

Ra Clicky™ Flashlight User's Guide

Copyright December 2008 by Ra Lights, all rights reserved

Congratulations on your purchase of the Ra Clicky Flashlight. We think you will find your new Ra Clicky Flashlight the most versatile flashlight you have ever owned. Simple single-handed operation provides quick access to the 4 brightness settings allowing you to conveniently select the amount of light you need for any task. You can customize your flashlight for added utility. Your flashlight is designed for use with primary or rechargeable batteries. Your flashlight is built to provide years of reliable service with daily use.

Introduction

Selecting the optimum amount of light for your task allows you to maximize battery life. Too much light wastes battery life while too little light makes it difficult to see. The Primary brightness setting provides enough light for most tasks and provides a long battery life.

Your eyes respond to light in a logarithmic manner. This means that if you halve the amount of light, your eyes perceive the decrease as a small decrease in brightness. The converse is also true. And halving the amount of light doubles the battery life. The brightness levels on your flashlight are visually spaced so you will see a very small change in brightness between the levels. Every decrease of two brightness levels halves the amount of light, doubles the battery life but only appears to be a small change to your eyes.

Burst output is optimized to provide maximum performance while preserving a long battery life. It takes advantage of how your eyes work and the practical need for very bright light. You receive the maximum light output long enough to identify distant objects followed by what appears to your eyes as a very slight decrease in light that dramatically extends battery life while providing high output for extended periods.

Contents

1. Basic Operation
2. Advanced Operation
3. Low Battery Indication
4. Installing a New Battery
5. Cleaning and Maintenance
6. Additional Warnings
7. Customizing Your Flashlight
8. Factory Reset
9. Enabling Customization
10. Internal Brightness Levels
11. Customizing the Brightness Settings
12. Customizing Features Using the Option Menu
13. Specifications
14. Warranty

1. Basic Operation

Press and release the rubber button on the tail to turn on your flashlight. Your flashlight automatically turns on to the Primary brightness setting, which provides plenty of light for most tasks.

Press and hold the button while your flashlight is on to activate the High brightness setting. Release the button to return to the previous brightness setting.

Quickly press and release the button while your flashlight is on to turn off your flashlight.

2. Advanced Operation

We use the term “**click**” to indicate a quick press and release of the button. Think of it like a mouse click on your computer. The button must be released in less than 1/3 of a second to be recognized as a click. The term double-click means two clicks in rapid succession and triple-click means three clicks in rapid succession.

We use the term “**press-hold-release**” to indicate that the button should be held down for an extended period – longer than 1/3 of a second – to allow your flashlight to tell the difference between a click and a press-hold-release. We use the term “**press and hold**” to

indicate you should continue to hold the button down until you are told to release it. A click press-hold-release is a click followed by the next press in quick succession. The same applies to a double-click press-hold-release and a triple-click press-hold-release.

You tell your flashlight what to do through a sequence of clicks and/or a press-hold-release. The commands are simple and easy to learn. It will take a few minutes of practice to become proficient with them.

From Off: these commands are available when your flashlight is turned off:

- Click – turns on your flashlight to the Primary brightness setting.
- Click, press-hold-release – turns on your flashlight to the High brightness setting.

From On: these commands are available when your flashlight is turned on:

- Click – turns off your flashlight.
- Double-click – toggles between the Primary and Secondary brightness settings or returns you to the last Primary or Secondary brightness setting used.
- Triple-click – goes to the Low brightness setting.
- Click, press-hold-release – goes to the High brightness setting.
- Press and hold – goes to the High brightness setting for as long as you hold down the button and then returns to the previous brightness setting when the button is released.

Note: your flashlight will turn on burst output whenever you select the High brightness setting. After 10 seconds of burst output, the output is automatically reduced one brightness level to the one-hour output level. You can return to burst output for another 10 seconds by releasing the button and then pressing and holding the button again.

Please refer to Customizing Your Flashlight, below, for detailed instructions on customizing your flashlight.

3. Low Battery Indication

Your light will momentarily turn off and then back on to half of the previous brightness level when the battery in your flashlight is unable to supply enough power to run the current brightness level. This process is repeated when needed as the battery is used up. After this process starts, your flashlight will double-blink once a minute to remind you that the battery needs to be changed. Selecting a brightness level below the current brightness level will extend the dying battery and turn off the dying battery reminder.

Your flashlight will blink once a second when the battery is no longer capable of powering any of the regular brightness levels.

Warning: continued use of a rechargeable battery after your flashlight begins blinking once a second can result in sudden darkness because your flashlight will eventually turn itself off to protect the battery.

4. Installing a New Battery

Unscrew the battery compartment from the head and remove the old battery from the battery compartment. Insert the new battery into the battery compartment with the positive terminal out. Align the head and battery compartment, press them together to overcome the spring pressure and screw the battery compartment and head back together.

The light comes on dimly for 5 seconds following a battery change to indicate it is functioning correctly. If you do not see this indication when changing the battery, remove the battery for 60 seconds and try again. Removing the battery for 60 seconds forces your flashlight to “reset”.

Note: your flashlight protects rechargeable batteries from over-discharge under most conditions. However, we still recommend you use batteries with built-in over-discharge protection for an added level of safety.

Warning: only install fully charged rechargeable batteries. Using a partially charged battery may result in the battery not being properly recognized as a rechargeable battery. This can lead to the rechargeable battery being over-discharged and damaged.

Caution: do not try unscrewing or removing the switch cap. Doing so may damage your flashlight.

5. Cleaning and Maintenance

Periodically clean the open end of the battery compartment, the threads and O-ring with a clean lint-free cloth lightly moistened with isopropyl alcohol. Apply a coat of non-conductive silicon or petroleum grease to these surfaces.

Replace the battery compartment O-ring if it becomes worn or damaged. O-ring: 1.5mm x 20.5mm, 70 durometer Nitrile (Buna-N).

The recessed electrical contacts and interior threads can be cleaned using a lint-free swab lightly moistened with isopropyl alcohol. Recessed contacts and threads should be cleaned in a counter-clockwise direction to prevent snagging the swab. Be sure to remove any particles or fibers that may be left behind. Apply a coat of non-conductive silicon or petroleum grease to the interior threads.

The exterior can be cleaned with a mild soap and water. Rinse well and dry with a lint-free cotton cloth.

6. Additional Warnings

Warning: your flashlight is very bright on the higher brightness levels. You should avoid looking directly into the light as the light can be intense enough to injure your eyes.

Warning: a sudden total failure is unlikely but is still possible. We recommend you always carry a second light during critical situations (e.g., caving). We also recommend you carry enough spare batteries to cover your lighting requirements plus a reasonable safety margin. It is not necessary to start each trip with a new battery in your flashlight as long as you have spare batteries along.

Warning: do not recharge a rechargeable battery if you think it has been over-discharged or otherwise damaged. Dispose of the damaged battery immediately. An over-discharged or otherwise damaged battery can vent or explode when the battery is recharged or when the battery is subsequently used.

Warning: water – especially salt water – in the battery compartment will cause electrolysis, giving off hydrogen and oxygen – an explosive gas mixture. Electrolysis will also cause corrosion. If water gets inside of the battery compartment, immediately open the battery compartment, rinse the battery compartment and battery with fresh water and allow your flashlight and the battery to completely dry.

7. Customizing Your Flashlight

Your flashlight may be customized so it can perform special tasks more efficiently. You can customize each brightness setting through the Brightness Menu and you can customize many special features through the Option Menu. Together these features allow you to build a specialized flashlight optimized for the tasks you perform on a regular basis – and even tasks you rarely perform.

8. Factory Reset

Please feel free to experiment. You can always return to the original factory settings by following these steps:

- Reset your flashlight - i.e., remove the battery for 60 seconds and reinstall. Your flashlight will light dimly for 5 seconds to indicate the reset.
- Press and hold the button before the dim reset indication turns off. The light will become brighter for 10 seconds and then turn off. Release the button when your flashlight turns off.
- **Note:** your flashlight will display 5 rapid flashes and no settings are changed if you release the button before your flashlight turns off.
- **Note:** your flashlight will display 10 very rapid flashes if there is insufficient power to memorize the original factory settings.

9. Enabling Customization

Customization is disabled by default. Follow these steps to enable Customization:

- Reset your flashlight - i.e., remove the battery for 60 seconds and reinstall. Your flashlight will light dimly for 5 seconds and turn off to indicate the reset has completed. You have 10 seconds following

the reset to begin the next step. After 10 seconds, your flashlight will ignore attempts to enable Customization.

- Click the button 20 or more times in rapid succession. After the 20th time your flashlight stops turning off with every other click.
- Immediately press and hold the button until your flashlight turns off. Your flashlight will display a dim-to-bright sequence to indicate it is enabling Customization and then turn off. Release the button after your flashlight turns off. Customization is now enabled.
- **Note:** your flashlight will display 5 rapid flashes and Customization is not enabled if you release the button before your flashlight turns off.
- **Note:** your flashlight will display 10 very rapid flashes if there is insufficient power to memorize the setting.

We recommend you disable Customization after you finish customizing your flashlight. This allows you to hand your flashlight to anyone without fear that someone will accidentally modify your settings. See the Option Menu item #6.

10. Internal Brightness Levels

Your flashlight includes 23 regular brightness levels. These brightness levels are visually spaced so that the difference between any two brightness levels will appear to be a small even change. This visual spacing takes advantage of the logarithmic nature of your eyes to see a huge dynamic range – from very bright summer scenes to dim moonlit scenes. Your flashlight can produce a range of brightness levels that spans over 2000:1. Each brightness level is separated by a ratio of 1.4:1 – enough to provide a small but noticeable difference between brightness levels.

The amount of power your flashlight consumes is related to the amount of light it is generating. The more light generated, the more power consumed. By reducing the light output by a single level at the higher output settings you can dramatically reduce the power consumption and dramatically increase the runtimes. And because of how your eyes perceive light levels, you will barely notice the difference between the two brightness levels.

The maximum brightness level – also referred to as the burst level – trades efficiency and runtime for maximum light output. The burst level is automatically limited to 10 seconds per invocation. The burst level automatically drops to the next lower brightness level after 10 seconds of use. You may return to the burst level as often as you like for another burst of maximum light.

In addition to the regular brightness levels, there are three light shows: tactical strobe, emergency strobe and SOS. These three light shows are treated as if they were additional regular brightness levels.

The following table shows the brightness levels and the corresponding lumen output. The maximum output of your flashlight will determine which row to use. The values in the table are calculated and rounded while values used in the specifications are often truncated. This may result in the numbers in the table being one digit higher than found in the specifications.

Level	23	22	21	20	19	18	17	16	15	14	13
Lumens	141	100	71	50	35	25	18	13	8.8	6.3	4.4
Lumens	170	120	85	60	42	30	21	15	11	7.5	5.3

Level	12	11	10	9	8	7	6	5	4	3
Lumens	3.1	2.2	1.6	1.1	0.78	0.55	0.39	0.28	0.20	0.14
Lumens	3.8	2.7	1.9	1.3	0.94	0.66	0.47	0.33	0.23	0.17

Level	2	1	SOS	Emergency Strobe	Tactical Strobe
Lumens	0.10	0.07	71	100	140
Lumens	0.12	0.08	85	120	170

The brightness levels are arranged in a circular menu to make scrolling through all of the brightness levels easier. The maximum brightness level is followed by tactical strobe, emergency strobe, SOS and then the minimum brightness level.

11. Customizing the Brightness Settings

Your flashlight comes with 4 preset brightness settings: High, Primary, Secondary and Low. Each setting may be customized to any brightness level. Don't be fooled by the names we gave each brightness setting – we chose the names based on the factory settings. For instance, you might want to assign the tactical strobe to the High setting, a very dim brightness level to the Primary setting, a medium brightness level to the Secondary setting and the burst level to the Low setting.

Follow these steps to customize a brightness setting to one of the brightness levels:

- Select the brightness setting you want to customize.
- Double-click, press and hold. Your flashlight will pause at the current brightness level for 1 second and then begin to scroll up through the brightness levels pausing two seconds at each level. When your flashlight reaches the maximum brightness level, it will double blink and pause for 3 seconds. Each light show level is then displayed for 4 seconds. Upon reaching the minimum brightness level, your flashlight will again double-blink and pause for 3 seconds before continuing through the regular brightness levels.
- **Note:** the scrolling direction reverses each time you invoke the double-click, press and hold command. If the scrolling direction is not the desired direction, release the button and repeat the double-click, press and hold command to scroll in the opposite direction.
- Release the button when you reach the brightness level you want.
- Turn off your flashlight to save the customized setting.
- **Note:** switch to a different setting prior to turning off your flashlight to undo the customization. For example, press-hold-release will

momentarily switch to the High setting and then back to your selected setting and undo your customization.

- **Note:** your flashlight will turn off with 10 very rapid flashes if there is insufficient power to memorize the setting.

12. Customizing Features Using the Option Menu

Your flashlight offers the following features through the Option Menu:

1. Force Setting: indicated by a <long flash>
2. Button Lock: indicated by <three rapid flashes>
3. Automatic Turn Off: indicated by a <bright-to-dim> sequence
4. Locator Flash: indicated by a <dim flash>
5. Momentary: indicated by a <long-short flash> sequence
6. Customization: indicated by a <dim-to-bright> sequence

Follow these steps to customize your flashlight using a feature from the Option Menu:

- Triple-click, press-hold-release. Your flashlight will display the indication for the first menu item (Force Setting: indicated by a long flash).
- Click to move to the next menu item. Double-click to reverse direction and move to the previous menu item. The menu is circular – the last item is followed by the first and the first is preceded by the last.
- Press and hold the button to select the current menu item. Your flashlight will display a dim-to-bright sequence to indicate you are enabling the feature or a bright-to-dim sequence to indicate you are disabling the feature. Release the button after your flashlight turns off.
- **Note:** your flashlight will exit the Option Menu with 5 rapid flashes and without changing the setting if an error is detected. Possible errors include entering an unknown command, not entering a command for 10 seconds or not holding the button down until your flashlight turns off when selecting a setting.
- **Note:** your flashlight will exit the Option Menu with 10 very rapid flashes if there is insufficient power to memorize the setting.

Option Menu Item #1

Force Setting - <long flash>

The Force Setting feature allows you to select the brightness setting used when you turn on your flashlight. Force Setting is enabled and set to Primary by default.

Disable Force Setting to allow your flashlight to remember the last setting used and to use that setting when your flashlight is turned on the next time.

Follow these steps to select one of the four brightness settings to use when your flashlight is turned on:

- Disable Force Setting.
- Select the desired brightness setting.
- Enable Force Setting.

Option Menu Item #2

Button Lock - <three rapid flashes>

The Button Lock feature allows you to lock the button on your flashlight to prevent it from accidentally turning on. When the Button Lock feature is enabled and your flashlight is turned off, a triple-click will toggle the button lock – i.e., unlocking the button if it is locked or locking the button if it is unlocked. Button Lock is disabled by default.

Your flashlight will turn off when you lock the button and will turn on when you unlock the button. When the button is locked and you press the button, your flashlight will blink 3 times to indicate the button is locked and then turn off.

Option Menu Item #3

Automatic Turn Off - <bright-to-dim>

The Automatic Turn Off feature allows your flashlight to turn itself off after 10 minutes of inactivity. This can be handy if you carry your flashlight in your pocket and it gets accidentally turned on or if you fall asleep with your flashlight turned on. Automatic Turn Off is disabled by default.

Your flashlight will turn off gradually, dimming one brightness level each second. When the minimum brightness level has been reached, your flashlight will blink slowly 10 times and then turn off. You can click the button at any time during the sequence to return your flashlight to the original brightness level and to reset the Automatic Turn Off timer for another 10 minutes.

Option Menu Item #4

Locator Flash - <dim flash>

The Locator Flash feature allows your flashlight to emit a brief flash of dim light every three seconds when turned off. The periodic brief flash makes it easier to find your flashlight in the dark. The Locator Flash is disabled by default.

Option Menu Item #5

Momentary - <long-short flash>

The Momentary feature allows your flashlight to differentiate between a click and a press-hold-release when your flashlight is turned off. A press-hold-release will act in a momentary fashion when Momentary is enabled – i.e., turning off your flashlight when the button is released. A press-hold-release acts like a click when Momentary is disabled. Momentary is disabled by default.

Option Menu Item #6

Customization - <dim-to-bright>

The Customization feature allows you to control access to the Brightness Menu and Option Menu commands. This menu item can only be used to disable Customization. See Enabling Customization, above, to enable Customization. Customization is disabled by default.

13. Specifications

Input voltage: 1.8V to 4.5V

Light source: high efficiency white LED

Light output: 140 or 170 maximum lumens, 23 levels, tactical strobe, emergency strobe and SOS, locator flash

Runtimes: 1 hour on High setting, 10 hours on Primary setting

Power supply: constant power with thermal regulation

Battery: IEC-CR17345, Li-MnO₂ 3.2V non-rechargeable,

Li-CoO₂/Li-MnO₂ Li-ion 4.2V (3.7V nominal) rechargeable

Lens: nearly unbreakable ultra-clear glass with anti-reflective coatings

Housing: aerospace aluminum, military type III hard anodize, stainless steel bezel

Pocket clip, deep carry bezel up, MOLLE compatible, retaining

Waterproof: 2 atmospheres, 20 meters (66 feet) of water – static

Dimensions: 25.4mm (1 inch) diameter by 95mm (3.75 inches) long

Weight: 100g (3.5 ounces) including battery

Battery compartment O-ring: 1.5mm x 20.5mm, 70 durometer

Nitrile (Buna-N)

Lens O-ring: 1mm x 19mm, 70 durometer Nitrile (Buna-N)

Factory settings:

- High: maximum, Primary: 12/15 lumens, Secondary: 35/42 lumens, Low: 0.3 lumens
- Force Setting: enabled, Primary brightness setting
- Button Lock: disabled
- Automatic Turn Off: disabled
- Locator Flash: disabled
- Momentary: disabled
- Customization: disabled

Specifications are subject to change without notice.

14. Warranty

Your flashlight (Product) is warranted to be free from defects in materials and workmanship for the life of Product to the original owner. This warranty does not include cosmetic blemishes, damage, modifications and normal wear. We will repair Product, replace Product with an equivalent Product or refund the original purchase price for the defective Product – at our discretion. You are solely responsible for determining the Product's suitability for your application and you take sole responsibility for Product's use. In no case shall we be liable for more than the original purchase price of Product.

Contact Us

Ra Lights (HDS Systems, Inc. dba Ra Lights)
P.O. Box 42767
Tucson, Arizona 85733
USA

520-325-3004

www.RaLights.com
info@RaLights.com