SWD-3040H-19-DB

U-Band Waveguide Dual-Directional Coupler, 30 dB

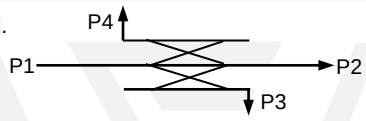
SWD-3040H-19-DB is a U-band, four-port waveguide dual-directional coupler that delivers a 30 dB nominal coupling level and 40 dB typical directivity across the full waveguide band from 40 to 60 GHz. The dual-directional coupler uses a traditional multi-hole and split block design to achieve a flat coupling 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 Range	40 GHz		60 GHz
Insertion Loss*		1.0 dB	
Coupling*		30 dB	
Directivity*		40 dB	
Return Loss		25 dB	
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

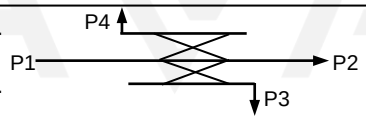
*Performance may be reduced at band edges.
*The actual directivity and return loss are higher than shown due to the limitations of the network analyzer's dynamic range.
*The required termination on the waveguide port is 30 dB or better for accurate measurement.
*The definition of the insertion loss, coupling and directivity is shown as following.

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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FEATURES

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

APPLICATIONS

- Test Lab
- Instrumentations
- System Integration

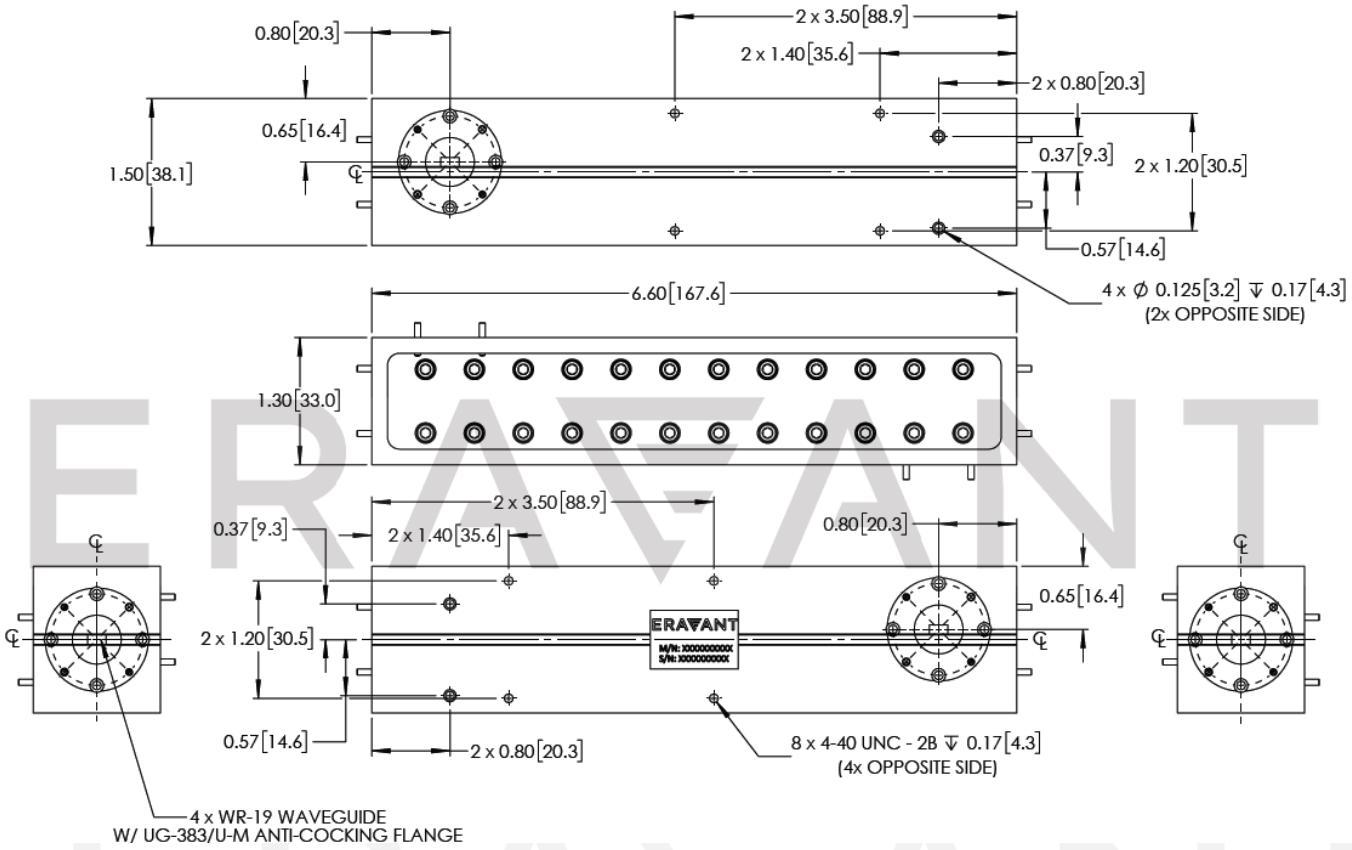
SUPPLEMENTAL DETAILS

Mechanical Specifications:

Item	Specification
RF 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:

- 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.

Typical Performance Vs Frequency