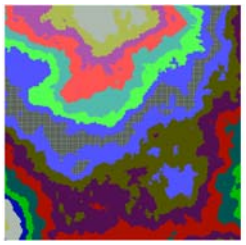
Applications

Listed below are just a few of the potential new and existing applications for micro-optics.

- Lenslet Arrays
- Diode Laser Couplers
- Fan-out Gratings
- Diffraction Gratings
- Beam Shaping and Homogenizing
- Aberration Compensation
- Fill-factor Enhancement
- Aperture Multiplexers
- Wavelength Division Multiplexing
- Laser Pointers
- Optical Interconnects
- Telescopes
- Fiber Optic Communications
- Vision Correction
- Beam Multiplexing



Section from the level design of an atmospheric turbulence simulator plate. This phase plate is 26mm square with 5200 X 5200 resolution. 25 different zones simulate turbulence in a variety of atmospheric conditions.

Lenslet arrays: AMO WaveFront Science has a large inventory of standard lenslet arrays. 2–53mm focal length, 72–480µm diameter, 25x19–140x140 element resolution arrays are available. Available in either fused silica or silicon, these lenslets may be AR coated for specific wavelengths. Both positive and negative lenses are available.

AMO®
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Micro-Optics

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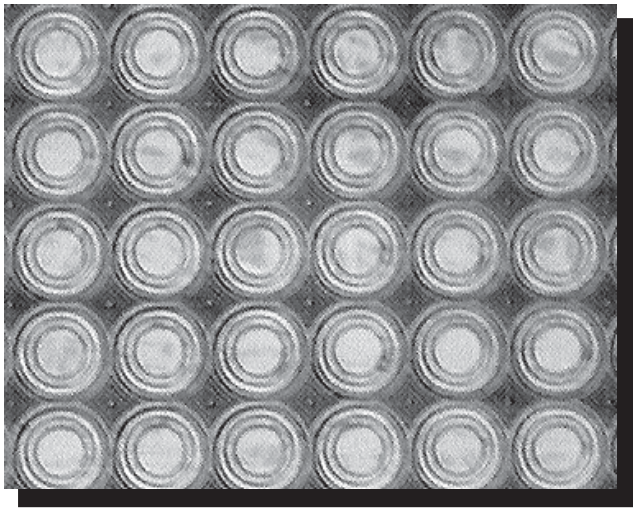

Lenslet array produced using diffractive optics technology. Each lens is 250µm (0.010 inch) in diameter

Micro-Optics

Micro-optics (diffractive optics, binary optics) is a revolutionary new technology which allows the fabrication of optical elements using semiconductor fabrication techniques. These techniques allow the custom design of optical surfaces. Optical processing previously impossible can now be produced precisely, repeatedly, and cost effectively.

AMO WaveFront Sciences provides a complete micro-optics design and manufacturing capability. From specification, modeling, and design to prototype and production manufacturing, AMO WaveFront Sciences is prepared to address your requirements for micro-optical components.

Micro-optics can improve existing optics based products to enable higher performance and lower cost implementation. In addition, completely new optical applications are now feasible due to the economic and design benefits provided by micro-optics.

Design Services

AMO WaveFront Sciences provides the ability to address your optical design support needs. Working from detailed specifications or broad requirements definition, we provide an optical design optimized to support your technical and cost requirements. Multiple design techniques may be employed to address your unique needs. The ability to design and manufacture completely arbitrary surfaces means that if you can imagine the optical requirement, AMO WaveFront Sciences can design and build it.

Fabrication

AMO WaveFront Sciences also provides the finished product based on either your design or ours. We can provide finished parts using our proprietary gray scale process. This single mask process yields up to 124 levels, producing optics with unparalled accuracy and design flexibility. We provides cost effective components with all the benefits of high quality glass optics.

Components

In addition to custom designs, AMO WaveFront Sciences provides an ever growing selection of off-the-shelf components. These products may provide the optical solution you need without design and set-up costs. Call us to discuss your needs and the potential availability of a standard component.

About our Logo
AMO WaveFront Sciences logo is an example of the mask for a custom micro-optical element designed to perform a function previously impossible. This particular design maps a circular beam onto a square detector for optimum sensor useage and dynamic range.