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This document provides an overview of the surfaces and objects LensMechanix supports for both Creo and SOLIDWORKS.

LensMechanix creates supported components as native Creo and SOLIDWORKS parts. Unsupported components do not load. To help us prioritize the list of unsupported components, please contact support@zemax.com.

You can load sequential and non-sequential files into LensMechanix. Since LensMechanix runs non-sequential ray trace, sequential files are converted to non-sequential files. LensMechanix uses the same conversion tool as OpticStudio. Some sequential designs do not have a direct conversion to non-sequential. If this is the case, you may need to have the file converted to non-sequential by the OpticStudio user.

Optical components LensMechanix converts

Upon loading an OpticStudio file, LensMechanix converts sequential designs to non-sequential designs. The following sequential optical surfaces have a direct conversion to non-sequential objects. Surfaces that do not directly converted to non-sequential objects are converted to a Grid Sag surface sampled with a 64 x 64 unit grid instead.

Sequential surfaces:

- Biconic
- Diffraction Grating
- Even Asphere
- Extended Asphere
- Extended Odd Asphere
- Extended Polynomial
- Fresnel
- Odd Asphere
- Polynomial
- Standard
- Toroidal

Sequential surfaces supported by Grid Sag:

- Biconic Zernike
- Chebyshev Polynomial
- Cubic Spline
- Extended Cubic Spline
- Extended Toroidal Grating
- Odd Cosine
- Periodic
- Q-Type Asphere
- Superconic
- Tilted
- Zernike Annular Standard Sag
- Zernike Fringe Sag
- Zernike Standard Sag

LensMechanix for Creo

Non-sequential components that load into LensMechanix for Creo

The following surfaces and objects will load if they exist in a non-sequential OpticStudio file.

Non-sequential surfaces and objects:

- Annular Aspheric Lens
- Annular Axial Lens
- Annular Volume
- Annulus
- Array
- Aspheric Surface
- Aspheric Surface2
- Axicon Surface
- Biconic Lens
- Biconic Surface
- Biconic Zernike
- Biconic Zernike Surface

LensMechanix for Creo (continued)

- Binary 1
- Binary 2
- Binary 2A
- Boolean Native
- CAD Part: Creo Parametric
- CAD Part: STEP/IGES/SAT
- CAD Part: STL
- Cone
- CPC
- CPC Rectangular
- Cylinder 2 Pipe
- Cylinder 2 Volume
- Cylinder Pipe
- Cylinder Volume
- Diffraction Grating
- Dual BEF Surface
- Ellipse
- Elliptical Volume
- Even Asphere Lens
- Extended Odd Asphere Lens
- Extended Polynomial Lens
- Extended Polynomial Surface
- Extruded
- Faceted Surface
- Fresnel 1
- Fresnel 2
- Hologram Lens
- Hologram Surface
- Jones Matrix
- Lenslet Array 1
- Lenslet Array 2
- MEMS
- Odd Asphere Lens
- Paraxial Lens
- Polygon Object
- Ray Rotator
- Rectangle
- Rectangular Corner
- Rectangular Pipe
- Rectangular Pipe Grating
- Rectangular Roof
- Rectangular Torus Surface
- Rectangular Torus Volume
- Rectangular Volume
- Rectangular Volume Grating
- Reverse Radiance Target
- Slide
- Sphere
- Standard Lens
- Standard Surface
- Tabulated Faceted Radial
- Tabulated Faceted Toroid
- Tabulated Fresnel Radial
- Toroidal Hologram
- Toroidal Lens
- Toroidal Surface
- Toroidal Surface Odd Asphere
- Torus Surface
- Torus Volume
- Triangle
- Triangular Corner
- Wolter Surface
- Zernike Surface

Non-sequential sources:

- Source Diffractive
- Source Diode
- Source DLL
- Source Ellipse
- Source File
- Source Gaussian
- Source Object
- Source Point
- Source Ray
- Source Rectangle
- Source Tube
- Source Two Angle

Non-sequential detectors:

- Detector Rectangle

Unsupported components:

The following non-sequential objects are currently not supported in LensMechanix for Creo.

- Array Ring
- Detector Surface
- Detector Volume
- Boolean CAD
- Freeform Z
- Hexagonal Lenslet Array
- Reverse Radiance Detector
- Source ELUMDAT File
- Source Filament
- Source IESNAFile
- Source Imported
- Source Radial
- Source Volume Cylindrical
- Source Volume Elliptical
- Source Volume Rectangular
- Swept
- User Defined Object

LensMechanix for SOLIDWORKS

Non-sequential components that load into LensMechanix for SOLIDWORKS

The following surfaces and objects will load if they exist in a non-sequential OpticStudio file.

Non-sequential surfaces and objects:

- Annular Aspheric Lens
- Annular Axial Lens
- Annular Volume
- Annulus
- Array
- Aspheric Surface
- Aspheric Surface 2
- Axicon Surface
- Biconic Lens
- Biconic Surface
- Biconic Zernike
- Biconic Zernike Surface
- Binary 1
- Binary 2
- Binary 2A
- Boolean
- Boolean CAD
- CAD Part: SOLIDWORKS
- CAD Part: STEP/IGES/SAT
- CAD Part: STL
- Cone
- CPC
- CPC Rectangular
- Cylinder 2 Pipe
- Cylinder 2 Volume
- Cylinder Pipe
- Cylinder Volume
- Diffraction Grating
- Dual BEF Surface
- Ellipse
- Elliptical Volume
- Even Asphere Lens
- Extended Odd Asphere Lens
- Extended Polynomial Lens
- Extended Polynomial Surface
- Extruded
- Faceted Surface
- Freeform Z
- Fresnel 1
- Fresnel 2
- Hexagonal Lenslet Array
- Hologram Lens
- Hologram Surface
- Jones Matrix
- Lenslet Array 1
- Lenslet Array 2
- MEMS
- Odd Asphere Lens
- Paraxial Lens
- Polygon Object
- Ray Rotator
- Rectangle
- Rectangular Corner
- Rectangular Pipe
- Rectangular Pipe Grating
- Rectangular Roof
- Rectangular Torus Surface
- Rectangular Torus Volume
- Rectangular Volume
- Rectangular Volume Grating
- Reverse Radiance Detector
- Reverse Radiance Target
- Slide
- Sphere
- Standard Lens
- Standard Surface
- Tabulated Faceted Radial
- Tabulated Faceted Toroid
- Tabulated Fresnel Radial
- Toroidal Hologram
- Toroidal Lens
- Toroidal Surface
- Toroidal Surface Odd Asphere
- Torus Surface
- Torus Volume
- Triangle
- Triangular Corner
- Wolter Surface
- Zernike Surface

LensMechanix for SOLIDWORKS (continued)

Non-sequential sources:

- Source Diffractive
- Source Diode
- Source DLL
- Source Ellipse
- Source EULUMDAT File
- Source Filament
- Source File
- Source Gaussian
- Source IESNA File
- Source Imported
- Source Object
- Source Point
- Source Radial
- Source Ray
- Source Rectangle
- Source Tube
- Source Two Angle
- Source Volume Cylindrical
- Source Volume Elliptical
- Source Volume Rectangular

Non-sequential detectors:

- Detector Rectangle

Unsupported components:

The following non-sequential objects are currently not supported in LensMechanix for SOLIDWORKS.

- Array Ring
- Detector Surface
- Detector Volume
- Swept
- User Defined Object

Sequential surfaces supported by manual conversion to non-sequential objects

In OpticStudio, sequential surfaces that can be represented by the non-sequential objects above can be converted manually by the OpticStudio user. After manual conversion, they can be loaded into LensMechanix. For assistance with manual conversions, please contact support@zemax.com.