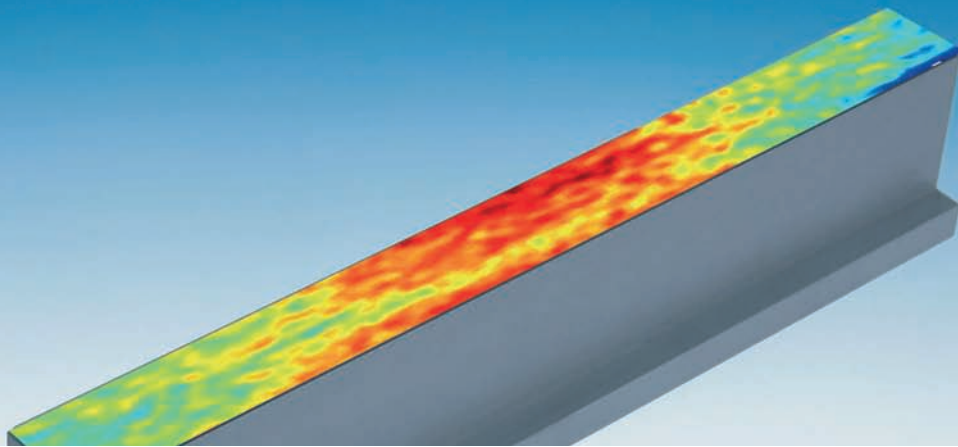


XUV Components and Modules

Very high precision. Very low surface roughness.



Advantages:

In order to keep pace with the quest of the semiconductor industry for ever decreasing chip structure sizes, JENOPTIK Laser, Optik, Systeme GmbH has developed a technology for the manufacturing of XUV components.

These components also enable innovative analytical processes in nanotechnology applications.

New applications in „nanoscopy“ and „nanalytics“ are facilitated in particular by inspection processes where the sample surfaces of the objects to be studied are penetrated in order to obtain information about internal properties:

- Quality control of nano films at the top of or inside semiconductors
- Production of future semiconductor chips with critical dimensions of less than 45 nm
- Observation of processes within living cells

Applications:

- EUV collector mirrors
- EUV-Schwarzschild lenses
- Synchrotron optics
- Optics for EUV lithography
- Components for EUV microscopy
- Optics for free electron lasers
- Components for X-ray technology
- Precision aspheres used in space applications
- Optics for spectral photometers

XUV Components and Modules

Specifications

Manufacturing Range:

Diameters:	10 mm ... 250 mm
Dimensions:	20 mm x 20 mm ... 20 mm x 200 mm
Shapes:	Plane, concave, convex, aspherical, non-rotationally symmetrical
Bulk materials:	Fused silica, silicon, ULE, Zerodur®
Coating materials:	XUV coatings in cooperation with Fraunhofer IOF, Jena

Manufacturing Tolerances*:

Shape:	≤ 2 nm rms
MSFR:	≤ 0.5 nm rms
HSFR:	≤ 0.3 nm rms

Technology and Manufacturing Expertise:	CNC grinding, conventional polishing, CNC polishing, CCP, MRF, IBF (in cooperation with IOM Leipzig)
Modules:	Mounting and measurement equipment
Measurement and Inspection Equipment:	2D/3D tactile, interferometer, CGH**, Taylor Hobson Talystep, DIK-Nomarski, BRDF***, Zygo NewView 100, AFM****
Design:	Optical design department

* plane, spherical, for other geometries please contact us

** Proprietary expertise and technology for design and manufacture of CGHs.

*** Bi-directional reflectance distribution function, used for HSFR measurement of large parts, different wavelengths are possible (down to $\lambda = 244$ nm)

**** in cooperation with Fraunhofer IOF, Jena

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

In cooperation with:



JENOPTIK Laser, Optik, Systeme GmbH
Business Unit Optics
Goeschwitzer Strasse 25, 07745 Jena, Germany
Phone +49 3641 65-3311 Fax +49 3641 65-3677
E-mail: optics@jenoptik.com
Internet: www.jenoptik-los.com