The 800-watt Light Unit

This light unit requires a power source that can provide at least 7 amps of 120-volt AC power. This can be achieved by using a small 1000-watt generator or higher. Or using a DC-AC power inverter rated for at least 1000 watts or more is also possible but is much more complicated.

Using a generator – The 800w light plugs right into the generator and it will power the light continuously as bright as it can be for as long as you have fuel in the generator. A generator that can produce at least 900 continuous running watts is all that's needed to power one 800w light unit. These generators typically weigh only 30lbs and are about the size of a large briefcase. This is the preferred option for most customers and definitely the SIMPLEST.

Inverter: Changes DC power from batteries to AC power for this light.

Using a DC – AC inverter – This method limits the length of time you can power the light. There are also a few other things that need to be understood before going this route.

1- To determine how long your setup will run lights you need to know how many amp hours or Ah your battery is rated for.

2- 800watts is equal to about 7amps of draw only on the AC 120v side of the inverter. The DC side of the inverter can draw up to 10 times that amperage to provide the light with 800 watts of AC 120v power.

3- The required amperage it takes for the inverter to do it's job must be factored in along with other electronics running from the same power source.

4- The amperage drawn from the DC side of the inverter depends on the number of batteries you have and how they are wired together.

5- The inverter you choose must match the DC voltage you have going into the inverter.

6- If the batteries you use are the same ones that receive a charge from your motor, this will ONLY slightly extend the run time.

How this works – To figure how many amps will be drawn using this system, you need to follow these steps:

Step 1 – Divide the light wattage by the number of volts that will be going into the inverter. (800w / 12v = 66.6 amps.) (800w / 24v = 33.3 amps.) (800w / 36v = 22.2 amps.) If your battery set up is different just change the voltage part of the equation to get your answer.

Step 2 – Find out the amp draw that the user manual for your inverter says your inverter requires to make 800w. Also if you have other electronics receiving power from the same batteries such as GPS, trolling motor, stereo, lights, pumps, etc… find out the added together amp draw of all those.

Step 3 – Add together all the amps from step 2 with the amps from step 1 to get your total amp draw.

Step 4 – This step is only If the batteries you use are the same ones that receive a charge from your motor, and you have the motor ON while using the light. This will slightly extend the run time. Find out how many amps your motor produces at idle speed. Take this number and subtract it from the result in step 3 to give you your new total amp draw.

Step 5 – Figure out the amp hours your battery or battery system will provide. This depends on the number of batteries, Ah rating of each battery, and how they are wired together. If it is just one battery you just need to find the Ah rating.

Step 6 – Divide the number of amp hours from step 5, by the total amp draw which will finally give you the run time of your light. Ah / total amp draw = Hours of run time.

** **Ah**: If you cannot find the Ah labeled on your battery, you should be able to find the Reserve capacity or RC or BC. If you can find that number just divide it by 2.4 and that is your baseline Amp-hr rating for your battery. The actual Ah rating is usually 10 – 30 Ah more than this number but at least you know the baseline Ah.

Example: If my boat has a 12v 80Ah battery and I am trying to power the 800w light with an inverter that uses 6 amps to do it's job and nav lights and gps are also drawing 3 amps from this battery.

800w / 12v = 66.6 amp draw, then

66.6 amps + 6 amps + 3 amps = 75.6, then

80 amphr / 72.6 total amp draw = ***1.06hr***

The charts below more clearly outline how to determine the run time of an 800w light using an inverter. Chart #1 shows batteries wired in parallel. Chart #2 shows batteries wired in series. These charts DO NOT factor in the added amperage the inverter will draw to do its work or amp draw from electronics. The batteries in this chart have a 60 Ah rating.

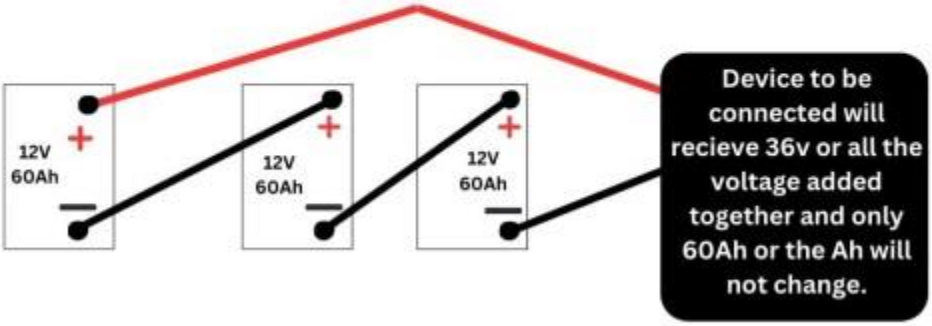
* (your batteries may have a different Ah rating)

# OF BATTERIES	VOLTS	AMP/HR	AMP DRAW	APROX. RUN TIME
1	12	60	66.6	50 min
2	12	120	66.6	1.8 hrs
3	12	180	66.6	2.7 hrs
4	12	240	66.6	3.6 hrs

CHART # 1

# 0F BATTERIES	VOLTS	AMP/HR	AMP DRAW	APROX. RUNTIME
1	12	60	66.6	50 min
2	24	60	33.3	1.8 hrs
3	36	60	22.3	2.7 hrs
4	48	60	16.6	3.6 hrs

SERIES



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