

Energy Cost per Device Calculator

Calculate per-device energy and cost from device watts, quantity, runtime, operating days, and energy rate, with total annual cost for the repeated load.

Generated October 10, 2026

<https://www.elecatrrix.com/power-energy-cost/energy-cost-per-device-calculator/>

Inputs

Input	Value	Unit
Device power	100	W
Device count	10	devices
Hours per day	8	h/day
Operating days	365	days/year
Electricity rate	0.16	\$/kWh

Results

Result	Value	Unit
Energy per device	292	kWh/year
Annual total energy	2920	kWh/year
Annual cost per device	46.72	\$/year
Annual total cost	467.2	\$/year

Calculation details

Detail	Value	Unit
Calculation basis	Per-device energy equals watts divided by 1000, multiplied by runtime and operating days. Total cost scales that energy by device count and rate.	
Boundary	Screening estimate only; no duty-cycle model, standby load, tax, demand charge, or tariff reconciliation is made by this calculator.	

Formulas

energy per device = device watts / 1000 x hours per day x operating days

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annual total energy = energy per device x device count

annual cost per device = energy per device x electricity rate

annual total cost = annual total energy x electricity rate

Warnings and limitations

This per-device cost estimate uses entered runtime assumptions only. It does not model duty cycles, standby loads, controls, taxes, demand charges, or tariff rules.