

Lenses

Replication technology is the key asset of Anteryon's know-how and capability



Aspheric Lenses



Lenses

Aspheric lenses represent the core of Anteryon's products manufactured using replica technology. Glass replication technology is the most flexible and cost effective solution for correcting astigmatism or any other optical functions. Practically any shape can be replicated on any optical surface.

Anteryon's collimating and focussing lenses are diffraction limited and have low wave front aberration (< 40nm RMS). Anteryon's Aspherical lenses are corrected for spherical aberration, coma, astigmatism and spherochromatism even at high numerical apertures (NA).

Anteryon's aspheres are the ideal choice for collimating or focussing the light of a laser diode.

Advantages of glass replicated aspherical lenses are:

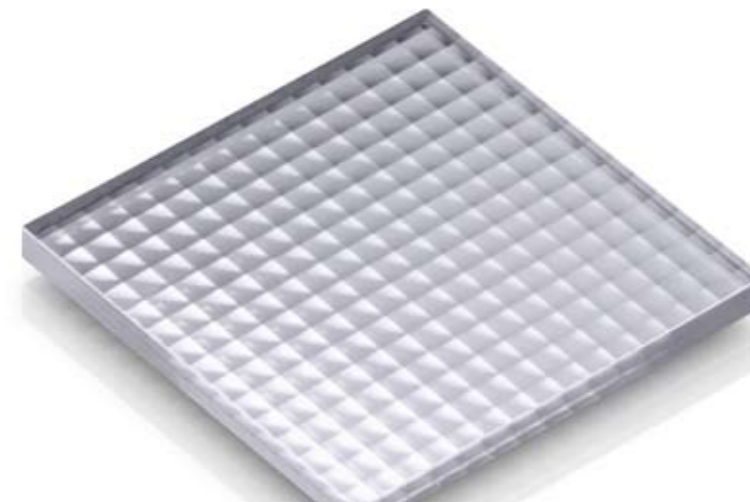
- Less optical components
- Best performance
- Smaller and lighter designs
- Low unit costs
- Low mould costs
- Custom samples within 6 - 8 weeks

Anteryon's hybrid micro optics are manufactured using cutting edge glass replication (UV casting) technology. A thin layer of liquid UV curable polymer is replicated on a glass surface. Glass replication is a cold process performed at room temperature. Glass replication technology combines the technical advantages of glass moulding with the cost benefits of plastic moulding.



Lenses

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Free Form Lenses

Lenticulars and Lens Arrays

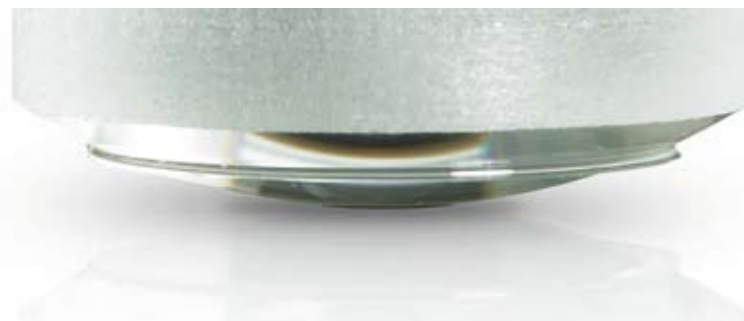
Free form lenses are often used for beam shaping, coma corrections, astigmatism or wave front corrections in the optical path.

A free form lens can be used for optimising coupling efficiency when coupling the light of a laser diode into a single mode fiber since it can convert an oval beam into a round spot.

Practically any shape can be replicated on any optical surface either flat or curved. Common free form shapes are for example beam shaping lenses (a saddle shaped surface).

Glass replica technology is a cost effective way of producing free-form lenses. Using glass replica technology the expensive master mould only needs

to be made once. Competitive technologies like glass moulding or plastic moulding require new moulds after an x amount of pieces made. Glass and plastic moulding technologies have a higher piece to piece variation due to the high fabrication temperatures. Glass replica technology takes place at room temperature.



Lenticulars

Based on replication technology Anteryon produces optical screens for fixed 3D displays, switchable 2D-3D displays or multiview based on front or back light projection technology.

Anteryon's screens provide excellent brightness and contrast with low scatter. The 3D images are visible from any distance over a wide field of view.

3D displays are used for signage, medical monitors, mobile imaging, automotive displays, and control room applications. Repeating ultra precision in consistent quality over a large surface gives Anteryon a competitive edge in 2D and 3D display applications e.g. lenticular sheets, diffractives and diffusors.

Anteryon matches of any glass, LCD glass, polymers and LC materials towards refractive index and temperature expansion with the polymer. Optionally different photopolymers diffuser particles, anti-reflection coating, tinting, specular reflection reduction can be integrated.

Lens Arrays

Anteryon's unique glass replication hybrid technology can be used to replicate diffractive optical elements (DOE) and spherical, aspherical, cylindrical or acylindrical micro lens arrays (MLA's).

Multiple optical functions can be combined using the same glass body or glass substrate. Optical surface structures can be replicated at either one or at both sides.