



## Princeton Tec APEX 4AA LED HEADLAMP Instructions

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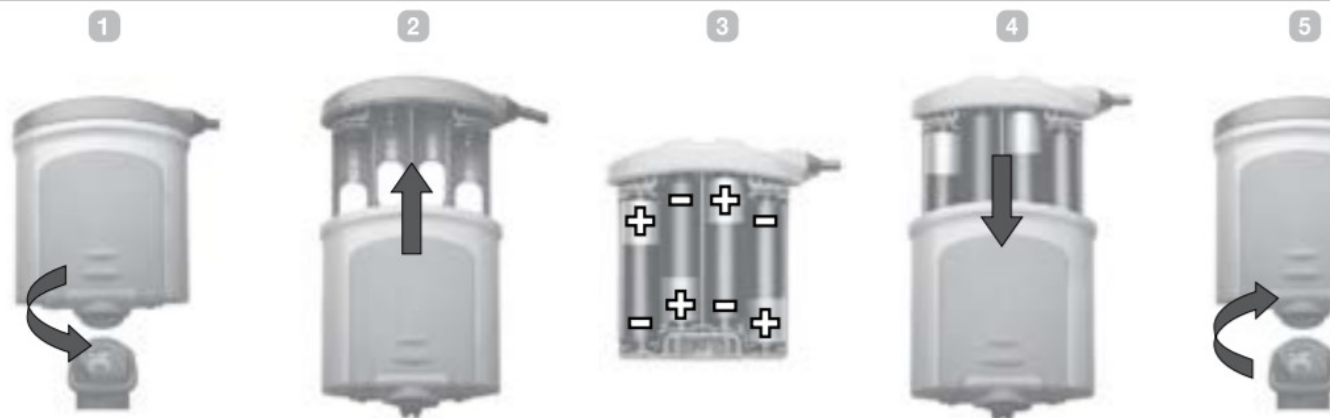


**APEX  
4 AA LED HEADLAMP**

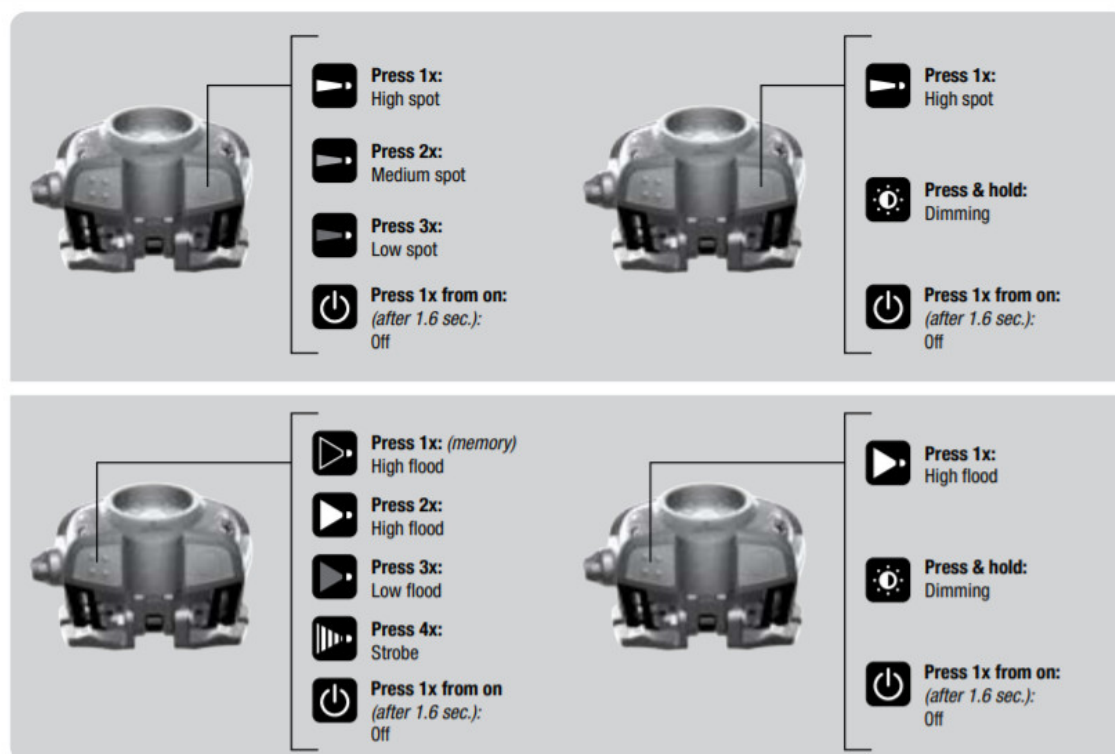


**Operating and Maintenance Instructions**

**Figure 1 – Battery Installation**



**Figure 2 - Operation**



**Figure 3 – Performance**

Modes	Lumens	Runtime	Beam Pattern	Regulated Res	
SPOT HIGH	650	1.5h		1.4h	0
SPOT MED.	350	12h		2h	-
SPOT LOW	70	12h		9h	8
FLOOD HIGH	70	10h		8h	9
FLOOD STROBE	70	10h		8h	1
FLOOD LOW	25	6h		5h	1
DISTANCE (m)			0 22 43 67 92 120		

**(ANSI FL-1 Standard)**

Runtime is defined as the duration of time from the initial light output value—defined as 30 seconds after the point the device is first

turned on—using fresh batteries, until the light output reaches 10% of the initial value.

Reserve time is the duration of time from 10% of the initial light output value down to 0.25 lux

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## Battery Charging – See Figure 1

### 4 AA

- Lithium (L91)
- Alkaline (LR6)
- Rechargeable Nicad or NiMH

Release battery tray using the headband tool or coin. Slide the battery tray out of the battery pack. Observe proper battery polarity when installing the batteries.

### 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.

Princeton Tec cares about the environment and recommends recycling batteries. For more information about battery recycling, please go to: <https://batterysolutions.com>

Improper installation of batteries will damage the light and void the warranty.

Lithium batteries hold a charge better in extreme cold weather and are lighter in weight than Alkaline or rechargeable batteries. Rechargeable Nicad or NiMH batteries may result in reduced brightness in some modes due to lower voltage.

The battery pack has a waterproof seal. It is important to keep this seal free from dirt and harsh chemicals in order to preserve waterproof integrity. Inspect the seal every time batteries are charged. If dirt is present, wipe gently with a damp cotton swab and mild soap until the 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 Apex battery pack is equipped with a platinum catalyst that will remove this gas. When replacing the batteries, visually inspect for broken or missing catalyst. If the catalyst appears to be damaged, (you may notice gray particles in the battery compartment), do not use a headlamp. See the warranty and return policy for more information.

## Switch Operation – See Figure 2

The left button is marked with a large circle representing the single Maxbright LED. The Left button controls the spot beam.

The right button is marked with 4 small bumps to represent the 4 Ultrabright LEDs. The right button controls the flood beam and strobe.

- Single press the left button to activate the high spot
- Double press the left button to activate the medium spot
- Triple press the left button to activate the low spot
- Single press the left button to activate (after 1.6 seconds): off
- Single press the right button to activate flood mode (memory)
- Double press the right button to activate high flood
- Triple press the right button to activate low flood
- Quadruple Press the right button to activate strobe
- Single press the right button (after 1.6 seconds): off
- To activate dimming, When light is on, in spot or flood modes, press and hold to activate dimming. The LEDs will blink once to indicate lowest or highest settings.
- Memory In flood mode; After the flood LEDs brightness levels are set (activated by the right-hand button), and then turned off, the next time the flood is turned back on, it will recall the previous brightness setting.

## Battery Power Meter

Multicolored LED

Color	Battery Capacity*
Green	> 40 % of total
Yellow	≤ 40 % of total
Red	~ 20 minutes of runtime remaining

\*Capacity percentage is the minimum expected remaining power needed to operate the Maxbright LED in high mode at 0° C. The purpose of the battery power meter is to give you a general idea of the remaining runtime. Switching modes can create an abrupt change in battery voltage which may cause the indicator to change color. Once the color turns yellow, the runtime remaining depends on the typical discharge curve for the type of batteries you are using. After the light has been turned off, the battery voltage might temporarily increase, causing the battery power meter to temporarily display an artificially higher setting.

When the light is off, the battery power meter will continue to blink for 24 hours to indicate the current status of the batteries. After 24 hours with no activity, the battery power meter will turn off to conserve battery power. When the light is turned on again, it will resume functioning.

## Low Battery Signaling During Use

In addition to displaying red on the battery power meter, when there are approximately 20 minutes of run time remaining, the Apex will blink three times in rapid succession.

You can then decide to stay at your current light level or switch to a lower light level, which may cause the battery voltage to rise enough that the battery power meter transitions back to yellow. When the battery power meter returns to red, the light will blink again to alert you.

## Circuitry

The Apex uses a sophisticated circuit to control the light. Under normal circumstances, the metal heatsink will sufficiently cool the electronics and protect the LEDs from damage. Should the internal temperature of the light get too hot, a backup temperature protection circuit will activate and gradually decrease the light output until the temperature is within the specified limits.

The Apex will automatically turn off after 12 hours of inactivity. Any button press during the 12 hour period will reset the auto-off timer.

Never attempt to disassemble the lamp housing. It is sealed to protect the components from water and there are no user-serviceable parts inside. Disassembly will void your warranty!

To keep the heatsink at peak performance, keep the heatsink and plastic cover free of obstructions (mud and dirt). Do not remove the heatsink cover—it is there to protect you from the high temperature of the heatsink during operation. If the heatsink cover is damaged or broken under normal use, do not use the headlamp. See the warranty and return policy for more information.

## Power Consumption

The Apex uses a current-controlled circuit that maintains constant light output as long as the batteries have sufficient voltage. Constant run time is dependant on battery type, LEDs, and light level selected.

## Troubleshooting

If the Apex fails to light:

- Check the batteries for proper installation.
- Inspect the cable for damage.

If the Apex does not seem to change brightness levels:

- The battery voltage may be too low to switch to a brighter setting.  
This condition is normal for a regulated LED/current-controlled circuit. You are most likely to experience this issue in the Maxbright LED mode. Install new batteries and recheck the modes.
- In extreme heat conditions, the internal temperature of the light may be too hot and the LED temperature protection circuit may have activated. Allow the light to cool and try again.

## USA Lifetime – International 10 Year Warranty

**WARRANTY** – Princeton Tec warrants this product to be free from defects in workmanship and materials under normal use for as long as you own this product. This warranty covers all of the component parts of the product except batteries. This warranty does not cover deterioration due to normal wear or damage due to misuse, alteration, negligence, accidents, or unauthorized repair. Princeton Tec will repair or replace parts that are defective in workmanship or materials.

Your authorized Princeton Tec Dealer and Princeton Tec are the only facilities authorized to repair the product. After (3) unsuccessful

attempts (within the warranty period) to repair the product, you have the right to elect replacement of the product or a refund of the purchase price less allowance for use of the product. NO INCIDENTAL OR CONSEQUENTIAL DAMAGES ARE INCLUDED IN THIS WARRANTY. (Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.) This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Princeton Tec reserves the right to change product specifications without notice.

### **FOR CALIFORNIA RESIDENTS:**

**WARNING:** This product contains Bisphenol A (BPA) a chemical known to the State of California to cause birth

defects or other  
reproductive harm.

## Return Policy

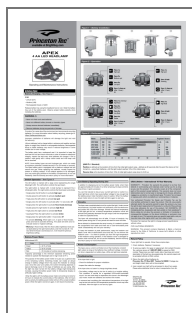
If your light fails to operate, follow these simple steps:

1. Check batteries. Replace if necessary.
2. To send your light in for repair or replacement, first, contact Princeton Tec customer service at **1-800-257-9080** to request an RMA number. Please have your light model, date of purchase, and a brief description of the fault you are experiencing. No warranty repairs will be accepted without an RMA number.
3. Return the light without batteries to:  
**Princeton Tec, PO Box 8057 Trenton NJ 08650.** Postage due and freight collect items will not be accepted.
4. Upon receipt, your light will be processed in about two weeks.  
Please allow additional time for return transportation from NJ.



Princeton Tec  
PO Box 8057, Trenton, NJ 08650  
Phone: 609-298-9331  
Fax: 609-298-9601  
[princetontec.com](http://princetontec.com)  
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## Documents / Resources



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