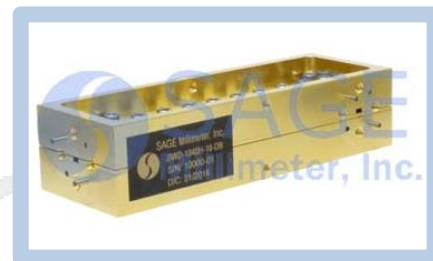


## E-Band Waveguide Dual-Directional Coupler, 6 dB

### Description:

**Model SWD-0640H-12-DB** is a E band, four-port waveguide dual-directional coupler that delivers a 6 dB nominal coupling level and 40 dB typical directivity across the full waveguide band from 60 to 90 GHz. The dual-directional 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 flanges. Custom coupling levels are available under different model numbers.



### Features:

- Full Band Operation
- Low Insertion Loss
- High Directivity

### Applications:

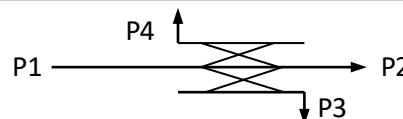
- Test Labs
- Instrumentations
- Sub-assemblies

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	60 GHz		90 GHz
Insertion Loss*		1.5 dB	
Coupling*		6.0 dB	
Directivity*	30 dB	40 dB	
VSWR		1.1:1	
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

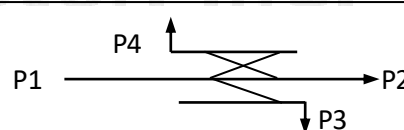
\* The definition of the insertion loss, coupling and directivity is show as following.

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



Directivity =  $-10 \log_{10} [P3/P2]$  when P1 and P4 are terminated.

Directivity =  $-10 \log_{10} [P4/P1]$  when P2 and P4 are terminated.



### Mechanical Specifications:

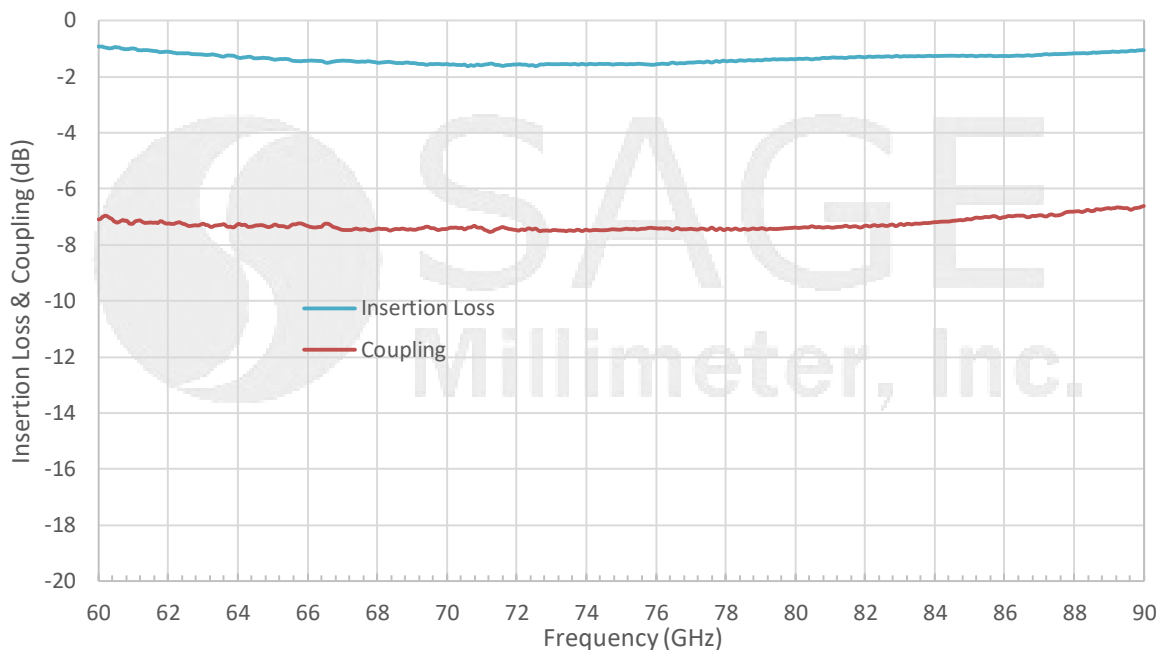
Item	Specification
Through Ports	WR-12 Waveguide with UG-387/U Flange
Coupled Port	WR-12 Waveguide with UG-387/U Flange
Size	3.60" (L) X 1.50" (W) x 1.00" (H)
Housing Material	Brass
Finish	Gold Plated
Weight	20 Oz
Outline	WD-DB-E



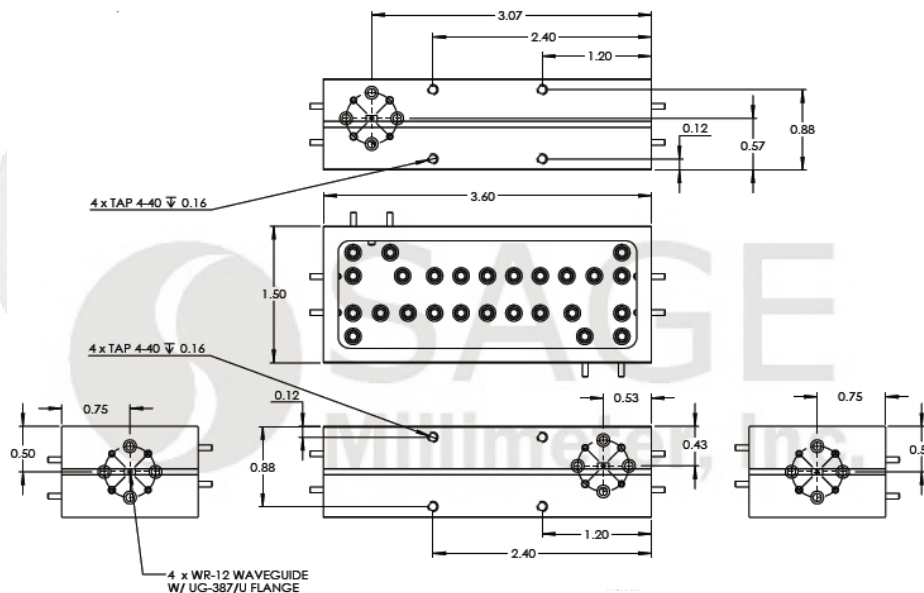
www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505  
 Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com

## E-Band Waveguide Dual-Directional Coupler, 6 dB

### Typical Performance vs. Frequency



### 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.



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