

## E-Band Waveguide Directional Coupler, 10 dB

### Description:

**SWD-1040H-12-SB-WP** is an E band, three-port waveguide directional coupler that delivers a 10 dB nominal coupling level and 40 dB directivity across the waveguide band from 71 to 86 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 interfaces of the coupler are WR-12 waveguides with UG-387/U anti-cocking flanges. Custom coupling levels are available under different model numbers.



### Features:

- Low Insertion Loss
- High Directivity

### Applications:

- Test Labs
- Instrumentations
- Sub-assemblies

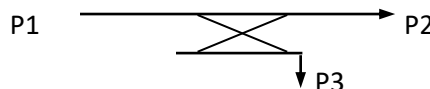
### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	71 GHz		86 GHz
Insertion Loss*		0.8 dB	
Coupling*		10 dB	
Directivity*		40 dB	
VSWR		1.08:1	
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.

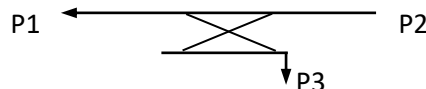
$$\text{Insertion Loss} = -10 \log_{10} [(P2+P3)/P1]$$

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



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

$$\text{Directivity} = \text{Isolation} - \text{Coupling Value}$$



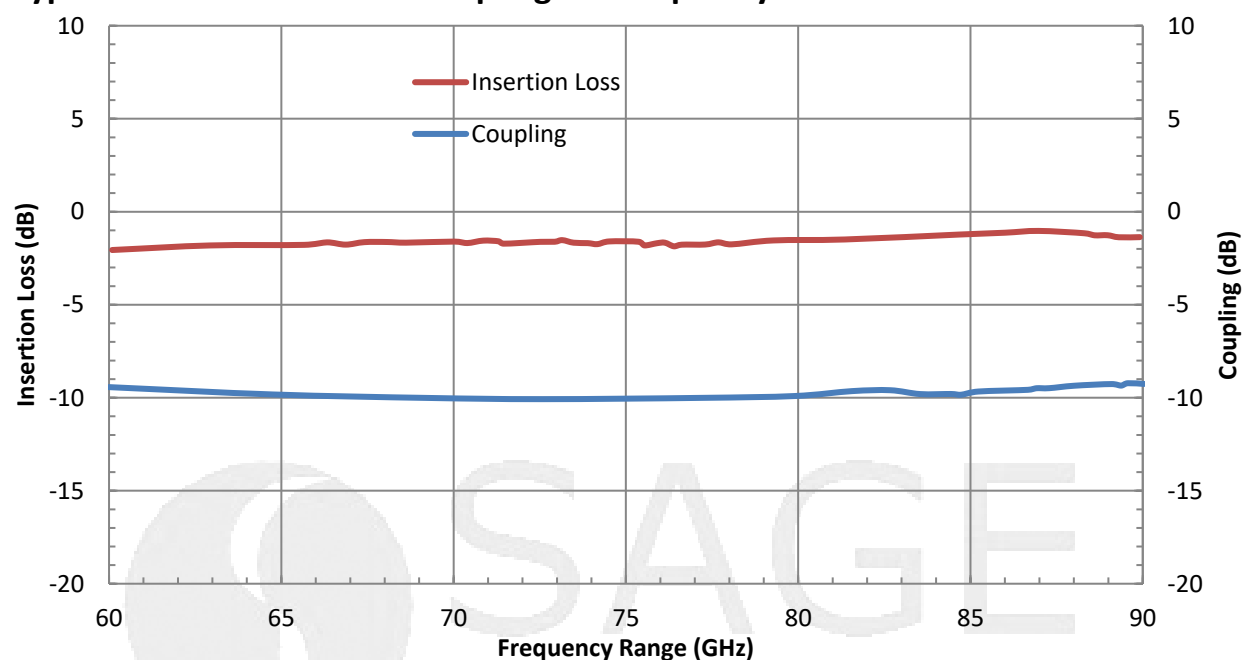


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## Mechanical Specifications:

Item	Specification
Through Ports	WR-12 Waveguide with UG-387/U Anti-Cocking Flange
Coupled Port	WR-12 Waveguide with UG-387/U Anti-Cocking Flange
Size	3.60" (L) X 0.95" (W) x 0.83" (H)
Material	Brass
Finish	Gold Plated
Weight	7.48 Oz
Outline	WD-SB-E-A

## Typical Insertion Loss and Coupling vs. Frequency

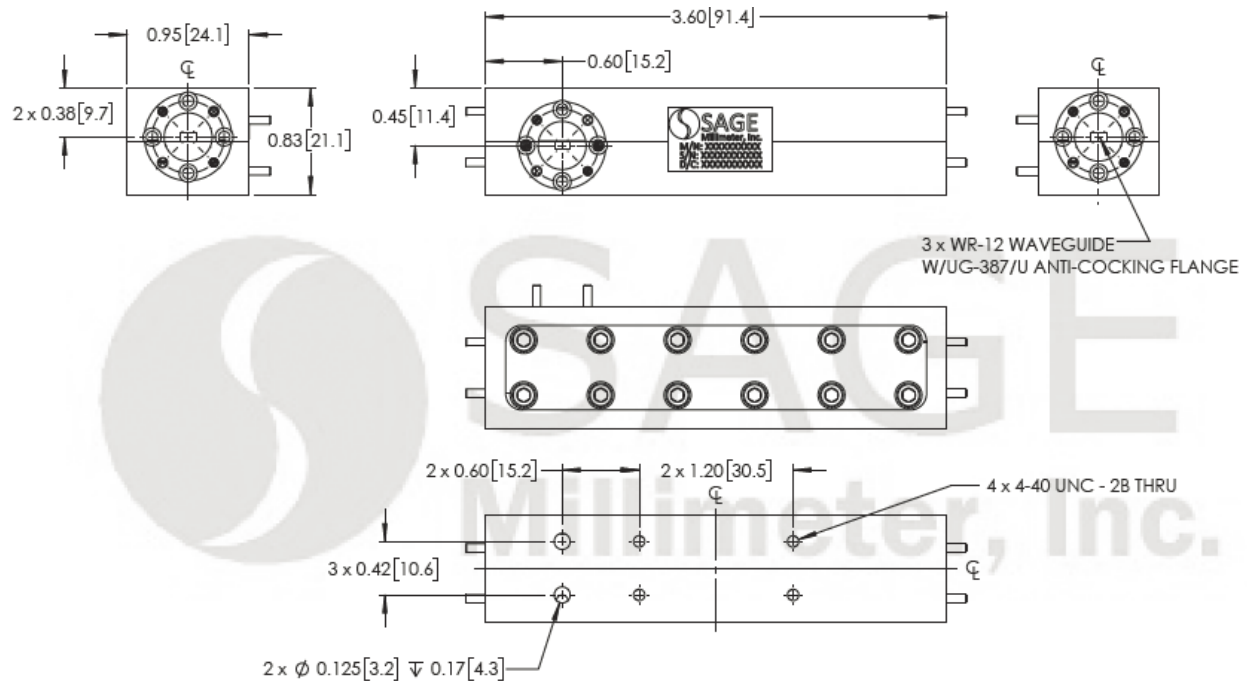


\*Insertion loss includes circuit loss



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



### 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.
- Eravant 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.

