

# WR-34 Waveguide Dual-Directional Coupler, 20 dB

## **Description:**

Model SWD-2040H-34-DB is a WR-34, 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 22 to 33 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-34 waveguides with UG-1530/U 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
- Flat Coupling Level Across the Band

## **Applications:**

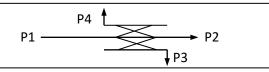
- Test Labs
- Instrumentations
- Sub-assemblies

### **Electrical Specifications:**

Parameter	Minimum	Typical	Maximum
Frequency	22 GHz		33 GHz
Insertion Loss*		0.6 dB	
Coupling*		20 dB	
Directivity*		40 dB	
Main Line Return Loss		25 dB	
Coupling Port Return Loss		25 dB	
Specification Temperature		+25 °C	1000000
Operating Temperature	-40 °C		+85 °C

<sup>\*</sup>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.

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.

P1 P2



www.eravant.com | 501 Amapola Ave, Torrance, CA 90501 Phone: 424-757-0168 | Fax: 424-757-0188 | Email: support@eravant.com

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

0.75[19.1]

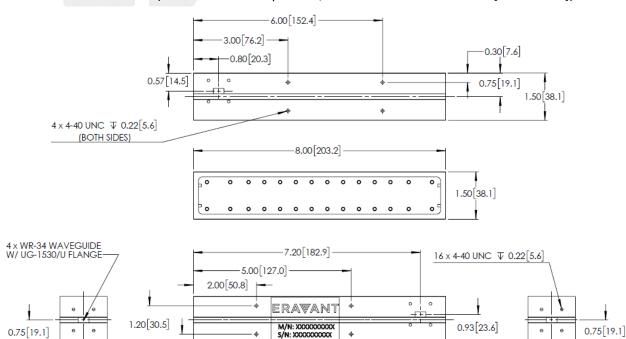


# WR-34 Waveguide Dual-Directional Coupler, 20 dB

## **Mechanical Specifications:**

Item	Specification	
Waveguide Ports	WR-34 Waveguide with UG-1530/U Flange	
Material	Brass	
Finish	Gold Plated	
Weight	2.7 lbs.	
Outline	WD-DB-3	

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



#### Note:

0.75[19.1]

0.30[7.6]

• 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.



www.eravant.com | 501 Amapola Ave, Torrance, CA 90501 Phone: 424-757-0168 | Fax: 424-757-0188 | Email: support@eravant.com