

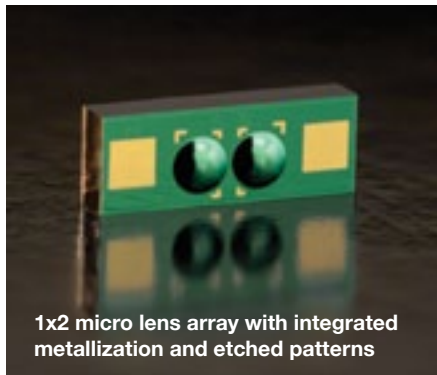
Micro-Optic Solutions for Refractive Optical Elements



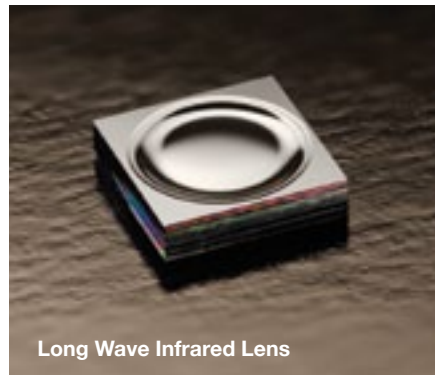
DigitalOptic Corporation (DOC) OptiML™ wafer-based lithographic processing technology enables the simultaneous fabrication of up to thousands of lenses with submicron precision for a variety of functional purposes, such as source collimation, focusing, and imaging.

Achieve Superior Performance with Refractive Optics

Lenses can be formed on both the front and back surfaces and combined with state-of-the-art diffractive elements, mirrors, coatings, etc., can enable a high density of functionality through compact component integration.



1x2 micro lens array with integrated metallization and etched patterns



Long Wave Infrared Lens

High Precision Functionality

Advanced lithography allows precision registration between lenses in an array; typically $< 0.1\mu\text{m}$. Lasers and other electro-optical devices can be more precisely aligned to wafer-based optics than to conventional discrete elements.

State of the Art Metrology

Optical parameters such as radius of curvature, conic constant and aspheric coefficients can be mapped at the wafer level. These data are integrated with DOC's manufacturing systems to ensure high quality and allow part matching and binning techniques.

Robust Monolithic Parts

Many of DOC's manufacturing methods result in a single monolithic part that is highly robust to environmental extremes.

Products

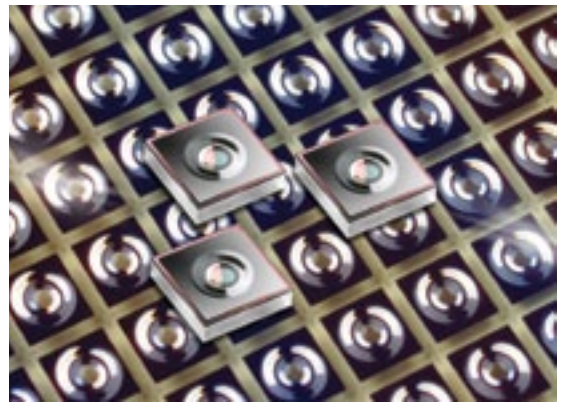
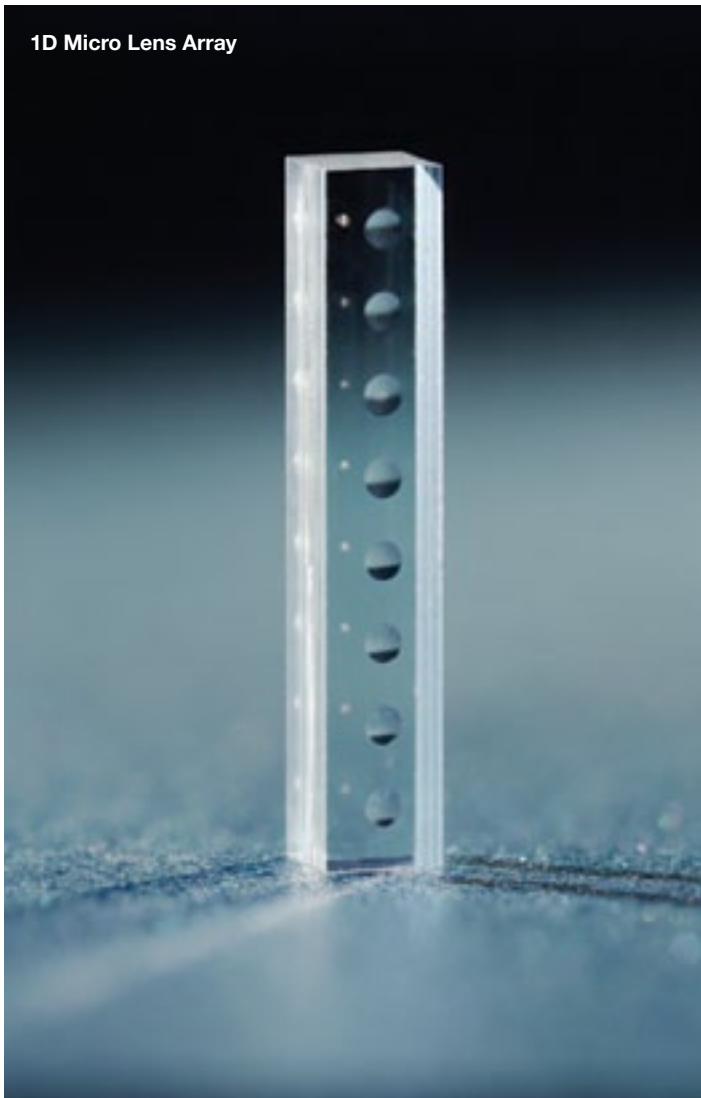
- Spherical and aspheric lenses
- 1D and 2D micro lens arrays
- Arbitrary shapes
- Single or double-sided lenses
- Hybrid lenses
- Metal patterns and apertures
- Dielectric coatings

Advantages

- Lithographic precision alignment
- Volume scalability
- Small form factors
- Compact functional integration
- State-of-the-art metrology
- Optical design expertise
- Robust monolithic parts

Applications

- Datacom
- Telecom
- Medical
- IR vision
- Industrial



Lens stack

DigitalOptics Corporation Refractive Optics

| | |
|----------------|--|
| Wavelengths | Materials and applications from 193nm to 14um |
| Lens Materials | Fused-silica, silicon, IR materials, polymers |
| Lens Diameters | 0.01mm up to 10mm |
| Lens Sags | <10µm up to 750µm |
| Wafer Sizes | 150mm and 200mm |
| Coatings | Anti-reflective coating and metallization capabilities |

Optical and Mechanical Design Expertise

DOC's experienced engineers utilize advanced design techniques to tackle the complexities of miniaturized optical and opto-mechanical systems.

Using state-of-the-art in-house and commercial software, we work with our customers to understand their unique needs and offer them customized solutions.

Contact a DOC sales representative for more information.

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