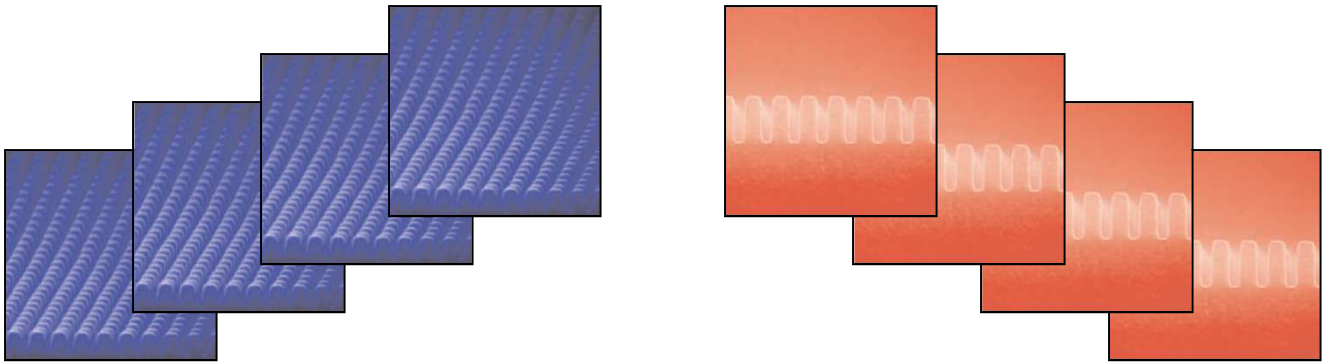


## NanoReplication



*Prototype to Production without Compromising Quality*

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**Your single source for custom design,  
prototyping and manufacturing.**

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***We Manufacture:***

- ▣▣▣▣▶ *MicroLens Arrays*
- ▣▣▣▣▶ *Transmission Gratings*
- ▣▣▣▣▶ *Pulse Compensation Gratings*
- ▣▣▣▣▶ *Diffraction Gratings*
- ▣▣▣▣▶ *Optical Diffusers*
- ▣▣▣▣▶ *Optical Waveguides*
- ▣▣▣▣▶ *Micro-fluidic Wells*
- ▣▣▣▣▶ *Imprint Templates*

# Capabilities and Resources

## Design and Development

Holographix possesses a solid foundation in the design, development, and manufacture of nano- and micro-patterned surface relief structures. This knowledge allows us to help you design your optical components for both optimum performance and manufacturability. Holographix uses several different design and analytical software tools to model and optimize each product design to ensure that the most effective solutions are developed.

## Master Patterning

Holographix works closely with patterning industry leaders, often pushing the boundaries of what is possible in nano- and micro-pattern mastering. We offer access to a full range of advanced mastering techniques including greyscale lithography, laser writing, and e-beam writing, ensuring that the proper technology is used for your application.

## Replication Benefits

Our proprietary replication process provides a cost effective alternative to competing manufacturing processes. The inherent repeatability of the replication process also eliminates inconsistencies associated with other forms of production. Whether your production requirements call for 100 individual components or 100,000 wafers, we can offer you a cost-effective solution.

## Standard Replica Properties

Feature size:	< 10 nm to > 100 $\mu$ m
Feature resolution:	<10 nm
Optical transmission:	>99% from 420 nm to 2.2 $\mu$ m
Temperature range:	-50° C to 260° C (solder reflow compatible)
Damage Threshold:	>1 MW/cm <sup>2</sup>
Humidity range:	0 to 95% continuous
Chemical resistance:	most common solvents

## Company Experience

Over the past 25 years, Holographix has earned a reputation for providing our customers with outstanding development and manufacturing services for custom surface relief patterns. Custom binary and blazed gratings, micro-lens arrays, and diffractive waveguides are our main focus. With a company-wide emphasis on quality, Holographix maintains a rigorous Quality Assurance program designed to ISO9001-2008 standards.

## Replication Facilities

Production of replicated components requires a significant investment in capital equipment. Our 14,500 square foot facility in Hudson, MA is equipped with:

- 5 Class 1000 cleanrooms
- 4 Custom UV replication labs
- March AP-1000 plasma treatment system
- Denton Infinity 22 thin-film box coater
- 2 Denton sputtering systems
- 4 ADE and Zygo phase shifting interferometers
- Cary 500 UV-Vis-NIR spectrophotometer
- 2 Mitutoyo Vision Systems
- Amray 3600 Scanning Electron Microscope (SEM)
- AFM Workshop TT – Atomic Force Microscope (AFM)
- ADT 7100 Dicing System

## Production Capabilities

Holographix specializes in the manufacture of custom replicated components in production quantities. The inherent speed of our cold-forming replication process allows us to offer economical volume pricing without the associated high tooling costs.

Please contact us via phone, e-mail, or fax with any inquiries you may have regarding our services. We will be happy to assist you!

For a more comprehensive overview of Holographix and our technology, please visit our website below.

[www.holographix.com](http://www.holographix.com)

