

WR-05 Waveguide Dual-Directional Coupler, 10 dB

Description:

Model SWD-1020H-05-DB-C-1.6 is a WR-05, four-port waveguide dual-directional coupler that delivers a 10 dB nominal coupling level and 20 dB typical directivity across the full waveguide band from 140 to 220 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 waveguide interface of the coupler is WR-05 waveguides with UG-387/U-M anti-cocking flanges. Other coupling levels including custom coupling levels and asymmetrical forward/reverse coupling levels are available under different model numbers.



Features:

- Full Band Operation
- Low Insertion Loss
- High Directivity
- Flat Coupling Level Across the Band

Applications:

- Test Labs
- Instrumentations
- Sub-assemblies

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	140 GHz		220 GHz
Insertion Loss*		2.0 dB	
Coupling*		10 dB	
Directivity*		20 dB	
Main Line Return Loss		20 dB	
Coupling Port Return Loss		20 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

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

* The actual directivity and return loss are higher than shown due to the limitations of the network analyzer's dynamic range.

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

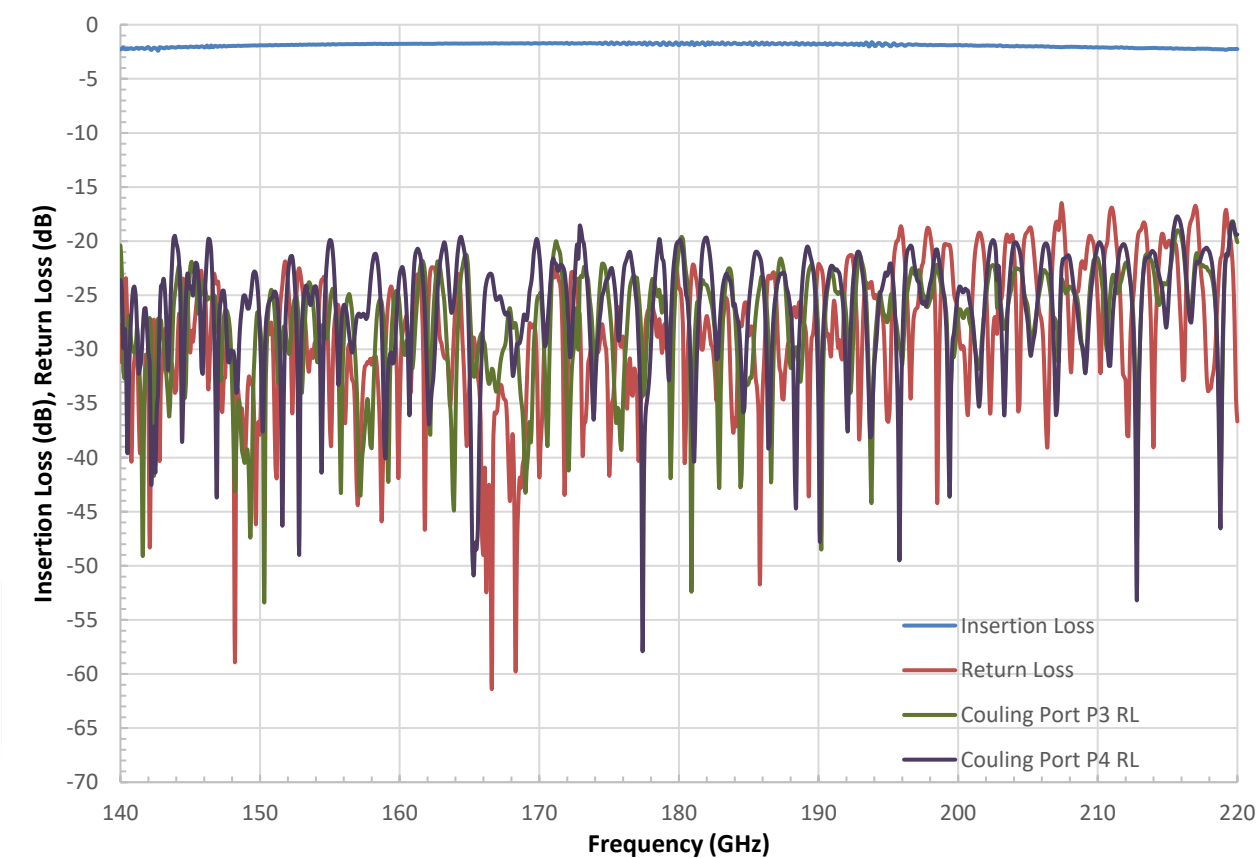


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Mechanical Specifications:

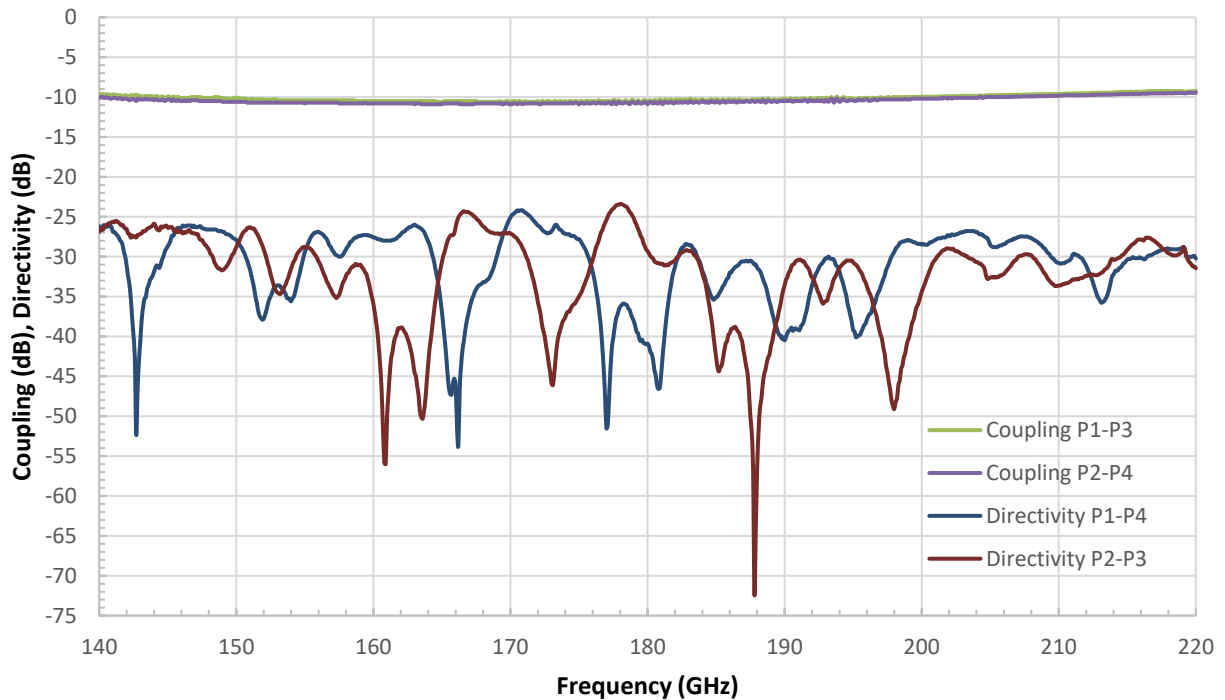
Item	Specification
Waveguide Ports	WR-05 Waveguide with UG-387/U-M Anti-Cocking Flange
Material	Brass
Finish	Gold Plated
Weight	4.5 oz.
Outline	WD-DB-G-A-C-1.6

Measured Insertion Loss and Return Loss Vs Frequency

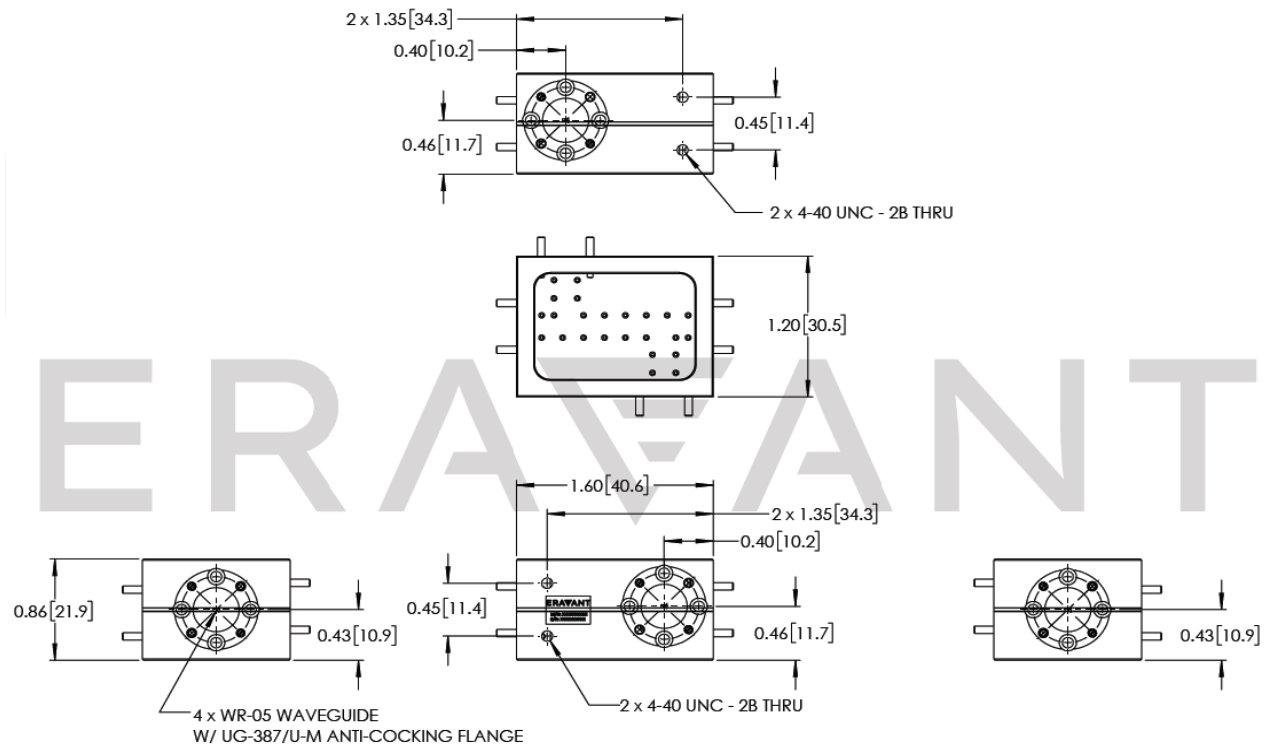


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Measured Coupling and Directivity Vs Frequency



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



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Note:

- Eravant reserves the right to change the information presented without notice.

Caution:

- Any foreign objects in the waveguide will cause performance degradation and possible device damage.

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