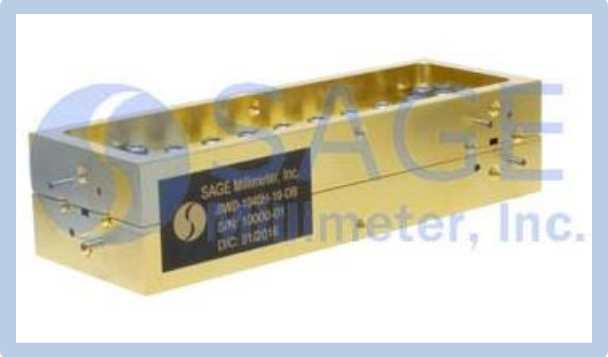
SWD-2040H-10-DB

Rev. 1.1

W-Band Waveguide Dual-Directional Coupler, 20 dB

Description:

Model SWD-2040H-10-DB is a W band, four-port waveguide dual-directional coupler that delivers a 20 dB nominal coupling level and 40 dB typical directivity across the full waveguide band from 75 to 110 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-10 waveguides with UG-387/U-M flanges. Custom coupling levels are available under different model numbers.



Features:

- Full Band Operation
- Low Insertion Loss
- High Directivity

Applications:

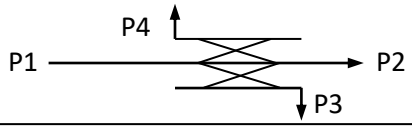
- Test Labs
- Instrumentations
- Sub-assemblies

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	75 GHz		110 GHz
Insertion Loss*		1.0 dB	
Coupling*		20.0 dB	
Directivity*	30 dB	40 dB	
Main Line VSWR		1.08:1	1.10:1
Secondary Line VSWR		1.12:1	1.15:1
Specification Temperature		+25˚C	
Operating Temperature	-40˚C		+85˚C

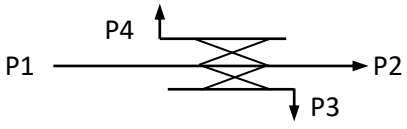
* The definition of the insertion loss, coupling and directivity is show as following.

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.



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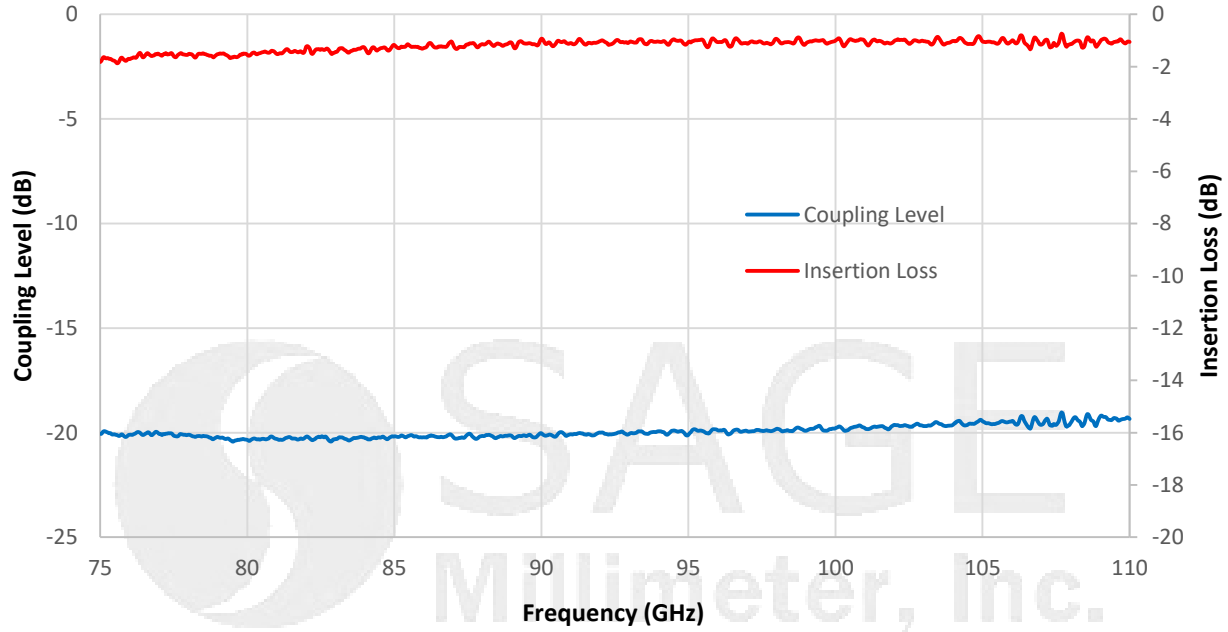
Mechanical Specifications:

Item	Specification
Through Ports	WR-10 Waveguide with UG-387/U-M Flange
Coupled Port	WR-10 Waveguide with UG-387/U-M Flange
Size	4.20” (L) X 1.50” (W) x 1.00” (H)
Housing Material	Aluminum
Finish	Gold Plated
Weight	15.5 Oz
Outline	WD-DB-W

Typical Coupling & Insertion Loss vs. Frequency



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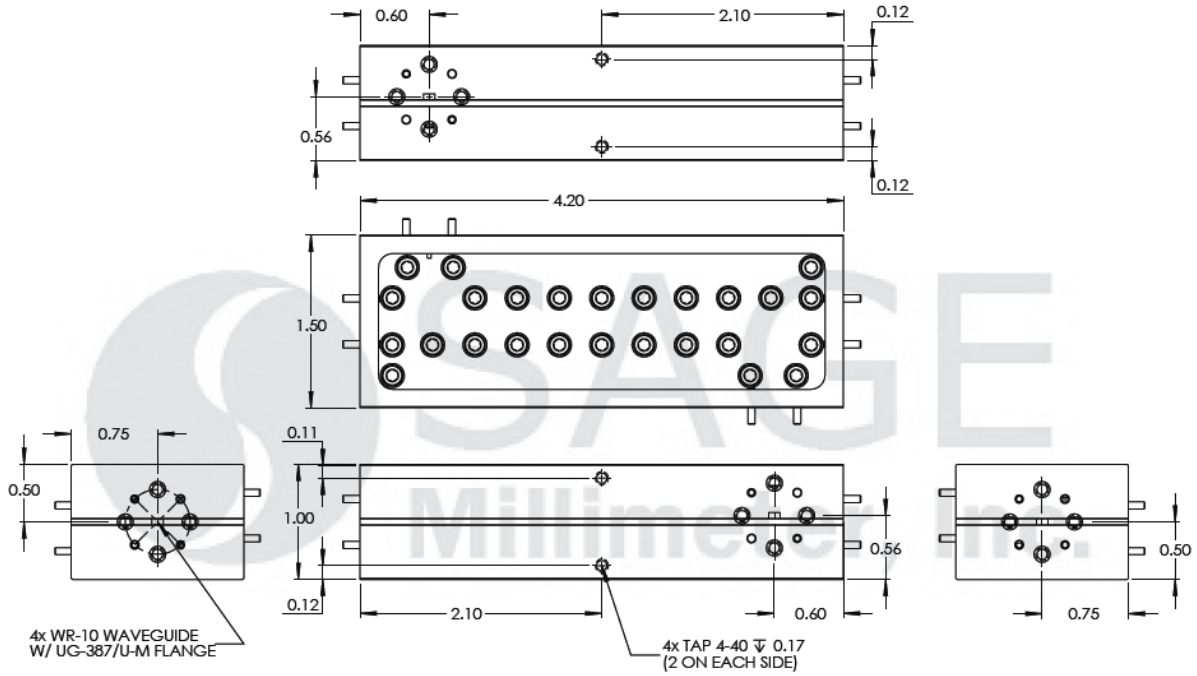
Mechanical Outline: (Unless otherwise specified, all dimensions are in inches)



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.

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