

Battery Discharge Current Calculator

Calculate battery-side input power, discharge current, and conversion loss from a stated load, nominal battery voltage, and conversion efficiency.

Generated October 10, 2026

<https://www.elecatrix.com/solar-backup-power/battery-discharge-current-calculator/>

Inputs

Input	Value	Unit
Load power	1200	W
Battery voltage	48	V
Conversion efficiency	90	%

Results

Result	Value	Unit
Battery-side input power	1333.3333	W
Discharge current	27.7778	A
Conversion loss	133.3333	W
Efficiency factor	0.9	x

Calculation details

Detail	Value	Unit
Calculation basis	DC input power equals load watts divided by conversion efficiency. Battery discharge current equals DC input power divided by battery voltage.	
Review boundary	Battery discharge-current arithmetic only; verify battery chemistry, C-rate, temperature, inverter surge, cable drop, protection, listing, and manufacturer data separately.	

Formulas

$$P_{DC} = \frac{P_{load}}{\eta}$$

$$I_{DC} = \frac{P_{DC}}{V_{battery}}$$

$$P_{loss} = P_{DC} - P_{load}$$

Warnings and limitations

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This is battery current arithmetic only. It does not verify battery C-rate, cable ampacity, voltage drop, overcurrent protection, surge capability, or manufacturer limits.