Our case is $h_n \gg h_0$ (shallow laser incidence, strong diffraction).

Hence, $$n\lambda \simeq \frac{d}{2L^2}\cdot (h_n)^2$$ (see page 3 of lab manual).

Taking derivative with resp. to λ:

$$n = \frac{d}{2L^2}\cdot 2\,h_n \cdot \frac{\partial h_n}{\partial \lambda}$$

Multiply by λ and rearrange:

$$n\lambda = \frac{d}{L^2}\cdot h_n \cdot \delta h_n \cdot \frac{\lambda}{\delta\lambda}$$

$$\frac{d}{2L^2}\cdot (h_n)^2 = \frac{d}{L^2}\cdot h_n \cdot \delta h_n \cdot \frac{\lambda}{\delta\lambda}$$

$$\boxed{\frac{\delta\lambda}{\lambda} = 2\cdot\frac{\delta h_n}{h_n}}$$

But angles $\varphi_n \equiv \frac{h_n}{L}$, so $\delta\varphi_n = \frac{\delta h_n}{L}$, and thus

$\frac{\delta\varphi_n}{\varphi_n} = \frac{\delta h_n}{h_n}$, and therefore $\frac{\delta\varphi_n}{\varphi_n} \cong \frac{1}{2}\cdot\frac{\delta\lambda}{\lambda}$,

Thus, accuracy in angle should be 1 %.