

Commercial Phase Allocation Calculator

Compare Phase A, B, and C VA values, calculate phase currents, and show the load difference needed for a closer balance.

Generated October 10, 2026

<https://www.elecatrrix.com/commercial-industrial-loads/commercial-phase-allocation-calculator/>

Inputs

Input	Value	Unit
Phase A load	24000	VA
Phase B load	18000	VA
Phase C load	12000	VA
Phase voltage basis	480	V

Results

Result	Value	Unit
Total phase load	54000	VA
Average phase load	18000	VA
Maximum phase load	24000	VA
Minimum phase load	12000	VA
Maximum phase deviation	6000	VA
Imbalance estimate	33.3333	%
Equalizing transfer estimate	6000	VA
Phase A current estimate	50	A
Phase B current estimate	37.5	A
Phase C current estimate	25	A
Phase voltage used	480	V

Calculation details

Detail	Value	Unit
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Calculation basis	Phase allocation totals the three entered VA values, compares each phase with the average, and converts each phase VA to current using the entered voltage.
Review boundary	Screening allocation arithmetic only. No demand factor, neutral or harmonic analysis, panelboard rating, conductor selection, protection, utility, or code-compliance result is made.

Formulas

$$V!A_{total} = V!A_A + V!A_B + V!A_C$$

$$V!A_{avg} = \frac{V!A_{total}}{3}$$

$$U_{\%} = \frac{\Delta V!A_{max}}{V!A_{avg}} \times 100$$

$$V!A_{transfer} = \frac{V!A_{max} - V!A_{min}}{2}$$

$$I_{phase} = \frac{V!A_{phase}}{V}$$

Warnings and limitations

This is phase-allocation arithmetic only. It does not assign circuits, apply demand factors, size equipment, or establish panel, conductor, protection, utility, or code compliance.