

EV Charger Circuit Size Calculator

Estimate EVSE circuit ampacity and apparent load from entered charger current, voltage, phase, continuous-load factor, conductor ampacity, and OCPD values.

Generated October 10, 2026

<https://www.elecatrix.com/solar-backup-power/ev-charger-circuit-size-calculator/>

Inputs

Input	Value	Unit
EVSE current	48	A
Continuous multiplier	125	%
System voltage	240	V
Phase	Single-phase	
Entered conductor ampacity	60	A
Preferred OCPD	60	A

Results

Result	Value	Unit
Required circuit ampacity	60	A
EVSE load	11520	VA
Adjusted load	14400	VA
Entered ampacity margin	N/A	A
Preferred OCPD margin	N/A	A

Rating comparison

Within entered conductor and OCPD ratings

Calculation details

Detail	Value	Unit
Calculation basis	Required circuit ampacity equals entered EVSE current multiplied by the entered continuous-load factor. Entered ampacity and preferred OCPD are comparison values only.	

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Selection boundary

EV charger circuit estimate only; no conductor, breaker, EVSE listing, load-management, dwelling load, utility, permit, or code-compliance result is made.

Formulas

Required circuit ampacity = EVSE current x (continuous multiplier (%)/100)

Phase multiplier = 1 for single-phase, sqrt(3) for balanced three-phase

EVSE load (VA) = EVSE current x voltage x phase multiplier

Adjusted load (VA) = required circuit ampacity x voltage x phase multiplier

Entered ampacity margin = entered conductor ampacity - required circuit ampacity

Preferred OCPD margin = preferred OCPD - required circuit ampacity

Warnings and limitations

This EV charger circuit estimate is an arithmetic comparison. It does not select conductors, breakers, EVSE settings, load management, dwelling load capacity, permits, utility approval, or code compliance.