



U-Band Waveguide Directional Coupler, 20 dB

Description:

Model SWD-2040H-19-SB is a U band, three-port waveguide directional coupler that delivers a 20 dB nominal coupling level and 35 dB minimum directivity across the full waveguide band from 40 to 60 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-19 waveguides with UG-383/U-M 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	40 GHz		60 GHz
Insertion Loss*		0.7 dB	
Coupling*		20 dB	
Directivity*	35 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. 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 = $-10 \log_{10} [P3/P1]$

A schematic diagram of a directional coupler. A horizontal line represents the main waveguide path from port P1 on the left to port P2 on the right. A vertical line represents the coupled port P3, branching downwards from the main path. The coupler is represented by a box with an 'X' inside, indicating a split block design.

Isolation = $-10 \log_{10} [P3/P2]$

Directivity = Isolation – Coupling Value

A schematic diagram of a directional coupler. A horizontal line represents the main waveguide path from port P2 on the right to port P1 on the left. A vertical line represents the coupled port P3, branching downwards from the main path. The coupler is represented by a box with an 'X' inside, indicating a split block design.



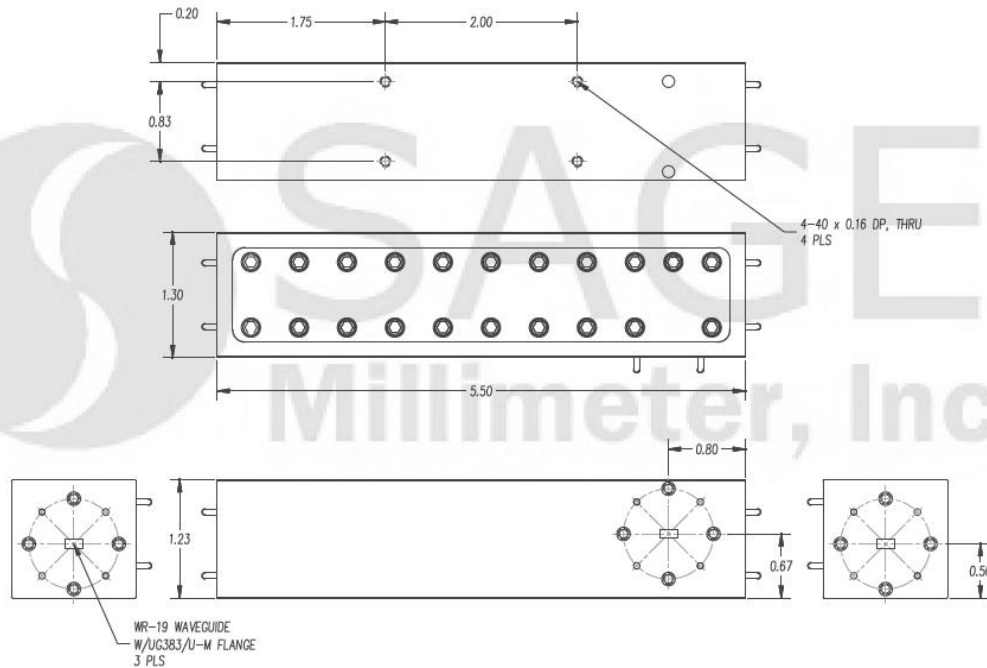


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Mechanical Specifications:

Item	Specification
Through Ports	WR-19 Waveguide with UG-383/U-M Flange
Coupled Port	WR-19 Waveguide with UG-383/U-M Flange
Size	5.50" (L) X 1.30" (W) x 1.23" (H)
Material	Brass
Finish	Gold Plated
Weight	1.58 Lb
Outline	WD-SB-U

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



Note:

- 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.

