# Formula for calculating the amount of wire used in distribution boxes

## Overview

The basic formula is: Required Volume = (Number of Conductors × Volume per Conductor) + (Number of Devices × 2 × Volume per Conductor) + (Number of Fittings × Volume per Conductor). The Box Fill Calculator is an essential electrical installation tool that determines the maximum number of conductors, devices, and fittings that can be safely installed in electrical boxes according to National Electrical Code (NEC) standards. Box fill calculations are important for several reasons: What is box fill?

The total volume. This electrical box fill calculator (or in short, box fill calculator) will help you determine the total box fill volumes you will need to meet so that each of your electrical utility boxes will pass the National Electrical Code®. Calculate electrical box fill per NEC 314. 16, including conductors, devices, clamps, and grounding. Ensure your installations are safe and code-compliant.

## Article Content

May 10, 2026

Box Fill Calculator – Fast, Accurate & NEC-Compliant

Easily calculate electrical box fill per NEC code. Enter wires, devices, clamps & get instant results. Free, fast & accurate Box Fill Calculator online!

May 25, 2026

Box Fill Calculator

Calculate electrical box fill capacity, determine NEC compliance, and ensure proper wire management. Free online tool for electricians and electrical contractors.

Mar 13, 2026

Box Fill Calculator

Calculate electrical box fill volume, conductor allowances, device fill, and grounding conductor requirements. The most accurate box fill calculator for electricians.

Nov 26, 2025

Box Fill Calculation Guide | PDF | Electrical Conductor | Volume

Calculating conductor volume is a matter of adding up individual conductor fill volumes and conductor equivalent volume fills — and there are five such volumes. After you calculate all five volumes using ...

Aug 19, 2025

Box Fill Calculator · NEC 314.16 helper

Choose a preset box volume or enter a custom volume in cubic inches (add ring volumes if used). Add one or more gauge rows and enter the number of insulated conductors of each gauge entering or ...

Aug 20, 2025

Box Fill Calculator

Proper box fill calculation is crucial for electrical safety and code compliance. Our Box Fill Calculator helps you determine if your electrical box has sufficient capacity for all conductors and devices.

Sep 03, 2025

Box Fill Calculator

Use this box fill calculator to find the correct size of electrical utility box to fit the conducting wires, grounding wires, and devices or equipment you would need to install and have it pass the National ...

Sep 07, 2025

How To Calculate Box Fill | Angi

A box fill calculator helps you determine how many wires and devices fit safely in your electrical box based on conductor size and box volume. Your box fill calculation depends on the ...

Jan 11, 2026

Home Electrical Wiring | Electrical Code for Wire and Box Fill Capacity

Part (1) of Section 370-16 (a) describes in detail the method of counting wires, as well as clamps, fittings, or devices (i.e., switches, receptacles, combination devices) - by establishing an equivalent ...

Apr 03, 2026

Box Fill Calculator

Calculate electrical box fill capacity per NEC requirements. Free junction box calculator for determining wire and device fill volumes.

## Contact Us

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