

Residential Heat Pump Service Load Calculator

Estimate the net added kW from a residential heat-pump conversion and compare the planned peak load with available service capacity.

Generated October 10, 2026

<https://www.elecatrix.com/residential-load-service/residential-heat-pump-service-load-calculator/>

Inputs

Input	Value	Unit
Indoor heat pump load	3.6	kW
Auxiliary heat load	5	kW
Outdoor unit load	0.8	kW
Replaced electric heating load	2	kW
Existing residential peak	11	kW
Entered coincidence factor	70	%
Entered service capacity	24	kW

Results

Result	Value	Unit
Net added heat pump load	7.4	kW
Planned peak with heat pump	16.18	kW
Entered service capacity margin	7.82	kW

Calculation details

Detail	Value	Unit
Calculation basis	Heat-pump load is compared with replaced load, existing peak, and entered service capacity.	
Review boundary	Planning estimate only; no service size, manufacturer nameplate, utility, or code-compliance approval is made.	

Formulas

Net added load=Heat pump load+Auxiliary heat load+Outdoor unit load-Replaced electric heat

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$\text{Planned peak} = \text{Existing peak} + \text{Net added load} \times \text{Coincidence factor} / 100$

$\text{Service capacity margin} = \text{Service capacity} - \text{Planned peak}$

Warnings and limitations

This residential heat-pump estimate does not determine final service size, approve equipment nameplate data, select conductors or breakers, or replace utility/AHJ review.