

PILOT LINE FOR FREEFORM OPTICS

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Location: FlandersMake@VUB

DESCRIPTION

Within our pilot line for freeform optics we provide:

- a variety of custom made cutting-edge optical components and systems
- tailor-made advanced optical and photonic sensors
- a complete and all-inclusive local prototyping and pilot line

We believe these options are essential for successful innovations in the new Industry 4.0 paradigm. We propose different solutions such that you can choose for the best solution according to your needs.

Freeform optics provide significant advantages for:

- Optical sensor customization (optimal imaging in the smallest form-factor)
- Beam shaping for laser-based applications

TECHNICAL SPECIFICATIONS

Within our pilot line for freeform optics we use the following equipment:

- **Moore Nanotech 350FG - Ultraprecision diamond tooling**
Prototyping of freeform optics or mould fabrication in non-ferrous metals: 300mm diameter max.
- **Jenoptik HEXO4 - Hot embossing**
Replication in thermoplastic polymers, heating up to 300°C, pressing force up to 450kN, 300mm max. diameter, double-sided embossing with <1µm alignment.
- **Nanoscribe Photonic Professional GT - Two-photon polymerization-based 3D nanoprinting**
Printing in negative photoresist materials with feature sizes down to 150nm.
- **Metrology in ISO class 7 cleanroom including**
 - Bruker Contour GT-I - Non-contact optical profilometry
 - Veeco Dektak 8 - Stylus profilometry
 - Dimension 3100 Nanoscope IV - Atomic force microscope
 - Werth UA400 - multisensor coordinate measurement machine
 - etc.
- **Röders RXP601DSHZ2 - High-speed 5-axis ultraprecision dial-axis milling and grinding**
Grinding of glass freeform optics, preshaping of moulds for freeform optics replication
- **Zeeko IRP200 II - 7-axis ultraprecision polishing with fluid jet polishing robot**
Polishing of ground glass freeform optics and of moulds for freeform optics replications
- **Wittmann-Battenfeld Micropower 15 - High-precision polymer micro-injection moulding**
Replication of polymer freeform optical and micro-mechanical components with 15 ton clamping force, max. 1cm³ injection volume

PILOT LINE FOR FREEFORM OPTICS



OUR OFFER

Our state-of-the-art pilot line for freeform optics enables local prototyping and replication of:

- Custom optical components and systems
- Custom advanced optical and photonic sensors

INTERESTED?

Contact contact_BPHOT@flandersmake.be for more information.