

**WR-04 Waveguide Dual-Directional Coupler, 10 dB**

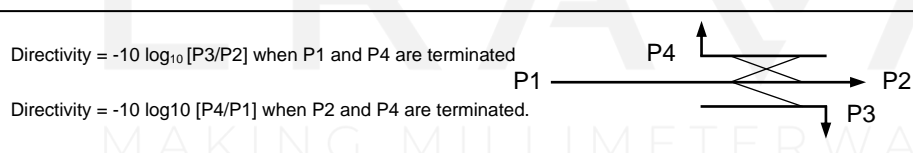
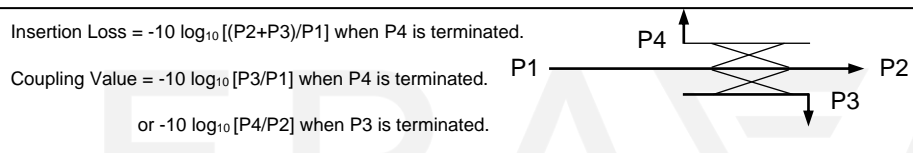
**SWD-1020H-04-DB** is a WR-04, four-port waveguide dual-directional coupler that delivers a 10 dB nominal coupling level and 20 dB typical directivity across the full waveguide band from 170 to 260 GHz. The dual-directional coupler uses a traditional multi-hole and split block design to achieve a flat coupling level, high directivity, and low insertion loss. The waveguide interface of the coupler is WR-04 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.

**Electrical Specifications:**

Parameter	Minimum	Typical	Maximum
Frequency Range	170 GHz		260 GHz
Insertion Loss*		3.5 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.

**ECCN**

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**FEATURES**

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

**APPLICATIONS**

- Test Labs
- Instrumentations
- Sub-assemblies

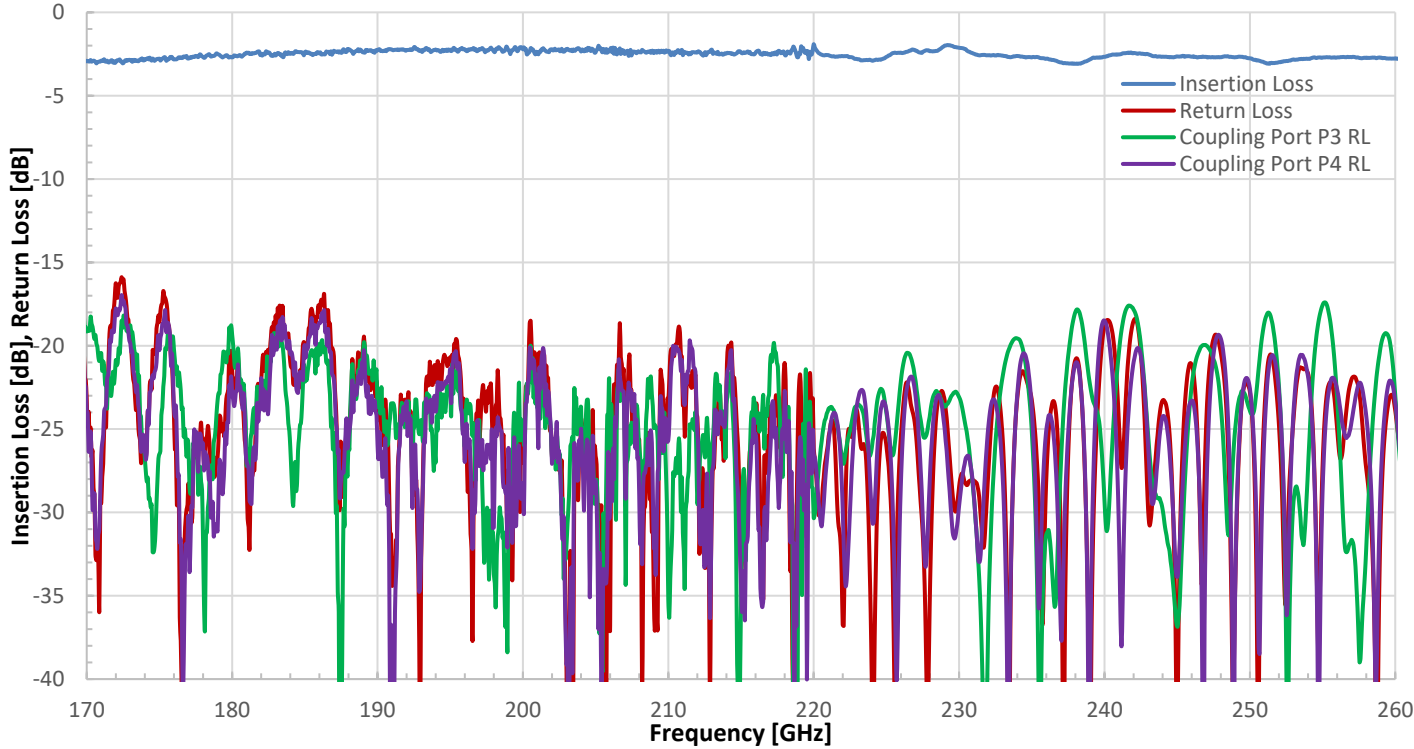
**SUPPLEMENTAL DETAILS**

SWD-1020H-04-DB

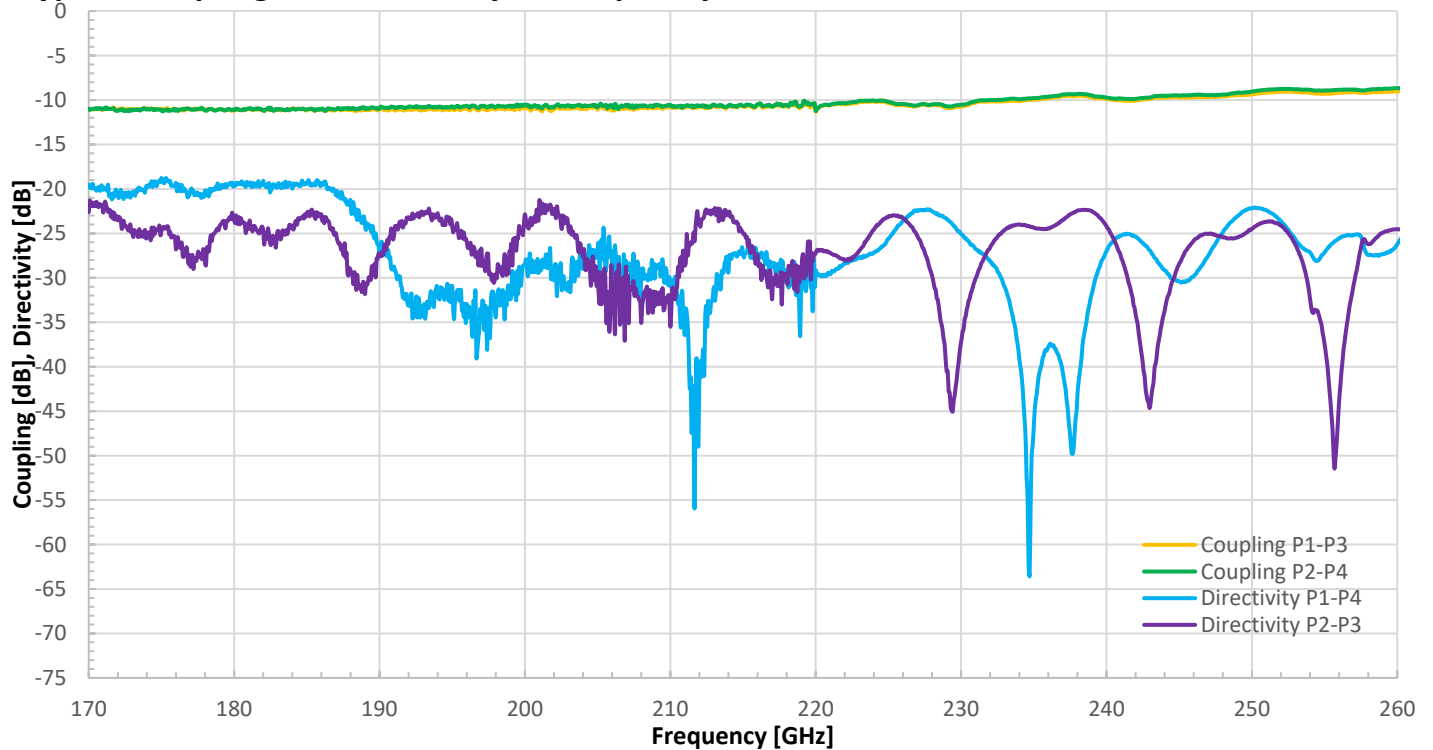
Mechanical Specifications:

Item	Specification
Waveguide Ports	WR-04 Waveguide with UG-387/U-M Anti-Cocking Flange
Material	Brass
Finish	Gold Plated
Weight	4.0 Oz
Outline	WD-DB-04-A

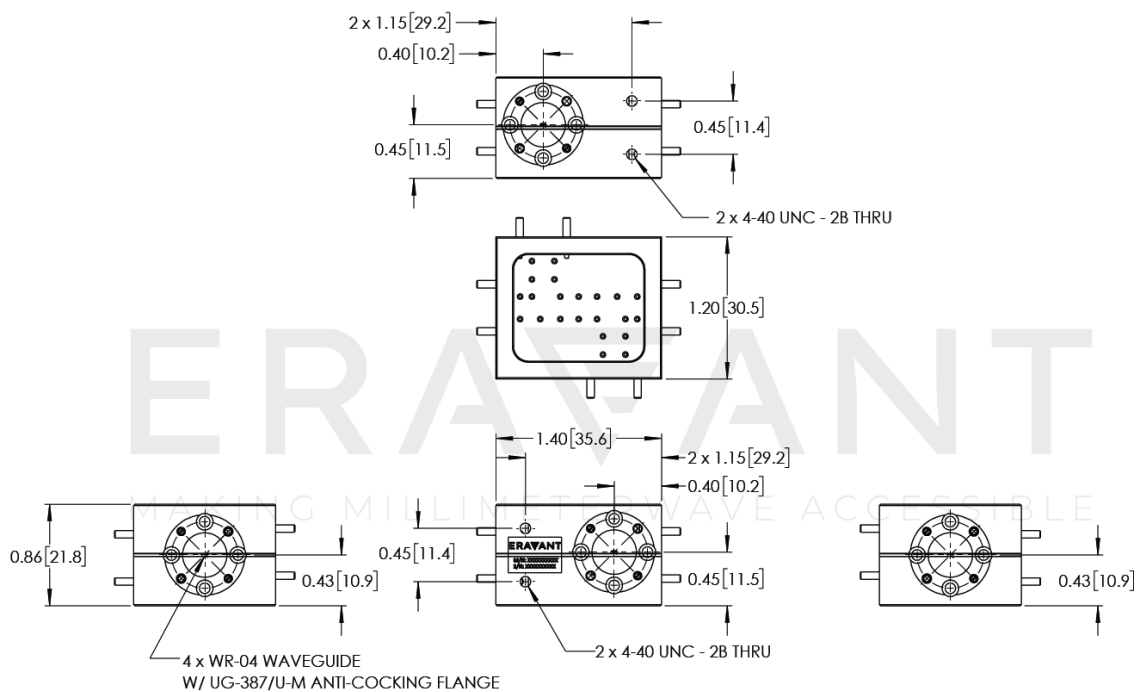
Typical Insertion Loss and Return Loss vs Frequency



### Typical Coupling and Directivity vs Frequency



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



**NOTE:**

- On condition that test data is provided it is collected from a sample lot. Actual data may vary slightly from unit to unit. All testing is performed under +25 °C room temperature.
- On condition that simulated test data is provided, actual measured data may slightly vary.
- Eravant reserves the right to change the information presented without notice.

**CAUTION:**

- If a waveguide is present, any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.

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