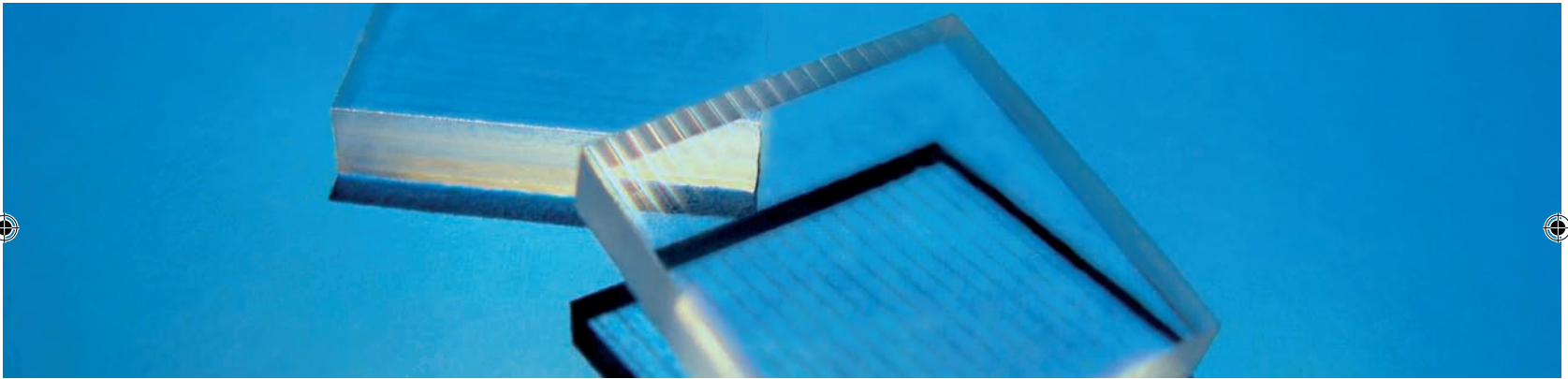




UV Beam Shaping with CaF_2 – Microlens Arrays



Laser beam homogeneity of UV lasers is a challenge. For a large range of applications a smooth beam profile of an arbitrary input intensity distribution at a high power density is required.

In particular for UV-lasers such as Excimer lasers and diode pumped frequency tripled lasers with their unique ability to deliver high pulse energies, Microlens Arrays of CaF_2 are suitable optics to produce homogenous intensity distributions with a long durability which is especially needed in industrial applications.

Jenoptik CaF_2 – Microlens Arrays can reshape nearly every input intensity distribution into well-defined, reproducible and custom tophat far-field profiles with a high efficiency over a long lifetime.

Features:

- Excellent Deep UV Transmission
- Higher damage threshold in the DUV compared to quartz
- Custom design
- High efficiency
- Steep slopes of tophat profile
- Low modulation
- Insensitive to input beam shape

Applications:

- Illumination systems for Semiconductor Industry
- Ophthalmology
- Laser materials processing
- Printing technology
- Measuring systems

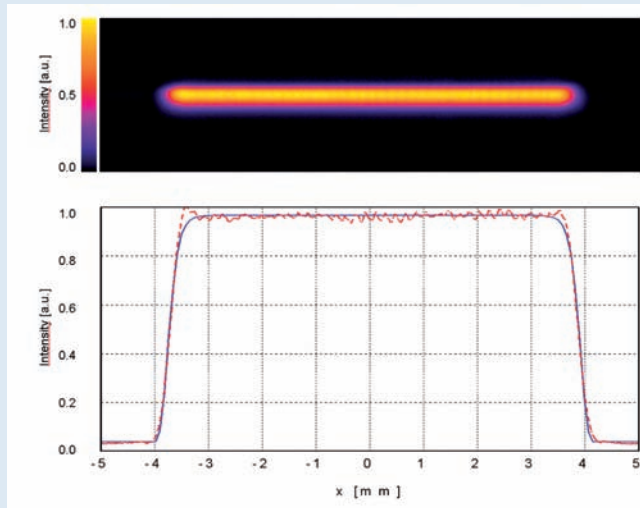
UV Beam Shaping with CaF₂ – Microlens Arrays

Specifications

Uniformity:	< 7 %
Efficiency:	> 92 % *
Max. lens sag:	2 μm
Clear aperture:	5 mm to 120 mm
Laser wavelengths:	> 157 nm
Material:	CaF ₂
AR-Coating:	optional laser resistant coatings
Product number:	029143

* with AR-Coating

Typical result for a homogenization with CaF₂ Microlens Arrays @ 193 nm



Setup:

Imaging tandem Microlens Array assembly

Input Laser beam size (1/e²): 3 mm x 6 mm

Laser divergence: 2 x 1 mrad

CaF₂ Microlens Arrays

Lens pitch: 0.5 mm

Focal length: 30 mm

Results:

Uniformity: < 6.3 %

Efficiency: > 92.2 %

Output Laser beam size (1/e²): 0.54 mm x 7.8 mm

It is our policy to constantly improve the design and specifications. Accordingly, the details represented herein cannot be regarded as final and binding.



JENOPTIK | Optical Systems
Microoptics Business Unit
JENOPTIK Laser, Optik, Systeme GmbH
Goeschwitzer Strasse 25 | 07745 Jena | Germany
Phone +49 3641 65-2442 | Fax -2443
microoptics@jenoptik.com | www.jenoptik-los.com

MEMS Optical, Inc.
205 Import Circle | Huntsville | AL 35806 | USA
Phone +1 256 859-1886 | Fax +1 256 859-5890
info@memsoptical.com | www.memsoptical.com

029143-003-99-14-0908-en