

# Cable Tray Width Calculator

Calculate the tray width required for an entered cable envelope after spacing, usable-width, and edge-clearance assumptions, then compare it with a candidate tray.

Generated October 10, 2026

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

## Inputs

| Input                      | Value | Unit |
|----------------------------|-------|------|
| Total cable envelope width | 18    | in   |
| Spacing allowance          | 15    | %    |
| Usable width factor        | 75    | %    |
| Edge clearance per side    | 1     | in   |
| Selected tray width        | 36    | in   |

## Results

| Result                       | Value | Unit |
|------------------------------|-------|------|
| Planned cable envelope width | 20.7  | in   |
| Required usable tray width   | 27.6  | in   |
| Minimum tray width           | 29.6  | in   |
| Selected width margin        | 6.4   | in   |

## Status

| Status           | Value                               | Unit |
|------------------|-------------------------------------|------|
| Tray width check | Selected Width At Or Above Estimate |      |

## Calculation details

| Detail               | Value                                                                                                                  | Unit |
|----------------------|------------------------------------------------------------------------------------------------------------------------|------|
| Calculation basis    | Entered cable envelope is adjusted by spacing allowance and usable width factor, then side clearances are added.       |      |
| Tray review boundary | Layout width estimate only; tray series, fill rules, separation, supports, and manufacturer selection remain external. |      |

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## Formulas

$$W_{\text{planned}} = W_{\text{cable}}(1 + \frac{S_{\text{allowance}}}{100})$$

$$W_{\text{usable}} = \frac{W_{\text{planned}} F_{\text{usable}}}{100}$$

$$W_{\text{minimum}} = W_{\text{usable}} + 2E_{\text{edge}}$$

$$M_{\text{width}} = W_{\text{selected}} - W_{\text{minimum}}$$

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## Warnings and limitations

This width worksheet uses entered layout assumptions. It does not approve cable tray fill, structural loading, ventilation, support spacing, cable separation, or manufacturer tray selection.