

ATTENUATION OF ELECTROMAGNETIC IONISING RADIATION

Name:

Group:

Date:

1. Goal of the experiment:

2. Radiation source:, energy of photons:

3. Measurement of radiation background:

a) radiation background counting time $t' =$

b) radiation background counting rate $a \pm \Delta a =$

THE FIRST ABSORBER:

Absorber density: $d \pm \Delta d =$

4. Measurements of the counting rate versus thickness x of the absorber layer

(counting time $t =$):

| | Absorber thickness x | Counting rate a_x | Δa_x | $\ln a_x$ | $\Delta \ln a_x^*$ |
|----|------------------------|----------------------|----------------------|-----------|--------------------|
| | <i>unit</i> | <i>unit</i> | <i>unit</i> | | |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |

* $\Delta \ln a = \ln(a + \Delta a) - \ln a$

Make a graph of the function $a_x = f(x)$ and $\ln a_x = f(x)$ for the first absorber.

Properties of the first absorber:

| | half-value layer | linear attenuation coefficient | mass attenuation coefficient |
|----------------|------------------|--------------------------------|------------------------------|
| $a = f(x)$ | | | |
| $\ln a = f(x)$ | | | |

