

High Power Dual Directional Coupler, 1-250MHz

WMHPDDC-1-250M-40dB-N

Description

Werbel Microwave Model WMHPDDC-1-250M-40dB-N is an internally isolated, dual directional coupler that covers the 1-250MHz band with 40dB nominal coupling and high directivity. Capable of handling 100 watts CW. Coupling flatness ± 0.75 dB typical. Mainline loss 0.43dB typical. Directivity 33dB typical. Return loss mainline 30dB typical.



Photo is representative.

Specifications	Min.	Typ.	Max.	Units
Frequency	1	--	250	MHz
Impedance	--	50	--	Ohm
Coupling	--	40	± 2.50	dB
Frequency Sensitivity (Flatness)	--	± 0.75	± 1.25	dB
Mainline Loss ¹	--	0.43	0.60	dB
Directivity	18	33	--	dB
Isolation	--	73	--	dB
Return Loss (In and Out)	20	30	--	dB
Input Power (CW) ²	--	--	100	Watts

Mechanical

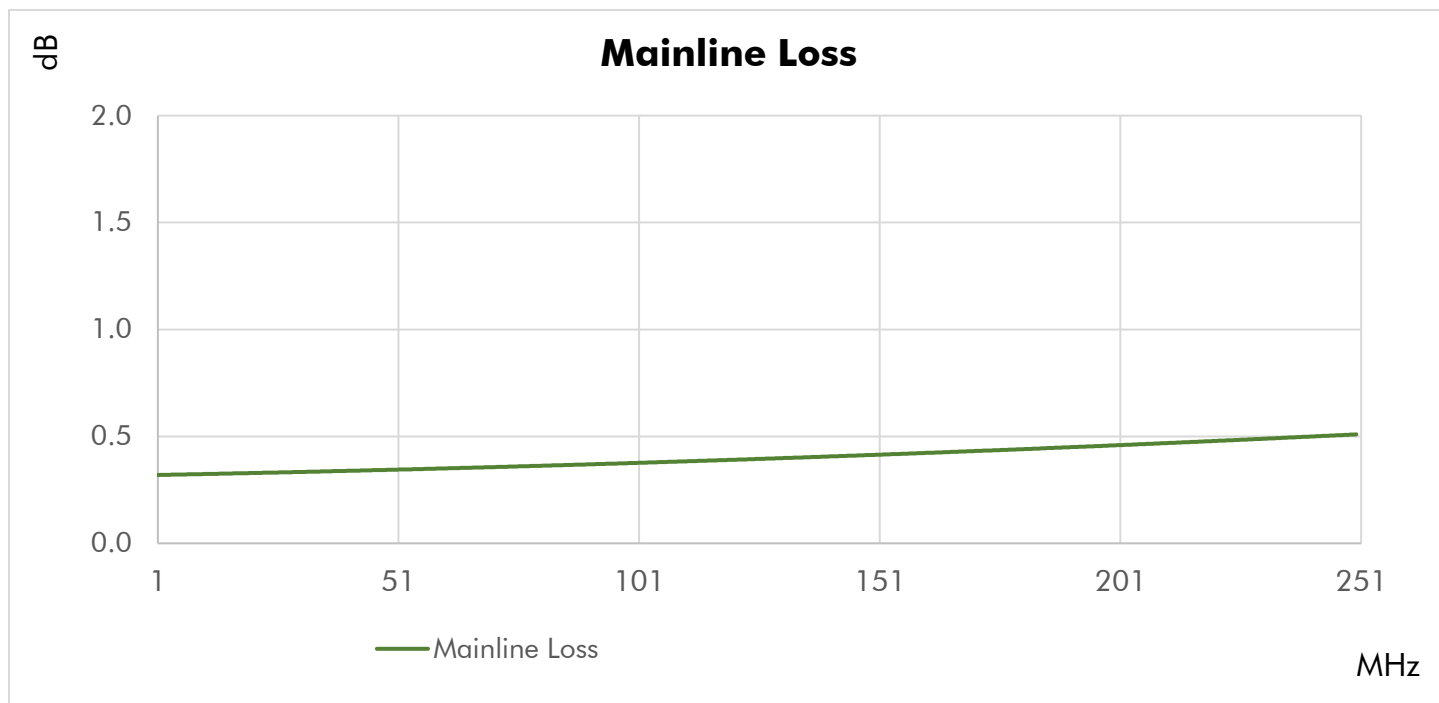
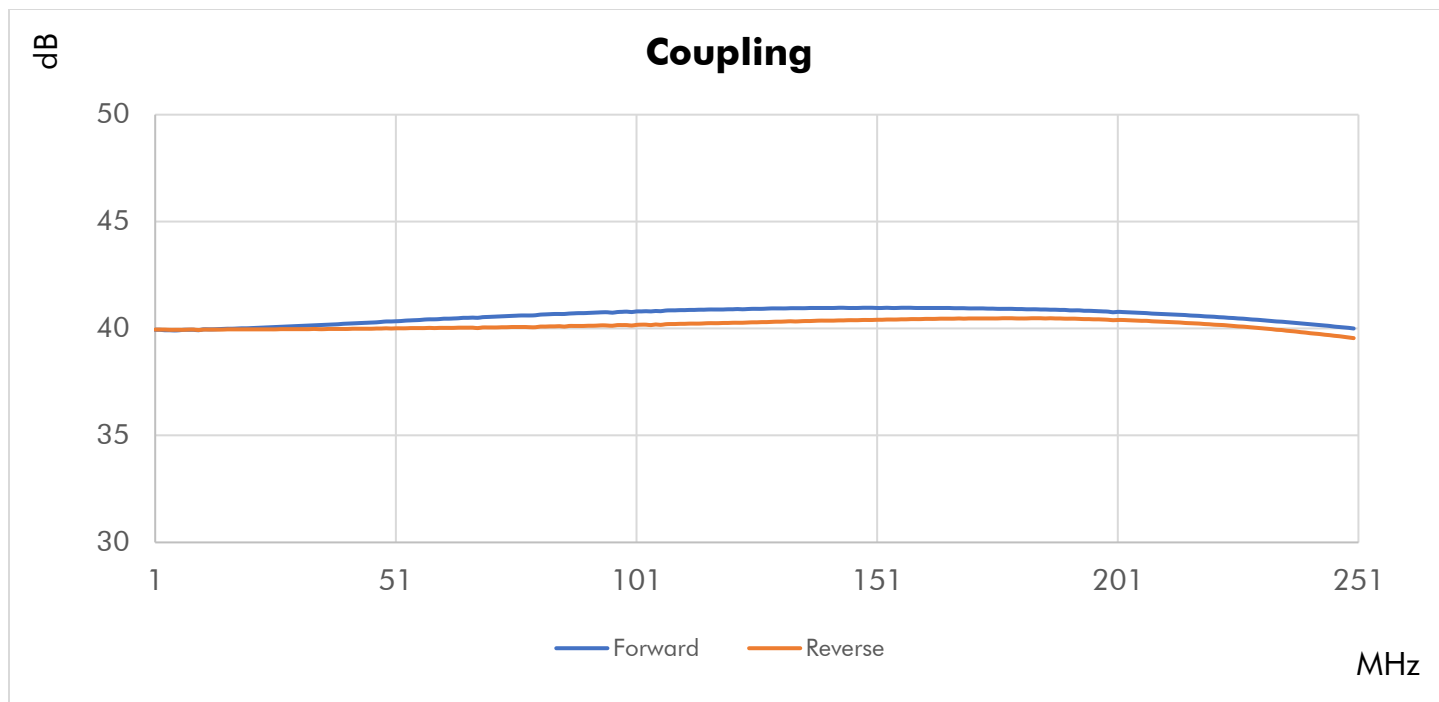
Connector Interface	N-Female
Operating Temperature ³	-10 to +65 °C
Thermal compound between mounting surface and base plate is recommended.	
Storage Temperature	-55 to +100 °C
Weight	1.4 lb. (635 g)
Humidity	10-90% non-condensing
Environment	Indoors Use Only

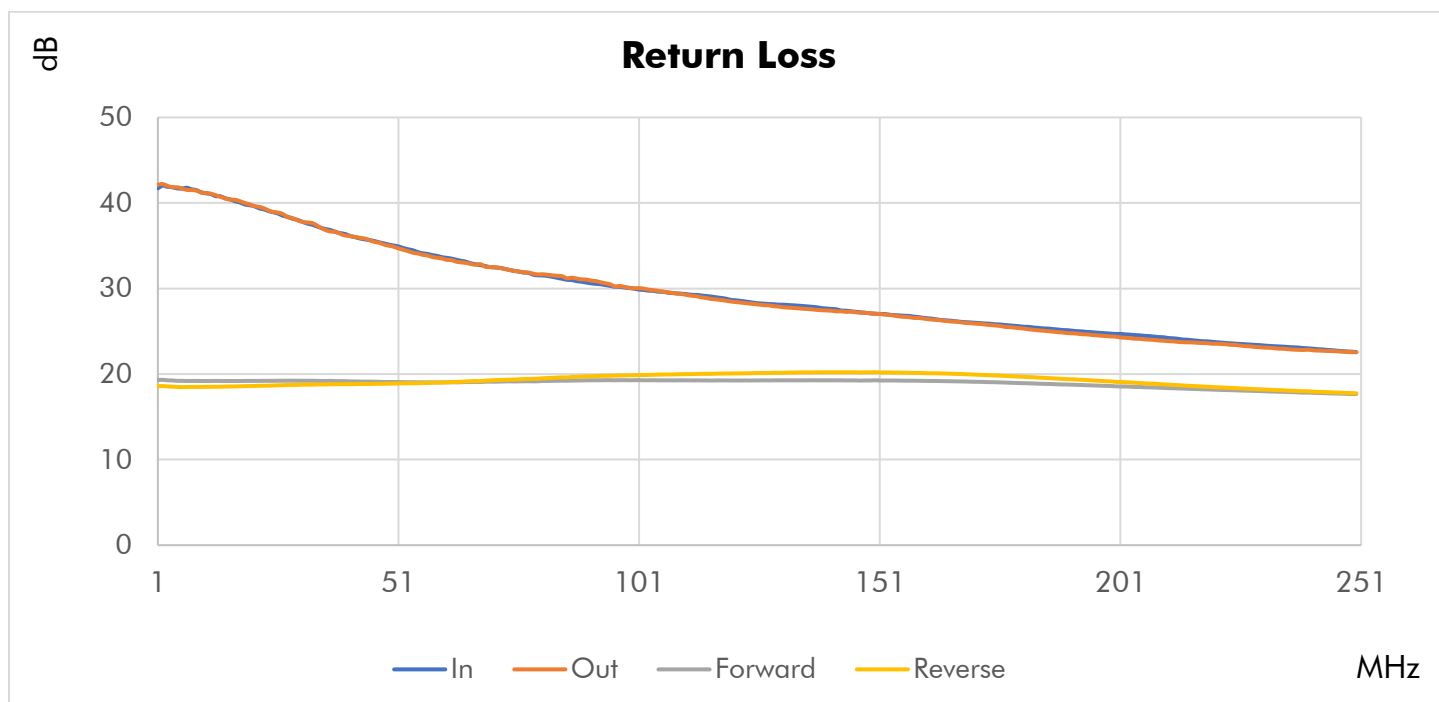
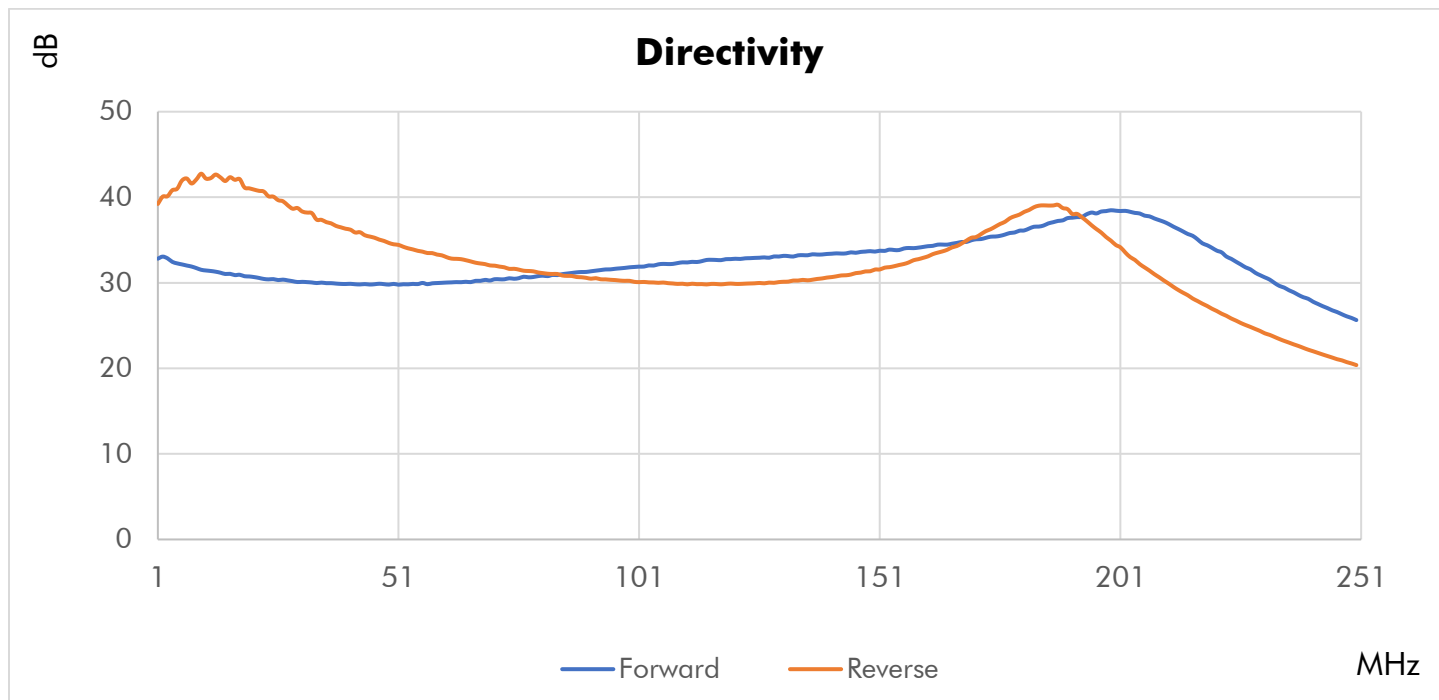
1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications at +25 °C.
4. To the best of our knowledge at time of publication.

Materials

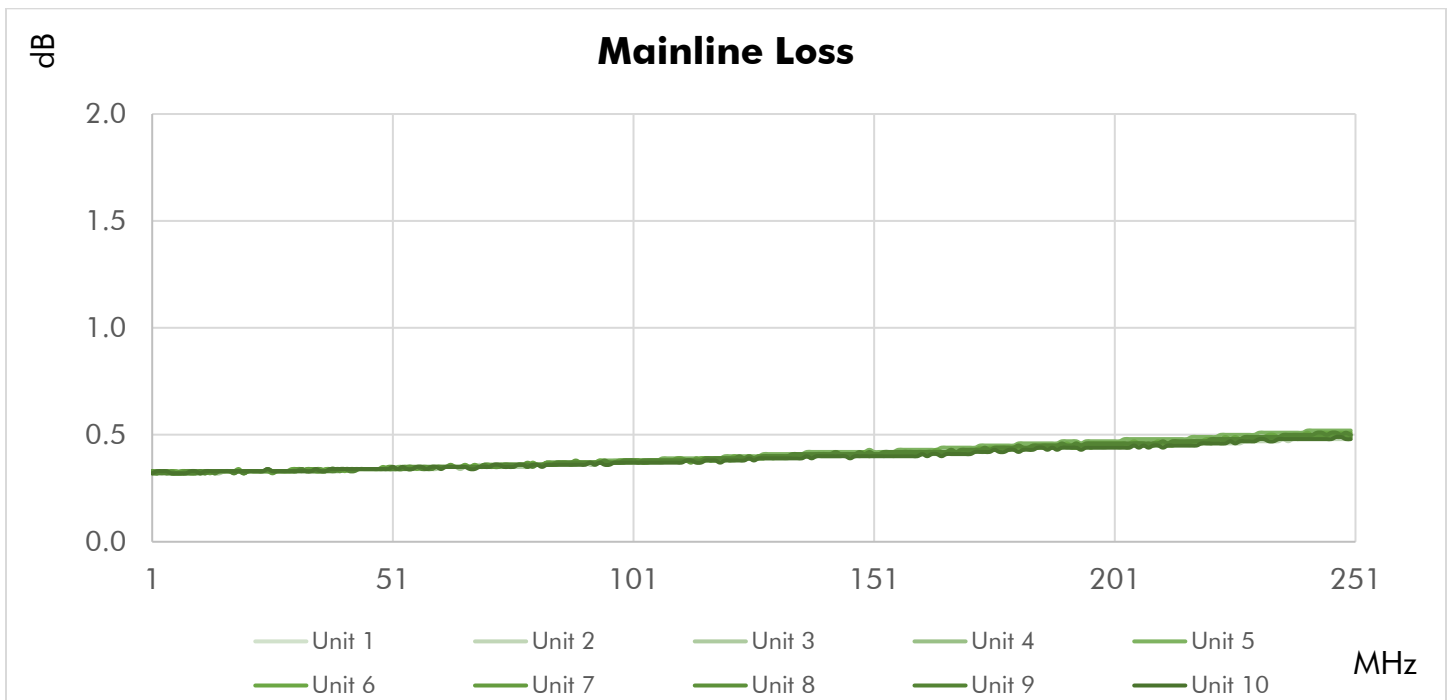
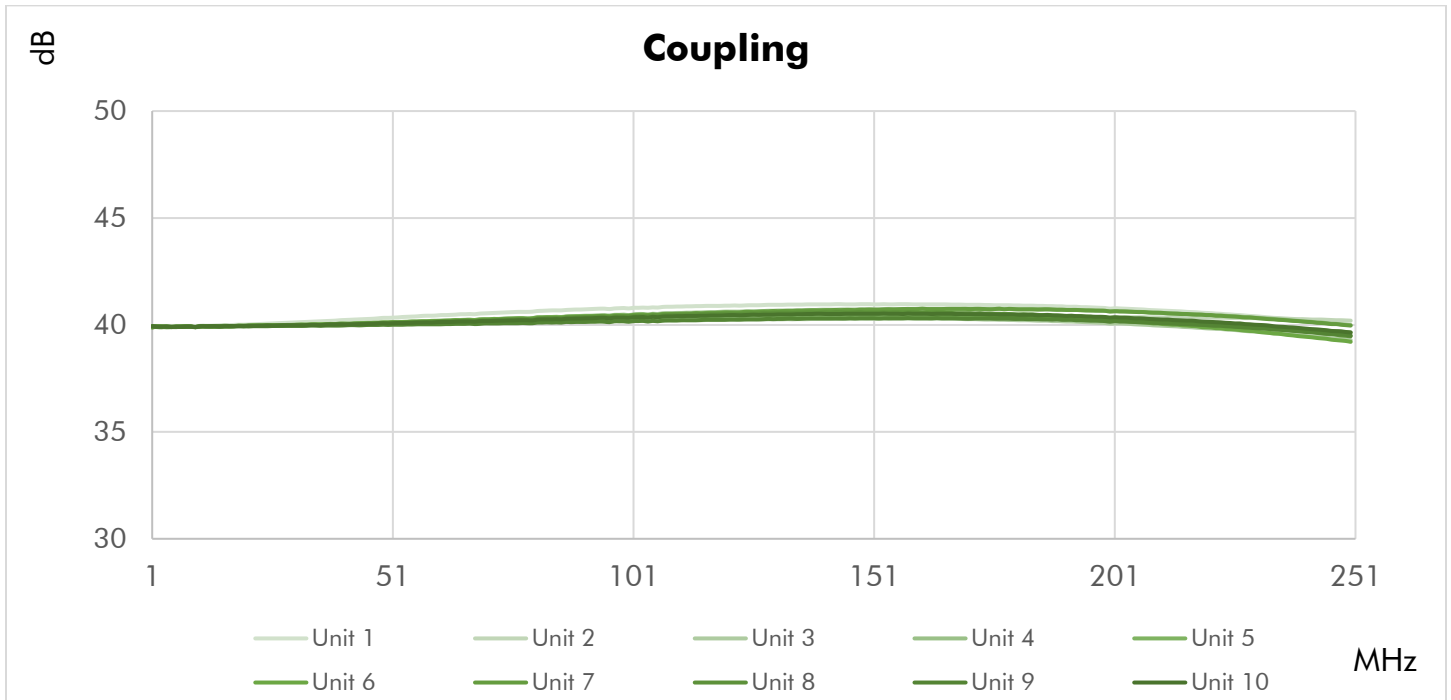
RoHS and REACH Compliant ⁴	
Enclosure	Aluminum
Connectors (Mainline)	Brass, Tri-Plate
Connectors (Coupled)	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish (Outer)	Green Paint
Finish (Mounting Surface)	Clear Conversion Film

Typical Performance at +25 °C





Repeatability in Production



Typical Performance Data

Frequency (MHz)	Return Loss (dB)				Mainline Loss (dB)	Coupling (dB)		Directivity (dB)	
	In	Out	Fwd.	Rev.		In-Fwd.	Out-Rev.	Fwd.	Rev.
1	41.71	42.12	19.31	18.58	0.33	39.94	39.95	32.82	39.22
10	41.24	41.23	19.19	18.50	0.32	39.92	39.93	31.52	42.75
20	39.74	39.85	19.20	18.60	0.33	40.01	39.96	30.74	41.04
30	38.03	37.97	19.22	18.74	0.33	40.11	39.97	30.09	38.74
40	36.36	36.19	19.17	18.82	0.34	40.22	39.98	29.86	36.32
50	35.03	34.89	19.08	18.90	0.34	40.33	40.00	29.87	34.50
60	33.67	33.52	19.03	19.02	0.35	40.44	40.03	30.00	33.21
70	32.51	32.51	19.12	19.26	0.36	40.54	40.05	30.27	32.03
80	31.54	31.65	19.16	19.47	0.36	40.62	40.06	30.78	31.21
90	30.70	31.05	19.27	19.73	0.37	40.72	40.12	31.27	30.58
100	29.98	30.03	19.29	19.87	0.38	40.77	40.14	31.85	30.11
110	29.39	29.35	19.27	19.99	0.38	40.86	40.22	32.39	29.89
120	28.68	28.49	19.25	20.07	0.39	40.90	40.26	32.77	29.91
130	28.12	27.89	19.27	20.15	0.40	40.94	40.32	33.07	30.08
140	27.66	27.44	19.27	20.21	0.41	40.96	40.37	33.37	30.61
150	27.06	27.06	19.28	20.23	0.41	40.97	40.40	33.65	31.55
160	26.58	26.50	19.21	20.12	0.42	40.96	40.44	34.19	32.92
170	26.03	25.95	19.11	19.96	0.43	40.94	40.47	34.97	35.26
180	25.59	25.37	18.95	19.71	0.44	40.91	40.47	36.09	37.97
190	25.13	24.79	18.78	19.41	0.45	40.87	40.46	37.56	38.61
200	24.69	24.38	18.57	19.09	0.46	40.76	40.39	38.43	34.43
210	24.30	23.90	18.39	18.80	0.46	40.68	40.32	37.13	30.27
220	23.78	23.55	18.19	18.49	0.48	40.56	40.20	34.09	26.97
230	23.38	23.14	18.01	18.22	0.49	40.41	40.03	30.89	24.37
240	23.01	22.85	17.84	17.99	0.50	40.22	39.81	28.13	22.18
250	22.58	22.55	17.66	17.75	0.50	40.00	39.55	25.64	20.38

(e.g., performance over temperature, power handling, DC current, HI-POT) are “designed to meet” and are not individually tested in production of commercially available products. Please contact a Werbel Microwave LLC Applications Engineer if specific reliability testing is needed on a particular product.