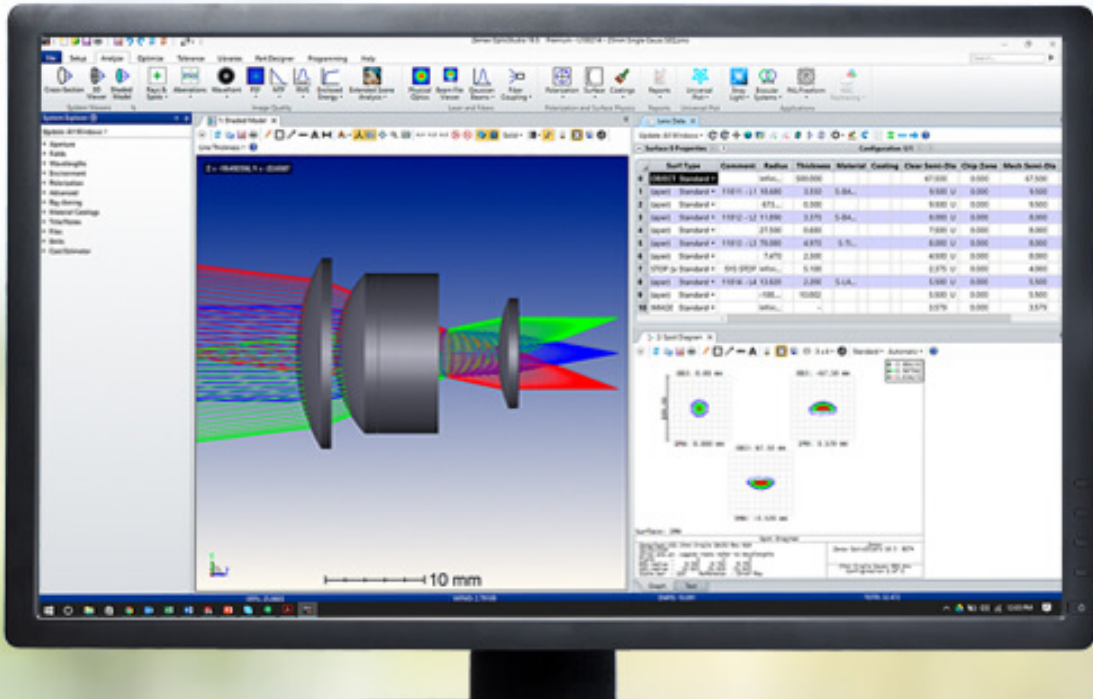


# Zemax



## OpticStudio<sup>®</sup>

Everything you need to design optical systems

SEE IT IN ACTION

Everything you need to design optical products

OpticStudio<sup>®</sup> is the world's leading optical, illumination, and laser system design software.

Top companies in aerospace, astronomy, automotive, biomedical research, consumer

electronics, and machine vision, use OpticStudio as their tool of choice. With its comprehensive set of analysis and simulation tools, OpticStudio stands alone in its feature set. No other software on the market today offers state-of-the-art optimization and tolerancing tools alongside a seamless integration to software created for CAD users, streamlining your team's workflow and helping you get fully validated optomechanical designs out to market faster.

## Five steps to design your optical system in OpticStudio:

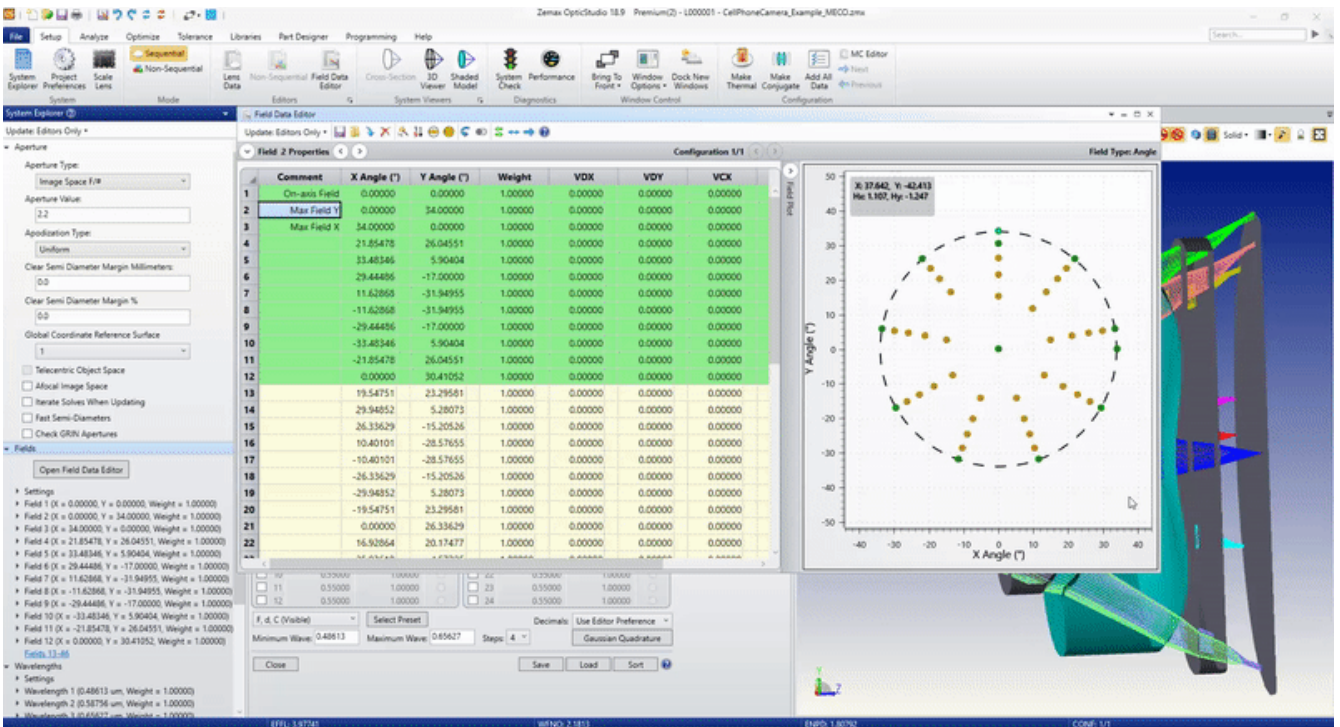
### 1. Set up your system

OpticStudio's intuitive user interface includes easy-to-learn tools and wizards which enable efficient simulation and design of any optical system.

With more than 200 field points you can set up even the most complex freeform and non-rotationally symmetric systems.

Design high-confidence virtual prototypes with the only optical design software that can model everything from imaging optics to illumination, including the effects of stray light.

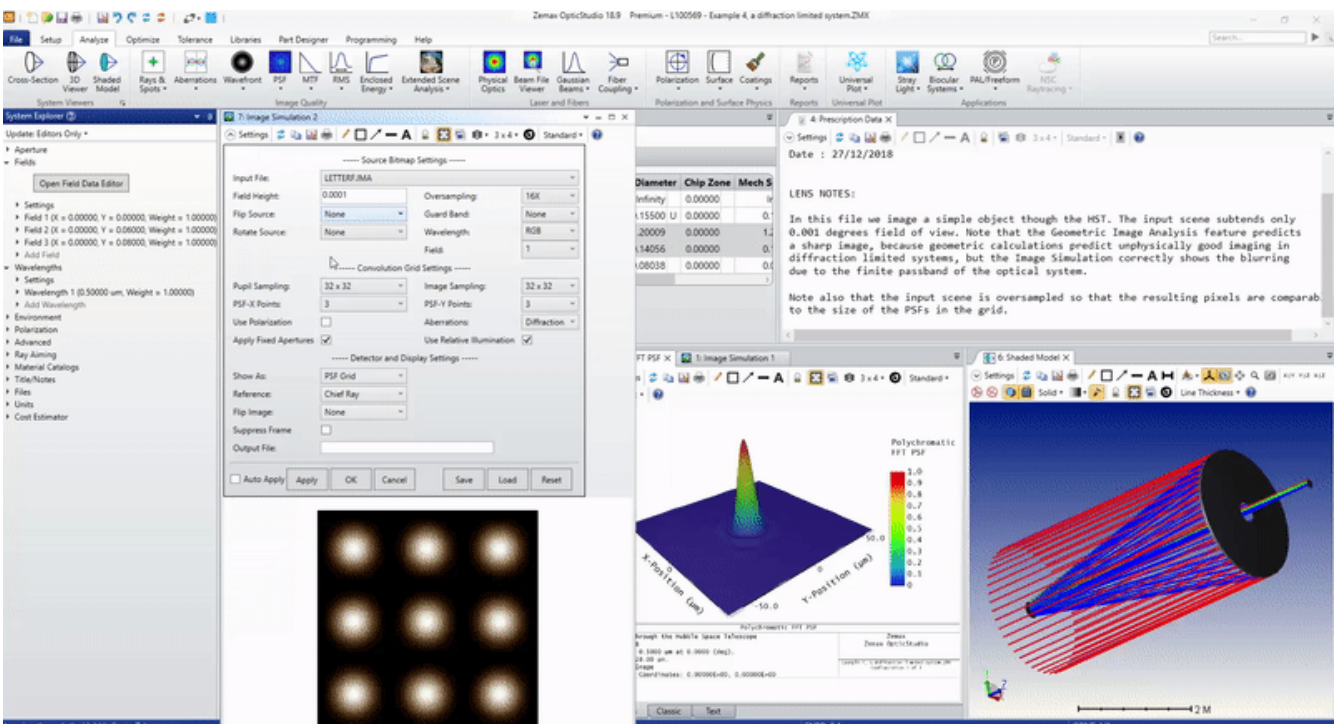
[\*\*Webinar: Combining Sequential and Non-Sequential >\*\*](#)



## 2. Analyze your system to evaluate performance

OpticStudio includes a suite of tools to analyze the performance of your system. In addition to the classic analysis functions, OpticStudio also offers Full-field Aberration analysis to improve freeform designs; contrast analysis for MTF optimization; and Image Simulation to produce photorealistic images of object scenes.

### [Webinar: Simulating image quality >](#)

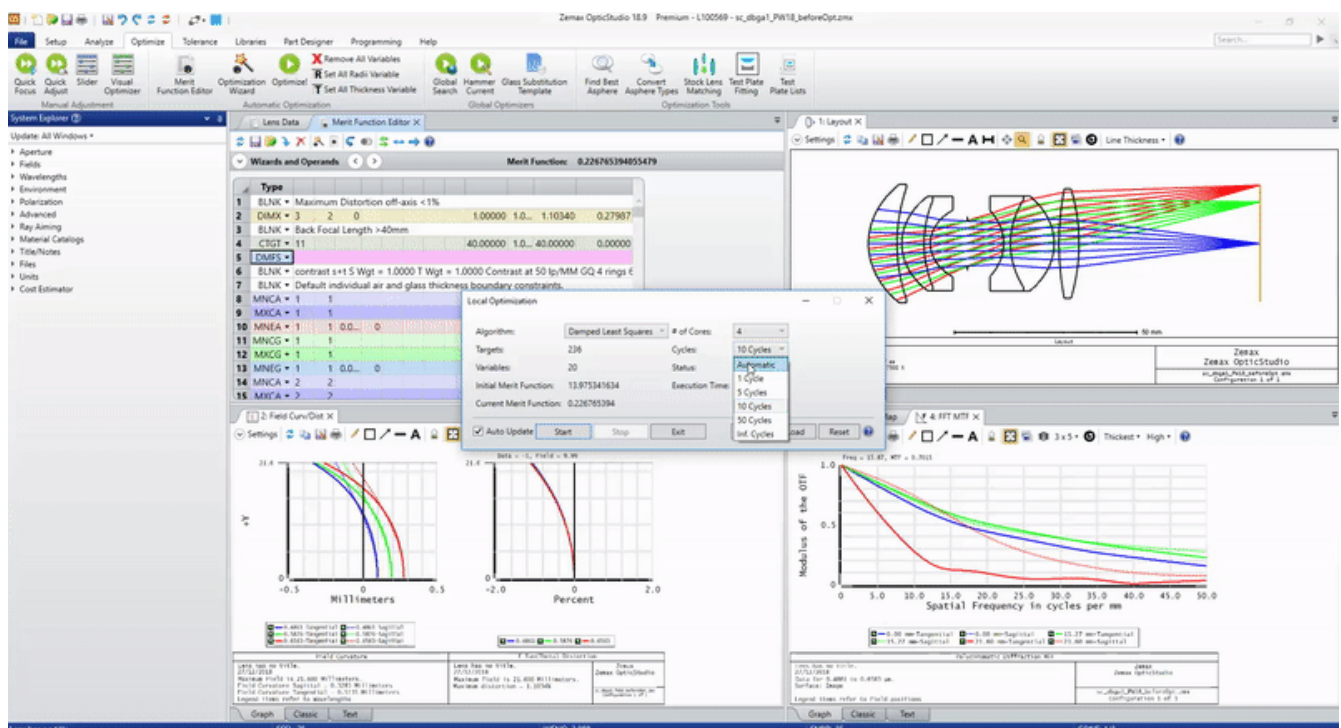


### 3. Optimize your system to meet manufacturing specifications

State-of-the-art optimization tools automatically improve the performance of designs based on user-defined constraints and design goals. This saves time by eliminating design iterations.

Optimize for MTF up to 10x faster with Contrast Optimization - which removes multiple design and test steps inherent in older processes.

#### [Webinar: Contrast Optimization >](#)



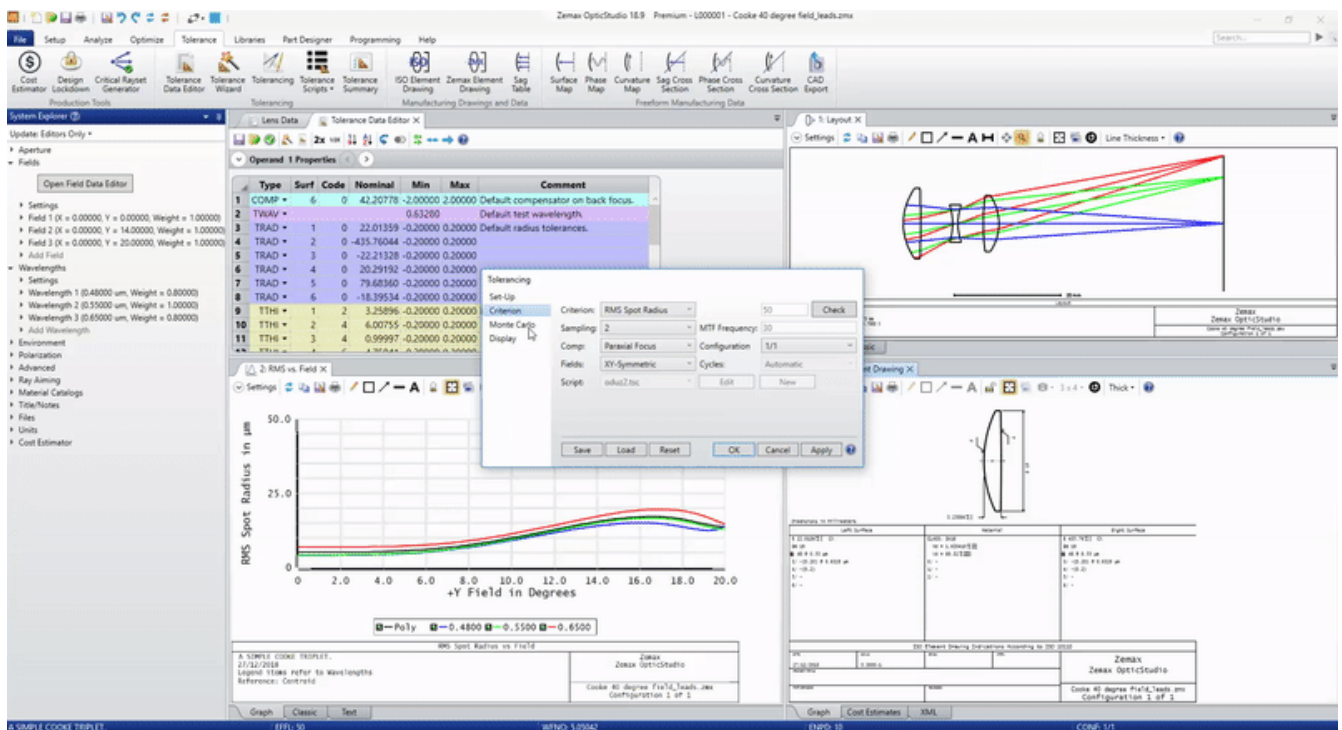
### 4. Tolerance your system to ensure manufacturability

Advanced tools incorporate manufacturing and assembly limits into design constraints to ensure manufacturability and production efficiency.

In addition to sensitivity studies, Monte Carlo tolerance analysis can simulate the as-built performance.

Finished designs can be exported to manufacturing ready outputs such as ISO drawings and common CAD file formats.

#### [Webinar: Tolerancing real-world optical systems >](#)



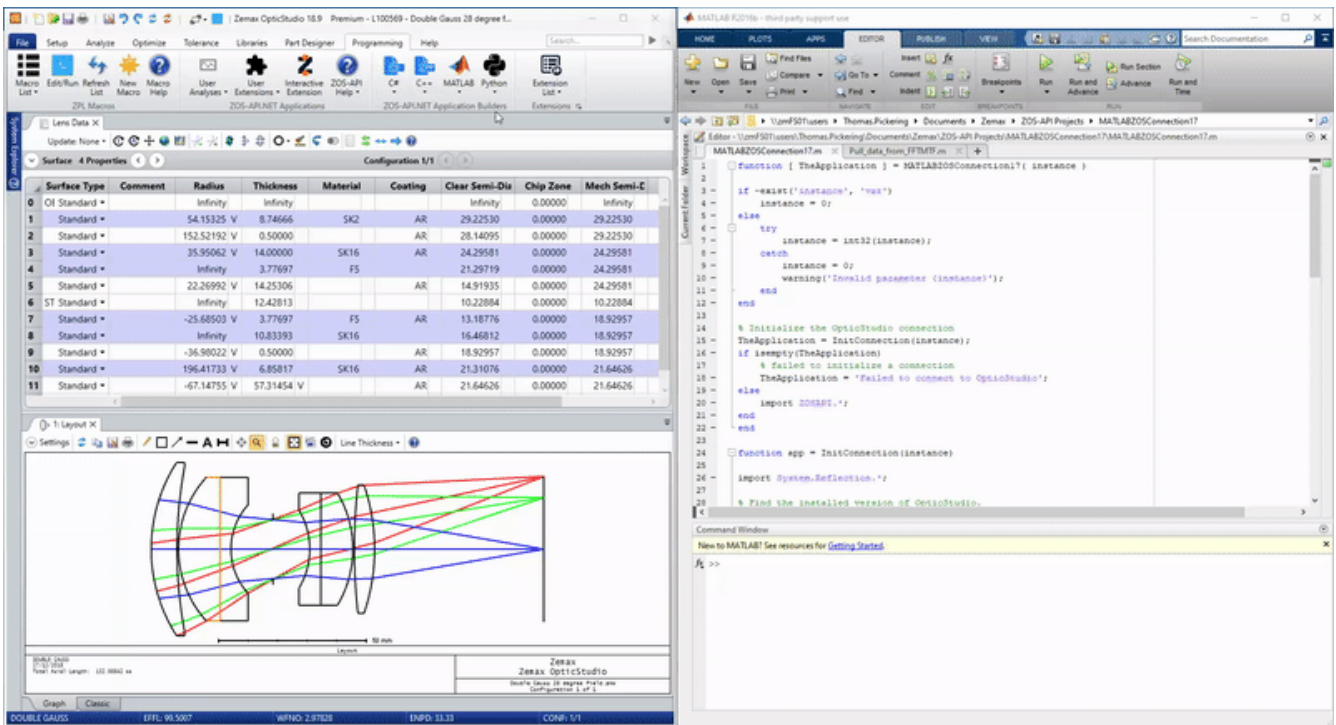
## 5. Customize OpticStudio to suit your needs

With the ZOS-API, you can create standalone applications, build your own analyses, and control OpticStudio externally using C#, C++, MATLAB and Python.

Zemax Programming Language (ZPL) enables you to write your own macros to automate repetitive processes.

Custom DLLs allow creation of any surfaces, objects, sources, and scatter functions.

[Webinar: Matlab & ZOS-API >](#)



Check out these useful resources:

### Customer story

[How ESI developed a new cost-saving design methodology for laser systems](#)

### eGuide

[Contrast Loss Map in OpticStudio](#)

### Webinar

[Designing for manufacturability with OpticStudio](#)

[Features in each edition >](#)

[System requirements >](#)

[Release notes >](#)

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