



Halogen
NiMH

Evolution Smart



USER GUIDE



DISCOVER THE NIGHT!

Thank you for choosing the Evolution Smart™ system from NiteRider, the innovator in technical lighting systems. The Evolution Smart incorporates fast charging and NiteRider's patented "smart" battery and lamp technologies that extend system life. The Evolution Smart system includes:

- Halogen lamp with four brightness levels and three flash modes for safety
- Compact, lightweight nickel metal hydride (NiMH) battery
- 2.5-hour fast charger
- Fuel (battery) gauge
- Frame and helmet mounting

To get the most from your NiteRider light, we urge you to familiarize yourself with the following safety and operation instructions.

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RIDING AT NIGHT

While the Evolution Smart will improve your control and enjoyment of night riding, please remember that cycling at night is an inherently dangerous activity. In addition to using your lighting system properly and riding with extreme caution, NiteRider urges you to:

- never ride alone
- always let someone know where you are going
- wear a helmet and reflective clothing
- carry an auxiliary light and emergency supplies.

PROTECTING YOUR INVESTMENT

When not in use, always disconnect the headlamp from the battery. To unplug, grasp the connector, not the cable.

Properly charge your battery to maximize its lifespan (see “Battery Charging and Care” on page 12). To avoid damaging your system, only charge your NiteRider battery with the appropriate NiteRider charger.

While Evolution Smart will perform in wet weather conditions, submerging it in water will damage the system. If you need a submersible light, NiteRider manufactures industrial-grade dive light systems. For information, contact NiteRider Dive Lights at 858.268.3850 or visit www.niteriderdive.com.

SUPPORT

If you experience difficulties during product installation or operation, NiteRider provides free telephone support on weekdays from 8:00 AM to 4:30 PM (Pacific Time) at 800.466.8366, ext. 4. You may also e-mail us at support@niterider.com.

WARRANTY

NiteRider stands behind its products with the following warranties:

- Lifetime warranty on all mechanical components
- 1 year on cables and connectors, electronic components, and printed circuit boards
- 180 days on rechargeable batteries and fast chargers
- 60 days on halogen bulbs

To repair or replace your product while under warranty, return it (postage prepaid and insured with original sales receipt) to the address below. Out-of-warranty repair service is also available. For complete warranty information, please visit our website.

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PARTS LIST AND IDENTIFICATION

Please verify the contents of your Evolution Smart system:

- A. 15 Watt-6 Volt halogen headlamp
- B. 4.5 Ah-6 Volt NiMH battery (pocket/frame mount)
- C. Charger power cord
- D. Universal handlebar mount
- E. 2.5-hour fast charger
- F. Helmet mount
- G. 36" helmet cord
- H. Velcro cable tie



QUICK START

1. Fully charge the battery before the first use. See “Using the 2.5-hour Fast Charger” on page 12.
2. To mount the headlamp and battery, see “Mounting the Headlamp” on page 6 and “Mounting the Battery” on page 8.
3. Connect the battery to the headlamp.
4. To turn the light on for normal operation, press and hold the headlamp power button for one second. Cycle through the three brightness levels by pressing and releasing the power button.
5. To access the flash and walking modes, see “Flash and Walking Modes” on page 9.
6. To turn the system off, press and hold the power button for one second.

MOUNTING THE HEADLAMP

The Evolution Smart headlamp can be mounted to the handlebar or a helmet.

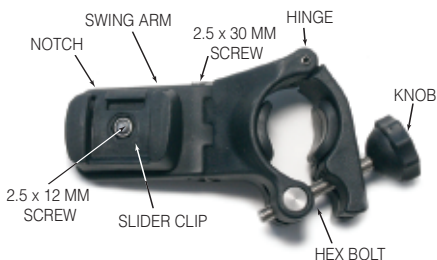
Universal Handlebar Mount

The Universal Handlebar Mount (UHM) is designed to fit on virtually any handlebar. Included with the mount is a 2.5-mm Allen wrench, a pair of black rubber bumpers already in place, and a thin rubber shim to customize the fit on large handlebars up to 32 mm in diameter.



Turn the knob counter-clockwise, allowing the hinge to swing open. Place the mount on the handlebar on the left side the stem, orienting the rectangular notch in the slider clip to the rear. Swing the hinge down to make contact with the handlebar. Swing the hex bolt up, seating the knob into its recess. Turn the knob clockwise to tighten and secure the mount to the handlebar.

The UHM can be adjusted to accommodate any handlebar angle. By loosening the 2.5 x 30 mm Allen screw, you can move the swing arm back and forth to straighten the headlamp. Tighten the 2.5 x 30 mm screw after the adjustment.



To pivot the headlamp, loosen the 2.5 x 12 mm screw located under the slider clip and swing arm and rotate the headlamp to the desired position. Make this adjustment before tightening the 2.5 x 30 mm screw.

Helmet Mount

1. Unclamp the straps on each side of the helmet mount and pull them free.
2. Position the plastic mounting plate as close to the centerline of the helmet as possible, orienting the parallel grooves on the slider clip to the rear.
3. Feed each strap into and out of two helmet vents, circling each strap back to the upper edge of the corresponding clamp.
4. Fasten the straps by inserting them into the clamps.



Inserting the Headlamp into the Handlebar or Helmet Mount

Insert the headlamp mount into the handlebar or helmet mount slider clip from the rear of the slider clip forward. Gently rocking the lamp as you slide it may help. Do not push the release lever when inserting the headlamp into the slider clip; let the lamp snap into place by itself.

To remove the headlamp, push the release lever and slide the lamp backward.

Note: After mounting the headlamp, adjust the headlamp so it illuminates the road properly without distracting oncoming riders.

MOUNTING THE BATTERY

The battery can be mounted to the bike frame or placed in a jersey pocket, hydration pack, or fanny pack.

Warning: For safety reasons, a cyclist should never be tethered to the bike. If the headlamp is mounted to the helmet, do not mount the battery to the frame. Conversely, if the headlamp is mounted to the handlebar, do not place the battery in a pocket or pack.

Frame Mount

1. Thread the wide Velcro tie through the slots on the top of the battery clip.
2. Attach the concave surface of the battery to a safe, convenient location on the frame (typically under the top or down tube), placing the Velcro strap over the tube but under any shift or brake cables.
3. Secure the handlebar cord to the frame using the thin Velcro tie. Make sure the cord does not interfere with any moving parts.



Pocket or Pack

1. Route the helmet cord through a helmet vent or along the outside of the helmet using the thin Velcro tie to secure the cord.
2. Connect the helmet cord to the battery, making sure the cord does not interfere with any moving parts.
3. Simply place the battery in a pocket or pack.



1. Connect the battery cord to the headlamp or helmet cord. The halogen light and fuel gauge will flash briefly while the system diagnoses itself.
2. To turn the halogen light on for normal night operation, press and hold the headlamp power button for approximately one second.
3. There are three brightness levels in normal night operation: 15, 10, and 6 watts. Cycle through the brightness levels by pressing and releasing the power button.
4. To turn the system off, press and hold the power button for one second. (If you hold the button down too long, the lamp will enter flash mode.)

Flash and Walking Modes

To increase your visibility in different situations, Evolution Smart provides four flash and walking modes: daylight, walking, S.O.S., and strobe. To enter flash/walking mode, press and hold the power button for approximately four seconds. Cycle through the modes by pressing and releasing the power button. To return to normal night operation, press and hold the power button for one second.

- **Daylight** mode pulses the beam at a rate that is highly visible to motorists during daylight hours. For maximum visibility, aim the light at eye or rear-view mirror level.
- **Walking** mode is a steady, 3-watt light that will greatly extend your run time, allowing for a much slower pace such as walking. This mode is not intended for riding.
- **S.O.S.**, the universal distress signal in Morse code, can be used during the day or night.
- **Strobe** is a single-pulse beam that can be used as a location marker or to warn cyclists or motorists of a hazard.

Fuel Gauge and Automatic Shut Off

The fuel (battery) gauge is a series of five indicator LEDs within the headlamp power button, four of which are green and one of which is red. When all green LEDs are brightly lit, the battery is fully charged. As the battery discharges one-fourth increments of its capacity, the green LEDs will go out one by one. When the battery is near depletion, the red LED will illuminate. At this time, the headlamp should be turned off and the battery recharged.

If use continues, the halogen headlamp will automatically shut off to avoid overly discharging the battery.

BATTERY CHARGING AND CARE

Note: The charger will charge a fully depleted battery in approximately 2.5 hours.

1. Plug the power cord into the charger and then the wall socket. The charger will conduct a self-diagnosis and the charging indicator light (located on the back, upper-left corner of the charger) will illuminate green, then amber, and then back to green.
2. Connect the charger cable to the battery. If the battery is not fully charged, the indicator light will turn amber, signifying fast-charge mode. If the light flashes when you first plug in the battery, the charger is preparing an overly discharged battery for fast charging.
3. When the battery is fully charged, the indicator light will turn green and charging will shut off automatically.
4. Unplug the charger from the battery and wall socket, grasping the connectors rather than the cables. (Leaving the battery and charger connected indefinitely will not harm the cells.)

Battery Initialization

Until the battery has been charged and discharged up to ten times, you may experience shorter than expected run times as well as higher than normal charger and battery temperatures.

Warning: NiteRider discourages battery initialization through “bench testing” (operating the light in stationary conditions) because the excessive heat generated can damage the headlamp.

The Evolution Smart's “smart” battery incorporates thermal protection circuitry that turns the battery off when it overheats from charging, external heat, or a short circuit. When the


thermal protection circuit is activated, the system will lock and the fuel gauge will become dark. To clear the system and return it to normal operation, unplug the light from the battery and allow the battery to cool.

Similarly, intelligent lamp technology protects the battery from overly discharging by turning the lamp off at the appropriate time.

Storage

Rechargeable batteries perform better and last longer if they are brought to a complete charge before storing and every 45 to 60 days when not in use.

Disconnect the battery from the headlamp, and store the system in a cool dry place.

 RUN TIMES	
Setting	Run Time (hours)
Normal night operation	
15 watts	1:45
10 watts	2:25
6 watts	3:00
Walking mode	5:00
The above run times are based on a fully charged battery.	
Run times are approximations and will vary.	



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Technical Lighting Systems

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