

## SWD-2025H-05-DB

## G-Band Waveguide Dual-Directional Coupler, 20 dB

**SWD-2025H-05-DB** is a G-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 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.



## Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	140 GHz		220 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.

\*Performance may be reduced at band edges.

## Mechanical Specifications:

Item	Specification
RF Ports	WR-05 Waveguide with UG-387/U-M Anti-Cocking Flange
Material	Brass
Finish	Gold Plated
Weight	5 oz.
Outline	WD-DB-G-A

## ECCN

EAR99

## FEATURES

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

## APPLICATIONS

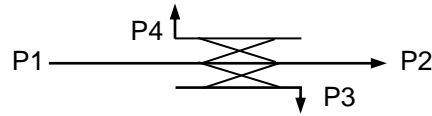
- Test Lab
- Instrumentations
- System Integration

## SUPPLEMENTAL DETAILS



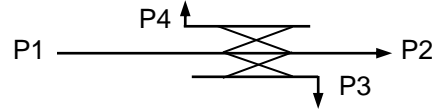
## SWD-2025H-05-DB

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.



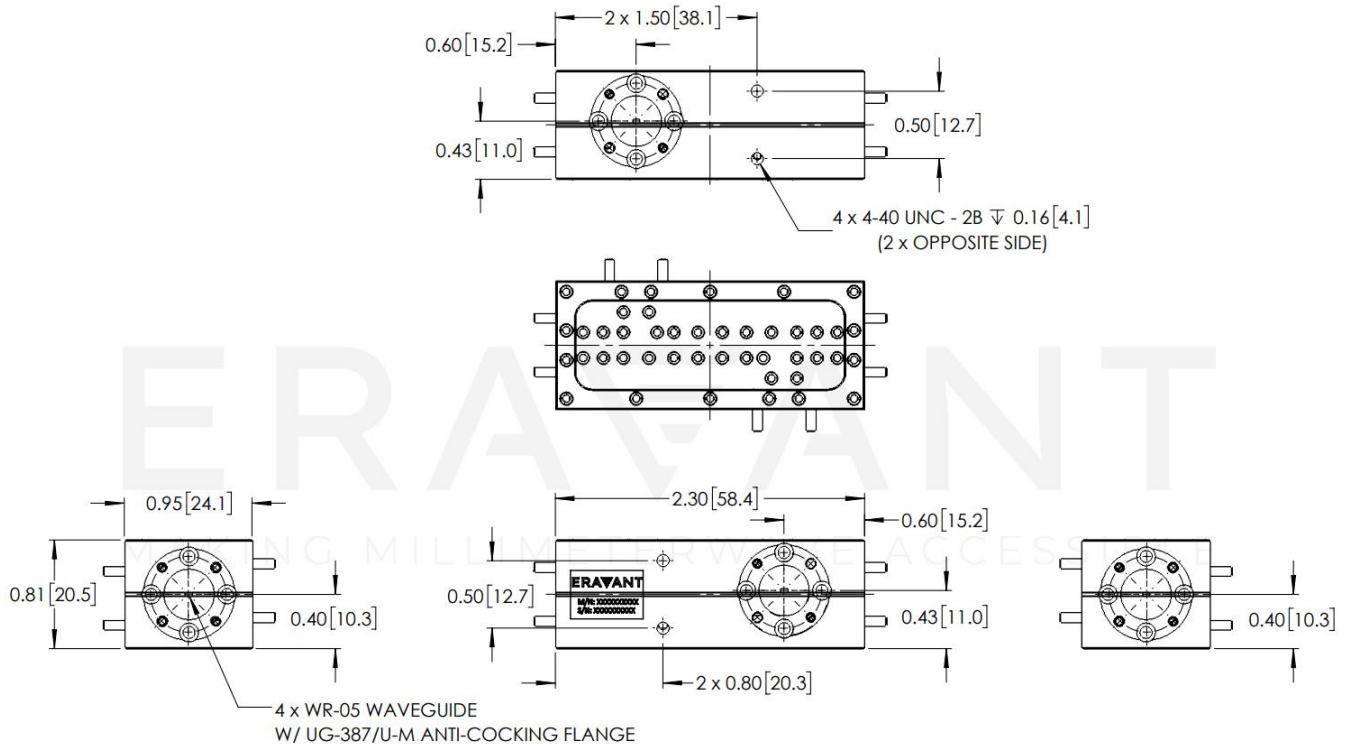
Directivity =  $-10 \log_{10} [P3/P2]$  when P1 and P4 are terminated.

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

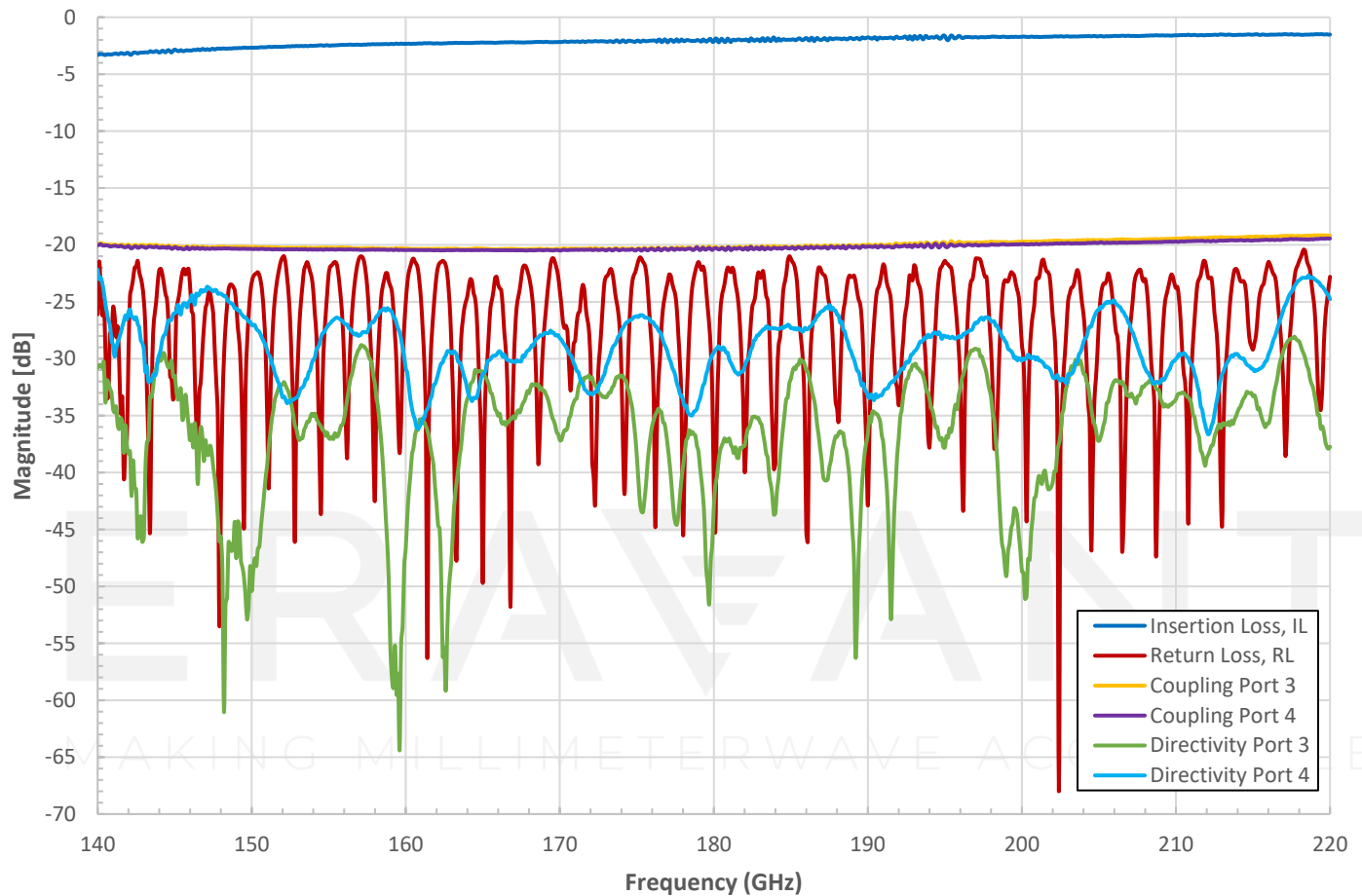


### Mechanical Outline:

Unless otherwise specified, all dimensions are in inches [millimeters]



### Typical Performance Vs Frequency



#### 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.