

Transformer Cooling Load Calculator

Convert transformer losses and operating assumptions into adjusted heat load, BTU per hour, cooling tons, and daily heat energy for HVAC coordination.

Generated October 10, 2026

<https://www.elecatrix.com/power-quality-transformers/transformer-cooling-load-calculator/>

Inputs

Input	Value	Unit
Transformer losses	2500	W
Load diversity factor	100	%
Cooling safety factor	20	%
Operating hours per day	12	h/day

Results

Result	Value	Unit
Adjusted heat load	3000	W
Heat load	10236.426	BTU/h
Cooling tons	0.853	tons
Daily heat energy	36	kWh/day

Calculation details

Detail	Value	Unit
Calculation basis	Entered transformer losses are adjusted by diversity and safety factors, then converted to HVAC heat-load units.	
Cooling boundary	Heat-load conversion only; ventilation, ambient, transformer limits, and HVAC selection remain external.	

Formulas

Adjusted heat load = Transformer losses x (Diversity percent/100) x (1 + (Safety factor percent/100))

BTU per hour = Adjusted heat load (W) x 3.412142

Cooling tons = (BTU per hour/12000)

Transformer Cooling Load Calculator

Convert transformer losses and operating assumptions into adjusted heat load, BTU per hour, cooling tons, and daily heat energy for HVAC coordination.

Generated October 10, 2026

<https://www.elecatrix.com/power-quality-transformers/transformer-cooling-load-calculator/>

Daily heat energy (kWh) = (Adjusted heat load (W) x Operating hours/1000)

Warnings and limitations

This cooling estimate converts entered loss data. It does not model enclosure ventilation, transformer temperature rise, HVAC equipment selection, ambient conditions, or manufacturer thermal limits.