

Enclosure Heat Dissipation Calculator

Calculate enclosure temperature rise, internal temperature, and margin from internal heat, ambient temperature, and thermal resistance.

Generated October 10, 2026

<https://www.elecatrix.com/circuits-components/enclosure-heat-dissipation-calculator/>

Inputs

Input	Value	Unit
Internal power dissipation	120	W
Thermal resistance	0.15	deg C/W
Ambient temperature	25	deg C
Maximum internal temperature	50	deg C

Results

Result	Value	Unit
Temperature rise	18	deg C
Internal temperature	43	deg C
Temperature margin	7	deg C
Temperature comparison	At or below entered maximum temperature	

Calculation details

Detail	Value	Unit
Calculation basis	Temperature rise equals internal power multiplied by the entered thermal resistance. Estimated internal temperature adds that rise to ambient.	
Screening boundary	Thermal arithmetic only; verify enclosure geometry, surface area, heat transfer, ambient variation, solar gain, component spacing, ratings, and manufacturer instructions.	

Formulas

temperature rise deg C = internal power W x thermal resistance deg C/W

Enclosure Heat Dissipation Calculator

Calculate enclosure temperature rise, internal temperature, and margin from internal heat, ambient temperature, and thermal resistance.

Generated October 10, 2026

<https://www.elecatrix.com/circuits-components/enclosure-heat-dissipation-calculator/>

estimated internal temperature deg C = ambient temperature deg C + temperature rise deg C

temperature margin deg C = maximum internal temperature deg C - estimated internal temperature deg C

Warnings and limitations

This is a simplified enclosure heat screen. It does not select an enclosure, fan, air conditioner, heat exchanger, NEMA/IP rating, or equipment temperature approval.