Energy Use of Some Typical Home Appliances

If you want a general estimate of how much electricity your home appliances consume, you can refer to the list below, which provides the energy consumption (Wattage) of some typical home appliances. If you have appliances that are not listed in the table, or desire a more exact figure based on a specific appliance in your home, use the following formula to estimate the amount of energy a specific appliance consumes:

$$\text{Wattage} \times \text{Hours Used per Day} \div 1000 = \text{Daily Kilowatt-hour (kWh) consumption}$$

**Note:** 1 kilowatt (kW) = 1,000 Watts

Multiply this by the number of days you use the appliance during the year for the annual consumption. You can then calculate the annual cost to run an appliance by multiplying the kWh per year by your local utility's rate per kWh consumed.

**For examples:**

*Window fan:*

$$\begin{align*}
200 \text{ Watts} \times 4 \text{ hours/day} \times 120 \text{ days/year} \div 1000 &= 96 \text{ kWh} \times 8.5 \text{ Cents/kWh} \\
&= 8.16 \text{/year}
\end{align*}$$

*Personal Computer and Monitor:*

$$\begin{align*}
(120 + 150) \text{ Watts} \times 4 \text{ hours/day} \times 365 \text{ days/year} \div 1000 &= 394 \text{ kWh} \times 8.5 \text{ Cents/kWh} \\
&= 33.51 \text{/year}
\end{align*}$$

You can usually find the wattage of most appliances stamped on the bottom or back of the appliance, or on its "nameplate." The wattage listed is the maximum power drawn by the appliance. Since many appliances have a range of settings (for example, the volume on a radio), the actual amount of power consumed depends on the setting used at any one time.
Here are some examples of the range of nameplate wattages for various household appliances:

Aquarium = 50-1210 Watts  
Clock radio = 10  
Coffee maker = 900-1200  
Clothes washer = 350-500  
Clothes dryer = 1800-5000  
Dishwasher = 1200-2400 (using the drying feature greatly increases energy consumption)  
Dehumidifier = 785  
Electric blanket- Single/Double = 60 / 100  
Fans  
   Ceiling = 65-175  
   Window = 55-250  
   Furnace = 750  
   Whole house = 240-750  
Hair dryer = 1200-1875  
Heater (portable) = 750-1500  
Clothes Iron = 1000-1800  
Microwave oven = 750-1100  
Personal Computer  
   CPU - awake / asleep = 120 / 30 or less  
   Monitor - awake / asleep = 150 / 30 or less  
   Laptop = 50  
Radio (stereo) = 70-400  
Refrigerator (frost-free, 16 cubic feet) = 725  
Televisions (colour)  
   19" = 65-110  
   27" = 113  
   36" = 133  
   53"-61" Projection = 170  
   Flat Screen = 120  
Toaster = 800-1400  
Toaster Oven = 1225  
VCR/DVD = 17-21 /20-25  
Vacuum cleaner = 1000-1440  
Water heater (40 gallon) = 4500-5500  
Water pump (deep well) = 250-1100  
Water bed (w/ heater, no cover) = 120-380
Refrigerators, although turned "on" all the time, actually cycle on and off at a rate that depends on a number of factors. These factors include how well it is insulated, room temperature, freezer temperature, how often the door is opened, if the coils are clean, if it is defrosted regularly, and the condition of the door seals.

To get an approximate figure for the number of hours that a refrigerator actually operates at its maximum wattage, divide the total time the refrigerator is plugged in by three.

If the wattage is not listed on the appliance, you can still estimate it by finding the current draw (in amperes) and multiplying that by the voltage used by the appliance.

The amperes might be stamped on the unit in place of the wattage.

If not, find a clamp-on ammeter—an electrician's tool that clamps around one of the two wires on the appliance—to measure the current flowing through it.

You can obtain this type of ammeter in stores that sell electrical and electronic equipment. Take a reading while the device is running; this is the actual amount of current being used at that instant.

Note: When measuring the current drawn by a motor, in the first second that the motor starts, the meter will show about three times the current than when it is running smoothly.

Also note that many appliances continue to draw a small amount of power when they are switched "off."

These "phantom loads" occur in most appliances that use electricity, such as VCRs, televisions, stereos, computers, and kitchen appliances.

Most phantom loads will increase the appliance's energy consumption a few watts per hour.

These loads can be avoided by unplugging the appliance or using a power strip and using the switch on the power strip to cut all power to the appliance.