

Dual Directional Coupler, 6-18GHz, 10dB, SMA-Female

WMDDC-6-18-10dB-S

Description

WMDDC-6-18-10dB is a true dual directional coupler that covers 6 to 18GHz with excellent return loss, coupling flatness and high directivity. Its advantage is a smaller and more lightweight housing than two independent couplers. It eliminates reflections caused by additional cabling. Improved performance over separate couplers due to the lack of interconnections and cable between. Insertion loss 1.54dB typical. Directivity 18.7dB typical. Return loss 20.5dB typical. Coupling 10 ± 0.8 dB; flatness ± 0.34 dB typical.



Photo is representative.

Specifications	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency Range	--	6	--	18	GHz
Impedance	--	--	50	--	Ohm
Coupling	--	--	10 ± 0.8	± 1.5	dB
Frequency Sensitivity (Flatness)	--	--	± 0.34	± 1.0	dB
Mainline Loss ¹	6-12.4	--	1.54	2.00	dB
	12.4-18	--	1.63	2.50	
Directivity	6-12.4	15.0	18.7	--	dB
	12.4-18	12.0	15.1	--	
Isolation	6-12.4	--	28.7	--	dB
	12.4-18	--	25.1	--	
Return Loss (Main Line)	--	14.0	20.5	--	dB
Return Loss (Secondary Line)	--	14.0	18.7	--	dB
Input Power (CW) ²	--	--	--	20	Watts

Mechanical

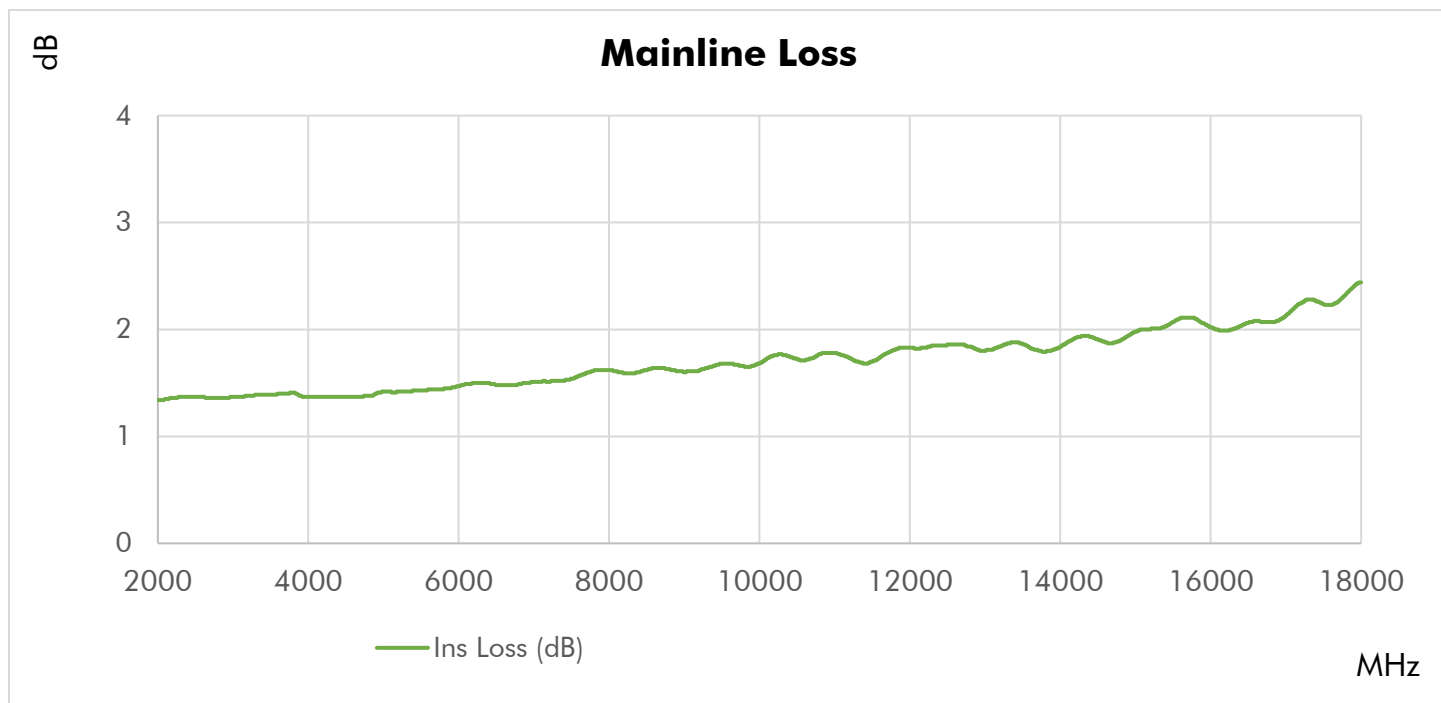
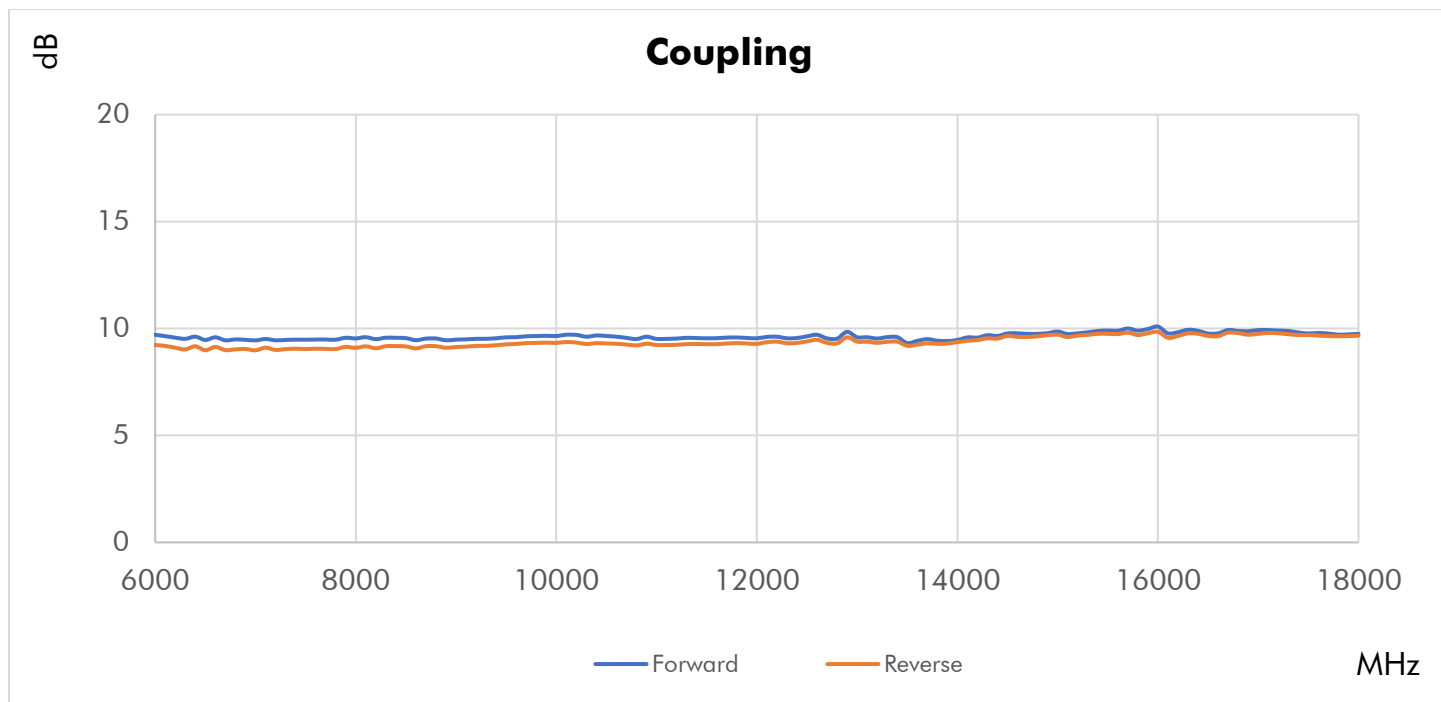
Connector Interface	SMA-Female
Operating Temperature ³	-40 to +85 °C
Storage Temperature	-55 to +100 °C
Weight	40.4 g (1.43 oz)
Humidity	10-90% non-condensing
Environment	Indoors Use Only

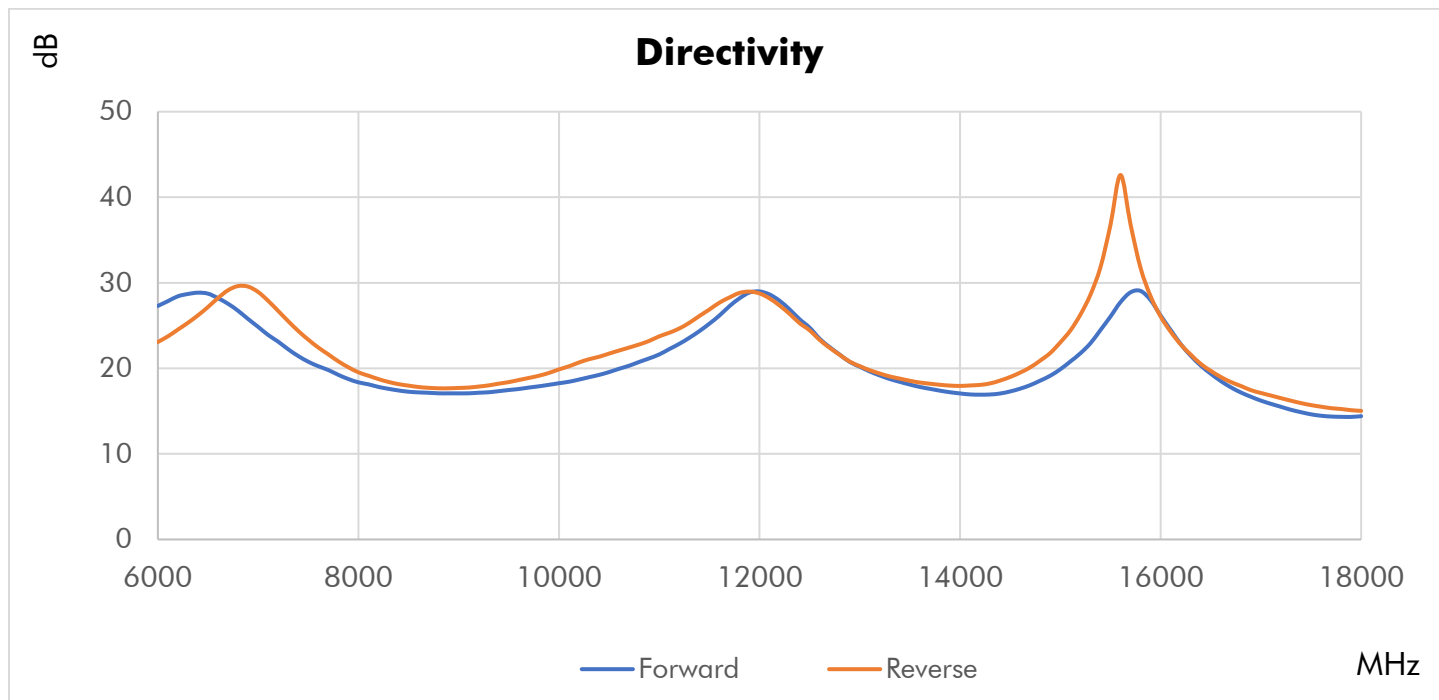
1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications at +25 °C.
4. To the best of our knowledge at time of publication.

Materials

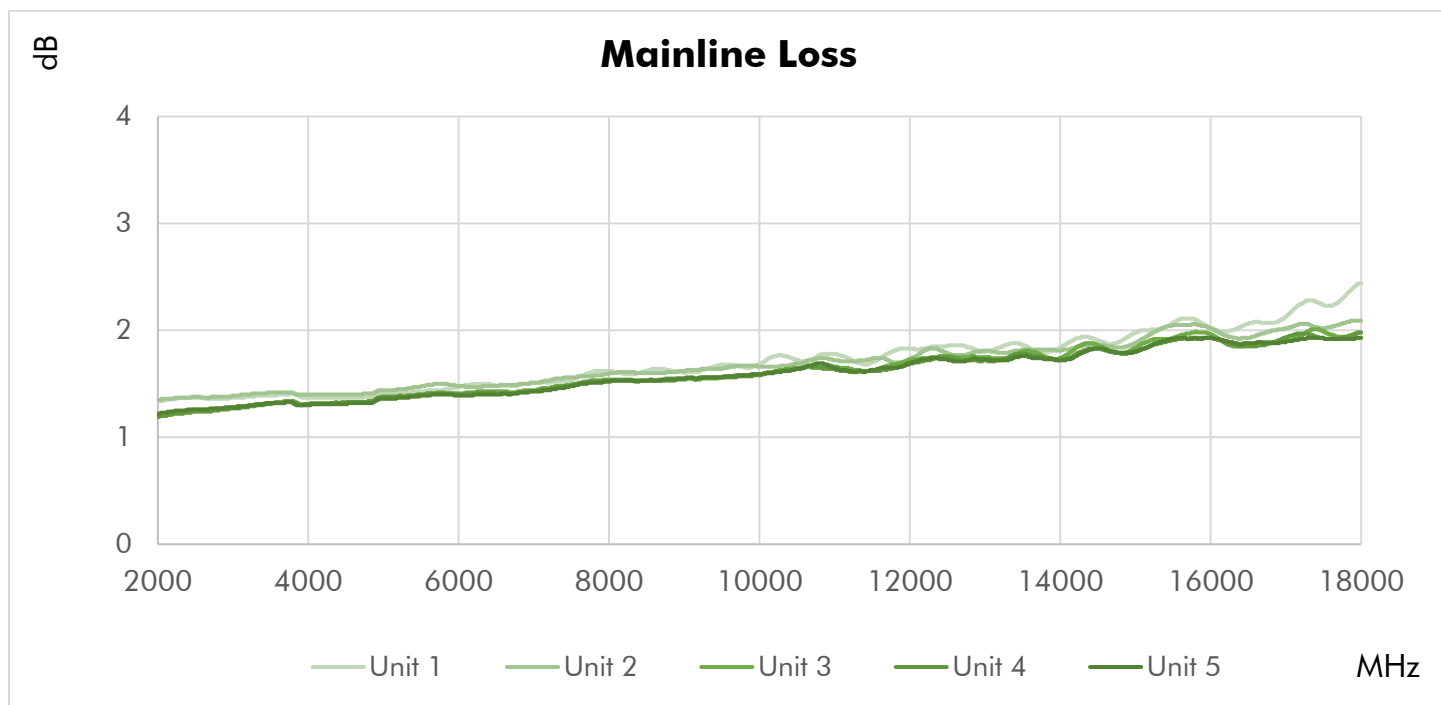
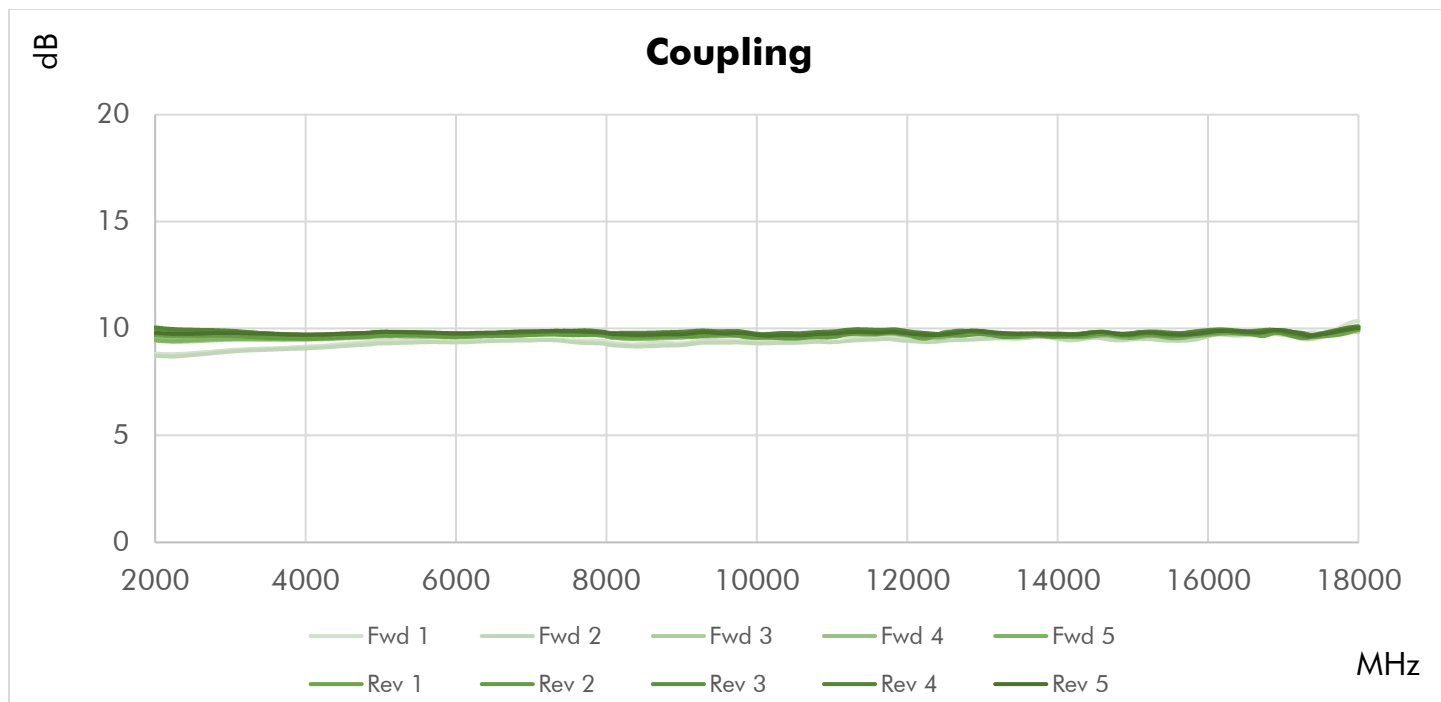
RoHS and REACH Compliant ⁴	
Enclosure	Aluminum
Connectors	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Green Paint

Typical Performance at +25 °C





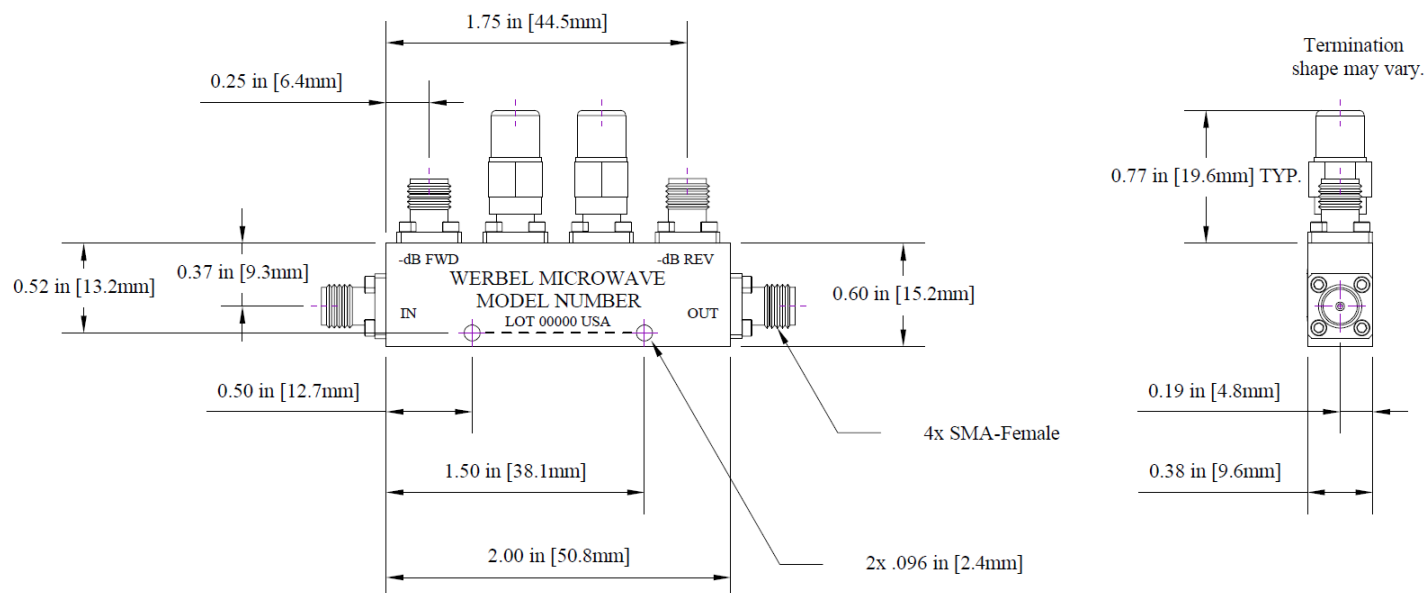
Repeatability in Production



Typical Performance Data

Frequency (MHz)	Return Loss (dB)				Mainline Loss (dB)	Coupling (dB)		Directivity (dB)	
	In	Out	Fwd.	Rev.		Fwd.	Rev.	Fwd.	Rev.
6000	23.37	23.09	21.46	19.91	1.38	9.71	9.23	27.30	23.08
6500	28.75	27.31	23.99	21.77	1.38	9.47	8.98	28.73	27.17
7000	31.45	25.86	30.83	27.20	1.38	9.45	8.98	24.85	28.93
7500	22.93	22.10	30.27	30.44	1.41	9.48	9.04	20.77	23.36
8000	23.55	23.40	23.41	22.67	1.40	9.54	9.09	18.37	19.53
8500	34.62	30.94	20.22	19.35	1.43	9.55	9.16	17.27	17.98
9000	23.78	21.51	19.29	18.71	1.46	9.48	9.13	17.08	17.71
9500	18.66	18.10	19.75	19.84	1.51	9.59	9.26	17.47	18.39
10000	17.87	17.46	21.25	22.23	1.47	9.65	9.33	18.26	19.88
10500	21.33	22.12	23.56	25.56	1.49	9.65	9.30	19.57	21.73
11000	31.50	39.64	28.40	29.63	1.47	9.51	9.23	21.63	23.74
11500	20.58	21.11	35.11	32.38	1.53	9.54	9.27	25.22	26.88
12000	18.14	18.21	27.43	27.26	1.51	9.54	9.28	28.99	28.76
12500	21.97	22.11	22.95	23.85	1.63	9.63	9.40	24.76	24.44
13000	26.81	26.88	21.62	23.57	1.56	9.59	9.39	20.19	20.26
13500	17.99	19.43	22.74	27.80	1.72	9.32	9.19	18.10	18.55
14000	18.15	17.96	24.20	30.51	1.40	9.46	9.37	17.07	17.94
14500	28.67	23.79	21.58	22.61	1.47	9.77	9.66	17.30	18.99
15000	24.66	24.14	18.11	18.66	1.54	9.86	9.71	19.90	23.04
15500	20.56	21.17	16.69	17.51	1.58	9.91	9.75	26.06	36.77
16000	22.36	21.53	17.50	18.41	1.52	10.09	9.85	26.18	26.07
16500	25.11	28.20	21.14	21.36	1.57	9.77	9.65	19.37	19.71
17000	24.19	33.35	34.33	25.97	1.65	9.93	9.75	16.23	17.12
17500	26.37	26.14	28.27	26.13	1.64	9.77	9.70	14.63	15.70
18000	42.18	27.41	22.98	25.39	1.63	9.75	9.66	14.41	15.03

Outline Dimensions



Outline # OL-5006

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

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

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