

Astrolux S43

The S43 is a powerful EDC lamp. Rechargeable over USB. It is fitted with four Cree XP-G3 or Nichia 219c LEDs and uses a NarsilM v1.3 Firmware

USER MANUAL

Safety precautions

- Use only reputable 18350 or 18650 cells of known origin.
- Use a Micro-USB cable for charging.
- Remove and recharge cells when the low voltage indication is given by the S43 (4 blinks and repeated step-downs in light level and eventual shutdown of the light).
- The extraordinary energy density that 18350 and 18650 cells offers also means that hazardous conditions are created when a cell is short-circuited or damaged. Always treat cells with respect and properly dispose of damaged cells.
- The S43 is a very high-intensity flashlight. Do not point the lamp directly at a person, animal, moving vehicles or flammable materials.
- When running at higher output levels the head of the S43 will quickly heat. This is normal. In warmer ambient conditions this temperature may exceed 60°C, so please take the necessary precautions when handling the S43.

Quick start

- Unscrew the tail-cap and insert a 18350 cell. (Use a 18650 cell with the long tube)
- Double check the polarity every time before closing: The battery must point with plus (nipple) towards the head.
- Screw the tail-cap back. The S43 will flash twice when electrical contact is made. Continue to tighten the tail-cap to a gentle stop. Do not over-tighten.
- All functions are performed using the single side button. Note that pressing this button continuously for more than 16 s enters the UI configuration settings (indicated by the light blinking). If this is done inadvertently, exit the configuration settings by simply releasing the button briefly then pressing it again continuously for about 4 s until all the resulting blinks stops.
- The S43 comes factory-set to use the **RAMPING** UI: From **OFF**, press&hold the side button. The light output will ramp up from a very low level to full power. Release the button when the required light level is reached. (The full ramp takes about 3 s. To signal 'End of Ramp' it does a subtle blink) Use a single-click at any time to turn the S43 **OFF**. Please see below for further details.
- There is a very small drain on the battery while **OFF**. This should not be of any concern, but we recommend removing the cell (or partially loosening the tail-cap) if the S43 will not be used for several months.
- The S43 on budgetlightforum: <http://budgetlightforum.com/node/62239>.
- **If you transport this light in a bag use at least the electronic lock-out! It will burn things on higher levels!**

Default UI: Smooth ramping

This feature-rich UI provides for smooth ramping of the light output between 0 and 50%, with an easily-accessible 100% **TURBO** mode.

- Turn the S43 ON:** single-click the button, S43 turns **ON** using the previously used light output level
- Ramp light level:** press&hold button
- Reverse ramp:** while ramping in one direction, release button briefly and press&hold again
- Instant TURBO:** double-click
- Turn the Lamp OFF:** single-click
- MOON mode:** from **OFF**: press the button and release as soon as the S43 turns on
- Strobes:** double-click for **TURBO**, and then double-click again

The strobes are deactivated by default. To enable strobes you must click 3 times in setting #4 (ramping) or setting #8 (modes). (Use single-clicks to cycle forward through the different types of strobes, but you have to be quick: If resting on a strobe longer than 1.2 s it locks in and the next single-click is **OFF**. Press&hold at any time to cycle backwards through the strobes.)

- Battery status:** triple-click (4 blinks, a short pause, then 1 blink would indicate 4.1 V average per cell, for example)
- Electronic lock-out:** four clicks to disable the S43, same to re-enable the Lamp
- MOMENTARY mode:** five clicks (loosen and re-tighten the tail-cap to return to normal operation)
- Factory reset:** triple-click (battery status mode), then double-click (driver temperature mode), double-click again (firmware version mode), then press&hold for about 2 s. Four blinks confirm a successful reset.

Alternative UI: Mode-sets

The S43 is factory-set to operate using the contemporary **RAMPING** user interface, as described in the previous section. However, the S43 can also be operated using a more conventional **MODE-SET** style user interface. (See next section for detail on how to set UI options).

Using the **MODE-SET** UI the output does not ramp, it steps from one mode to the next using single-clicks.

- Turn the S43 ON:** single-click
- Next mode:** single-click before the current mode 'locks in' (1.2 s)
- Previous mode:** press&hold
- Last mode [100%]:** from **OFF**: press&hold
- Turn the Lamp OFF:** single-click button, after resting on a mode more than 1.2 s (mode locked in)
- Strobes:** press&hold

The strobes are deactivated by default. To enable strobes you must click 3 times in setting #4 (ramping) or setting #8 (modes). (Use single-clicks to cycle forward through the different types of strobes, but you have to be quick: If resting on a strobe longer than 1.2 s it locks in and the next single-click is **OFF**. Press&hold at any time to cycle backwards through the strobes.)

- Battery status:** from **OFF**: single-click followed by press&hold (4 blinks, a short pause, then 1 blink would indicate 4.1 V average per cell, for example)
- Electronic lock-out:** from **OFF**: double-click followed by press&hold, same to re-enable the S43
- Factory reset:** from **OFF**, single-click followed by a press&hold (battery status mode), then double-click (driver temperature mode), double-click again (firmware version mode), then press&hold for about 2 s. Four blinks confirm a successful reset.

Advanced operation

By default the S43 is set to suit most users and applications, but several settings are user-configurable. To enter the configuration settings, press&hold the button for about 16 s (3 s if in the MODE-SET UI), do not release until a double flash followed by a single blink is seen. The single blink is the prompt for the first setting. Click the button as many times as required for that setting, or leave the setting alone and simply wait for the next double flash, this time followed by two blinks, indicating that we are now at setting #2, etc.

The S43 confirms each click with a blink. A press&hold skips to the next setting. A continuous press exits the setup menu completely. Four blinks indicate that the setup is completed.

The available settings differ, depending if the S43 is currently set to the RAMPING UI or the MODE-SET UI. Note that changing setting 1 flips to the other UI and immediately kicks you into the table for that UI:

RAMPING user interface settings		
Setting	Function	Clicks
1	User interface	1: MODE-SET 2: RAMPING [default]
2	MOON level	1-7 [default 3]
3	Auto step-down	1: Disable 2: Temperature [default]** 3: Timed, requires another 1-6 clicks for 60s, 90s, 2m, 3m, 5m, 7m respectively
4	Strobes	1: Disable [default] 2: Strobe 1 only 3: All strobes

MODE-SET user interface settings		
Setting	Function	Clicks
1	User interface	1: MODE-SET 2: RAMPING [default]
2	Mode-set	1-12 [default 4]
3	Moon mode	1: Disable 2: Enable [default]
4	Mode order	1: Low to high [default] 2: High to low
5	Mode memory	1: Disable [default] 2: Enable
6	MOON level	1-7 [default 3]
7	Auto step-down	1: Disable 2: Temperature [default]** 3: Timed, requires another 1-6 clicks for 60s, 90s, 2m, 3m, 5m, 7m respectively
8	Strobes	1: Disable [default] 2: Strobe 1 only 3: All strobes

** If [temperature] is selected for auto step-down, the S43 goes to 100% output. Leave the lamp to heat to the desired limit, and then click to set that temperature as the trip point (this can take a minute, use fresh cells for this). Or click within 5 s to keep previous setting.

The mode-sets have been selected to suit a high-power thrower like the S43:

Mode-set no.	Modes [% of light]						
	1	2	3	4	5	6	7
1	100						
2	7	100					
3	3	36	100				
4	0.7	7	38	100	[default]		
5	0.7	3	7	38	100		
6	0.5	3	9	29	60	100	
7	0.6	1.6	4	7	34	61	100
8	7	21	50				
9	0.7	17	100				
10	0.7	38	100				
11	7	34	100				
12	0.5	6	42	100			

Note that **MOON** mode is enabled by default, adding one extra mode (mode 0) to the above.

Pre-programmed strobes (disabled by default):

Strobe	Type
1	16 Hz
2	Police strobe (dual frequency)
3	Biking (low light with hi-vis stutter)
4	2 s beacon
5	10 s beacon

The S43 has in stock form no additional UI settings like in other NarsilM lamps. The controller board has no connection to the button back-light in the S43

Additional UI settings are available to control the button back-light. While in the battery check mode, press&hold the button. A double flash followed by a single blink is again the prompt for the first setting:

Advanced UI settings (S43 only after hardware change)		
Setting	Function	Clicks
1	Button LED on while S43 OFF	1: Disable 2: Enable [default]
2	Battery level blinks on button LED only	1: Disable [default] 2: Enable
3	Button LED	1: Disable 2: Enable [default]

Specifications

Emitter:	four LEDs, cool white (CREE) or in neutral white (Nichia), mounted on copper DTP MCPCB
Flux:	>2000 lumen
Range:	184 meters
Firmware:	Tom E's open-source GPL NarsilM v1.3 adapted by Texas_Ace
User interface:	[1] By default the S43 is set to use the very intuitive Narsil smooth RAMPING UI. Instant access to a 2.5 A TURBO mode is also provided. [2] A more conventional discrete level MODE-SET UI is available as an alternative. Any one of 12 pre-defined mode-sets can be selected. [3] MOMENTARY mode is useful for signaling purposes or rapidly/briefly lighting up targets.
Battery:	One 18350 cell (or a 18650 with the long tube). Protected cells are recommended. Cells are not included.
Driver:	Texas Avenger FET Driver with charging
Optic:	quad optic
Lens:	Glass with anti-reflective coating
Body:	Aluminum with Type III hard-coat anodizing or stainless steel
Tripod socket:	Standard tripod thread for a survival hammer
Button:	Tactile with back-lit rubber boot
Ingress rating:	Equivalent to IPX6, do not immerse in liquids
Impact resistance:	Up to 1.5 meters
Weight:	Approximately 60g without cells
Dimensions:	27 mm Ø head x 89 mm length

Charging

Battery is not included. Over-discharging and overcharging protection. Use a micro USB cable to charge the light. The red light indicates it is charging. When the red LED turns off unplug the charger.

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