

STRUMENTI SCIENTIFICI

**CINEL**® s.r.l.

Cinel was founded in Padua in the 70's with a technical partnership of INFN LNL Legnaro Laboratory on particle accelerator projects and since then has been involved in some of the most challenging projects all over Europe.

Nowadays, CINEL has reached a long experience on mechanical design and manufacturing of apparatuses in several scientific and research fields such as Synchrotron Light Sources (monochromators, fully integrated front ends and beam lines, experimental chambers), as well as accelerator components (vacuum chambers, accelerating cavities, radiofrequency quadrupole cavities).

Cinel has acquired skilled experience in the field of cryogenics, superconductivity, astrophysics and bio-mechanics collaborating with well-known institutions as a qualified partner in the mechanical, thermal and control system design and it can thus now propose turnkey solutions with high level standardization.

CAD-CAM environment and CNC machines allow Cinel to fully develop whole technical projects, from the design phase to the product certification taking care of all the electro-mechanical, pneumatic and hydraulic aspects.

Cinel is an ISO 9001 qualified company.



DESIGN  
TESTING  
ASSEMBLY  
ENGINEERING  
INSTALLATION  
MANUFACTURING

Components for  
**SYNCHROTRON LIGHT**  
Source Laboratories

**Strumenti Scientifici CINEL S.r.l.**

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# Vacuum Furnace Brazing

HIGH VACUUM, HIGH TEMPERATURE SPECIAL BRAZINGS

- All metal vacuum furnace (working volume 60/60/120 cm)
- Aviation standard (AMS2750) compliant
- Vacuum chamber is in stainless steel with Conflat flanges
- Heating chamber has a circular cross section and it is entirely metallic (pure molybdenum, stainless steel and alumina); 3 independently controlled heating zones along the useful length are provided
- Provided with internal gas cooling system, including tube&fin heat exchanger, centrifugal fan and motor
- Maximum operating temperature 1400°C
- High vacuum (1E-6 mbar range) or partial pressure of Ar - H2 (adjustable from PLC) environment
- The pumping group consists of a pre-vacuum pump system, a 17500 l/s diffusion pump, and a cryogenic trap



Working space:

- width = 600 mm
- height = 600 mm
- depth = 1200 mm
- max weight load (gross) = 600 kg

## Water Cooled and Uncooled UHV Slit Systems



## Vacuum furnace specials brazing

# Components for Synchrotron Light Source Laboratories

## Vacuum Chamber

Elettra Synchrotron Laboratory Trieste (Italy)



## High Precision Water Cooled Slit

Canadian Light Source-CLS  
Saskatchewan University (Canada)



## Cooled Slit for ODE and MARS Beamlines

Synchrotron Soleil Saint-Aubin (France)



## White Beam Shutter



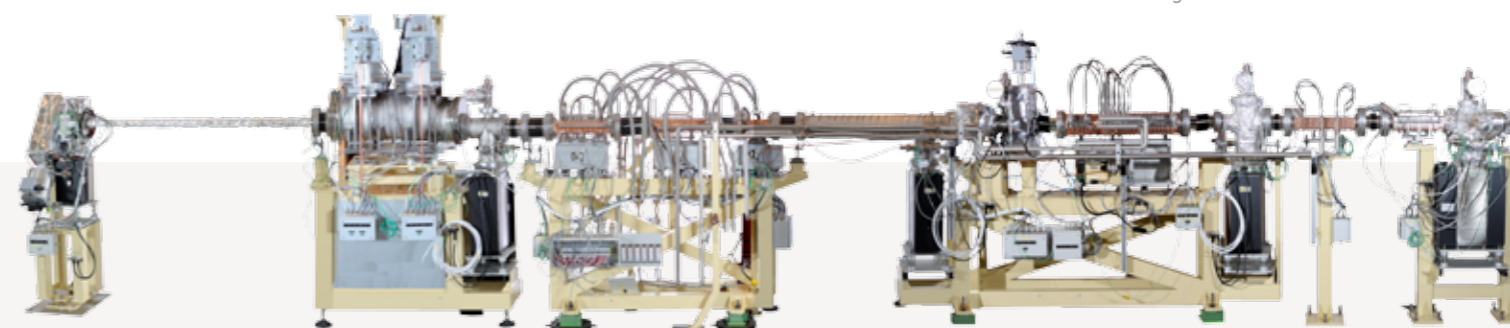
## Gamma Ray Shutter for Monochromatic Beam and Bremsstrahlung Radiation

Synchrotron Soleil Saint-Aubin (France)



## I20 Canted Wiggler Front-end

Diamond Light Source Didcot (UK)



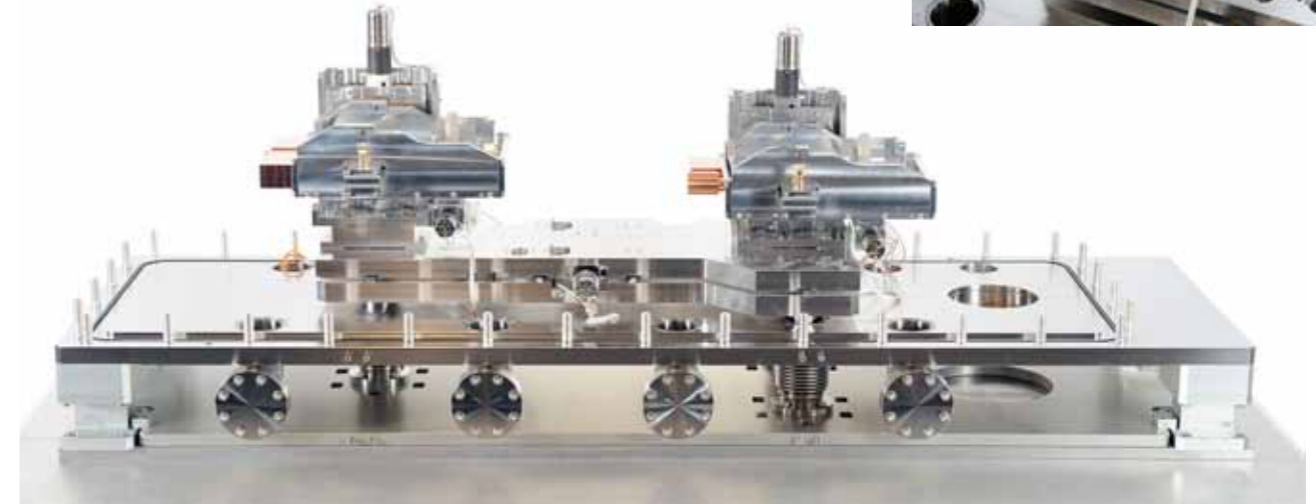
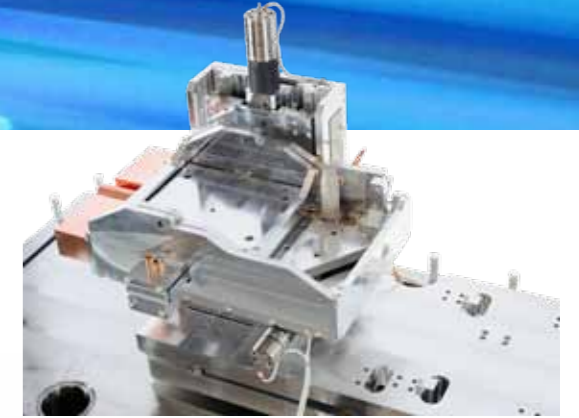
# MIRROR CHAMBERS



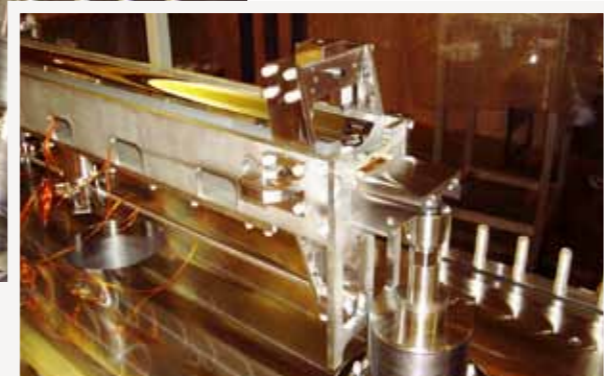
■ Mirror Chamber for X-ray Deimos Beamline  
Synchrotron Soleil Saint-Aubin (France)



■ Kirkpatrick-Baez (KB) Mirror System  
Advanced Photon Source Argonne (USA)



■ Mirror Chamber for Protein Crystallography Beamline (M2)  
X06DA Swiss Light Source SLS Villigen (Switzerland)



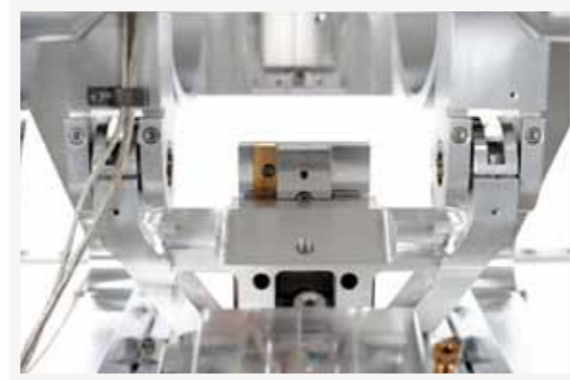
■ Mirror Chamber for Protein Crystallography Beamline (M1)  
X06DA Swiss Light Source SLS Villigen (Switzerland)



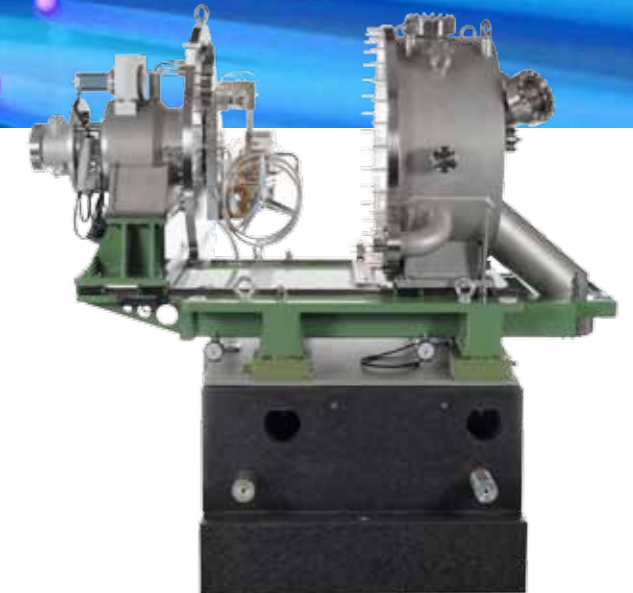
# MONOCHROMATORS



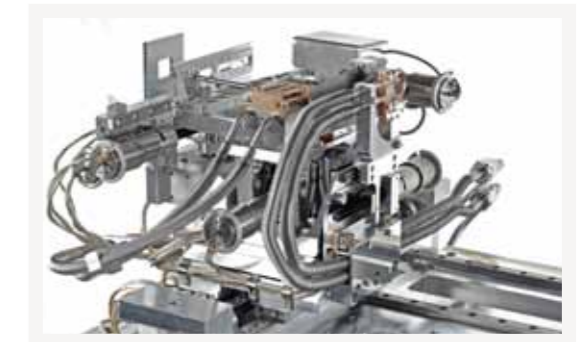
■ VUV Grating Monochromator for Disco Beamline  
Synchrotron Soleil Saint-Aubin (France)



■ Fixed exit double channel DCM Monochromator  
(3.5 ÷ 25 keV) for BL-1A Beamline  
Photon Factory KEK Tsukuba (Japan)



■ Fixed exit double channel DCM Monochromator (2.5 ÷ 100 keV) for ID06 Beamline  
European Synchrotron Radiation Facility - ESRF- Grenoble (France)



■ Horizontally Dispersing Monochromator in Laue-Laue configuration with fixed exit Double  
Laue bent crystal (Double bounce) (~ 22.7 ÷ 141.7 keV)  
European Synchrotron Radiation Facility ESRF- Grenoble (France)



■ Double Crystal/Multilayer Monochromator  
(energy range ~ 8 ÷ 45 keV) for TOMCAT Beamline  
Swiss Light Source SLS Villigen (Switzerland)

