

Receptacle Load Calculator

Estimates connected and demand receptacle load in VA, then converts the demand load to circuit current from the entered voltage and phase model.

Generated October 10, 2026

<https://www.elecatrrix.com/commercial-industrial-loads/receptacle-load-calculator/>

Inputs

Input	Value	Unit
Receptacle count	80	count
Load per receptacle	180	VA
Demand factor	60	%
System voltage	120	V
Phase	Single-phase	

Results

Result	Value	Unit
Connected load	14400	VA
Demand load	8640	VA
Circuit current	72	A
Phase multiplier	1	x

Calculation details

Detail	Value	Unit
Calculation basis	Connected receptacle load equals receptacle count times entered VA per receptacle, then the entered demand factor is applied.	
Selection boundary	Receptacle load estimate only; no code demand table, circuit count, conductor, breaker, occupancy, or inspection result is made.	

Formulas

$$VA_{connected} = N_{receptacles} \times VA_{per\ receptacle}$$

$$VA_{demand} = VA_{connected} \times (D/100)$$

$$I = \frac{VA_{demand}}{V}$$

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$m=1$ for single-phase; $m=\sqrt{3}$ for balanced three-phase

Warnings and limitations

This receptacle load estimate uses user-entered VA and demand factors. It does not apply occupancy rules, demand tables, circuit limits, conductor sizing, or code compliance.