

Ra Clicky™ User's Guide

For the Ra Clicky Executive and Ra Clicky Tactical

RA LIGHTS

By HDS Systems

**Ra Clicky User's Guide
for the
Ra Clicky Executive and Ra Clicky Tactical flashlights**

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Congratulations for purchasing the finest flashlight available. The Ra Clicky Executive and Ra Clicky Tactical flashlights are best-of-class flashlights providing regulated output at your desired brightness for extended periods. The single button easily and directly selects your desired light output. You can customize your flashlight's operation and output levels for added utility. Lithium-ion rechargeable batteries are fully supported and recommended for lower operating cost. Finally, your flashlight is built tough and water resistant to provide a lifetime of dependable service, all in a pleasantly small package.

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 accomplish your task. By using the different brightness levels efficiently, you receive the benefits of long runtimes and the ability to see very long distances. The 4 preset brightness levels were selected for maximum utility. You may customize them if desired.

Burst output takes advantage of the logarithmic nature of your eyes to provide you with maximum visual acuity while at the same time preserving long runtimes at high output settings. The operation of burst output is fully automatic and most people will not even notice it working – other than being able to see better and noticing that the battery lasts longer.

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.

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1. Basic Operation - Executive

Press and release the rubber button on the tail of your flashlight to turn on your flashlight. Your flashlight turns on to preset level B (Medium), which provides plenty of light for most tasks.

Press and hold the button while your flashlight is on to activate preset level A (High). Release the button to return to the previous preset level.

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

2. Advanced Operation - Executive

You communicate with your flashlight through a sequence of clicks and/or a press-hold-release or a press and hold. These sequences are called **commands** and are simple and easy to learn. It will take a few minutes of practice to become proficient with them.

The term “**click**” indicates 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** indicates two clicks in rapid succession and the term **triple-click** indicates three clicks in rapid succession.

The term “**press-hold-release**” indicates 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. The term “**press and hold**” indicates that you should continue to hold the button down until you are told to release it. A click, press-hold-release and a click, press and hold indicates 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.

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

- Click – turns on your flashlight to preset level B (Medium).
- Click, press-hold-release – turns on your flashlight to preset level A (High).

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

- Click – turns off your flashlight.
- Double-click – toggles between preset level B (Medium) and preset level C (Medium-High) or returns you to the last preset level B or C used.
- Triple-click – selects preset level D (Low).
- Click, press-hold-release – selects preset level A (High).
- Press and hold – selects preset level A (High) for as long as you hold down the button and then returns to the previous preset level when the button is released.

Please refer to Customizing Your Flashlight in section 9 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 by 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.

3. Basic Operation - Tactical

Quickly press and release the rubber button on the tail of your flashlight to turn on your flashlight. Your flashlight turns on to preset level B (High).

Press and hold the button while your flashlight is on to activate preset level A (Tactical Strobe). Release the button to return to the previous preset level.

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

4. Advanced Operation - Tactical

You communicate with your flashlight through a sequence of clicks and/or a press-hold-release or a press and hold. These sequences are called **commands** and are simple and easy to learn. It will take a few minutes of practice to become proficient with them.

The term “**click**” indicates 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** indicates two clicks in rapid succession and the term **triple-click** indicates three clicks in rapid succession.

The term “**press-hold-release**” indicates 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. The term “**press and hold**” indicates that you should continue to hold the button down until you are told to release it. A click, press-hold-release and a click, press and hold indicates 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.

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

- Click – turns on your flashlight to preset level B (High).

- Press and hold – turns on your flashlight to preset level B (High) 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 preset level A (Tactical Strobe) 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 preset level B (High) and preset level C (Medium) or returns you to the last preset level B or C used.
- Triple-click – selects preset level D (Low).
- Click, press-hold-release – selects preset level A (Tactical Strobe).
- Press and hold – selects preset level A (Tactical Strobe) for as long as you hold down the button and then returns to the previous preset level when the button is released.

Please refer to Customizing Your Flashlight in section 9 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 by one brightness level to the one-hour output level. You can return to burst output for another 10 seconds by press-hold-releasing the button.

5. Low Battery Indication

Your light will momentarily turn off and then back on one level below 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 low 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 higher 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.

6. 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 7 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.

7. 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.

Note: the anti-reflective coating on the lens can be abraded by excessive rubbing or cleaning.

8. 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 attempt to 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.

9. Customizing Your Flashlight

Your flashlight may be customized so you can perform various tasks more efficiently. You can customize each preset level 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. To begin the customization process, see Enabling Customization in section 11.

10. 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 turn off) and then reinstall the battery compartment without waiting. Your flashlight will light dimly for 7 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.

11. Enabling Customization

Your flashlight is shipped with Customization disabled. 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 turn off) and then reinstall the battery compartment without waiting. Your flashlight will light dimly for 7 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, you will need to start over.
- 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 20th click your flashlight stops turning off and on with every other click.
- Hold the button down 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 Option Menu item #6 in section 14.

12. Internal Brightness Levels

Your flashlight includes 23 internal brightness levels. 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 **burst level** – trades efficiency and runtime for maximum light output. Burst level is automatically limited to 10 seconds per invocation. Burst level drops to the next lower brightness level after 10 seconds of use. You may return to burst level as often as you like for another burst of maximum light output.

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 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-High, Medium and Low, respectively.

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.

13. Customizing the Brightness Settings

Your flashlight comes with 4 preset levels. They are referred to as preset levels A, B, C and D. A is the press and hold setting, B is the factory turn-on setting, C is the first double-click setting and D is the triple-click setting.

Follow these steps to customize a preset level:

- See Enabling Customization in section 11 to enable customization.
- Select the preset level you want to customize.
- Double-click, press-hold-release. Your flashlight will display the current brightness level. If the current brightness level is the minimum or maximum level, the displayed level will start with a double-blink.
- Click to move to the next brightness level. Double-click to reverse direction and move to the previous brightness level. The menu is circular – the last item is followed by the first and the first is preceded by the last. When you get to the minimum or maximum level, the displayed level will start with a double-blink.

- Press and hold the button to select the current brightness level. Your flashlight will display a dim-to-bright sequence to indicate you are setting the brightness level. Release the button after your flashlight turns off and your flashlight will return to the selected brightness level.
- **Note:** your flashlight will exit the Brightness Menu with 5 rapid flashes 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 brightness level.
- **Note:** your flashlight will exit the Brightness Menu with 10 very rapid flashes if there is insufficient power to memorize the setting.

14. Customizing Features Using the Option Menu

Your flashlight offers the following features through the Option Menu:

1. Turn On Preset – 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:

- See Enabling Customization in section 11 to enable customization.
- Turn on your flashlight.
- Triple-click, press-hold-release. Your flashlight will display the indication for the first menu item (Turn On Preset – <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 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

Turn On Preset – <long flash>

The Turn On Preset feature allows you to select the preset level used when you turn on your flashlight. Disable Turn On Preset to allow your flashlight to remember the last preset level used and to use that preset level when your flashlight is turned on the next time.

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

- Disable Turn On Preset.
- Select the desired preset level.
- Enable Turn On Preset.

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.

15. Specifications

Input voltage: 1.8V to 4.5V

Light source: high efficiency white LED

Light output: 140 or 170 maximum lumens, 23 levels

Runtimes: 1 hour on High setting minimum, 1.25 hours typical

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, black military type III hard anodize,
stainless steel bezel (military AlTiN black on Tactical)

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

95mm (3.7 inches) long (Executive)

98mm (3.9 inches) long (Tactical)

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 - Executive:

- A: maximum, B: 12/15 lumens, C: 35/42 lumens, D: 0.3 lumens
- Turn On Preset: enabled, preset level B
- Button Lock: disabled
- Automatic Turn Off: disabled
- Locator Flash: disabled
- Momentary: disabled
- Customization: disabled

Factory settings - Tactical:

- A: tactical strobe, B: maximum, C: 12/15 lumens, D: 0.3 lumens
- Turn On Preset: enabled, preset level B
- Button Lock: disabled
- Automatic Turn Off: disabled
- Locator Flash: disabled
- Momentary: enabled
- Customization: disabled

Specifications are subject to change without notice.

16. 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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