



D-Band Waveguide Directional Coupler, 20 dB

Description:

Model SWD-2025H-06-SB is a D band, three-port waveguide directional coupler that delivers a 20 dB nominal coupling level and 25 dB typical directivity across the full waveguide band from 110 to 170 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-06 waveguides with UG-387/U-M anti-cocking 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	110 GHz		170 GHz
Insertion Loss*		3.0 dB	
Coupling*		20 dB	
Directivity*		25 dB	
VSWR		1.2:1	
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



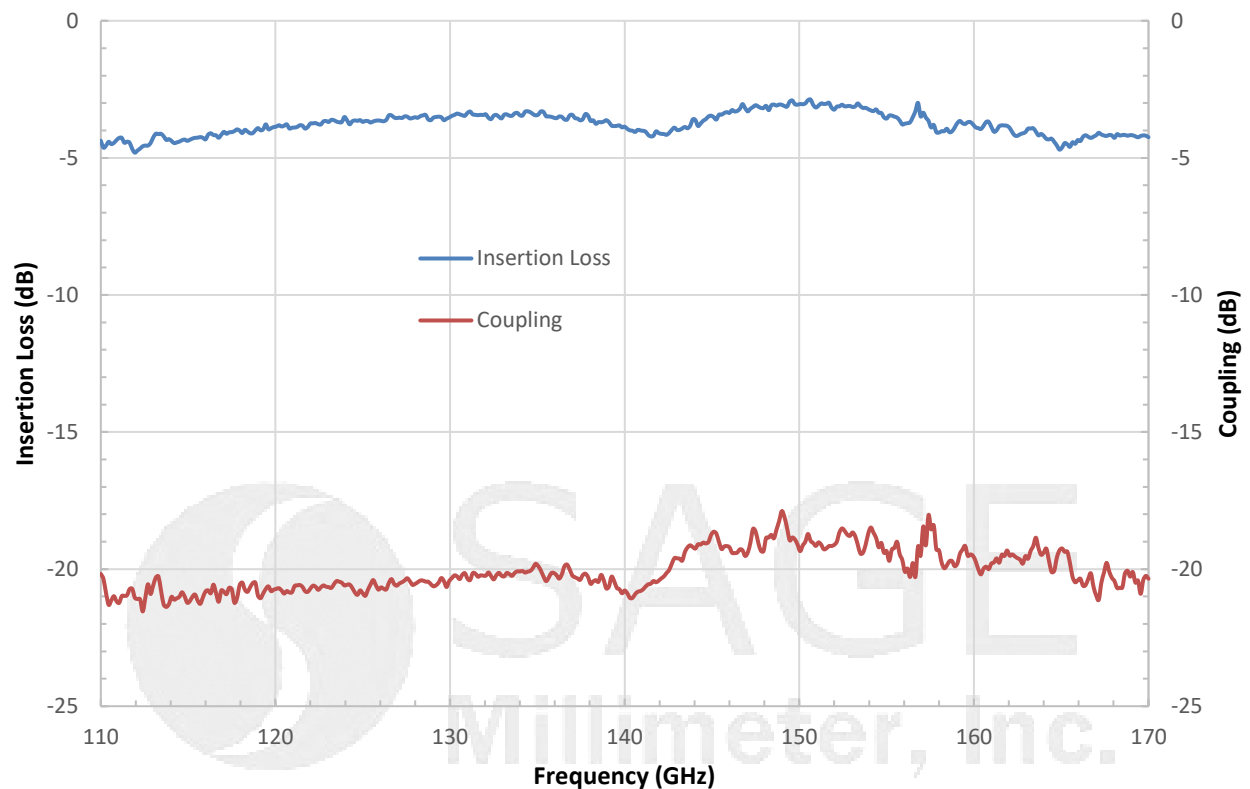


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Mechanical Specifications:

Item	Specification
Through Ports	WR-06 Waveguide with UG-387/U-M Anti-Cocking Flange
Coupled Port	WR-06 Waveguide with UG-387/U-M Anti-Cocking Flange
Size	3.60" (L) X 0.95" (W) x 0.83" (H)
Material	Brass
Finish	Gold Plated
Weight	7.7 Oz
Outline	WD-SB-D-A

Typical Insertion Loss and Coupling vs. Frequency

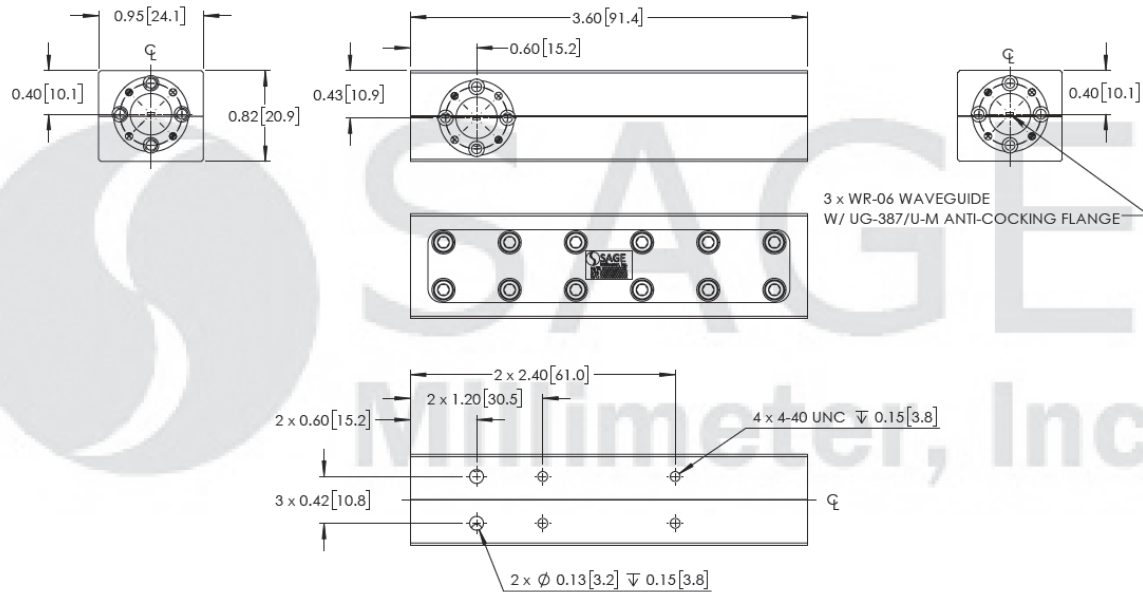


*Insertion loss includes coupling loss



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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, slightly.
- All testing was performed under +25 °C case temperature.
- 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.

