

TOP-FLIGHT PERFORMANCE FOR THE MOST DEMANDING APPLICATIONS

The coatings offered by **Safran Reosc** cover all bandwidths from 160nm to 16µm, and all size components from just a few millimeters up to 1.5 meters.

Robust designs and proven fabrication processes are compatible with even the most complex stacking arrangements: more than 100 layers, from 1 nm to 50 µm thick.

The combination of optical coating and photolithography technologies means that several spectral functions can be joined on a single component (filtering, absorption, etc.).

**No. 1
WORLDWIDE**

ADVANCED COATINGS FOR HIGH POWER AND HIGH ENERGY LASERS

HIGH-PERFORMANCE INFRARED COATINGS (ESPECIALLY FOR SPACE APPLICATIONS)



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POWERED BY TRUST

Safran Reosc
Avenue de la Tour Maury
91280 Saint-Pierre-du-Perray Cedex - France
Tel. : +33 1 69 89 72 00 - Fax : +33 1 69 89 76 50

safran-reosc.com

 **SAFRAN**



SAFRAN REOSC
Excellence in optical coatings

 **SAFRAN**

SOPHISTICATED OPTICAL COATINGS FOR EXTREME ENVIRONMENTS

Safran Reosc offers a complete range of optical coatings, from extreme UV to far infrared and has built up an unrivaled expertise through multiple contributions to the most demanding astronomy and space programs.

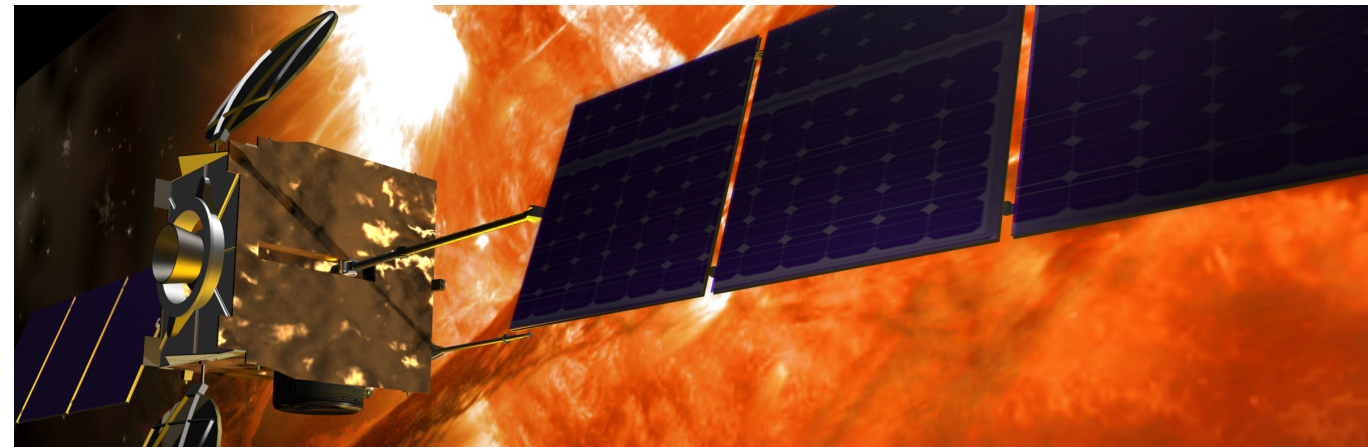
Combining engineering excellence with production know-how, Safran Reosc covers the entire process, from design and manufacturing to testing and inspection, providing customers with very high performance optical components.

Thanks to its multidisciplinary expertise (mechanical, optical, thermal, etc.),

Safran Reosc conducts advanced thermomechanical research, enabling a realistic simulation performance under operational conditions and adjustment of the design to specific needs.

Safran Reosc proposes custom-tailored optical coating solutions, addressing all performance aspects beyond spectral response.

Safran Reosc offers a broad product range : antireflecting, dichroic, polarizing, narrow-band filtering, absorbent, mirror...



EXTREME OPERATING CONDITIONS

The main challenge when dealing with thin-film optics is to guarantee high performance and reliability even under the harshest environmental conditions, including humidity, temperature, radiation, resistance to laser flux, etc.

Reosc's technologies meet these requirements, and are particular well suited to operations in even most demanding environments: space, cryogenics, high-energy lasers, etc.

UNIQUE PRODUCTION AND TESTING FACILITIES



Safran Reosc deploys coating machines (8 coatings chambers up to 1.5m), fitted with precision optical control systems, allowing to develop and manufacture the highest performance optical components. Extensive characterization and control of coatings performance is carried out, thanks to a complete set of test instruments, plus vacuum and cryogenic chambers : a wide range of actual operating conditions can be experimentally simulated.

These machines and equipment are installed in in a 600 square meters ISO 6 clean room.

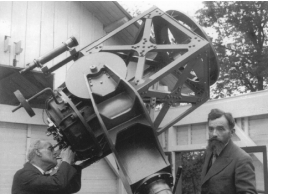
In addition, stucturation of optical coatings down to the pixel level can be performed thanks to a photolithography shop.

- 5 SPECTROPHOTOMETERS [0.12 - 50 MM]
- VISIBLE BAND MICRO-SPECTROPHOTOMETER
- INTERFEROMETERS
- PROFILOMETER
- CRYOGENIC SPECTRAL MEASUREMENT DOWN TO 20K
- THERMAL CYCLING CHAMBER [90-340°K]
- HUMIDITY CHAMBER
- LASER FLUENCE TEST BENCH
- ABSORPTION BENCH
- LASER REFLECTOMETERS
- NORMARSKI MICROSCOPE

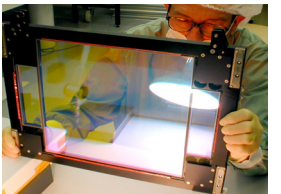
80 YEARS OF OPTICAL COATING EXPERTISE FOR THE MOST DEMANDING PROGRAMS

REOSC IS A FRENCH COMPAGNY SET UP IN 1937 BY TWO SCIENTISTS, CHARLES FABRY AND HENRI CHRETIEN. LOCATED IN SAINT-PIERRE-DU-PERRAY, 35 KM SOUTH OF PARIS, THE COMPAGNY IS NOW A FULLY OWNED SUBSIDIARY OF SAGEM (TODAY SAFRAN ELECTRONICS & DEFENSE) AND HAS BECOME A EUROPEAN LEADER IN THE FIELD OF HIGH PERFORMANCE OPTICS DESIGN, MANUFACTURING AND TESTING.

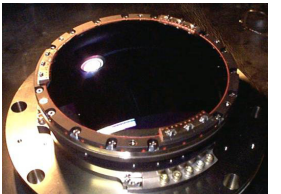
- 1937** Founding of Reosc.
- 1950** Aluminide and silver coatings for astronomy.
- 1977** First space-based earth observation system (Meteosat).
- 1980** >1 m class optical coating capabilities.
- 1987** Supply of space optics for Spot and Helios satellites (mirrors, multispectral filters).
- 1995** Development and manufacture of NIR/IR filters for Meteosat Second Generation.
- 1998** Development and manufacture of optics for IASI (IR optics).
- 1999** Development and manufacture of filters for Rosetta mission.
- 2002** Production of nano-second laser for LMJ on 1 m class highfluence mirror.
- 2007** Polishing and coating of mirrors for the Near IR Spectrograph.
- 2008** Stripe filters for PLEIADES and CBERS mission.
- 2010** Polishing and coating of 193 nm optics for lithography scanner.
- 2013** Development and manufacture of NIR/IR filters for Meteosat Third Generation.
- 2014** Development for coatings for femto-second laser wither high fluence resistance.
- 2015** Development of detector coatings (multi-layer AR and pixelated filters) for VIS/NIR/IR bands.
- 2017** After M2, M3 and M4, ESO chooses Safran Reosc to polish the primary mirror on the Extremely Large Telescope (ELT).



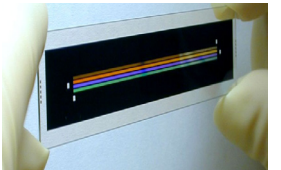
Henri Chretien in front of he first Ritchey-Chretien telescope



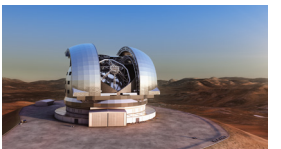
OmegaCAM Filter



IASIIR lens



Pleiades strip filter



Extremely Large Telescope (ELT)