

G-Band Waveguide Directional Coupler, 20 dB

Description:

Model SWD-2025H-05-SB is a G-band, three-port waveguide directional coupler that delivers a 20 dB nominal coupling level and 25 dB typical directivity across the full waveguide band from 140 to 220 GHz. The three-port coupler uses a traditional multi-hole and split block design to achieve a flat coupling level, and low insertion loss. The interfaces of the coupler are WR-05 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

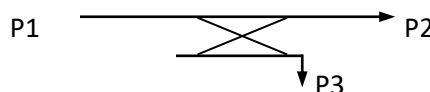
Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	140 GHz		220 GHz
Insertion Loss*		3.0 dB	
Coupling*		20 dB	
Directivity*		25 dB	
Return Loss		18 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

*The definition of insertion loss, coupling and directivity is show below. The required termination on the waveguide port is 30 dB or better for accurate measurement.

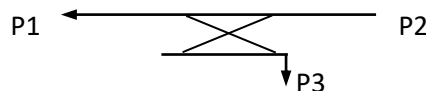
$$\text{Insertion Loss} = -10 \log_{10} [(P2+P3)/P1]$$

$$\text{Coupling Value} = -10 \log_{10} [P3/P1]$$



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

$$\text{Directivity} = \text{Isolation} - \text{Coupling Value}$$

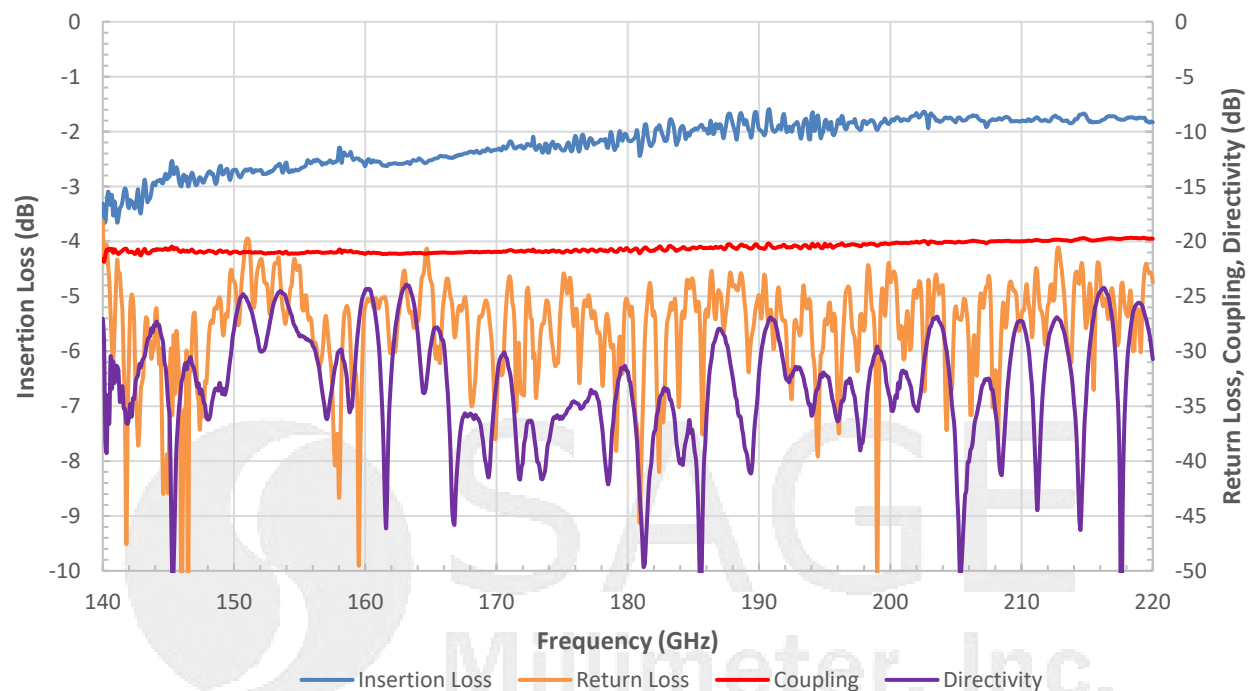


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Mechanical Specifications:

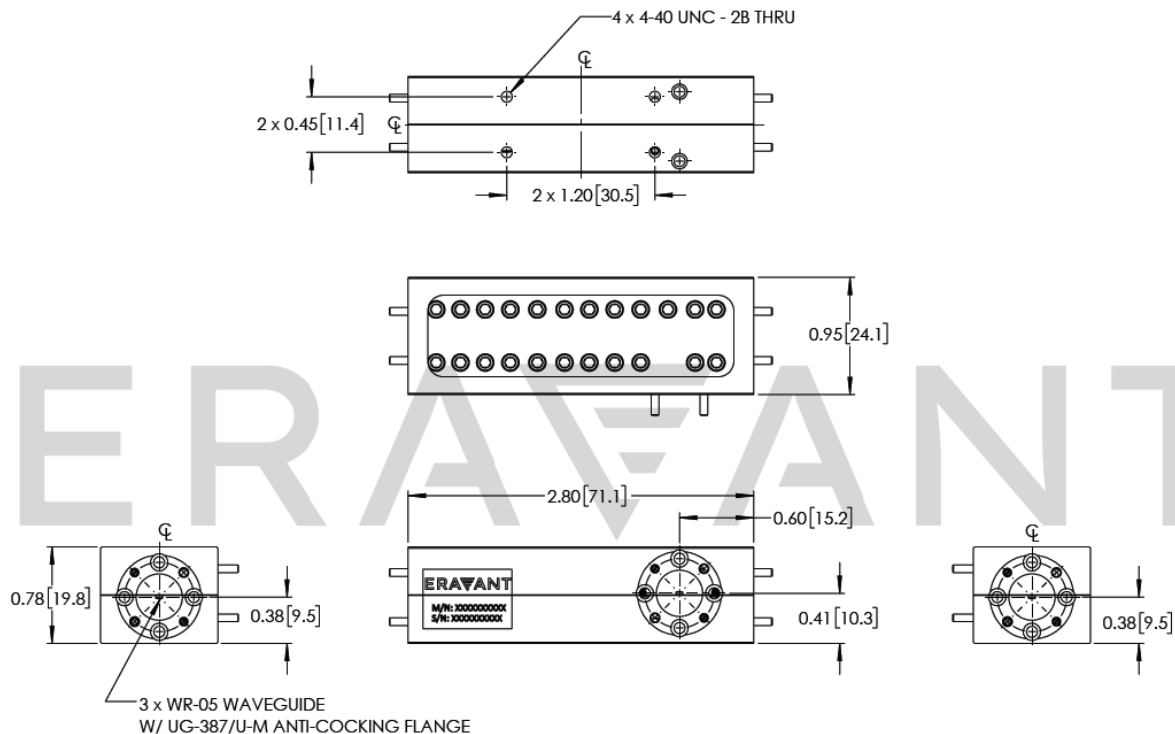
Item	Specification
Through Ports	WR-05 Waveguide with UG-387/U-M Anti-Cocking Flange
Coupled Port	WR-05 Waveguide with UG-387/U-M Anti-Cocking Flange
Size	2.80" (L) x 0.95" (W) x 0.78" (H)
Material	Brass
Finish	Gold Plated
Weight	6.0 Oz
Outline	WD-SB-G-A

Typical Performance vs Frequency



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



Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under +25 °C case temperature.
- Eravant 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.

