

Parallel Conductor Calculator

Compares ideal and highest-loaded current per parallel conductor set with entered ampacity using total load, set count, and mismatch allowance.

Generated October 10, 2026

<https://www.elecatrix.com/wire-raceway-ampacity/parallel-conductor-calculator/>

Inputs		
Input	Value	Unit
Total load	800	A
Parallel sets	4	sets
Ampacity per set	225	A
Mismatch allowance	3	%
Results		
Result	Value	Unit
Ideal current per set	200	A
Estimated highest set current	206	A
Entered total ampacity	900	A
Highest set margin	19	A
Status		
Status	Value	Unit
Capacity comparison	Within entered ampacity basis	
Calculation details		
Detail	Value	Unit
Calculation basis	Ideal current is total load divided by parallel sets. The entered mismatch percent is applied to estimate a highest-loaded set for ampacity review.	
Selection boundary	Parallel conductor estimate only; no conductor selection, installation approval, impedance study, termination rating, derating, or code-compliance result is made.	

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Formulas

$$I_{\text{ideal, set}} = \frac{I_{\text{total}}}{N_{\text{sets}}}$$

$$I_{\text{highest, set}} = I_{\text{ideal, set}} (1 + (\text{Mismatch } (\%) / 100))$$

$$I_{\text{ampacity, total}} = N_{\text{sets}} \times I_{\text{ampacity, set}}$$

$$M_{\text{highest, set}} = I_{\text{ampacity, set}} - I_{\text{highest, set}}$$

Warnings and limitations

This parallel conductor estimate is a current-sharing comparison. It does not verify conductor paralleling rules, length matching, raceway arrangement, impedance balance, derating, terminations, or code compliance.