



UV Flashlight
Model V3 385-395nm

Instructions & User Guide



© uvBeast
11923 NE Sumner St • STE 635709
Portland, Oregon 97250 • USA • Tel: 503-568-1586

Email: support@uvbeast.com

WARNING!

DO NOT shine UV in the eyes, nor
use irresponsibly. Adult use and
supervision only.

Table of Contents

UV Light WARNING	1
Quick Start	2
Important Notice [setting your expectations]	3
Contact Us	3
Battery Installation	3
Batteries and Accessories Included	4
The Extension Barrel	5
When to Charge the Batteries?	6
Features	7
Using the Glasses (included in some models)	7
Specifications	8
Care and Maintenance	9
Battery Safety	9
Troubleshooting	10
LEDs are not coming on	10
UV emission appears to be not all that strong (i.e. weak UV)	11
Light getting “dim”	11
I have OTHER issues	12
Using UV Light	13
Getting Best Results	13
What Can the uvBeast Be Used for?	13
Technical Section	16
How it all works?	16
What difference does the higher power from uvBeast make?	16
Spectral Quality	16

UV Light WARNING

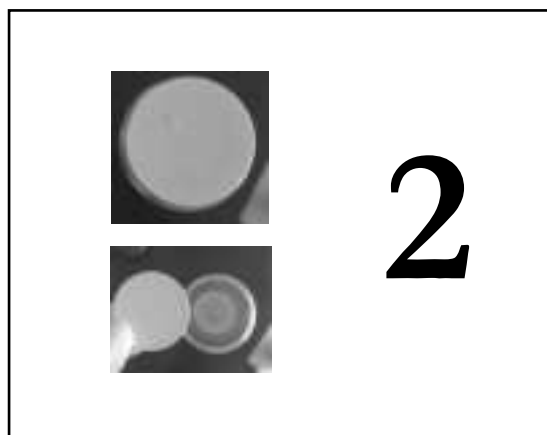
Do NOT shine UV light directly into eyes. Do not use UV light irresponsibly. Adult supervision only.

Quick Start



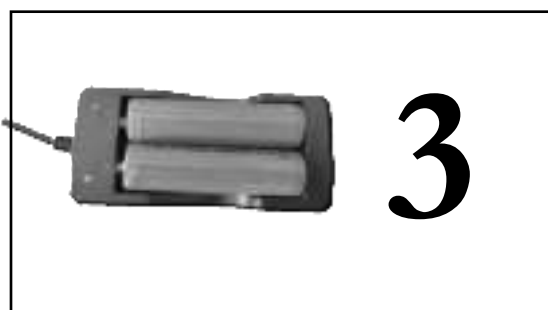
Unscrew the tail cap as shown. Take care not to damage the O-rings.

When Step 4 is complete you should apply some lubrication to the threads and O-rings to prolong their life



Remove and discard the battery insulation cover.

NOTE: This may be affixed to the inside of the tail cap



Charge the batteries until the charger indicator lights turn green. NOTE: On first-time charging this can take up to 6 hours or more



Insert the batteries with both +ve ends facing the LED head i.e. the button ends facing the LED head. NOTE: Batteries must be orientated correctly

Thanks for your purchase!

uvBeast V3 – It's a new release and it's truly even more of a BEAST. In short you've made a wise choice. You've just moved into the next evolutionary stage from the yesteryear 100 LED UV – yes that was classed as powerful. But with a Lithium-ion rechargeable power source the V3 can support newer tech LEDs to give you even more UV power, more range, and more UV intensity. And Li-ion batteries being rechargeable will save you massive costs over the 100 LED V1 and V2 versions. We know. We've read and listened to all your gripes about the six AA alkaline batteries required for the V1 100 LED and V2.

Important Notice [setting your expectations]

As soon as you turn the uvBeast on you may say, “Hey this is not very bright” – but UV can never be described as bright.

Please remember this device emits majority Dark Light (or light that is not visible). So although you can't see the full ultraviolet beam, it is there! Just point it towards your area of interest and you'll begin to see objects fluoresce. As proof that your purchase works as it should and is emitting majority Dark Light, included are spectral graphs that show you how much Dark Light is being emitted – please see the Technical Section if you're interested.

Contact Us

You may contact us at support@uvbeast.com

Battery Installation

PLEASE NOTE: When unscrewing any section please do so carefully and slowly so as to not damage the O-rings. NOTE: O-

rings are already fitted to the uvBeast at the threads. These seal the uvBeast from dust, moisture, and water.

Spare O-rings are inside the internal packaging.

PLEASE NOTE [OTHERWISE YOU MAY THINK YOUR DEVICE IS DEFECTIVE]:

Please discard the battery insulation plastic disc found between the battery and the inside tail cap (sometimes it can affixed to the inside tail cap)

The Li-ion cells will be found already inside your uvBeast V3. However, for transportation you'll notice a thin white disc covering the end of the cell (between the cell and the inside tail cap) – **sometimes it can get affixed to the inside tail cap**. Please discard this, as its only function is to prevent parasitic drain and circuit connection during transit. (Also, please note that the Li-ion cells will arrive semi-charged, but may need further charging). So on first start it's always best to fully charge the cells otherwise you may think the unit is defective. For future reference, **the positive ends** of each cell are inserted first into the barrel i.e. the positive ends face the LED head while the negative end faces the tail cap).

Batteries and Accessories Included

PLEASE NOTE: For your future reference only **button-top** 18650 Li-ion should be used (not flat-top).

**18650 Lithium-ion
3.7v Protected
PCB Cells
(2600mAh
capacity)**

Some quick info on the cells. We'll only really convey what's most important. Each of the cells is designated as "protected". This means that there is a PCB fitted to each battery which prevents the cell from two events happening: (1) Over-charging the cell, and (2) Over-discharging the cell. Both can damage the cell and adversely affect long-term performance.

The li-ion cell can be charged between 300 to 500 times as given by industry benchmarks, but this is also acknowledged to be conservative and so you may even achieve up to 700 to 1000. These are known as "charge cycles" where one-cycle is equivalent to fully charging the cell and then fully discharging the cell. To further optimize the full working life of the 18650 cell it is better practice to charge the cell when it is about 80% depleted rather than fully depleted, although full depletion with a "protected" cell is however still acceptable.

The two-port charger has a safety protection to prevent over-charging of in-situ 18650 cells. The USB cable will allow you the flexibility of using various power sources which support USB connections, although for direct connection to the mains, a mains plug (with USB connection) is also supplied for quickest time-to-charge.

For those of you who just might have geek-ish inclinations, the supplied cells are not “true” or pure ICR types (i.e. lithium-cobalt), since they also have good amounts of Nickel and Manganese (similar to INR and IMR) in them, more so than the older or more prevalent lithium-cobalt type (ICR).

Finally, you really have made a wise choice. The Li-ion cell is often hailed as the “cell of the future” due to its relatively high voltage and its ability to sustain discharge at relatively high voltage levels. So any flashlight using a Li-ion cell is a good indication that there’s serious power on tap. But, the number one advantage is that being rechargeable they’ll save you a huge cost outlay on non-rechargeable cells, bringing down the total-cost-of-ownership of a flashlight to very low levels.

Especially when you consider they’ll last for years to come, after which you simply buy a new set to start the lifetime-cycle again.

The Extension Barrel

To extend working time of the uvBeast V3 on a single charge of the cells, the extension barrel supplied accommodates an additional 18650 li-ion cell, giving you three cells in total inside your uvBeast V3. Note that a third cell is not supplied.

The extension barrel which extends the body of the uvBeast V3 is not mandatory to use. Note: Upon unboxing the extension barrel may be pre-fitted to the flashlight tail cap – this may be removed by unscrewing the tail cap and fitting the tail cap instead to the end of the flashlight barrel.

The below diagram illustrates the sections where the uvBeast V3 contains thread sections for **adjustment and battery installation**.



When to Charge the Batteries?

During operation your uvBeast V3 may flash/flicker a few times of its own accord without the on/off button being pressed. This indicates that the cells are reaching low voltage and it's time to charge the batteries.

Features

- **Professional grade designed for long-range UV and higher power applications**
- **High intensity UV (with high flux density)**
- **Adjusted wavelength (385nm – 395nm) specifically optimized for many domestic & commercial applications**
- **Capable Under Interior/Ambient Lighting**

Your uvBeast V3 Power Pack Edition includes the accessories you need so it's ready-to-use straight out of the box. Note: Some models may vary with the following accessories. It includes:



- **Two 18650 Lithium-ion 3.7 volt PROTECTED PCB cells (2600mAh capacity each),**
- **Flashlight extension barrel to fit an optional third 18650 size cell to increase working time,**
- **Two-port 18650 cell charger with USB lead,**
- **Mains USB plug (for faster charging),**
- **Custom uvBeast color tint UV glasses for enhanced observation, and,**
- **Spare O-rings**

Using the Glasses (included in some models)

Use the glasses that are included with the uvBeast. They will filter out any unwanted visible purple light and you'll see fluorescence even better! Try it out. These have been color tint optimized to do two things: (1) Prevent eye fatigue especially in dark conditions), and (2) to enhance the color transmission of objects you're looking at with the uvBeast.

Specifications

Wavelength	385-395nm (Broader band)
Optical Power/Radiant Intensity	~1950mW
Irradiance (UV power per unit area)	~8100μW/cm²
UV Beam Distance (dark conditions)	110-120ft
UV Beam Distance (ambient room light conditions)	6-8ft
UV Beam Width	15in
Battery Type	[Supplied] 2x Rechargeable 18650 Lithium-ion 3.7v 2600mAh Protected PCB
Battery Life (Working time)	~2-3 hours
IP Rating	IP65 (will prevent water ingress from jet sprays), but is NOT submersible

Care and Maintenance

Please lubricate the threads at the tail cap of the flashlight at various intervals. This will preserve and maintain thread integrity when unscrewing the tail cap section.

Please lubricate the O-rings located at the tail cap thread at various intervals. This will prolong the life of the O-rings as well as maintain their function to prevent the ingress of dust and moisture.

When the V3 LEDs flicker during operation it signifies that it is time to charge the batteries. This may also be indicated when the V3 is switched on and the LEDs turn off automatically after some seconds. If the batteries are drained beyond this point the protected PCB circuit may activate to prevent damage to the 18650 batteries due to over discharging. If this is the case the batteries will auto shut off and will require charging. In this event charging may require longer than normal (until the green charge indicator light on the charger turns green). This is to preserve the battery chemistry. On subsequent charges the charging time will resume to normal.

If the V3 LEDs flicker during operation it signifies that it is time to charge the batteries. This may also be indicated when the V3 is switched on and the LEDs turn off automatically after some seconds.

Battery Safety

NOTE: Battery damage due to misuse will not be covered under warranty, likewise damage to the V3 caused by 18650 batteries other than the supplied batteries will also not be covered by warranty, except for the recommended batteries which are: *18650 lithium-ion button top ICR, INR, or IMR which are at least 43g in weight (indicating the correct chemistry density).*

Do not place damaged 18650 batteries in the V3

Do not store batteries in pockets or close to metal objects when kept outside of the V3

Do not tamper with the batteries

If the batteries fail to charge after a number of successive attempts, this indicates that the PTC mechanisms have activated to make the battery safe and will be deactivated permanently. This is a built in safety precaution. **Do not** try to activate batteries which have been deactivated

Troubleshooting

LEDs are not coming on

Please ensure and check the following:

18650 button-top where possible are the cell types to choose. And beware of true flat-tops – they won't work in two-battery flashlights connected in serial

1. Are the two 18650 cells flat-top? (In case you are using your own batteries other than the batteries supplied with the V3)

(True) flat top 18650 cells will not work in the V3. The reason is because the two 18650 cells are connected in series (one on top of each other). Since (true) flat-top cells have the positive and negative metal ends below the plastic casing (when viewed from a side angle), so when they are stacked on top of each other, metal does not touch metal. Therefore, no electrical circuit is made. Now, to clarify the word "true" as in a "true flat-top cell". Some flat-top 18650 cells are sold as flat-top but actually they do have a positive metal end which does extend beyond the plastic casing. The way to distinguish is when you view the positive metal end of the cell directly from a side angle, you will see a positive metal anode protruding beyond the plastic casing. This means that if you stack another 18650 cell on top of this it will form a metal-to-metal contact with the negative end of the other cell. **18650 button-top where possible are the cell types to choose.**

The positive ends of both the 18650 cells must face the LED head

2. Are the two 18650 cells inserted the correct way around?

Obvious we know, but it is a learning curve with many not totally familiar with 18650 nuances. **The positive ends of both the 18650 cells must face the LED head.** So, with button-top cells the button end faces the LED head, meaning that the other negative end faces the tail cap end. We have definitely encountered this issue on many occasions - it's a very quick fix and an even quicker check to make sure this isn't the reason why the V3 won't turn on.

Ensure that the charge indicator (usually a red/green LED light) on the 18650 charger you are using turns to green

3. Are the two 18650 cells fully charged?

Again, an obvious thing to some, but again it's an 18650 learning curve thing. Either check that BOTH cells are fully charged to 4.2 volts EACH or failing that ensure that the charge indicator (usually a red/green LED light) on the 18650 charger you are using turns to green. Note that if you're not using the mains as a current supply it can take longer for the cells to charge.

Please discard the battery insulation plastic disc found between the battery and the inside tail cap (sometimes it can affixed to the inside tail cap)

4. Have you removed the battery insulation disc?

For transportation you'll notice a thin white disc covering the end of the cell (between the cell and the inside tail cap) – **sometimes it can get affixed to the inside tail cap**. Please discard this, as its only function is to prevent parasitic drain and circuit connection during transit. (Also, please note that the Li-ion cells will arrive semi-charged, but may need further charging). So on first start it's always best to fully charge the cells otherwise you may think the unit is defective. For future reference, **the positive ends** of each cell are inserted first into the barrel i.e. the positive ends face the LED head while the negative end faces the tail cap).

5. Checked all of the above but still the V3 will not turn on.

Do ensure you've carried out the previous checks - as we've found that in most cases these resolve. In some rare cases, the two cells supplied with the V3 Power Pack Edition will need to be charged again using the supplied charger. The PCB protection inside the cell sometimes (in rare cases) needs another charge cycle attempt to "wake up" the cell. This can sometimes take around 24 hours.

Otherwise, please contact us on our site and we'll resolve ASAP.

UV emission appears to be not all that strong (i.e. weak UV)

Firstly, the light output from a (non-visible) UV light will **not** be of comparable brightness to a regular white light flashlight. Carry out a test with objects known to vividly fluoresce such as washed whites (garments), white paper, fluorescent materials, etc. If you don't see vivid fluorescence in this test, then this is due to one of two things. A defective unit, or more likely, a battery issue. **Before contacting us regarding a defective unit**, please charge until the charge indicator turns green – this can sometimes take around 24 hours if the cells need to “wake up” – it is rare but can happen.

Light getting “dim”

If at any point you find the uvBeast getting slightly “dim” after many hours of continuous operation, it's usually because the batteries (one or more of them) are getting low. However, it doesn't necessarily mean that the UV intensity is also getting low, just the visible light portion. Check to see if fluorescence of objects suffers. If so, then it's time to charge the batteries.

I have OTHER issues

Please check out our Help Center & Knowledge Base on our official website here: <https://uvbeast.com/pages/help-center> - most likely we've addressed it there since we continually update common issues people run into. (You can also do a search on our website).

Using UV Light

The current uvBeast models emit ultraviolet light in the following wavelengths (measured in nanometers). 385-395nm and 365nm, depending upon your model.

Visible light is at around 400nm and above to the infrared spectrum.

Getting Best Results

Different substances will fluoresce (“shine”) at different UV intensities. Whether you had domestic or commercial applications in mind, the principle is “the darker the conditions the better” to unleash the full power of the uvBeast. However, that sometimes isn’t always possible nor practical (to achieve darkness) so you’ll still get a decent 4-6ft beam range in ambient light conditions.

TIP – Scan a general area first to illuminate, and then shine closer to investigate & spot.

Sometimes, in ambient light, you may need to go closer, depending upon the fluorescence intensity of the substance investigated. (Scorpions are the exception. At night/dull conditions, boy do they glow electric blue/green – except from very young ones and also adults if they just molted their skin.

What Can the uvBeast Be Used for?

Whether your needs are commercial or domestic uvBeast will not disappoint. You’ll save time, effort, and money with those sanitization jobs, looking for otherwise invisible fluorescence, or just about any other UV task you have in mind.

As an example of the benefits of UV, rather than clean an entire area “just in case”, now you can pin-point and spot-treat the specific area. Without UV light, stains are difficult to spot or are invisible. Now, those stains will glow bright. Among other applications that require UV light, uvBeast is especially designed (but not limited to) to fluoresce or react with the following:

- **Gems, Rocks, and Minerals** (items such as rubies, diamonds, yooperlite, opal, etc.)

- **Cat/Dog urine** (Note: urine needs to be dry - as wet/fresh urine doesn't fluoresce under UV, but a wet urine stain is easily spotted by the eye anyhow)
- **Scorpions and their dens** (but the very young, and adults just molted may not glow as much)
- **Rat/Mouse urine trails** (appear as small dots since they urinate and defecate as they travel and eat)
- **Human Body Fluids** (urine, semen)
- **Unsanitary stains**, and the like
- **Leak Detection** (UV dyes as well as calcium deposits from water leaks)
- **Conformal Coating Detection** (e.g. poor glue coverage on items, paint anomalies, etc.)
- **UV Curing** (resins and adhesives including LOCA)
- **Other VERY handy applications** which require 395nm UV light - such as UV adhesive curing, Artwork and antique inspection, Fluid leak detection (vehicles and a/c units), Property hygiene appraisal, UV photography, UV paint charging and fluorescence, Charging of fishing lures, Charging of golf discs, Egg inspection, Gemstone identification (rubies, diamonds, etc.), Caterpillar identification (including the Tomato Hornworm crop destroyer), Resin detection (like glue, wall paint, etc.), Fossil detection, Mineral fluorescence (limited under 395nm), Vaseline glass identification, Banana inspection, Ringworm and mold detection (not all species), Crime and forensic investigation, Narcotic detection, PCB conformity checking...and in fact the list goes on (if that wasn't enough).

You can see more details/instructions on these and more on our website (uvbeast.com) by doing a search. If you have any other uses let us know and we'll include it!

Domestic applications

Identifying vermin activity, treating areas where pets foul, finding hidden scorpions (especially the Bark Scorpion) and their dens, and checking sanitization levels all over the house. So whether you're monitoring or discouraging your pets' unsanitary practices, keeping scorpions at bay, or checking up

on sanitization levels before/after cleaning, uvBeast will be your useful assistant.

Commercial applications

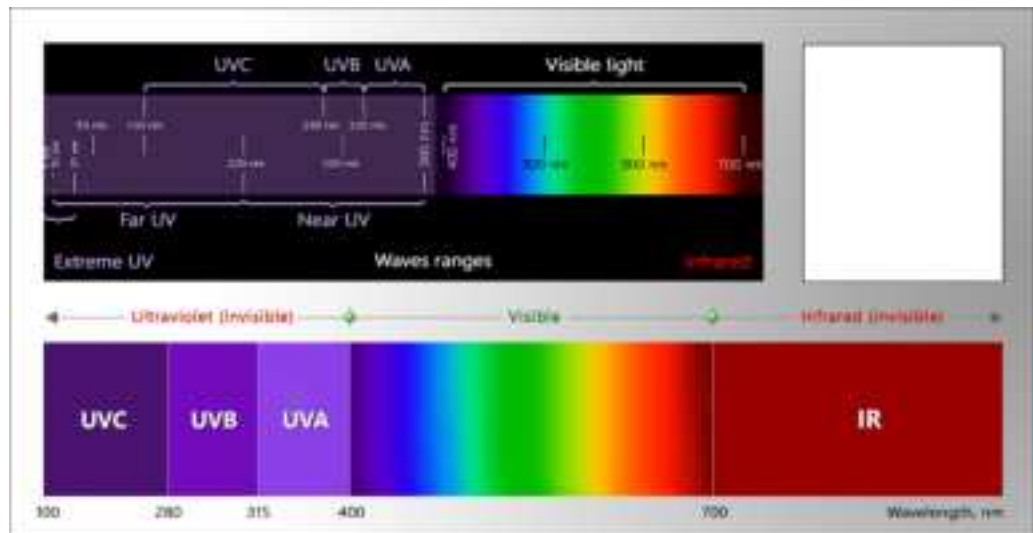
Verifying sanitizations levels in properties, restaurants, hotels, kitchens, pest control efforts, and cleaning services, giving you before and after evidence-based verification as proof that you can show your clients, tenants, guests, customers, or contracted services.

You'll benefit greatly from this type of oversight, making you and your staff more productive, do more in less time, and save wasted effort and money. Cleaning or inspecting? Pin-point stains and substances accurately and instantly without wasting time, effort, and missing hard-to-spot substances.

Same applies to all other UV applications such as identifying leaks from devices/machinery. The UV intensity will accelerate your ability to identify most if not all hidden leaks and anomalies thus greatly reducing and effectively addressing operational risks.

Technical Section

The Electromagnetic Spectrum and UV



Depending upon which uvBeast model you have the device will emit UV at 385-395nm or 365nm.

How it all works?

uvBeast emits 385nm-395nm (at 82% of total radiant intensity) wavelength of light in the invisible light spectrum, which is below visible light that we can see. Past the violet at the end of a rainbow. Light (or photons) at this wavelength when making contact with types of substances, causes excitation. The excited substance then emits light back in the visible spectrum (fluorescence), which we can thus observe with the naked eye.

What difference does the higher power from uvBeast make?

Following from the logic above, weaker UV LED flashlights although at the same wavelength (395nm) emit less photon energy. That amount of energy just doesn't get the target substance all that excited, so in return the substance doesn't emit (fluoresce) that much back to us. So, you'll have to shut out light, create dark conditions, and be inconveniently close to the subject to really see anything.

Typically, most UV flashlights have not been designed to emit high intensity UV. The higher the intensity, the greater the excitation. The greater the excitation, the better the results.

Spectral Quality

The accompanying graph below, illustrate the very high UV capability of your purchase. Anyone can say, "Our manufactured UV light is "super bright", "high flux", "super high flux", or even "the best in the universe".

But, how would you, the consumer really know? After all with a regular “visible light” flashlight that’s easy to determine. But remember, this is Dark Light (invisible light) that you can’t see. At uvBeast we get that, so we have provided spectral proof of the UV light emitting capabilities of your purchase.

The graphs show the UV flux range. You’ll see that the uvBeast peaks at ~393nm at 100% output (relative radiant intensity), but still at 82% output you’re getting quality ~382nm, while even at 60% of total output you’re getting ~373nm. By the way, against industry benchmarks those figures are awesome because it means that you can consider the uvBeast as emitting UV in the range of 385nm to 395nm – most other decent UV flashlights are only capable of 390nm to 395nm at 63%, whilst the not-so-good quality are even worse at wavelengths of 395-410nm+.

uvBeast.com

Peak wavelength of the uvBeast is at 393nm.

82% of the flux is at 385nm wavelength

