



## Ka-Band Waveguide Directional Coupler, 40 dB

### Description:

**Model SWD-4040H-28-SB** is a Ka band, three-port waveguide directional coupler that delivers a 40 dB nominal coupling level and 35 dB minimum directivity across the full waveguide band from 26.5 to 40 GHz. The three-port coupler uses a traditional multi-hole and split block design to achieve a flat coupling level, high directivity, and low insertion loss. The power handling of the directional coupler is depended on the port matching. The data shown is based on all ports are perfectly match. The poor port VSWR will degrade the maximum handling greatly. 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		40.0 GHz
Insertion Loss*		0.5 dB	
Coupling*		40 dB	
Directivity*	35 dB		
Power Handling (All ports matched)			500 W
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. The required termination on the waveguide port is 30 dB or better for accurate measurement.

Insertion Loss =  $-10 \log_{10} [(P2+P3)/P1]$

Coupling Value =  $-10 \log_{10} [P3/P1]$

Isolation =  $-10 \log_{10} [P3/P2]$

Directivity = Isolation – Coupling Value



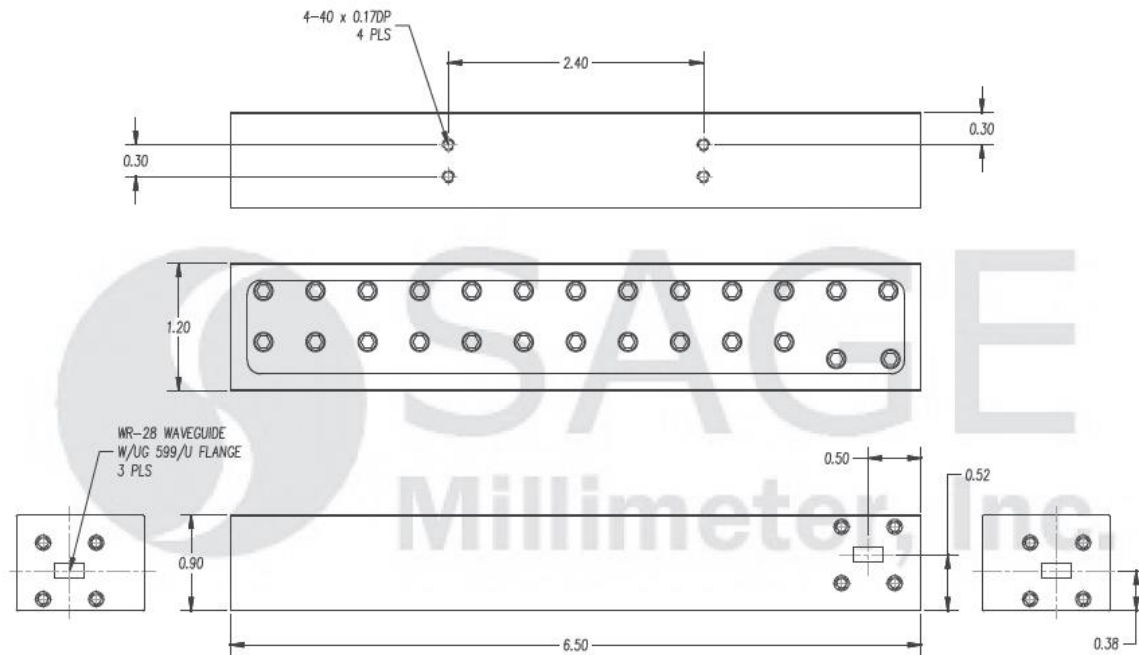


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### Mechanical Specifications:

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

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



### Note:

- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

### Caution:

- Exceeding absolute maximum ratings shown will damage the device.
- Any foreign objects in the waveguide will degrade performance and/or damage the device.

