

Dual Directional Coupler, 2-18GHz, 10dB, SMA-Female

WMDDC-2-18-10dB-S

Description

WMDDC-2-18-10dB is a true dual directional coupler that covers 2 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 1.85dB typical. Directivity 17dB typical. Return loss 20dB typical.



Photo is representative.

Specifications	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency Range	--	2	--	18	GHz
Impedance	--	--	50	--	Ohm
Coupling	--	--	10 ± 0.6	±1.5	dB
Frequency Sensitivity (Flatness)	--	--	±0.78	±1.5	dB
Mainline Loss ¹	2-12.4	--	1.85	2.50	dB
	12.4-18	--	2.44	3.50	dB
Directivity	2-12.4	15.0	17.4	--	dB
	12.4-18	12.0	16.8	--	dB
Return Loss (Main Line)	--	14.0	20.2	--	dB
Return Loss (Secondary Line)	--	14.0	18.4	--	dB
Input Power (CW) ²	--	--	--	20	Watts

Mechanical

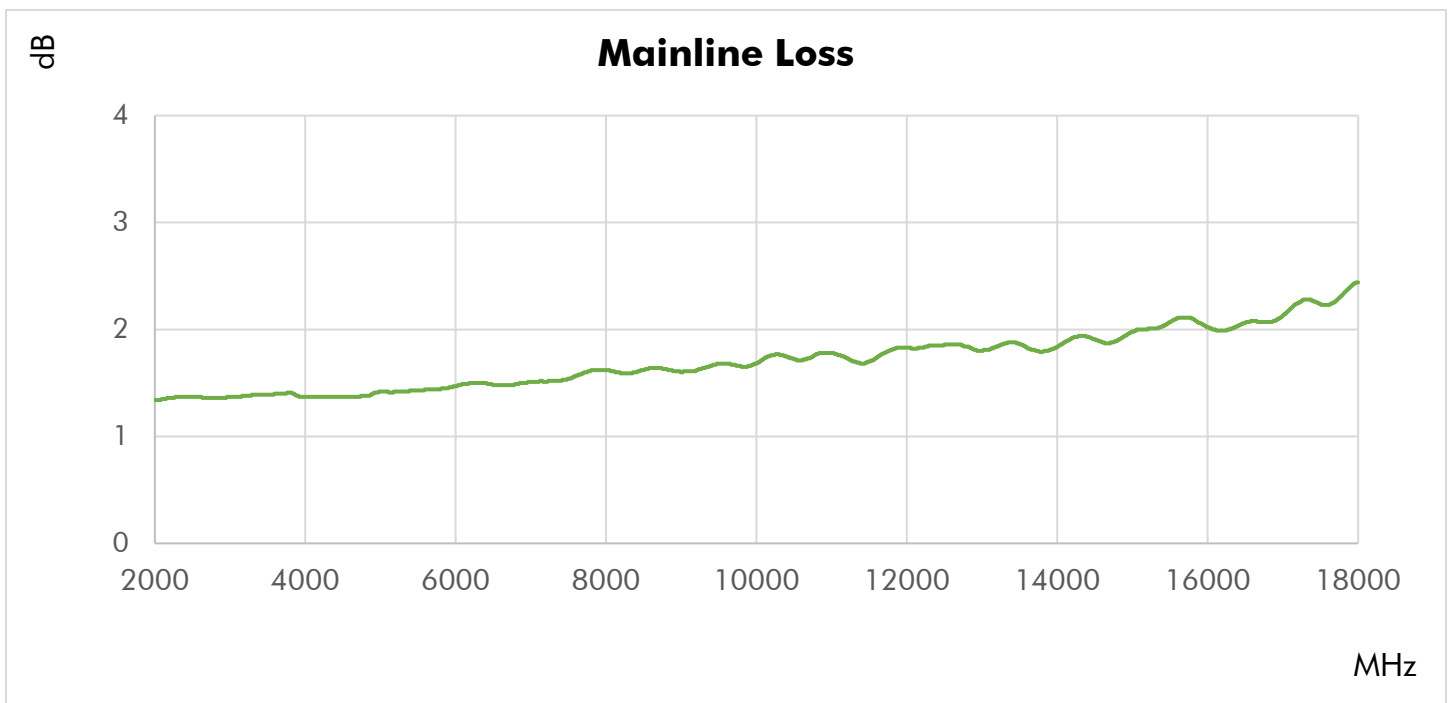
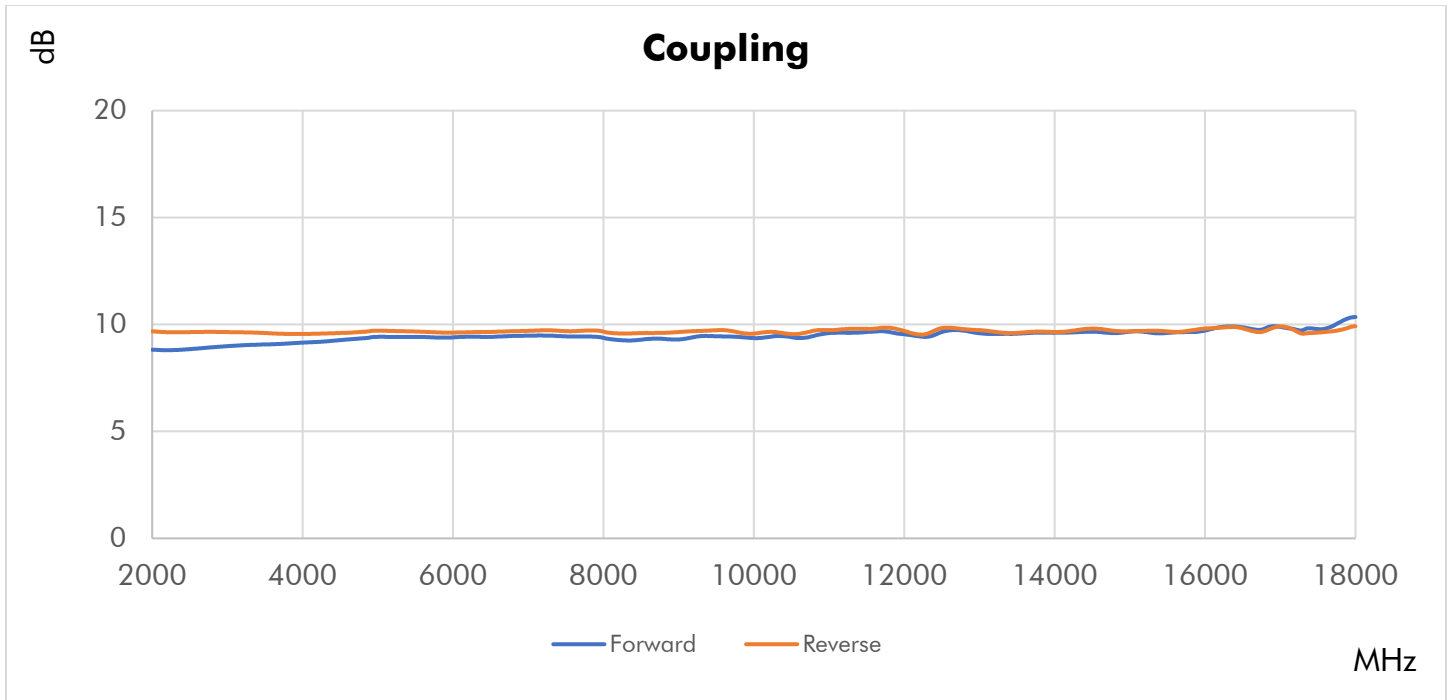
Connector Interface	SMA-Female
Operating Temperature ³	-40 to +85 °C
Storage Temperature	-55 to +100 °C
Weight	3.1 oz (89 g)
Humidity	10-90% non-condensing
Environment	Indoors Use Only

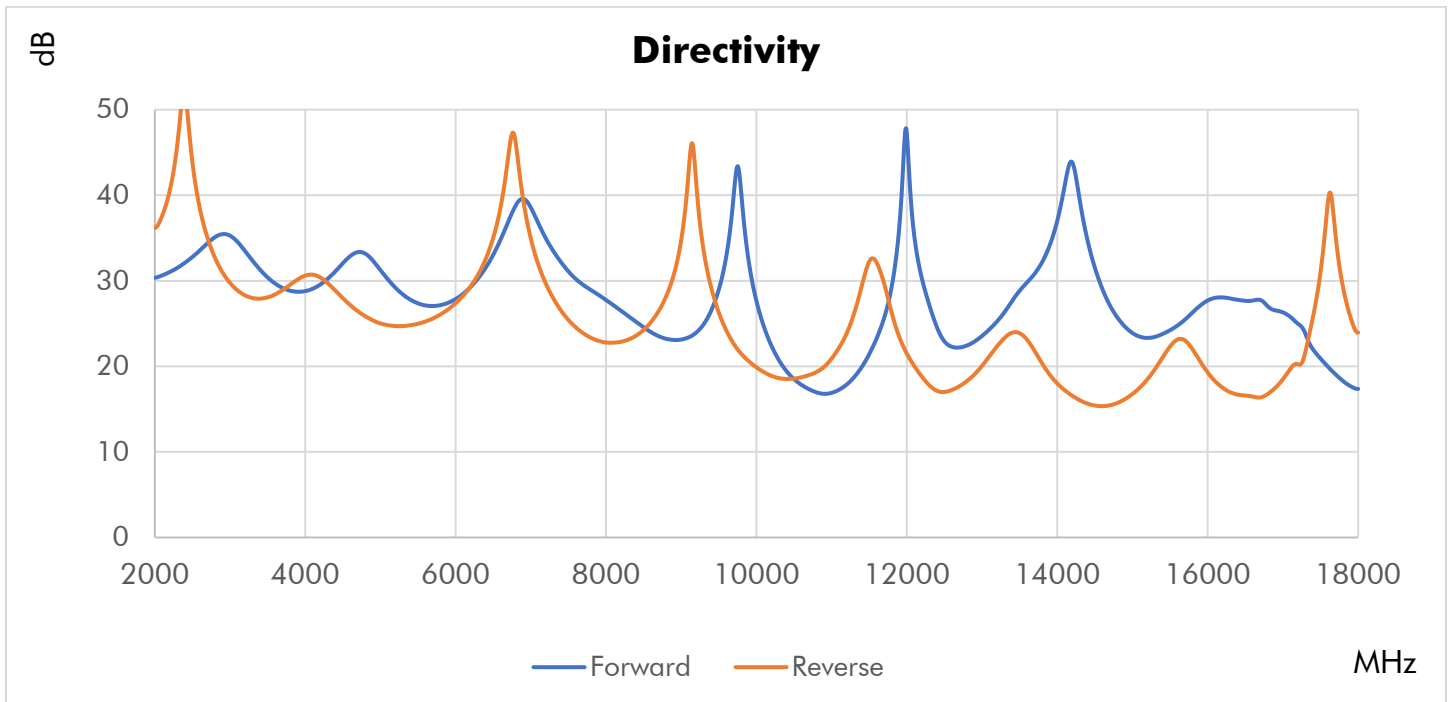
1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications at +25 °C only.
4. To the best of our knowledge at time of publication.

Materials

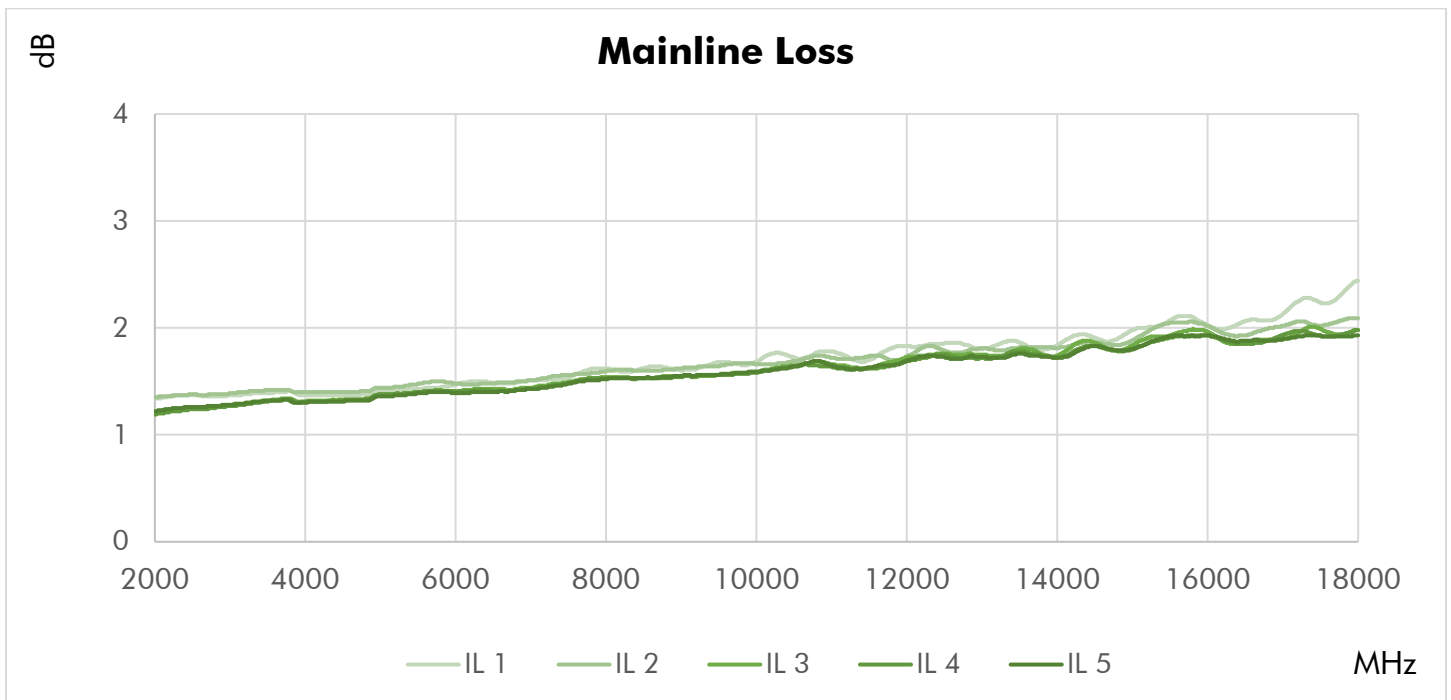
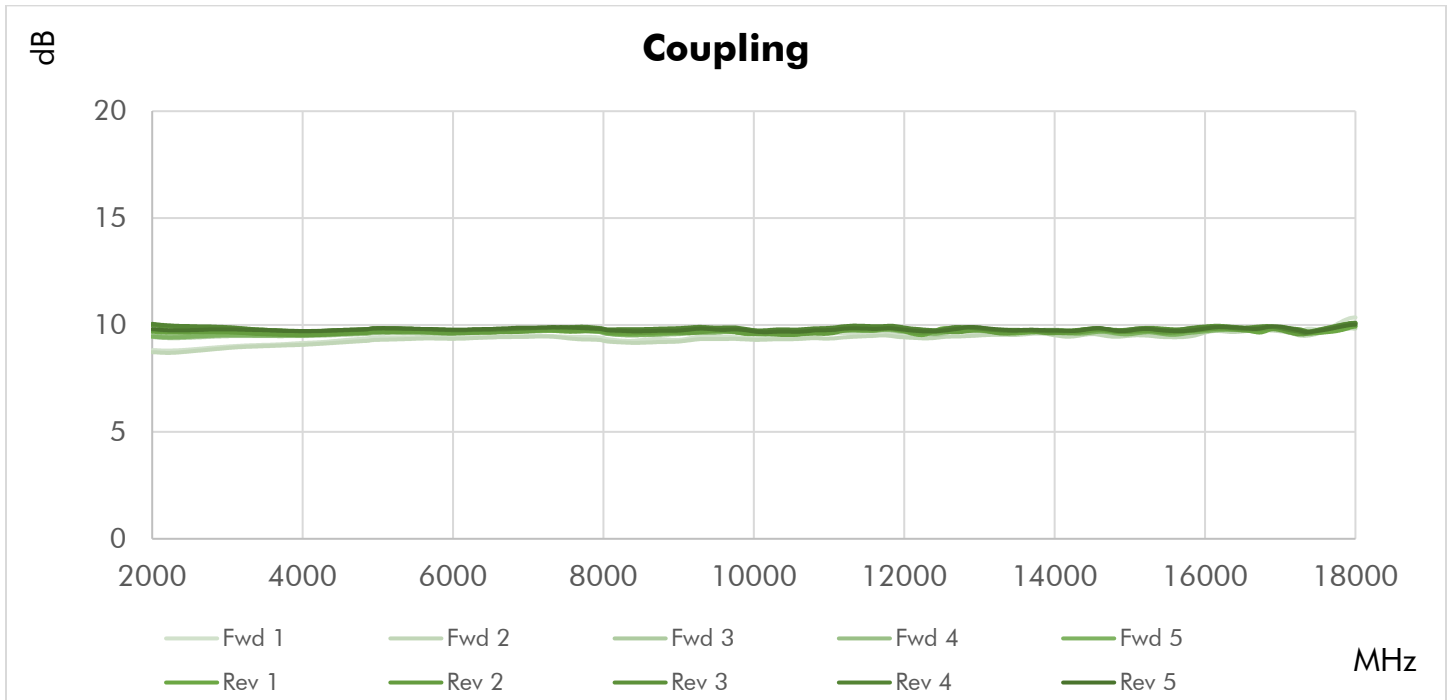
RoHS and REACH Compliant ⁴	
Enclosure	Aluminum
Connectors	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Green Paint

Typical Performance at +25 °C





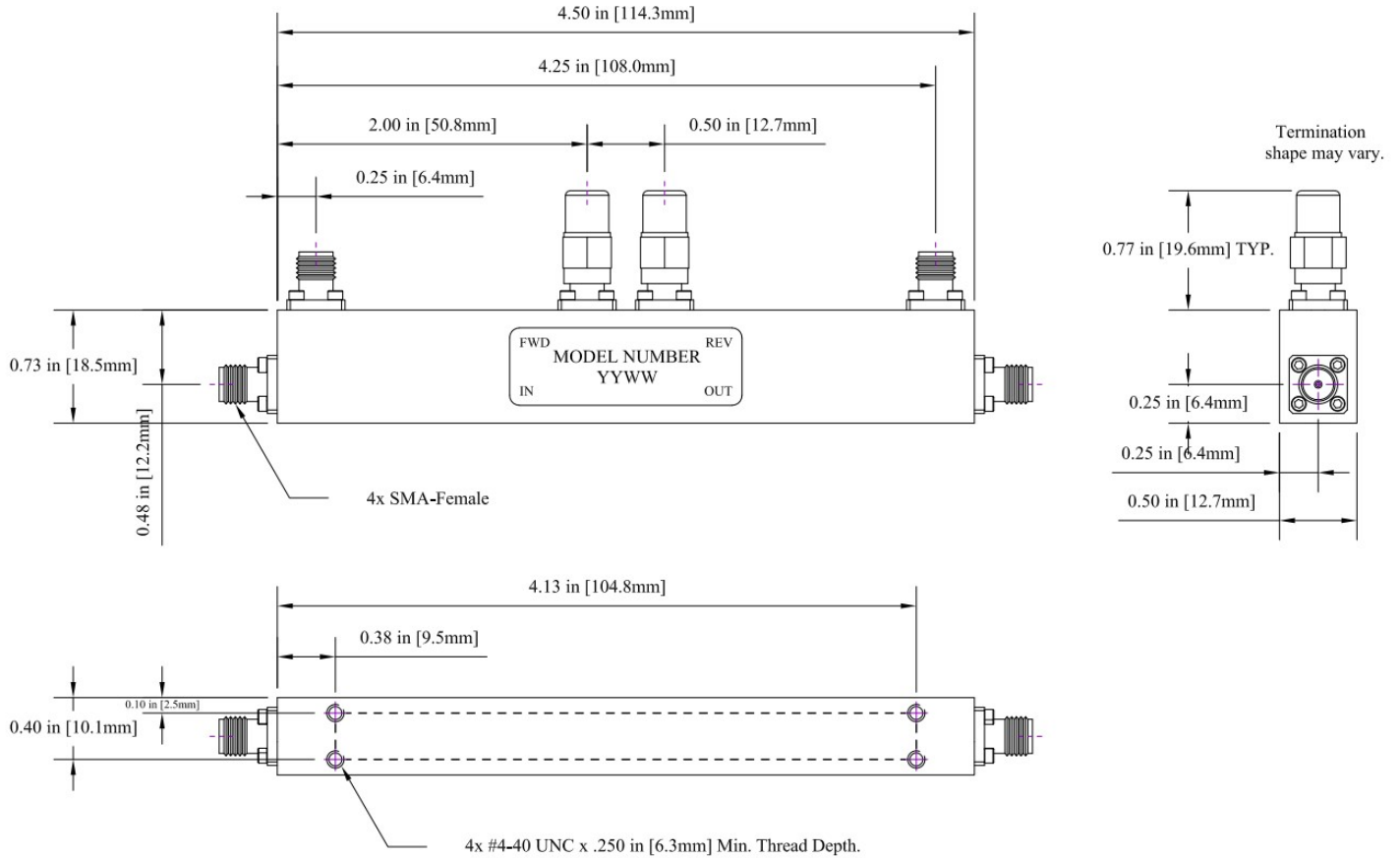
Repeatability in Production



Typical Performance Data

Frequency (MHz)	Return Loss (dB)				Mainline Loss (dB)	Coupling (dB)		Directivity (dB)	
	In	Out	Fwd.	Rev.		In-Out	Fwd.	Rev.	Fwd.
2000	26.7	27.1	32.3	34.9	1.34	8.82	9.68	30.4	36.2
2500	25.7	26.4	30.7	38.0	1.37	8.85	9.64	32.8	43.8
3000	31.9	38.1	30.1	35.0	1.37	8.99	9.65	35.3	29.8
3500	34.4	34.1	27.4	28.9	1.39	9.07	9.60	30.4	28.1
4000	27.5	29.3	27.2	33.8	1.37	9.15	9.56	28.8	30.6
4500	35.2	32.0	33.2	31.1	1.37	9.27	9.60	32.1	28.0
5000	28.3	25.9	27.1	25.2	1.42	9.42	9.71	31.2	25.0
5500	30.0	28.5	29.0	27.0	1.43	9.42	9.67	27.4	25.0
6000	25.8	22.6	33.8	30.9	1.47	9.40	9.62	27.9	27.4
6500	22.1	22.3	26.5	23.2	1.48	9.42	9.65	33.1	35.1
7000	23.1	22.7	30.3	22.4	1.51	9.48	9.70	38.5	34.9
7500	27.6	30.7	41.3	39.1	1.54	9.45	9.69	31.1	25.4
8000	20.7	20.5	33.4	23.4	1.62	9.38	9.67	27.8	22.8
8500	20.2	19.8	34.7	23.3	1.62	9.29	9.60	24.6	24.3
9000	29.9	26.8	28.7	33.3	1.60	9.30	9.65	23.1	34.9
9500	18.0	20.2	20.5	20.0	1.68	9.45	9.73	29.0	26.3
10000	19.3	19.1	20.8	20.7	1.68	9.37	9.58	27.6	19.9
10500	20.5	21.5	33.5	26.6	1.72	9.41	9.55	18.5	18.6
11000	17.1	18.4	21.1	17.8	1.78	9.60	9.74	16.9	20.9
11500	24.1	24.1	18.7	17.0	1.70	9.65	9.80	21.5	32.3
12000	18.0	17.6	26.3	23.6	1.83	9.55	9.70	47.1	21.5
12500	18.8	18.0	23.4	19.2	1.86	9.65	9.83	22.9	17.0
13000	32.3	24.6	18.8	16.4	1.80	9.59	9.74	23.6	20.1
13500	19.7	18.8	19.5	21.5	1.86	9.57	9.61	28.9	23.9
14000	19.6	20.0	21.6	27.6	1.84	9.62	9.65	37.1	18.0
14500	23.0	18.3	22.5	22.0	1.91	9.66	9.81	31.5	15.4
15000	19.4	17.4	19.6	25.2	1.98	9.67	9.68	23.9	16.8
15500	23.6	20.6	24.7	28.0	2.07	9.61	9.68	24.2	22.3
16000	22.3	18.0	31.1	28.5	2.02	9.72	9.81	27.7	19.3
16500	21.3	18.1	19.9	24.9	2.06	9.87	9.82	27.7	16.6
17000	22.4	18.7	17.4	17.0	2.13	9.89	9.91	26.3	18.5
17500	20.3	29.7	24.9	20.8	2.24	9.79	9.62	20.9	31.1
18000	15.8	18.0	19.0	19.3	2.44	10.35	9.92	17.4	24.0

Outline Dimensions



Outline # OL-5182

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

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

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