

## Directional Coupler 20 dB SMA Female from 500 MHz to 2 GHz

### Directional Couplers Technical Data Sheet

**C-1002-20**

#### Description

Directional couplers are used in signal monitoring. Model C-1002-20 from Werbel Microwave is a 20dB coupler from 0.5-2.0 GHz with flatness of +/- 0.75 dB max. High directivity performance of 23 dB minimum guaranteed. Excellent VSWR performance of 1.20:1 max at all ports. Designed to handle 50 watts in both forward and reverse directions. Enclosure measures 3.60 x 0.60 x 0.38 inches. Enclosure is made from aluminum alloy and SMA female connectors are stainless steel. Made in USA.



Specification	Min	Typ.	Max	Units
Frequency	500		2,000	MHz
Impedance		50		Ohm
Coupling		20 ± 1.0		dB
Frequency Sensitivity (Flatness)		± 0.50	± 0.75	dB
Insertion Loss Measured at Highest Frequency (above theoretical coupling/splitting loss)		0.25	0.35	dB
Directivity	23	26		dB
Main Line VSWR		1.15	1.20	:1
Secondary Line VSWR		1.15	1.20	:1
Input Power (CW) into 1.2:1 max load VSWR			50	Watts
Reverse Power (CW) into 1.2:1 max load VSWR			50	Watts
Termination			1	Watt

#### Mechanical

Connector Interface	SMA-Female
Operating Temperature*	-55 to +85 °C
Storage Temperature	-55 to +100 °C
Weight	1.6 oz (45 g)
Humidity	10-90% non-condensing
Environment	Indoor Use Only

#### Materials

##### RoHS and REACH Compliant

Enclosure	Aluminum
Connectors	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Gray Paint

\* Design to meet based on materials. Production-tested at +25 °C. External heatsink and convection cooling recommended to maintain body temperature below +50 °C.



**MADE IN USA**

**ISO 9001:2015**

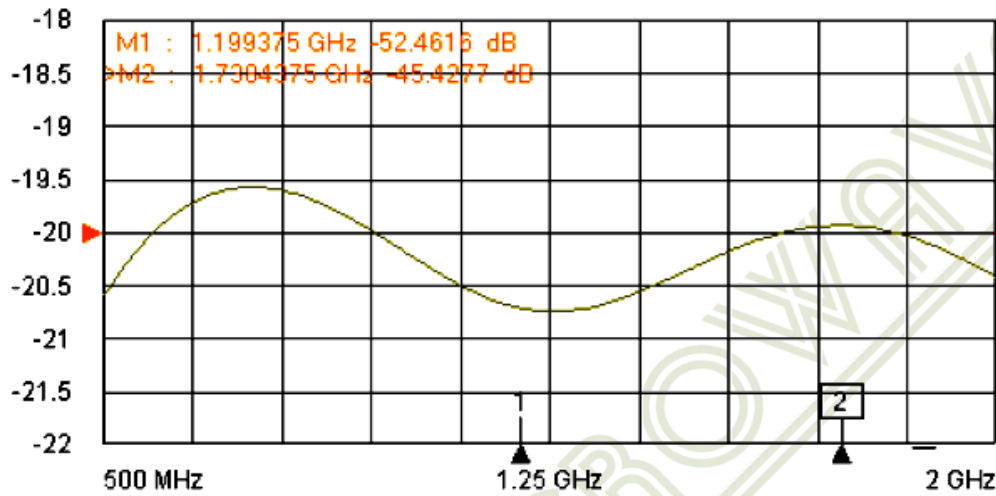
**Certified Company**

## Typical Performance at +25 °C

### Coupling Value and Flatness

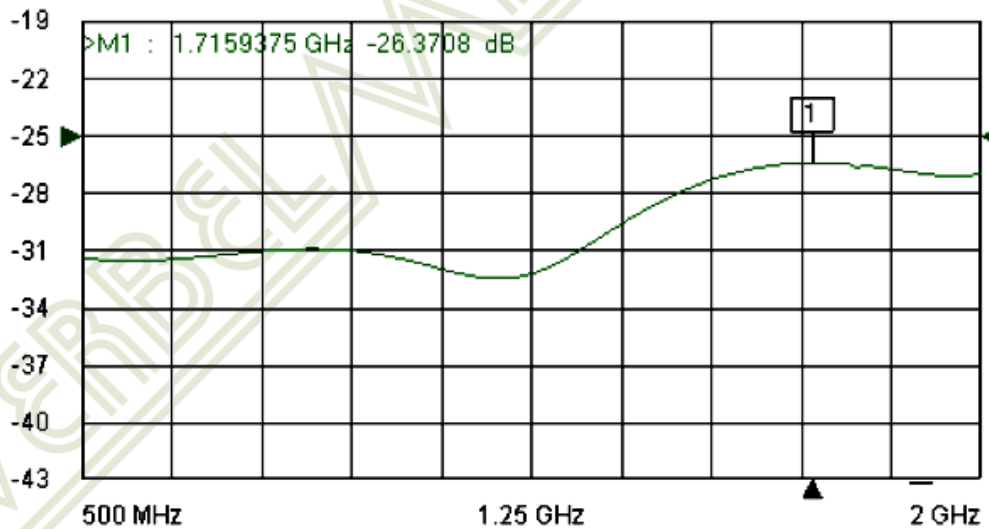
**Coupling** [D&M] S21 Trans LogM RefLvl: -20 dB Res: 0.5 dB/Div

M1(Tr1)



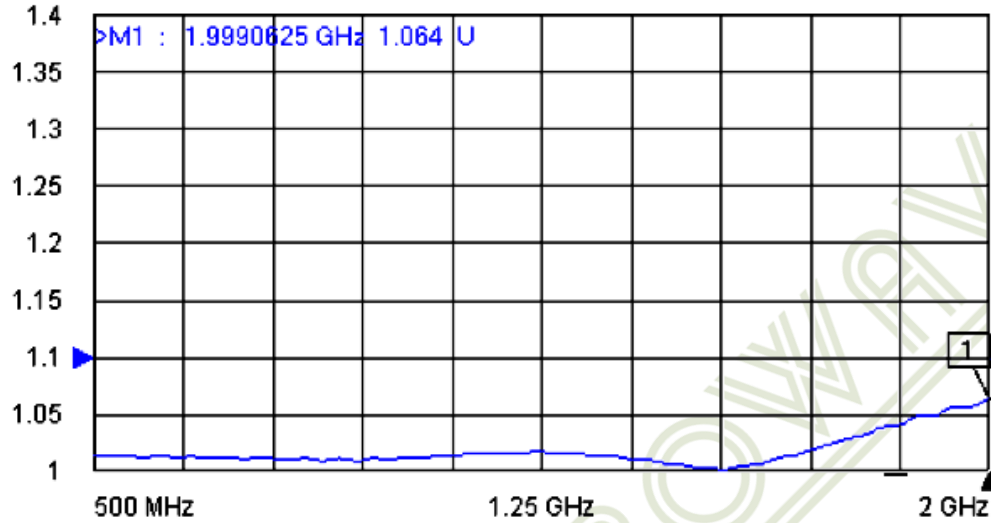
### Directionality

**Directivity** [D/M] S21 Trans LogM RefLvl: -25 dB Res: 3 dB/Div



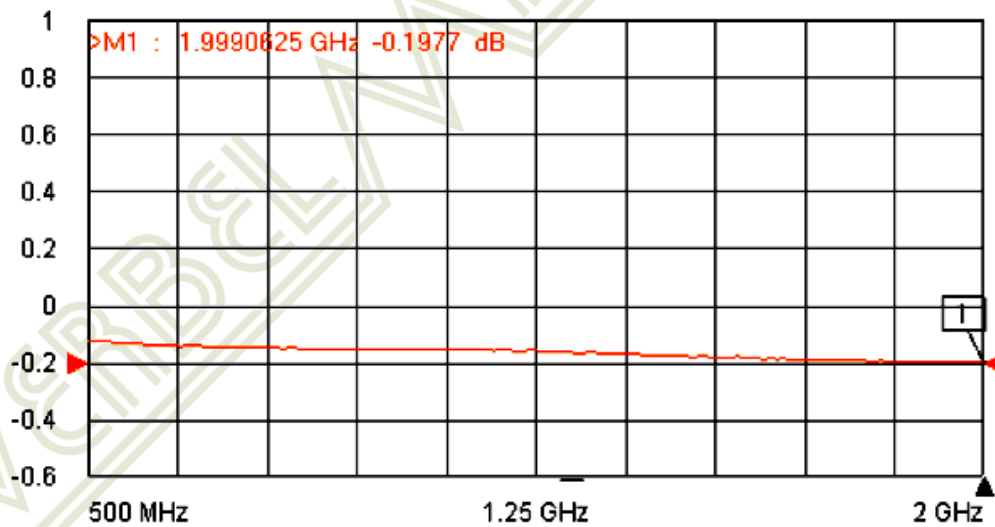
## Return Loss

**VSWR** S11 Refl SWR RefLvl: 1.1 U Res: 50 mU/Div

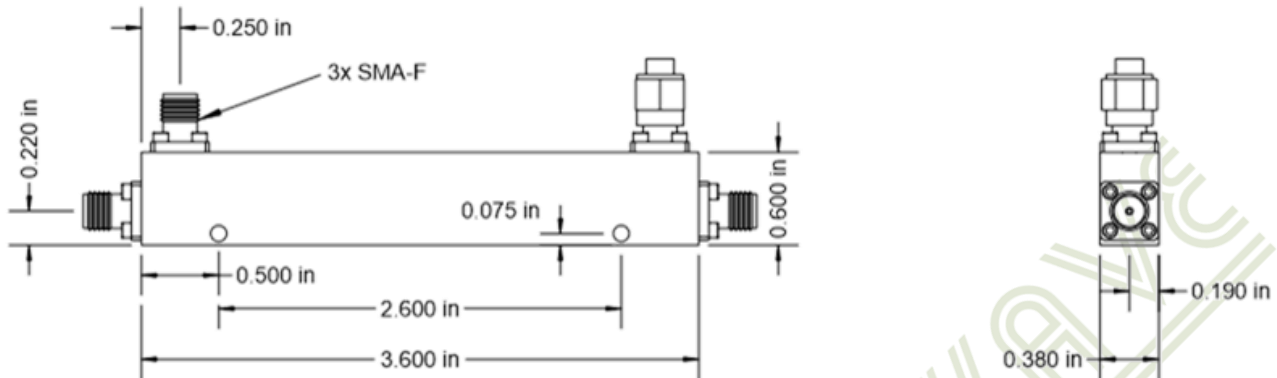


## Insertion Loss

**InsLoss** S21 Trans LogM RefLvl: -0.2 dB Res: 0.2 dB/Div



## Outline Dimensions



Outline # OL-1002

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

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

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