# Features & Benefits

LensMechanix®

## Data integrity

| Feature | Benefit | Value |
|---|---|---|
| Load OpticStudio files | Load OpticStudio® files as native CAD parts, eliminating the time spent redesigning the geometry of the optical system. You can view all of the optical information and start designing the mechanical system right away. Includes support for the compound lens, boolean native, and grid sag. | Save time, streamline workflow, maximize efficiency |
| Save OpticStudio output files | Share files from the CAD platform to OpticStudio while maintaining design fidelity. Both the optics and the mechanical design are shared without losing information. | Maintain design fidelity, streamline workflow |
| Construction geometry | Make informed mechanical design decisions by accessing data such as clear apertures, centers of curvature, apexes, and optical axes. You get access to all of the geometry information that you need in one file. | Make informed design decisions |
| Load ZAR files with CAD (Creo and SW parts) | Load OpticStudio files that contain Creo parts into Creo. This enables you to access the same information that was previously designed without having to worry about loss of information or having to relocate components. | Streamline workflow |
| Load and validate multi-configuration files | Load OpticStudio files that have multi-configurations. You can view the performance of systems at different setups to ensure all setups meet performance requirements. | Streamline workflow |
| Generate a report | Generate a PDF or DOCX file to easily share information with colleagues that need high-level information. | Improve collaboration |

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## Validation

| Feature | Benefit | Value |
|---|---|---|
| Optical Performance Summary | Easily identify how much your mechanical components are affecting the optical performance in a pass/fail format. You can make informed design tradeoffs on cost versus performance. | Make changes early in the design process, make informed tradeoffs |
| Instant ray filters | Instantly draw ray filters that help you identify which mechanical components are affecting the optical performance. You can make changes to the mechanical components early in the design process. | Catch and correct errors early, reduce prototypes |
| Ray animation | View an animation of rays going from the sources through the optomechanical path then to the detectors. This enables you to make changes to the mechanical system in the order that they arise and could reduce the changes that you have to make in the mechanical system. | Catch and correct errors early |
| Computational Domain | Exclude components for a ray trace, enabling you to analyze only specific components at a time. You can run faster ray traces without having to remove components from the assembly as well as determine the performance without specific components. | Find errors early |
| Power throughput | View the power lost to optical and mechanical components, enabling you to identify whether changes need to be done to mechanical design or optical design. | Make changes early in the design process |
| Surface power | View the power incident on any mechanical surface. You can view how much power is striking a specific component to determine if the object is causing too much energy loss. | Save time |

## Manufacturing

| Feature | Benefit | Value |
|---|---|---|
| Apply scatter profiles | Get an accurate representation of the reflective properties of the mechanical components. Get ray trace results that more accurately represent a real-world model (physical prototype). | Changes can be done in a virtual prototype |
| Add mechanical edge | Add material around a lens to use as mounting edge. You can easily add the edge within the CAD platform which you can use to mount your optics better. | Reduce back and forth |
| Generate lens drawings | Create ISO 10110 drawings for aspheric and standard lenses. Drawings automatically populate with ISO 10110 standard to ensure they are ready for manufacturing. | Streamline workflow |
| Load and display tolerance information | Access optical tolerance data, including parameter and positional information, the was defined in the OpticStudio file to make informed design decisions. | Streamline workflow |

## Iterate quicker

| Feature | Benefit | Value |
|---|---|---|
| Update OpticStudio file | In an assembly with both optics and mechanics, you can wipe out the optics and replace them with the new ones when there are changes to the optical design. Updating the system helps you understand what changes need to be made in the mechanical design when there are changes to the optical design. | Respond quicker to changes |
| Fold mirror tool | Enables mechanical engineers to add a fold mirror in an existing optical train to accommodate space requirements. Adding a fold mirror within the CAD platform means you don't have to go back and forth between optical and mechanical design to define the position of fold mirrors. | Reduce back and forth when changes are made |
| Add custom component | Add custom optical components to simulate and suggest changes in the optical design for faster iterations | Save time, streamline workflow |
| Add catalog component | Add off-the-shelf optical components in a CAD platform for faster component placement and iterations | Save time, streamline workflow |

**Please refer to the list of Supported Components in LensMechanix.**

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