

Circular Light on Linear Polarizer



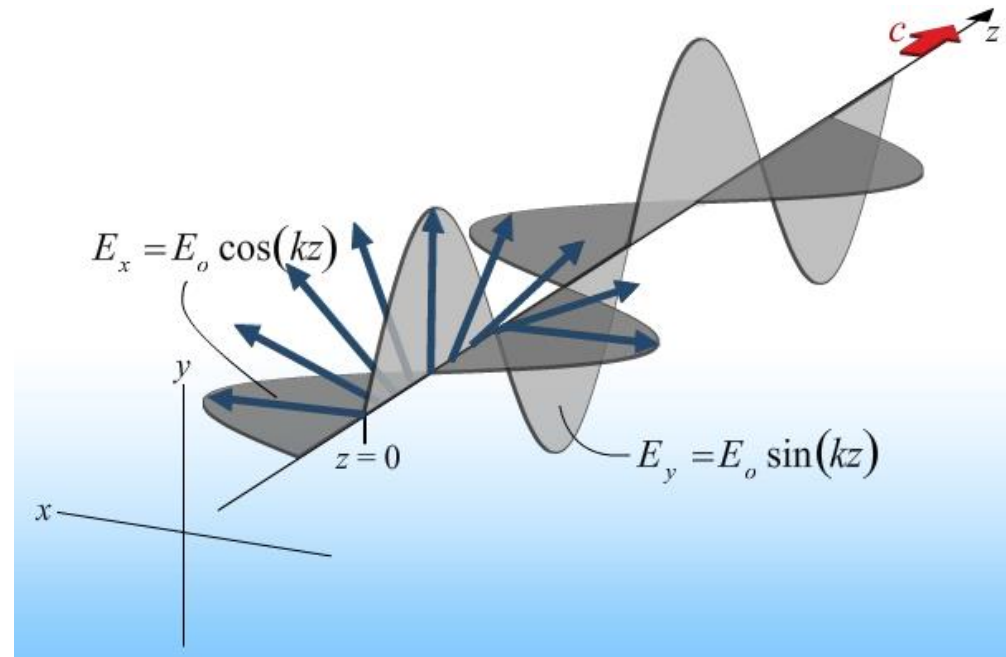
Q: What happens when circularly polarized light is put through a polarizer along the y (or x) axis ?

A) $I = 0$

B) $I = \frac{1}{2} I_0$

C) $I = I_0$

$$\begin{aligned} I &= \epsilon_0 c \langle E^2 \rangle \\ &= \epsilon_0 c \langle E_x^2 + \cancel{E_y^2} \rangle \\ &= \epsilon_0 c \frac{E_0^2}{2} \underbrace{\langle \cos^2(kz - \omega t) \rangle}_{1/2} \end{aligned}$$



$$= \frac{1}{2} \cdot \frac{1}{2} \epsilon_0 c E_0^2$$

Half of before