Killawatt - The Power of Plug-In Kilwatt Meters

Green ACES (Advisory Committee on Environmental Sustainability) is pleased to provide a Kill-A-Watt Monitor Loan Program through the City of Greenbelt Department of Public Works.

You plug the Kill-A-Watt Monitor between your wall socket and an electrical appliance to find out how much energy the appliance uses.

To borrow a devise for your use come to the Public Works office of Recycling and fill out a Loan Form and deposit a reimbursable $20 deposit. Devices can be borrowed for up to one week at a time. We are located at 555 Crescent Road. Park at the Buddy Attick Park lot and walk down the driveway to the Public Works building. We are open from 7:30 am to 4:00 pm Monday through Friday.

At home you can plug one into your refrigerator, TV, computer, microwave, electric heater, stereo etc... And at work you can use one to check out the energy consumption of various bits of equipment such as computers, photocopiers, fax machines, and fans.

You'll probably be quite surprised at how much electricity some things use... Believe it or not, **some electrical items even use energy when they're switched off!** These items are called *"electricity vampires"* because they keep *sucking electricity* until you unplug them or switch them off at the wall.

A plug-in meter will enable you to hunt down these electricity vampires and any other faulty or inefficient equipment that's using more energy than it should... Once you've found the worst offenders you can repair or replace them, or at least take special care to switch them off or unplug them when they're not needed.

Some appliances, such as refrigerators, can cost a small fortune to run if they're a bit worse for wear, so it's very important to check such items every so often to ensure that they're not pouring energy and money down the drain.

Even if you don't find any inefficient equipment, using one of these plug-in electricity usage monitors will almost certainly make you more aware of your energy consumption, and you can use the figures from it to encourage your co-workers or family to be more careful about switching things off when they're not needed.

Using the Kill-a-Watt meter

1) Simply plug it into an electrical wall socket and then insert the plug for the device that you wish to monitor into the front of the Kill-a-Watt meter.
2) Turn on the appliance or electric device you wish to monitor. To check its energy consumption in kilowatt-hours (kWh)—the unit your home's electric meter measures and which your electric company bills you for—push the purple-pink button on the far right side of the Kill-a-Watt meter.
3) To check the power consumption in watts, push the middle button.

TIP: If the device is in a difficult-to-reach location, or the wall electrical outlet is far from the device, use a power strip or suitable extension cord during the monitoring period, making sure the extension cord can safely handle the electrical load.

CAUTION: Only use with standard 110-/120 volt devices, not 220/240 volt devices such as clothes dryers or certain heavy duty through-the-wall air conditioners.

Want more details?

Some appliances consume widely varying amounts of electricity over the course of time. For example, refrigerators will draw most of their power when their compressors are running or their heaters are running in the defrost cycle. For devices such as these, it's best to monitor over a long period of time. For example, plug in the refrigerator into the Kill-a-Watt meter. Push the purple-pink button on the far right side of the Kill-a-Watt meter, and let it measure consumption for a full day. This will tell you its energy consumption in kWh. Push the same button again (it toggles) and you'll get the number of hours you monitored the device. By dividing the total kWh by the number of hours of monitoring, you'll get a fairly accurate energy consumption in kWh the device consumes per hour. Want to know how much that cost? Multiply by your electric rate. Then, to see how much that device costs to operate each year, multiply the cost per kWh by the estimated number of hours you use that device per year. (For a refrigerator, which is always operating, multiply your cost per kWh by 8,760 hours [the number of hours in a year]). For a TV, use 4, 5, 6 or however many hours per day you watch TV and multiply by 365 days in a year to find its annual energy cost.

Some devices, like most lamps, draw nearly constant power consumption. Power is the energy used at any given moment. By pushing the middle button, you'll see what the power consumption is in watts. (There are 1,000 watts in a kilowatt.) If you plug in your

TV and select the watt button, you'll see that it fluctuates a little. That's because the volume and color display is constantly changing when you're watching the TV, consuming more or less power as a result. You can compare the power consumed by different devices this way. For example, an LED string of holiday lights may consume only a few watts, compared to a string of traditional holiday lights, which consists of incandescent bulbs, may consume 10 times as much.

The Kill-a-Watt meter is capable of measuring other electrical device characteristics—hertz, power factor, volt-amperes, volts, and amps—for those of you who are technical.

P4400 Kill A Watt TM Operation Manual

1. The LCD shows all meter readings: Volts, Current, Watts, Frequency, Power Factor, and VA. The unit will start to accumulate KWH and powered duration time (hour) after power is applied.
2. Press Volt Key for true RMS Voltage (Volts) display.
3. Press Amp Key for true RMS output current (Amps) display.
4. The Watt/VA Key is a toggle function key. Press the Watt/VA key once to display Watt meter, then press key to display VA meter. The LCD will display Watts as the active power, where VA is the apparent Power. (VA=Vrms Arms).
5. The HZ/PF is a toggle function key. Press the HZ/PF key once to display the frequency (Hertz), then
press key to display the Power Factor. HZ is the Frequency of output Voltage, where PF is the Power
Factor (PF=W/Vrms Arms).
6. The KWH/Hour is a toggle function key. Press the KWH/Hour key once to show the cumulative energy consumption since power was applied to the unit. Then press key to display the cumulative time since power was applied to the unit.
7. Consumption will be displayed in Kilowatt-Hours (from 0.01 KWH to 9999 KWH). Time will initially be displayed as Hours: Minutes (from 00:00) and switch to Hours (to 9999). Counters will recycle to zero when they reach their maximum. To reset, remove power from unit momentarily.

WARNING: Do not exceed maximum ratings as detailed on label.

Operating Voltage: 115 VAC
Max Voltage 125 VAC
Max Current 15 A
Max Power 1875 VA