

Battery Sizing Worksheet

1. Enter your daily amp-hour requirement. AH/Day _____
(Divide watts/day by 12, 24, or 48, depending on your system voltage)
2. Enter your maximum number of consecutive cloudy weather days expected in your area, or the number of days of autonomy you would like your system to support. (3-5 days generally) _____
3. Multiply the amp-hour requirements by the number of days. This is the amount of amp-hours your system will need to store. AH _____
4. Enter the depth of discharge for the battery you have chosen. This provides a safety factor so that you can avoid overcharging your battery bank. This number should not exceed 0.8. We recommend 50% or 0.5. _____
5. Divide line 3 by line 4. AH _____
6. Select the multiplier from Figure 1 below which corresponds to the average winter-time ambient temperature that your battery bank should experience. _____
7. Multiply lines 5 and 6. This calculation ensures your battery bank will have enough capacity to overcome cold weather effects. The number represents the total battery capacity you will need. AH _____
8. Enter your amp-hour rating for the battery you have chosen. _____
9. Divide the total capacity (#7) by the battery amp-hour rating (#8) and round off to the highest number. This is the number of parallel-wired batteries required. _____
10. Divide the nominal voltage (12V, 24V, or 48V) by the battery voltage. Round to the highest number. This is the number of batteries wired in series required. _____
11. Add lines 9 and 10. This is the number of batteries required in total. _____



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Figure 1

Ambient Temperature Multiplier		
80° F	26.7° C	1.00
70° F	21.2° C	1.04
60° F	15.6° C	1.11
50° F	10.0° C	1.19
40° F	4.4° C	1.30
30° F	(-1.1°) C	1.40
20° F	(-6.7°) C	1.59