

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

### Directional Couplers Technical Data Sheet

**C-1205-20**

#### Description

Werbel Microwave model C-1205-20 is a wideband directional coupler that covers 500 MHz to 20 GHz with 20 dB coupling factor. Typical flatness is +/- 0.5 dB across the band. Typical directivity is 16 dB. Case measures 4.40 x 0.73 x 0.50 inches. Available with SMA female connectors. Made in USA.



Specification	Min	Typ.	Max	Units
Frequency	0.5		20	GHz
Impedance		50		Ohm
Coupling		20	±1.2	dB
Frequency Sensitivity (Flatness)		±0.57	±1.8	dB
Mainline Loss Measured (Includes loss due to coupling)		1.08	1.70	dB
Directivity	12	16.7		dB
Main Line VSWR		1.38	1.60	:1
Secondary Line VSWR		1.42	1.70	:1
Input Power (CW) into 1.2:1 max load VSWR			20	Watts
Reverse Power (CW) into 1.2:1 max load VSWR			20	Watts
Termination			1	Watt

#### Mechanical

Connector Interface	SMA-Female
Operating Temperature*	-55 to +85 °C
Storage Temperature	-55 to +100 °C
Weight	3.5 oz (86 g)
Humidity	10-90% non-condensing
Environment	Indoors Use Only

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

#### Materials

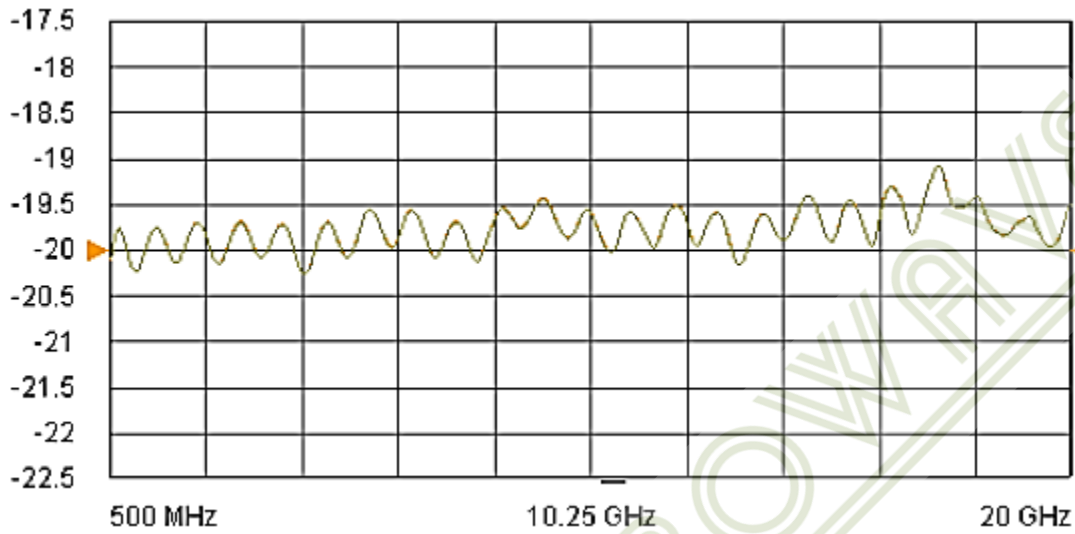
##### RoHS and REACH Compliant

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

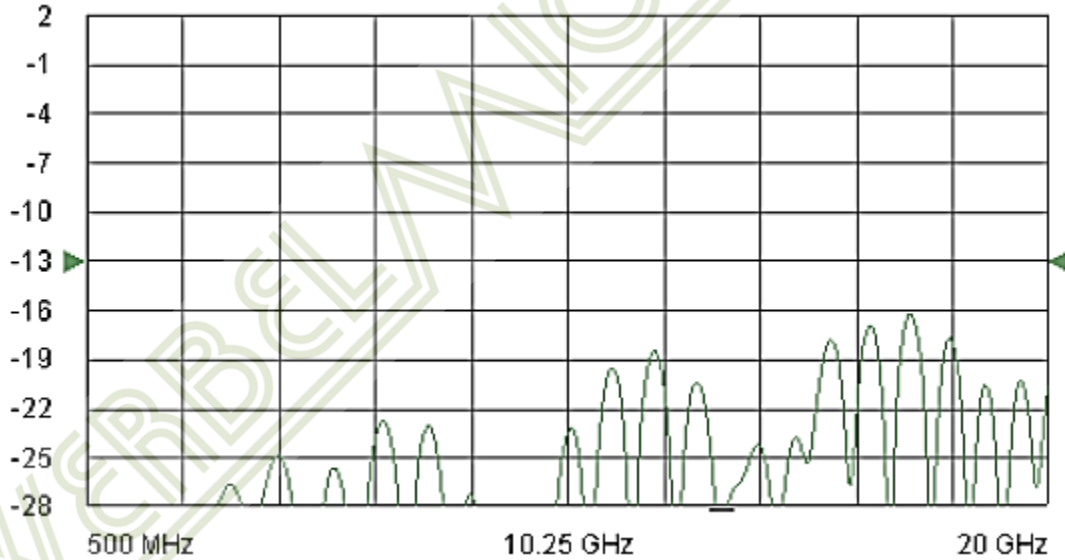


## Typical Performance at +25 °C

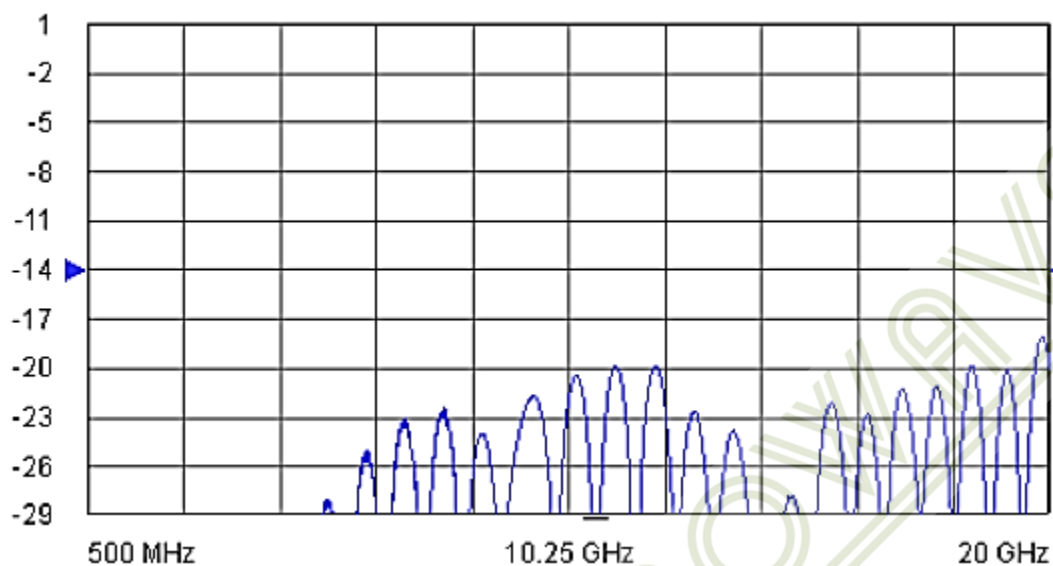
### Coupling Value and Flatness



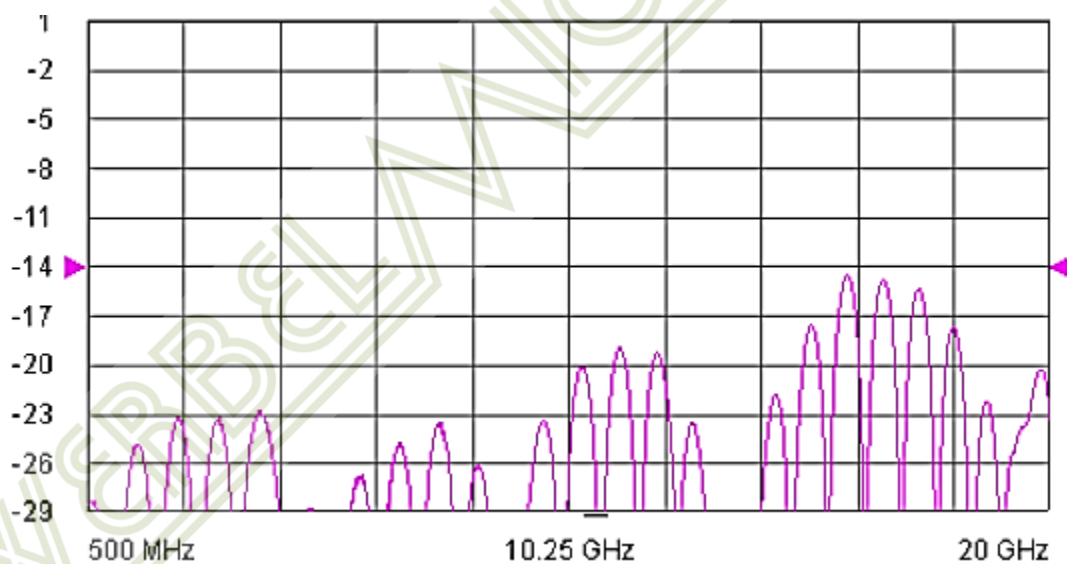
### Directionality



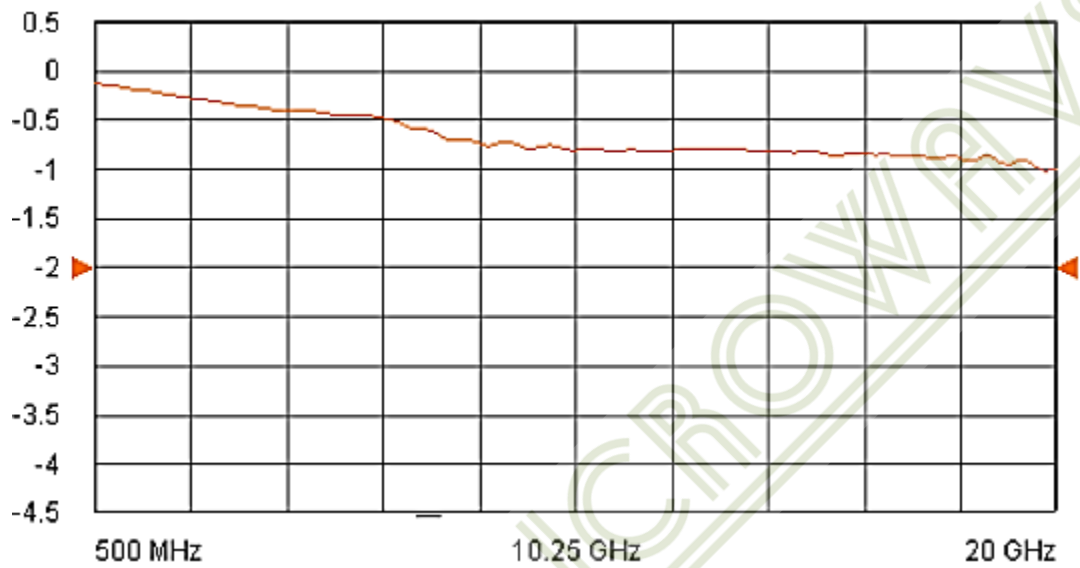
## Return Loss Mainline



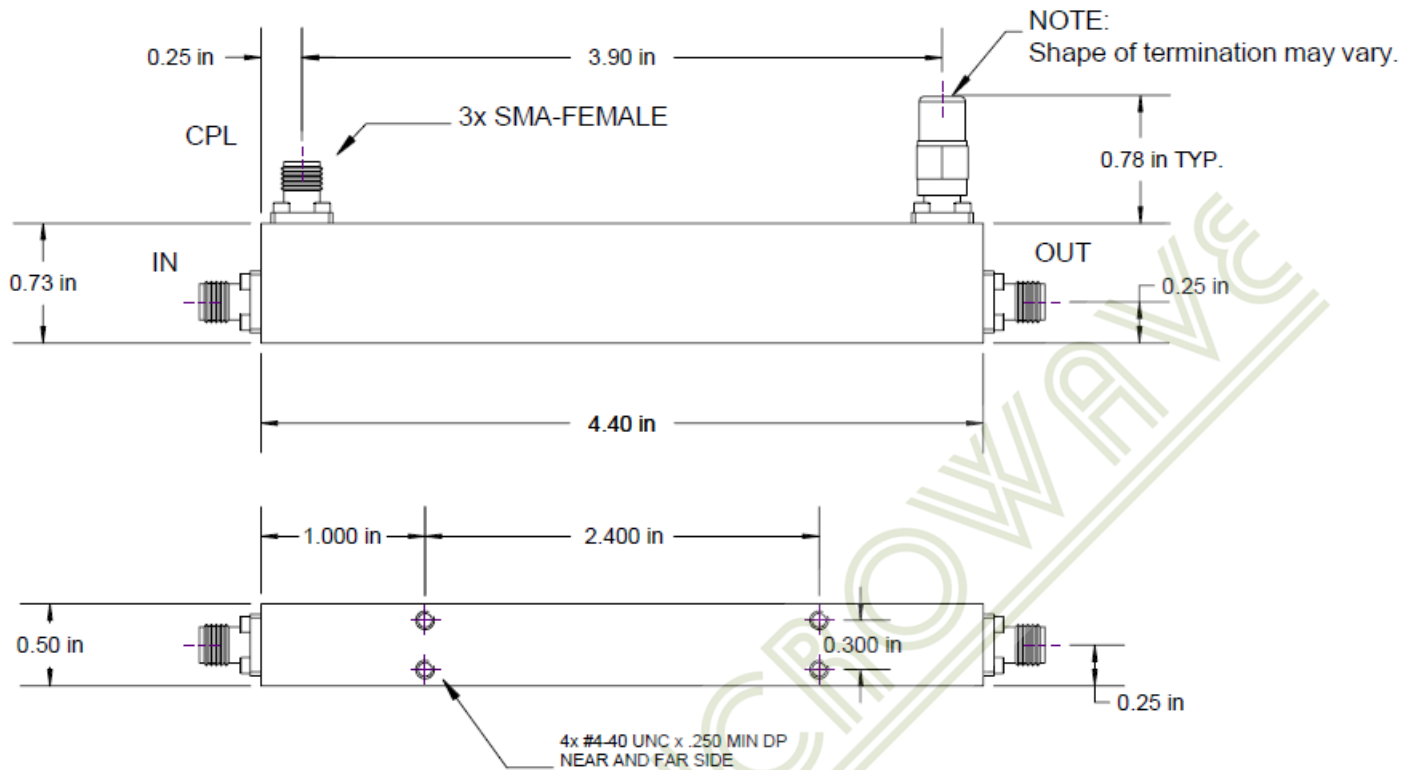
## Return Loss Coupled Port



## Insertion Loss



## Outline Dimensions



Outline # OL-1185

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

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

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or documentation of the part, in order to implement improvements. Werbel Microwave LLC reserves the right to make such changes as required without notice. Unless otherwise stated, all specifications and dimensions are nominal. Werbel Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Werbel Microwave LLC does not assume any liability arising out of the use of any part of documentation. This document gives only a description of the product(s) and shall not form part of any contract. Please contact a Werbel Microwave LLC Applications Engineer for the most current specification drawing.