

# Temperature effects on battery performance & life

Different temperatures affect the internal chemical reaction rates, and internal resistance and efficiency of all types of batteries.

Run times will vary as temperatures change

- Batteries are significantly less efficient under heavy discharges at lower temperatures.
- Increasing as the temperature rises above 25°C / 77° F
- Decreasing as the temperature drops below 25°C / 77° F

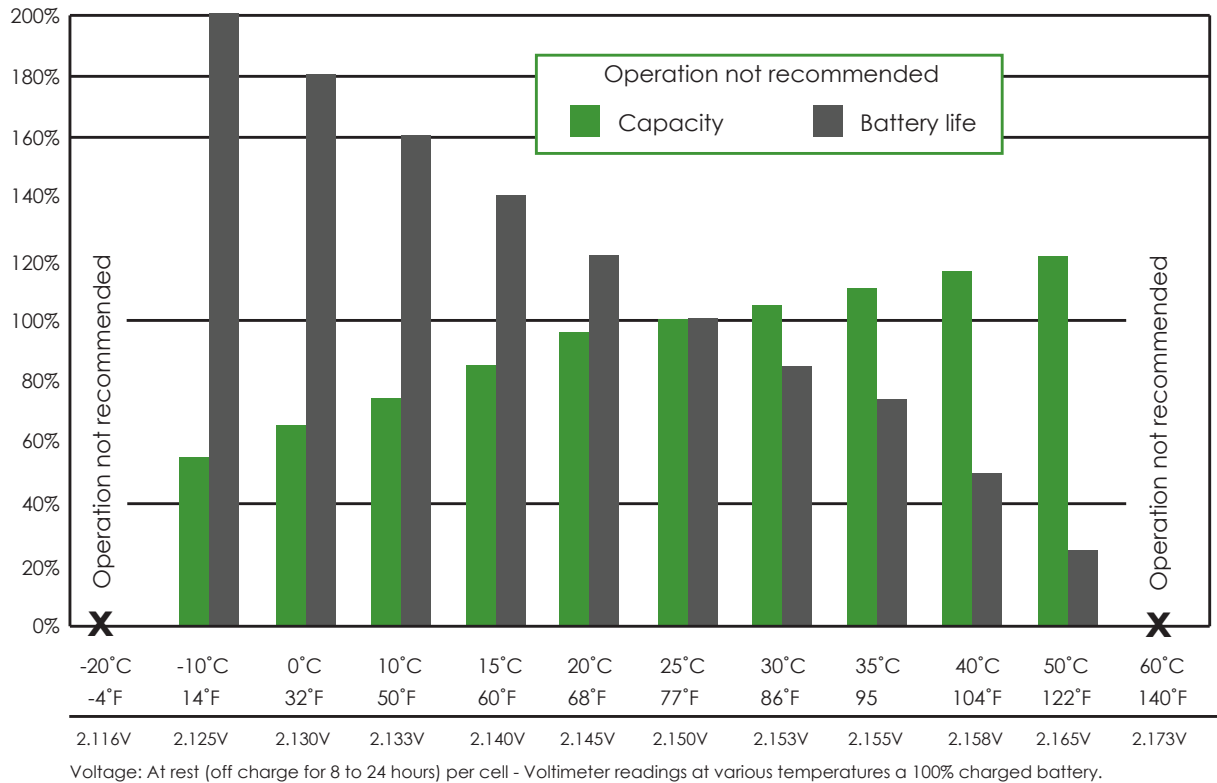
Charge times will vary as temperatures change

- Batteries are significantly less efficient when being charged at lower temperatures.
- Increasing as the temperature drops below 25°C / 77° F
- Decreasing as the temperature rises above 25°C / 77° F

Battery life will vary when operated at different temperatures

- Continued operation at higher temperatures will shorten battery life.
- Increasing as the temperature drops below 25°C / 77° F
- Decreasing as the temperature rises above 25°C / 77° F

## Battery capacity & battery life compared at different temperatures



## Definitions and things to know:

Data provided as representative only. Battery voltage, capacity and life will vary with actual environmental conditions and operator driving habits. Operation above 50°C / 122° F and below -10°C / 14° F is not recommended. Temperature: C: Celsius, F: Fahrenheit. Capacity: Operation or available "run time" as a % of base-line capacity established using industry standard testing at 25°C / 77° F. Battery Life: Expected battery life as a % of base-line life established using industry standard testing at 25°C / 77° F. Voltage: For Discover® Batteries, multiply the voltages shown by 3 for 6-volt batteries, by 4 for 8-volt batteries, and by 6 for 12-volt batteries.