



Northern Light® Polaris Charger User Guide

PART NO. NRT000-xxx, NRT120-xx, NRT240-xx
July 29, 2013



THIS MANUAL, INCLUDING THE WARNINGS AND CAUTIONS INSIDE MUST BE READ AND FOLLOWED CAREFULLY BY ALL PERSONS WHO USE OR MAINTAIN THIS PRODUCT, INCLUDING THOSE WHO HAVE ANY RESPONSIBILITY INVOLVING ITS SELECTION, APPLICATION, SERVICE OR REPAIR. THIS CAP LAMP SYSTEM WILL PERFORM AS DESIGNED ONLY IF USED AND MAINTAINED ACCORDING TO THE INSTRUCTIONS.

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1. Charger Units and Racks

The following charging configurations are available for the Polaris cap lamp:

- Single unit charger (includes wall adapter)
- 10-unit portable charger
- 24-unit charger rack
- 48-unit charger rack



NRT120-01 – Single unit charger including North American wall adapter (shown above)

NRT240-01 – Single unit charger including European wall adapter

NRT000-01 – Single unit charger including Universal wall adapter kit

Output power requirements: 12V AC or DC; 0.5A



NRT120-10P – 10-unit portable rack, Input power requirement:120V AC, 300mA (shown above)

NRT240-10P – 10-unit portable rack, Input power requirement:240V AC, 150mA

Dimensions: 7.5" x 12.5" x 27.5"; Weight: 19lb

***The 10-unit Portable rack is shipped fully assembled. Power cord sold separately.**



NRT120-24 – 24-unit rack, Input power requirement:120V AC, 600mA (shown above)

NRT240-24 – 24-unit rack, Input power requirement:240V AC, 300mA

Dimensions: 47" x 9" x 35"; Weight: 65lb

***The 24-unit rack is shipped fully assembled. Power cord sold separately.**



NRT120-48 – 48-unit rack, Input power requirement:120V AC, 1200mA

NRT240-48 – 48-unit rack, Input power requirement:240V AC, 600mA

Dimensions: 74" x 8" x 45"; Weight: 145lb

***The 48-unit rack is shipped partially assembled.** Please refer to Section 4.0 for assembly instruction.



YL460-003 – Power cord with North American plug (shwon above)

YL460-006 – Power cord with European plug

2. Spare parts



NRT000 – Charger housing assembly



NL5801 – Wiring harness (12-unit)

***One wiring harness is required for every 12 charger housing assembly.** Please refer to Section 4.3 for replacement instructions.



YL4012 – Screw (Tapping, Pan head, 10x1)

***Two screws are required for each charger housing assembly.**



YL4013 – U-type nut

***Two U-type nuts are required for each charger housing assembly.**



YL489-001 – Wall bracket

***Two wall brackets are required to mount the 48-unit racks to the wall. Four wall brackets are required to mount the 24-unit racks to the wall.**



NL4501-N – North American wall adapter



NL4501-E – European wall adapter



NL4501-I – Universal wall adapter kit



NL4502 – Vehicle adapter, 12/24V input

3. Retrofit kits

The following upgrade kits are available for the Polaris cap lamp if you have existing GII or Eclipse charger racks:

- A 1-unit adapter plate – this should be used on existing Eclipse upright charger racks only.
- A 2-unit adapter plate – this can be used on 5-unit GII portable chargers and all types of GII upright racks. This CANNOT be used on the Eclipse upright charger racks.
- A 10-unit adapter panel – this can be used on 5-unit GII/Eclipse portable chargers.



NRT000-AD – A 1-unit retrofit kit consists of one 1-unit adapter plate, one single unit adapter harness, two u-type nuts, six screws and 1 charger housing assembly assembled as one piece. Please refer to Section 5.0 for assembly instructions.

***The 1-unit retrofit kit can be used on Eclipse single, 5-unit portable and 10/20/40-unit racks. One 1-unit adapter wire harness will be required per adapter plate.**



NRT000-AD2 – A 2-unit retrofit kit consists of one 2-unit adapter plate, one 2-unit wiring harness, four u-type nuts, six screws and 2 charger housing assemblies. Please refer to Section 5.0 for assembly instructions.

***The 2-unit retrofit kit can be used on GII single, 5-unit portable and 10/20/40-unit racks. One 2-unit wire harness will be required per adapter plate.**

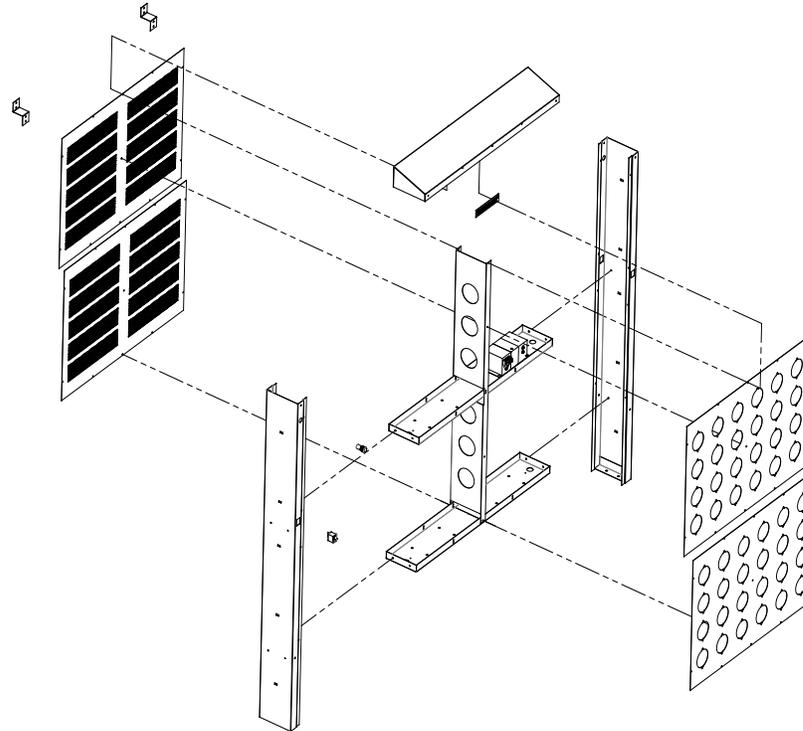


NRT000-AD10 – A 10-unit retrofit kit consists of one 10-unit adapter panel, one 10-unit wiring harness, 20 u-type nuts, 28 screws and 10 charger housing assemblies. Please refer to Section 6.0 for assembly instructions.

****The 10-unit retrofit kit is shipped partially assembled. It can be used to upgrade the GII/Eclipse 5-unit portable charger.**

4. 48-unit charger rack assembly instructions

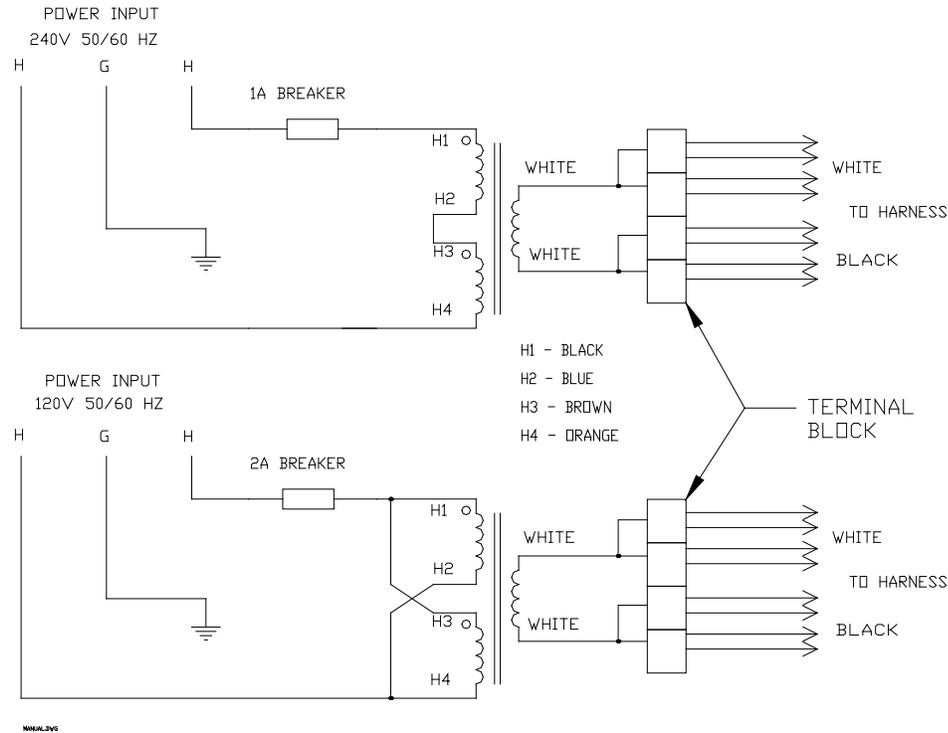
4.1 Exploded View



4.2 Assembly Instructions

1. Lay the upright with the LED and circuit breaker on the floor. Attach the transformer shelf to the middle section of the upright and the second shelf to the lower section of the upright using hex nuts (2 per shelf). The transformer should be on the side closest to the circuit breaker.
2. Position the middle upright so that both shelves pass through the 2 openings. Attach the middle upright to the transformer shelf using 2 machine screws on the side away from the LED and circuit breaker. Note that these screws will need to be removed when attaching the back panels.
3. Attached the second upright to the 2 shelves using hex nuts (2 per shelf).
4. Raise the rack to standing position and attach the front panels using machine screws (11 per panel).
5. Connect the 4 wire harnesses from the terminal block on the transformer to the charger housings. Each wire harness will connect to 12 charger housings. At the end each wire harness, there are 2 stripped wires. Connect the end of the top wire harness to the LED using Marrettes. For the other 3 wire harnesses, protect the stripped wires using Marrettes. Connect the black and white wires from the transformer to the circuit breaker.
6. Prior to the attaching the back panels, remove the 2 screws from the shelf. Attach the back panels to the uprights using machine screws (11 per panel).
7. Attach the roof to the top of the rack using 4 screws.
8. Place the charger rack in permanent location. **IMPORTANT** – Chargers must be stabilized with wall brackets. All racks are supplied with wall brackets. Drill and anchor to wall. The rack can also be anchored to the ground.

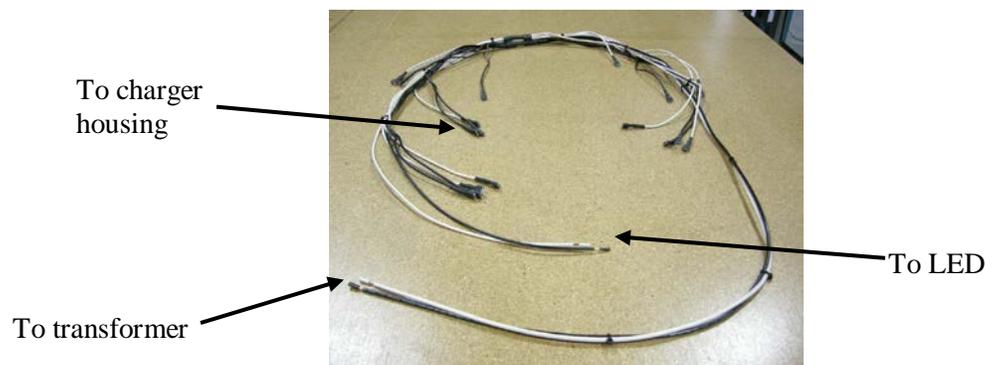
4.3 Wiring Diagram for Transformer Primary and Charger Rack Wiring Harness



⚠ WARNING: When installing main wiring, be sure to include an appropriate means of disconnecting power to the charging rack, such as a switch or circuit breaker. A qualified electrician should install main wiring.

4.4 Replacing the 12-unit Wiring Harness Assembly

1. The 12-unit wire harness assembly consists of 12 pairs of quick-fit connector; one pair (1 white and 1 black wire) per charger housing. At both ends of the wiring harness, there is one pair (1 white and 1 black) of wires that is partially stripped. The longer length is to be connected to the transformer. The shorter length is to be connected to the LED on the charger rack.



2. On a 48-unit rack, only one of the wiring harness will require the end connection to the LED. On the other 3 wiring harnesses, terminate the wires using Marrettes.

5. 1- or 2-unit Retrofit Kit Upgrade Instructions

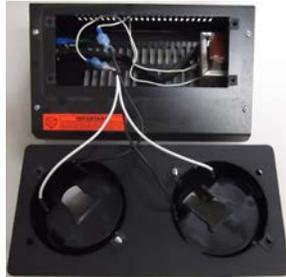
The 1-unit retrofit kit can be used to upgrade existing Eclipse charger racks. It converts a single Eclipse charger position into a single Polaris charger position.

The 2-unit adapter kit can be used to upgrade existing GII charger racks. It allows the user to charge up to 2 Polaris cap lamp in the same space as the other versions of the cap lamp.

Both the 1- and 2-unit adapter kits can be used to retrofit the existing single unit chargers too. Instructions below are applicable for both the 1- and 2-unit upgrade kit.

5.1 Single Unit Charger Upgrade Instructions

1. Unplug the power supply. Remove the existing charger housing by unscrewing it from the base and removing the wiring harness from the housing contacts.
2. Take the existing wire harness and attach the adapter wire harness to the quick fit connectors.

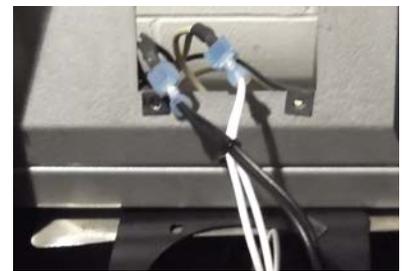
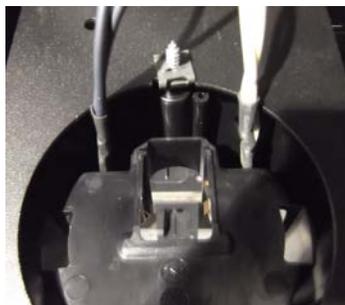


3. Screw in the adapter plate to the base.



5.2 Charger Rack Upgrade Instructions

1. Unplug the power supply. Remove the existing charger housing by unscrewing it from the base and removing the wiring harness from the housing contacts.
2. Take the existing wire harness and attach the adapter wire harnesses to the quick fit connectors.



3. Screw in the adapter plate to the base.

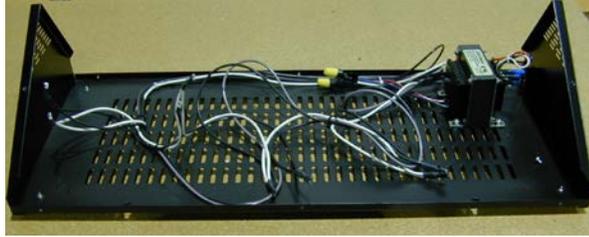


6. 10-Unit Portable Panel Retrofit Kit Assembly Instructions

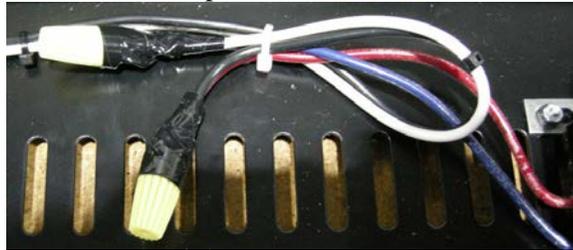
The 10-unit portable panel retrofit kit can be used to upgrade an existing GII 5-unit portable charger unit. The kit is shipped partially assembled; the charger housings and LED are installed onto the panel.

6.1 10-Unit Portable Upgrade Instructions

1. Unplug the power supply. Remove the existing charger housing by unscrewing it from the base and removing the wiring harness from the housing contacts.
2. Remove the cover from the base.



3. Remove existing wire harness from base. Connect Black wire from harness to the Red wire from transformer with Marrette connector. Connect White wire from harness to the Blue wire from transformer with Marrette connector. Tape Marrette connectors and fix loose wires with tie wrap.



4. Run the wire along back of base and attach it to the base of the charger by using cable ties.



5. Attach connectors from harness to back of the LED light in top panel.



6. Attach 10 remaining pairs to charger housing contacts.
7. Attach cover to base.



Contacting NLT's Help Desk & Technical Support

For further sales information, warranty matters, technical support or user issues, contact your Northern Light® distributor or email NL Technologies directly at customercare@nltinc.com