Supplement

Estimation of the approximate number of photons generating the glow in trilobite lenses as observed in the here described phenomenon

The number of photons falling upon a lens with a diameter of 300µm with the origin of a punctiform light source (4Watt) at a distance of 5cm can be calculated.

1. Energy of the photon at 365nm, at SI-units:

$$E= \frac{ℏ ·c^{} }{λ ^{}}$$

$$\frac{(6.626 ·10^{-34} [\frac{J}{s}]) ·(2.9979 ·10^{ 8} [\frac{m}{s}]) }{(365 [nm] ^{} [\frac{1}{10^{9}\left[nm\right]}])}$$

 = > Photon energy at 365nm: 5.44 -19 [J]

The area of a lens with a diameter of 300µm: A = π · r2 = π · 0.01502 = 7.0686 -4 [cm2]

The area of the spherical surface of the punctiform lightsource at a distance of 5cm:

B = 4 · π · r2 = 31.42cm²

The illuminated lens is the xth-component of this area.

x = 31.42 : 7.0686 -4 [cm2] = 44,450.10

4W = 4 J/s are distributed on 31.42 [cm²], the area of the lens is its 44,450.10th part. So the energy arriving at the lens is 4 : 44,450.10= 8.999-5 [J/s]

Because the energy of 1 photon (λ=365nm) is 5.44 -19 [J] ,the energy arriving at the lens (Ø300µm) results to: 8.999-5 [J/s] : 5.44 -19 [J] **= 1.6514 photons/s**..