

# MetaOptic Designer

## Automatically Generates Metalenses/Metasurfaces

### Features at a Glance

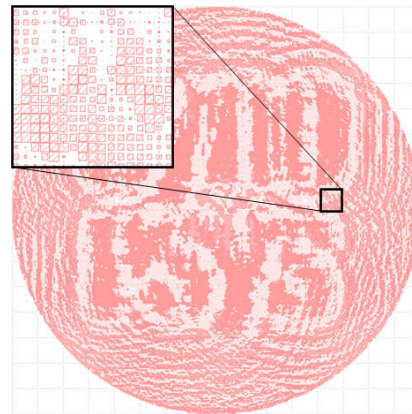
- Built-in engineering intelligence allows designers at all levels of expertise to create novel metalens designs quickly and easily
- Efficient optimization and simulation algorithms generate accurate results, validated by a rigorous finite-difference time-domain (FDTD) method
- Powerful and user-friendly features significantly reduce design-to-validation cycles

### Overview

Metalenses have the potential to revolutionize optical products by replacing bulky curved lenses with thin, flat surfaces. Metalenses are a key enabling technology for the next generation of compact imaging, sensing and display applications.

Synopsys is supporting this new world of innovation with MetaOptic Designer, an unprecedented inverse design tool that takes user-specified criteria and generates metalenses/metasurfaces for optimal design performance.

Metalens design traditionally requires extensive physics knowledge and many hours of development. MetaOptic Designer removes these barriers with exclusive AI that automatically yields the best metalens designs as fast as possible.

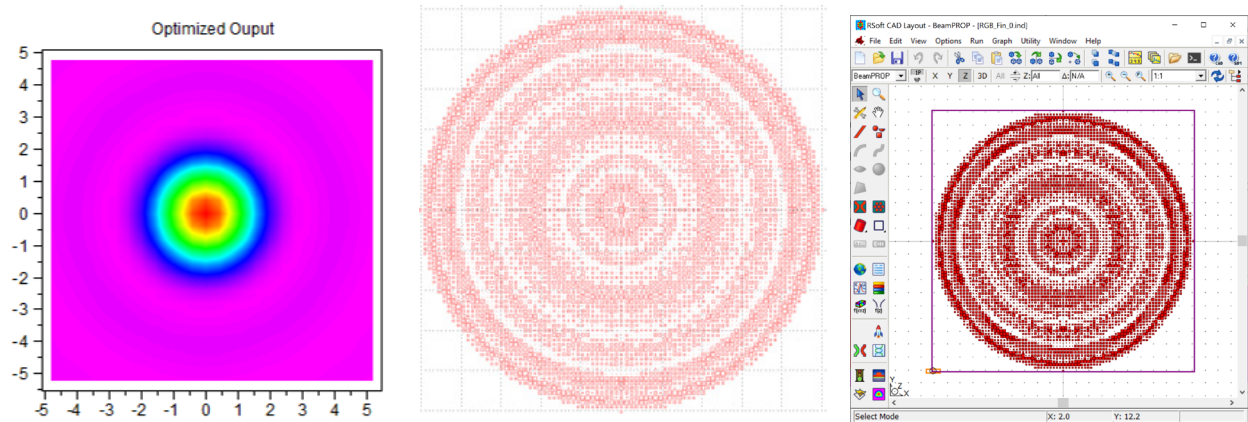


**Figure 1: Optimized metalens layout from MetaOptic Designer**

MetaOptic Designer includes efficient optimization and simulation algorithms to help generate metalens designs quickly. Results are validated by a rigorous finite-difference time-domain (FDTD) method to ensure accurate results. In addition, MetaOptic Designer's powerful, user-friendly interface significantly reduces design-to-validation cycles.

## Key Features

- Automatically generates metalens/metasurface layouts, RSoft CAD files for simulation, and GDS files for fabrication
- Provides unique optimization algorithms to meet user-specified targets
- Requires minimal user inputs, such as basic lens system configurations, incident conditions, target patterns, and meta-library settings
- Is a standalone tool with its own graphical user interface
- Advanced and robust simulation algorithm supports full-vector field solutions in structures and materials



**Figure 2: MetaOptic Designer generates optimized results and metalens layouts, RSoft CAD files for simulation and GDS files for fabrication**

## For More Information

Contact us at [optics@synopsys.com](mailto:optics@synopsys.com) to request software pricing and to start a trial, or visit [synopsys.com/optical-solutions](https://synopsys.com/optical-solutions).