

Box Fill Calculator

Compare entered conductor, device, clamp, and grounding volume allowances with an electrical box volume while keeping the source record visible for review.

Generated October 10, 2026

<https://www.elecatrix.com/wire-raceway-ampacity/box-fill-calculator/>

Inputs

Input	Value	Unit
Entered box volume	22.5	in^3
Conductor count	6	conductors
Conductor allowance	2	in^3
Device yoke count	1	yokes
Device allowance	4	in^3
Clamp count	1	clamps
Clamp allowance	2	in^3
Grounding allowance	2	in^3
Allowance source reference	box-schedule-a	

Results

Result	Value	Unit
Conductor volume	12	in^3
Device volume	4	in^3
Clamp volume	2	in^3
Total entered fill volume	20	in^3
Remaining box volume	2.5	in^3
Entered fill percentage	88.8889	%
Fill comparison	within_entered_volume	

Calculation details

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Detail	Value	Unit
Calculation basis	The worksheet sums entered conductor, device, clamp, and grounding allowances and compares them with entered box volume.	
Review boundary	Entered-volume worksheet only; no NEC table lookup, box approval, or code-compliance result is made.	
Record comparison	entered_values_comparable	

Formulas

$$V_{conductors} = N_{conductors} \times V_{allowance}$$

$$V_{fill} = V_{conductors} + V_{device} + V_{clamp} + V_{grounding}$$

$$V_{remaining} = V_{box} - V_{fill}$$

$$fill\ percent = \frac{V_{fill}}{V_{box}} \times 100$$

Warnings and limitations

Entered-volume comparison only; no NEC table lookup or final standards determination is made.