



# ALLOY-X<sup>®</sup> DUAL FUEL LED PEN LIGHT



## Operating and Maintenance Instructions

Figure 1 – Battery Replacement



Figure 2 – Switch Operation

**Standard operation:**

- Press 1x:**  
On / Medium
- From Medium**  
**Quickly press 2x (off and on):**  
Low
- From Low**  
**Quickly press 2x (off and on):**  
High
- Press 1x from On:**  
Off

**Alternate operation**

- From Medium**  
**Half press 1x (no click):**  
Low
- From Low**  
**Half press 2x (no click):**  
High
- From Medium**  
**Half press 3x (no click):**  
High
- From Off:**  
Cycle-memory continues for  
one minute, then resets

Figure 3 – Performance

Note: performance is based on Princeton Tec rechargeable battery. AAA output will be somewhat lower.

Modes	Lumens	Runtime	Beam Pattern
SPOT HIGH	400	0.5h	
SPOT MED	250	1.25h	
SPOT LOW	5	28h	
DISTANCE (m)			0                      6                      50                      72

### (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.

Figure 2 – Charging



### General Maintenance

- Do not disassemble the sealed head as doing so may cause damage to the flashlight and void the warranty.
- Replace the O-rings if they become stretched or damaged. Regularly lubricate the O-rings.
- Clean the contacts of your light periodically

### Troubleshooting

If the Alloy-X fails to light:

- Check the battery to see if it needs to be recharged
- Check the batteries for proper installation.
- Replace batteries if proper installation is confirmed.
- Check the PCB board contacts or battery contact for dirt
- Clean the contact points with an alcohol soaked cotton swab.

### ENGLISH:

#### LED Charging Indicators

The LED on the positive end of the battery housing lights up when the cable is correctly installed.

- **Charging** - Red LED is illuminated.
- **Fully Charged** - Green LED is illuminated.

Charge time is approximately 4.5 hours.

**IMPORTANT:** Maximum charging temperature range is 20°F to 115°F with optimal temperature range between 50°F and 86°F. A safety circuit prevents charging outside the maximum range and the red charge LED will pulse rapidly. When temperature is within an acceptable range charging will resume.

#### Battery Installation

– See Battery Installation Diagram

Alloy-X uses one 10900 Lithium Rechargeable Battery, as supplied by Princeton Tec. It is also compatible with 2 AAA Alkaline batteries.

When not using Alloy-X, separate the head and tail by turning counterclockwise approximately one turn. This will prevent accidental activation. Remove batteries when storing Alloy-X.

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

#### Switch Operation

– See Figure 2

#### ON/OFF

With the light off, a full press of the tail switch will produce an audible “click” and the light will turn on. The default is **MEDIUM** output. Another full press will turn the light off.

#### Brightness Adjustment

From **ON**, a half press of the tail switch will cycle through the three output modes. Default is to turn on in **MEDIUM**. The next half press will produce **LOW** which is then followed by **HIGH** and then a return to **MEDIUM**. The cycle will repeat.

From **OFF**, a full press will turn the light on the next mode in the cycle. For example, if the light is on in **MEDIUM** and then turned off, the next full press from **OFF** will turn the light on in **LOW**. If the light is turned off, the next click will result in **HIGH**. The cycle will repeat.

Note: If the light is left off more than one minute it will reset to the default which is turning on in **MEDIUM**.



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