

# EDC Twisty™ User's Guide

HDS SYSTEMS

## **EDC Twisty User's Guide**

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Congratulations for purchasing the finest flashlight available. The EDC Twisty flashlight is a best-of-class flashlight providing regulated output at your desired brightness for extended periods. The simple twisting action easily selects your desired light output. You can customize your flashlight's 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 long distances. The 3 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

Rotate the battery compartment clockwise to increase the brightness level. Your flashlight will sequence from Off to Low to Medium to High.

**Caution:** do not continue tightening the battery compartment after the High setting has engaged and the battery compartment stops turning as this may damage the switch mechanism.

Rotate the battery compartment counter-clockwise to decrease the brightness level. Your flashlight will sequence from High to Medium to Low to Off.

**Note:** clockwise and counter-clockwise rotation are relative to the head when the flashlight is pointed away from you.

### 2. 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 every two minutes 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 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.

### **3. 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 - 90 seconds and try again. Removing the battery for 60 - 90 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.

### **4. 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.

## 5. 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.

## 6. Internal Brightness Levels

Your flashlight includes 23 internal brightness levels, depending on 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. You can dramatically reduce the power consumption and dramatically increase the runtimes by reducing the light output by a single level at the higher output settings. 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 and which column to start at. The values in the table are calculated and rounded and may differ slightly from numbers found in the specifications.

The shaded entries in the table correspond to High, Medium and Low, respectively, with High indicated for 23 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	MI-2	Maximum level - 1	Maximum level
Lumens	0.12	0.08	MI-2	Maximum level - 1	Maximum level

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.

## 7. Customizing the Brightness Presets

Your flashlight comes with 3 preset levels. They are referred to as preset levels A, B and C. The sequence of operation is Off, preset level A (low), preset level B (medium) and preset level C (high). Each preset level may be assigned any brightness level.

Follow these steps to customize a preset level:

- **Note:** you can exit the customization procedure at any time by turning your flashlight off.
- **Note:** you must repeat this procedure for each preset level you want to customize.
- **Caution:** do not set two adjacent presets to the same brightness level or you will not be able to distinguish between them for further customization. You can use the factory-reset procedure below to recover from this mistake.
- Reset your flashlight - i.e., remove the battery for 60 - 90 seconds and reinstall. Your flashlight will light dimly for 7 seconds and turn off to let you know the reset has taken place. You will have 15 seconds following the reset – i.e., after the light turns off - to begin the customizing procedure. After 15 seconds, your flashlight will ignore attempts to enter customization mode.
- Turn your flashlight on to preset level A.
- Turn your flashlight to preset level B and back to preset level A 20 times. After the 20 cycles, your flashlight will turn on to the minimum brightness level and double-blink to let you know you have successfully completed the entry into the brightness menu. There is no need to rush. You have 3 seconds to move from preset level A to preset level B and 3 seconds to move back to preset level A. You have 15 seconds to complete the first cycle after performing the reset.
- Your flashlight will slowly step through the brightness menu from minimum to maximum and then the three light shows. Steady levels are displayed for 3 seconds with double-blinks on the minimum and maximum levels while light shows are displayed for 5 seconds. The brightness menu is circular and wraps around until you select a brightness level or exit customization. When you see the brightness level you want, proceed to the next step.
- Turn your flashlight from preset level A to preset level B to select the current brightness level and enter the preset level selection menu. Your flashlight will single-flash about once a second to indicate you have entered the preset level selection menu.
- Your flashlight will display a flash code to indicate which preset level menu item is currently selected. Single-flash for preset level



A, double-flash for preset level B and triple-flash for preset level C. Turn your flashlight from preset level B to preset level A and back to preset level B to select the next preset level menu item. The preset level selection menu is circular and wraps from preset level C to preset level A. When you see the preset level you want, proceed to the next step.

- Turn your flashlight from preset level B to preset level C to set the selected preset level to the selected brightness level. You will see a ramping from dimmer to brighter and then the light will turn off.
- **Note:** your flashlight will exit customization with 10 very rapid flashes if there is insufficient power to memorize the setting.
- Turn off your light even though it already appears to be turned off.

## 8. Factory Reset

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

- **Note:** removing the battery case O-ring makes performing this procedure easier. You should replace the O-ring once this procedure has been completed.
- Reset your flashlight - i.e., remove the battery for 60 to 90 seconds and reinstall. Your flashlight will light dimly for 7 seconds to indicate the reset. You must accomplish the next task before the light turns off – i.e., within the 7 second reset indication period.
- Rapidly screw the battery compartment into the head until the light goes from dim to brighter. You have 7 seconds to accomplish this step from the beginning of the reset. If your flashlight turns off before changing intensity you will need to restart the procedure.
- Your flashlight will become brighter for 10 seconds and then turn off. When your flashlight turns off the factory settings have been restored successfully.
- **Note:** your flashlight will display 10 very rapid flashes if there is insufficient power to memorize the original factory settings.
- Turn off your flashlight even though it already appears to be off.

## 9. 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-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,  
stainless steel bezel (military AlTiN black on Tactical)

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

Dimensions: 25.4mm (1 inch) diameter by  
88mm (3.5 inches) long

Weight: 88g (3.1 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:

- A: maximum, B: 12/15 lumens, C: 0.3 lumens

Specifications are subject to change without notice.

## **10. 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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