

| Vertical Height (M) | Horizontal Length (M) | Term Resistor (Ω) | Transformer | Gain dBi | Null dB |
|---------------------|-----------------------|----------------------------|--------------|----------|---------|
| 3.00 | 17.00 | 970.00 | 450/50 - 9:1 | -36.52 | 63.47 |
| 3.10 | 17.00 | 971.00 | 450/50 - 9:1 | -36.23 | 63.76 |
| 3.20 | 17.00 | 974.00 | 450/50 - 9:1 | -35.95 | 64.04 |
| 3.30 | 18.00 | 979.00 | 450/50 - 9:1 | -35.22 | 64.77 |
| 3.40 | 18.00 | 982.00 | 450/50 - 9:1 | -34.96 | 65.03 |
| 3.50 | 19.00 | 986.00 | 450/50 - 9:1 | -34.27 | 65.72 |
| 3.60 | 19.00 | 989.00 | 450/50 - 9:1 | -34.03 | 65.96 |
| 3.70 | 19.00 | 990.00 | 450/50 - 9:1 | -33.79 | 65.73 |
| 3.80 | 20.00 | 995.00 | 450/50 - 9:1 | -33.15 | 66.84 |
| 3.90 | 20.00 | 997.00 | 450/50 - 9:1 | -32.91 | 67.06 |
| 4.00 | 21.00 | 1002.00 | 450/50 - 9:1 | -32.23 | 67.67 |
| 4.10 | 21.00 | 1003.00 | 450/50 - 9:1 | -32.11 | 67.73 |
| 4.20 | 22.00 | 1009.00 | 450/50 - 9:1 | -31.53 | 64.80 |
| 4.30 | 22.00 | 1010.00 | 450/50 - 9:1 | -31.33 | 68.66 |
| 4.40 | 22.00 | 1012.00 | 450/50 - 9:1 | -31.13 | 68.86 |
| 4.50 | 23.00 | 1017.00 | 450/50 - 9:1 | -30.59 | 66.58 |
| 4.60 | 23.00 | 1018.00 | 450/50 - 9:1 | -30.40 | 69.59 |
| 4.70 | 23.00 | 1020.00 | 450/50 - 9:1 | -30.22 | 67.76 |
| 4.80 | 24.00 | 1024.00 | 450/50 - 9:1 | -29.71 | 68.31 |
| 4.90 | 24.00 | 1026.00 | 450/50 - 9:1 | -29.53 | 70.46 |
| 5.00 | 24.00 | 1027.00 | 450/50 - 9:1 | -29.36 | 66.37 |

Notes:

The above dimensions are calculated mid MW band i.e. 1120 kHz

The EWE is a very forgiving aerial and can be built to almost any dimensions.

The main advantage of the EWE is its ability to null out offending signals from the opposite direction

Factors affecting the ability to obtain a deep null are dimensions and terminating resistor.

There is an optimum horizontal length for any given vertical element and a corresponding termination resistor

The gain difference between the smallest EWE and the largest above is +7.16 dBi

A change away from optimal dimensions will not effect the forward gain significantly but will impact significantly on its ability to null signals from the opposite direction.

The value of the terminating resistor changes with frequency and accordingly changes the depth of the null

For the serious Dxer the terminating resistor should be variable and preferably remotely adjustable

Bill Marsh - 27 Dec 2020