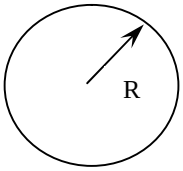
Exposure

Surface area calculation:



$S = ®R^2$,

(Where R – radius of a circle area

® - Constant)

Let's say that you want to illuminate circle of 2 centimetres radius:

$S = 3.141592 * 2^2 = 12.5cm^2$

Expose time calculation:

Now let's calculate what exposure will make your laser when it will work for one second and illuminate the surface of 12.5cm^2

$Exp = \frac{P}{S}$; (exposure [mJ/cm^2]);

P – your laser power,

S – lighted surface area.

$Exp = \frac{5mJ}{12.5cm^2} = 0.4\,{}^{mJ}\!/_{cm^2}$ (One second exposure)

Now taking a look to the emulsions sensitivity curves:

For example, for PFG-03C we need 2.5–3 mJ/cm^2. To get now the exposure time for this emulsion, we are dividing the sensitivity (2.5–3 mJ/cm^2) by your laser one-second exposure of your surface (0.4 mJ/cm^2) – that gives us 6-8 seconds for this emulsion.