



# GTmini

## USER MANUAL

### Safety precautions

- Use only reputable 18650 cells of known origin. Protected type cells, based on Samsung, Panasonic/Sanyo, Sony or LG cells, are recommended.
- Use a reliable battery charger. Never over-charge or over-discharge cells.
- Remove and recharge cells when the low voltage indication is given by the GTmini (repeated step-downs in light level and eventual shutdown of the light).
- The extraordinary energy density that 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 GTmini is a very high-intensity flashlight. Do not point the GTmini directly at a person, animal, moving vehicles or flammable materials.
- When running at higher output levels the head of the GTmini will rapidly heat. This is normal. The temperature may exceed 60°C in 3-5 minutes, so please take the necessary precautions when handling the GTmini.

### Quick start

- Load with one button-top 18650 or 18350 (short tube required) cell. Take care to observe the correct polarity for the cell.
- Screw the tail-cap back. The GTmini 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 8 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 stop.
- The GTmini 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.) Use a single-click at any time to turn the GTmini **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 cells (or partially loosening the tail-cap) if the GTmini will not be used for several months.
- By default the button back-light is illuminated while the GTmini is **OFF**. This is normal and is done to easily locate the button in a dark environment. Turning the GTmini **ON**, then **OFF**, in rapid succession, disables the back-light until the next use. This is also normal.

### Default UI: Smooth ramping

This feature-rich UI provides for smooth ramping of the light output between 0 and 80%, with an easily-accessible 100% **TURBO** mode.

- Turn the GTmini ON:** single-click the button, GTmini 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 GTmini OFF:** single-click
- MOON mode:** from **OFF**: press the button and release as soon as the GTmini turns on
- Strobes:** double-click for **TURBO**, and then double-click again

(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 GTmini, same to re-enable the GTmini
- 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 GTmini is factory-set to operate using the contemporary **RAMPING** user interface, as described in the previous section. However, the GTmini 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 GTmini 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 GTmini OFF:** single-click button, after resting on a mode more than 1.2 s (mode locked in)
- Strobes:** press&hold

(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 of the cell, for example)
- Electronic lock-out:** from **OFF**: double-click followed by press&hold, same to re-enable the GTmini
- 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 GTmini firmware 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 8 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 GTmini 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 GTmini 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 2: Strobe 1 only 3: All strobes [default]

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 2: Strobe 1 only 3: All strobes [default]

\*\* If [temperature] is selected for auto step-down, the GTmini goes to 100% output. Leave the GT to heat to the desired limit, and then click to set that temperature as the trip point (the GTmini is huge, so this can take 20 minutes or longer, 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 GTmini:

Mode-set no.	Modes [% of light]					
	1	2	3	4	5	6
Sets 1 to 6: 100% = 2.3 A LED drive						
1	100					
2	25	100				
3	11	33	100			
4	12.5	25	50	100	[default]	
5*	1	7	22	52	100	
6*	1	5	15	32	60	100
Sets 7 to 12: 100% = 4.5 A LED drive						
7	100					
8	25	100				
9	11	33	100			
10	12.5	25	50	100		
11*	1	7	22	52	100	
12*	1	5	15	32	60	100

\* Modes in these sets are equally-spaced on a cube-root curve (considered an ideal mode-spacing by many).

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

Pre-programmed strobes:

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

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		
Setting	Function	Clicks
1	Button LED on while GT 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:** Cree XHL High Intensity, neutral white and cold white optional, mounted on copper DTP MCPCB

**Flux:** >1200 lm

**Intensity:** >135,000cd (ANSI throw >750m)

**Firmware:** TomE's open-source NarsilMV1.2

**User interface:** [1] By default the GTmini is set to use the very intuitive Narsil smooth RAMPING UI. Instant access to 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 button-top 18650 or 18350 (short tube required) Li-ion cells. Protected cells are recommended. Cells are not included.

**Driver:** 17W, 4.5 A regulated buck driver with conversion efficiency that exceeds 90%. Parasitic drain while OFF is ~27 µA (~27 µA with button back-light).

**Reflector:** 43 mm ID, aluminum, smooth finish

**Lens:** Glass with anti-reflective coating

**Body:** Aluminum with Type III hard-coat anodizing

**Button:** Tactile with back-lit rubber boot

**Ingress rating:** IP68, underwater 2 meters

**Weight:** 150g without cells

**Dimensions:** 50mm Ø head x 132mm length

## Links



[tiny.cc/o9t8oy](http://tiny.cc/o9t8oy)  
[GT support thread on BLF]



[tiny.cc/epe9oy](http://tiny.cc/epe9oy)  
[lumintop.com]

## Made in China

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