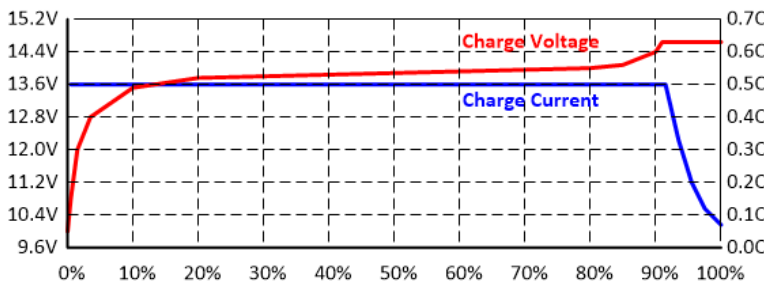
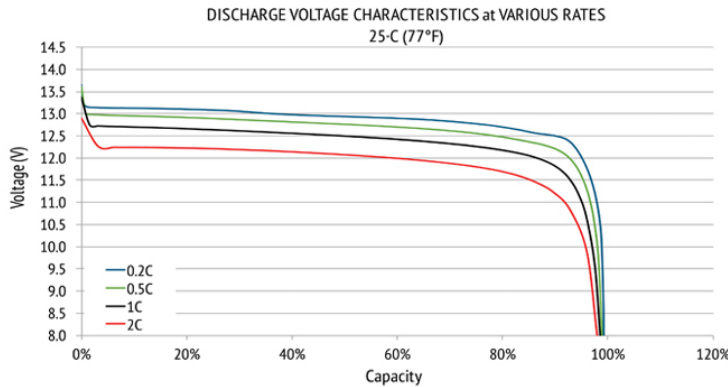




Monday, February 07, 2022

Frequently Asked Question: Am I Able to Know My Battery State of Charge by Its Voltage Reading?

Reply: Yes, and, no! Lithium-Ion Iron Phosphate does not have a “linear” curve of its charge and discharge voltage readings. Instead, it is a non-linear or exponential curve. Thus, to accurately report State of Charge, the Battery Management System or BMS counts AMPS going in and out of the battery, similar to cars passing through a toll booth. The curves look like this: notice under load, the voltage curve shifts based on the level of energy pulled from the battery. Thus, voltage is not a reliable indication of battery State of Charge.



The chart below is a Rough Assimilation between State of Charge and Open Circuit Voltage, For Reference Only (Not Intended to be a Reliable Indicator) But Helpful Nonetheless)

Voltage	Capacity
14.4V	100%
13.6V	100%
13.4V	99%
13.3V	90%
13.2V	70%
13.1V	40%
13.0V	30%
12.9V	20%
12.8V	17%
12.5V	14%
12.0V	9%
10.0V	0%

For Values on Higher Voltage Batteries:
 “24V” (25.6V) Double the Voltage Values From Chart
 “48V” (51.2V) Multiply the Charge Values X 4