

Demand Factor Estimate (NEC 220 Context)

Estimate demand from two user-defined load blocks, entered factor percentages, and an optional fixed allowance while keeping NEC article references as context rather than encoded code logic.

Generated October 10, 2026

<https://www.elecatrix.com/residential-load-service/nec-220-demand-factor-calculator/>

Inputs

Input	Value	Unit
Connected load	50000	VA
First-block load	3000	VA
First-block factor	100	%
Second user-defined block	47000	VA
Remaining-block factor	50	%
Fixed allowance	N/A	VA
Load block basis note	N/A	
Factor basis note	N/A	
Edition context note	N/A	

Results

Result	Value	Unit
Applied first-block demand	3000	VA
Applied remaining-block demand	23500	VA
Total defined load blocks	50000	VA
Unmodeled connected load	N/A	VA
Estimated demand from entered blocks	26500	VA
Diversity allowance from entered blocks	23500	VA
Effective entered demand factor	53	%

Calculation details

Detail	Value	Unit
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Calculation basis	User-defined load blocks, user-entered factors, and optional fixed allowance; no NEC table value is selected.
User factor boundary	Entered blocks, percentages, and fixed allowance are user-supplied; no NEC Article 220 table value is selected.
Adopted-code boundary	No NEC Article 220 load table, dwelling demand factor, feeder/service calculation, or code-compliance result is made by this calculator.
Article context boundary	NEC 220 is legacy/topical context; current adopted edition, Article 120/220 numbering, AHJ direction, and official NEC text must be verified separately.
Diversity allowance interpretation	Diversity allowance is connected load minus demand from the entered assumptions; it is not unused service, feeder, or panel capacity.
Service-size boundary	No NEC demand calculation, service-size calculation, conductor selection, breaker selection, equipment approval, utility approval, or code-compliance result is made by this calculator.

Formulas

$$D_1 = B_1 \times (f_1/100)$$

$$D_2 = B_2 \times (f_2/100)$$

$$D_estimated = A_fixed + D_1 + D_2$$

$$B_defined = B_1 + B_2$$

$$L_unmodeled = L_connected - B_1 - B_2$$

$$V_diversity = L_connected - D_estimated$$

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$f_{\text{effective}} = \text{fracD_estimatedL_connected} \times 100$

$\text{applied first-block VA} = \text{first-block VA} \times \text{first-block factor percent} / 100$

$\text{applied remaining-block VA} = \text{remaining-block VA} \times \text{remaining-block factor percent} / 100$

$\text{unmodeled connected load VA} = \text{connected load VA} - \text{first-block VA} - \text{remaining-block VA}$

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Warnings and limitations

This is a U.S.-focused preliminary engineering estimate, not a reproduction of NEC Article 220 or Article 120 tables, not a dwelling-unit demand calculation, not a service-size calculation, and not a code-compliance result. NEC 220 is retained as legacy and topical context; verify current adopted NEC numbering, AHJ direction, and official NEC text separately. The first block, second user-defined block, factors, and fixed allowance are user-defined assumptions. This calculator does not apply NEC load classifications, continuous-load rules, standard demand tables, conductor ampacity, overcurrent protection, equipment ratings, load balancing, utility requirements, or local amendments.