

Conduit Bend Radius Calculator

Compare entered inside and outside radii with an explicit minimum radius without using a hidden conduit or manufacturer table.

Generated October 10, 2026

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

Inputs

Input	Value	Unit
Inside radius	4	in
Outside radius	6	in
Conduit outside diameter	2	in
Bend angle	90	deg
Minimum entered radius	3	in

Results

Result	Value	Unit
Centerline radius	5	in
Developed arc length	7.854	in
Radius-to-diameter ratio	2.5	x
Radius margin	2	in
Entered minimum status	meets_entered_minimum	

Calculation details

Detail	Value	Unit
Geometry boundary	Centerline radius is the average of entered inside and outside radii; no product or code minimum is inferred.	

Formulas

centerline radius = (inside radius + outside radius) / 2

arc length = 2 x pi x centerline radius x bend angle / 360

radius-to-diameter ratio = centerline radius / conduit diameter

radius margin = centerline radius - minimum entered radius

entered minimum status = meets entered minimum when radius margin >= 0

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Warnings and limitations

This is an entered-geometry screen. It does not select a code-compliant minimum, product listing, bender shoe, cable limit, or manufacturer radius.