

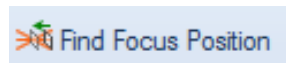
UseCase.0063 (1.0)

Focus Finding Tool

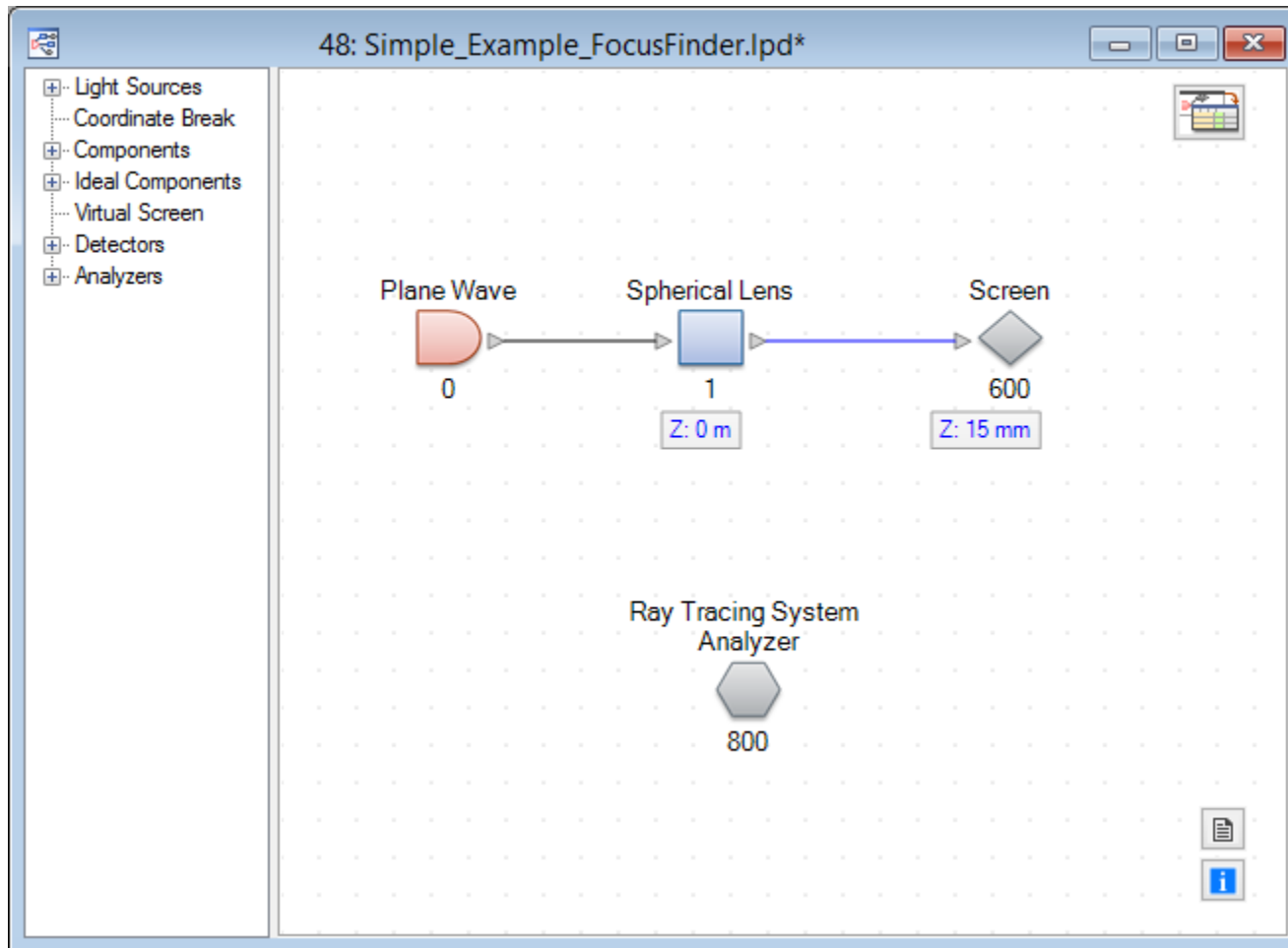
Keywords: focus, ray tracing, optimization, fast, quick

Description

- This use case demonstrates a tool for the detection of a focus position.
- The detection is done by a ray tracing approach. Ray tracing is used to find the z-position on the optical axis where the extension of the ray bundle information is as small as possible.
- The tool has several options which can be configured within the edit dialog of the tool.
- The tool can be started by clicking on the corresponding button in the light path ribbon:

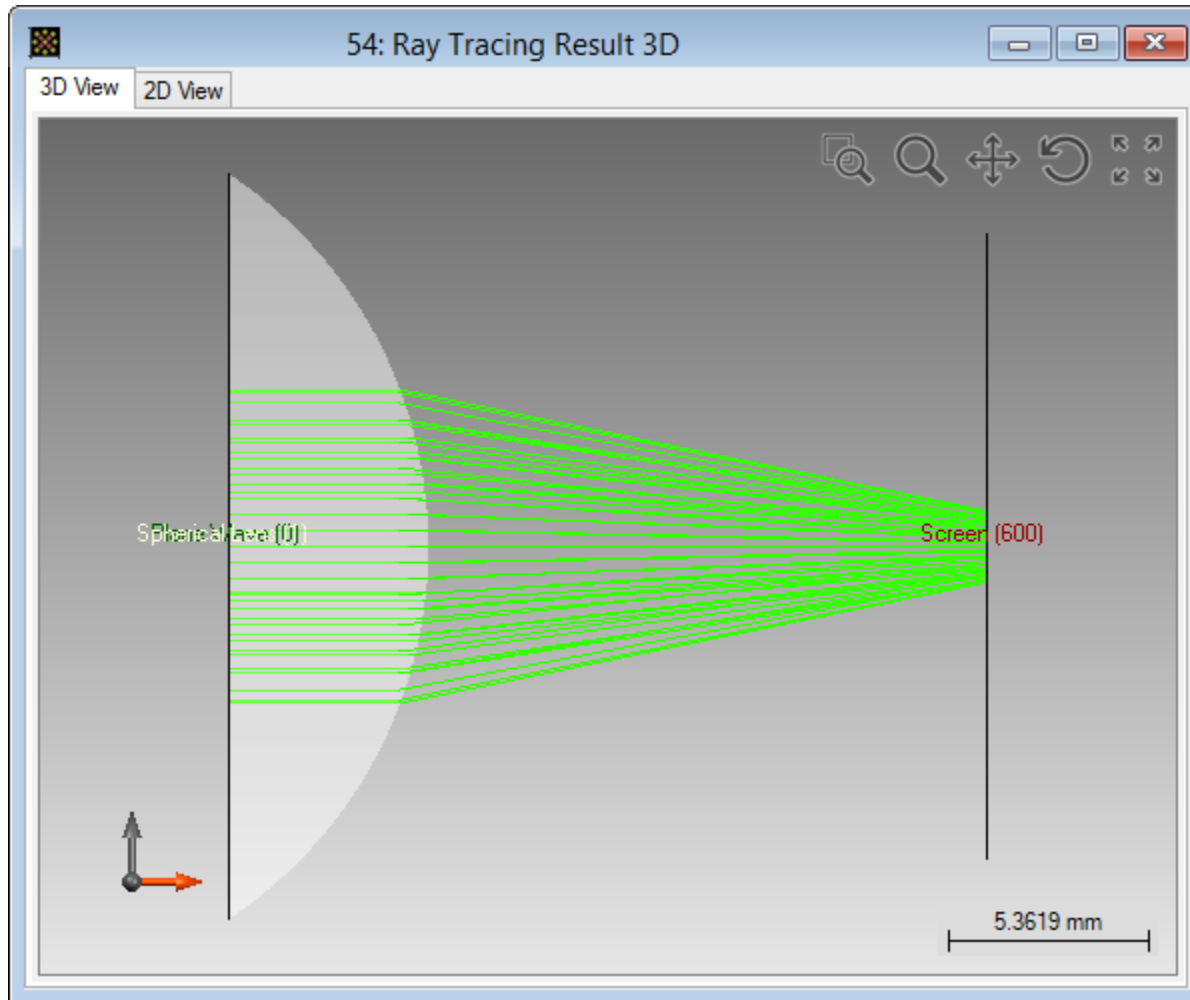


The Original System

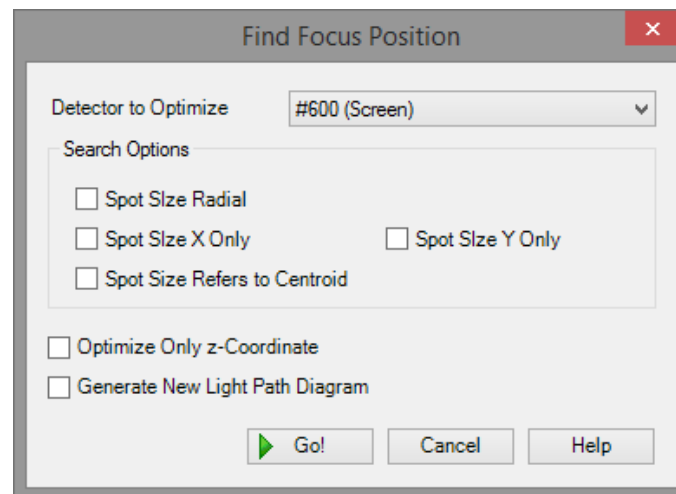
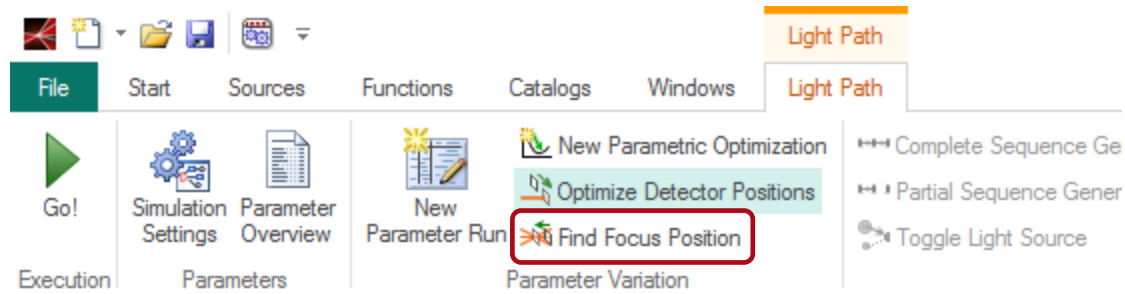


Filename: Simple_Example_FocusFinder.Ipd

Result of 3D Ray Tracing System Analyzer



Focus Finder Tool

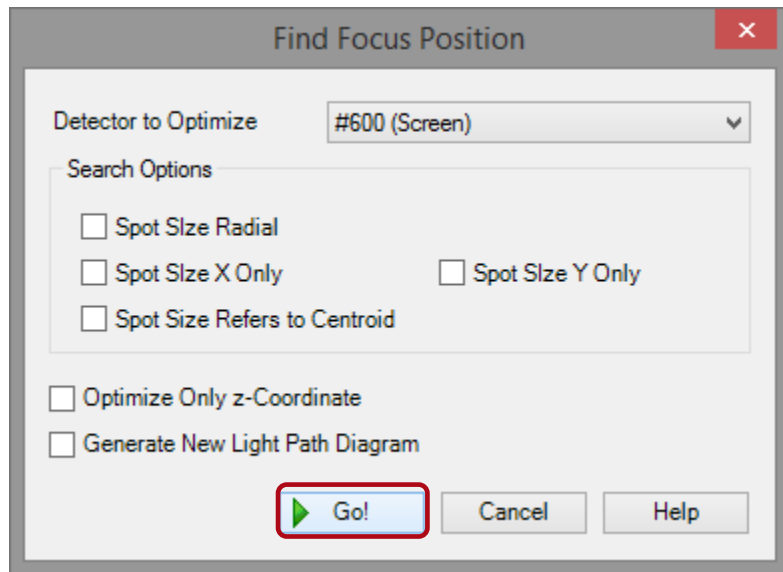


Parameter for Focus Finder

- The user can specify the following setting

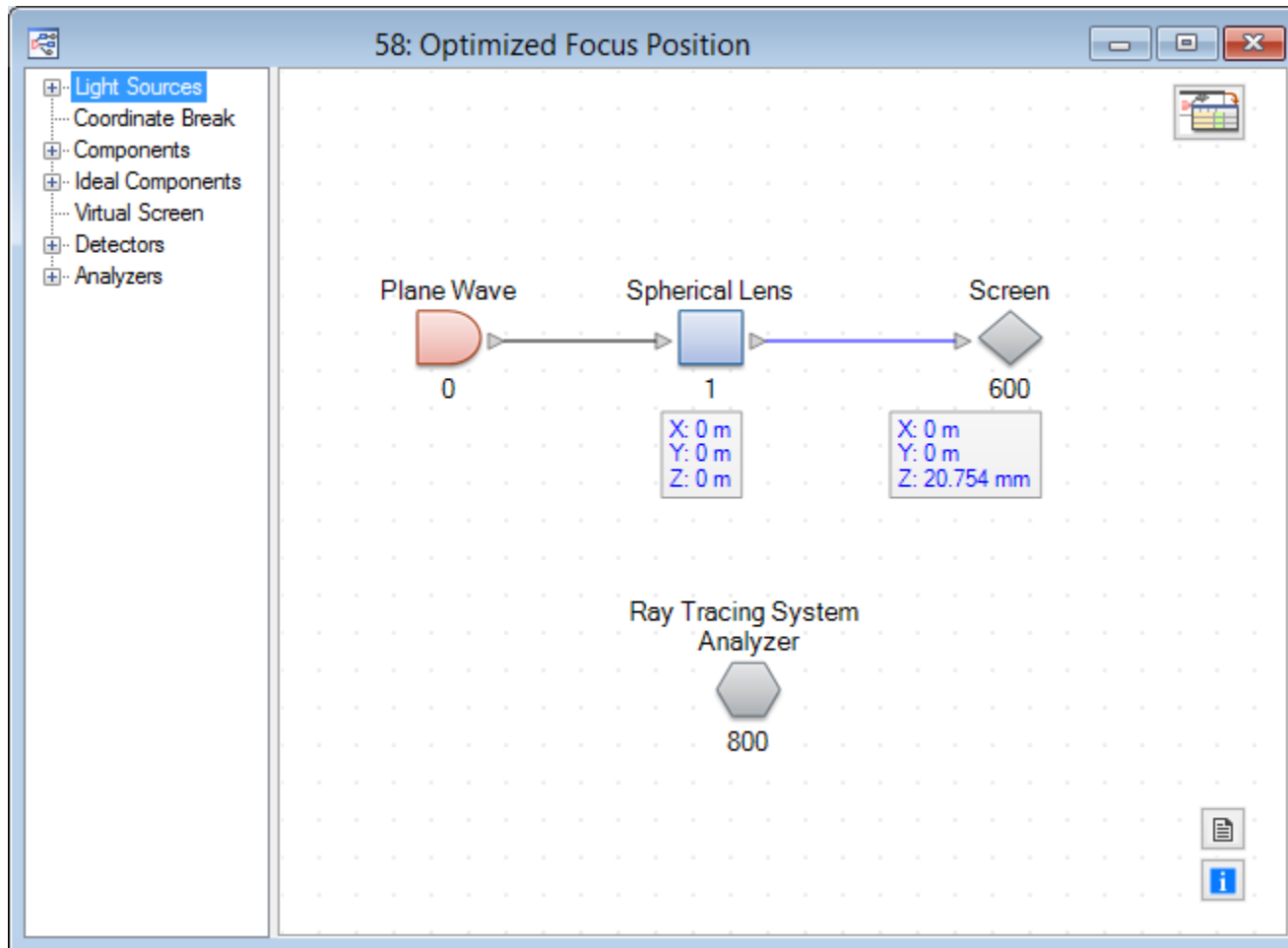
Parameter	Description
Detector to Optimize	The user can select the detector for which the position shall be optimized. (Restriction: Only detectors with one active linkage can be used)
Spot Size Radial	Detect the spot size radial?
Spot Size X Only	Detect the spot size in x-direction only?
Spot Size Y Only	Detect the spot size in y-direction only?
Use Centroid	Use centroid as reference for spot size calculation? Otherwise the position of the chief ray is used.
Optimize only z-Coordinate	Only evaluate z? (skip x, and y direction)
Generate New Light Path Diagram	Shall a new LPD be generated, or shall the optimized value set into the active light path diagram?

Start the Focus Search

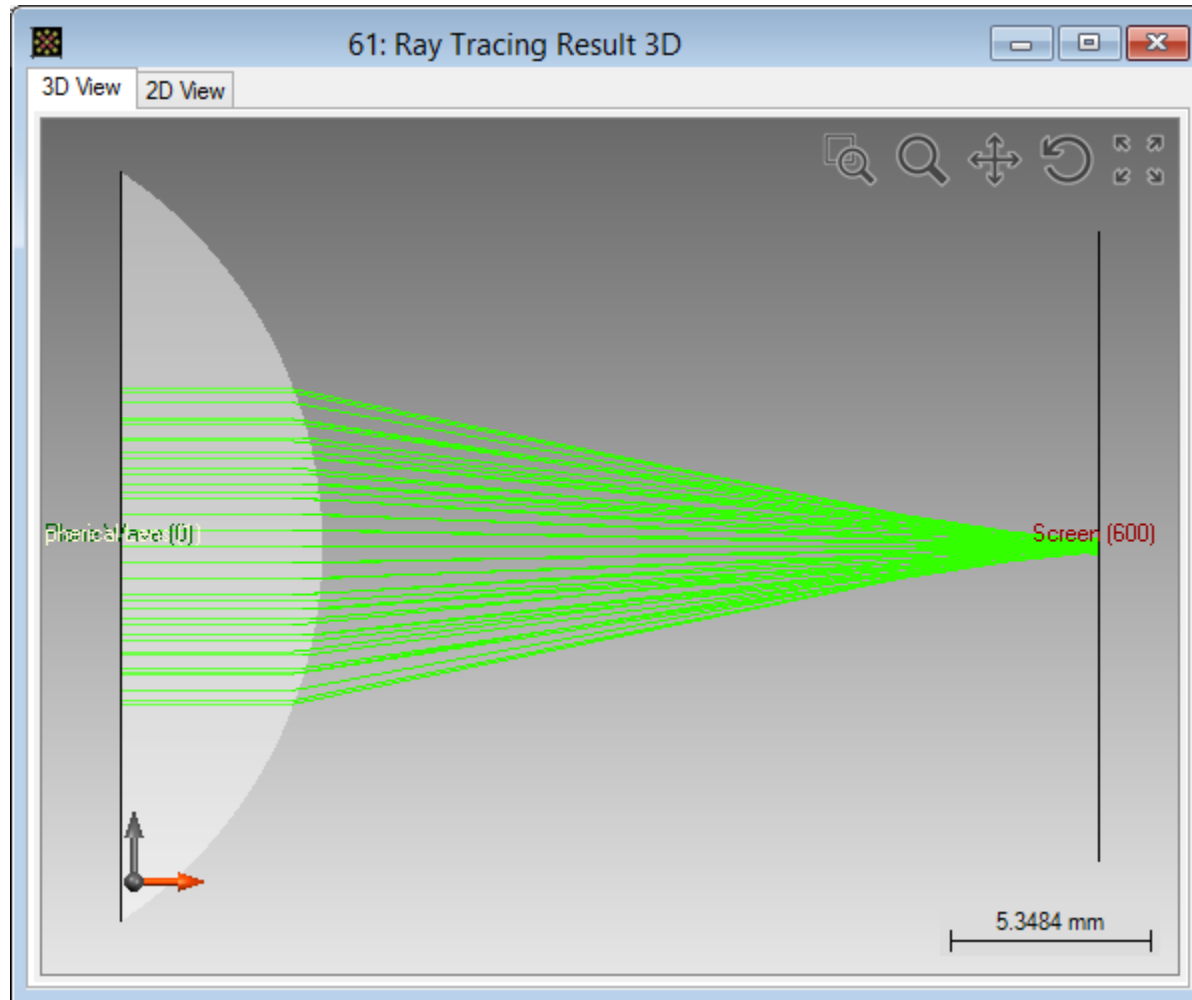


- By clicking on the Go! button the search of the focal position will be started.
- The user can stop the search by clicking on Stop.
- After the optimization is done, the dialog is closed automatically and the new LPD is shown (or the current LPD is updated).

Result of Focus Finder



Result of 3D Ray Tracing System Analyzer



Summary

- The focus finder tool is very helpful to understand and to optimize your optical setup.
- The optimization tool is based on ray tracing and can also handle polychromatic or partially coherent light sources.
- The edit dialog offers a lot of different configuration options and also allows to start or stop the optimization.