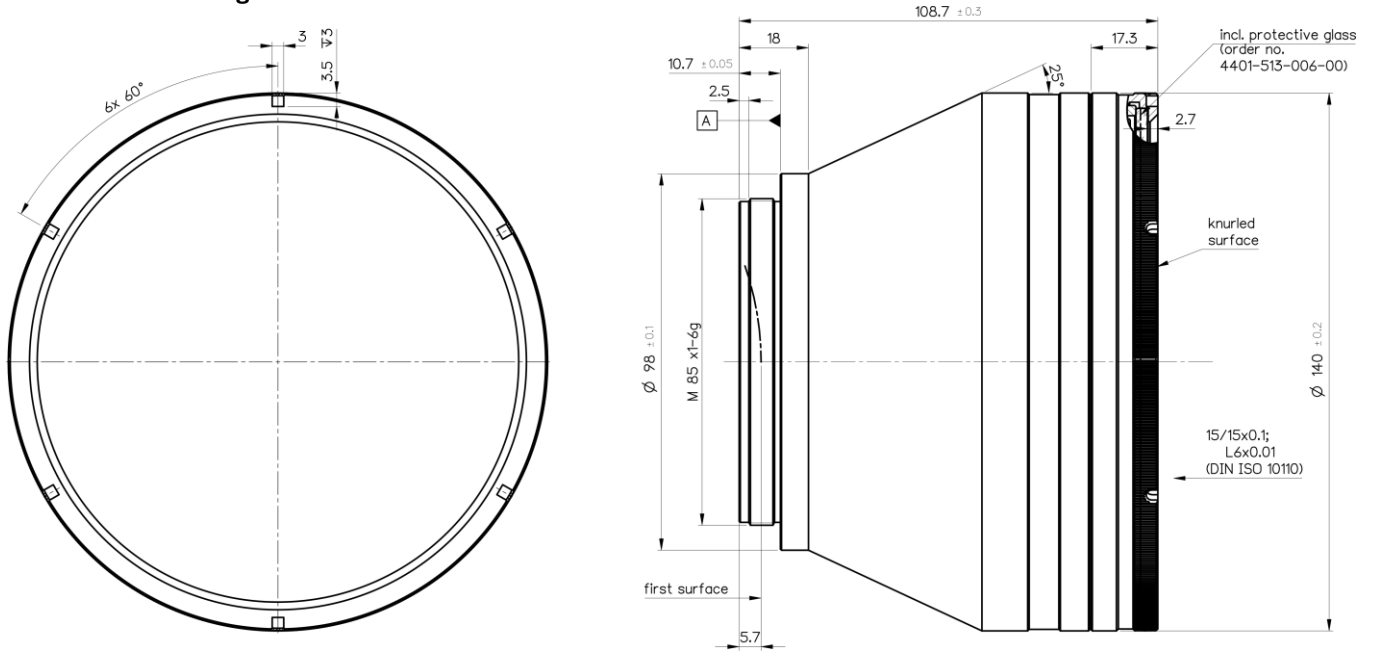
f = 167mm, 1030-1080nm, telecentric, fused silica, low absorption



Part number	4401-513-000-26			
Design wavelength	λ	(nm)	1064	
Effective focal length	EFL	(mm)	167.3	
Back focal length	BFL	(mm)	217.9	
Working distance	WD	(mm)	215.4	
Flange focal length	FFL	(mm)	313.2	
Beam diameter $1/e^2$ truncated	$\varnothing_{\text{beam}}$	(mm)	14.0	20.0
Recommended mirror distance m1	m1	(mm)	17.0	25.6
Recommended mirror distance m2	m2	(mm)	28.0	28.0
Recommended mirror distance $m2_{\text{mechanical}}$	$m2_m$	(mm)	22.3	22.3
Scan angle	$\pm\theta_{x,y}$	(°)	15.2	14.9
Scan area (edge length of scan field)	$2x * 2y$	(mm ²)	85 x 85	84 x 84
Spot diameter	$\varnothing_{\text{spot}}$	(μm)	23	16
Telecentric error (maximum deviation)	DT	(°)	4.3	3.7
Total transmission @ 1030 - 1080nm	T	(%)	> 96	
Group delay dispersion at λ	GDD	(fs ²)	1198	
LIDT coating @ 1064nm, 12ns, 100Hz		(J/cm ²)	40	
LIDT coating @ 1030nm, 291fs, 5kHz		(J/cm ²)	0.9	
Focused back reflex positions from first surface		(mm)	4.0; 7.6; 12.0; 12.3; 15.4; 16.0; 38.3	
Weight		(g)	2100	
Protective glass	PG		4401-513-006-00	

Optical parameters calculated for a 1-mirror system
Subject to technical change

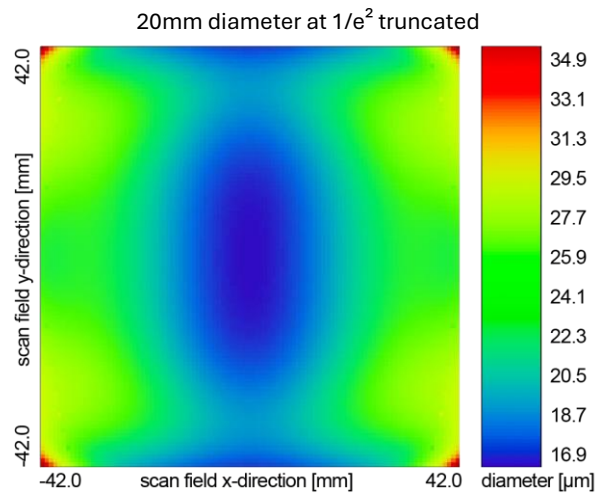
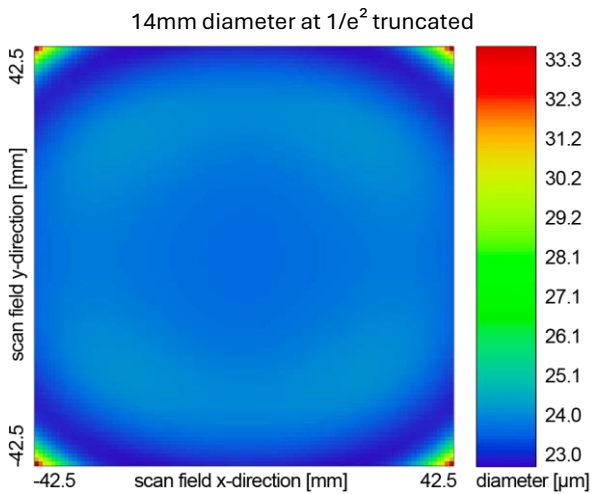
Mechanical drawing



Dimensions without tolerances are nominal values and illustration not to scale

Spot variation over scan field

Spot radius in μm at $1/e^2$ level for a Gaussian laser beam ($M^2=1$), focused over scan field
Field size and mirror distances as given above for a 2 mirror scan system, vignetting $\leq 1\%$



Notes

For technical explanations, see our homepage.

[LINOS Laser Material Processing Optics | Excelitas](http://www.excelitas.com)

In a 1-mirror system, the entrance pupil (EP) is the position of the scan mirror. In a 2-mirror system, it is the point where the scan mirrors should be placed around symmetrically to reach specified performance.

The actual LIDT of the lens, as well as effects such as thermal focus shift, depend on the specific system setup and laser parameters. We recommend testing the respective optical components before use. We are happy to support and advise you in selecting the right F-Theta lens!