

Ground Grid Resistance Calculator

Estimate simplified ground-grid resistance from soil resistivity, grid area, and parallel paths for preliminary review.

Generated October 10, 2026

<https://www.elecatrix.com/testing-protection-grounding/ground-grid-resistance-calculator/>

Inputs

Input	Value	Unit
Soil resistivity	100	ohm-m
Grid length	20	m
Grid width	10	m
Parallel paths	4	count

Results

Result	Value	Unit
Grid area	200	m2
Base grid resistance	1.7678	ohm
Grid resistance	0.4419	ohm
Grid aspect ratio	2	x

Calculation details

Detail	Value	Unit
Calculation basis	This worksheet uses soil resistivity divided by four times the square root of entered grid area, then divides by entered parallel paths.	
Selection boundary	Ground-grid screen only; this does not replace field testing, an IEEE 80 model, electrode design, bonding review, utility rules, or code compliance.	

Formulas

grid area = grid length x grid width

base grid resistance = soil resistivity / (4 x square root of grid area)

estimated grid resistance = base grid resistance / parallel paths

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`grid aspect ratio = maximum(length / width, width / length)`

Warnings and limitations

This preliminary estimate uses a simplified approximation and does not replace field testing or claim an IEEE 80, utility, or field-test result.