

CamLight Systems

2-Stage Pack Dischargers • Auto-Cutoff Modules • Load Modules

PD-24V Pack Discharger Cutoff Voltage Table

Per-Cell Cutoff Voltages for all PACK VOLT. and CUTOFF Settings

This table lists the per-cell cutoffs for the different Pack Voltage and Cutoff switch settings for any pack that is within the voltage range of the Pack Discharger. To use this table:

1. In the first column, find the number of cells in the pack you wish to discharge and go to that row on the table. If you can't find the **Number of Cells In Your Pack** value that matches your battery pack, this model Pack Discharger can't be used to safely discharge it.
2. As you go across the correct row, look for the per-cell cutoff voltage level you want to discharge your pack down to. The green-background values are the ones that are OK for your pack (we recommend approximately 0.9V/cell).
3. When you find the per-cell cutoff voltage you want to discharge your pack down to, move up that column to find the Cutoff switch setting, and above that, the Pack Voltage switch setting you'll need to set your Pack Discharger to.
4. Set the switches on your Pack Discharger to these settings and begin your discharge. The discharger will automatically turn off at the correct cutoff point.

		PD-24V Settings																							
		Pack Voltage Setting = 10 Cells				Pack Voltage Setting = 12 Cells				Pack Voltage Setting = 14 Cells				Pack Voltage Setting = 15 Cells				Pack Voltage Setting = 16 Cells				Pack Voltage Setting = 20 Cells			
		0.8V Cutoff Setting (8.0V)	0.9V Cutoff Setting (9.0V)	1.0V Cutoff Setting (10.0V)	1.1V Cutoff Setting (11.0V)	0.8V Cutoff Setting (9.6V)	0.9V Cutoff Setting (10.8V)	1.0V Cutoff Setting (12.0V)	1.1V Cutoff Setting (13.2V)	0.8V Cutoff Setting (11.2V)	0.9V Cutoff Setting (12.6V)	1.0V Cutoff Setting (14.0V)	1.1V Cutoff Setting (15.4V)	0.8V Cutoff Setting (12.0V)	0.9V Cutoff Setting (13.5V)	1.0V Cutoff Setting (15.0V)	1.1V Cutoff Setting (16.5V)	0.8V Cutoff Setting (12.8V)	0.9V Cutoff Setting (14.4V)	1.0V Cutoff Setting (16.0V)	1.1V Cutoff Setting (17.6V)	0.8V Cutoff Setting (16.0V)	0.9V Cutoff Setting (18.0V)	1.0V Cutoff Setting (20.0V)	1.1V Cutoff Setting (22.0V)
Number of Cells In Your Pack	8	1.00V																							
	9	.89V	1.00V			1.07V																			
	10	.80V	.90V	1.00V	1.10V	.96V	1.08V																		
	11	.73V	.82V	.91V	1.00V	.87V	.98V	1.09V					1.02V				1.09V								
	12		.75V	.83V	.92V	.80V	.90V	1.00V	1.10V	.93V	1.05V					1.00V			1.07V						
	13			.77V	.85V	.74V	.83V	.92V	1.02V	.86V	.97V	1.08V			.92V	1.04V			.98V						
	14			.71V	.79V		.77V	.86V	.94V	.80V	.90V	1.00V	1.10V	.86V	.96V	1.07V			.91V	1.03V					
	15				.73V		.72V	.80V	.88V	.75V	.84V	.93V	1.03V	.80V	.90V	1.00V	1.10V	.85V	.96V	1.07V			1.07V		
	16							.75V	.83V	.70V	.79V	.88V	.96V	.75V	.84V	.94V	1.03V	.80V	.90V	1.00V	1.10V	1.00V			
	17							.71V	.78V		.74V	.82V	.91V	.71V	.79V	.88V	.97V	.75V	.85V	.94V	1.04V	.94V	1.06V		
	18								.73V		.70V	.78V	.86V		.75V	.83V	.92V	.71V	.80V	.89V	.98V	.89V	1.00V		
	19										.74V	.81V			.71V	.79V	.87V		.76V	.84V	.93V	.84V	.95V	1.05V	
20										.70V	.77V				.75V	.83V		.72V	.80V	.88V	.80V	.90V	1.00V	1.10V	

Green (.80V-1.10V) = OK to use any of these settings (we recommend approximately 0.9V/cell).

Yellow (.70V-.79V) = Usually OK unless the pack is very old or cells are badly unbalanced. We don't recommend discharging down to these voltages until the pack is conditioned.

- Cutoffs that are 1.11V/cell and higher won't damage the pack but the cells will not be discharged.
- Cutoffs that are 0.69V/cell and lower can cause possible cell damage from polarity -reversal during discharge but only from unbalanced packs. There is almost no charge left in a cell below 0.9V so no real benefit is realized from discharging cells in a pack much below 0.8V-0.9V/cell.
- The color-coded cutoff values above are merely recommendations, not absolutes to be followed no matter what. If a 0.80V/cell cutoff level is OK, then a 0.79V/cell cutoff is probably OK too. We had to divide the cutoffs somewhere and we want you to use your best judgment when deciding what cutoff voltage to discharge down to. If you have any questions or concerns about the recommendations in these tables, please feel free to contact us.
- The voltage in parentheses below each CUTOFF setting is the cutoff voltage for the pack using those PACK VOLT. and CUTOFF switch settings. For example, the **(8.0V)** below the **0.8V Cutoff Setting** column heading in the **Pack Voltage Setting = 10 Cells** column indicates that using these two settings will discharge your pack to 8.0V (10-cells times 0.8V/cell = 8.0V).
- For single-stage discharging with cells in good condition, higher discharge current levels can use the yellow-highlighted voltages to compensate for voltage drops due to the cell's internal resistance. You don't need to compensate for this internal resistance if you're using the 2-Stage discharging feature of our Pack Dischargers, it's done automatically by the discharger. Just select the per-cell value you want to discharge down to.