

Transformer Losses Calculator

Calculate transformer losses and efficiency when core-loss and load-loss values are already defined. It does not derive manufacturer losses or select equipment.

Generated October 10, 2026

<https://www.elecatrrix.com/power-quality-transformers/transformer-losses-calculator/>

Inputs

Input	Value	Unit
Core loss	300	W
Load loss	700	W
Output power	100	kW

Results

Result	Value	Unit
Total losses	1000	W
Estimated input power	101000	W
Estimated efficiency	99.0099	%
Core loss used	300	W
Load loss used	700	W

Calculation details

Detail	Value	Unit
Calculation basis	Total transformer loss equals core loss plus load loss. Input power equals output power plus total loss.	
Selection boundary	Loss arithmetic only; core and load loss values must come from a defined test or manufacturer basis. No rating, temperature rise, harmonic, or code-compliance result is made.	

Formulas

$$P_{\text{loss}} = P_{\text{core}} + P_{\text{load}}$$

$$P_{\text{input}} = P_{\text{output}} + P_{\text{loss}}$$

$$\eta = \frac{P_{\text{output}}}{P_{\text{input}}} \times 100\%$$

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Warnings and limitations

Core-loss and load-loss inputs must come from a defined test, datasheet, or project basis. This does not calculate thermal performance, harmonic effects, or code compliance.