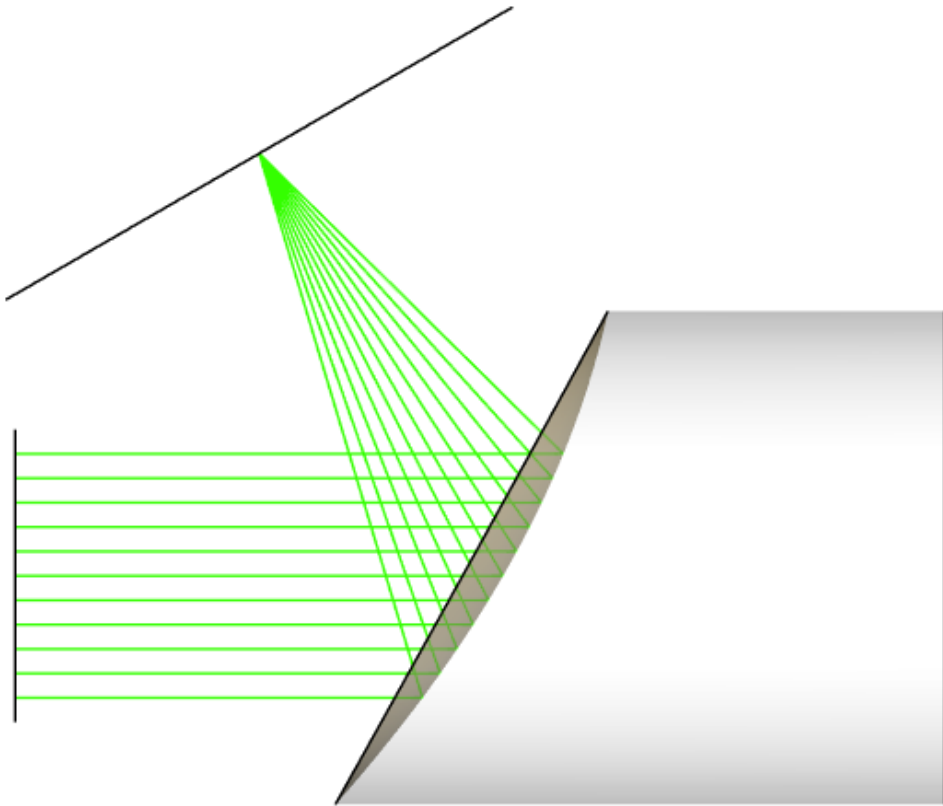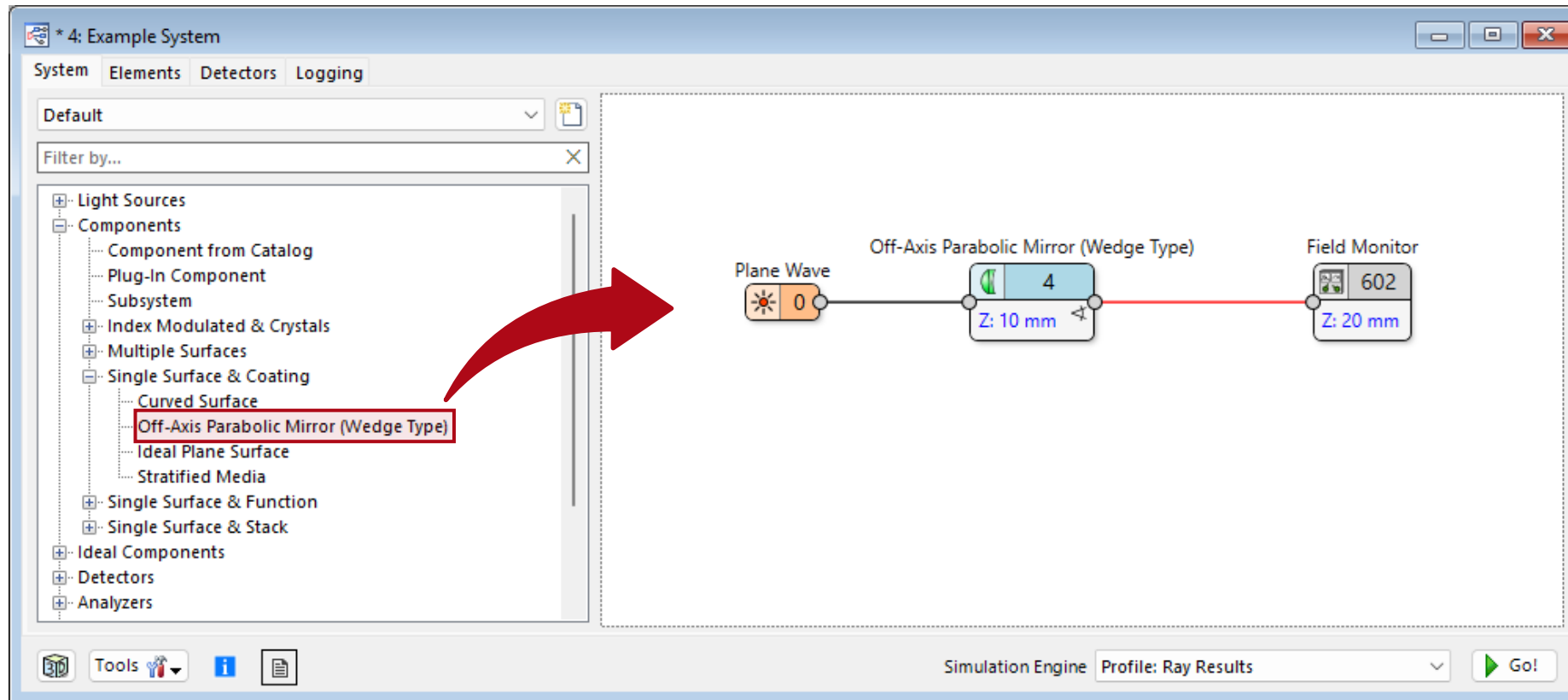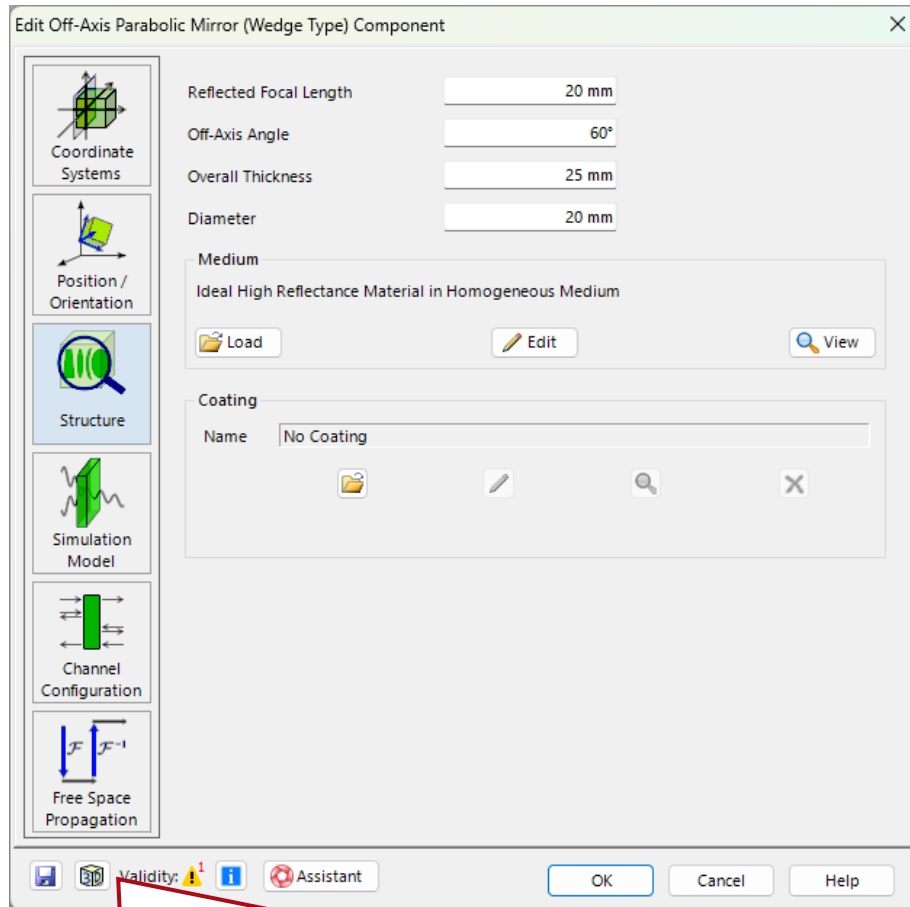# Off-Axis Parabolic Mirror

Abstract

This tutorial demonstrates the Off-Axis Parabolic Mirror (Wedge Type) with examples of various focusing and collimation configurations.
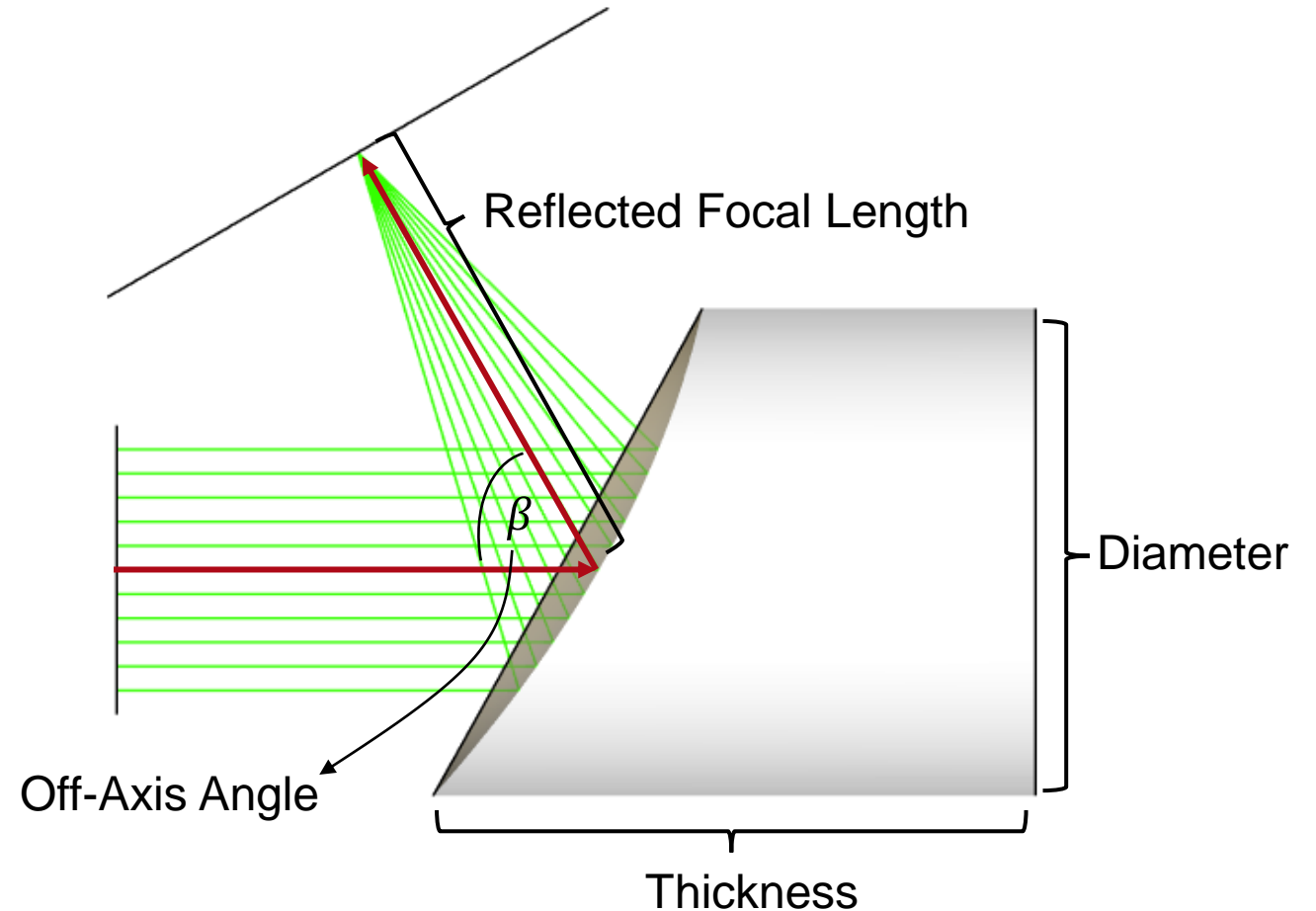
Where to Find the Component?

The Off-Axis Parabolic Mirror (Wedge Type) can be found under *Components/Single Surface & Coating*.
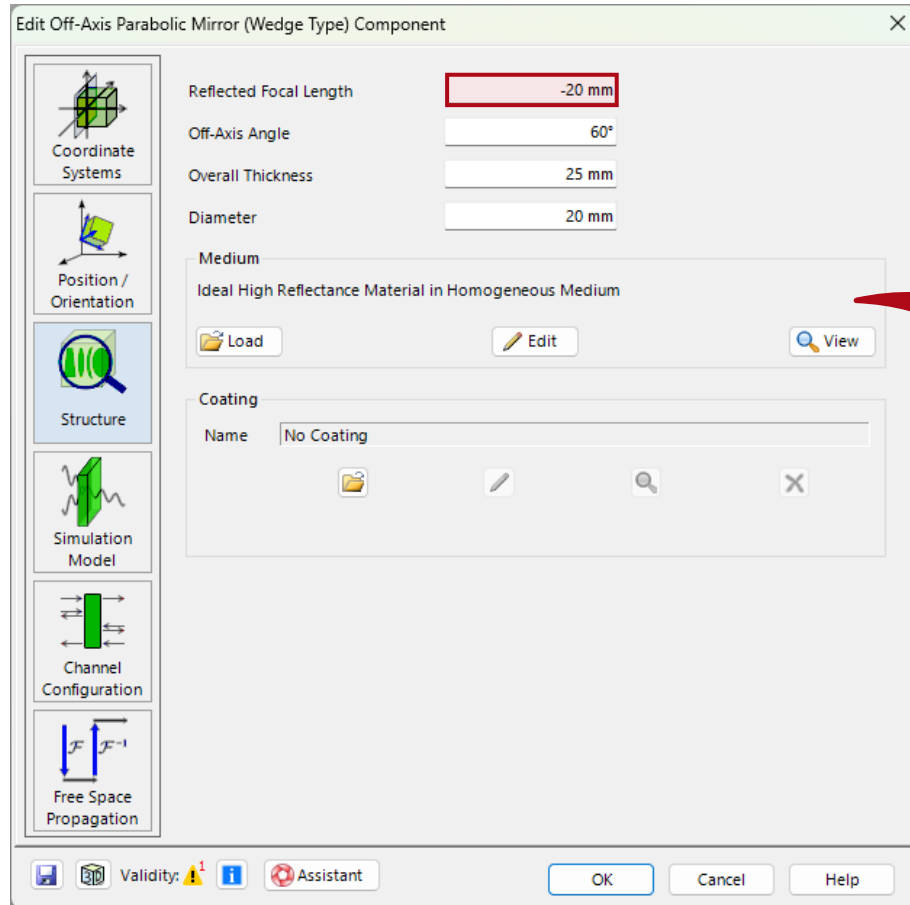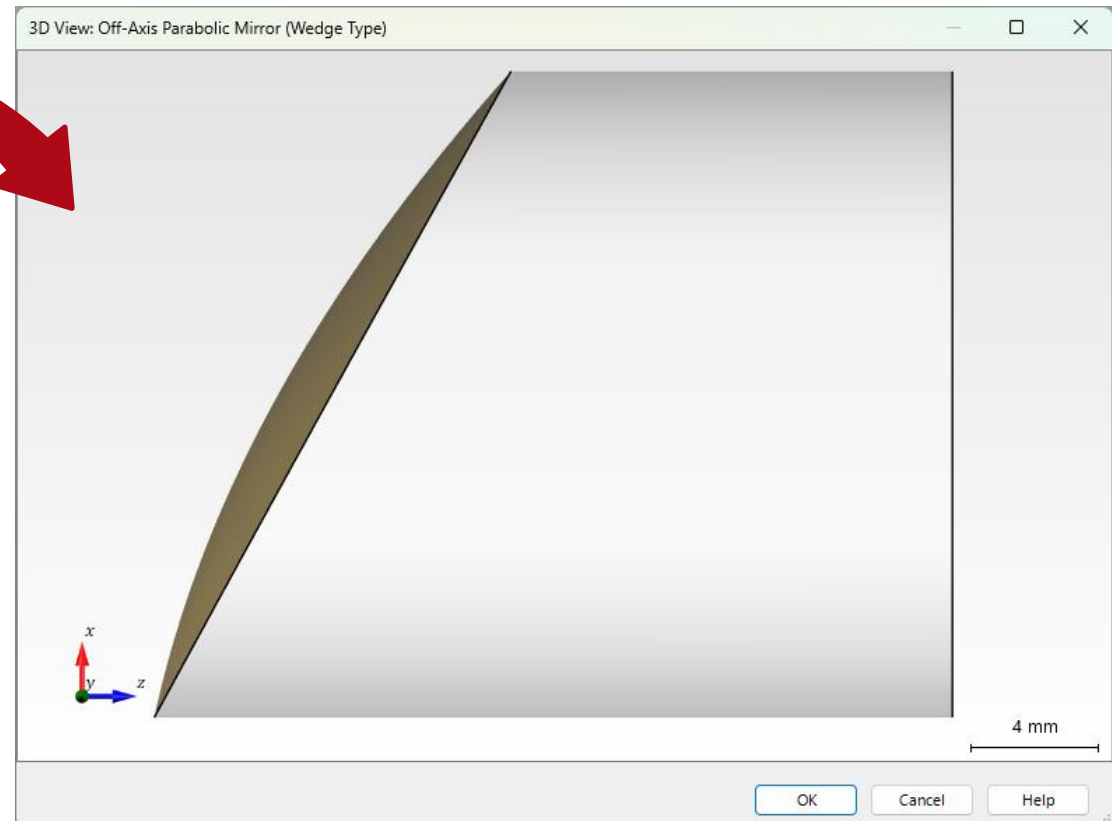
Parameters of the Component

VirtualLab Fusion automatically generates the structure from the specified parameters.

Edit Off-Axis Parabolic Mirror (Wedge Type) Component

Reflected Focal Length	20 mm
Off-Axis Angle	60°
Overall Thickness	25 mm
Diameter	20 mm

Medium
Ideal High Reflectance Material in Homogeneous Medium

Load   Edit   View

Coating
Name   No Coating

Coordinate Systems
Position / Orientation
Structure
Simulation Model
Channel Configuration
Free Space Propagation

Validity: Assistant   OK   Cancel   Help

The actual structure can be visualized by pressing this button.

β

Reflected Focal Length
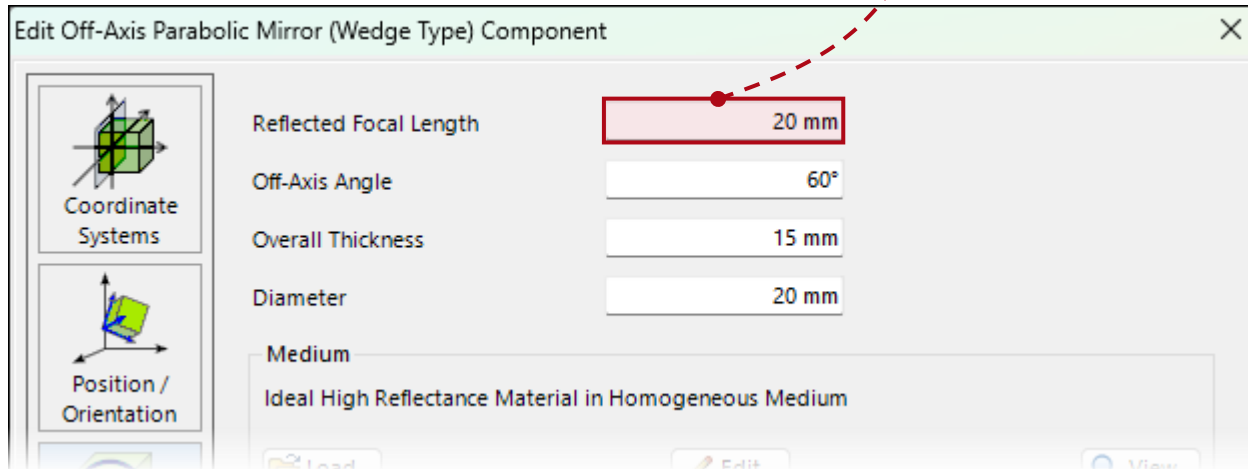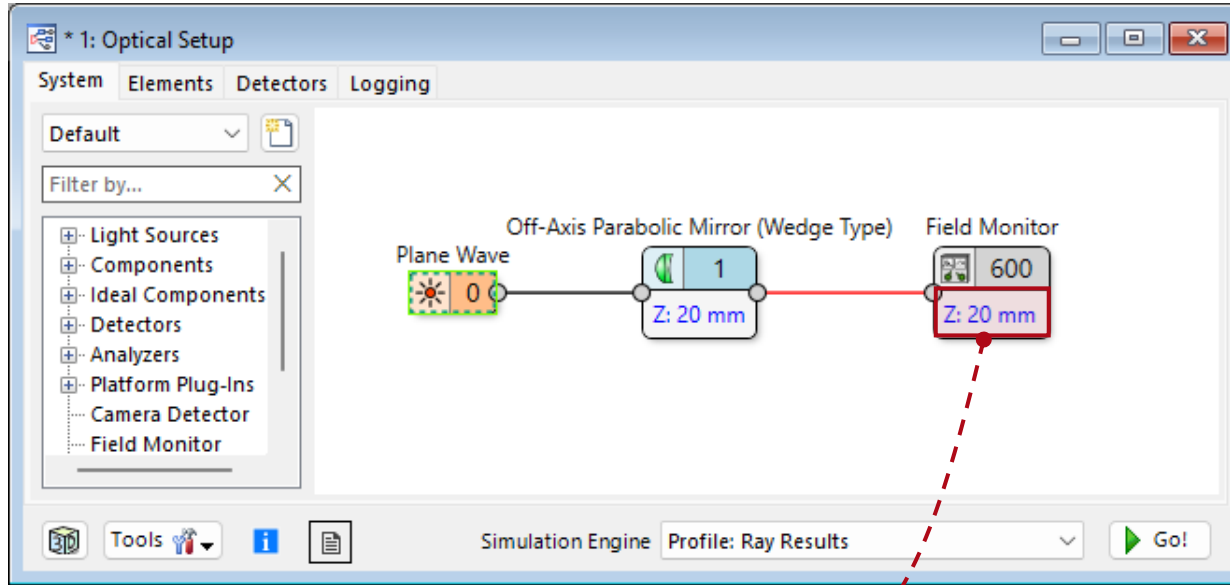
Off-Axis Angle

Diameter

Thickness

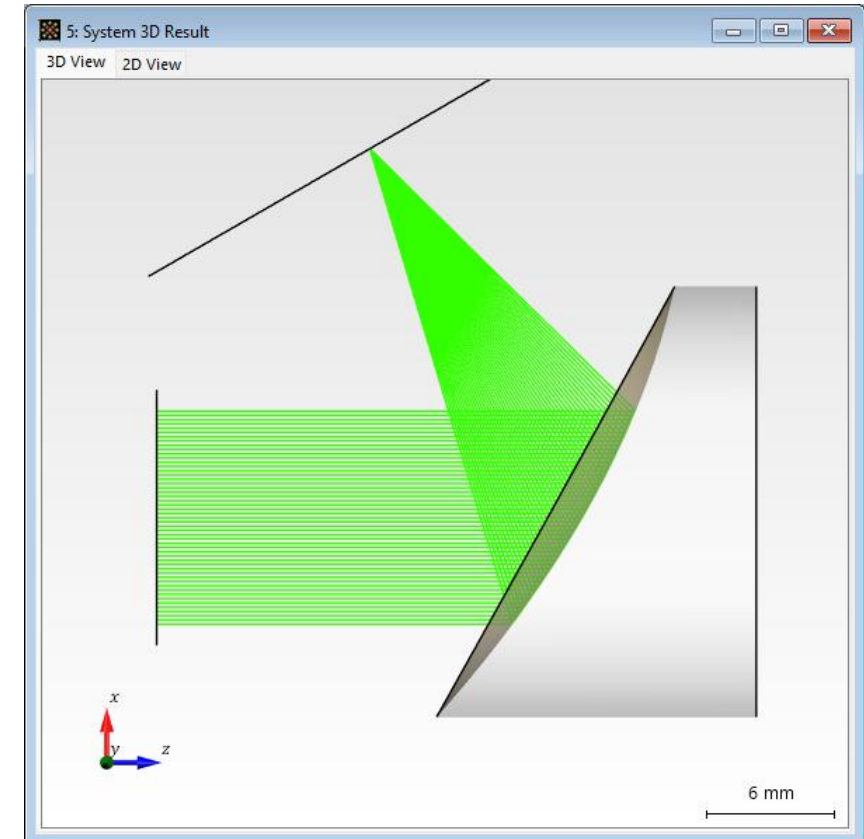# Off-Axis Parabolic with Negative Focal Length

Setting a negative *Reflected Focal Length* automatically converts the structure into a diverging surface.
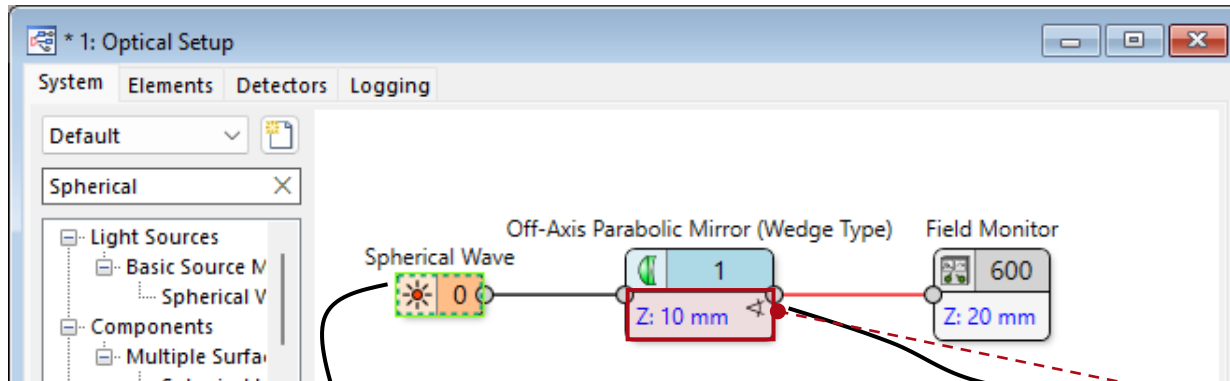
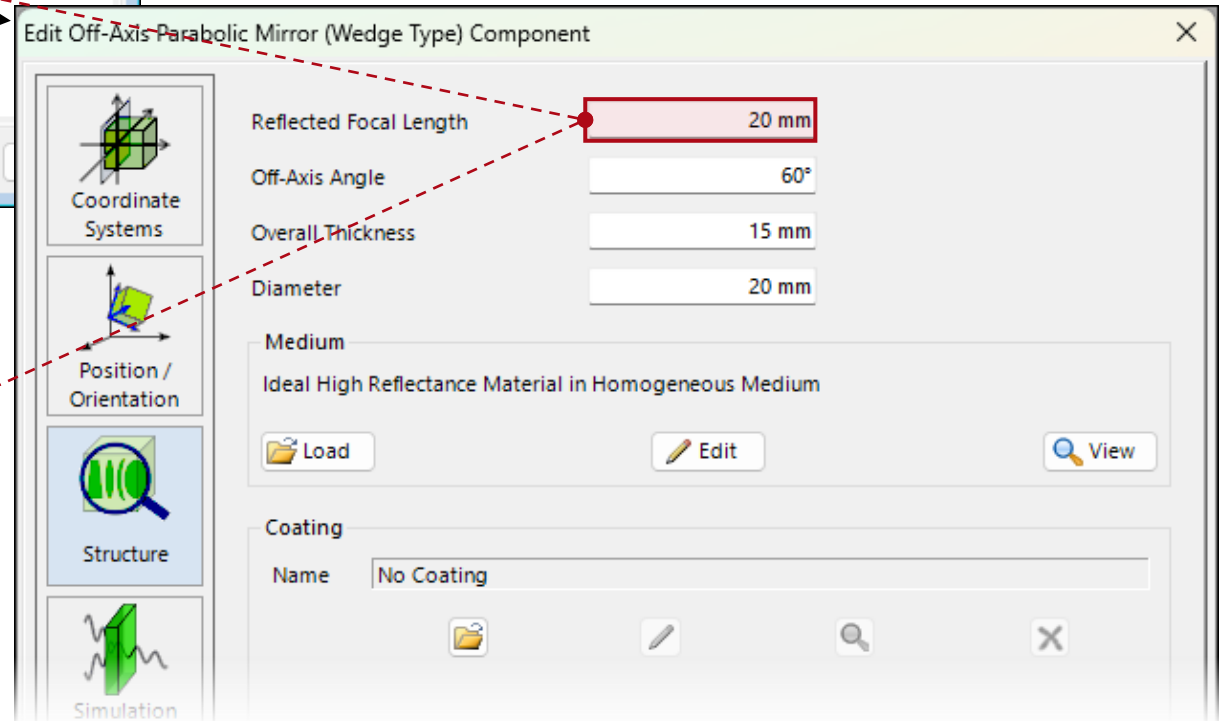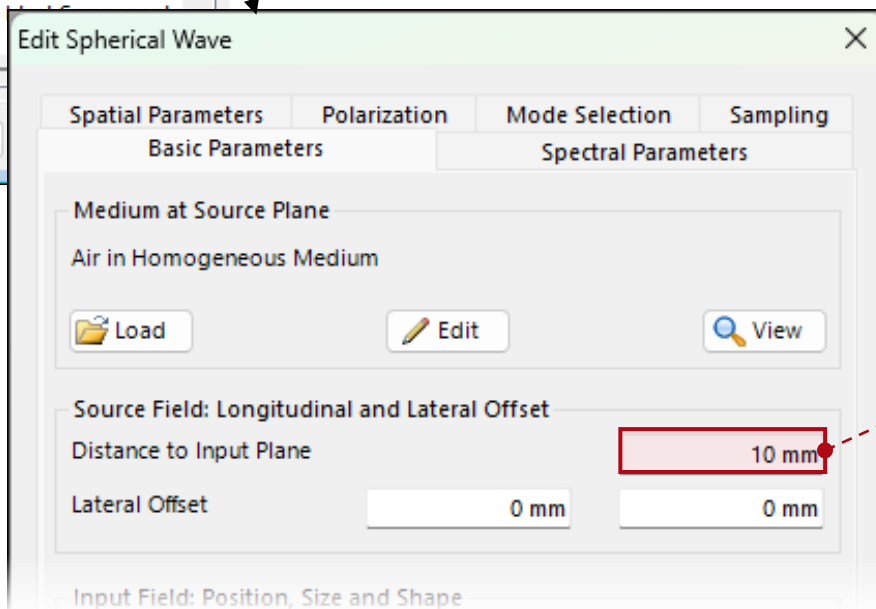# Focusing with a Off-Axis Parabolic Mirror

When focusing with the off-axis parabolic mirror, set the detector at the *Reflected Focal Length*. VirtualLab Fusion will automatically position it at the focal spot.
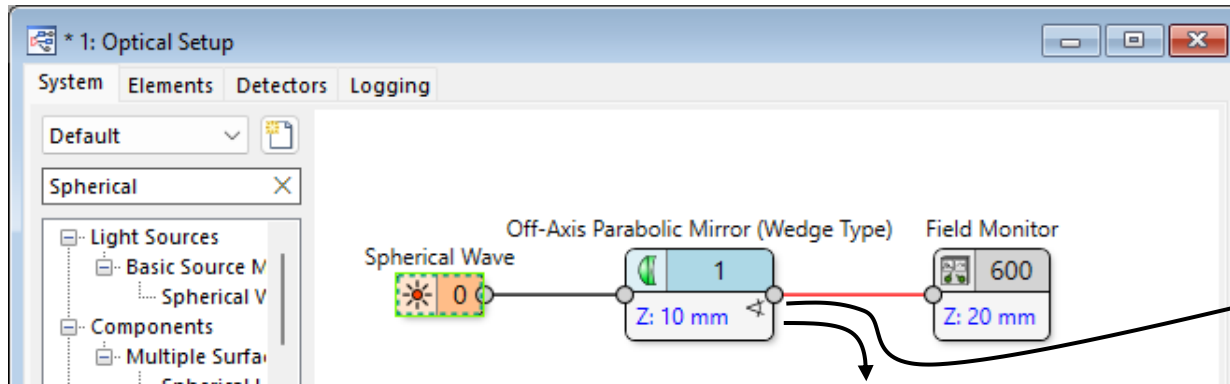
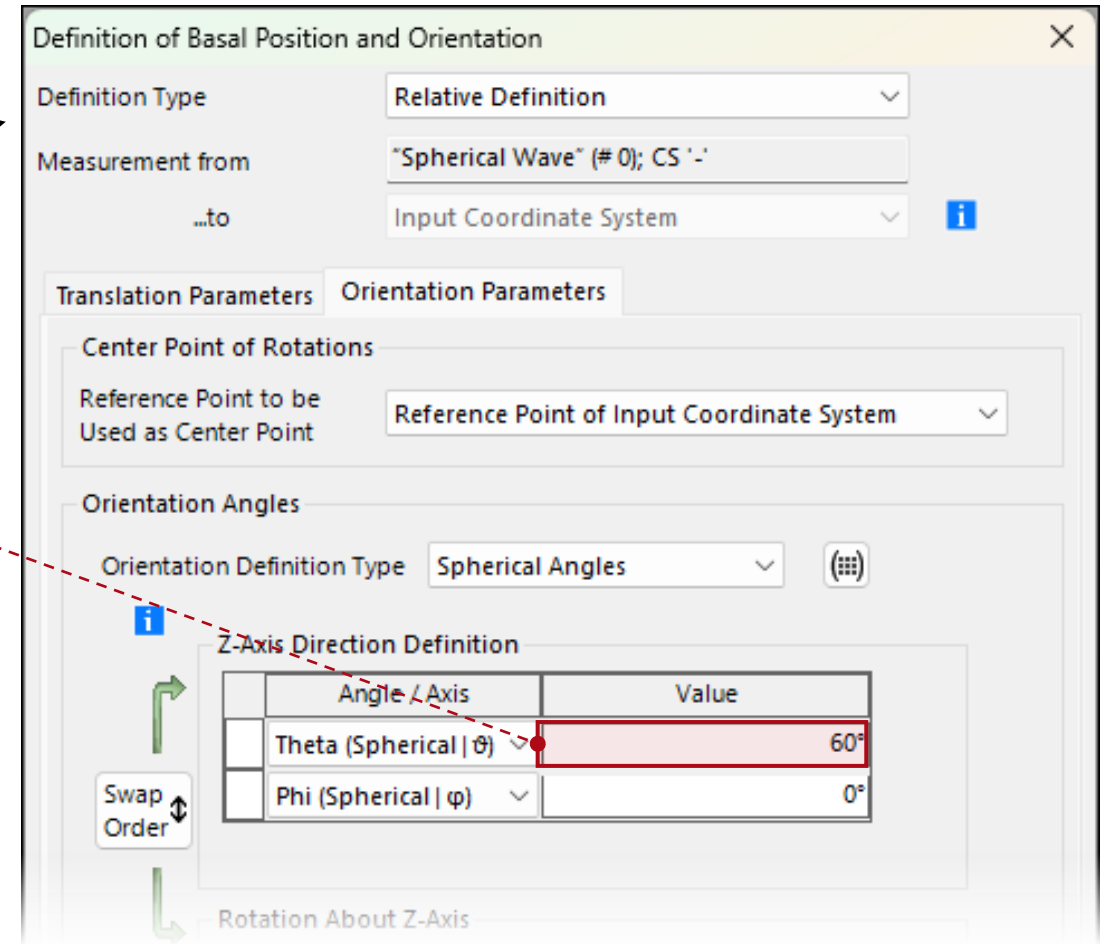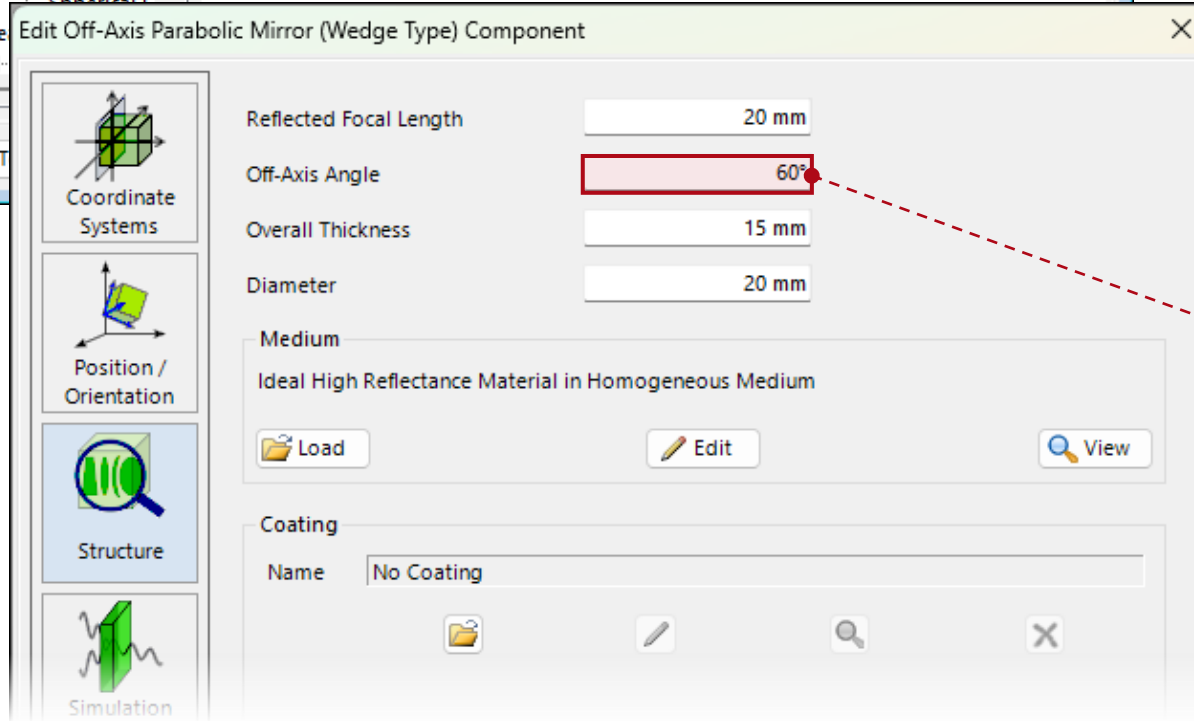# Collimation with a Off-Axis Parabolic Mirror

To collimate a spherical wave, set the *Reflected Focal Length* equal to the distance to the point source - i.e., the sum of the *Distance to Input Plane* and the distance from the off-axis parabolic mirror to the source.
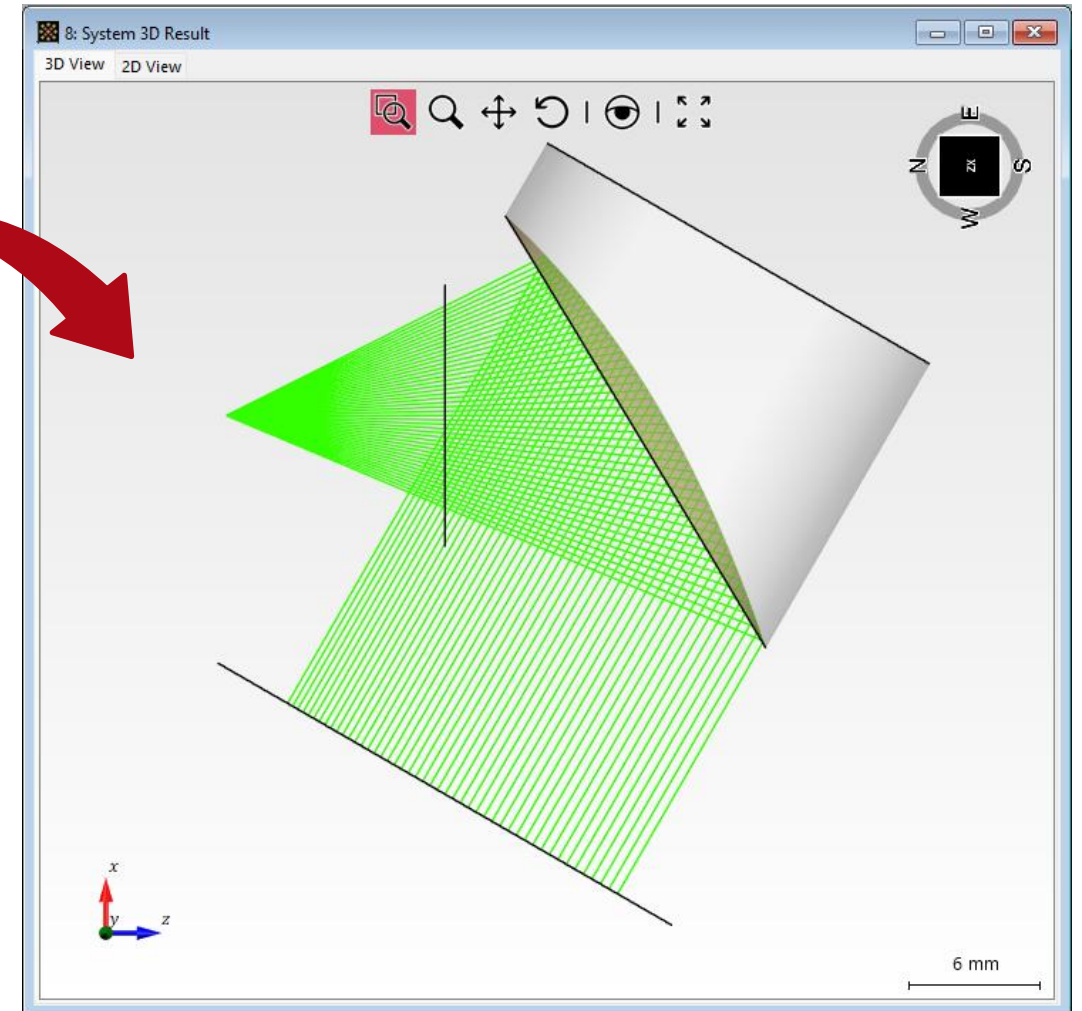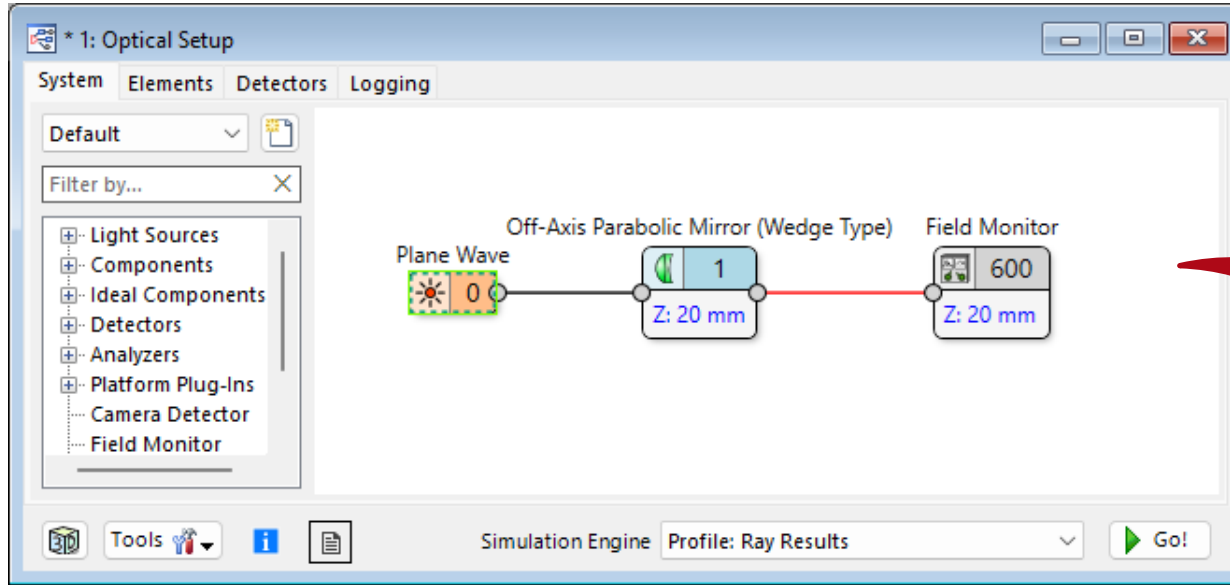
Matching Tilt Angles
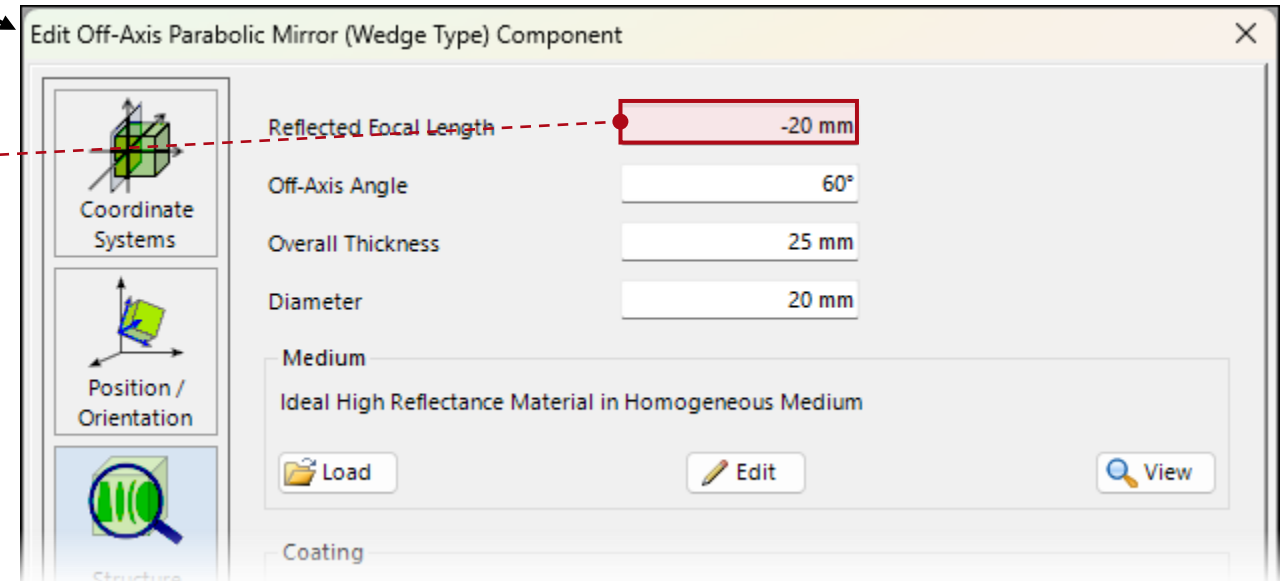
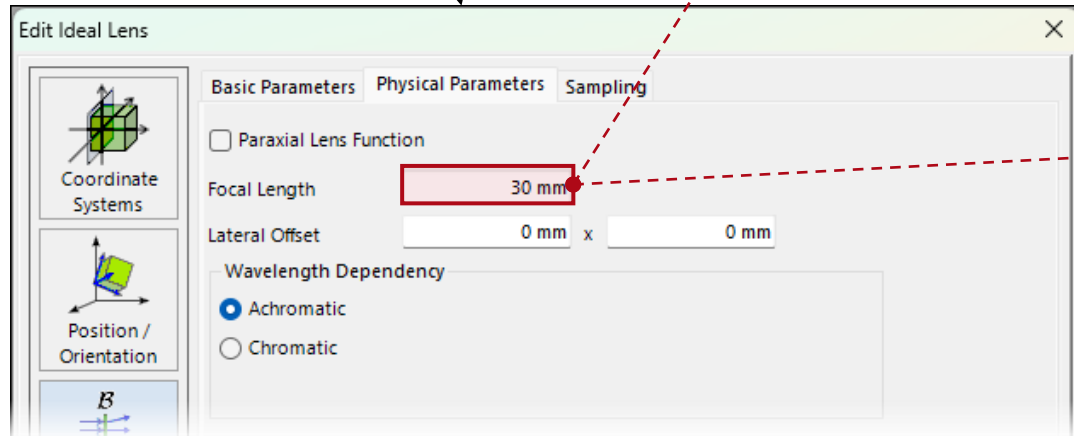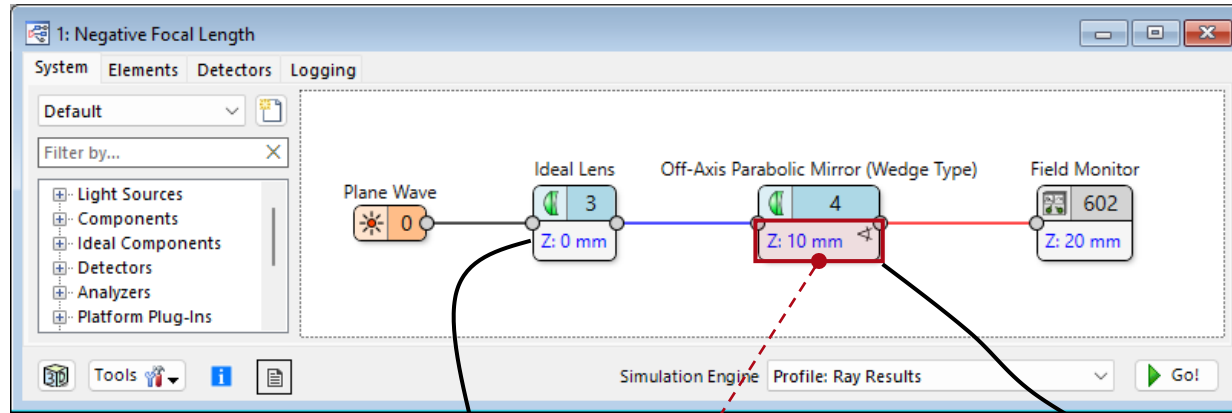Also tilt the Off-Axis Parabolic Mirror (Wedge Type) accordingly.

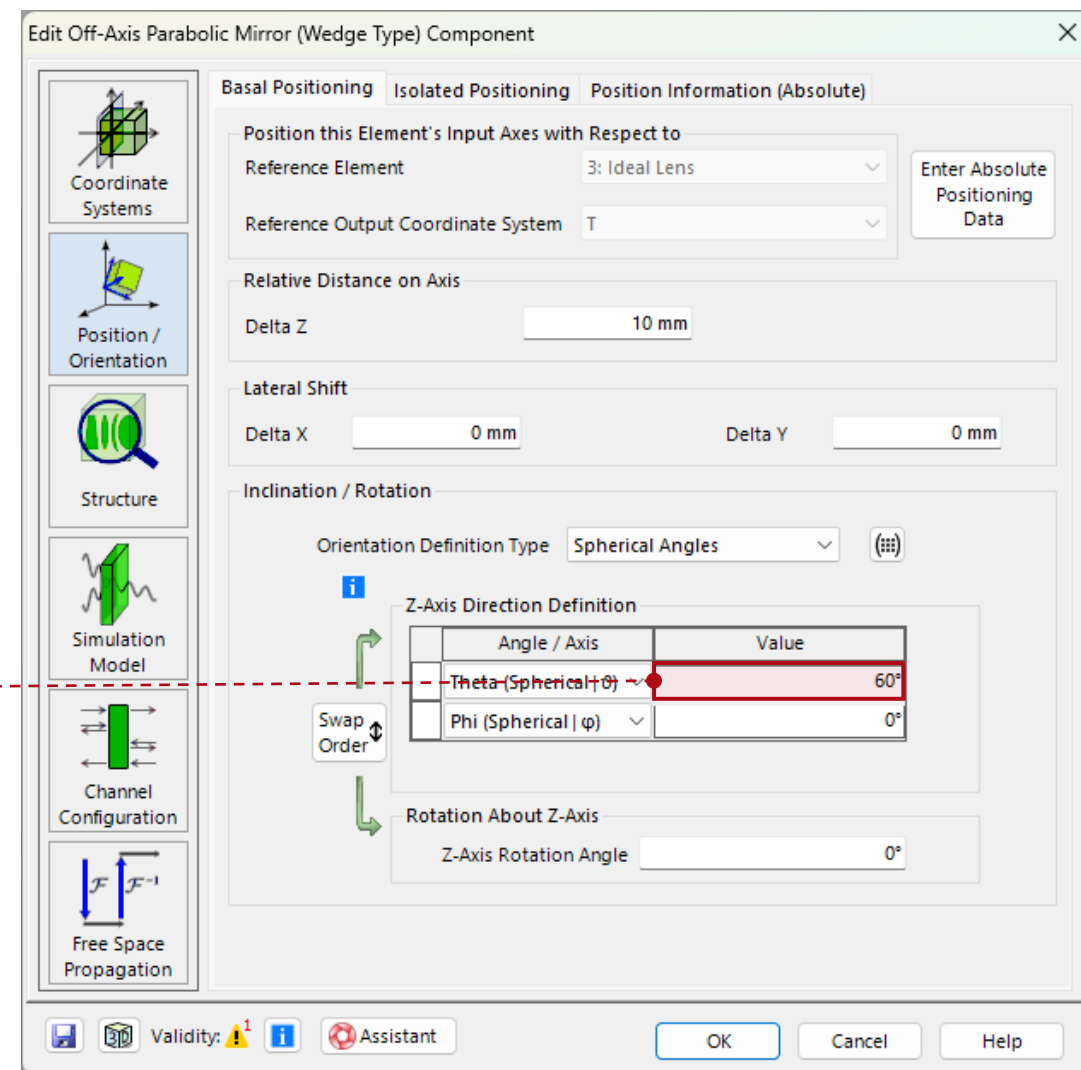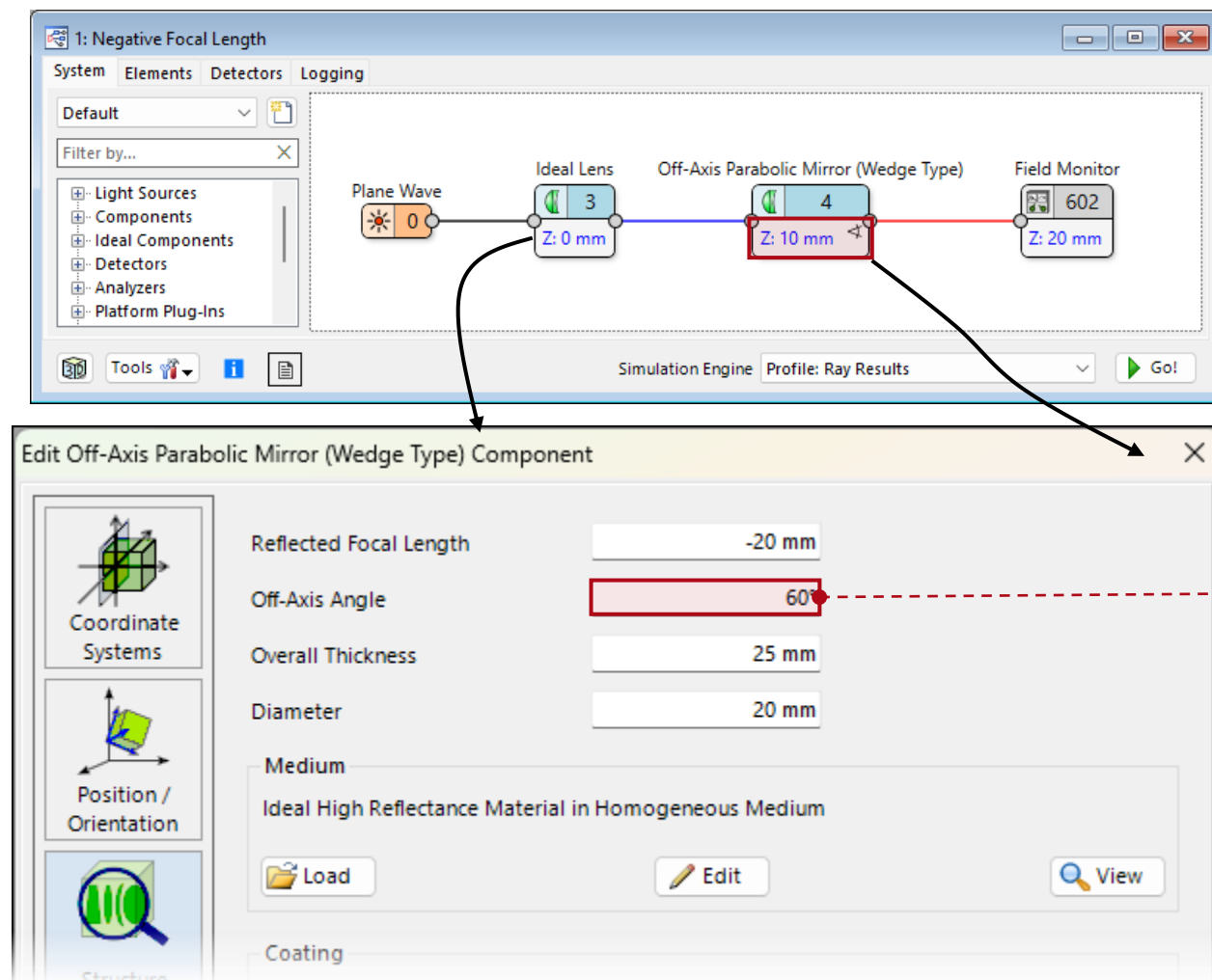# Collimation with a Off-Axis Parabolic Mirror

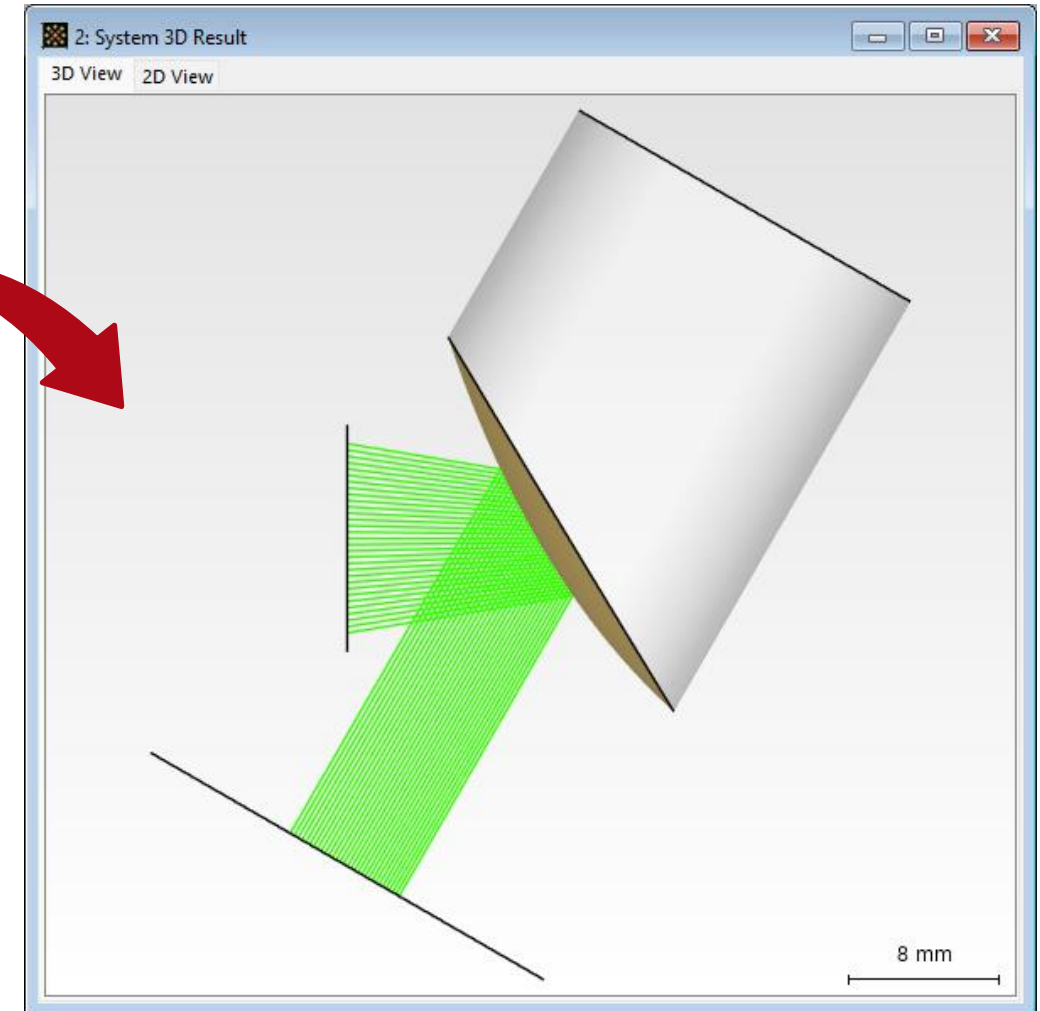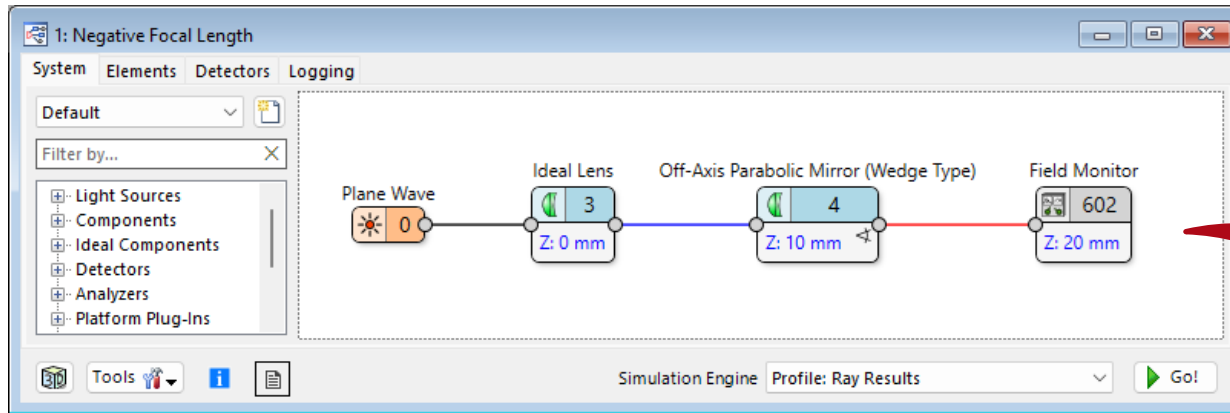# Collimation of a Convergent Beam with an OAP

A convergent beam (e.g., from a focusing lens) can also be collimated if the OAP's focal point coincides with the beam's focal point.

Matching Tilt Angles

Collimation with a Off-Axis Parabolic Mirror

Document Information

Title	Off-Axis Parabolic Mirror
Document code	TUT.0485
Publication date	24.09.2025
Required packages	-
Software version	2025.2 (Build 1.118)*
Category	Use Case
Further reading	

* *The files attached to this document require the specific version or later.*