



Battery Sizing

Sun Volt Solar
www.sun-volt.com
 (845) 626-2627

Use this work sheet in
 conjunction with Electrical load
 sizing work sheet and PV array
 sizing worksheet

(1) AC average daily load (watt hours) X	(2) Inverter Efficiency (%) =	(3) Result of Box 1 x 2 +	(4) DC average daily load (watt hours) /	(5) DC system Voltage =	(6) Average Ah per day
(7) Results from box 6 X	(8) Number of days without sun X	(9) Battery Discharge Limit (%+1) /	(10) Battery Ah =	(11) Number of batteries in parallel	
(12) DC system voltage /	(13) Battery Voltage =	(14) Batteries in Series X	(15) Result of Box 11 =	(16) Total batteries required	

Instructions:

Box 1: Enter the AC average daily load from the electrical load worksheet

Box 2: Enter the inverter manufactures specified efficiency in decimal format, e.g. 92%= 0.92

Box 3: Multiply box 1 by box 2

Box 4: Enter the DC average daily load from the electrical load worksheet

Box 5: Enter the system DC voltage, usually 12, 24 or 48 volts

Box 6: Divide box 4 by box 5

Box 7: Enter amount in box 6

Box 8: Enter the autonomous operation or maximum number of days without sun

Box 9: Enter the lowest percentage discharge state desired in decimal format, then add 1, e.g. 50% discharged

would equal .50 + 1 or 1.50

Box 10: Enter the Ah of the battery(ies) being used

Box 11: Divide box 9 by box 10 and round up to nearest whole number

Box 12: Enter the DC system voltage, same as box 5

Box 13: Enter the voltage of the batteries being used, can be 2, 4, 6, 8, or 12 volts

Box 14: divide box 12 by box 13

Box 15: enter the results of box 11

Box 16: Multiply box 14 x box 16, this is the total number of batteries required.