ERAVANT

WR-03 Waveguide Directional Coupler, 20 dB

SWD-2020H-03-SB is a compact WR-03, three-port waveguide directional coupler that delivers a 20 dB nominal coupling level and 20 dB typical directivity across the full waveguide band from 220 to 330 GHz. The three-port coupler uses a traditional multi-hole and split block design to achieve a flat coupling level, and low insertion loss. The interfaces of the coupler are WR-03 waveguides with UG-387/U-M anti-cocking flanges. Custom coupling levels are available under different model numbers.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	220 GHz		330 GHz
Insertion Loss*		3.0 dB	
Coupling*		20 dB	
Directivity*		20 dB	
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.
*Performance may be reduced at band edges.

Insertion Loss = -10 $\log_{10}$ [(P2+P3)/P1]
Coupling Value = -10 $\log_{10}$ [P3/P1]

P1 $\longrightarrow$ P2
P3 $\downarrow$

Isolation = -10 $\log_{10}$ [P3/P2]
Directivity = Isolation – Coupling Value

P1 $\longleftarrow$ P2
P3 $\downarrow$

Mechanical Specifications:

| Item	Specification
Waveguide Ports	WR-03 Waveguide with UG-387/U-M Anti-Cocking Flange
Material	Brass
Finish	Gold Plated
Weight	3.5 Oz
Outline	WD-SB-03-A

ECCN

EAR99

FEATURES

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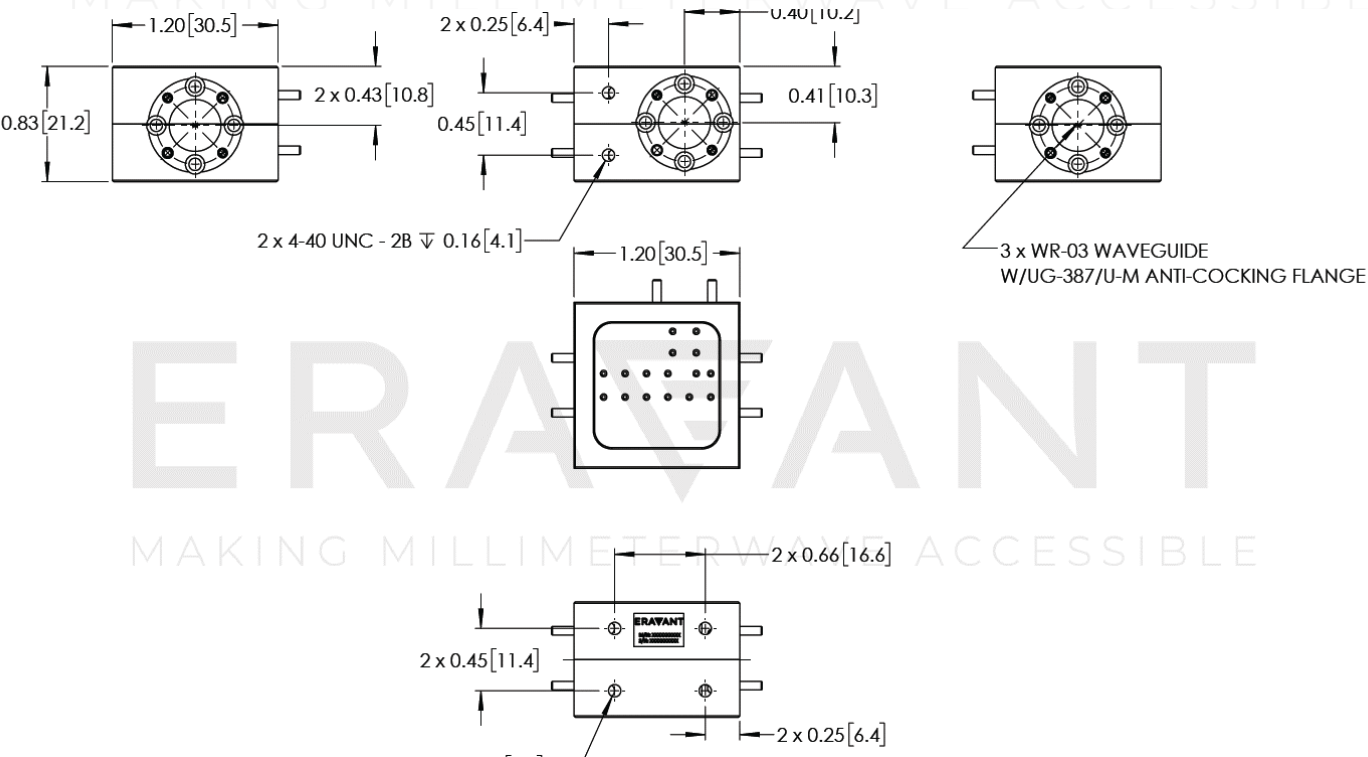- High Directivity
- Flat Coupling Level Across the Band

APPLICATIONS

- Test Labs
- Instrumentations
- Sub-assemblies

SUPPLEMENTAL DETAILS

RoHS

Final Rev 1.2

Typical Performance vs. Frequency
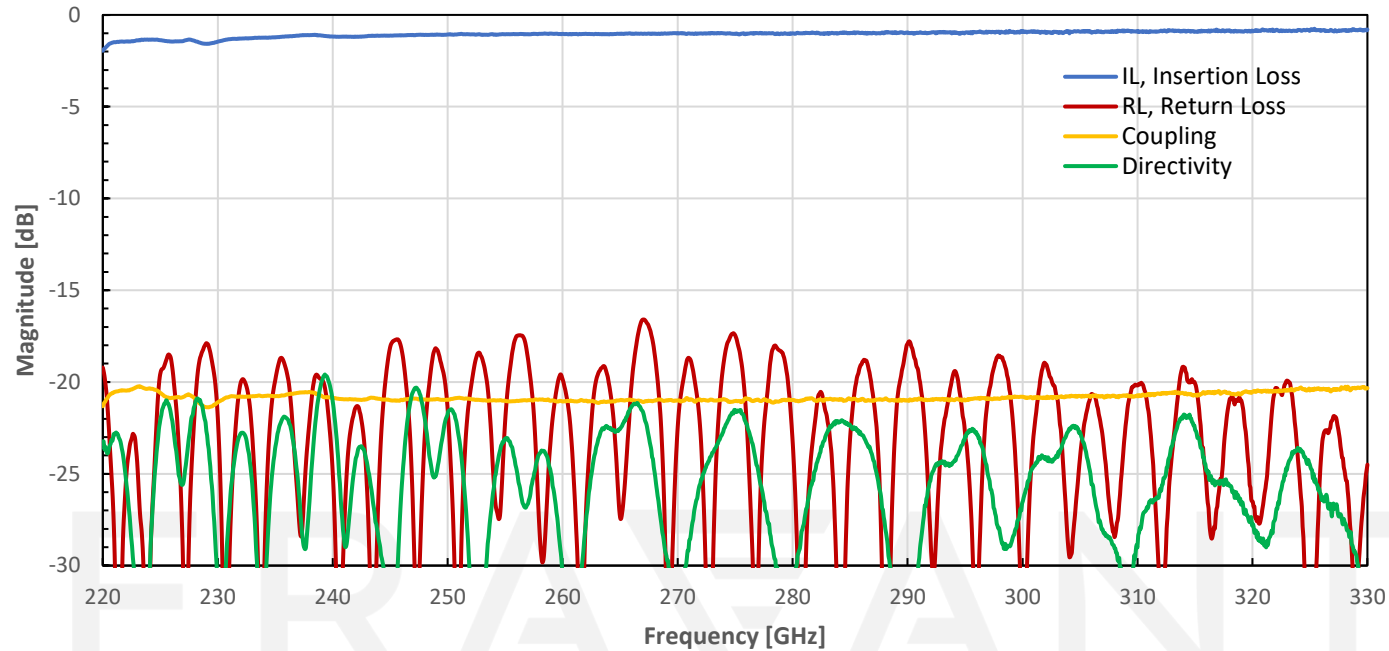
Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])

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.
- 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.