



Hello All,

We often are asked why are our LiFeBATT Battery Packs so expensive? This is not easily discernible if you are just looking at a few specs such as LiFeP04, x Voltage x Amperage. While knowing the chemistry and the Voltage / Amperage is important, it doesn't go far enough in evaluating the difference between products out there on the market. It is like comparing two different computers based on the size of their display monitors. For example here are a few more important spec differences that you need to know in order to make an educated decision on how to spend your hard earned money. We are a top – tier advanced Lithium – Ion battery pack developer / manufacturer in the same category as Valence or A123, but we talk to everyone. If you want to buy a single pack, or two dozen packs, you won't even be able to talk to A123 about what they cost. In fact they won't even talk to you period. If you manage to find a legitimate distributor to purchase their cells you will find their price is significantly higher than LiFeBATT - all things considered. In fact LiFeBATT is priced comfortably lower than either Valence or A123 if you do an apples to apples comparison.

Another common mistake is people like to compare advanced Lithium – ion to commodity Lithium – ion which is misleading because the small format cells like 18650 have been around for many years having been made in the millions in China for laptops and mobile electronic devices. These cells don't compare to the new large format cells like the 40138 or the 20Ah Prismatic cells now being made by LiFeBATT & A123 specifically for the EV market. Lately it seems that folks like to use a \$ / wH price for comparison. Nothing is wrong with that – except that usually this is for Cells only. In our case we don't sell loose cells (only complete Plug & Play Packs) so our price of \$ / wH price includes the Cells, an Aluminum or Steel Skeleton Frame & Control Box, Factory Assembly, BMS and 3 Year

Cell Warranty. One has to weigh the value proposition between Valence, A123 & LiFeBATT (or any other top – tier battery maker) when comparing the same specifications. Many people see LiFeP04 advertised for much less on the internet for example.

For this reason we often get compared to Chinese product like what you see on EBay. There is no comparison here - but I will try anyway so you will better understand the Price difference. I hope this is helpful to you and that you will come back to LiFeBATT sometime in the near future?

### **COMPARING LIFE BATT PACKS WITH THE LOW PRICED LiFeP04 CHINESE PACKS:**

Chinese: Often use small format (18650) Commodity Lithium – ion Cells. It requires 3 – 6 X the number of Cells to build a pack using small format cells.

LiFeBATT: Uses large format (40138) or Prismatic Cells for EV market. It takes fewer Cells to build our packs and is much easier to manage.

Chinese: Max Discharge Current: 60A (typical) Rated Discharge Current: 30A Continuous.

LiFeBATT: Max Discharge Current: 300A. Rated Discharge Current: 100A Continuous.

Chinese: Duct Tape or Shrink Wrap Packs – no provision for serviceability, circuit protection or passive air – flow.

LiFeBATT: Aluminum Skeleton Packs – easily serviced, fully protected circuit boards and includes passive air – flow for heating/cooling.

Chinese: Energy Density – rarely (if ever) specified.

LiFeBATT: Energy Density – 129 Wh / Kg.

Chinese: Power Density – rarely (if ever) specified.

LiFeBATT: Power Density – 1,100 W / Kg.

Chinese: Warranty – none (often) or rarely 1 Year.

LiFeBATT: Warranty – 3 Years non pro-rated on all Cells.

Chinese: Minimal Tech Support – none (often) or minimal (rarely) and difficult to understand Chinese email.

LiFeBATT: Total Tech Support - U.S. based in Danville, Virginia with English speaking friendly representatives by telephone & email.

Chinese: Servicing – You pay to ship the pack to China both ways if you need repairs. That is IF the vendor you bought it from is still in business?

LiFeBATT: You pay to ship the pack back to Danville, Virginia and we pay to ship it back to you.

Chinese: Replacement Parts – You spend countless hours unraveling duct tape and re – wrapping the pack, breaking solder connections or weld taps, re – soldering / welding, – good luck!

LiFeBATT: You unscrew 4-6 screws and you are done then put the top back on after replacing a cell or better yet ship the pack to us and we will service it and send it back in a matter of days not weeks.

Chinese: Product Liability – You have none!

LiFeBATT: We carry Product Liability Insurance that covers any personal or property damage claims.

### **AND THERE IS MORE:**

- 1) Regarding our new Prismatic Cells - there is no other source that I am aware of that is currently manufacturing an 18Ah & 20Ah Prismatic LiFeP04 Cell that comes close to ours in specifications or size / format. If you know of one please let me know? I have searched the world and it doesn't exist yet. The closest cousin right now is the Pouch 20Ah Cell offered by A123. We have the LiFeBATT P20 Cells NOW. We are not still in the cell design phase – they are currently being produced on our new robotic manufacturing line in Taiwan and going through Certification. LiFeBATT has purchased ALL of the P18 & P20 Cell production for the next three years.

- 2) Our P20 Prismatic Cell has screw posts which eliminates any soldering and makes cell replacement simple compared to the design of the A123 Pouch Cell that uses foil tabs for terminals requiring breaking solder connections and re – soldering to change out a bad Cell. Our Prismatic Cells are also made with a lightweight Aluminum can which is stronger than a foil pouch and provides additional protection to puncture proofing the Cell itself. Our Prismatic Cell modules (or Packs) are generally smaller in size than a comparable A123 - Pouch 20Ah module saving precious space inside the battery compartment. Weight is the same for both Cells. ***The difference is LiFeBATT Skeleton Packs are truly “field serviceable” whereas sealed systems as produced by A123 or Valence are NOT.*** This can be a critical difference if these batteries are deployed in a third world country or a remote location where “hot – swapping” Battery Packs would be extremely difficult if not impossible to do.
- 3) There is no better BMS / VMS system developed by any other Battery Developer than what LiFeBATT offers - especially one that scales for large multiple LiFeP04 pack configurations. Again, if you know of one please let me know? Our BMS system is designed specifically for LiFeBATT cells and has been proven in the field for over 5 years.
- 4) We are one of the few companies that also offer a Battery CAN bus interface (IM) with the development of our BMS program. We don't know of another battery supplier that has anything better and ready for market yet including A123 or Valence?
- 5) We have also designed a cost effective Skeleton Pack system for our P20 Cells that is truly modular, easily serviceable, lightweight, and configurable in stacking or packing configurations to produce larger systems practically. This design accounts for circuit board protection, passive air flow for heating / cooling, and a protective exoskeleton to handle shock and vibration concerns in an EV application. These Skeleton Packs are available in Steel or Aluminum and are manufactured here in the U.S. and assembled in Danville, Virginia, the U.S.

- 6) We are one of a few top –tier Battery Developers that can offer a complete Plug & Play advanced Lithium – ion battery system “off – the - shelf” including a 3 Year warranty. It has taken us 5 years to reach the point where all of this is now a reality.
- 7) We are one of a handful of battery developers that manufacture our Cells exclusively in Taiwan (not China, Japan or Korea) and maintain a complete pack assembly facility here in Danville, Virginia, the U.S.

In any event, we know that we can't be everyone's cup of tea, especially the small customers who only need one or two battery packs. We will continue to work to bring prices down as our volume ramps up with our OEM customers so that we can then offer a better price to our smaller customers. At least we will talk to you, and we believe it is better than not even acknowledging your requests, because someday you just could just become one of our best customers!

LiFeBATT offers a Battery Training Course for local and nationwide Community Colleges and Technical Schools. This course is complete with prepared Lectures and hands – on Training Stations that teach the skills required to understand advanced Lithium – ion batteries and actually build a battery pack from ground up. An advanced course in applying these batteries to large scale multiple pack applications is also available working on actual EV conversions. Building a top – tier Lithium – ion battery pack is not a DIY project although there are many forums that think it is. This misconception began with the RC Hobbyists who routinely assemble their own packs for their RC toys. If you are building battery packs for Electric Vehicles that involve human being's life & safety, you want to be sure it's done professionally and backed by a reputable battery assembly facility with strict QC and CERTIFIED training.

There is so much confusion in this industry right now that I hope by being open and honest, LiFeBATT will earn your respect, and that we will always have a few minutes of our time to talk to anyone. Regardless of your technical knowledge of batteries, we will help you understand this

confusing marketplace, and at least point you in the right direction.  
LiFeBATT will never be *too big* to talk to you while on my watch!



Best Regards,

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