

## Ka-Band Waveguide Bi-Directional Coupler, 10 dB

### Description:

**Model SWD-1040H-28-BB** is a Ka band, four-port waveguide bi-directional coupler that delivers a 10 dB nominal coupling level and 35 dB minimum directivity across the full waveguide band from 26.5 to 40 GHz. The four-port coupler uses a traditional multi-hole and split block design to achieve a flat coupling level, high directivity, and low insertion loss. The interfaces of the coupler are WR-28 waveguides with UG-599/U flanges. Custom coupling levels are available under different model numbers.



### Features:

- Full Band Operation
- Low Insertion Loss
- High Directivity

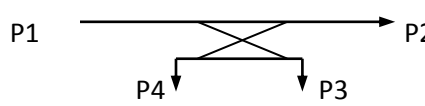
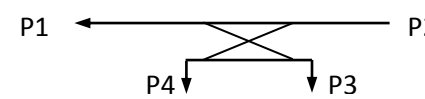
### Applications:

- Test Labs
- Instrumentation
- Sub-assemblies

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	26.5 GHz		40 GHz
Insertion Loss*		0.5 dB	
Coupling*		10 dB	
Directivity*	35 dB		
VSWR			1.1:1
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

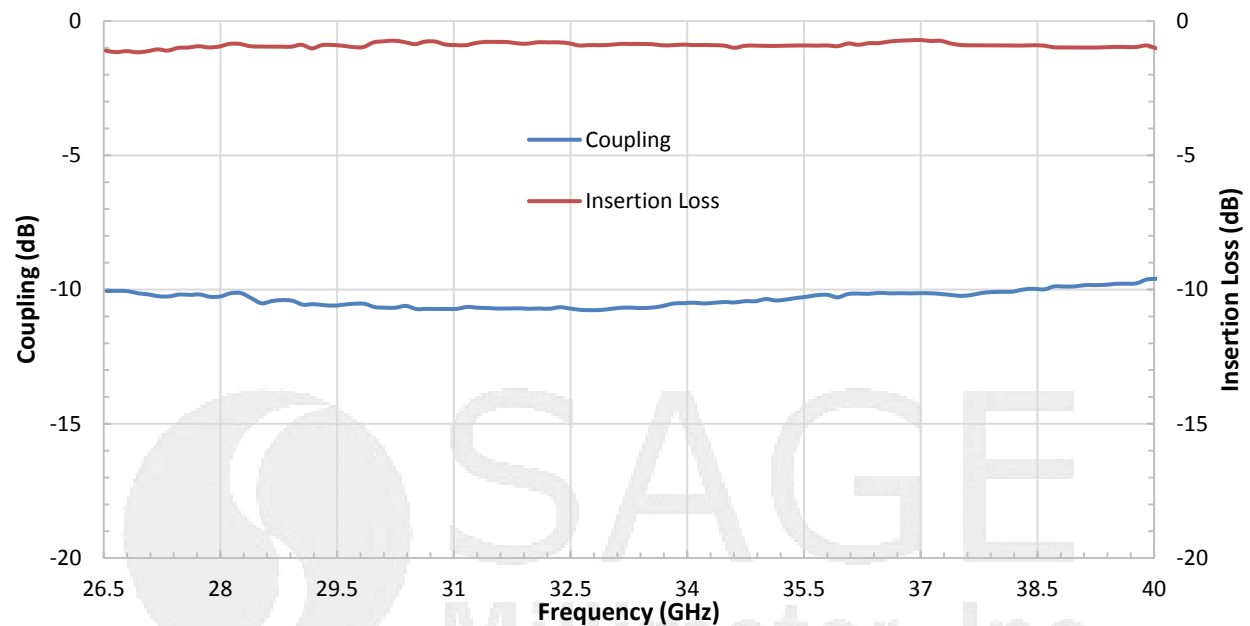
\* The definition of the insertion loss, coupling and directivity is show as following.

<p>Insertion Loss = <math>-10 \log_{10} [(P2+P3)/P1]</math> when P4 is terminated.</p> <p>Coupling Value = <math>-10 \log_{10} [P3/P1]</math> when P4 is terminated.</p> <p>or <math>-10 \log_{10} [P4/P2]</math> when P3 is terminated.</p>	
<p>Directivity = <math>-10 \log_{10} [P3/P2]</math> when P4 is terminated.</p> <p>Directivity = <math>-10 \log_{10} [P4/P1]</math> when P3 is terminated.</p>	



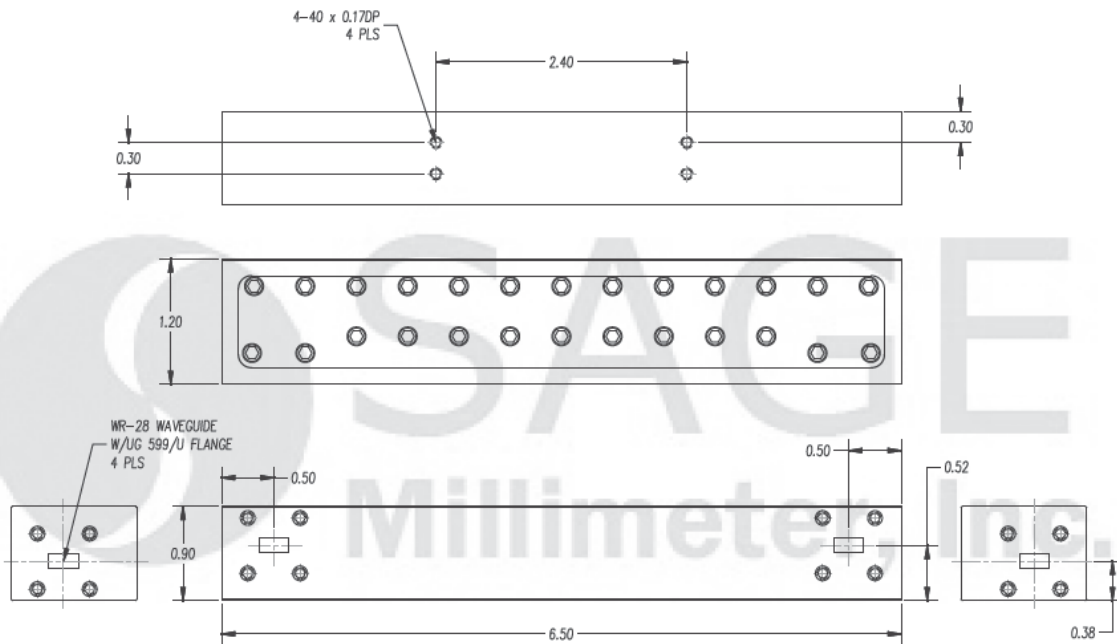
**Ka-Band Waveguide Bi-Directional Coupler, 10 dB****Mechanical Specifications:**

Item	Specification
Through Ports	WR-28 Waveguide with UG/599 Flange
Coupled Port	WR-28 Waveguide with UG/599 Flange
Size	6.50" (L) X 1.20" (W) x 0.90" (H)
Material	Brass
Finish	Gold Plated
Weight	1.4 lb
Outline	WD-SB-A

**Typical Coupling and Insertion Loss vs. Frequency**

## Ka-Band Waveguide Bi-Directional Coupler, 10 dB

**Mechanical Outline:** (Unless otherwise specified, all dimensions are in inches)



**Note:**

- All data was presented using a limited sample lot. Actual data may vary unit to unit.
- The insertion loss shown includes the loss due to coupling.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

**Caution:**

- Any foreign objects in the waveguide will degrade performance and/or damage the device.

