



What's a Watt? How Much Juice Do You Need to Produce

A watt basically measures how much energy an appliance needs to operate.

A 60-watt lightbulb consumes 60 watts.

So how many watts do you need to weather a power outage?

The answer is actually pretty easy as long as you don't get too bogged down into "wattage overload."

Restoring Power to Survival Appliances

Let's be honest. A 3500-7,000 watt generator will help you weather the storm.

They won't power your entire home. Nor do they pack a big enough punch to run an electric range or clothes dryer, which requires a ton of electricity.

"Medium sized generators are the ideal entry-level emergency generators," says Hoch. "They're perfect for the person who wants to protect their family from power failure and doesn't want to spend a fortune."

Wattage Management

Since medium emergency generators produce limited electricity, you'll need to manage how many appliances are connected to the generator so it doesn't overload.

The best advice is to avoid powering too many motorized appliances (refrigerators, sump pumps, well pumps). While unlikely, the electric surge could pop the generator's circuit breaker if two motorized appliances start simultaneously.

Your best bet is to rotate the larger appliances. For example, run the refrigerator for an hour. Then run the well pump. Then run the deep freezer.

Yes, it requires a little more effort, but you'll still be the envy of the block during the next blackout.

How to Safely Restore Power to Your Home

Getting a portable generator is great start family from power failure. battle. Getting the electricity into the house is You NEVER should back feed the electricity into incorrectly, you can electrocute utility workers lines. recommends two safe ways to get the electricity house:



toward protecting your However, it's only half the another matter. the house. If done repairing downed power Electric Generators Direct from the generator into your

Extension Cords

How to Easily Extend Your Generator's Reach

Extension cords work well with small generators because they only generate enough power for one or two appliances.



The most common way to use a portable electric generator is to place it outdoors, then run extension cords through an open window or door to the chosen appliances.

Extension cords have several drawbacks:

- 1) You can only restore power to appliances with cords. Hardwired items, like furnaces fans, well pumps and ceiling fans, don't have cords. Therefore, you can't power them with an extension cord.
- (2) If the cords are too long, the resulting power drop may damage the generator and appliances. And, if they are placed under rugs or carpets, heat can buildup and spark a fire.
- (3) It's time consuming stringing a bunch of extension cords together. The power could be restored by the time you get everything set up.

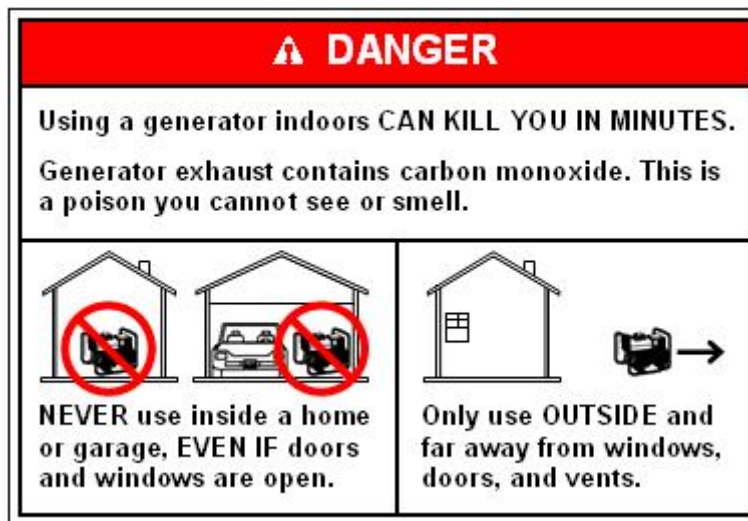
Portable Generator Hazards

Portable generators are useful when temporary or remote electric power is needed, but they also can be hazardous. The primary hazards to avoid when using a generator are carbon monoxide (CO) poisoning from the toxic engine exhaust, electric shock or electrocution, fire and burns.

Every year, people die in incidents related to portable generator use. Most of the incidents associated with portable generators reported to CPSC involve CO poisoning from generators used indoors or in partially-enclosed spaces.

Carbon Monoxide Hazards

When used in a confined space, generators can produce high levels of CO within minutes. When you use a portable generator, remember that you cannot see or smell CO. Even if you do not smell exhaust fumes, you may still be exposed to CO.



Danger labels are required on all portable generators manufactured or imported on or after May 14, 2007.

If you start to feel sick, dizzy, or weak while using a generator, get to fresh air **RIGHT AWAY. DO NOT DELAY.** The CO from generators can rapidly kill you.

Follow these safety tips to protect against CO poisoning.

- **NEVER** use a generator inside homes, garages, crawlspaces, sheds, or similar areas, even when using fans or opening doors and windows for ventilation. Deadly levels of carbon monoxide can quickly build up in these areas and can linger for hours, even after the generator has shut off.
- Follow the instructions that come with your generator. Locate the unit outdoors and far from doors, windows, and vents that could allow CO to come indoors.
- Install battery-operated CO alarms or plug-in CO alarms with battery back-up in your home, according to the manufacturer's instructions. CO alarms should be certified to the requirements of the latest safety standards (UL 2034, IAS 6-96, or CSA 6.19.01). Test batteries monthly.

To avoid CO poisoning when using generators:

- Never run generators indoors, including garages, basements, crawlspaces and sheds.
- Get to fresh air right away if you start to feel dizzy or weak.

Electrical Hazards

- Generators pose a risk of shock and electrocution, especially if they are operated in wet conditions. If you must use a generator when it is wet outside, protect the generator from moisture to help avoid the shock/electrocution hazard, but do so without operating the generator indoors or near openings to any building that can be occupied in order to help avoid the CO hazard. Operate the generator under an open, canopy-like structure on a dry surface where water cannot reach it or puddle or drain under it. Dry your hands, if wet, before touching the generator.
- Connect appliances to the generator using heavy-duty extension cords that are specifically designed for outdoor use. Make sure the wattage rating for each cord exceeds the total wattage of all appliances connected to it. Use extension cords that are long enough to allow the generator to be placed outdoors and far away from windows, doors and vents to the home or to other structures that could be occupied. Check that the entire length of each cord is free of cuts or tears and that the plug has all three prongs. Protect the cord from getting pinched or crushed if it passes through a window or doorway.
- **NEVER** try to power the house wiring by plugging the generator into a wall outlet, a practice known as "backfeeding." This is extremely dangerous and presents an electrocution risk to utility workers and neighbors served by the same utility transformer. It also bypasses some of the built-in household circuit protection devices.

Fire Hazards

- **Never** store fuel for your generator in the home. Gasoline, propane, kerosene, and other flammable liquids should be stored outside of living areas in properly-labeled, non-glass safety containers. Do not store them near a fuel-burning appliance, such as a natural gas water heater in a garage.
- Before refueling the generator, turn it off and let it cool down. Gasoline spilled on hot engine parts could ignite.

How Many Watts Will Your Generator Need to Produce?

Add up the wattage of tools, appliances and motors you want to run at the same time. Then select a generator with the **RUNNING** wattage rating to match or exceed the total load. Keep in mind that appliances with electric motors require additional **SURGE** wattage at startup that can be double or triple the normal running wattage requirement. Look at the surge watts required and make sure you choose a generator with enough additional wattage to start them. Keep in mind that you typically are not starting more than half of the items at the same time.

Most home appliances and power tools are 120 Volts; larger appliances like electric stoves and clothes dryers may be 240 Volts. Generator power is measured in Watts: **Amps x Volts = Watts**

You can use our Wattage Chart to estimate the wattages of the tools, appliances and motors you will be operating at the same time. Wattage noted below are approximates only; please refer to tool or appliance itself for specific wattage required or order our easy-to-use tester below.

Wattage Chart		
	Running Wattage Required	Surge Wattage Required at Startup
Household		
Coffee Maker	1750	0
Electric Fry Pan	1300	0
Electric Range: 8in. Element	2100	0
625W Microwave	625	800
Refrigerator or Freezer	700	2200
Furnace Fan (Gas or fuel oil):	300-875	2350
Lights	As indicated on bulb	0
Radio	50-200	0
Sump Pump: 1/3 HP	800	1300
Sump Pump: 1/2 HP	1050	2150
Color Television	300-500	0
Computers		
Desktop	600-800	0
Laptop	200-250	0
Monitor	200-250	0
Fax	600-800	0
Printer	400-600	0

*Based on average-sized unit. Central air conditioners differ in wattage requirements; consult owner's manual for specific wattage requirements.

Finally, add together the wattage requirements for all the electrical devices that you want to run, to determine the minimum continuous wattage you will need from a generator.