# SWD-1020H-03-DB

# WR-03 Waveguide Dual-Directional Coupler, 10 dB

## **Description:**

Model SWD-1020H-03-DB is a WR-03, four-port waveguide dualdirectional coupler that delivers a 10 dB nominal coupling level and 20 dB typical directivity across the full waveguide band from 220 to 330 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-03 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.

#### **Features:**

- **Full Band Operation**
- Low Insertion Loss
- **High Directivity**
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## **Electrical**

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Parameter	Minimum	_

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# **Applications:**

- **Test Labs**
- Instrumentations
- Sub-assemblies

Parameter	Minimum	Typical	Maximum
Frequency	220 GHz		330 GHz
Insertion Loss*		3.5 dB	
Coupling*		10 dB	
Directivity*		20 dB	
Main Line Return Loss		18 dB	
Coupling Port 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.

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





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# **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-DB-03-A

### **Measured Performance vs Frequency**





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



#### Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit, slightly.
- All testing was performed under +25 °C case temperature.
- Eravant reserves the right to change the information presented without notice.

#### Caution:

• Any foreign objects in the waveguide will cause performance degradation and possible device damage.



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