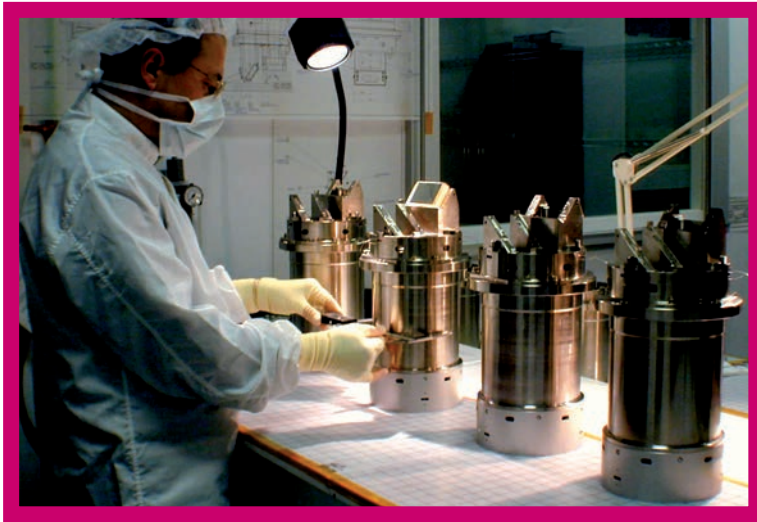


OPTICAL SYSTEMS FOR SEMI-CONDUCTOR INDUSTRY

- Lens assemblies
- Telescope, catadioptric systems
- Optronic equipment
- High-tech components / coating services
- IR, UV, DUV, EUV

Optical systems for semi-conductor industry

Safran Reosc solutions



Capitalizing on its expertise in high-performance optical assembly technology for astronomy, space and defense, Safran Reosc, a subsidiary of Safran Electronics & Defense, designs and produces all kinds of optical systems dedicated to the semi-conductor industry.

Safran Reosc's skills in catadioptric and multi-mirror systems perfectly meet the new industrial needs in terms of manufacture (lithography, laser processing, etc.) and inspection of semi-conductor structures, LED, OLED, MEMS and all emerging micro and nano structures.

Safran Reosc designs and produces conventional passive optics as well as complex equipment combining high-performance opto-mechanics, electronics and software for the industry: actively figure controlled mirrors, leveling sensors, steering mirrors, cooled optics, etc.

Safran Reosc can develop high-precision components in small or large sizes such as:

- Plano, sphere or asphere lenses and mirrors (up to 300 mm for standard pieces, up to 1-meter or even higher for customized pieces)
- Stage blocks, wafer tables, bar mirrors
- Precision coatings from EUV to IR

Safran Reosc is able to conduct precise on-spec development of new products and to set up an industrial production tool for the subsequent high-tech serial production.

Safran Reosc has manufactured complete optical systems operating at 193 nm, including high NA imaging optics, pupil shaping sub-system and illumination homogenizer.

Technical specifications

IR / UV 1x Litho Tool

- Large Field of View
- Low distortion

DUV high-tech optical equipment

Imaging optics

- High resolution
- Low distortion
- High stability
- High throughput

Illumination & diagnostic

DUV components & coatings

- Sphere & asphere
- Smooth finish to 1A
- Precise figure to 1nm
- 193nm coatings
- Long bar mirrors
- Lightweight parts
- All glasses – SiC – Glass Ceramic

EUV optics & components

- NA 0.32 Schwarzschild
- 500x @ λ Microscope
- Cooled aspheric collector
- EUV components & assemblies

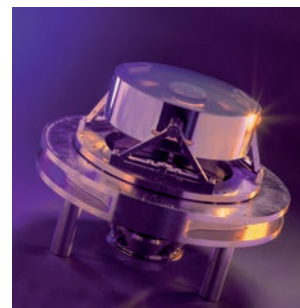
• Complex optical systems

• Spheres / aspheres: multi-mirror / lens systems

• Optronic equipment

• High-precision components & services for EUV and DUV

• Development & production



Glossary

IR: Infrared

UV: Ultraviolet

DUV: Deep Ultraviolet

EUV: Extreme Ultraviolet

LED: Light Emitting Diode

OLED: Organic Light-Emitting Diode

MEMS: Micro Electro-Mechanical System

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