

Appliance Load Calculator

Estimate appliance load and current from row-level VA, quantity, demand factors, continuous multipliers, voltage, phase, and an entered comparison capacity. The result does not apply dwelling, dryer, range, branch-circuit, or service demand rules.

Generated October 10, 2026

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

Inputs

Input	Value	Unit
Appliance rows	Rows: 4	
Row 1 - Label	Dishwasher	
Row 1 - Quantity	1	count
Row 1 - VA each	1200	VA
Row 1 - Demand factor	100	%
Row 1 - Continuous multiplier	100	%
Row 2 - Label	Disposal	
Row 2 - Quantity	1	count
Row 2 - VA each	840	VA
Row 2 - Demand factor	100	%
Row 2 - Continuous multiplier	100	%
Row 3 - Label	Laundry	
Row 3 - Quantity	1	count
Row 3 - VA each	1500	VA
Row 3 - Demand factor	100	%
Row 3 - Continuous multiplier	100	%
Row 4 - Label	Small appliance group	
Row 4 - Quantity	2	count
Row 4 - VA each	1500	VA

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Row 4 - Demand factor	75	%
Row 4 - Continuous multiplier	100	%
System voltage	240	V
Phase	Single-phase	
Entered capacity	40	A

Results

Result	Value	Unit
Connected appliance load	6540	VA
Demand appliance load	5790	VA
Continuous adder	N/A	VA
Adjusted appliance load	5790	VA
Appliance current	24.125	A
Entered capacity margin	15.875	A
Largest row load	3000	VA
Effective demand factor	88.5321	%
Counted appliances	5	count
Counted appliance rows	4	rows
Phase multiplier	1	x

Calculation details

Detail	Value	Unit
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Calculation basis	Each appliance row multiplies quantity by entered VA each, applies the user-entered demand factor, then applies the user-entered continuous multiplier before current conversion.
Selection boundary	Appliance load estimate only; no dwelling optional method, dryer/range demand table, branch-circuit sizing, service sizing, or code-compliance result is made.

Formulas

N =quantity,quad VA_{each} =VA per appliance,quad F_{demand} =demand factor percent,quad $F_{continuous}$ =continuous multiplier percent

V =system voltage,quad m_{phase} =1 for single-phase or $\sqrt{3}$ for balanced three-phase

Connected $VA_{row} = N \times VA_{each}$

Demand $VA_{row} = \text{Connected } VA_{row} \times \frac{F_{demand}}{100}$

Continuous adder_row = Demand $VA_{row} \times (\frac{F_{continuous}}{100} - 1)$

Adjusted VA = sum Demand $VA_{row} + \text{sum Continuous adder_row}$

$I = \frac{\text{Adjusted VA}}{V \times m_{phase}}$

Effective demand percent = (Adjusted VA/Connected VA) x 100%

Warnings and limitations

This appliance load estimate uses user-entered appliance rows and factor assumptions. It does not apply dwelling optional methods, dryer or range demand tables, branch-circuit rules, service sizing, or code compliance.