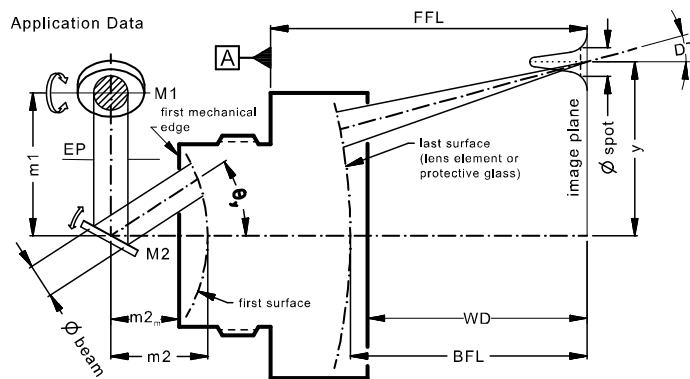


LINOS F-Theta-Ronar Lens

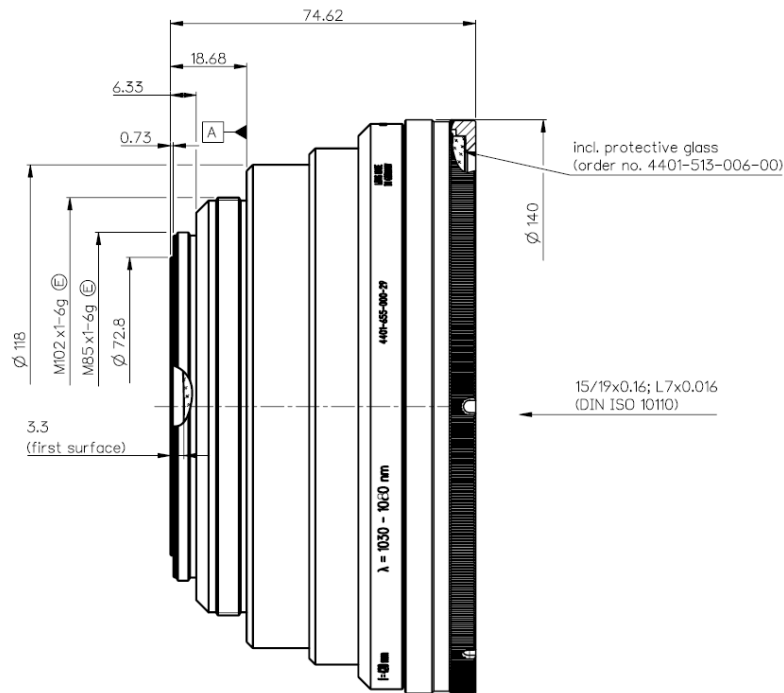
f = 420mm, 1030-1080nm, fused silica, reduced outgassing



Part number	4401-655-000-29			
Design wavelength	λ	(nm)	1064	
Effective focal length	EFL	(mm)	419.8	
Back focal length	BFL	(mm)	508.6	
Working distance	WD	(mm)	505.9	
Flange focal length	FFL	(mm)	561.9	
Beam diameter $1/e^2$	$\varnothing_{\text{beam}}$	(mm)	14 (truncated 20mm)	20 (truncated 30mm)
Recommended mirror distance m1	m1	(mm)	25.0	36.0
Recommended mirror distance m2	m2	(mm)	28.0	29.4
Recommended mirror distance $m_{2\text{mechanical}}$	m_{2m}	(mm)	24.7	26.1
Scan angle	$\pm\theta_{x,y}$	(°)	17.5	14.0
Scan area (edge length of scan field)	$2x * 2y$	(mm ²)	268 x 268	205 x 205
Spot diameter	$\varnothing_{\text{spot}}$	(μm)	47	33
Telecentric error (maximum deviation)	DT	(°)	14.8	11.8
Total transmission @ 1030 - 1080nm	T	(%)	> 96	
Group delay dispersion at λ	GDD	(fs ²)	818	
LIDT coating @ 1064nm, 12ns, 100Hz		(J/cm ²)	tbc	
LIDT coating @ 1030nm, 291fs, 5kHz		(J/cm ²)	tbc	
Focused back reflex positions from first surface		(mm)	3.0; 3.1; 10.8; 80.7; 96.0; 130.7; 131.4	
Weight		(g)	1490	
Protective glass	PG		4401-513-006-00	

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

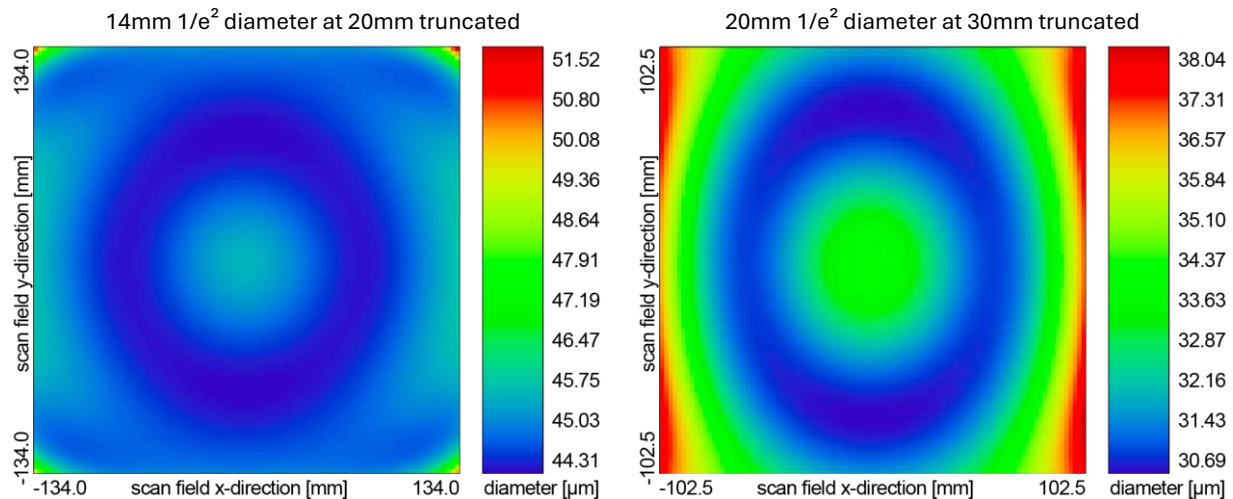
Mechanical drawing



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



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.