



**B. DETERMINATION OF THE LUMINOUS INTENSITY BY THE COMPARATIVE PHOTOMETRY METHOD**

1. Analysis of experimental errors - accuracy of the light sources and the photometer position on the optical bench:

$\Delta x_s = \Delta x_u = \dots\dots\dots$

Position of the standard source:  $x_s \pm \Delta x_s = \dots\dots\dots$

Position of the unknown source:  $x_u \pm \Delta x_u = \dots\dots\dots$

2. Position  $x_{ph}$  of the Joly photometer on the optical bench where the wax boxes are equally bright:

	$x_{ph}$	$x_{ph} - \bar{x}_{ph}$ 3 sign. digits	$(x_{ph} - \bar{x}_{ph})^2$ 3 sign. digits
	..... unit	..... unit	..... unit
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Sum			
Mean $\bar{x}_{ph}$			

Standard deviation:  $s_{x_{ph}} = \dots\dots\dots$   
3 significant digits

Standard deviation of the mean:  $s_{\bar{x}_{ph}} = \dots\dots\dots$   
3 significant digits

Maximal error of the mean:  $3 \cdot s_{\bar{x}_{ph}} = \dots\dots\dots$   
3 significant digits

Final result:

$\bar{x}_{ph} \pm \Delta \bar{x}_{ph} = \dots\dots\dots$

Error of the measurement is classified as systematic accidental  
cross the invalid off  
one.

$R_u = \bar{x}_{ph} - x_s = \dots\dots\dots$        $R_s = x_u - \bar{x}_{ph} = \dots\dots\dots$

$\Delta R_u = \Delta \bar{x}_{ph} + \Delta x_s = \dots\dots\dots$        $\Delta R_s = \Delta \bar{x}_{ph} + \Delta x_s = \dots\dots\dots$

Wattage of the reference source:  $P_s = \dots\dots\dots$ , wattage of the unknown source:  $P_u = \dots\dots\dots$

3. Calculated relative luminous intensity  $\frac{I_u}{I_s}$  of the unknown source against the reference source:

.....  
formula and value

Estimated error of the calculated relative luminous intensity:

.....  
formula and value

Final result:  $\frac{I_u}{I_s} \pm \Delta \left( \frac{I_u}{I_s} \right) = \dots\dots\dots$

Conclusions: .....

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