

**WR-12 Magic Tee Waveguide Using UG-387/U Round Cover Flange and Operating from 60 GHz to 90 GHz**

Fairview's FMWMT1001 is a magic, or hybrid tee that operates from 60 GHz to 90 GHz, E band. It is a 4 port device that is internally tuned to optimize matching, balance, and isolation. Magic tees have an H-plane (sum) port, an E-plane (difference) port, and two collinear ports. A signal applied to the H port will be equally divided between the two collinear ports. A signal applied to the E port will be divided between the two collinear ports but with a 180 degree phase difference. Similarly, when two in-phase signals of equal amplitude are applied to the collinear ports, these will be added together at the H-plane (sum) port and subtracted from one another at the E-plane (difference) port.



**Electrical Specifications**

Description	Min	Typ	Max	Units
Frequency Range	60		90	GHz
Insertion Loss			1	dB
Isolation, E-H ( $\Delta$ - $\Sigma$ ) Ports	25			dB
Isolation, Collinear Ports	15			dB

**Mechanical Specifications**

<b>Size</b>	
Weight	0.125 lbs [56.7 g]
Waveguide Size	WR-12
Flange Type	Round Cover
Flange Designation	UG-387/U
Body Material and Plating	Aluminum, Gold
Body Plating Specification	ASTMB488

**Environmental Specifications**

**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

Notes:

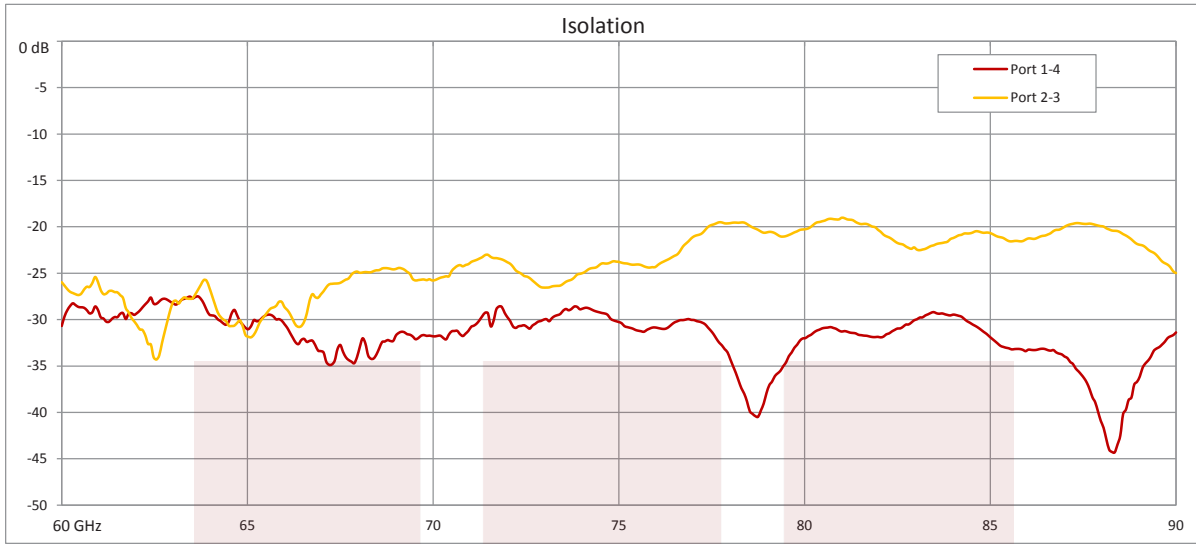
**Features:**

- 60 to 90 GHz Frequency Range
- E to H Port Isolation 25 dB Min
- Collinear Port Isolation 15 dB Min
- 1 dB Insertion loss
- E Band

**Applications:**

- Test and Measurement
- Military Communications
- Commercial Communications
- Wireless Communications
- SATCOM

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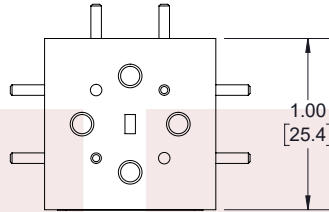
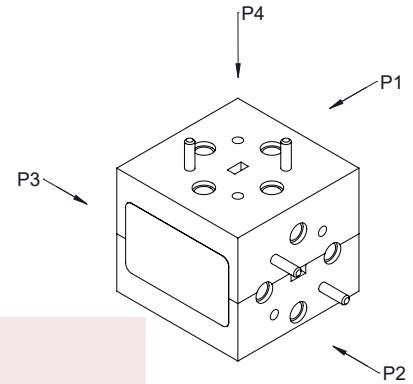
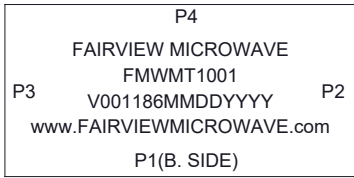
WR-12 Magic Tee Waveguide Using UG-387/U Round Cover Flange and Operating from 60 GHz to 90 GHz from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [WR-12 Magic Tee Waveguide Using UG-387/U Round Cover Flange and Operating from 60 GHz to 90 GHz FMWMT1001](https://www.fairviewmicrowave.com/wr-12-magic-tee-waveguide-ug387-round-90-ghz-fmwmt1001-p.aspx)

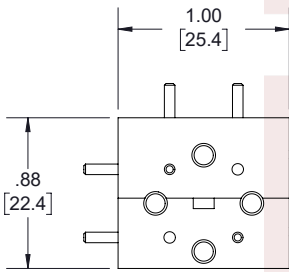
URL: <https://www.fairviewmicrowave.com/wr-12-magic-tee-waveguide-ug387-round-90-ghz-fmwmt1001-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.

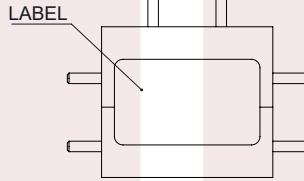
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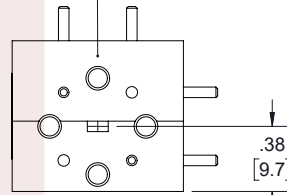
**PORT 4**  
**"DIFFERENCE"**



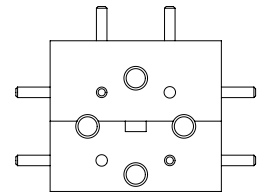
**PORT 3**  
**"COLLINEAR"**



**FRONT**

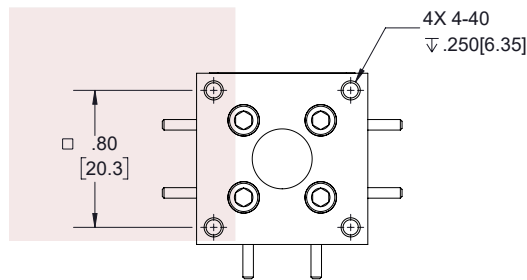


**PORT 2**  
**"COLLINEAR"**

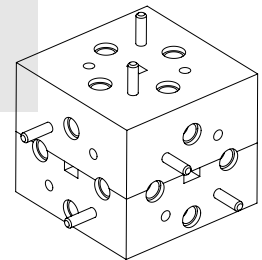


**PORT 1**  
**"SUM"**

WR-12 WAVEGUIDE  
 UG387/U COVER FLANGE  
 (4 PLACES)



**BOTTOM**



**STANDARD TOLERANCES**

- .X ±0.2
- .XX ±0.01
- .XXX ±0.005

\*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES

<b>FAIRVIEW MICROWAVE INC.</b> ALLEN, TX 75013 WWW.FAIRVIEWMICROWAVE.COM		NOTES: 1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL. 2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME. 3. DIMENSIONS ARE IN INCHES [mm].			
TITLE WR-12 Magic Tee Waveguide Using UG-387/U Round Cover Flange and Operating from 60 GHz to 90 GHz		DWG NO FMWMT1001		CAGE CODE 3FKR5	
CAD FILE	111417	SHEET	1 OF 1	SCALE	N/A
		SIZE	A		7361