

High Power Directional Coupler, 80-520MHz

WMHPC-80-520M-10dB-N

Description

Werbel Microwave Model WMHPC-80-520M-10dB-N is a high-power coupler that operates over the 80-520MHz band, covering FM radio, upper VHF and lower UHF applications. Rated for 200 watts CW. Useful for amplification and signal distribution applications including radio and television broadcasting, public safety and emergency broadcasting and distributed antenna systems. There exists a roll down of 2dB at the low frequency, making the nominal coupling value 12dB within the FM radio band. Mainline loss 1.2dB typical which includes the loss due to coupling. Typical return loss 33.2dB. Typical directivity 28.3dB.



Photo is representative.

Specifications	Min.	Typ.	Max.	Units
Frequency	80	--	520	MHz
Impedance	--	50	--	Ohm
Coupling	80-130MHz	12.0±2.0	--	dB
	130-520MHz	10.0±1.4	--	
Frequency Sensitivity (Flatness) within 130-520MHz	--	±0.6	±1.4	dB
Mainline Loss ¹	--	0.6	0.8	dB
Directivity	19.0	28.3	--	dB
Return Loss (All Ports)	19.1	33.2	--	dB
Input Power (CW) ²	--	--	200	Watts

Mechanical

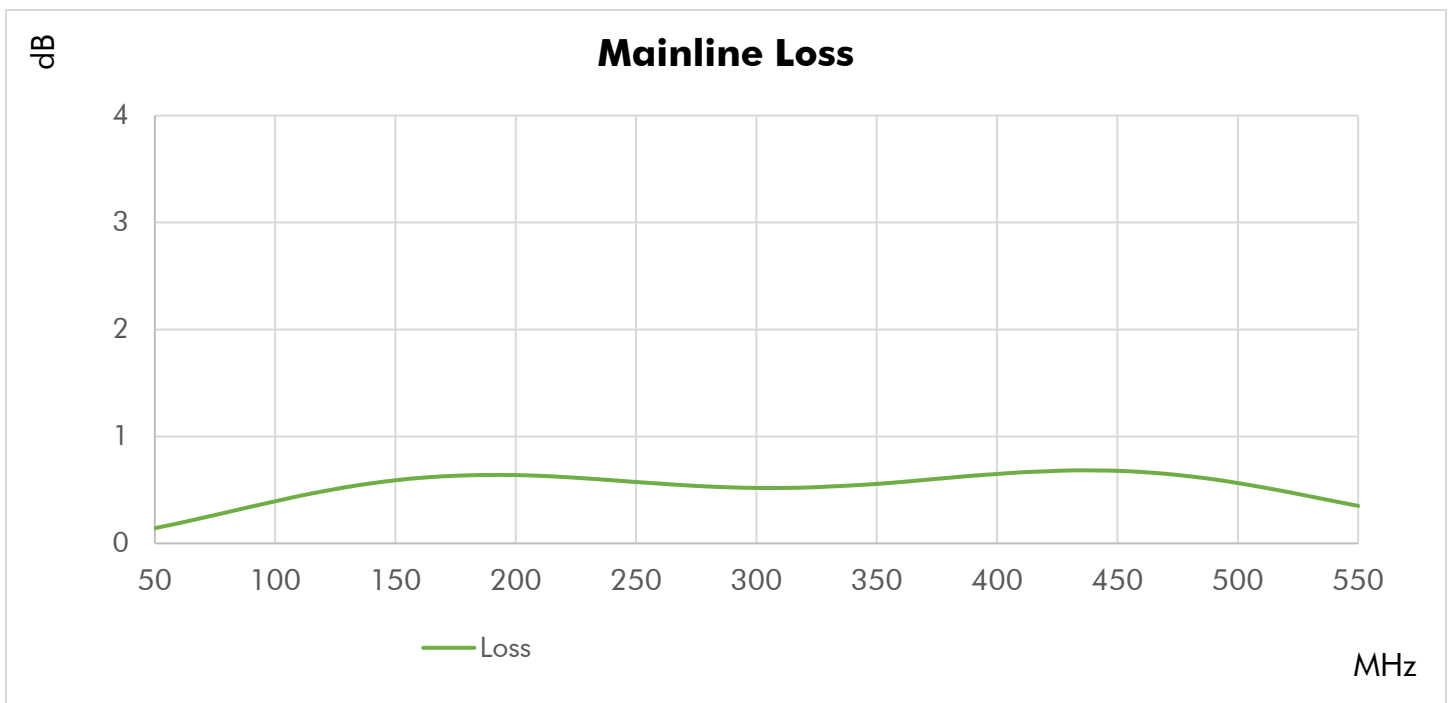
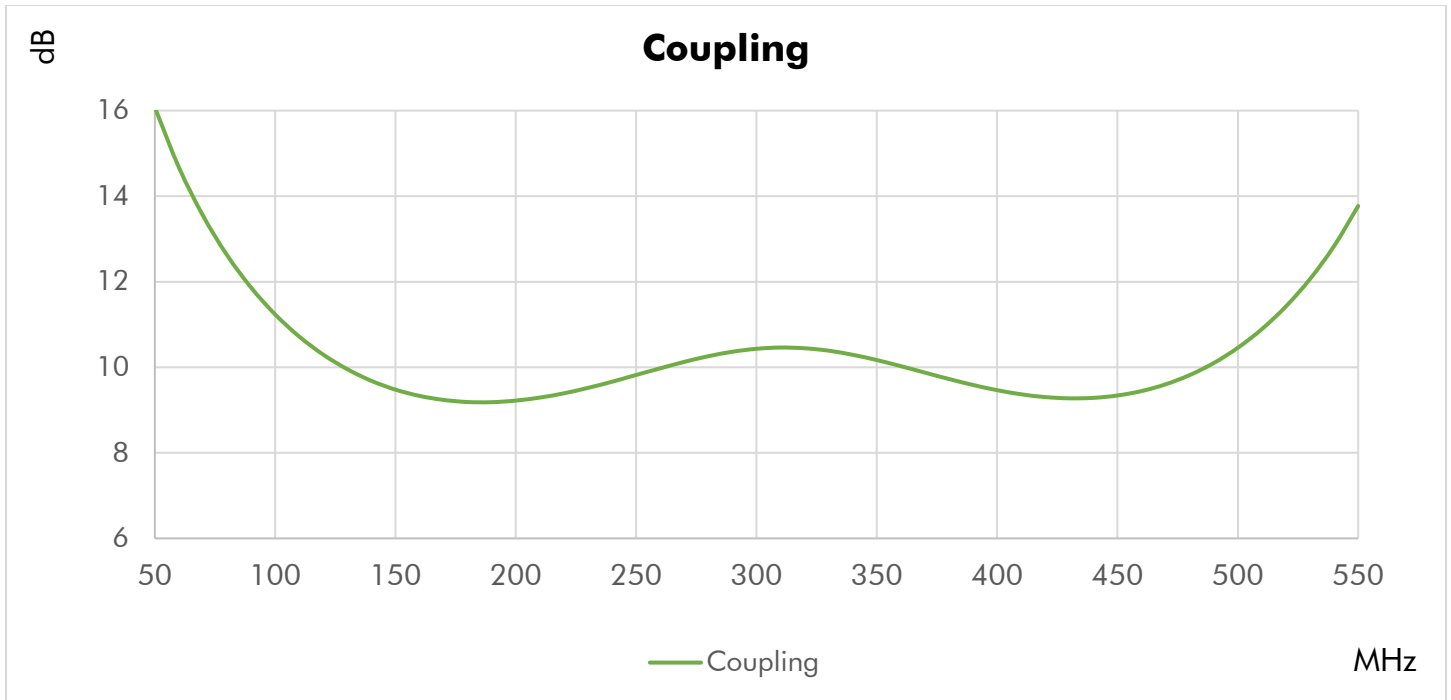
Connector Interface	N-Female
Operating Temperature ³	-40 to +65 °C
Storage Temperature	-55 to +100 °C
Weight	570g (20 oz)
Humidity	10-90% non-condensing
Environment	Indoors Use Only

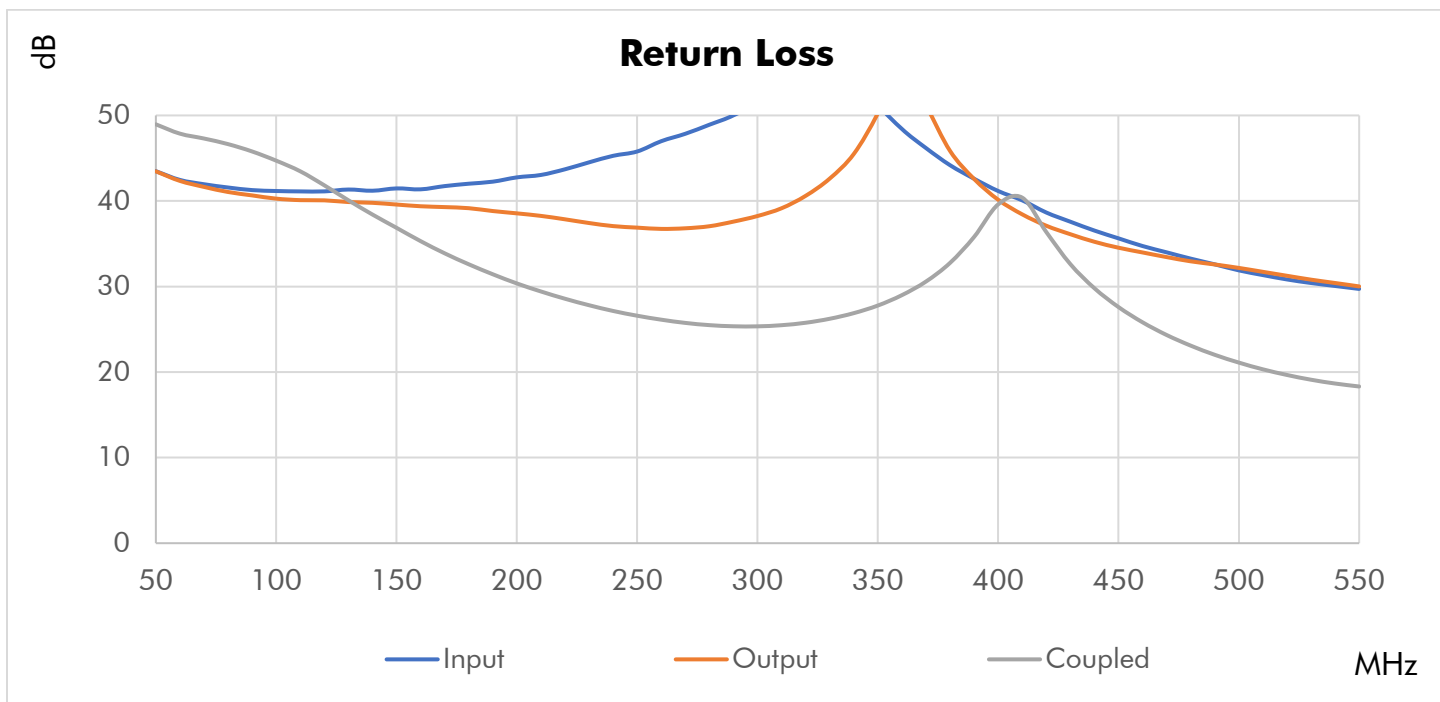
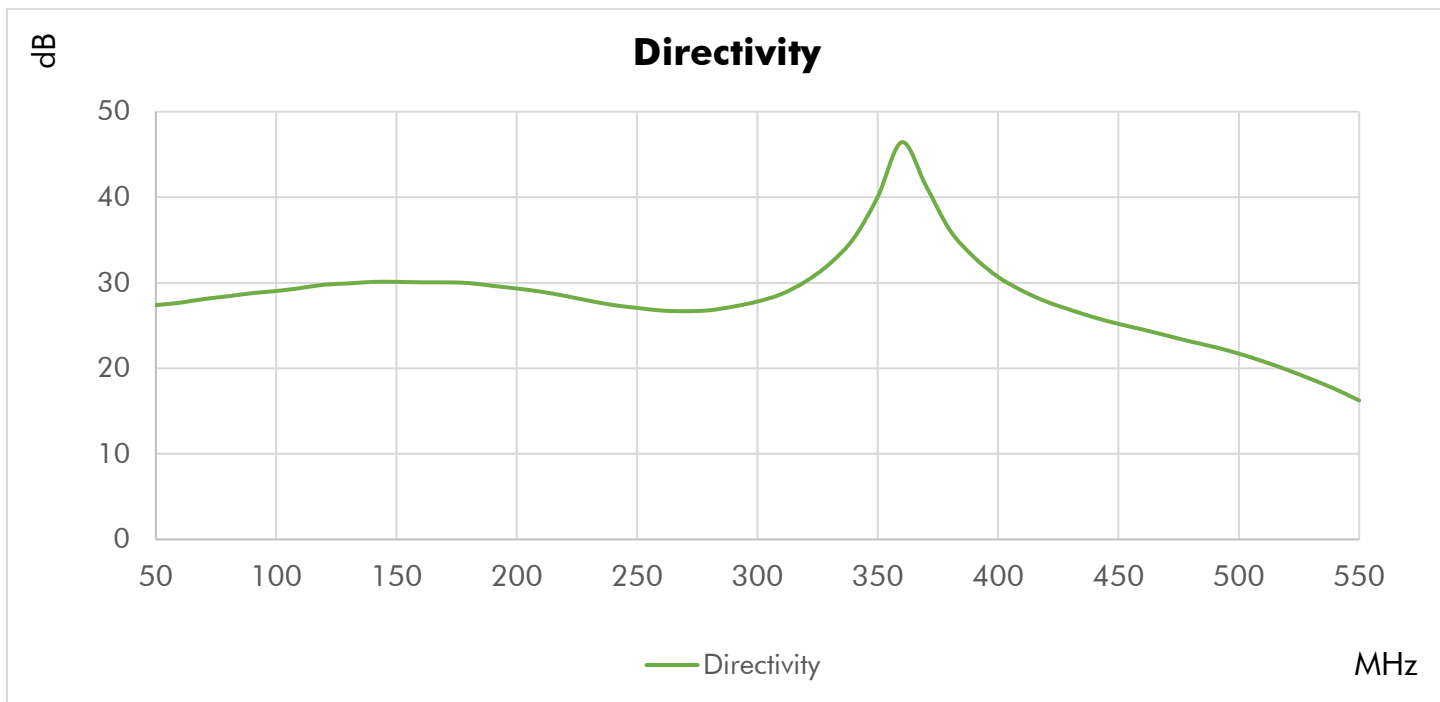
Materials

RoHS and REACH Compliant ⁴	
Enclosure	Aluminum
Connectors	Brass, Tri-Alloy Plate
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Green Paint

1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications at +25 °C.
4. To the best of our knowledge at time of publication.

Typical Performance at +25 °C

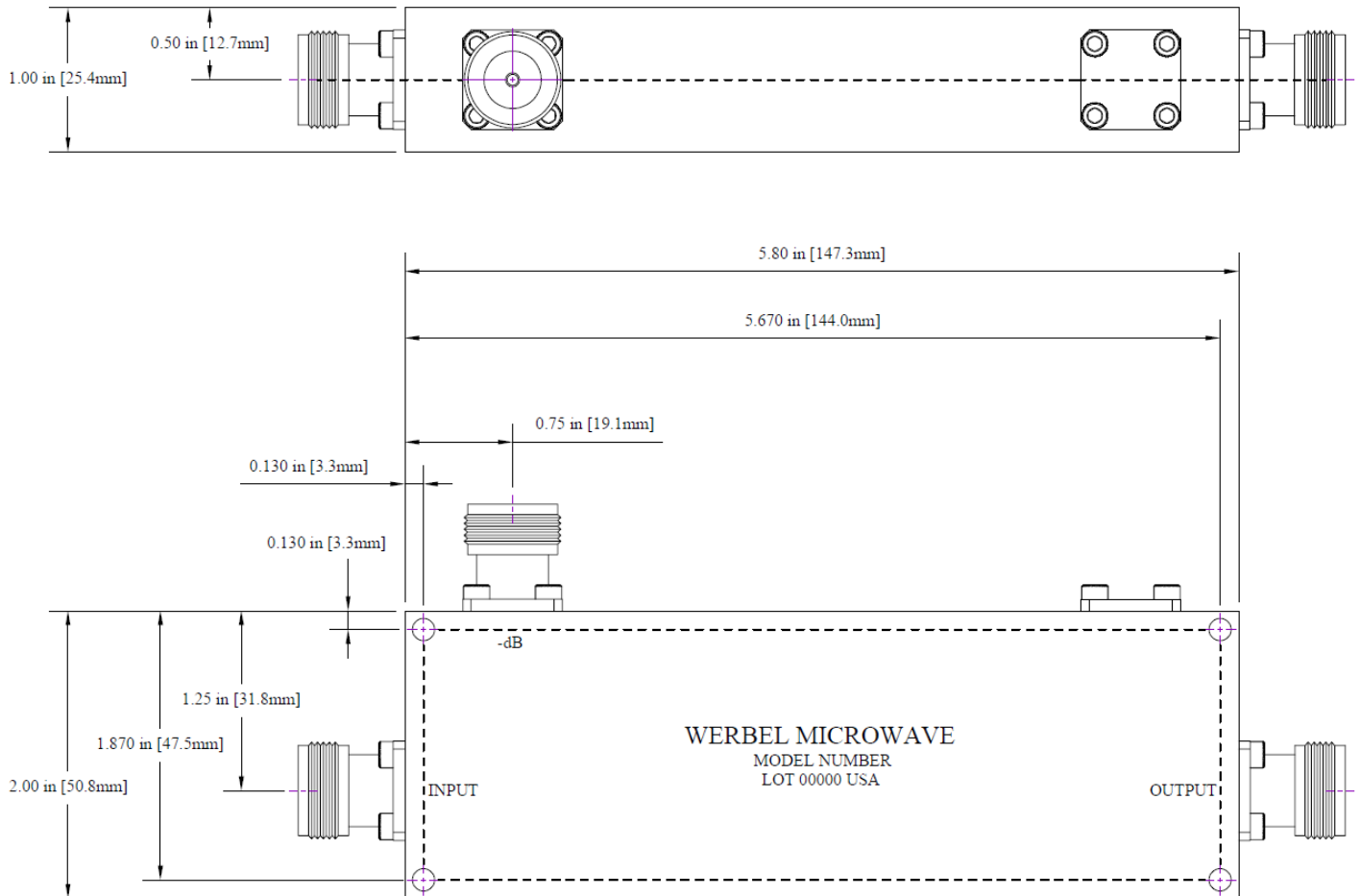




Typical Performance Data

Frequency (MHz)	Return Loss (dB)			Mainline Loss (dB)	Coupling (dB)	Directivity (dB)
	In	Out	Cpl.	In-Out	In-Cpl.	
80	41.58	41.05	46.65	0.29	12.62	41.05
90	41.27	40.65	45.79	0.34	11.86	40.65
100	41.17	40.27	44.71	0.39	11.24	40.27
110	41.12	40.10	43.47	0.44	10.72	40.10
120	41.12	40.08	41.83	0.49	10.30	40.08
130	41.34	39.88	40.08	0.53	9.95	39.88
140	41.20	39.79	38.42	0.56	9.68	39.79
150	41.47	39.59	36.86	0.59	9.48	39.59
160	41.36	39.39	35.31	0.61	9.33	39.39
170	41.74	39.29	33.88	0.63	9.24	39.29
180	42.02	39.16	32.60	0.64	9.19	39.16
190	42.26	38.83	31.44	0.64	9.18	38.83
200	42.76	38.55	30.36	0.64	9.22	38.55
210	43.04	38.26	29.42	0.63	9.29	38.26
220	43.70	37.86	28.57	0.62	9.39	37.86
230	44.52	37.42	27.82	0.61	9.52	37.42
240	45.28	37.06	27.15	0.59	9.66	37.06
250	45.79	36.89	26.59	0.57	9.82	36.89
260	46.99	36.74	26.13	0.56	9.98	36.74
270	47.86	36.81	25.75	0.54	10.13	36.81
280	48.91	37.05	25.49	0.53	10.26	37.05
290	50.02	37.59	25.36	0.52	10.36	37.59
300	51.76	38.24	25.35	0.52	10.43	38.24
310	56.41	39.15	25.48	0.52	10.46	39.15
320	62.98	40.60	25.77	0.52	10.44	40.60
330	68.32	42.62	26.23	0.53	10.39	42.62
340	56.98	45.50	26.89	0.54	10.29	45.50
350	51.47	50.25	27.78	0.56	10.17	50.25
360	48.42	56.46	28.99	0.57	10.03	56.46
370	46.19	51.20	30.58	0.59	9.88	51.20
380	44.19	45.85	32.76	0.61	9.73	45.85
390	42.60	42.57	35.80	0.63	9.59	42.57
400	41.17	40.15	39.60	0.65	9.47	40.15
410	40.07	38.44	40.39	0.66	9.37	38.44
420	38.65	37.11	36.37	0.67	9.30	37.11
430	37.58	36.11	32.62	0.68	9.27	36.11
440	36.54	35.23	29.80	0.68	9.29	35.23
450	35.63	34.54	27.60	0.68	9.34	34.54
460	34.73	33.98	25.82	0.67	9.44	33.98
470	34.00	33.44	24.33	0.65	9.60	33.44
480	33.26	32.95	23.09	0.63	9.82	32.95
490	32.59	32.58	22.02	0.60	10.10	32.58
500	31.89	32.18	21.11	0.56	10.46	32.18
510	31.34	31.72	20.32	0.53	10.89	31.72
520	30.83	31.26	19.66	0.48	11.42	31.26

Outline Dimensions



Outline # OL-1352

Dimensions are in inches, [mm] shown for convenience.

Tolerances on 2-pl decimals: $\pm .03$. 3-pl decimals: $\pm .015$.

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or documentation of the part, in order to implement improvements. Werbel Microwave LLC reserves the right to make such changes as required without notice. Unless otherwise stated, all specifications and dimensions are nominal. Werbel Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Werbel Microwave LLC does not assume any liability arising out of the use of any part of documentation. This document gives only a description of the product(s) and shall not form part of any contract. Please contact a Werbel Microwave LLC Applications Engineer for the most current specification drawing.