

U-Band Waveguide Dual-Directional Coupler, 20 dB

SWD-2040H-19-DB is a U-band, four-port waveguide dual-directional coupler that delivers a 20 dB nominal coupling level and 40 dB typical directivity across the full waveguide band from 40 to 60 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-19 waveguides with UG-383/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	40 GHz		60 GHz
Insertion Loss*		1.0 dB	
Coupling*		20 dB	
Directivity*		40 dB	
Main Line Return Loss		25 dB	
Coupling Port Return Loss		25 dB	
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

ECCN

EAR99

FEATURES

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

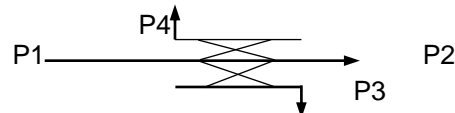
APPLICATIONS

- Test Lab
- Instrumentations
- Sub-assemblies

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

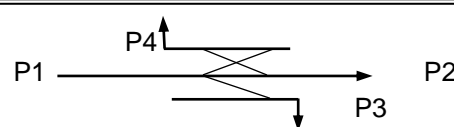
* The actual directivity and return loss are higher than shown due to the limitations of the network analyzer's dynamic range.

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 P4 are terminated.

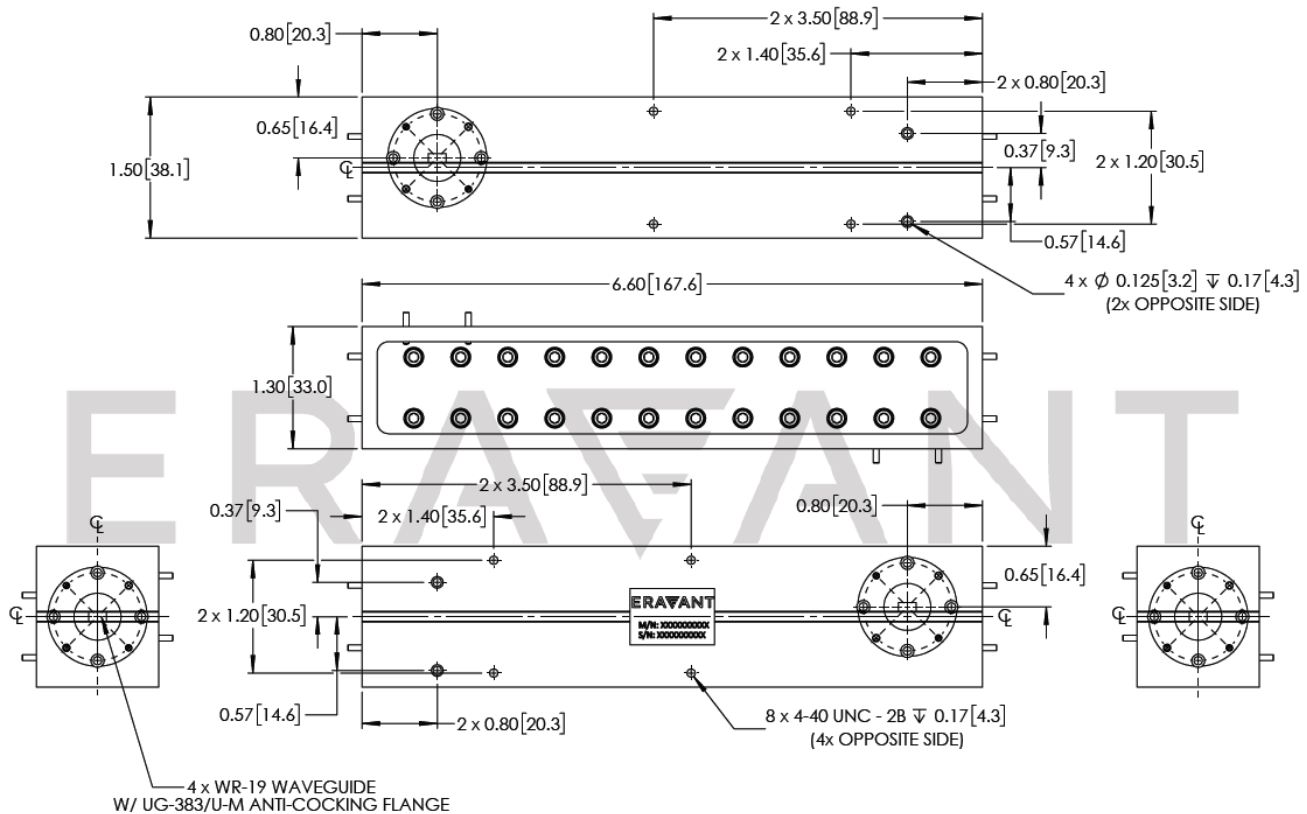


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Mechanical Specifications:

Item	Specification
Waveguide Ports	WR-19 Waveguide with UG-383/U-M Anti-Cocking Flange
Material	Brass
Finish	Gold Plated
Weight	2.0 lbs.
Outline	WD-DB-U-A

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



NOTE:

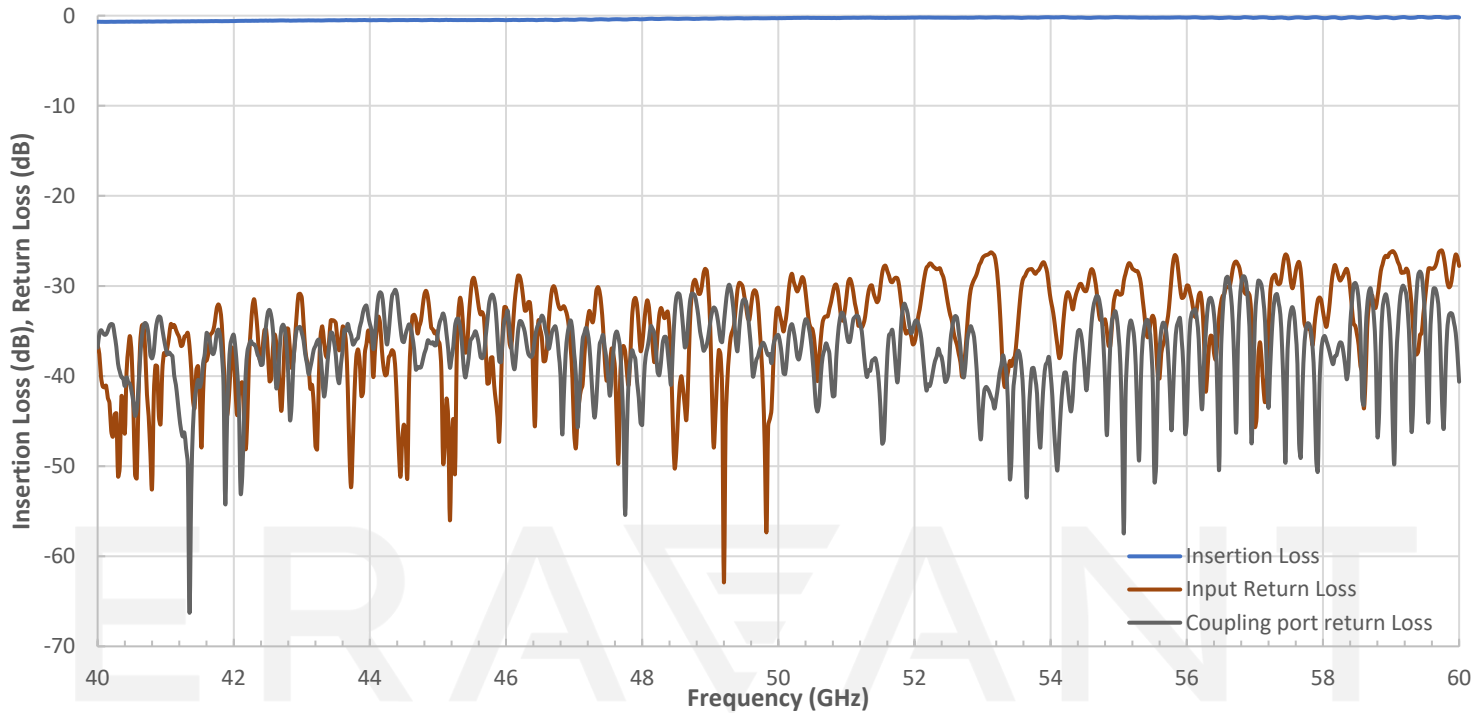
- Eravant reserves the right to change the information presented without notice.

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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Measured Insertion loss and Return Loss Vs Frequency



Measured Coupling and Directivity Vs Frequency

