



## Q-Band Waveguide Directional Coupler, 40 dB

### Description:

**Model SWD-4040H-22-SB** is a Q band, three-port waveguide directional coupler that delivers a 40 dB nominal coupling level and 35 dB minimum directivity across the full waveguide band from 33 to 50 GHz. The three-port coupler uses a traditional multi-hole and split block design to achieve flat coupling level, high directivity, and low insertion loss. The interfaces of the coupler are WR-22 waveguides with UG-383/U 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	33 GHz		50 GHz
Insertion Loss*		0.6 dB	
Coupling*		40 dB	
Directivity*	35 dB		
Power Handling			500 Watts
VSWR			1.10:1
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></p> <p>Coupling Value = <math>-10 \log_{10} [P3/P1]</math></p>	
<p>Directivity = <math>-10 \log_{10} [P3/P2]</math></p>	



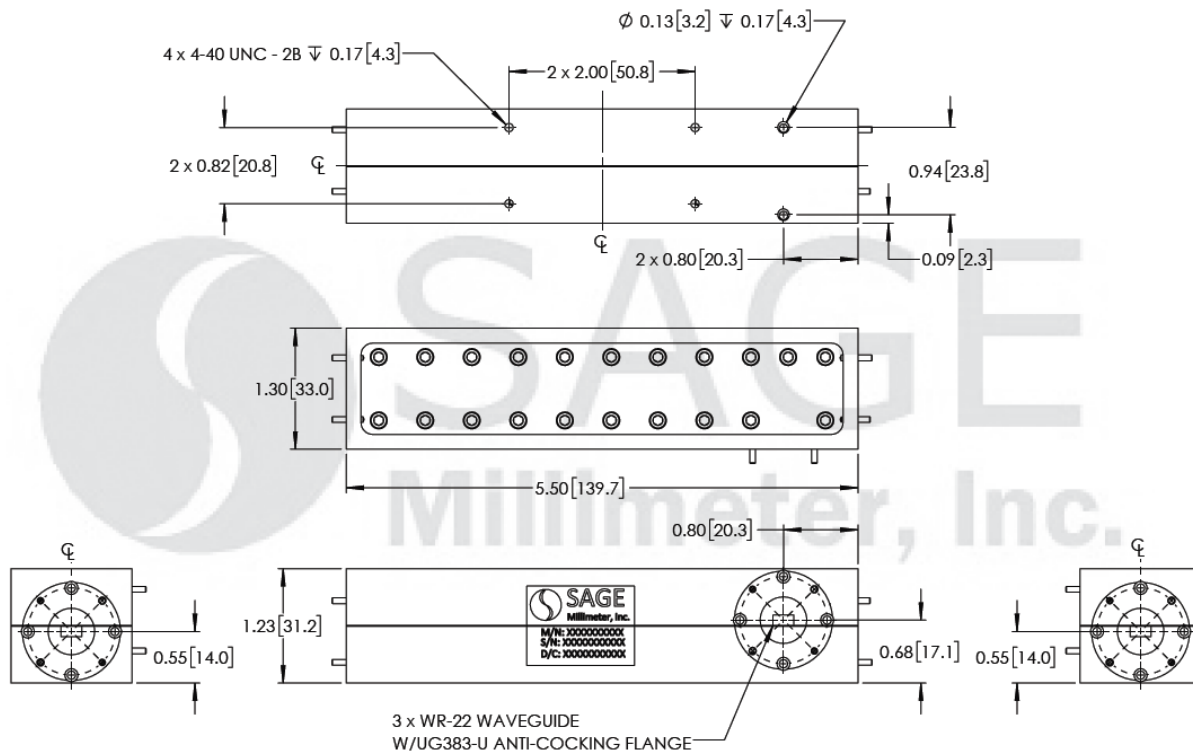


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### Mechanical Specifications:

Item	Specification
Through Ports	WR-22 Waveguide with UG-383/U Anti-Cocking Flange
Coupled Port	WR-22 Waveguide with UG-383/U Anti-Cocking Flange
Size	5.50" (L) X 1.30" (W) x 1.25" (H)
Material	Brass
Finish	Gold Plated
Weight	1.58 Lb
Outline	WD-SB-Q-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.

