

Re: night sky meter project needs SX programmer

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From: Dan McKenna (mckenna_at_as.arizona.edu)

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Date: Thu, 08 Jul 2004 09:51:35 -0700

Hi Tony,

Yes, a smaller FOV would be nice and I do operate the meter at zenith or to the north a bit. The present part, TSL230, is in a clear dip package with the photo diode about 1 mm from the surface. The photo diode array (8 by 8) is about .93 mm on a side.

For a fov of 0.1 rad (~5.7 deg) we need a focal length of about 530 mm now the light on the detector due to sky area is 1% of the 1 rad fov and so we need 10 times the area of the photo diode and so we need a 1 cm dia lens

Seems like it would be easy to do although some one my get shot pointing around a 530 mm tube.

Is that correct ?

Ok then, I will dig up a lens and give it a go.

I am now waiting for samples of the TSL237 that claims to have better dark properties and higher sensitivity. This device has a dome lens on the package.

Dan

Tony Flanders wrote:

> Dan McKenna <mckenna@as.arizona.edu> wrote in message
news:<40EC6BAC.9809BA10@as.arizona.edu>...

>

>> The detector that measures the light level is filtered by hoyu
>> CM 500 glass and has a simple field stop to limit the field of
>> view to about 1 Radian (57.3 or so degrees)

>

> It would be nice to have the option of fitting it with a fast
> lens (doesn't have to be fancy, could even be a singlet) to
> get a narrower FOV without unduly restricting the incoming light.
> One radian is fine for zenith measurements but not great for
> anything else. At a typical suburban site, facing toward the
> city center, sky brightness doubles between 60 degrees and
> 30 degrees above the horizon, and doubles again at 15 degrees.

sci.astro.amateur: Re: night sky meter project needs SX programmer

- > *That means that a 1-radian bucket is catching a wide range*
- > *of sky brightnesses unless pointed almost directly upward.*
- >
- > – *Tony Flanders*