Wattage Load Planning

PlugOut Power offers this information for estimating the emergency power needs of your home. Our list of appliances is not complete, nor can we know the specific watt rating for your appliances, but it covers most of the house appliances and gives a range of likely wattage values. If you need assistance, contact PlugOut Power or an electrician.

For emergency power capacity planning, first prioritize the appliances in your home for emergency use, then find out the wattage ratings for those appliances and total them up. Be sure to know the actual wattage of your appliances. Reselect appliances to fit the PlugOut and car.

Wattages: Appliances can be grouped by low-medium-high-very high range. Note that motors [wash machines, pumps, power tools, etc.] have a startup power draw that is 4-5x the motor's power rating. Lower power resistive heating appliances have a 2-3x surge rating. When judging max power needs, use the highest possible continuous power need, without the highest power appliance, then add the surge power for the highest power appliance. This should be less than the surge power capability of vehicle and PlugOut [whichever is lower]. The Plug-Out supports surge power up to 1.5x the PlugOut's rating. Inventory and sum your emergency power needs. Our numbers are approximate. You should find out your actual wattages.

Use limits: In addition to the power limits of the PlugOut, most Cars will also have a max surge power limit they can supply. Ex: Prius is about 3.7kw. [See Supported Vehicle List]. We do not recommend planning to use anywhere near the PlugOut or Car limit. Leave 25-50% headroom to accommodate surges and inaccurate power estimates.

Distribution: Next decide on the distribution method. If this process is not well understood by you, get a certified electrician to help you, and to avoid costly errors. Note the PlugOut should not be installed where freezing temperatures are likely, nor where condensation/precipitation can occur. In many cases, this means installing in the basement.

Ad-Hoc: You can run extension cords from the Plug-Out [at the car] into the home and then more cords to the individual appliances. Use power meter[s] to accurately gauge total power use.

House wiring: If the PlugOut is installed in the garage, install an AC generator socket/outlet [30A] in the garage wired to a subpanel-transfer switch.

Or, if the PlugOut is installed in the basement, run DC extension cables from the car to the wall, using a DC wall socket, and to the basement PlugOut. Then you will install AC wires from the PlugOut to the panel, or a subpanel with only emergency house AC circuits. When the grid goes down, the transfer switch disconnects the sub/panel circuits from the grid and connects them to the generator socket. We strongly recommend engaging a certified electrician to help you ensure safety, estimate the needed capacity, and install the circuits. DO NOT do this yourself. There are serious safety issues for yourself, the house, your appliances, and emergency utility workmen.

If possible, use power meters so that power usage can be monitored. Leave sufficient spare power capacity to absorb any simultaneous device startups.

Low Wattage:	Watt Range	Surge	Your Wattage	Qty	Total
LED/CFL lights	5-15-25	10-50			
Incandescent	40-200	80-400			
Device Battery charger	5-50	10-100			
Laptop computers	40-50	80-100			
Desktop computer	50-100	100-200			
Printer – ink	20-40	40-80			
Printer – laser	100-200	200-400			
Home Network Router/wifi	20	40			
TV – CRT	50-100	100-200			
T V – plasma	100-300	200-600			
TV - LCD, LED	50-100	100-200			
Other	?				
Medium Wattage:					
Refrigerator	300-500	800-1000			
Freezer	400-800	800-1600			
AC window unit	500-1200	1000-2400			
heating – water [gas/oil/propane]	100-400	250-800			
water heater [same]	100-250	200-500			
stove/oven [same]	50	100			
clothes dryer [gas]	100-1000	500-1200			
Clothes washer	100-1000	500-1500			
Other	?				
High Wattage:					
Microwave oven	900-1500	2000-3000			
Coffee maker	900-1200	2000-2500			
Hair dryer	500-1200	1000-2500			
Power tool –drill	300-1000	1500-5000			
Power tool – saw	500-1200	2000-5000			
Space heater [electric]	500-1500	1000-3000			
Central heating – air [gas/oil/etc]	500-1500	1500-5000			
Water well pump - <100ft	500-1000	2500-5000			
Sump/Sewage pump regular	700-1000	3500-5000			
Other	?				
Very High Wattage – typically 240v		[typically too much for PlugOut or Car]			
Well pump - >100ft [208/240v]	1000-2000	5000-10000			
Clothes dryer [electric]	2000-4000	6000-15000			
Stove/oven [electric]	2000-7000	4000-14000			
Central Electric house heating	2000-7000	4000-14000			
Central Heat Pump and fan	1500-3500	6000-14000			
Total					W