

- Supplied with 14AWG silicone-insulated wire leads.
- All switch settings and connections are clearly marked.
- Current draw from the pack when the MiniPD-12V is off is approx. 2mA at 4.8V, 10mA at 12V.
- Absolute maximum battery voltage = 16V
- Size = 2.4"W x 2.4"D x 3"H, not including wire leads.
- Weight = 6 oz.

If you have any questions, check our web site at www.camlight.com or contact us at (212) 579-1901 (9am-9pm EST) or via e-mail at info@camlight.com.

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CamLight Systems

Model MiniPD-12V

4-10 cell (4.8V-12V) NiCd/NiMH Battery Pack 2-Stage Discharger

The CamLight Systems MiniPD-12V 2-Stage Discharger safely and accurately monitors your 4-10 cell (4.8V-12V) NiCd/NiMH battery pack's voltage level as it discharges and automatically disconnects the load when the battery pack has reached the selected cutoff voltage.

The MiniPD-12V uses two discharge stages:

- Stage-1 – A higher-current discharge to quickly bring the pack to 0.9V/cell.
- Stage-2 – A low-current discharge to again bring the pack down to 0.9V/cell to ensure a complete discharge.

This 2-Stage discharge occurs automatically and helps to properly condition your packs better than high-current single-stage dischargers. And it's much faster than any low-current single-stage discharger!

To best match the discharge requirements of different battery packs, the Stage-1 current level of the MiniPD-12V can be set to 5 different levels.

The MiniPD-12V's small size and low weight allows you to take it wherever you need to discharge your battery packs. No need for AC power or another battery to worry about, the MiniPD-12V runs itself from the battery pack being discharged. And it's ready to start discharging as soon as you connect the battery pack.

- Safely monitors a 4-10 cell (4.8V-12V) NiCd/NiMH battery pack as it discharges down to one of five selectable cutoff voltages (0.9V/cell for 4, 6, 7, 8, 10-cell packs). With limitations, 5-cell and 9-cell packs can also be discharged.
- Automatic 2-Stage circuitry quickly discharges your packs. No more having to settle for only one discharge current level or hours of waiting for a low-current discharge to finish.
- Five Stage-1 discharge current levels with a low-current Stage-2 to ensure a complete discharge.
- Stage 1 = approx. 0.2A-1.5A (4-cells) to 0.5A-3.7A (10-cells).
- Stage-2 = approx. 0.2A (4-cells) to 0.5A (10-cells).
- Perfect for smaller, lower capacity NiCd/NiMH battery packs.
- Solid-state output, no relay contacts to arc or stick together.

To discharge your 4-10 cell (4.8V-12V) NiCd or NiMH battery pack:

1. Select a pack voltage by moving one of the five pack voltage switches to the down (ON) position, making sure it's all the way down:

With this # of cells...	With this pack voltage...	For this cutoff ...	Push down this switch
4	4.8V	3.6V	1
6	7.2V	5.4V	2
7	8.4V	6.3V	3
8	9.6V	7.2V	4
10	12V	9.0V	5

Note: Be sure that only one switch is in the down (ON) position and that it is all the way down! Your packs can be drained to <2V if no cutoff is selected (no switch is down), or if multiple switches are in the down (ON) position.

2. Select the Stage-1 current level by moving any number of the four LOADS switches to the down (ON) position.

# of LOADS switches on (down)	4-cell Pack	6-cell Pack	7-cell Pack	8-cell Pack	10-cell Pack
0	0.25A	0.4A	0.45	0.5A	0.65
1	0.6A	0.9A	1.0A	1.2A	1.5A
2	0.9	1.4A	1.6A	1.8A	2.3A
3	1.2A	1.8A	2.1A	2.5A	3.1A
4	1.5A	2.3A	2.7A	3.1A	3.8A

Note: Don't change the LOADS switch setting while the discharger is operating.

Note: If measuring the MiniPD-12V's discharge current levels, be aware that not all current meters and watt-hour meters are equally accurate. Your readings may differ from the chart above.

3. Connect the battery pack to be discharged. The white wire lead is positive, the black wire is negative (ground). The connections are also marked on the circuit board near the wire leads.

Note: If the LEDs light up red (reversed polarity), disconnect the pack immediately and reverse the leads.

4. Press the MiniPD-12V's white *Start* button (to the right of the red pack voltage switches) to begin discharging. The two green *Discharging* LEDs light up to indicate that the pack is now being discharged.
5. The left Stage-1 *Discharging* LED will turn off when the pack reaches 0.9V/cell. The right Stage-2 *Discharging* LED and the fan will turn off when the pack again reaches 0.9V/cell and is fully discharged.
6. Disconnect the battery pack.

Notes on using the MiniPD-12V:

- 5-cell packs can be discharged using these settings:

For this cutoff...	Push down this pack voltage switch
1.08V/cell	2
0.72V/cell	1

- 9-cell packs can be discharged using these settings:

For this cutoff...	Push down this pack voltage switch
1.0V/cell	5
0.8V/cell	4

- The power resistors used for the Stage-1 load get very hot during use, over 200-degrees F. If you decide to skip the Stage-2 discharge, wait a couple of minutes before storing your MiniPD-12V to allow it to cool. But, we recommend letting Stage-2 run for a couple of minutes so the Stage-1 discharge resistors can be quickly cooled by the fan.

Caution: Do not touch the power resistors during a discharge!

- The MiniPD-12V is protected from reversed polarity battery connections but the full discharge current will flow if the pack is connected "backwards". Since the cutoff-voltage detecting circuitry isn't working when the polarity is reversed, the pack will discharge down to less than 2 volts. If the *Discharging* LEDs light up red when you connect the pack, immediately disconnect the pack and reverse the connections.
- **Never exceed 16V at the battery connections!**
- The fan's speed changes with the pack voltage. This is normal as less cooling is needed when discharging lower voltage packs.
- Don't leave the pack connected to the MiniPD-12V for a long time after discharging is complete. The unit only draws 2mA-10mA when off, but over a long period of time that could possibly over-discharge a pack.
- Don't bend the wire leads sharply when using or storing the discharger. Over time, this will weaken and break the copper strands of the wire.

Specifications for the MiniPD-12V:

- Five cutoff voltages are available (for 4, 6, 7, 8 and 10-cell packs), selectable via five DIP switches.
- Cutoff voltage is set to 0.9V/cell.
- Stage-1 discharge current = 0.25A-1.5A (4-cells) to 0.65A-3.8A (10-cells).
- Stage-2 discharge current = approx. 0.25A (4-cells) to 0.6A (10-cells).
- Stage-2 typically discharges an additional 0.1AH-0.3AH from the pack.
- Green LEDs indicate that the pack is discharging. If the LEDs light up red when you connect the battery pack, the leads need to be reversed.
- No need for AC power or another battery to run the MiniPD-12V. It powers itself from the battery pack being discharged.
- Solid-state output, no relay contacts to arc or stick together.

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