



## QUAD™ LED HEADLAMP

Operating and Maintenance Instructions

### ENGLISH

#### Battery Installation

See Battery Installation Diagram

- 3 AAA**
- Alkaline (LR03)
  - Lithium (L92)
  - Rechargeable NiCad or NiMH

Princeton Tec cares about the environment and recommends recycling batteries.

Observe proper battery polarity when installing the batteries. Improper installation of the batteries will damage the light and void the warranty.

#### WARNING

- Never mix fresh and used batteries.
- Never mix different battery brands or chemistry types.
- Always remove drained batteries immediately.
- Remove batteries during long periods of storage.

NOTE: Lithium batteries offer extended constant brightness time, extreme cold weather performance, and lighter weight. Rechargeable NiCad or NiMH batteries may result in reduced brightness due to lower nominal voltage.

The Quad battery compartment has a waterproof seal. It is important to keep this seal free from dirt and away from harsh chemicals in order to preserve waterproof integrity. Inspect the seal every time batteries are changed. If dirt is present, wipe gently. With a damp cotton swab and mild soap until dirt is removed.

NOTE: Some battery types can emit hydrogen gas, which can create an explosion potential in sealed devices if it is not vented or removed. The Quad is equipped with a platinum catalyst to remove this gas. Upon severe impact, the catalyst could fracture. If you notice a rattling sound in the headlamp or gray particles in the battery compartment, do not use the headlamp. See the warranty and return policy for more information.

#### Switch Operation – See Switch Operation diagram

Modes (High, medium, low and flash) are selected by pressing and releasing the button within 1.5 seconds of the previous button press.

There are two ways to turn the Quad off. You can cycle through the modes until you reach off or if more than two seconds has passed since the previous button press, holding the button for 1.5 seconds will turn the light off.

#### Circuitry and Power Consumption / Regulated Leds

See Regulated LED diagram

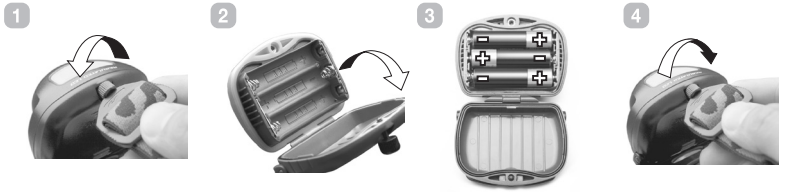
The Quad uses a sophisticated current-regulating circuit that maintains initial brightness as long as the batteries have sufficient voltage.

#### Troubleshooting

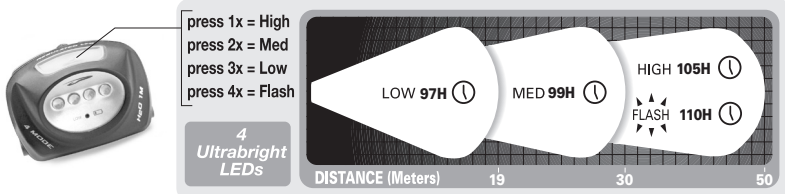
If the Quad fails to light:

- Check the batteries for proper installation.
- Replace batteries if proper installation is confirmed.
- Check circuit board for water (the seal may have been compromised by improper rear cover installation). The light will resume normal operation once the water is shaken or blown out and the light is left open until completely dry. If the light has been contaminated with

#### Battery Installation

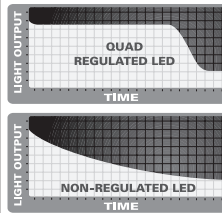


#### Operation



\* Princeton Tec calculates total burn time as the time it takes for the light source to produce a minimum of 0.25 lux at 2 meters. 0.25 lux is about the equivalent of a full moon on a clear night. Regulated burn time is less than overall burn time.

#### Regulated LED



Battery Type	Power Level				Output Distance (m)	Overall Burn Time (Hours)	Regulated / Constant Burn Time (Hours)
	Low	Med	High	Flash			
Alkaline	●				18	97	31
		●			29	99	10
			●		49	105	1
				●	49	110	5
Lithium	●				18	45	38
		●			29	24	16
			●		49	10	4
				●	49	60	48

\* The times listed in this chart assume you start with fresh batteries and use only one mode.

salt water, flush the unit with fresh water and dry as described above.

#### Battery Power Meter

The purpose of the red low battery power meter LED is to indicate when the batteries are near the end of their functional life.

If the headlamp is turned off and the battery voltage is low, the red low battery power meter LED will become active and start blinking.

If the headlamp is turned on and the battery voltage is low, the light beam will blink several times in rapid succession. This signal indicates the batteries are running low power.

NOTE: The red low battery power meter LED only functions when the headlamp is turned off and will not blink while the headlamp is turned on.

