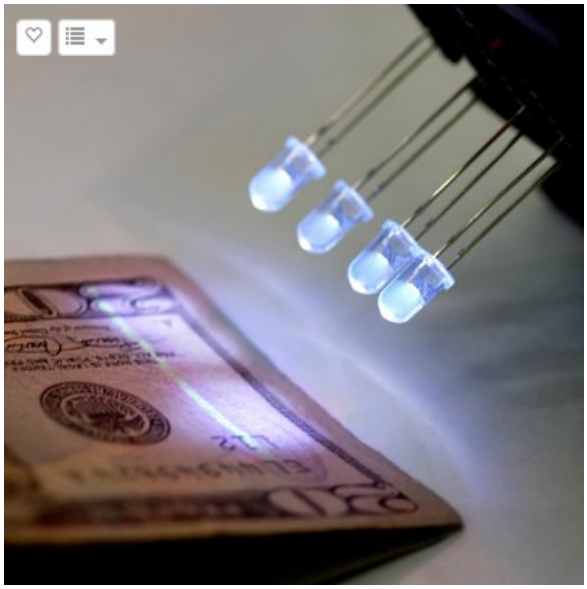





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LED - Ultraviolet

COM-08662 ROHS

DESCRIPTION FEATURES DOCUMENTS

- T1 3/4 5mm clear lens
- 395-400nm
- 100-180mcd
- 3-3.6V forward drop

LED - Ultraviolet Product Help and Resources

SUPPORT TIPS SKILLS NEEDED

Resources and Going Further

last updated about 2 years ago

Try using the ML8511 UV Sensor [https://learn.sparkfun.com/tutorials/ml8511-uv-sensor-hookup-guide/] to read the UV LED!

COMMENTS 44 REVIEWS 0

Comments

Looking for answers to technical questions?

We welcome your comments and suggestions below. However, if you are looking for solutions to technical questions please see our Technical Assistance page.

Log in or register to post comments.

Member #744847 / about 4 years ago / ★ 1

I built a counterfeit bill detector with 6 of these LEDs. Knowing that I wanted to limit the current thru the LEDs to about 12 ma. I used a 78L05 to regulate the output of an alkaline 9v battery to 5v. That way, using a 120 ohm 1/8 w resistor, the current thru each LED will remain constant over the life of the battery. At 12 ma the LEDs remain cool and are still very bright. The LEDs and regulator are soldered on a plated thru fiberglass proto board which was then mounted in a small plastic box. The box is small enough to be held in the palm of the hand. Note that in addition to the parts mentioned a .33 uF tantalum cap should be used at the input of the regulator for stability. The finished device will cause UV objects to fluoresce from a few feet away so I wouldn't the device for more than a few seconds. I built this device with the intent to detect bogus

bills. The stripe in a good bill lights up very brightly and can be seen glowing even in ambient light.

MrAureliusR / about 4 years ago / ★ 1

Not to burst your bubble, but when operating from a battery source capacitors are completely unnecessary on a regulator. Also, I'd highly recommend using AAs instead of 9V, the capacity of 9V batteries is actually much lower than what most people think.

Member #278726 / about 4 years ago / ★ 1

on the note of sterilization, based on my experiments, these will NOT sterilize surfaces practically. I put some pieces of bread into a sealed plastic bag and put them in a dark box. One box was the control no light at all. the other box had 3 of these UV LEDs pointing at the bread 24/7. Both breads developed similar amounts of mold and in the same time period. Now maybe this kills bacteria and not mold? I am not sure. but just note if you want to say clean your toothbrush while its in a cabinet I feel like molds would still grow so, be careful!

PCBproduction / about 11 years ago / ★ 5

is this led right in use for exposing pcb's?

MarkPanzer / about 10 years ago / ★ 4

Nice LEDs. You can see the beam with the naked eye though; I thought you couldn't see ultraviolet. Maybe it's just an indicator whether it is working or not.

Member #688920 / about 5 years ago / ★ 1

Everyone's eyes are different, but the colour cones in the eye react to UVA, although the lens typically blocks UV, although this varies with age. The eye can generally see 400 nm perfectly fine, anything less than 400 nm may be attenuated, but the light near 400 nm, although not as easily detected by the human eye, is still detected to a lesser extent. In other words, you should see light at 380 nm, although it will be far fainter than a light of equal power at 400 nm. (The response of the eye to different wavelengths looks like a triple-peaked bell curve, so there is no "hard stop" at either end of the spectrum).

Sparkjoy Electronics / about 10 years ago / ★ 1

@MarkPanzer I think you got LEDs that are slightly defective because the visible range for a human is from 400 to 700 nanometers. The description says that the range for the LEDs are from 395 to 400. It's possible that these LEDs go to 400 nanometers or a little bit over. Of course, you could just have special vision :D

dac621 / about 9 years ago / ★ 4

I think that the visible light you see is broad autofluorescence from the lens/encapsulation plastic. LED emission is really very narrow spectrum intrinsically, set by the physics of the materials. 400nm is not bluish-white, it is a very deep blue.

Kevin Vermeer / about 10 years ago / ★ 1

Nah, your eyes are just better than normal. Similarly, you can sometimes see a faint red glow when looking at IR LEDs. Do wear eye protection, though! Your pupils won't contract to shield your eyes from the bright light (that you can only see faintly).

Member #129054 / about 8 years ago / ★ 2

AFAIK, the red glow on IR LEDS is caused by autofluorescense too. This also happens with the IR Laser source of the Kinect, for example.

vivi / about 11 years ago / ★ 4

@mikedamage : despite what the description says only UVB (<320nm) can give you sun burns, and only UVC (<280nm) are germicidal.
Also, the Candela is a visible light intensity unit, it does not make much sense here.

stuff dude guy / about 10 years ago / ★ 3

The leds are actually UVA, the pefect ultraviolet light for giving yourself a tan. You coul strap some to you face, and come to work with an "unkown disease." Or you could by a couple thousand and make and make a tanning booth.

pubdc / about 10 years ago / ★ 2

@mikedamage : "(Mirei Mori ea) studied the possibility of using commercially available UVA-LED model for water sterilization. UVA-LED is capable of sterilization and should be available for use in sterilization equipment." They are talking about 365nm, their study is referenced in wikipedia's led article nr 43. They used NCCU033(T)from Nichia.com, which it seems was replaced by NCSU033A. www.momoalliance.co.jp makes lightblocks with 25 and 50 of these, but I can't find prices anywhere. To summarize, this LED here will NOT ou needn't go down to 280nm either. Sparfun : when I get the prices I will direct them to

you, perhaps you can add them to the offering ?

LED addict / about 6 years ago / ★ 1

Sold in units of one right?

> Toni_K / about 6 years ago / ★ 1
>
> Yup!

Member #490941 / about 6 years ago / ★ 1

What is the optical power output of one of these UV LEDs? Thank you

Member #471629 / about 6 years ago / ★ 1

These Uv leds might be fumn

Colecago / about 7 years ago / ★ 1

These are very visible to the naked eye. I was hoping to make something to activate a glow in the dark ghost, but the light is so visible it kind of ruins the effect I was trying to get which is causing the ghost to glow without being able to tell what's making it glow. http://youtu.be/eh28DYkKeGk

Araknide / about 7 years ago / ★ 1

I ordered 20 of these, but I received 20 10mm leds absolutely red.

> Thesmug / about 7 years ago / ★ 1
>
> I am amazed. The EXACT opposite thing happened to me today, except with 5 leds, not 20. I wonder how these two parts get mixed up so easily...
>
> > Toni_K / about 7 years ago / ★ 1
> >
> > It's just a case of part numbers being misread I think. The two bins are right next to each other in inventory (08662 and 08862 are easy to mix up). Like I posted above, contact tech support and you'll get set up with the right items. Sorry about that!
>
> Toni_K / about 7 years ago / ★ 1
>
> Sorry to hear about the mix up! If you can contact us at techsupport at sparkfun dot com with your order number, we can get you set up with the proper LEDs.

Member #276309 / about 7 years ago / ★ 1

These work well for blacklight purposes, but don't expect magic. They produce noticeably more visible light than a decent fluorescent blacklight tube does. They work great for spotlights but if you want to light up a nightclub stick with fluorescent.

MostThingsWeb / about 8 years ago / ★ 1

I'm assuming that some simple sunglasses (maybe not cheap dollar store ones though) would protect against the light?

Member #90536 / about 8 years ago / ★ 1

In response to some of the comments:
*Most regular safety glasses block UV. I use a pair I bought at home depot that are shaded for the brighter LED systems I work with.
*Even the Nichia 365nM LED's that I work with at times emit some visible light, their peak is at 365nM and the light emitted above 400nM is weak but visible. There may be some materials in the LED's that absorb UV and re-emit visible as well.
*I've been working with UV LED equipment for several years and have never gone home with a tan. I'm not exposing myself to it for hours at a time either. For times where I have to work with it for extended times I have welding gloves, sunblock, and a good pair of safety glasses.
*The lights I work with emit up to 15W/cm^2 at 390nM so I'm more likely to burn myself then get a tan. Still I try to limit exposure time. The LED's listed here are very low power, but a long exposure time at low power can equal a short time at high power. Less time is best either way.
*These LED's are good to 20mA, I have tried to push the current higher with similar LED's and they don't last to long.
*At 395-400nM security features will show up but they are more pronounced at shorter wavelengths. This is probably what is used for those little flashlights they use to check your drivers license, and money. Low power and long wavelength for safety.

Member #217718 / about 9 years ago / ★ 1

What's the part no. for a 25-pack of these UV leds?

,, why not?

buddhafw / about 9 years ago / ★ 1

I second the motion! If I am buying leds I want bunches!

I2C Master / about 9 years ago / ★ 1

I shined one of these around my toilet and I saw a ton of germs. Though I had to turn of every light that could reach the bathroom

Merana / about 9 years ago / ★ 1

Just a forewarning: Your mileage may vary for blacklight applications.
Make sure you find out the wavelength that your application requires. These LED's only emit in the top end (near visible) of the UV A range, and may not work for all UV reactive items. Some (like mine, sadly) will only excite at lower wavelengths. Mine was looking for a target of 365nm.
I know that LED's exist that can emit in the appropriate wavelength, as I have a LED caplight that works with my application. Is there any chance that Sparkfun might get a true UV-A LED in the future?

dac621 / about 9 years ago / ★ 1

After reading some of these posts, I think it is probably wise for Sparkfun to stay away from LEDs that emit in the deeper UV. Deeper UV 5mm LEDs (352nm, 362nm, 375nm) are available reasonably and in small quantities from LED Supply:
http://www.ledsupply.com/5mm-leds.php
For serious research quality LEDs, check Thorlabs:
http://www.thorlabs.com/navigation.cfm?Guide_ID=2101

SomeGuy123 / about 9 years ago * / ★ 1

I just bought one of these to play around with.
The description says this LED can give you sun burns. Does this mean it can give you cancer as well?

MattTheGeek / about 9 years ago / ★ 1

All Ultra Violet lights sources may cause cancer. Hypothetically if one of the genes (e.g. tumor suppressor protein p53) for cancer detection gets damaged by direct or indirect damage, there is a chance that the cell won't undergo programmed cell death when there is a mutation in the cells DNA.
The chance you will get cancer from one of these led's is extremely low to non-existent. Think 0.0000000001%
Additionally the led emits UV-A, which is less harmful per se than UV-B. UV-A is only linked to Vitamin A destruction, photoaging, and the release of free radicals. However the intensity of this led is not considered sufficient to cause any of these adverse effects and generally considered safe.
-MattTheGeek (Aka Matthew)

hmp7saol.com / about 9 years ago / ★ 1

they are good black lights.

stuff dude guy / about 10 years ago / ★ 1

thats also why it says 100-180 mcd, cuz they do emit ome visible light

stuff dude guy / about 10 years ago / ★ 1

you really dont need eye protection, im sure everbody has looked at the sun once before and it has an intensity per square ft. much higher than an led, what is dangerous is when you end up staring at one without knowing it for like a minute, but even that causes no more damage then staring at a regular led for the same period, plus, these do emit a little regular light, look at the picture

slim / about 10 years ago / ★ 1

found these glasses that seem to be in the perfect range. 375nm - 400 nm UV Glasses
http://www.unitednuclear.com/index.php?main_page=product_info&cPath=28_43&products_id=381

Ryland / about 10 years ago / ★ 1

I just bought three of these thinking they would be fun to play with, but before I try them out, what kind of eye protection should I wear, and where can I get it?

SomeGuy123 / about 9 years ago * / ★ 3

Get a bright white flashlight and shine it in your face. That will force your pupils to tighten up, protecting your retinas from most of the UV light. Or you could use regular sunglasses.

Vishu / about 10 years ago / ★ 1

Hi All,

[illegible]ote/bill detection. Can somebody help regarding the tech. spec.

of the UV LED suitable for the purpose.
Thanks.

Vishu / about 10 years ago / ★ 1

Hi all,
I'm looking for UV LED to be used for counterfiet note detection. Will someone plz inform the tech spec of UV LED's required for the purpose.
Thanks

youn00b.com / about 11 years ago / ★ 1

I ordered two of these, received both today, however neither of them operate when applying 1.5 - 3vDc in the description. I even tried viewing through a UV sensitive camera, with no visible output.

> LittleBlinkyThing / about 9 years ago / ★ 1
>
> The forward drop (AKA voltage needed to operate) is 3.3v min, 6v max... so you could wire two of these up to a 9v battery with no fear.
>
> > hobgoblin612 / about 9 years ago / ★ 3
> >
> > NO if you did that the only thing stopping the leds from blowing is the internal resistance of the battery. Remember leds are diodes. You always need a current limiting resistor of CC driver.

mikedamage / about 11 years ago / ★ 1

I don't mean to split hairs, but according to the Wikipedia article on UV, the wavelengths used for germicidal UV are 100-280nm. The description says these emit UV around 395-400nm (long wave UV-A). Can these actually be used for sterilization?

START SOMETHING.

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