



Campbell.[®]

S C I E N T I F I C

Campbell Scientific Battery Comparison



DEPTH OF DISCHARGE, SELF DISCHARGE, TEMPERATURES

Amp-Hour and Depth of Discharge

What is an amp-hour?

How long the battery can deliver a certain amperage:

$$350 \text{ mA} * 20 \text{ hrs} = \mathbf{7000 \text{ mAh}}$$

$$\begin{aligned} & \frac{7000 \text{ milli-amp hrs}}{1000 \text{ milli-amps/amp}} \\ & = \\ & \mathbf{7 \text{ Ah}} \end{aligned}$$

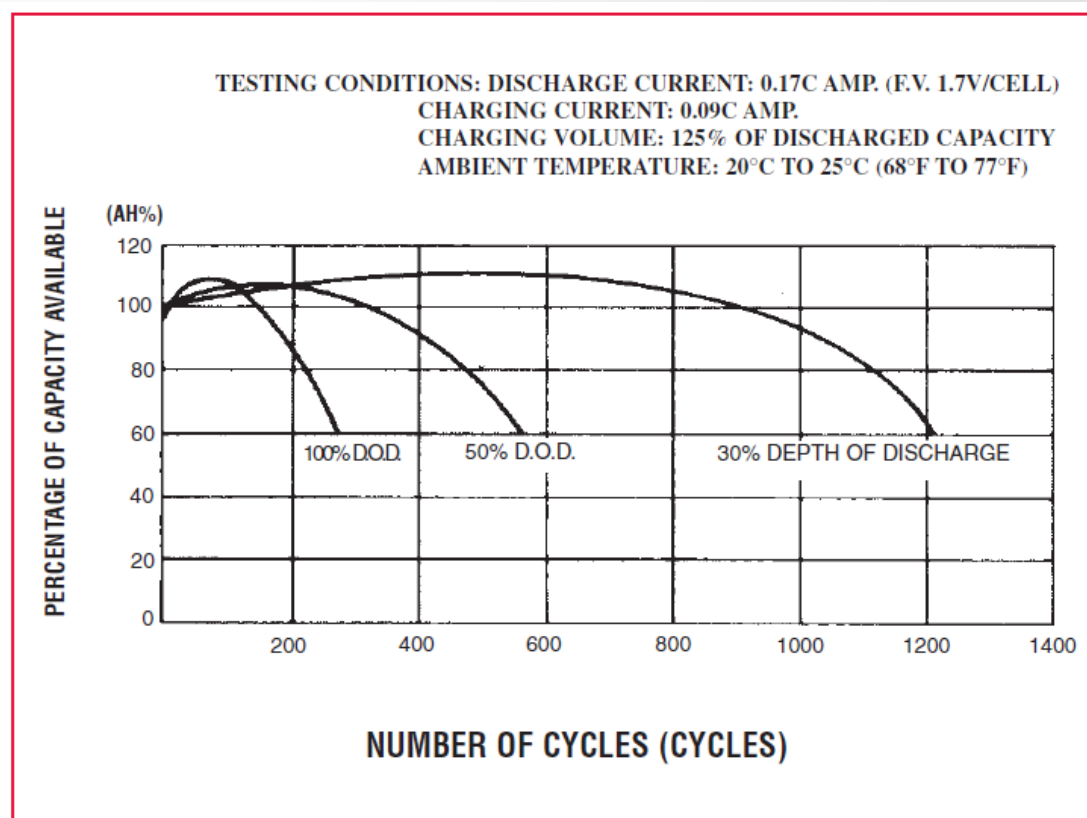


Figure 11. Cyclic Service Life in Relation to Depth of Discharge
Genesis® NP Series

<https://s.campbellsci.com/documents/us/technical-papers/pow-sup.pdf> (See section 1.2.1.)

NP Series: BP7, BP12, BP24

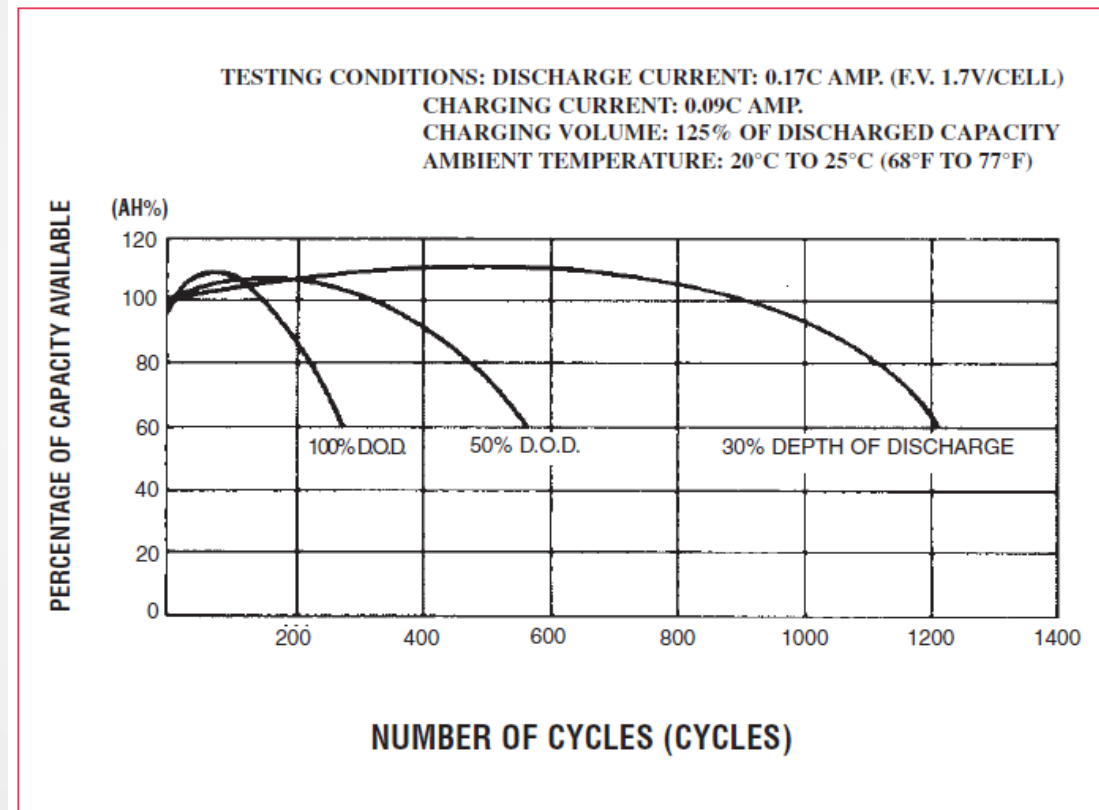
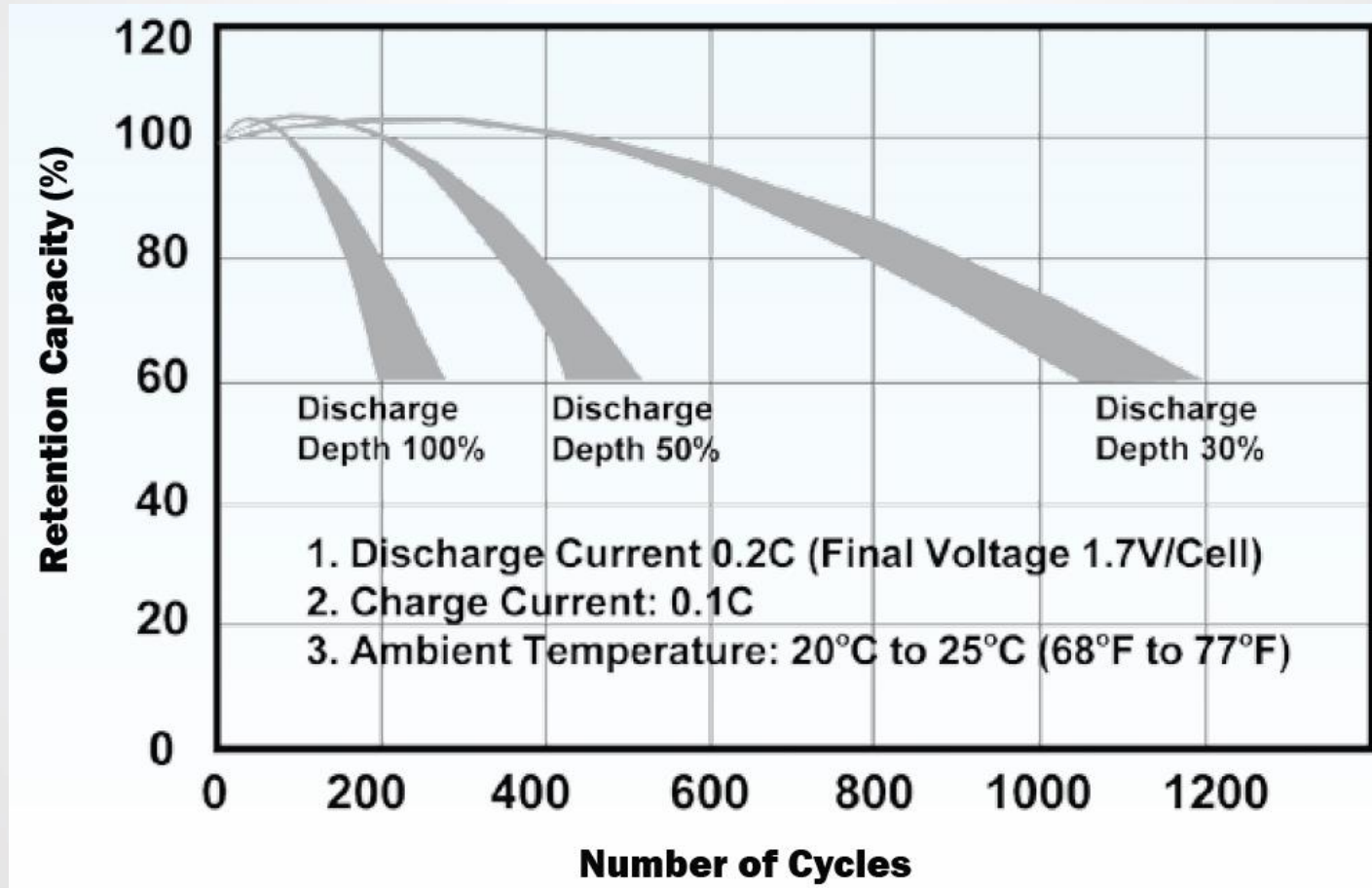


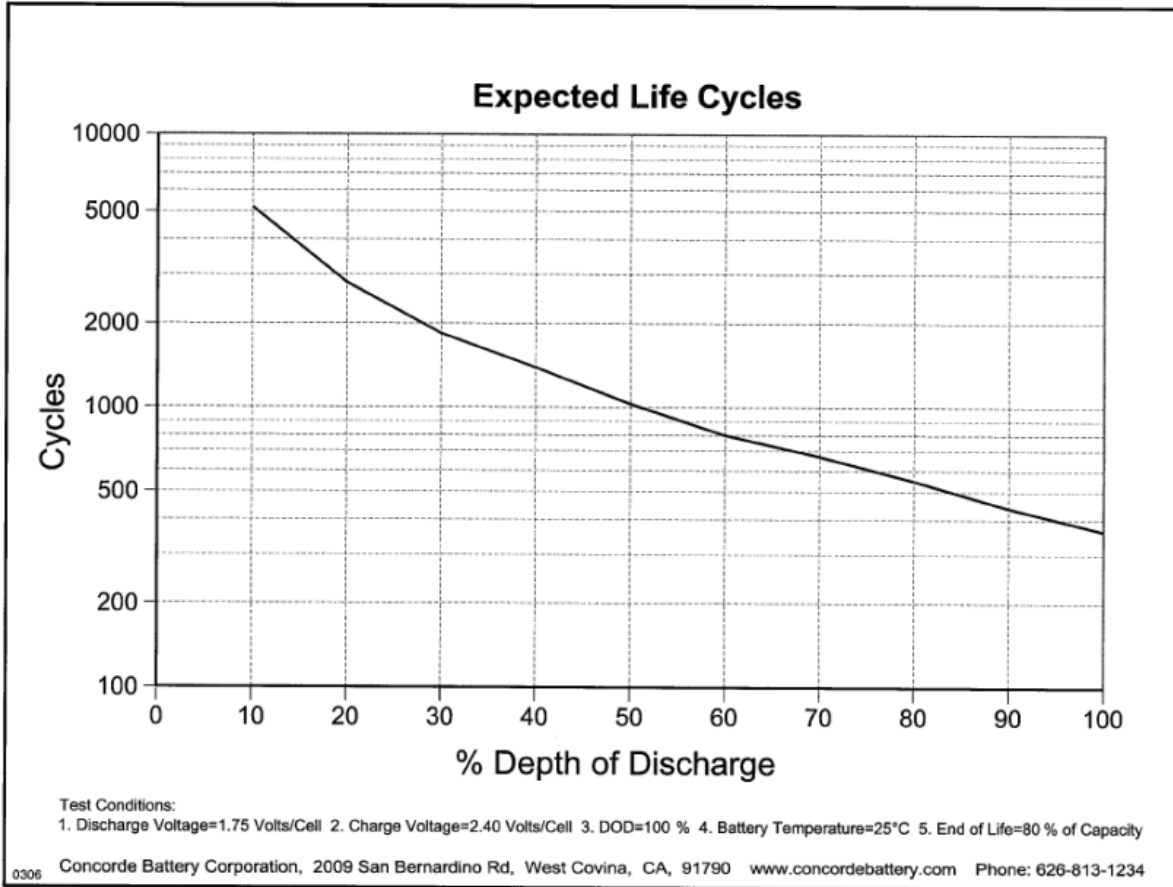
Figure 11. Cyclic Service Life in Relation to Depth of Discharge
Genesis® NP Series

Panasonic: BP24 (26 Ah)



Sun Xtender: BP84

Copyright © Concorde Battery Corporation 2014




...the heart of your solar system®

Self Discharge Curve

BP7, BP12, BP24

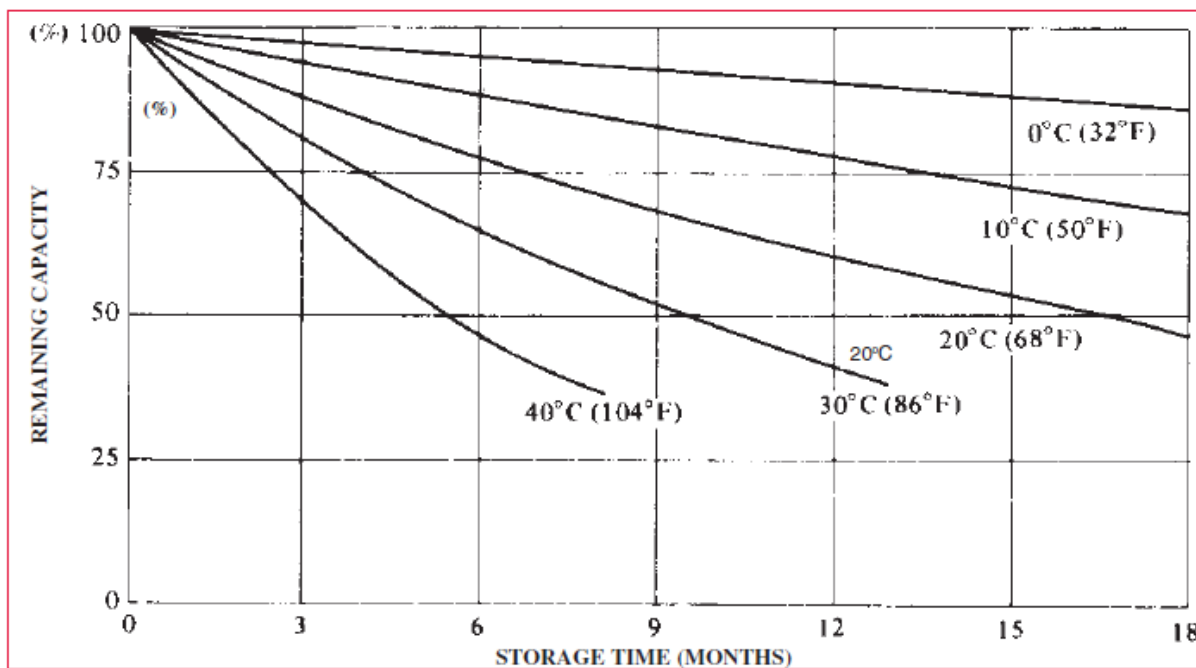
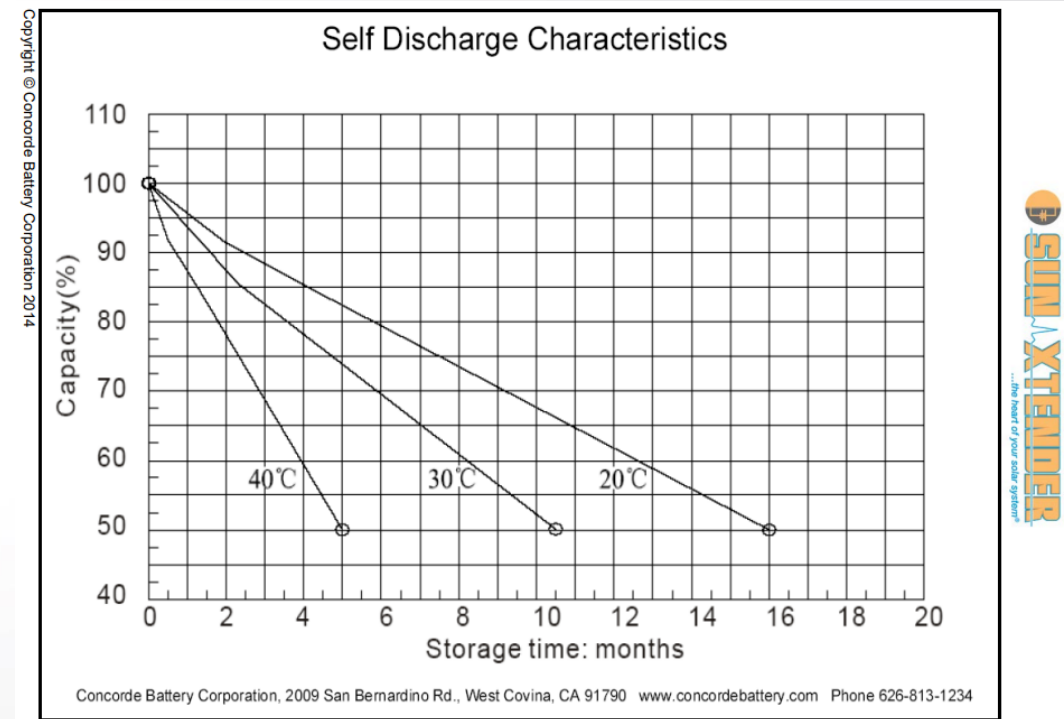


Figure 5. Self Discharge Characteristics

BP84



Concorde Battery Corporation, 2009 San Bernardino Rd., West Covina, CA 91790 www.concordebattery.com Phone 626-813-1234

Temperature

BP7, BP12, BP24

■ Temperature characteristics

At higher temperatures, the electrical capacity that can be taken out of a battery increases. At lower temperatures, the electrical capacity that can be taken out of a battery decreases. Figure 4 shows the temperature effects in relation to battery capacity.

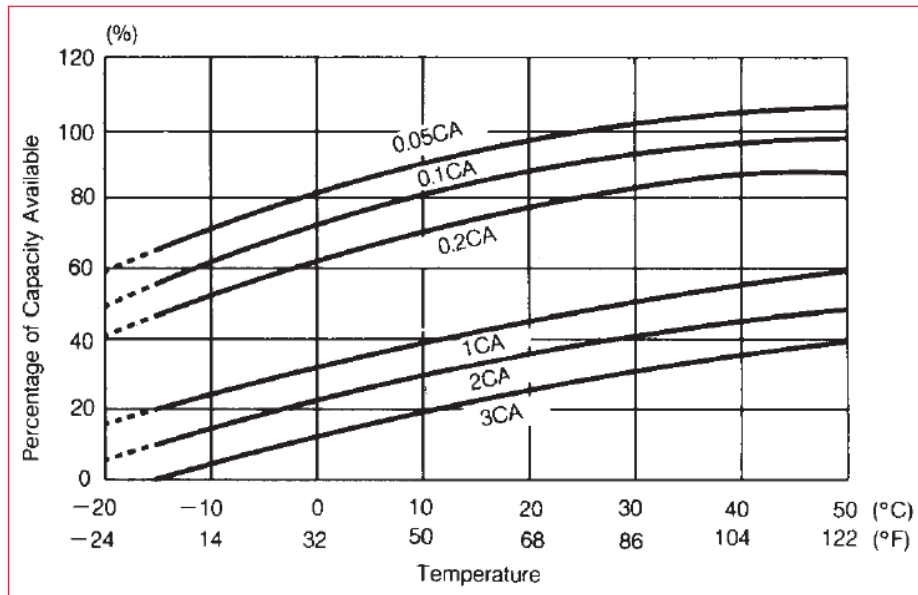


Figure 4. Temperature Effects in Relation to Battery Capacity

BP24 (26 Ah)

Temperature (°C)

Figure 6: Effect of Temperature on Capacity

Power-Sonic batteries may be discharged at temperatures ranging from -40°C to 60°C (-40°F to 140°F) and charged at temperatures from -20°C to 50°C (-4°F to 122°F).

While raising ambient temperature increases capacity, it also decreases useful service life. It is estimated that battery life is halved for each 10°C (18°F) above normal room temperature.

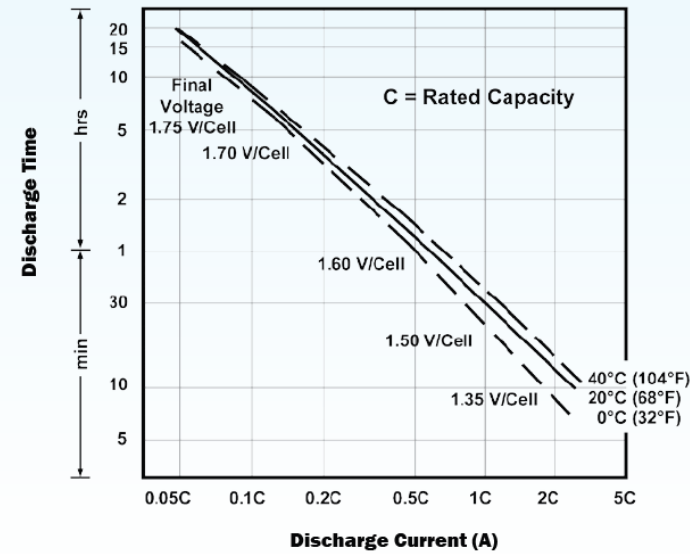
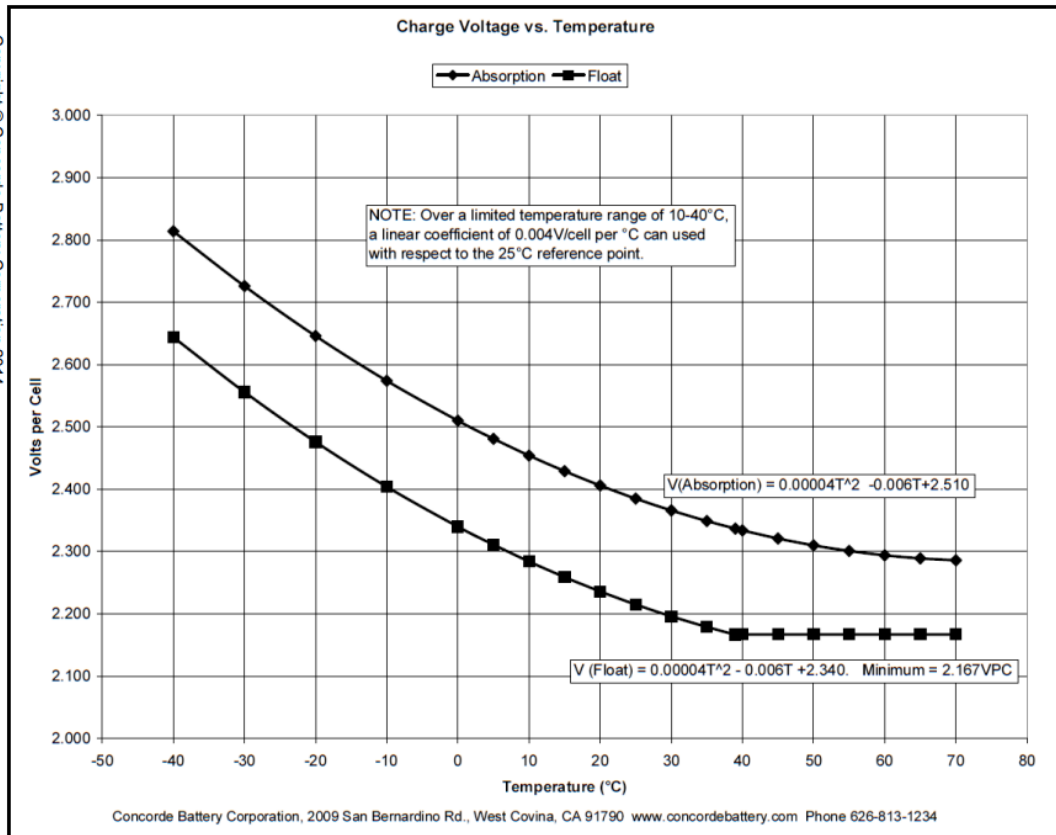


Figure 7: Relationship between current and discharge time for different ambient temperatures

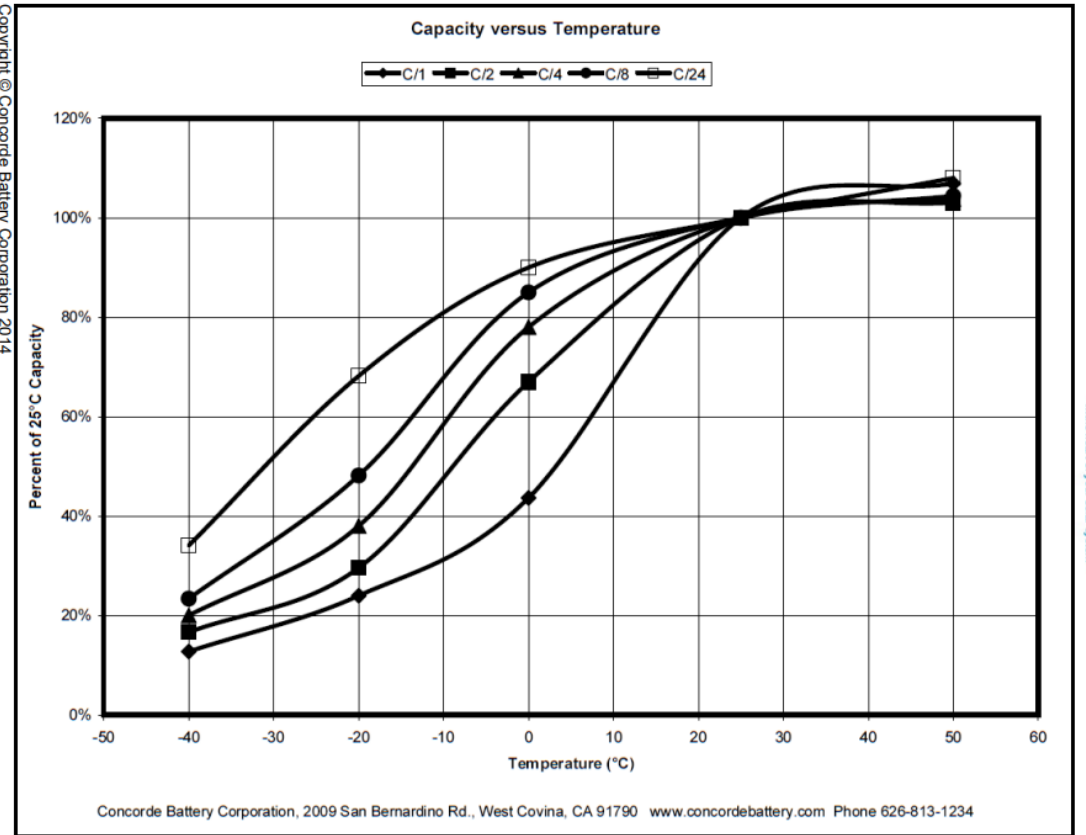
Temperature BP84

Copyright © Concorde Battery Corporation 2014



...the heart of your solar system™

Copyright © Concorde Battery Corporation 2014



...the heart of your solar system™

RELi³ON LiFePO₄ 52 Ahr (Warm Climate)

