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Technical Battery Terms

In our industry batteries can sometimes be oversimplified or categorized into a few groups, the blocks (VCLX or similar large capacity floor batteries), bricks/Dionics (handheld Gold-Mount / V-Mount batteries), and 7.2V (primarily Canon/Sony/Panasonic mounts). While these categories are effective at distinguishing the general products that can be powered, there are still many differences within each category based on the different brands and models. Further distinguishing between the various types is something we deal with in our branding and in focused messaging.

To help explain and communicate some of the different terms that come up in customer battery conversations, we would like to share a list of some of the more popular items with their associated definitions.

Wattage (W) – The measure of power in an electrical circuit where 1 watt is equal to 1 Amp flowing across 1 volt. Power (W) = Volts (V) x Current (A). Watts are typically used to describe the energy needed to turn on electrical devices and many of the products we support.

Watt-Hours (Wh) – Another capacity measurement and the base unit used to describe the different sized batteries we sell. Like Amp-hours, Watt-hours is the amount of power that could be removed from a battery at a constant rate in one hour. Therefore, a Titon Micro 45 could power a load of 45 Watts for 1 hour before shutting down. This is a bit of an oversimplification not taking operational voltages of equipment into consideration, but it is a handy tool used to estimate runtimes.

45 Watts x 1 Hour = 22.5 Watts x 2 Hours = 15 Watts x 3 Hours = 45Watt Hours

Cycle Life – The number of cycles a battery can endure before its learned capacity drops to 70% of the original nameplate capacity.

Nameplate capacity (Ah) – The production capacity of a brand-new battery. As mentioned above, a Dionic XT 90 has a nameplate capacity of 6.9Ah.

Learned Capacity (Ah) – The maximum potential capacity a battery can achieve at any point in time. As a battery is cycled, the potential capacity decreases. This results in shorter runtimes as batteries age and are used. An analogy to use here is thinking of a gasoline/petrol tank in a car that slowly decreases over time. You can still fill and empty the tank but the overall size or driving distance is reduced.

Remaining Capacity (Ah) – The capacity remaining within a battery at any given point in time. For example, if a battery has a learned capacity of 1.0Ah and is 100% charged, the remaining capacity will also be 1.0Ah. If the same battery is 50% charged, then the remaining capacity is 0.5Ah.

Voltage (V) – An electromotive force defined as the difference in electrical potential between two points. When discussing with customers I find it useful to compare this to the phenomenon of water pressure. Voltage is the electrical equivalent of water pressure in a pipe. In our battery products, the voltage is dictated by the number of cells stacked in series within the pack.

Amperes (A) – The measure of electrical current/charge through a conductor. Relating this to the water description above, current is the flow rate of water through the pipe. Current measured in Amps is the electrical equivalent.

Amp Hours (Ah) – A capacity measurement relating to the amount of current that could be removed from the battery in one hour at a constant rate. For example, a Dionic XT 90 is 6.9 Amp hours. This means that with a constant load of 6.9Amps the battery would be empty in 1 hour. This number can be used to estimate both charge and discharge times (roughly) because just you could say:

6.9 Amps x 1 Hour = 3.45 Amps x 2 Hours = 2.3 Amps x 3 Hours = 6.9Amp Hours