

NITECORE®

The All-Round Flashlight Expert

HC90 User Manual

Features

- Purpose-designed for hiking, climbing, camping and general outdoor recreation
- True variable output with a unique 'infinitely variable' sliding switch
- USB rechargeable / powered by 1 x 18650 lithium-ion battery
- Aluminum "unibody" construction is highly rugged and provides excellent cooling performance.
- Utilizes a premium CREE XM-L2(T6) LED for up to 900 lumens of output
- High-efficiency circuit provides up to 200 hours of runtime on low
- Third generation sliding control switch (patented) permits rapid and accurate mode switching / brightness adjustment with the use of one hand.
- Intelligent li-ion battery charging circuit (integrated micro-USB charging port)
- A custom catoptrics-based system produces an extremely wide 100° beam angle
- Unique light housing can be rotated wide range preventing illumination dead zones.
- Equipped with unique secondary RGB LEDs (red, green and blue)
- Integrated temperature sensor and intelligent temperature control ensure stable and safe operation.
- High-efficiency regulation circuit provides unwavering output as battery life diminishes
- Toughened ultra-clear mineral glass with anti-reflective coating
- Constructed from aero-grade aluminum alloy
- Rugged HAIII military grade hard-anodized finish
- Comfortable chafe-free and breathable nylon headband
- Waterproof in accordance with IPX8 (two meters submersible)
- Impact resistant to 1 meter
- Tail stand capability

Dimensions

Length: 90mm (3.39")
 Head Size: 70mm x 22mm (1.26")
 Weight: 135g (4.59oz)(without battery)

Accessories

USB cable, spare port plug and O-ring, head band, holder

Battery Options

	SIZE	Nominal voltage	Compatible
Primary Lithium battery	CR123	3V	Y (Recommended)
18650 Rechargeable Li-ion battery	18650	3.7V	Y (Recommended)
Rechargeable Li-ion battery	RCR123	3.7V	Y

Output & Runtime

FL1 STANDARD	TURBO	HIGH	LOWER
	900 LUMENS	530* LUMENS	0.2* LUMENS
	45min	2h	200h
	110m (Beam Distance)		
	3000cd (Peak Beam Intensity)		
	1m (Impact Resistant)		
	IPX8, 2m (Waterproof AND Submersible)		

NOTICE
 The above data has been measured in accordance with the international flashlight testing standards ANSI/NEMA FL1 using one x 3.7V 2600mAh Nitecore 18650 battery under laboratory conditions. The data may vary slightly during real-world use due to battery type, individual usage habits and environmental factors.

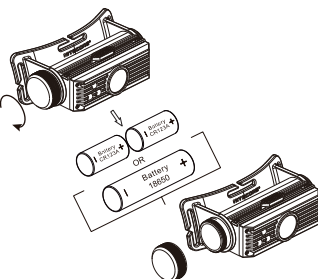
*Infinite brightness adjustment varies from 0.2 to 530 lumens and is manually adjusted via sliding a switch. Subsequently, runtime will vary anywhere from 2 hours to 200 hours depending on chosen level of output.

Battery Installation

Insert 1 x protected 18650 battery (recommended) or 2 x CR123A / 2 x RCR123 batteries with the positive (+) and negative (-) ends corresponding with the diagram below.

WARNING

Ensure when turning the HC90 on, the beam is directed away from the eyes of people or animals.



General Operation

The HC90 utilizes a sliding switch to access the light's numerous functions and brightness levels. With HC90 head facing forward, the order of modes (sliding the switch from right to left) are as follows: blue mode -> green mode -> red mode -> standby mode / off -> infinite brightness mode (ultra-low to high) -> turbo mode. These modes may be cycled through in reverse by sliding the switch from left to right. When using the HC90 in infinite brightness mode, runtime will increase when lower levels of output are selected. On its lowest setting, the HC90 will run continuously for up to 200 hours and on its highest setting continuously for up to 2 hours.

NOTE: A fully charged 18650 lithium-ion battery has a standby time of approximately 6000 hours (off position on the sliding switch). To prevent battery drain entirely (for example during long periods of inactivity) Nitecore suggests unscrewing the battery cap approximately half a turn. This will physically cut power to the headlamp and also help prevent accidental activation.

Charging Function

HC90 is capable of charging a protected 18650 li-ion battery using the included USB cable. Simply install a protected 18650 li-ion cell, plug one end of the USB cable into the HC90's mini USB port and the other end into a universal USB port or adaptor as shown in the adjacent image.

1. Fully charging a depleted 18650 li-ion battery takes approximately 6 hours.
2. Under normal charging conditions, the red indicator light near the charging port will blink every 1.5 seconds.
3. If a problem is detected during the charging process, the HC90 will stop charging and the red indicator will blink rapidly.
4. When charging is complete, the red indicator will illuminate steadily.



Warning: The HC90's charging functionality is designed for 18650 rechargeable li-ion only. Do not attempt to charge non-rechargeable batteries such as CR123 or other types of rechargeable cells such as RCR123 batteries.

Thermal protection

As the HC90 is very compact, extended operation in turbo mode will cause the body temperature to continually rise, thus potentially making it too hot for comfortable use. As a result, Nitecore does not recommend using the HC90 in turbo mode for extended periods. To prevent overheating, the HC90 has a built-in thermal protection sensor which prevents overheating by automatically reducing output when a temperature of 55°C is reached. This function ensures user safety and protects the headlamp from failure / damage.

Precaution: When the headlamp is hot, do not attempt to cool it by submerging in liquid as differences in internal and external air pressure may cause water ingress and irreparable damage.

Changing Batteries

Batteries should be replaced or recharged when output appears to be dim or the flashlight becomes unresponsive.

Maintenance

Every 6 months, threads should be wiped with a clean cloth followed by a thin coating of silicon-based lubricant.

Warranty Service

All NITECORE® products are warranted for quality. DOA / defective products can be exchanged for replacement through a local distributor/dealer within the 14 days of purchase. After 14 days, all defective / malfunctioning NITECORE® products will be repaired free of charge for a period of 18 months from the date of purchase. After 18 months, a limited warranty applies, covering the cost of labor and maintenance, but not the cost of accessories or replacement parts. The warranty is nullified in all of the following situations:

1. The product(s) is/are broken down, reconstructed and/or modified by unauthorized parties.
2. The product(s) is/are damaged through improper use.
3. The product(s) is/are damaged by leakage of batteries.

For the latest information on NITECORE® products and services, please contact your national NITECORE® distributor or send an email to service@nitecore.com

The Nitecore official website shall prevail in case of any product data changes.

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Thanks for purchasing NITECORE!