

# Battery cell FAQ



## How do I approach buying good quality new cells?

- Buy from a reputable seller so you do not get counterfeit cells.
- Buy reputable name brand, LG, Panasonic(Sanyo), Samsung, in that order are preferred. The cells are made in Japan or So Korea( both preferred) and China also ok, usually cheaper and slightly lower energy capacity.
- Do not buy any cell with 'fire' or 'vap' in the name. They will vaporize or catch fire (smiles).
- Look for higher C discharge rates on cells, 2C is standard, 3C is good. (DKblock is 100A max for 1 minute for 10 cells in parallel)
- Depending on quantities, plan on pricing from low \$2's to high \$3's for cells in the 3000-3500ma range with 3C and higher.
- There are not too many vendors to recommend, although Battery Bros do seem to stock genuine cells.

## How do I improve the quality of cells I get from a good vendor?

- Ask for 1% or better voltage matching of the cells and also specify that all cells must come from the same lot.
- Ask for some sample cells to test
- Once the cells arrive, test the actual capacity in a BT-C3400 (picture below) or equivalent battery cell tester, to ensure you are getting what you paid for.

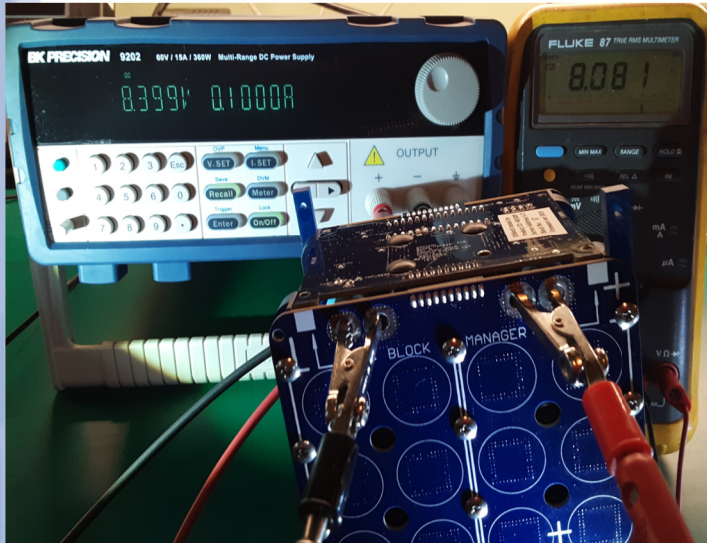
## Can I use recycled cells?

- Yes, but it is important to match capacities, so it is important to test capacity of each battery and then use lots of similar capacities and voltage when building blocks. There are other considerations such as age and battery type, so it would be good to research what other cell aggregators are doing in this regard.

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**When you get new battery cells, how do you balance them- how is that best accomplished?**



- Remember when we ordered the cells to be voltage matched to 1%, they should be already be balanced, and preferably well above 3.6VDC, so we are done here. But if not...
- If you can charge all the cells in parallel with the same charger or power supply, and they are charged to the manufacturers specification ( for LG MH1 about 4.150 +/-0.040) that is the best case in a perfect world. But can this can only be done with a lab power supply and accurate digital voltmeter.
- Another way to do this is with a DKblock assembled with cells and a programmed Block Manager board. Observing the polarity marks on the block, you would connect a power supply set to 8.400VDC that is also current limited to 100 milliamps. Now you just charge up the DKblock, allowing the Block Manager to do the cell balancing at up to 125ma.
- This is a picture of how that might look.
- Alternatively you can charge each cell to the same voltage, a few at a time. This is a picture of how that might look.

