



# gloworm

OPERATING INSTRUCTIONS



EXPERIENCE THE REVOLUTION

## Congratulations! You are now the owner of a Gloworm X2.

Prepare to Experience the Revolution in LED Adventure Lighting!

### Safety Instructions

An alternative light source should be carried at all times.

#### Heat Generation

The aluminium light-head is designed to draw heat away from the LED. The process works effectively when air is flowing over the light. However, the light can become hot if left stationary on its higher settings. It is recommended that the light is set to a lower setting when stationary for more than a few minutes.

**Important!** If the light is being used in a stationary state and it begins to become hot it will automatically reduce current as a measure to reduce the light's temperature and protect the electronic components. Constant operation at high is only possible with continuous air flow.

#### Battery Care

- Never leave a battery unattended whilst charging,
- A battery should never be exposed to direct heat,
- Only use the supplied li-Ion charger when charging the battery,
- Batteries do not need to be discharged before charging, frequent charging will not cause harm to your battery.
- When storing your battery, ensure it is at charged to at least 50% capacity. Store in a cool dry environment inside an airtight container.

# Mounting the X2

## Helmet Mounting

The X2 comes mounted to the helmet mount, this can be attached to almost any helmet using the supplied Velcro (or cable ties). Attach the light by looping the velcro through the vents of the helmet. Tip: Many helmet vents slope toward the front of the helmet. Mounting the helmet toward the front of the helmet helps prevent the light slipping forward during use.

## Bar Mounting

The bar mount is designed to fit flush with the stem. From this position the X2 can be adjusted to any position around the circumference of the bar.

Pre-stretch the o-ring prior to use then loop it over one side of the bar mount. Place the bar mount flush with the stem then stretch the o-ring around the bar and loop it over the opposite side of the mount.

## Headstrap

The light is attached to the headstrap by threading the headstrap elastic through the slits in the helmet mount. The elastic is then secured to the headstrap backplate. Adjust the straps to your preference.

## Battery

The battery can be attached to/placed in any location that suits the user, i.e. Top tube, back pack shoulder strap, in back pack, in riding jersey etc. To ensure there is enough cable to reach your desired battery location use the provided extension lead. A protective adhesive foam strip is supplied.

# Quick Start and Operation

## Overview

The X2 is operated using the remote switch. Operation of the X2 is through different types of button press:

<b>CLICK</b>	quick press, less than 1 second
<b>DOUBLE CLICK</b>	similar to that used with a computer mouse
<b>PRESS</b>	2 to 3 seconds
<b>HOLD</b>	hold button in the down position

The X2 is pre-loaded with two default programmes each of which can be customised to your needs (detailed in the next section). Each programme features 'Normal Operation Modes' (NOM) and one 'Special Mode' (SM).

## Start

Once the battery is connected, the X2 is ready to be used. **CLICK** to start the light in **TRAIL** programme (Default 1). **DOUBLE CLICK** to start in **COMMUTER** programme (Default 2). NOMs (High, Low, etc) are cycled using a **CLICK**. The SM is accessed with a **PRESS** of the switch from any NOM. A **CLICK** of the switch will return the X2 to NOM.

To turn off the X2, **HOLD** the remote switch. The light will cycle through SM, then it will turn off.

# Programme Matrix (Factory Settings)

	Special Modes	Normal Operation Modes		
<b>Trail Programme (Default 1)</b> CLICK to start	<b>Special Mode DIM</b> 150 Lumens 48 hrs runtime	<b>LOW</b> 600 Lumens 9 hrs runtime	<b>MED</b> 1200 Lumens 4 hrs runtime	<b>HIGH</b> 1500 Lumens 2.5 hrs runtime
<b>Commuter Programme (Default 2)</b> DOUBLE CLICK to start	<b>Special Mode FLASH</b> 1000/300 Lumens 8 hrs runtime	<b>LOW</b> 600 Lumens 9 hrs runtime	<b>HIGH</b> 1000 Lumens 5 hrs runtime	

# Light Level/Runtime Matrix (Customised)

10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
48hr	20hr	12hr	9hr	7hr	5.5hr	5hr	4hr	3.25hr	2.5hr
150 lm	300 lm	450 lm	600 lm	750 lm	900 lm	1050 lm	1200 lm	1350 lm	1500 lm

# Special Modes (SM)

<b>DIM</b> (like a flashlight, good for reading, small closeup tasks)	<b>48hrs</b>	<b>FLASH</b> (light flashes high-low-high-low every second)	<b>8hrs</b>	<b>BEACON</b> (1 bright flash, followed by a 3 second pause)	<b>48hrs</b>
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## IMT and Programme Customisation

Intelligent Mode Technology (IMT) allows the X2 to be refined for any adventure. The X2 is loaded with two programmes that can be customised on the fly.

**DEFAULT 1** - Special Mode and three light level modes

**DEFAULT 2** - Special Mode and two light level modes

The user can adjust the brightness of each light level mode in addition to being able to select the type of SM for each programme (DIM, FLASH or BEACON).

### Light Level Brightness Customisation (NOM)

1. Switch the light to the NOM (light level) you wish to adjust. 2. **DOUBLE CLICK**, the light will give 2 quick flashes indicating you can commence customisation. 3. Increase the brightness in 10% increments using a **CLICK** (when 100% brightness is reached the light will give 2 quick flashes), dim the brightness by **HOLDING** the button. 4. Once the desired brightness has been reached, **DOUBLE CLICK** to return to normal operation.

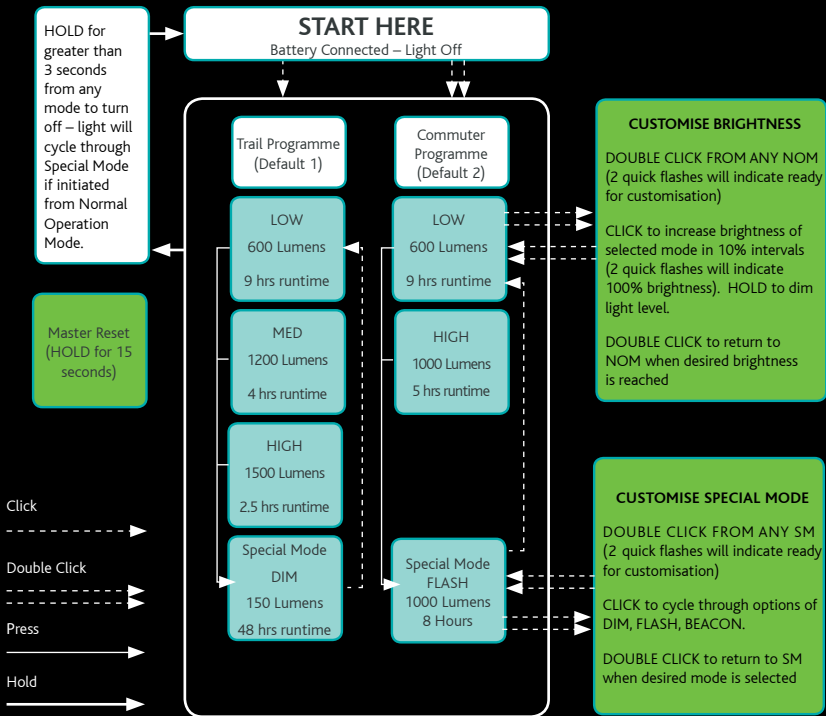
### Special Mode Customisation (SM)

1. When in SM, **DOUBLE CLICK** the button. 2. The light will give 2 quick flashes indicating you can select your preferred SM. 3. Cycle through the three options using a **CLICK**. **DIM** is indicated by a dim light, **FLASH** is indicated by two flashes every 1 sec and **BEACON** is indicated by a quick bright flash at 2 second intervals. 4. Once the desired SM has been selected, **DOUBLE CLICK** to return to normal operation.

### Master Reset

When the light is off, **HOLD** the button for 15 seconds to restore to factory settings. After 15 seconds the light will flash rapidly 10 times and then turn off. This indicates factory settings have been restored.

# Operation Chart



# Battery

## Voltage Indication

The battery's fuel gauge allows the user to monitor the battery capacity at a glance. There are four LED indicators (20%, 40%, 80%, 100%) located on the battery that will glow independently as the voltage decreases. Additionally, when voltage reaches a critical level the X2 will alert the user by emitting a flash sequence.

## Charger

The X2 is supplied with a Li-Ion Smart Charger. The charger has an LED indicator to let the user know when the battery has completed the charging process. Simply plug the charger into the wall socket (power off) and then connect the battery to the charger – the LED indicator will glow GREEN. Turn the power on at the wall socket and the indicator will glow RED and the charging process will commence. When charging is complete the indicator will glow GREEN.

Important! Always disconnect the battery from the light when not in use! The small amount of power used by the electronics will discharge the battery, additionally the lamp may be switched on accidentally and consequently cause an uncontrolled heat build-up. If you intend not to use the lamp for a longer period of time, fully charge the battery and store in a cool and dry place.



## Battery Care

The following steps should be taken to conserve the life of your battery.

- Always store your battery in a cool dry location
- Prior to storage, ensure your battery is charged to 50-70% (not full)
- Your battery will not develop a memory, you can charge and discharge as you like
- Keep your battery away from direct heat sources
- Only charge using a smart charger, an addition to the batteries protective circuit, this will prevent over charging
- Optimal battery use is between 15% and 85%. Our batteries are designed not to exceed these limits. Feel free to charge and discharge as needed
- A battery should be able to complete 500 cycles prior to losing capacity.
- Part charges and discharges are not equal to a full cycle. Several part cycles are better for the battery than 1 'full' cycle.

For more information on your battery go to [www.batteryuniversity.com](http://www.batteryuniversity.com)

POOR BATTERY CARE WILL VOID WARRANTY

## Changing the Optics

The X2 is supplied with 2 installed optic lenses. Additional optics can be purchased from your supplier. To change optics follow to the process below:

1. Remove the X2 from the battery.
2. Remove the two front screws using the supplied 2mm hex tool.
3. Now remove the front plate, the protective lens and the o-ring.
4. Carefully remove the optic; you will now see the LED – TAKE CARE: Do not touch the LED or the electronic board/connections, doing so will leave body oils on the surfaces and potentially damage the X1.
5. Place the new optic/s into the X2 so the top of the optic is flush with the front of the housing.
6. Replace the o-ring, the protective lens and the front plate.
7. Tighten the front screws until the front plate is flush with the housing. Do not over tighten.

**ANY OTHER DISASSEMBLY OR MODIFICATION OF THE LIGHTHEAD/BATTERY/  
CHARGER WILL RESULT IN VOIDING THE MANUFACTURER'S WARRANTY.**

## Video Tutorials

Gloworm tutorials can be found at [www.youtube.com/glowormproducts](http://www.youtube.com/glowormproducts)

## Tell us what you think!

We would really like to hear what you think about your Gloworm X2. You can provide feedback by posting a review on [www.mtbr.com](http://www.mtbr.com) or by sending an email to [reviews@glowormlites.co.nz](mailto:reviews@glowormlites.co.nz).



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