## 1. uzdevums

$$m = 5$$

$$egin{aligned} \lambda_{ ext{\~aur.}} &= rac{D_i \cdot d}{a \cdot m} = rac{(x_{i+m} - x_i) \cdot d}{a \cdot m} \ \lambda_{ ext{\~aur.}} &= rac{(1,72 ext{ mm} - 0,02 ext{ mm}) \cdot 0,344 ext{ mm}}{23.3 ext{ cm} \cdot 5} pprox 501,97 ext{ nm} \end{aligned}$$

## 2. uzdevums

$$\lambda_{\rm \check{s}aur.\,1.}\approx 501,97~\rm nm,\,\lambda_{\check{s}aur.\,2.}\approx 504,93~\rm nm$$

$$\lambda_{\mathrm{\check{s}aur.\,3.}} \approx 504,93\ \mathrm{nm}, \lambda_{\mathrm{\check{s}aur.\,4.}} \approx 504,93\ \mathrm{nm}$$

$$\lambda_{ ilde{ ext{saur. 5.}}}pprox 487, 21 ext{ nm; } \overline{\lambda}_{ ilde{ ext{saur.}}}=rac{1}{5}\sum_{i=1}^5 \lambda_{ ilde{ ext{saur. i}}}pprox 496, 07 ext{ nm}$$

$$\delta\lambda = \sqrt{\left(rac{\partial\lambda}{\partial D}\cdot\Delta D
ight)^2 + \left(rac{\partial\lambda}{\partial d}\cdot\Delta d
ight)^2 + \left(rac{\partial\lambda}{\partial a}\cdot\Delta a
ight)^2} = 
onumber \ = \sqrt{\left(rac{d}{a\cdot m}\cdot\Delta D
ight)^2 + \left(-rac{D\cdot d}{a^2\cdot m}\cdot\Delta a
ight)^2} = 
onumber \ = \sqrt{0,00000295279^2 + 0,000002154^2} = 3,65 \ \mathrm{nm}$$

## 3. uzdevums

$$D_{
m plat.} = rac{a}{d_{
m plat.}} \cdot m \cdot \lambda_{
m ar{s}aur.} = rac{233 \ 
m mm}{0,836 \ 
m mm} \cdot 6 \cdot 502 \ 
m nm = 0,839 \ 
m mm$$
  $D'_{
m plat.} = 1,72-0,81=0,91 \ 
m mm$ 

## 4. uzdevums

 $\delta a=0,5$  mm, jo tas ir puse no instrumenta mazākās iedaļas vērtības.

 $\delta D=0,005$ mm, jo tas ir puse no instrumenta mazākās iedaļas vērtības.

$$\delta\lambda = \sqrt{\left(rac{\partial\lambda}{\partial D}\cdot\Delta D
ight)^2 + \left(rac{\partial\lambda}{\partial d}\cdot\Delta d
ight)^2 + \left(rac{\partial\lambda}{\partial a}\cdot\Delta a
ight)^2} = 3,65 ext{ nm}$$
 $arepsilon_{\lambda} = rac{3,65}{496,07}pprox 0,74\%$ 

 $\lambda = (496,07\pm3,65) ext{ nm pie } eta = 0,95 ext{ un } arepsilon_{\lambda} = 0,74\%$