

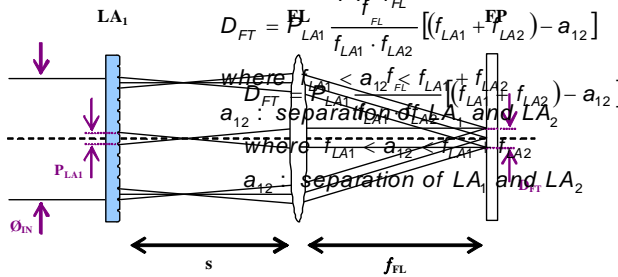
SMO TECH INFOSHEET 10bis - EXAMPLES FOR BEAM HOMOGENIZING

wavelength used for calculations:

Fused silica: 587nm Silicon: 2.15um

Please fill in all cells marked in yellow

Non-Imaging Beam Homogenizer



Choose Microlens Array:

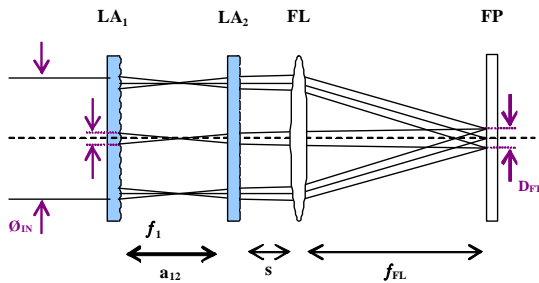
Square lenses: Lens pitch 300µm, ROC 2.2mm Div. Angle: ± 2°, no AR-Coating, Matc

18-1393-100-000	SMO-Order Number
Wavelength	λ 248 nm
Lens Pitch	P_{LA} 0.3 mm
Radius of Curvature	ROC_{LA1} 2.2 mm
LA1, focal length	f_{LA1} 4.79930192 mm
Lens FL, focal length	f_{LA} 100 mm

Flat-Top Size	D_{FT} 6.25 mm
Fresnel Number	FN 18.90

diffraction effects

Imaging Beam Homogenizer



Choose Microlens Arrays:

Square lenses: Lens pitch 300µm,

18-1393-100-000	SMO-Order Number
Wavelength	λ 248 nm
Lens Pitch	P_{LA1} 0.3 mm
Radius of Curvature	ROC_{LA1} 2.2 mm
LA1, focal length	f_{LA1} 4.80 mm

Square lenses: Lens pitch 300µm, ROC 2.2mm

18-1393-100-000	SMO-Order
Lens Pitch	P_{LA2} 0.3
Radius of Curvature	ROC_{LA2} 2.2
LA2, focal length	f_{LA2} 4.80
Separation LA1 <-> LA2	a_{12} 4.91
Lens FL, focal length	f_{FL} 100 mm

Flat-Top Size	D_{FT} 6.11 mm
Fresnel Number	FN 18.47
Beam divergence (+/-)	u_{beam} 5 mrad
Beam diameter	\varnothing_{beam} 5 mm
Spot on M _{LA2}	\varnothing_{dim} 0.056 mm
Focus factor	36.5
Divergence ($D_{FT} > P_{LA}$)	3.007 °
Numerical aperture	0.052

acceptable
FWHM
 $f_{aux} = 500$

Beam Homogenizer for Excimer 248nm

Microlens Arrays CC-Q-300S, 12-1393, flat-top 6mm x 6mm at 100mm working distance

The Flat-Top Size D_{FT} scales with the Focal Length of the Fourier Lens f_{FL} .

Fourier Lens f_{FL}	14mm	20mm	40mm	60mm	100mm	200mm	400mm
Flat-Top Size D_{FT}	0.84mm	1.2mm	2.4mm	3.6mm	6mm	12mm	24mm

Beam Homogenizer Toolbox:

Based on Technical Datasheet #10 this Excel file allows simple calculations for Beam Homogenizing. A catalog of SUSS MicroOptics' Microlens Arrays is included. A simple tool for damage threshold evaluation is included. → [Download Excel Toolbox](#)

Beam Homogenizer Optical Design in ZEMAX:

A simple model for a Microlens Beam Homogenizer simulation in Zemax Optical Design Program is provided. → [Download Zemax Files](#)

Contact:

Please contact our experts to get a customized solution for your homogenization problem!