



24 WATT LED LIGHTING SYSTEM USER MANUAL





This is the user manual for the Dive Rite HP50 Lighting System.

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Product Description

Brighter. Smarter. Modular. The HP50 Lighting System is completely adaptable to any dive mission. By removing the handheld battery pack and attaching the corded canister battery conversion, the HP50 easily transforms from a compact, lightweight travel companion to a rugged workhorse capable of boundary pushing, multi-hour technical dives.

A next generation, multi-die Cree XLamp XHP50 LED provides unparalleled output, efficiency, and reliability.

The HP50 is proudly designed, manufactured, and assembled in the USA.



Tech Specs

- Modular battery design can be easily converted from a handheld light to a corded canister style light
- Cree XLamp XHP50.2 LED driven @ 24W produces over 3500 lumens @ 6500 Kelvin
- Beam Angle: 10-degree spot
- Magnetic rotary switch activated
- Integrated microprocessor control unit monitors temperature and battery voltage
- Blinks 3 times to indicate low battery and automatically steps output down to increase usable burn time
- Four output modes: high power, medium power, low power, and strobe
- Durable CNC machined Delrin and hard-coat anodized aluminum body construction
- Handheld version uses 4 independent 18650 user replaceable batteries
- Canister battery options include a 100 watt-hour Slimline Li-Ion and a 150 watt-hour Expedition Li-Ion. Both battery canister options are UN 38.3 test compliant and safe for air transport. The 100 watt-hour canister consists of two individual 50 watt-hour packs and the 150 watt-hour canister consists of three individual 50 watt-hour packs. The individual battery packs are internal and are not connected together until the canister lid is installed in the activated position. When the lid is installed in the travel position (rotated 180 degrees) the packs remain disconnected from each other.
- Improved heat sinking and cross drilled light head allows water flow through and provides a direct thermal path from the back side of the LED chip to the water for maximum output and efficiency



- Includes Soft Handmount with Locking QRM mounting system
- Handheld version includes padded travel case and 4 cell charger
- Canister versions include Quick Belt Mount
- Burn Times:
 - Handheld
 - 1.5 hours on High Power
 - 3 hours on Medium Power
 - 30 hours on Low Power
 - 15 hours on Strobe Mode
 - Slimline Canister
 - 3 hours on High Power
 - 6 hours on Medium Power
 - 60 hours on Low Power
 - 30 hours on Strobe Mode
 - Expedition Canister
 - 4.5 hours on High Power
 - 9 hours on Medium Power
 - 90 hours on Low Power
 - 45 hours on Strobe Mode
- 4+ hour burn time after light output step down from full power
- Charging time: up to 8 hours from complete discharge
- Strobe Cycle Time: 100ms on then 900ms off



- Size:
 - Handheld Light: 6.4 in (16.3 cm) length, 2.15 in (5.46 cm) diameter
 - Light Head: 3.5 in (8.9 cm) length, 2.0 in (5.0 cm) diameter
 - Slimline Canister: 9 in (22.88 cm) height, 2.6 in (6.6 cm) diameter
 - Expedition Canister: 11 in (27.94 cm) height, 2.6 in (6.6 cm)
- Weight:
 - Handheld: 1.4 lbs (0.64 kg)
 - Slimline Canister: 3.6 lbs (1.63 kg)
 - Expedition Canister: 4.3 lbs (1.95 kg)
- Buoyancy: 1.25 lbs (0.56 kg) in freshwater
- Depth Rating: 500 feet (152 m)
- Li-Ion Smart Charger included
- Designed, manufactured, and assembled in the USA



Important Warnings

- Read this manual carefully before diving with the HP50 Lighting System. You should fully understand how this dive light works and that you are proficient in its use prior to diving.
- The HP50 Lighting System is an electronic device and electronic devices can fail. NEVER dive this light without at least two back up lights.
- The canister batteries are O-ring sealed in the canister with sealed connectors. Do not try to remove the batteries. The light is stored with the batteries in the canister.
- Do not keep the canister lid plugged into the battery in the activated position when not in use. The lid can be turned 180 degrees and reinstalled for transport and storage. The battery is not connected to the light in this position to prevent accidental activation. With the lid installed in this position the internal battery packs also remain disconnected from each other.
- Before using your HP50 Lighting System it is extremely important that you read and understand each warning, as well as warnings and cautions that appear throughout the manual. Failure to do so could result in damage to or loss of equipment, serious personal injury, or death.
- Before diving, you should have the proper training from a qualified instructor and obtain certification from a recognized training agency.
- DO NOT USE THE HP50 LIGHT OUT OF WATER. Brief operation to check functionality is OK, however the light head can get extremely hot and cause burns if used out of the water for extended periods.



Charging & Maintaining the Battery

The best way to keep your batteries in good shape so that they perform well on every dive is to follow the battery maintenance procedures below. Before using your light, make sure that the batteries are fully charged.

Charging the Canister Battery

1. Open the latches on the sides of the canister and remove the canister lid.
2. Plug the three (3) red connectors on the Smart Charger into the three (3) red (+) battery receptacles on the battery pack. It does not matter which plug connects to which socket.
3. Plug the black connector on the Smart Charger into the center black (-) battery receptacle on the battery back.
4. Plug the Smart Charger into a wall outlet.
5. Charging will not begin if the Smart Charger detects a missing battery or reversed connections.
6. Allow the battery to fully charge.

It can take up to eight hours for the battery to charge. The red LED on the charger indicates that the battery is charging. A green LED indicates when the battery is fully charged.

7. Disconnect the battery once it is fully charged and unplug the Smart Charger from the wall outlet.



Charging the Handheld Batteries

1. Unscrew and remove the battery tube from the light head.
2. Remove the battery carrier from the battery tube.
3. Remove the individual 18650 batteries from the battery carrier.
4. Insert the batteries into the charger. (See included charger manual for specific details relating to the charger.)
5. Plug the charger into a wall outlet.
6. Allow the batteries to fully charge.

It can take up to 12 hours for the batteries to charge from a full discharge. The LEDs on the charger will blink to indicate that the battery is charging. The battery is fully charged when all of the LEDs are lit solidly.

Maintaining the Batteries

- Store the batteries at room temperature and away from moisture.
- Ideally, store batteries in a 30-50% charge condition to maximize life.
- The canister battery is O-ring sealed in the canister to prevent any moisture from contacting the cells and should not be removed. The battery does not have to be removed when storing the light.
- Before every use, charge the battery completely.
- Do not plug the light head into the battery when not in use. The canister lid can be turned 180 degrees and reinstalled for transport and storage. The battery is not connected to the light in this position to prevent accidental activation.



Installing the Batteries



The HP50 Lighting System can be powered by either four 18650 batteries in the handheld battery tube, or using the canister battery adapter.

Installing the Handheld Batteries

1. Install the four individual 18650 batteries into the battery carrier lining up the plus (+) and minus(-) indications on the batteries and the carrier.
2. Slide the battery carrier into the battery body tube with the contact rings facing out.





3. Inspect the two O-rings on the light head. Make sure they are clean and undamaged.
4. Screw the battery body tube onto the light head.

Installing the Canister Battery

1. Inspect the two O-rings on the light head. Make sure they are clean and undamaged.
2. Screw the canister adapter onto the light head.



3. Check that the red O-ring is installed on the canister lid and that the O-ring is clean and not damaged.

There is no need to lubricate this O-ring. Lubrication can attract dirt which prevents proper sealing.

4. Install the battery lid onto the battery canister so that the four banana plug pins align with the black and red plug sockets on the battery.



Close both latches on the side of the battery canister simultaneously to evenly seal the O-ring and lock the lid in place. Pull on each latch to make sure it is locked.

Mounting the Canister

With the on/off activation of the light being on the light head, you can mount the canister to any location you desire on your diving system configuration. You don't need to be able to reach a switch on the canister.

The HP50 canister comes with the Quick Belt Mount for mounting it to the waist belt of your harness or backplate.

Mounting the Canister

1. Remove the Quick Mount elastic band from the canister by pulling the band over the bottom of the canister.
2. Slip the elastic band around your waist belt or other strap on your rig.
3. Stretch the elastic band back over the bottom of the canister.

The light is now securely placed on your waist belt or other location.



Adjusting the Hand Mount

The hand mount can be mounted on your left or right hand. It attaches to the hand using the adjustable elastic strap. The open end of the hand mount is for the thumb and helps to keep the light secure and in place on your hand while diving.

Adjusting the Hand Mount

1. Slide your hand into the hand mount placing your thumb through the open end on the side of the hand mount.



2. Position the hand mount so that it is secure and comfortable on your hand.



3. Pull the end of the elastic strap until the hand mount is snug on your hand.
4. Tuck the excess elastic strap into the retainers.

Hand Mount Attachment

The HP50 light head can be attached to the hand mount with it on or off of your hand. The light mount is spring-loaded to hold the light in place, and makes it easy to attach and remove the light.

Right Hand Attachment

1. Line up the clip on the base of the light head with the receiver on the hand mount.
2. Slip the front of the striker plate on the light head under the front bar of the receiver on the hand mount.



3. Push the light head forward and then push down until it snaps into place in the receiver.



Left Hand Attachment

1. Unscrew the two mounting screws to remove the receiver from the hand mount.
2. Turn the receiver 180 degrees and reattach it to the hand mount.
3. Follow the instructions above for attaching the HP50 to the hand mount.

Light Operation

The HP50 has a rotary magnetic on/off switch that can easily be operated underwater even with thick gloves.

Turning the Light On or Off



1. Rotate the magnetic switch to the right to turn the light on.
2. Rotate the magnetic switch to the left to turn the light off.

Switching Between Modes

1. With the light on, turn the light off and back on within three seconds to switch to the next mode.
2. Repeat step 1 until the desired mode is reached. The mode pattern is: High—Medium—Low—Strobe and then back to High.
3. Rotate the magnetic switch off to turn the light off.
4. If the light is turned off for more than three seconds it will start back in High mode when turned on again.

Care, Maintenance, and Storage

With proper care and service, your HP50 Lighting System can provide you with years of safe, enjoyable use. Without proper care, your HP50 can become damaged and be either unserviceable or dangerous to use.

- Prior to taking the light underwater, ensure that all O-rings and latches are secure. Thoroughly inspecting your light prior to the dive minimizes the risk of flooding the light. Most floods are caused by missing or damaged O-rings or unlocked latches. The cord should also be inspected for any cuts or damage. Cuts in the cord can allow water to flood the light.
- Inspect the light head and canister for any water leakage or other damage.



- Always rinse the light and hand mount thoroughly in fresh water after use in saltwater.
- The canister lid can be removed, rotated 180 degrees and reinstalled with the power plugs oriented into the blank holes in the battery lid for storage and transportation. This prevents accidental activation of the light. Always switch the lid to the travel position after every dive to prevent accidental turn on. The light head will get extremely hot if turned on out of the water and can cause damage to other equipment and injury to the user.
- Store the light in a cool and dry environment.
- Always charge the batteries following the instructions provided.
- The two head O-rings should be kept clean and lubricated with a light coating of silicone grease and replaced annually. See your Authorized Dive Rite dealer for replacement O-rings. (Dive Rite P/N RP9992-RED)
- The battery canister lid O-ring should NOT be greased. It should be kept clean and wiped down between dives. This O-ring should also be replaced annually. (Dive Rite P/N LT6015-RED)

Dealing With a Flooded Light

If your light floods, there are a few things you need to do:

- Do not continue to use the light.
- Turn the light off and disconnect the light head from the battery pack as soon as possible. If there is any water in the battery canister, drain the water and allow it to dry. **DO NOT REINSTALL THE CANISTER LID.** Storing a damaged or flooded battery inside of a sealed canister can lead to an explosion.



- DO NOT TAKE THE LIGHT APART.
- Arrange with your dealer to return the light to Dive Rite for repair. Flooding damage cannot be fixed or corrected in the field. Attempting to repair the light in the field voids your warranty.

Warranty

Dive Rite offers the original purchaser a one-year warranty against manufacturer defects on all of our products. To take advantage of this warranty the original purchaser must retain their original purchase receipt from an authorized dealer. Unauthorized modifications or repairs will VOID the manufacturer's warranty. Negligence, accidental damage, commercial/rental use, or abuse are not covered under warranty.

Lights carry the Dive Rite's general one-year warranty. Floods, broken bulbs, broken lenses, or punctured cords are not covered under warranty unless they are the result of a direct manufacturer defect.

Battery packs and individual battery cells are covered by a 90-day warranty from time of purchase.

MAKING A WARRANTY CLAIM

Warranty claims must be made directly with Dive Rite headquarters in Lake City, FL. It is the responsibility of the original purchaser to send in the suspected warranty item along with a completed Return Authorization Form and the original purchase receipt. Once the product is received Dive Rite will evaluate it to determine if a warranty claim is valid.