

Home task 6

A HeNe laser beam is focused to a point, and this point is then imaged using a singlet lens of focal length 100 mm, with a magnification of -7. Find the shape of the lens (that is, both radii of curvature) that minimizes the relevant aberrations. The lens is made from BK7.

Hint: thin lens theory. HeNe lasers have wavelength 632.8 nm, which gives a refractive index of 1.51508 for BK7.