

# TECH NOTE

From Zero Surge Inc.

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## Power Consumption

Occasionally, we are asked how much power a Zero Surge Power Quality Filter uses when on “standby” and nothing is plugged in or drawing power through its filters. *The answer is fairly simple: less than 1 Watt of power. Please read on if you'd like more details.*

Because our technology is always sensing surges, there are several components that actively consume power, but the overall power consumption is very low. In comparison, we use less than a power-efficient lightbulb.

In theory, our unit only has six components transforming energy into heat or light. (five

resistors and the green “power on” LED). The resistors illuminate the LED to insure the Zero Surge unit is powered on and operational. Some of the resistors also serve as a surge sense, triggering the protection system in the event there is a surge approaching the power line. Most of that power consumption is not occupied by the surge sense but by the LED. We rectify the power line voltage and store power on an appropriately sized capacitor which then supplies the resistance and LED. Power consumed can be valued at roughly .332 Watts which is nearly twenty times less power than a 7W LED lightbulb. This is represented in the math formula below:

$$\frac{168Volts}{86kOhms} \approx 0.002Amps \rightarrow 170Volts * 0.002Amps = 0.332Watts$$

In practice, there is resistance to copper wire and mediums chosen for capacity. From these effects, our products can emit very low amounts of heat which can rise according to how much power is sourced. The overall consumption seen on the line is still much less than a standard energy efficient lightbulb. In the average setting, our product is estimated to use less than 1 Watt of power to protect your equipment from surge damage as well as other power events and extend its lifespan.



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