

OPTI 415L / 515L - Optical Fabrication and Testing Laboratory

Lab #1 – First Order Optics

1) Lens properties using a Point Source Microscope (PSM):

The objective of this section is to determine the two radii of curvature, index and center thickness of a given lens using only a PSM. The procedure is provided in the lecture notes and the reference material titled 'Determination of Paraxial Properties'.

The three equations used to solve for the three unknowns are solved using two techniques. The first uses the solver function in MS Excel while the latter makes use of Zemax. Compare results from both techniques to the original lens prescription.

2) Effective focal length using a nodal slide:

The objective of this section is to determine the EFL of a given lens using the nodal slide. The procedure is detailed on page 106 of the reference material titled 'Nodal Slide Paper'. Compare the result to the original lens prescription.