

## D-Band Waveguide Directional Coupler, 20 dB

### Description:

**Model SWD-2025H-06-DB** is a D-band, four-port waveguide dual-directional coupler that delivers a 20 dB nominal coupling level and 25 dB typical directivity across the full waveguide band from 110 to 170 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 interfaces of the coupler are WR-06 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

### Applications:

- Test Labs
- Instrumentation
- Sub-assemblies

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	110 GHz		170 GHz
Insertion Loss*		3 dB	
Coupling*		20 dB	
Directivity*		25 dB	
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 = <math>-10 \log_{10} [(P2+P3)/P1]</math> when P4 is terminated.</p> <p>Coupling Value = <math>-10 \log_{10} [P3/P1]</math> when P4 is terminated.</p> <p>or <math>-10 \log_{10} [P4/P2]</math> when P3 is terminated.</p>	
<p>Directivity = <math>-10 \log_{10} [P3/P2]</math> when P1 and P4 are terminated.</p> <p>Directivity = <math>-10 \log_{10} [P4/P1]</math> when P2 and P4 are terminated.</p>	

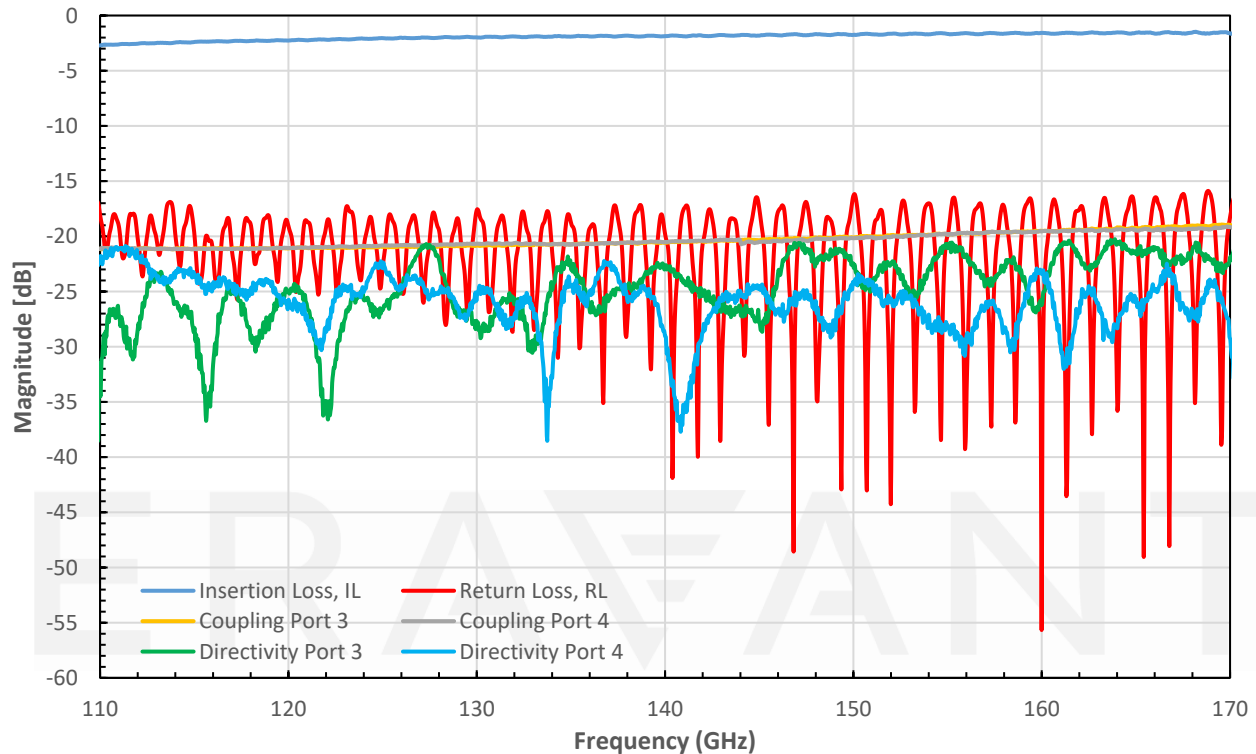


## D-Band Waveguide Directional Coupler, 20 dB

### Mechanical Specifications:

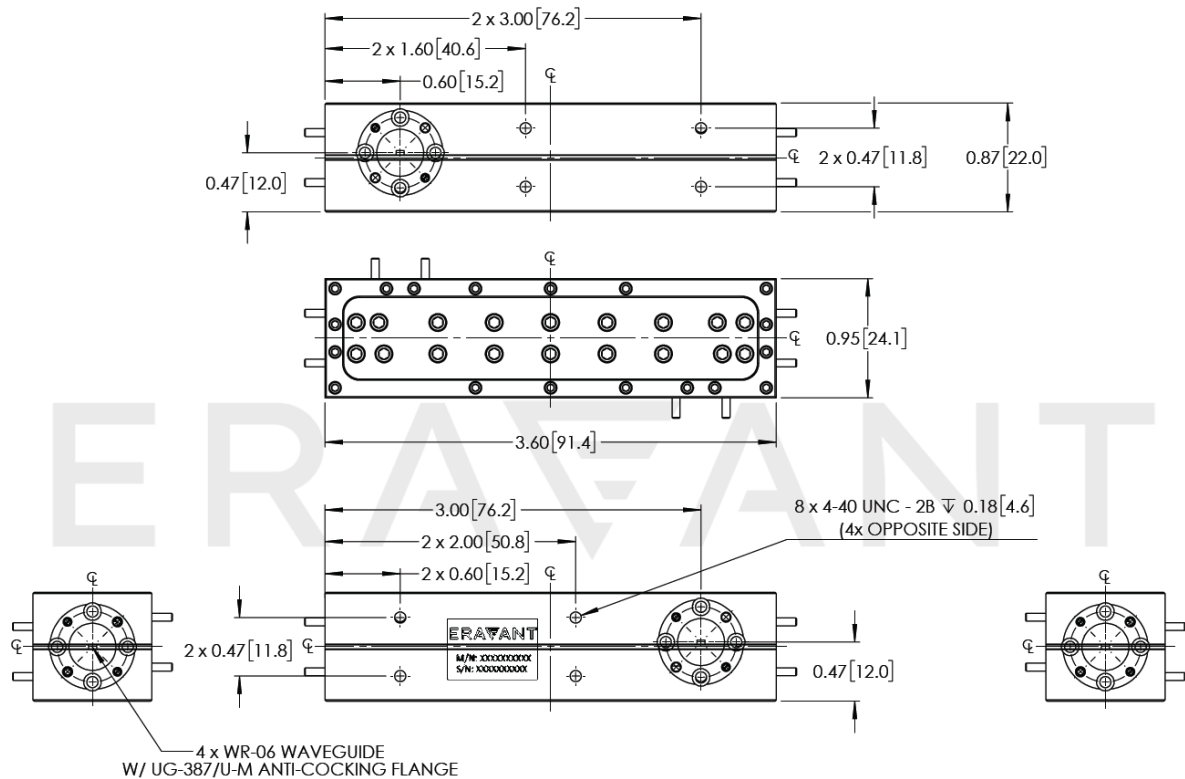
Item	Specification
RF Ports	WR-06 Waveguide with UG 387/U-M Anti-Cocking Flange
Material	Brass
Finish	Gold Plated
Weight	8 oz.
Outline	WD-DB-D-A

### Typical Measured Performance vs Frequency



## D-Band Waveguide Directional Coupler, 20 dB

**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 degrade performance and/or damage the device.

