



OPTICAL SYSTEMS FOR HIGH-ENERGY LASERS

- Precision optics: flat, spherical, aspherical
- Coatings: high fluence, low loss, low GDD
- CW, ns & fs pulses
- Accurate mounting & precision opto-mechanical components
- Active optics

Optical systems for high-energy lasers

Safran Reosc solutions



Safran Reosc, a subsidiary of Safran Electronics & Defense, offers proven expertise in the production of advanced optical components and subassemblies for precision laser systems. We can polish large plan, spherical, aspherical or cylindrical surfaces very precisely to achieve the low SSD, roughness and cosmetic defect level demanded by laser applications.

Laser components

A key supplier to several world-class laser facilities, Safran Reosc offers a range of several hundred different components, all made to extremely tight tolerances, and available in square or rectangular shapes, from 40 to 80 cm. We also make high-precision plano surfaces and off-axis aspherical optics up to 1 meter in diameter.

Opto-mechanical laser components

Safran Reosc has developed extensive expertise in lens design, finite element analysis (FEA) and CAD design, along with lens and mirror testing, component mounting and alignment under clean conditions. We make all types of components and subassemblies for laser applications requiring tight tolerances, high performance and extreme stability.

Laser coatings

Working closely with our customers for many years, Safran Reosc has built up unrivaled expertise in high-energy and high-power laser thin film coatings, combined with optical polishing and figuring techniques. For example, we have developed specific layer design and deposition techniques for all basic lenses, mirrors, polarizers, beam splitters and harmonic separators, as well as for the most commonly used wavelengths.

One of our major areas of expertise is very high damage threshold coatings (for example up to 80 J/cm² for 3 nanoseconds Yag laser pulses and 0.6 J/cm² for 11 femtoseconds Ti:Sa laser pulses) and we can apply these coatings on large 1-meter class optics.

Applications

CEA

- More than 400 large optical components (40cm x 40cm)
- Laser amplifier slabs
- Transport mirrors with their mounting in cell
- Polarizers, grating substrates & other 1w-3w full size flat optics
- Spatial filtering lenses

AWE – ORION

- Large plano mirrors
- Off-axis parabola

RAL - VULCAN

- Large plano mirrors
- Off-axis parabola
- Repolishing & Recoating

University of OSAKA - FIREX

- Rectangular polarizers
- Lozenge polarizers
- Off-axis parabola

CNRS LULI – APOLLON 10PW

- Mirrors and other optical components

• Precision optics:

- Flat, spherical, aspherical, off-axis
- Large size up to 1.2-m and even larger

• Coatings:

- High damage threshold & high stability
- R max, AR, monoλ & broadband, polarizer
- CW, ns and fs pulses

• Precision mounting & opto-mechanical components

• Active optics



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