



E-Band Waveguide Directional Coupler, 10 dB

Description:

Model SWD-1030E-12-SW is an E-band, three-port waveguide directional coupler that delivers a 10 dB nominal coupling level and 30 dB typical directivity across the full waveguide band from 60 to 90 GHz. The three-port coupler uses E-plane coupling and features a traditional multi-hole and waveguide 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
- Light Weight

Applications:

- Test Labs
- Instrumentations
- Sub-assemblies

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	60 GHz		90 GHz
Insertion Loss*		1.0 dB	
Coupling*		10 dB	
Directivity*		30 dB	
Return Loss		25 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

*The definition of the insertion loss, coupling and directivity is shown as follows. 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



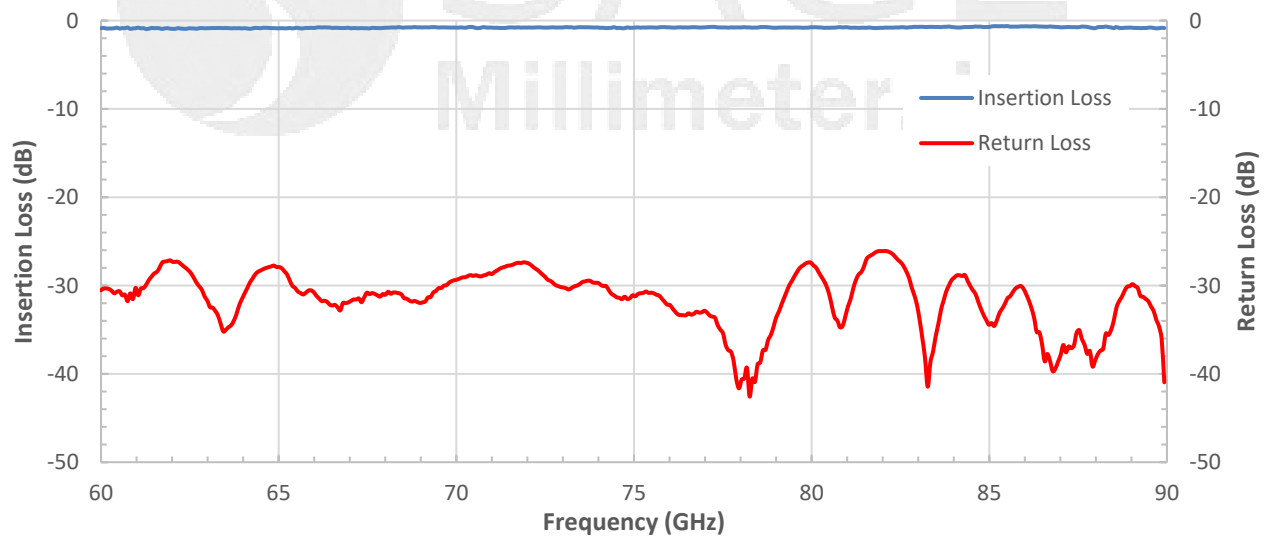


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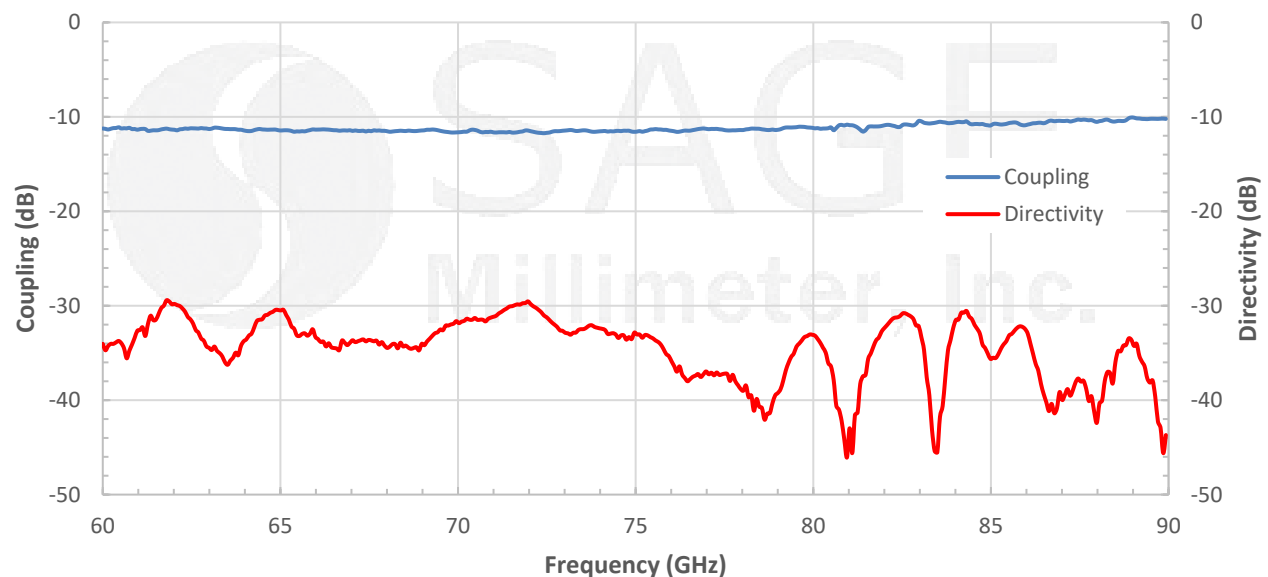
Mechanical Specifications:

Item	Specification
RF Ports	WR-12 Waveguide with UG-387/U Flange
Coupling Plane	E-Plane
Waveguide Material	Copper
Flange Material	Brass
Finish	Black Painted Body; Gold Plated Waveguide Faces
Weight	1.6 oz.
Outline	WD-SWE-E-BX1

Typical Measured Performance vs Frequency



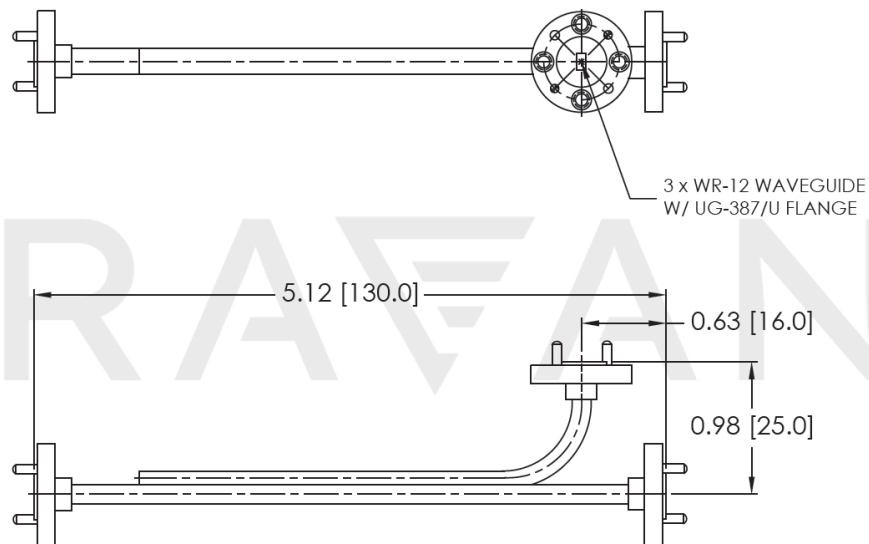
Typical Measured Performance vs Frequency





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



Note:

- All data presented is collected from a 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.

