

## High Power Directional Coupler, 80-520MHz

## WMHPC-80-520M-6dB-N

### Description

Werbel Microwave Model WMHPC-80-520M-6dB-N is a high-power coupler that operates over the 80-520MHz band, covering FM radio, upper VHF and lower UHF applications. Conservatively rated for 100 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 8dB within the FM radio band. Mainline loss 1.2dB typical which includes the loss due to coupling. Typical return loss 24.9dB. Typical directivity 24.5dB.

*Photo is representative.*

Specifications	Min.	Typ.	Max.	Units
Frequency	80	--	520	MHz
Impedance	--	50	--	Ohm
Coupling	80-130MHz	8.0±2.0	--	dB
	130-520MHz	6.0±1.0	--	
Frequency Sensitivity (Flatness) within 130-520MHz	--	±0.6	±1.0	dB
Mainline Loss <sup>1</sup>	--	1.3	1.8	dB
Directivity	19.0	24.5	--	dB
Return Loss (In and Out)	19.1	24.9	--	dB
Input Power (CW) <sup>2</sup>	--	--	100	Watts

### Mechanical

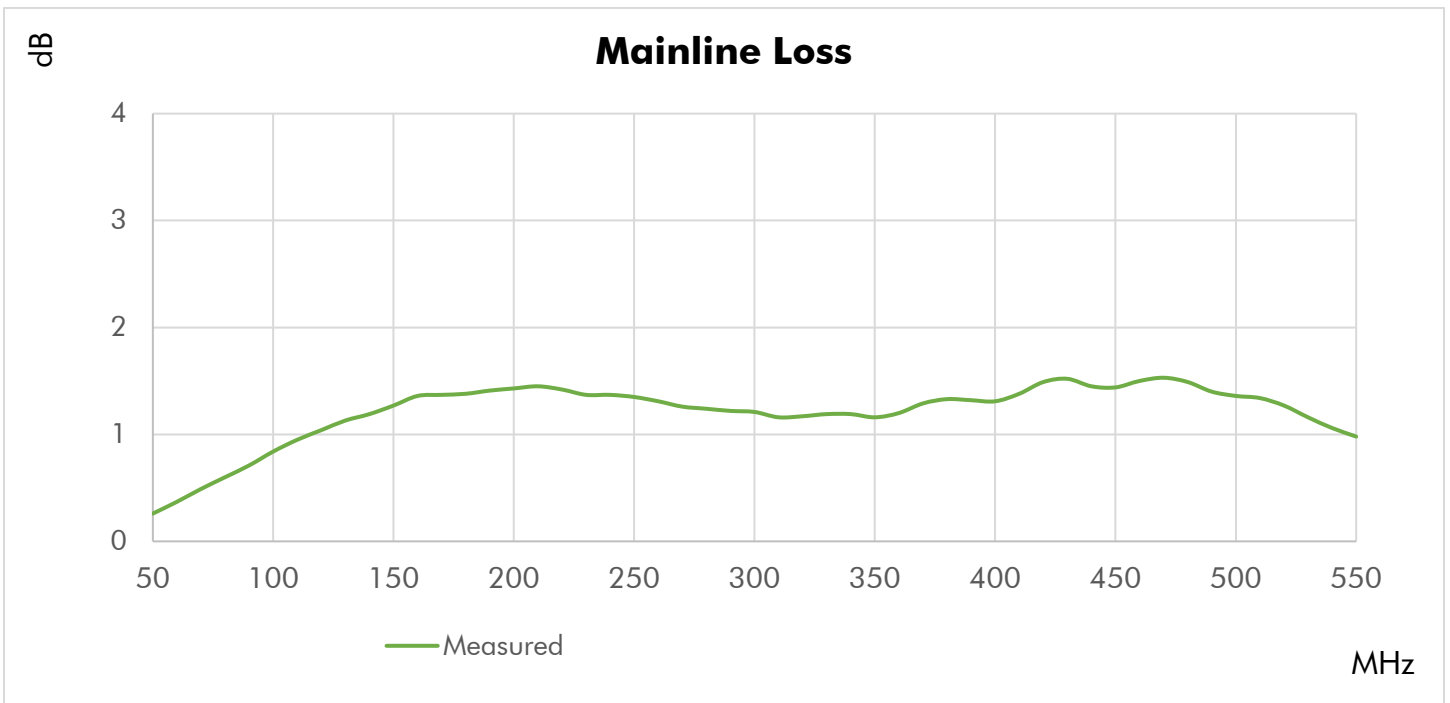
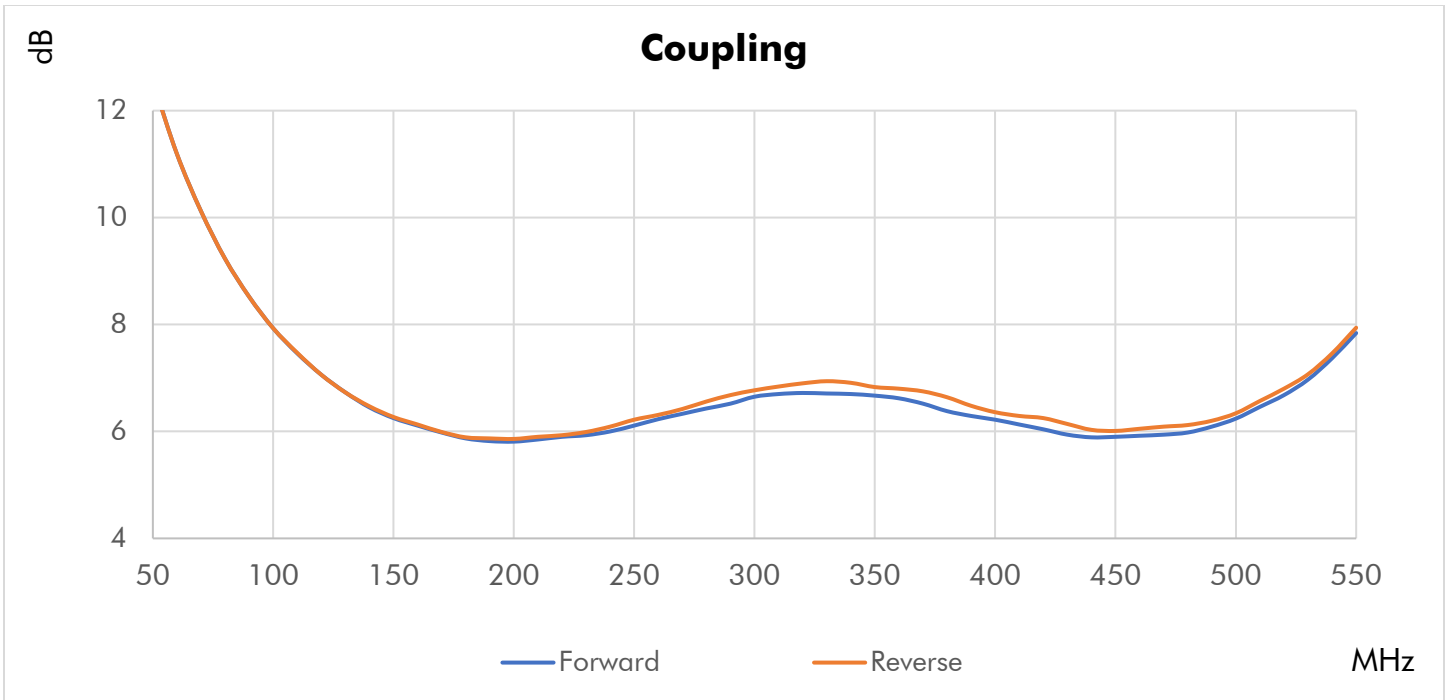
Connector Interface	N-Female
Operating Temperature <sup>3</sup>	-40 to +65 °C
Storage Temperature	-55 to +100 °C
Weight	570g (20 oz)
Humidity	10-90% non-condensing
Environment	Indoors Use Only

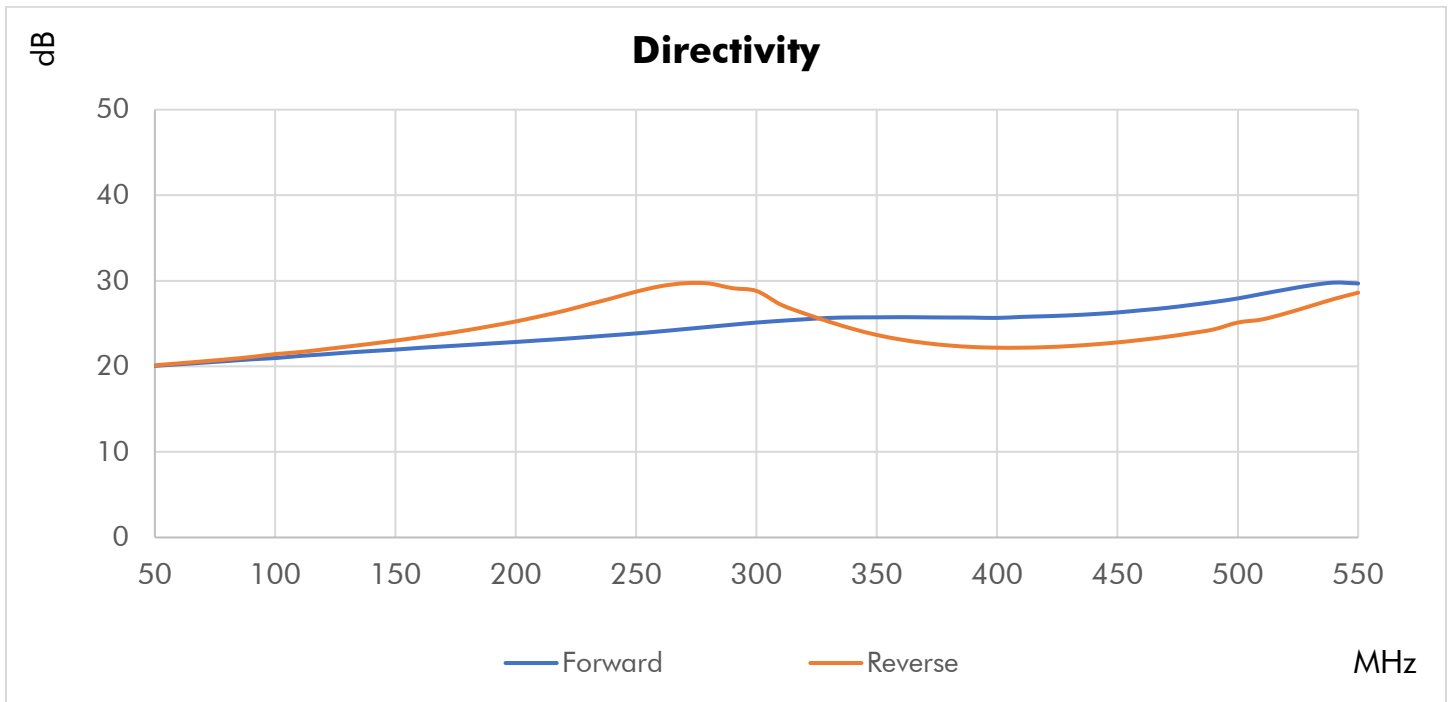
### Materials

RoHS and REACH Compliant <sup>4</sup>	
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

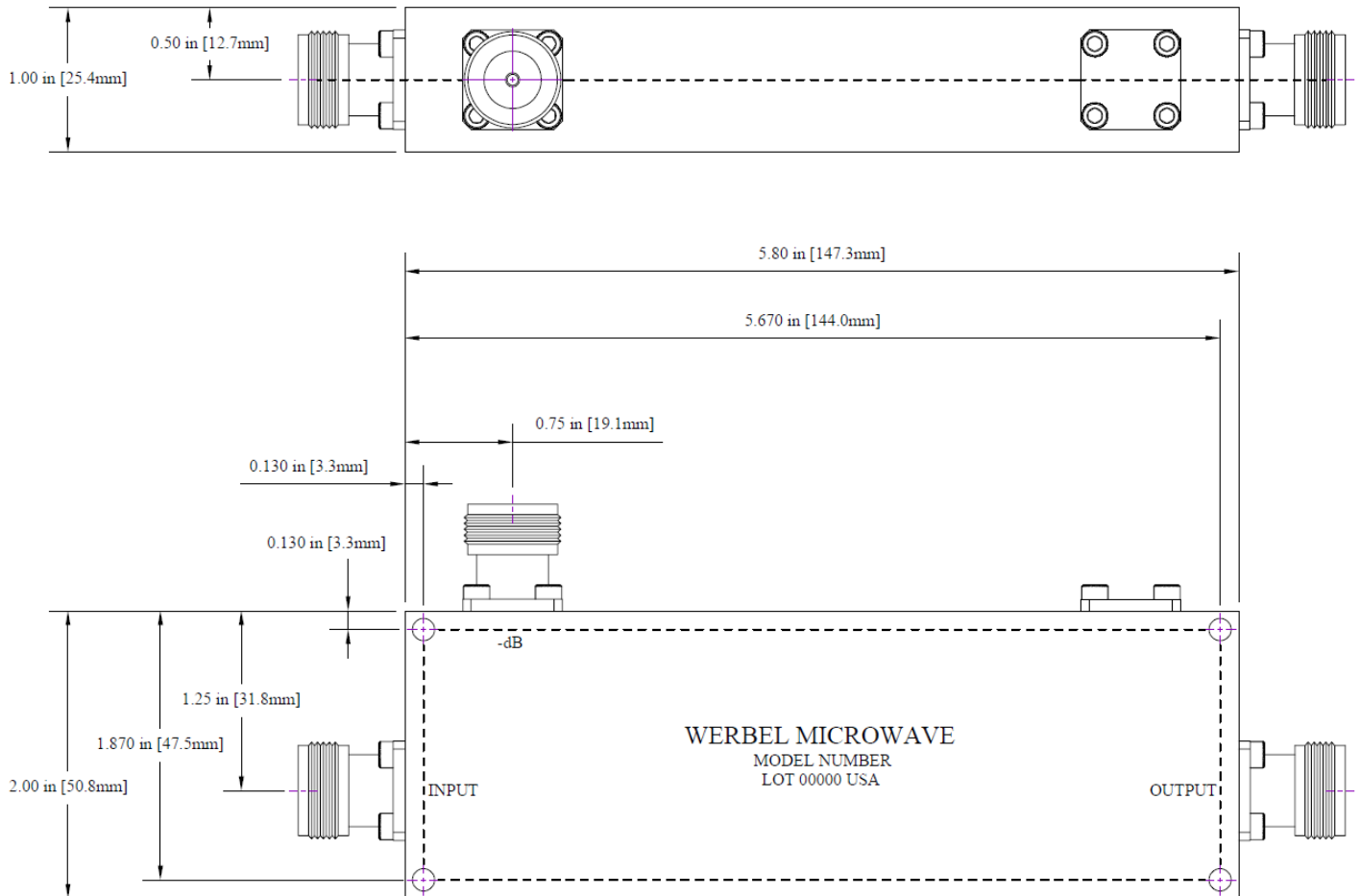




## Typical Performance Data

Frequency (MHz)	Return Loss (dB)				Mainline Loss (dB)	Coupling (dB)			Directivity (dB)	
	In	Out	Fwd.	Rev.		In-Out	In-Fwd.	Out-Rev.	Fwd.	Rev.
80	22.21	21.51	24.15	24.23	0.60	9.23	9.23	20.62	20.82	
90	21.76	21.34	23.81	23.90	0.71	8.52	8.52	20.82	21.09	
100	21.18	21.51	23.41	23.62	0.84	7.93	7.93	20.97	21.43	
110	20.83	21.41	23.33	23.62	0.95	7.46	7.47	21.21	21.66	
120	20.75	21.19	23.23	23.74	1.04	7.06	7.06	21.40	21.98	
130	20.82	20.86	23.32	24.03	1.13	6.73	6.73	21.61	22.31	
140	20.98	20.79	23.54	24.18	1.19	6.45	6.47	21.79	22.65	
150	21.03	20.99	23.58	24.08	1.27	6.25	6.27	21.96	23.01	
160	21.08	21.36	23.48	24.04	1.36	6.11	6.13	22.16	23.40	
170	21.21	21.90	23.43	24.31	1.37	5.98	5.99	22.33	23.80	
180	21.41	22.15	23.60	24.84	1.38	5.87	5.89	22.50	24.24	
190	21.91	22.38	23.94	25.24	1.41	5.82	5.87	22.68	24.73	
200	22.24	22.24	23.78	25.24	1.43	5.81	5.86	22.85	25.25	
210	22.59	22.77	24.12	25.32	1.45	5.85	5.90	23.04	25.85	
220	22.93	23.80	24.16	25.78	1.42	5.90	5.93	23.22	26.49	
230	23.03	24.87	24.34	26.42	1.37	5.93	5.99	23.43	27.23	
240	23.50	25.91	24.49	26.77	1.37	6.00	6.09	23.64	27.96	
250	24.13	26.39	24.68	27.23	1.35	6.11	6.22	23.85	28.73	
260	25.15	26.77	24.74	27.91	1.31	6.23	6.31	24.09	29.36	
270	26.00	27.35	25.01	28.49	1.26	6.33	6.42	24.35	29.71	
280	26.66	28.07	25.40	28.58	1.24	6.43	6.56	24.61	29.69	
290	26.72	28.79	25.67	28.58	1.22	6.52	6.68	24.87	29.14	
300	26.43	28.69	26.13	28.29	1.21	6.65	6.77	25.12	28.81	
310	26.06	28.96	26.00	28.28	1.16	6.70	6.84	25.32	27.23	
320	25.69	28.02	26.40	27.71	1.17	6.72	6.90	25.50	26.17	
330	25.80	26.52	26.85	26.80	1.19	6.71	6.94	25.66	25.23	
340	25.86	24.95	27.20	25.86	1.19	6.70	6.91	25.72	24.38	
350	25.83	23.92	27.44	25.43	1.16	6.67	6.83	25.73	23.67	
360	25.33	23.20	27.53	25.05	1.20	6.62	6.80	25.75	23.13	
370	24.37	22.78	27.56	24.87	1.29	6.52	6.75	25.73	22.73	
380	23.67	22.68	27.88	24.54	1.33	6.38	6.64	25.71	22.44	
390	22.92	22.11	28.04	24.26	1.32	6.29	6.48	25.70	22.26	
400	22.89	21.64	28.36	24.23	1.31	6.22	6.36	25.66	22.18	
410	22.97	21.08	28.40	24.21	1.38	6.13	6.29	25.78	22.18	
420	23.10	20.82	28.51	24.50	1.49	6.04	6.25	25.86	22.24	
430	23.21	21.13	28.59	24.70	1.52	5.94	6.14	25.96	22.37	
440	22.85	21.25	28.60	24.99	1.45	5.89	6.03	26.11	22.56	
450	22.76	21.64	28.61	25.18	1.44	5.90	6.01	26.30	22.80	
460	22.70	21.55	28.71	25.41	1.50	5.92	6.05	26.56	23.10	
470	23.08	21.60	28.95	25.62	1.53	5.94	6.09	26.82	23.44	
480	23.39	21.72	29.40	26.14	1.49	5.98	6.12	27.16	23.85	
490	23.72	22.11	29.53	26.73	1.40	6.09	6.20	27.52	24.32	
500	24.08	23.16	29.56	27.32	1.36	6.24	6.34	27.94	25.12	
510	24.52	23.86	29.57	27.25	1.34	6.46	6.57	28.47	25.48	
520	25.28	24.65	29.90	27.54	1.27	6.68	6.80	28.98	26.20	

## Outline Dimensions



Outline # OL-1352

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

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

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