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QFH
Calculator

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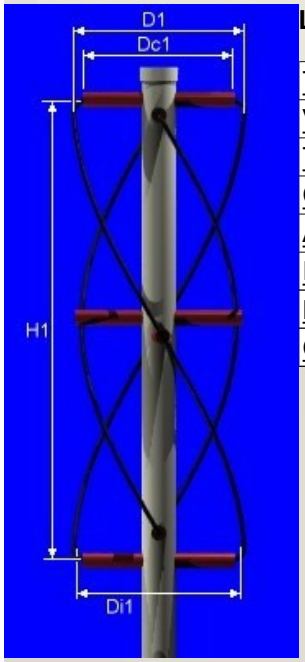
Input the data

Thanks to suggestions of Kevin and Barry Fittler, and the insistence of many others, I've finally made a bit of time to do 'repair work' on the calculator. Please report problems, if any.

Design frequency	868 MHz
Number of turns (twist)	0.5
Length of one turn	1 wavelengths
Bending radius	2 mm
Conductor diameter	1.75 mm (optimum: 3.2 mm)
Width/height ratio	0.44
	Calculate

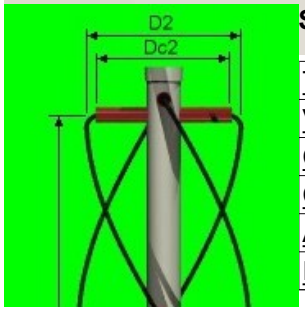
Results

Wavelength	345.6 mm
Compensated wavelength	365.7 mm
Bending correction	0.8 mm



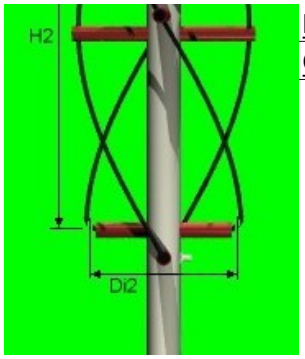
Larger loop

Total length		375.2 mm
Vertical separator		139 mm
Total compensated length		378.6 mm
Compensated vertical separation		135 mm
Antenna height	**H1=**	114.3 mm
Internal diameter	**Di1=**	48.5 mm
Horizontal separator	**D1=**	50.3 mm
Compensated horiz. separation	**Dc1=**	46.3 mm



Smaller loop

Total length		356.6 mm
Vertical tube		132.1 mm
Compensated total length		360 mm
Compensated vertical tube		128.1 mm
Antenna height	**H2=**	108.7 mm
Internal diameter	**Di2=**	46 mm



Horizontal separator	**D2=**	47.8 mm
Compensated horiz. separator	**Dc2=**	43.8 mm

Generate a drilling template

To generate a drilling template in PDF form, please enter the following extra data:

Vertical support tube diameter:	mm	
Horizontal support tube diameter:	mm	
Select paper size:	A4 (210x297 mm)	Generate

For more information on the construction technique corresponding to this template, visit this page.

Legend

This calculator generates a lot of data! Take care in the use of the information in order not to make mistakes...

Here's a little explanation:

Design frequency
Evident?
Number of turns (twist)
What's the twist of the antenna? (normally 0.5 (180 degrees)
Length of one turn
A few variations of the antenna exist. Normally the circumference (length of the loop) is 1 wavelength, but 1.5 wavelength and 2 wavelength versions exist.
Bending diameter
As it's impossible to bend the corner abruptly at 90 degrees, this value is needed for the calculations. It's measured from the bending center to the center of the tube.
Conductor diameter
External diameter of the tube or coax cable.
Diameter/height ratio
Most frequently this ratio is 0.44, but slightly lower values (0.3 to 0.4) give better horizon coverage.
Wavelength
Wavelength, corresponding to the selected frequency.
Compensated wavelength
Wavelength, compensated according to the conductor diameter.
Bending correction
Correction value needed according to the bending diameter.
Total length
Total length of the loop, before compensation.
Total loop cmpensated length
Total length of the loop, compensated for the bending effect, and the fact that the loop must be slightly larger (or smaller). This is the amount of tubing necessary for this loop.
Compensated vertical separation
Vertical separation (without the 'bends').
Compensated horizontal separation
This is in fact the horizontal part without the 'bends', and corresponds to the horizontal pipe necessary to support the cable.
Antenna height
Height of the loop (twisted!).
Internal diameter

The diameter of the (imaginary) cylinder on which the loop would be wound.

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