

## May 2019

LensMechanix supports all commonly used OpticStudio surfaces and components. This document provides a list of the surfaces and objects that LensMechanix supports. LensMechanix creates the geometry of the following objects into Creo and SOLIDWORKS, so you don't have to recreate geometry. Geometry for unsupported components does not load into the CAD platform.

[See the list of unsupported components in LensMechanix.](#)

## LensMechanix for Creo

### Sequential surfaces supported

The following sequential optical surfaces have a direct conversion to non-sequential objects:

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

### Sequential surfaces that convert to Grid Sag Surface

Some surfaces that do not directly convert to non-sequential objects convert to a Grid Sag Surface sampled with a 64 x 64-unit grid. Parameter information from the original surface definition is lost when a surface converts to Grid Sag Surface. The following sequential surface convert to a non-sequential Grid Sag Surface:

- 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

### Non-sequential components

The following non-sequential surfaces and objects load from non-sequential OpticStudio files.

Non-sequential surfaces and objects:

- Annular Aspheric Lens
- Annular Axial Lens
- Annular Volume
- Annulus
- Array
- Array Ring
- Aspheric Surface
- Aspheric Surface2
- Axicon Surface
- Biconic Lens
- Biconic Surface
- Biconic Zernike
- Biconic Zernike Surface
- Binary 1
- Binary 2
- Binary 2A
- Boolean CAD
- 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

## LensMechanix for Creo (continued)

- 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
- Detector Surface
- Detector Volume

## LensMechanix for SOLIDWORKS

### Sequential surfaces supported

The following sequential optical surfaces have a direct conversion to non-sequential objects:

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

### Sequential surfaces supported with Grid Sag

Some surfaces that do not directly convert to non-sequential objects convert to a Grid Sag Surface sampled with a 64 x 64-unit grid. Parameter information from the original surface definition is lost when a surface converts to Grid Sag Surface. The following sequential surface convert to a non-sequential Grid Sag Surface:

- 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

### Non-sequential components

The following non-sequential surfaces and objects load from non-sequential OpticStudio files.

Non-sequential surfaces and objects:

- Annular Aspheric Lens
- Annular Axial Lens
- Annular Volume
- Annulus
- Array
- Array Ring
- Aspheric Surface
- Aspheric Surface 2
- Axicon Surface
- Biconic Lens
- Biconic Surface
- Biconic Zernike
- Biconic Zernike Surface
- Binary 1
- Binary 2
- Binary 2A
- Boolean CAD
- Boolean Native
- 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
- Fresnel 1
- Fresnel 2
- Hexagonal Lenslet Array
- Hologram Lens
- Hologram Surface
- Jones Matrix
- Lenslet Array 1

## LensMechanix for SOLIDWORKS (continued)

- 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

### 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
- Detector Surface
- Detector Volume