Warm Up Set 15

Question

1. Two rays of light, of wavelength 600nm, reflect from glass surfaces separated by 150nm. The rays are initially in phase. What is the path length difference of the rays?

Answer

On both the path of incidence and of reflection one of the rays must travel a 150nm farther than the other, creating a total path difference of 300nm.

When they have cleared the reflective region, are the rays exactly in phase, exactly out of phase, or in some intermediate state?

Because the path difference is exactly half of the wavelength, the two rays are exactly out of phase