

WR-03 Waveguide Dual-Directional Coupler, 10 dB

Description:

Model SWD-1020H-03-DB-2-WP is a WR-03, 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 220 to 330 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-03 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:

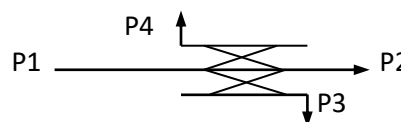
Parameter	Minimum	Typical	Maximum
Frequency	220 GHz		330 GHz
Insertion Loss*		3 dB	
Coupling*		10 dB	
Directivity*		20 dB	
Main Line Return Loss		18 dB	
Coupling Port Return Loss		18 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

*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.

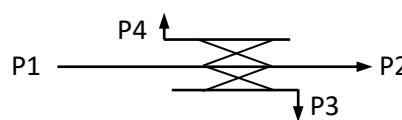
Insertion Loss = $-10 \log_{10} [(P2+P3)/P1]$ when P4 is terminated.

Coupling Value = $-10 \log_{10} [P3/P1]$ when P4 is terminated.
or $-10 \log_{10} [P4/P2]$ when P3 is terminated.



Directivity = $-10 \log_{10} [P3/P2]$ when P1 and P4 are terminated.

Directivity = $-10 \log_{10} [P4/P1]$ when P2 and P3 are terminated.

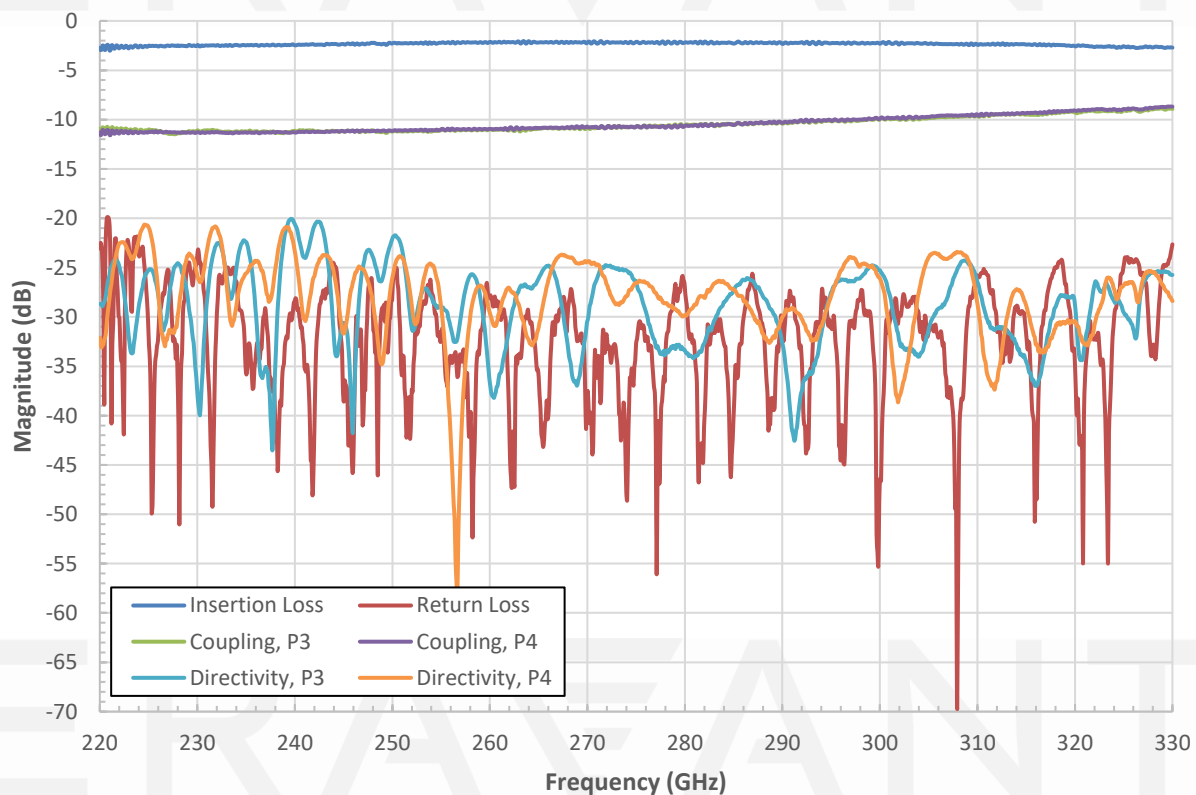


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Mechanical Specifications:

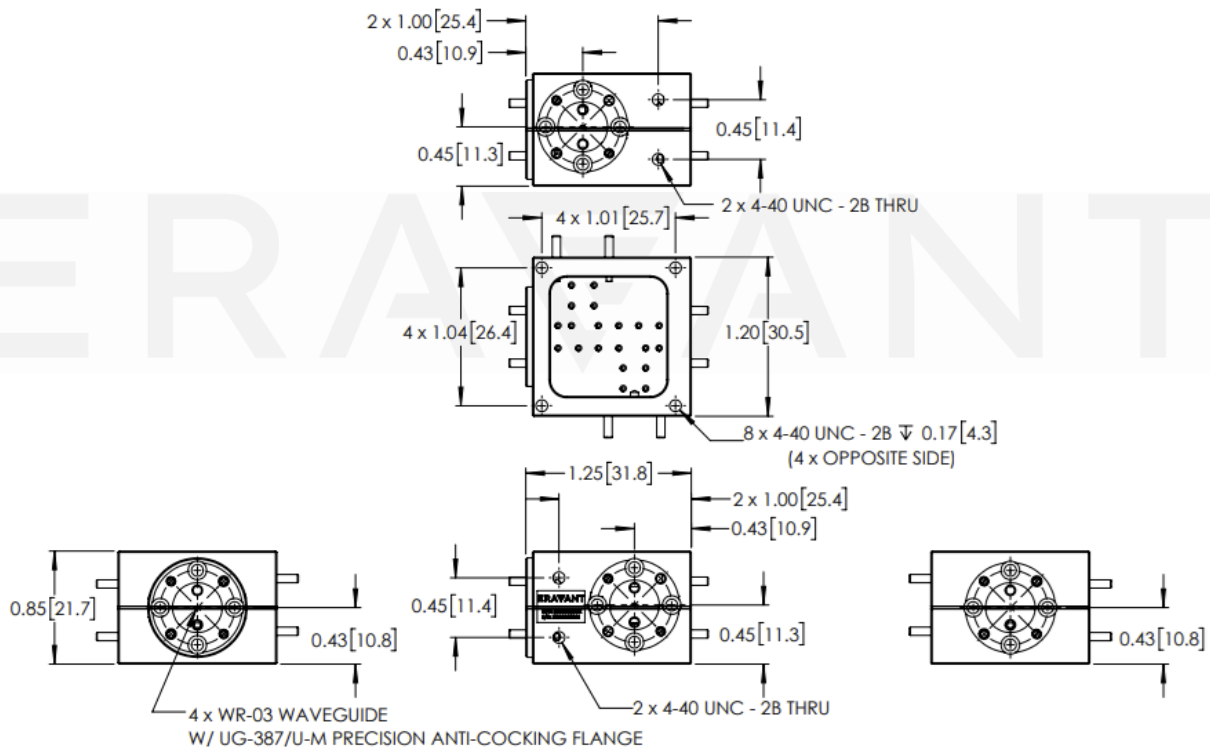
Item	Specification
Waveguide Ports	WR-03 Waveguide with UG-387/U-M Anti-Cocking Flange
Material	Brass
Finish	Gold Plated
Weight	3.5 oz.
Outline	WD-DB-03-A

Measured 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, slightly.
- 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 cause performance degradation and possible device damage.

