

January 9, 2022

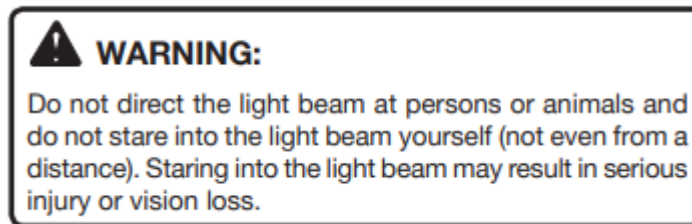
BY EMAIL

Jim Birchall, President
Birchall and Associates
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Re: Safety of LED Light Beams

Dear Jim Birchall,

The operator's manual for the Ryobi P705 Flashlight includes the following: "WARNING: Do not direct the light beam at persons or animals and do not stare into the beam yourself (not even from a distance) Staring into the light beam may result in serious injury or vision loss."



The Soft Lights Foundation would like to understand the significance of this warning. We have the following questions:

- 1) What evidence does Ryobi have that shows that the P705 flashlight may result in vision loss?
- 2) Why does the warning say "(not even from a distance)"? Is this warning related to the peak luminance emitted by an LED chip?
- 3) What are parameters for eye injury to occur? For example, how many milliseconds can a person stare at the light beam before injury occurs? Is the injury due to chemical or thermal reactions or both? Are the effects cumulative?
- 4) Does Ryobi use the word "light beam" to indicate that the source of the light is a Light Emitting Diode?

Sincerely,

Mark Baker

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