

Conduit Three-Bend Sequence Calculator

Calculate a three-bend sequence when a route uses a common rise and separate bend angles.

Generated October 10, 2026

<https://www.elecatrix.com/conduit-bending/conduit-three-bend-sequence-calculator/>

Inputs

Input	Value	Unit
Common rise per bend	4	in
First bend angle	30	deg
Middle bend angle	30	deg
Final bend angle	30	deg
First mark from conduit end	24	in

Results

Result	Value	Unit
First mark	24	in
Second mark	32	in
Third mark	40	in
Final mark	48	in
First travel	8	in
Middle travel	8	in
Final travel	8	in
Total travel	24	in
Total bend angle	90	deg
Total geometry shrink	3.2154	in

Calculation details

Detail	Value	Unit
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Calculation basis	Each of the three entered bends is screened against the same entered rise. Travel for each bend is rise divided by the sine of that bend angle.
Sequence boundary	Planning sequence only; real three-bend work depends on bend direction, conduit rotation, shoe markings, springback, and field clearance.

Formulas

travel for each bend = common rise / sin(bend angle)

second mark = first mark + first travel

third mark = second mark + middle travel

final mark = third mark + final travel

total geometry shrink = sum(common rise x tan(bend angle / 2))

Warnings and limitations

This worksheet screens three sequential mark positions using a common rise assumption. It does not model conduit rotation, compound geometry, springback, or a specific bender.