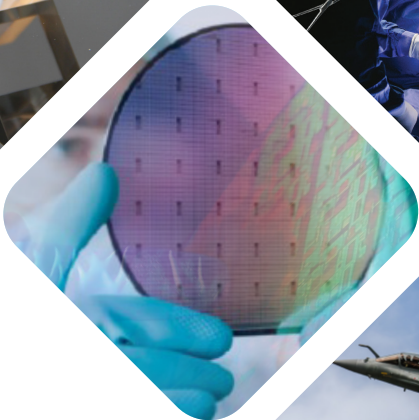
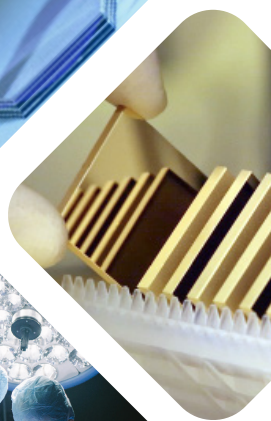
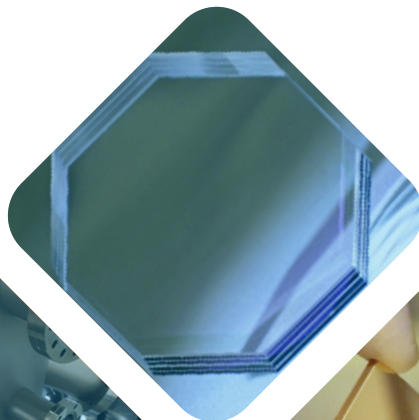




Surface materials engineering

Photonics fabrication from R&D to volume production





- 10 locations
- 2 countries
- 305 employees



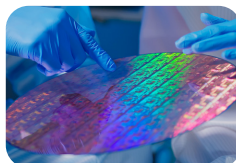
HEF Photonics, today on 2 continents
and tomorrow with you around the world.



HEF Photonics serves a variety of markets including:



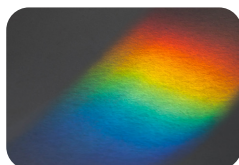
Defense



Industry



Medical



Instrumentation



Research



Aerospace

FROM PROTOTYPING TO VOLUME PRODUCTION

Precision polishing:

- Precision up to $\lambda / 20$ for diameters under 300 mm
- All types of materials: silica, sapphire, silicon, optical glasses, germanium, ceramics, quartz, zerodur...
- All types of shapes : windows, mirrors, prisms, lenses, beamsplitters, waveplates, filters and more
- Polishing of dimensions up to 1000 mm

Glass fabrication technology:

- Specialty and ultra-thin glass
- Chemical strengthening & heat tempering
- Screen-printed graphics
- Laser-marked displays
- Ready-to-install assemblies

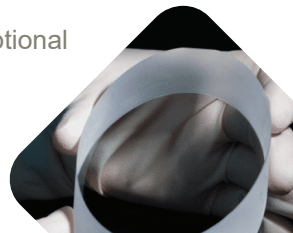
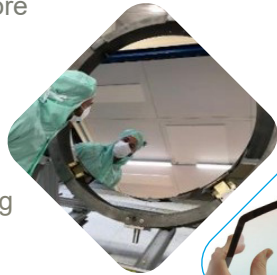
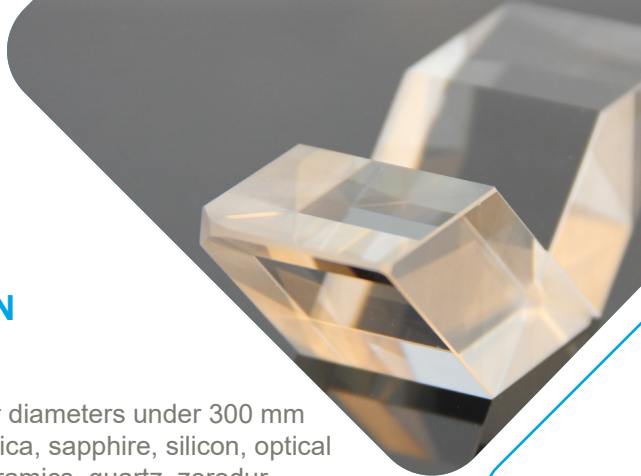
Optical thin films:

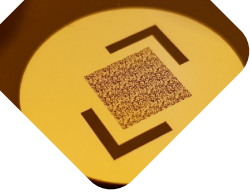
Over 50 chambers dedicated to fulfill our customer requirement, spread across 6 different cleanrooms.

Deposition technologies : Ebeam, Ion Assisted, Sputtering, Ion Beam Sputtering, thermal Chemical Vapor Deposition.

Coating solutions are offered from 200nm in the UV to 20 microns in the far infrared

- Anti-reflective, metallic, dielectric coatings, beamsplitters, filters, polarizing coatings
- Multispectral coatings
- Internal (prism) or external
- Filters: broadband, narrowband, bandpass, dichroic and custom filters
- Intense black coating
- Transparent conductive coatings (ITO / IMITO) with optional bus bars and heated optics solutions
- Bus Bar
- Hydrophobic solutions
- High laser damage threshold coatings





Masking and lithography

Engraving using different types of technology (photolithography, lift-off, wet etching, laser)

- Masking and creation of complete optical components
- On substrates from 2" up to 8"
- Resolution down to 1µm in width and 0.15µm in thickness
- Different types of substrates and etched materials (Au, Al, Ag, Cr, Cu, Ni...)

Electroforming

- Nickel deposition, thickness from 30 to 200µm
- Circles, slits, closed shapes down to microns
- Coated for emission and reflection

Precision dicing

Technologies : laser, scribe cutting, waterjet, slicer, wafer dicing

- Glass, stacks, Si wafer, metals, plastics
- Thickness down to 50µm
- Lateral roughness down to 3µm
- CNC machining

One supplier. One process chain.

From substrate manufacturing to optical coatings and final assemblies.



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