SWD-4040H-12-DB

Advanced

E-Band Waveguide Dual-Directional Coupler, 40 dB

Description:

Model SWD-4040H-12-DB is an E-band, four-port waveguide dual-directional coupler that delivers a 40 dB nominal coupling level and 40 dB typical directivity across the full waveguide band from 60 to 90 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-12 waveguides with UG-387/U flanges. Custom coupling levels are available under different model numbers.

Features:

- Full Band Operation
- Low Insertion Loss
- High Directivity

Applications:

- Test Labs
- Instrumentations
- Sub-assemblies

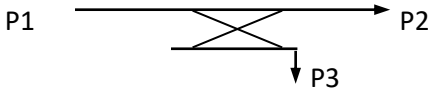
Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	60 GHz		90 GHz
Insertion Loss*		1.5 dB	
Coupling*		40.0 dB	
Directivity*	30 dB	40 dB	
Return Loss		20 dB	
Specification Temperature		+25˚C	
Operating Temperature	-40˚C		+85˚C

*The definition of the insertion loss, coupling and directivity is show as following. The required termination on the waveguide port is 30 dB or better for accurate measurement.

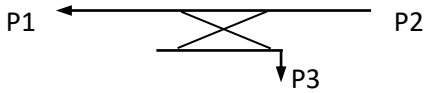
Insertion Loss = $-10 \log_{10} [(P2+P3)/P1]$

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



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

Directivity = Isolation – Coupling Value



www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505
Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com

Copyright © 2019 by SAGE Millimeter, Inc.

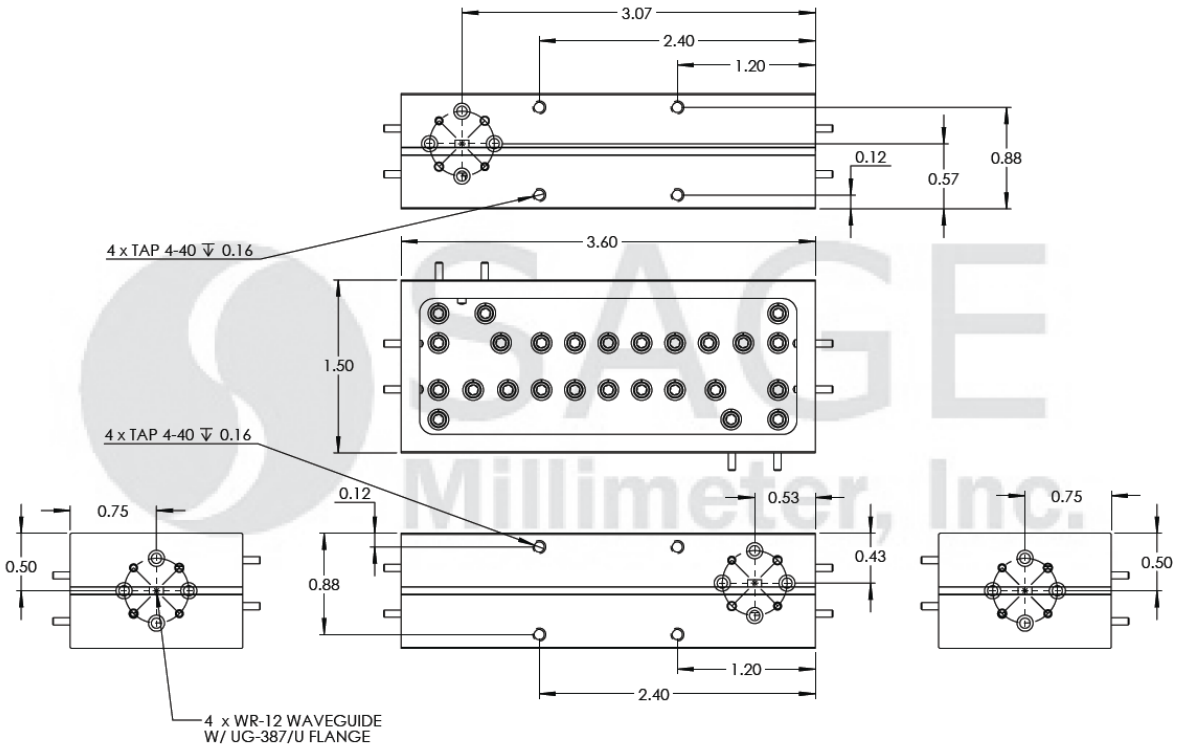
SAGE Millimeter, Inc.

E-Band Waveguide Dual-Directional Coupler, 40 dB

Mechanical Specifications:

Item	Specification
Through Ports	WR-12 Waveguide with UG-387/U Flange
Coupled Port	WR-12 Waveguide with UG-387/U Flange
Housing Material	Brass
Finish	Gold Plated
Weight	15.5 Oz
Size	3.60” (L) X 1.50” (W) x 1.00” (H)
Outline	WD-DB-E

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



Note:

- All data are collected from a sample lot. Actual data may vary unit to unit, slightly.
- All testing was performed under +25 °C case temperature.
- SAGE Millimeter, Inc. 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.

www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505
Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com

Copyright © 2019 by SAGE Millimeter, Inc.

SAGE Millimeter, Inc.