

Conduit Fill Calculator

Enter the raceway internal area, the cross-sectional area of one conductor, and the conductor count to estimate occupied area and fill ratio in square inches.

Generated October 10, 2026

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

Inputs

Input	Value	Unit
Raceway internal area	1	in ²
Conductor area, each	0.12	in ²
Conductor count	3	

Results

Result	Value	Unit
Total conductor area	0.36	in ²
Fill ratio	36	%
Remaining raceway area	0.64	in ²
Screening limit	40	%
40% screening area limit	0.4	in ²
40% screening area margin	0.04	in ²
Passes 40% screening estimate (3+ conductors)	Yes	
Screening status	passes_40_percent_screening	

Formulas

total conductor area = conductor area per conductor x conductor count

fill ratio percent = total conductor area / raceway internal area x 100

remaining raceway area = raceway internal area - total conductor area

40% screening area limit = raceway internal area x 0.40 when conductor count >= 3

40% screening margin = 40% screening area limit - total conductor area

passes 40% screening estimate = fill ratio percent <= 40 when conductor count >= 3

passes 40% screening estimate = not applicable when conductor count < 3

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Warnings and limitations

This is an explicit engineering estimate and screening estimate, not a reproduction of NEC protected tables and not a code-compliance determination. Verify raceway internal dimensions, conductor dimensions, insulation, raceway type, adopted code, applicable notes, manufacturer data, and local requirements before final sizing.