



V-Band Waveguide Bi-Directional Coupler, 10 dB, 50 to 85 GHz

Description:

Model SWD-5038531040H-15-BB is a V band, four-port waveguide bi-directional coupler that delivers a 10 dB nominal coupling level and 30 dB minimum directivity across the full waveguide band from 50 to 85 GHz. The four-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-15 waveguides with UG-385/U flanges. Custom coupling levels are available under different model numbers.



Features:

- Broad Band Operation
- Low Insertion Loss
- High Directivity

Applications:

- Test Labs
- Instrumentation
- Sub-assemblies

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	50 GHz		85 GHz*
Insertion Loss**		0.7 dB	
Coupling**		10 dB	
Directivity**	30 dB	40 dB	
Return Loss		20 dB	
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

* The maximum operation frequency can reach higher with small performance degradation.

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

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



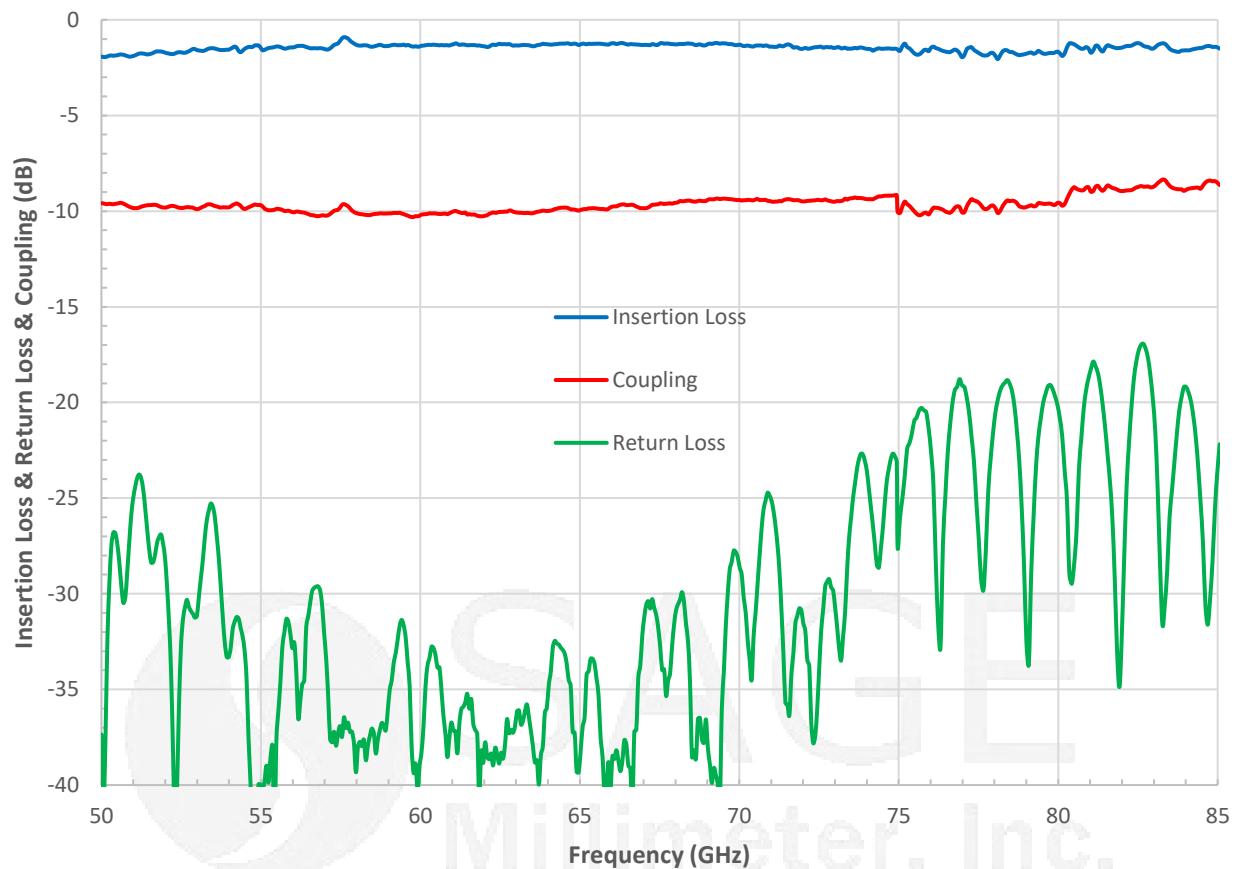


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Mechanical Specifications:

Item	Specification
Through Ports	WR-15 Waveguide with UG-385/U Flange
Coupled Port	WR-15 Waveguide with UG-385/U Flange
Size	3.60" (L) X 0.95" (W) x 0.83" (H)
Material	Brass
Finish	Gold Plated
Weight	7.5 Oz
Outline	WD-BB-V

Typical Performance vs. Frequency



*Insertion loss includes circuit loss

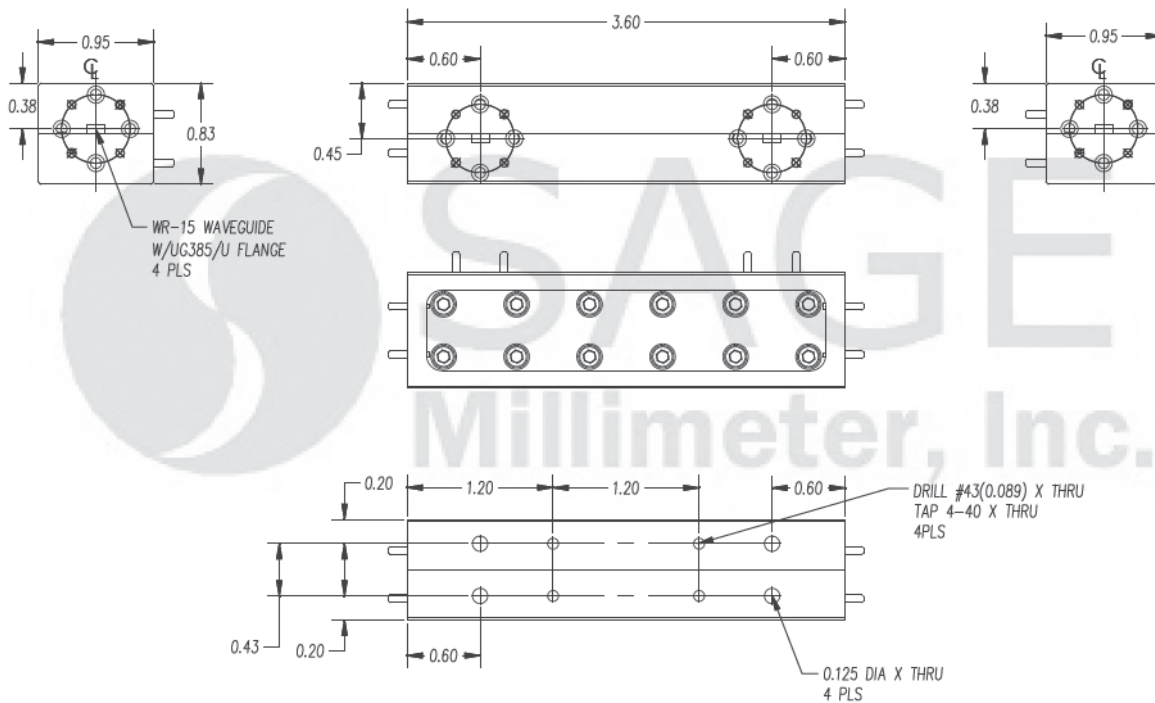


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Mechanical Outline: (Unless otherwise specified, all dimensions are in inches)



Note:

- All data presented is collected from a 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.

