

# Tactical Flashlight User's Guide

For the Ra Clicky™ and Ra Every Day Carry™

# RA LIGHTS

By HDS Systems

# **Tactical Flashlight User's Guide for the Ra Every Day Carry™ and Ra Clicky™**

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Congratulations for purchasing the finest flashlight available. The Ra Every Day Carry (EDC) and Ra Clicky Tactical flashlights are best-of-class flashlights providing regulated output at the desired brightness for extended periods. A single button easily selects the desired light output. You can customize your flashlight for added utility. Lithium-ion rechargeable batteries are fully supported and recommended for lower operating cost. And your flashlight is built tough to provide a lifetime of dependable service.

## **Introduction**

You can maximize battery life by selecting the optimum amount of light for your task. Too much light wastes battery life while too little light makes it difficult to see. The 4 brightness settings were selected for maximum utility. You may customize them if desired.

Burst output takes advantage of how your eyes work and the practical need for very bright light to provide maximum performance while preserving long battery life.

Your flashlight may be customized to perform special tasks more efficiently. These customization features allow you to build a specialized flashlight optimized for the tasks you perform on a regular basis – and even tasks you rarely perform.

Your eyes respond to light in a logarithmic manner. This means that if you reduce the amount of light by half, your eyes perceive the change as a small decrease in brightness. The internal 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 doubles the battery life while appearing to be a small change to your eyes.

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### 1. Basic Operation

Quickly press and release the rubber button on the tail of your flashlight to turn on your flashlight. Your flashlight turns on to the High brightness setting.

Press and hold the button while your flashlight is on to activate the Strobe 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 or a click, press and hold are a click followed by the press in rapid succession. There is no pause or delay between the click and the press. The same applies to double-click, press-hold-release and triple-click, press-hold-release.

You tell your flashlight what to do through a sequence of clicks and/or a press-hold-release or a press and hold. These sequences, known as 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 High brightness setting.
- Press and hold – turns on your flashlight to the High brightness setting for as long as you hold down the button and then turns your light off again when you release the button.
- Click, press and hold – turns on your flashlight to the Strobe setting for as long as you hold down the button and then turns your light off again when you release the button.

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

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

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

**Note:** your flashlight will turn on burst output whenever you select the High brightness setting. After 10 seconds of burst output, the output is

reduced one brightness level to the one-hour output level. One level is a very small change in brightness to your eyes but has a dramatic affect on runtime.

### **3. Low Battery Indication**

Your light will momentarily turn off and then back on one level below the previous 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 change battery reminder.

Your flashlight restricts the output to the highest brightness level the battery can maintain. However, if you turn your flashlight off and back on again to a higher level, it will slowly step up through the brightness levels testing the battery again.

Your flashlight will slowly blink once a second on the lowest brightness level when the battery is no longer capable of powering any of the steady brightness levels.

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

Your flashlight is designed to work with either primary lithium batteries or rechargeable lithium-ion batteries. In general, primary batteries provide longer runtimes. However, Li-ion batteries are less expensive in the long run and allow you to always leave home with a full battery.

**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 Notes, Cautions and Warnings

**Note:** your flashlight will reduce output power by single brightness levels if needed to prevent it from becoming excessively hot due to high output power.

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

**Caution:** some individuals may be sensitive to the affects of flashing lights. Be ready to render assistance if an individual should have a seizure induced by your flashing light.

**Warning:** your flashlight is very bright on the higher brightness levels. You should avoid looking directly into the reflector 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:** 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.

**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 you 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. Alternatively, you can turn on your flashlight, remove the battery compartment (your flashlight will go out) and then reinstall the battery compartment without waiting. 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. Alternatively, you can turn on your flashlight, remove the battery compartment (your flashlight will go out) and then reinstall the battery compartment without waiting. 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.
- Perform a 20-click, press and hold. You don't have to count the clicks because you are allowed to enter more than 20 clicks prior to the press and hold. After the 20<sup>th</sup> click your flashlight stops turning off with every other click.
- 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 22 or 23 regular brightness levels, depending on the maximum output of the model. These brightness levels are visually spaced so that the difference between any adjacent 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, depending on the model. 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 your eyes perceive light logarithmically, 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 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 tables show 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 sometimes truncated. This

may result in the numbers in the table being one digit higher than found in the specifications.

The shaded entries in the table correspond to High, Medium, Low and Strobe, respectively, for the 23 level models. High and the three light shows are one level lower for the 22 level models.

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	141
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. And vice versa.

## 11. Customizing the Brightness Settings

Your flashlight comes with 4 preset brightness settings. Don't be confused by the names we gave each brightness setting – we chose the names based on the factory settings. Each setting may be customized to any brightness level. For instance, you can assign the emergency strobe to the Low setting and you can assign a very dim brightness level to the High 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 Strobe 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 – <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. 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.

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 rapidly 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.

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 short flash of dim light every three seconds when turned off. The periodic short flash makes it easier to find your flashlight in the dark.

## **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.

## **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.

### 13. Specifications

Input voltage: 1.8V to 4.5V

Light source: high efficiency white LED

Light output: 140 or 170 maximum lumens, 23 levels;  
100 or 120 maximum lumens, 22 levels

Runtimes: 1 hour on High setting

Power supply: constant power with thermal regulation

Battery: IEC-CR17345, Li-MnO<sub>2</sub> 3.2V non-rechargeable,

Li-CoO<sub>2</sub>/Li-MnO<sub>2</sub> Li-ion 4.2V (3.7V nominal) rechargeable

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

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

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

Water resistance: 2 atmospheres (20m or 66 feet of water) - static

Dimensions: 25.4mm (1 inch) diameter by 98mm (3.85 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:

- Strobe: tactical strobe, High: maximum, Medium: 12/15 lumens, Low: 0.3 lumens
- Force Setting: enabled, High brightness setting
- Button Lock: disabled
- Automatic Turn Off: disabled
- Locator Flash: disabled
- Momentary: enabled
- 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.

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