

Cable Tray Fill Calculator

Compare cable area rows with a tray area limit while keeping layout, tray construction, and standards review separate.

Generated October 10, 2026

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

Inputs		
Input	Value	Unit
Usable tray area	120	in^2
Entered fill limit	50	%
Cable rows	Rows: 1	
Row 1 - Cable label	Feeder A	
Row 1 - Cable area	1.2	in^2
Row 1 - Quantity	10	cables
Results		
Result	Value	Unit
Occupied area	12	in^2
Entered fill percentage	10	%
Entered limit area	60	in^2
Fill margin	48	in^2
Remaining area	108	in^2
Counted rows	1	
Status		
Status	Value	Unit
Fill comparison	Within Entered Limit	
Calculation details		
Detail	Value	Unit
Calculation basis	Occupied tray area is the sum of entered cable row areas multiplied by entered quantities.	

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Selection boundary

Worksheet arithmetic only; no cable-tray type, support, thermal, or standards determination is made.

Formulas

$$A_{\text{occupied}} = \text{sum}(A_{\text{cable}} \times N_{\text{cable}})$$

$$\text{fill percent} = \frac{A_{\text{occupied}}}{A_{\text{tray}}} \times 100$$

$$A_{\text{limit}} = A_{\text{tray}} \times \frac{L_{\%}}{100}$$

$$M_{\text{fill}} = A_{\text{limit}} - A_{\text{occupied}}$$

Warnings and limitations

Entered-area worksheet only; review tray construction, cable arrangement, support, thermal effects, adopted rules, and qualified design context separately.