

W11TWOROJ1S

Imaging: Object of "Two round apertures", at Rayleigh distance and round lens, Y is used for R'

Object

$$Y := -.01, -.0099 .. .02$$

$$\text{Tol} := .1$$

$$\lambda := .0005$$

$$k := \frac{2 \cdot \pi}{\lambda}$$

for choice of ##
f/10 = f/2a

$$f := 500 \quad a := 25$$

$$\text{Io1}(Y) := (\Phi(b2 - Y) - \Phi(b1 - Y))$$

$$\text{Io2}(Y) := (\Phi(b4 - Y) - \Phi(b3 - Y))$$

$$\text{Io}(Y) := \text{Io1}(Y) + \text{Io2}(Y)$$

Image

$$\text{Iim}(Y) := \int_{b1}^{b2} 4 \cdot a^2 \cdot \left[\frac{J1 \left[\frac{k \cdot a \cdot (Y - YY)}{f} \right]}{k \cdot a \cdot \frac{(Y - YY)}{f}} \right]^2 dYY + \int_{b3}^{b4} 4 \cdot a^2 \cdot \left[\frac{J1 \left[\frac{k \cdot a \cdot (Y - YY)}{f} \right]}{k \cdot a \cdot \frac{(Y - YY)}{f}} \right]^2 dYY$$

Limits of integration

$$b1 \equiv -.00025 \quad b2 \equiv .00025 \quad b3 \equiv .00585 \quad b4 \equiv .00635$$

