

## Re: How best to detect laser?

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Michael <nleahcimathotmaildotcom@nowhere.com> wrote in message news:<Xns9524C557CD504nleahcim@204.127.204.17>...

> *Hi – recently I found a cheap source for red laser diodes with built in  
> power supplies. So – I was wondering – what kind of sensor should I use to  
> detect whether the laser was focused on that sensor? Hopefully something  
> that wouldn't be bothered much by other light sources. Better yet –  
> something that could handle high frequencies. Anyone have any  
> recommendations? Thanks!*

By "red" I presume you mean 633nm or 670nm.

Your choice of sensor depends on the separation between the laser and your sensor.

You can see the red spot produced by a 633nm or a 670nm laser, so for short distances and low frequencies, a bit of white paper is all you need.

For many applications, a silicon PIN photodiode is the next step up – the Siemens/Infineon/Osram SFH213 (end-viewing, 20 degree acceptance half angle, 1mm squared receiving area) and the Siemens/Infineon/Osram SFH206 (side viewing, 70 degree acceptance half angle 7mm squared receiving area) are cheap and widely available.

The SFH213 can be fast (in the right circuit) with a data sheet risetime of 5nsec. The larger-area SFH206 is rather slower at 20nsec – the larger area means a greater parallel capacitance.

If you really want to detect the output of laser a long way away from the laser, you might want to use a photomultiplier tube with a red-sensitive photocathode, but these aren't cheap.

Silicon photodetectors react to any photon in the range 400nm to about 900nm, so they can be bothered by other light sources. You can use multilayer narrow band interference filters to reject all normally incident light falling outside a narrow band at around 633nm or 670nm – Edmund Optics Ltd. stock such filters, but they aren't cheap either.

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