

## D-Band Waveguide Bi-Directional Coupler, 40 dB

### Description:

**Model SWD-4040H-06-BB** is a D band, four-port waveguide bi-directional coupler that delivers a 40 dB nominal coupling level and 40 dB nominal 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 dB	
Coupling*		40 dB	
Directivity*		40 dB	
Return Loss		20 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

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

<p>Insertion Loss = <math>-10 \log_{10} [(P2+P3)/P1]</math> when P4 is terminated.</p> <p>Coupling Value = <math>-10 \log_{10} [P3/P1]</math> when P4 is terminated.</p> <p>or <math>-10 \log_{10} [P4/P2]</math> when P3 is terminated.</p>	
<p>Directivity = <math>-10 \log_{10} [P3/P2]</math> when P4 is terminated.</p> <p>Directivity = <math>-10 \log_{10} [P4/P1]</math> when P3 is terminated.</p>	

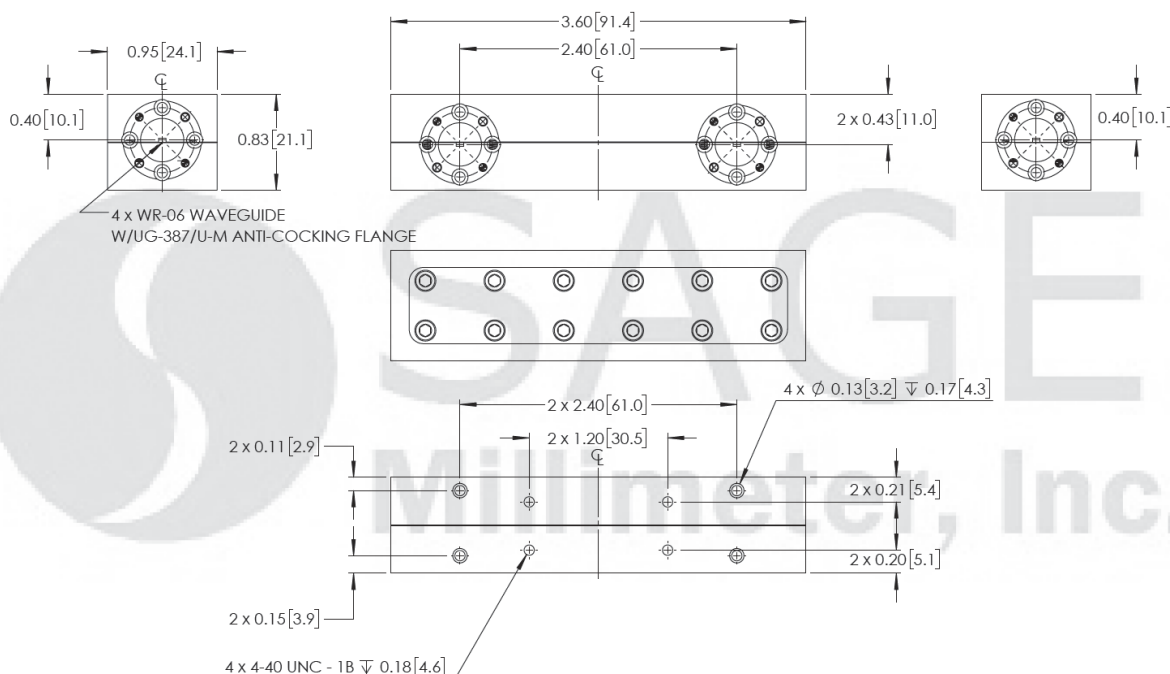


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### Mechanical Specifications:

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
Material	Brass
Finish	Gold Plated
Weight	7.7 Oz
Outline	WD-BB-D-A

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



### 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.