

47. We use Eq. 36-34:

$$\begin{aligned}L_{16} &= \left(16 + \frac{1}{2}\right) \frac{\lambda}{2n_2} \\L_6 &= \left(6 + \frac{1}{2}\right) \frac{\lambda}{2n_2}\end{aligned}$$

The difference between these, using the fact that  $n_2 = n_{\text{air}} = 1.0$ , is

$$L_{16} - L_6 = (10) \frac{480 \text{ nm}}{2(1.0)} = 2400 \text{ nm} .$$