

Re: "Shake flashlight" how strong (current, volt)?

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In article <Xns9506E4FB2AB5heritagedestinations@212.83.64.210>, Lou wrote:

>Hello, I'm new to electronics. I want to make a small device with a small
>6V motor and no batteries. I want to use the "shake" system, which can be
>found in some fun flashlights. (see link: [http://www.quality-items-
>flashlights.com/product_info.php?products_id=90](http://www.quality-items-flashlights.com/product_info.php?products_id=90)).
>
>Only I am not sure how much power such a "shaker" can provide.
>
>I want to power a little fan with blades of say 12 centimetres wide
>(diametre, 5 inches), to make wind.
>
>I would appreciate it very much if someone could explain to me how much
>shaking you would need, to power the fan for about 3 minutes.
>
>And I would also like to know if I use "two" magnet shakers, do I increase
>the power 2 times? Or is there loss?

I would advise to use green LEDs having either peak or dominant wavelength anywhere from 505 to 540 nm.

I would also advise that most such LEDs of "regular size" (5 mm AKA T1-3/4, 3 mm AKA T1, smaller sizes, including similar smaller surface mount packages, and even other sizes neither including a heatsink or a "partial heatsink" nor requiring heatsinking, and questionable as to "high flux" units in "spider" (4-lead) or "TopLed" packages or the like) tend to have higher efficiency at lower currents, such as a few milliamps.

Blue, blue-green, white and green LEDs having rated current 350 mA or more, in my experience, tend to have higher efficiency when somewhat underpowered.

I would also advise charging of large capacitors for energy storage. Along with lowest possible current through the LEDs from energy storage capacitors, even if as low as a fraction of a milliamp. I would advise usage of blue-green or green LEDs having peak or (this is different) dominant wavelengths anywhere around 500 to 540 nm.

I have found ability of LEDs having nominal wavelength close to 500 nm being able to illuminate a whole room well enough for me to navigate by

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using night vision even when said LED was fed 50 microamps and had at this current a voltage drop of only about or maybe a little less than 3 volts.

Please consider "night vision advantages" of wavelengths in the upper 400's and lower 500's of nm, and also most LEDs having peak wavelength in this range (and many other LEDs) having peak emission wavelength varying a little noticeably slightly inversely with current.

Wavelength noticeably varying inversely with current I have found to occur mainly with LED chip chemistries favoring higher efficiency at lower currents. When the chip chemistry favors higher efficiency at higher currents (a large majority of those with peak wavelength yellow–green 555 nm or longer, including most yellow, many orange, many red and a few infrared chemistries), the peak wavelength in my experience tends to vary less with current.

– Don Klipstein (don@misty.com, <http://www.misty.com/~don/index.html>)