

## WR-04 Waveguide Directional Coupler, 20 dB

### Description:

**Model SWD-2020H-04-SB** is WR-04, three-port waveguide directional coupler that delivers a 20 dB nominal coupling level and 20 dB typical directivity across the full waveguide band from 170 to 260 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-04 waveguides with UG-387/U-M anti-cocking flanges. Custom coupling levels are available under different model numbers.



### Features:

- Full Band Operation
- Low Insertion Loss
- High Directivity

### Applications:

- Test Labs
- Instrumentation
- Sub-assemblies

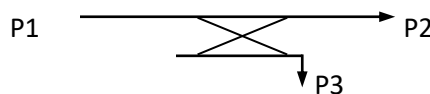
### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	170 GHz		260 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 insertion loss, coupling and directivity is show below. The required termination on the waveguide port is 30 dB or better for accurate measurement.

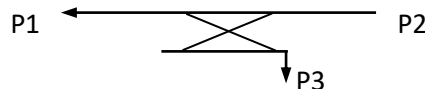
$$\text{Insertion Loss} = -10 \log_{10} [(P2+P3)/P1]$$

$$\text{Coupling Value} = -10 \log_{10} [P3/P1]$$



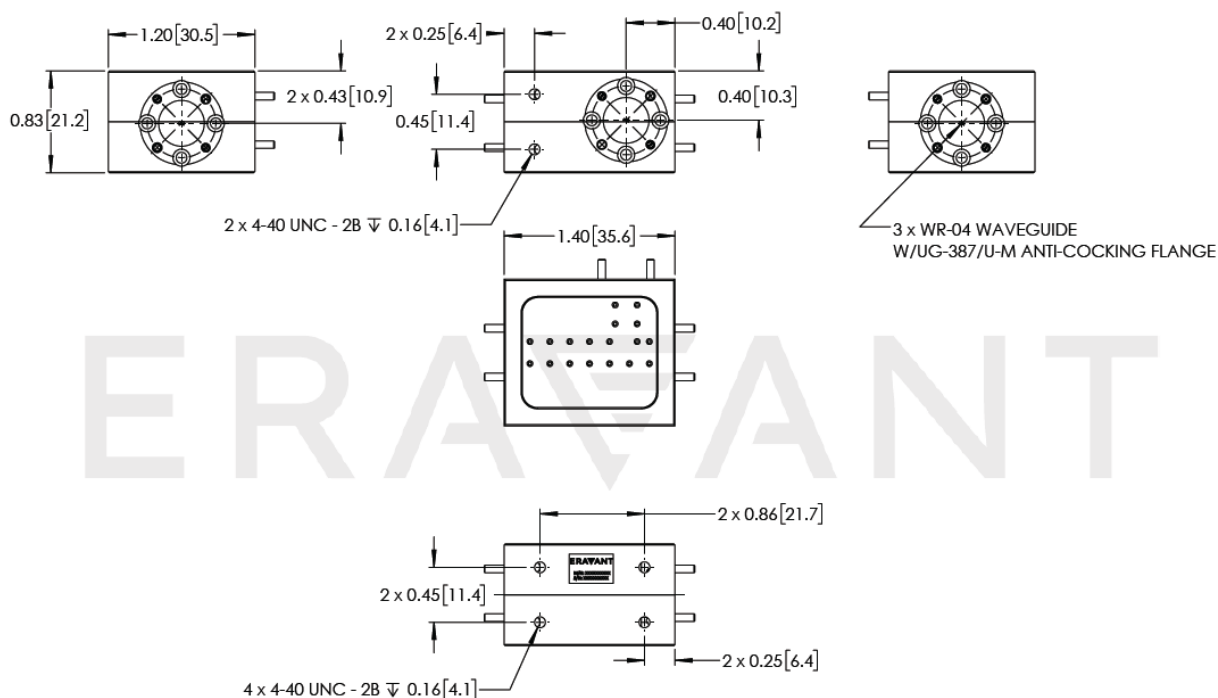
$$\text{Isolation} = -10 \log_{10} [P3/P2]$$

$$\text{Directivity} = \text{Isolation} - \text{Coupling Value}$$



**WR-04 Waveguide Directional Coupler, 20 dB****Mechanical Specifications:**

Item	Specification
RF Ports	WR-04 Waveguide with UG-387/U-M Anti-Cocking Flange
Material	Brass
Finish	Gold Plated
Weight	4.0 oz.
Outline	WD-SB-04-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:**

- Any foreign objects in the waveguide will degrade performance and/or damage the device.