



WR-12 Dual Polarized Scalar Feed Horn Antenna, 60 to 90 GHz, 13 dBi

Description:

Model SAF-6039031340-141-S1-122-DP is a dual polarized, WR-12 scalar feed horn antenna assembly that covers several popular 5G bands in the frequency range of 60 to 90 GHz. The antenna features an integrated orthomode transducer (OMT) that provides high port isolation and cross-polarization cancellation and a broad band scalar horn that provides low sidelobe levels. The OMT enables the antenna to separate a circular or elliptical polarized waveform into two linear, orthogonal waveforms or vice versa. The dual polarized horn also supports either vertical or horizontal polarized waveguide forms with more than 25 dB cross polarization rejections. At center frequency, the horn antenna exhibits 13 dBi nominal gain and a typical half power beamwidth of 40 degrees and -25 dB sidelobe levels, respectively. The antenna exhibits 35 dB typical port isolation between the horizontal and vertical ports. The horizontal and vertical ports are WR-12 waveguides with UG-387/U flanges and 4-40 threaded holes.



Features:

- 60 to 90 GHz Operations
- Linear and Circular Polarizations
- High Port Isolation
- High Crosspol Rejection

Applications:

- 5G Systems
- Radar Systems
- Communication Systems
- Circular and Linear Waveform Separation and Combination

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	60 GHz	75 GHz	90 GHz
Gain	11 dBi	13 dBi	16 dBi
3 dB Beamwidth, E-plane		40°	
3 dB Beamwidth, H-plane		40°	
Sidelobe Levels		-25 dB	-20 dB
V and H Port Isolation	30 dB	35 dB	
Cross Polarization Rejection		30 dB	
Port Return Loss	10 dB	15 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

Mechanical Specifications:

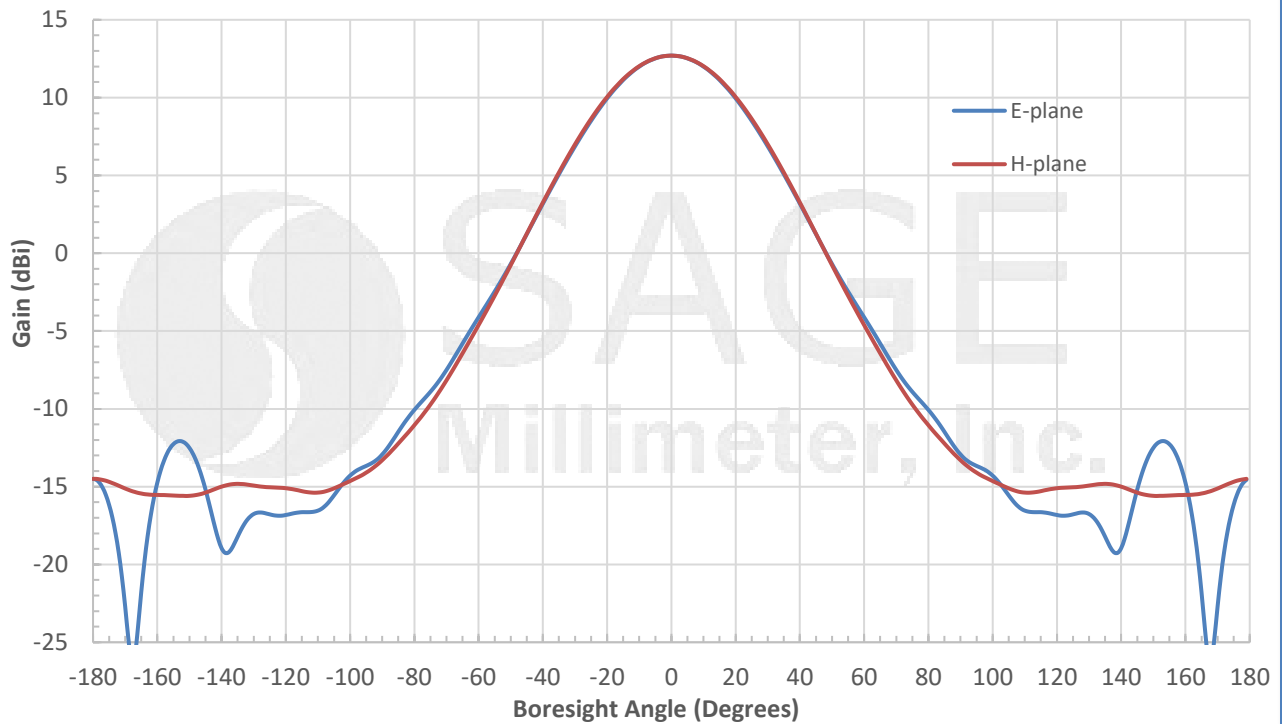
Item	Specification
Horizontal and Vertical Ports	WR-12 Waveguide with UG-387/U Threaded Flange
Material	Aluminum, Brass
Finish	Gold Plated
Weight	0.15 lbs
Size	2.75" (L) x 0.8" (W) x 0.8" (H)
Outline	AF-CE13-141-122-DP



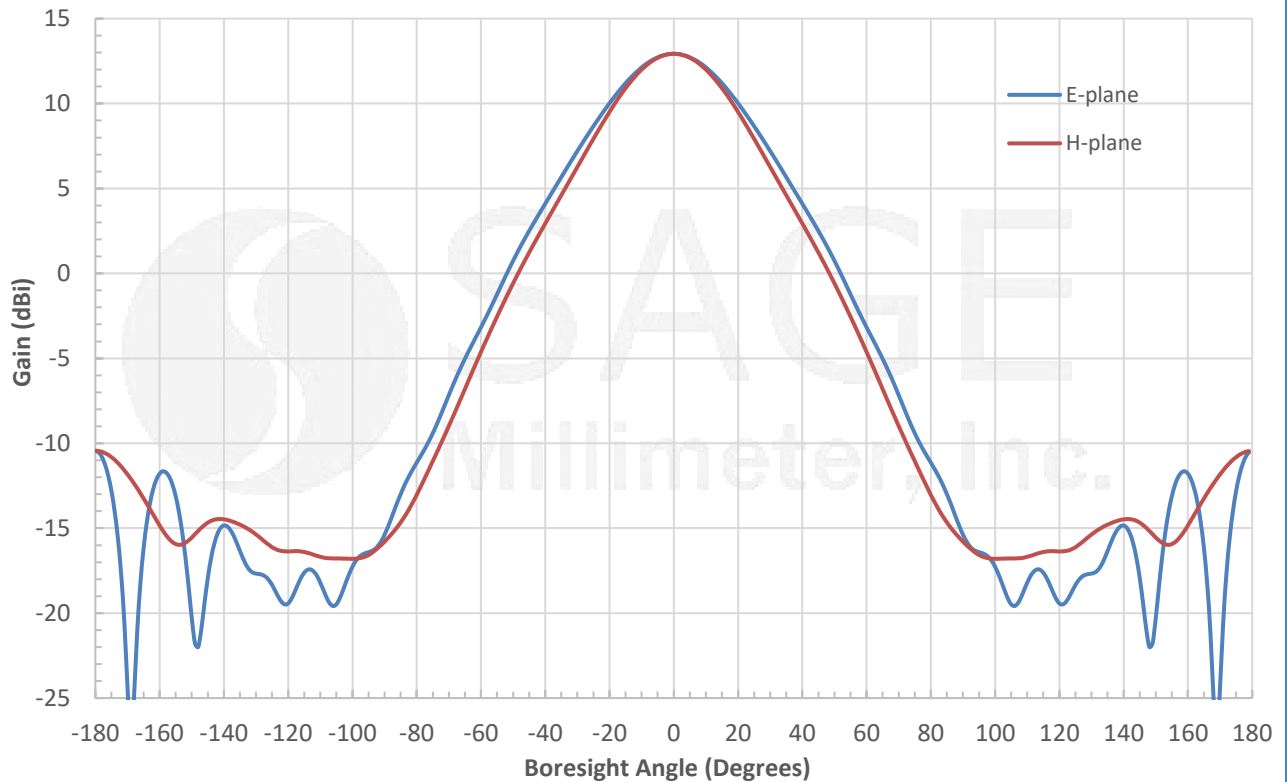


WR-12 Dual Polarized Scalar Feed Horn Antenna, 60 to 90 GHz, 13 dBi

Simulated Antenna Patterns @ 60 GHz



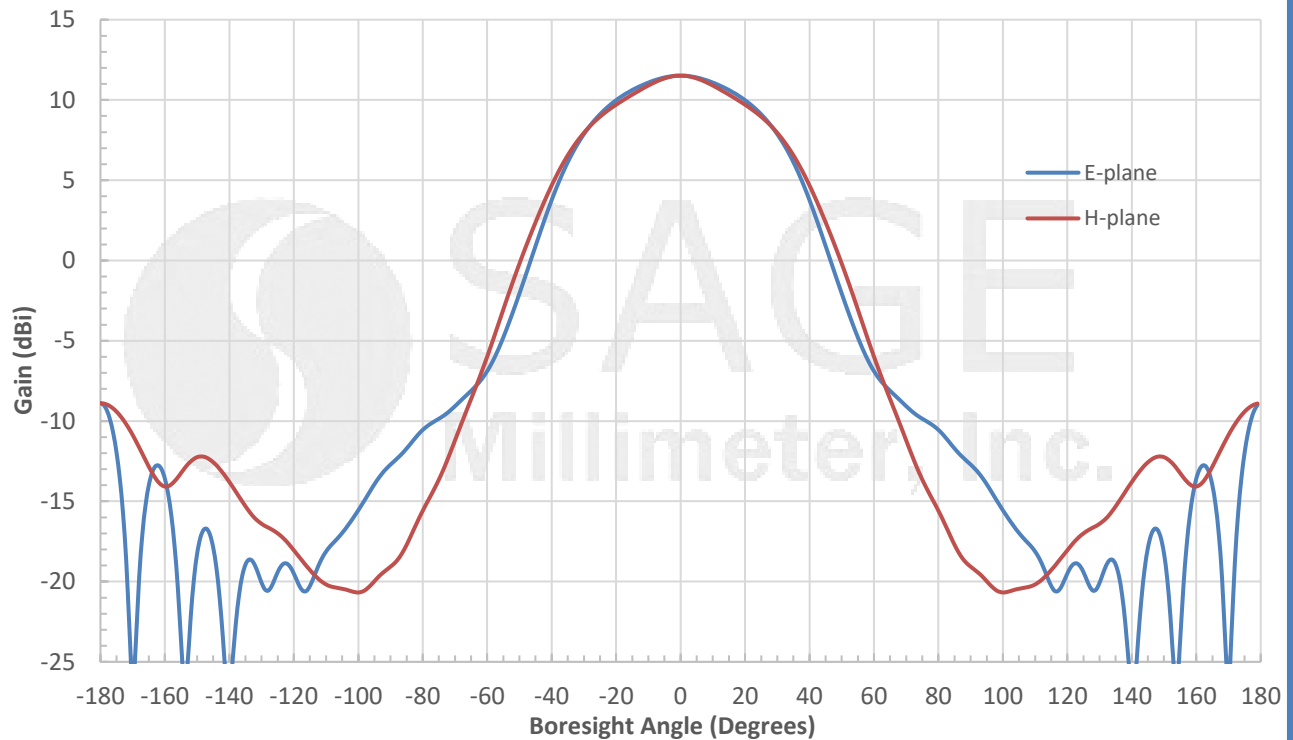
Simulated Antenna Patterns @ 75 GHz



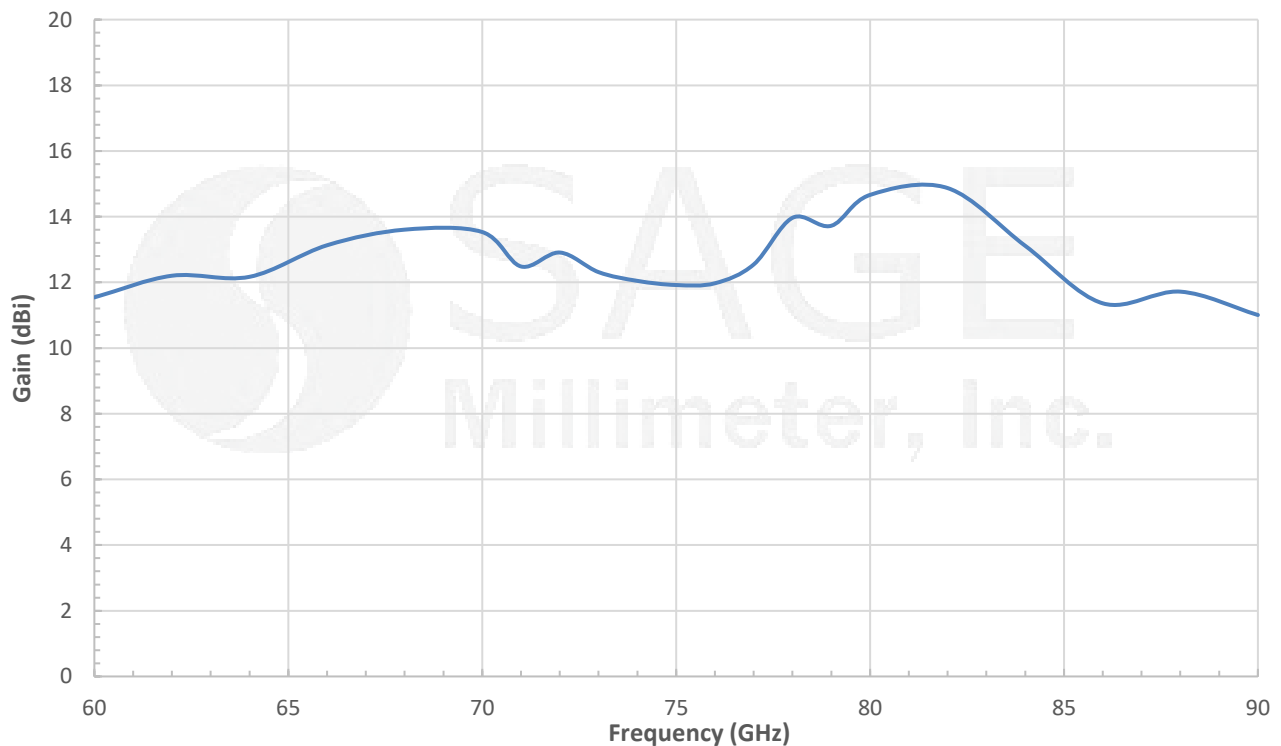


WR-12 Dual Polarized Scalar Feed Horn Antenna, 60 to 90 GHz, 13 dBi

Simulated Antenna Patterns @ 90 GHz



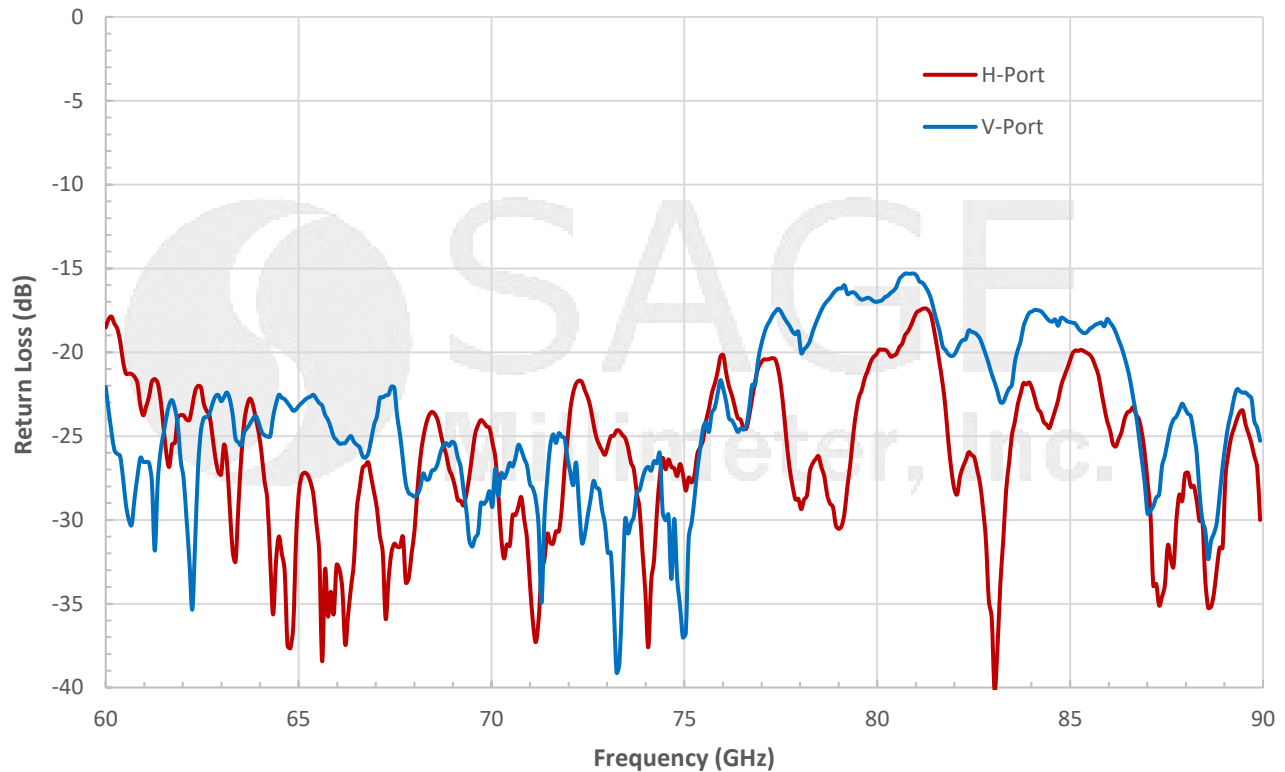
Measured Gain vs. Frequency



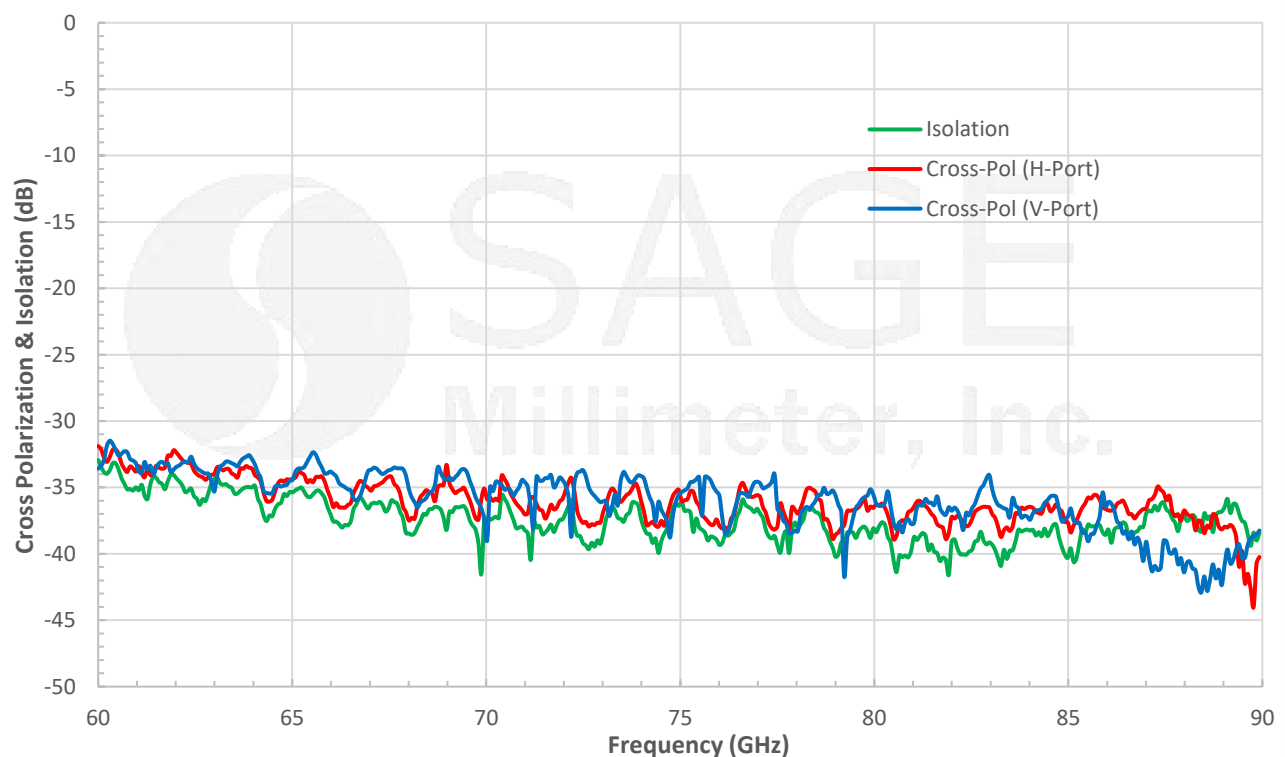


WR-12 Dual Polarized Scalar Feed Horn Antenna, 60 to 90 GHz, 13 dBi

Measured Return Loss vs. Frequency



Measured Cross Polarization & Isolation vs. Frequency

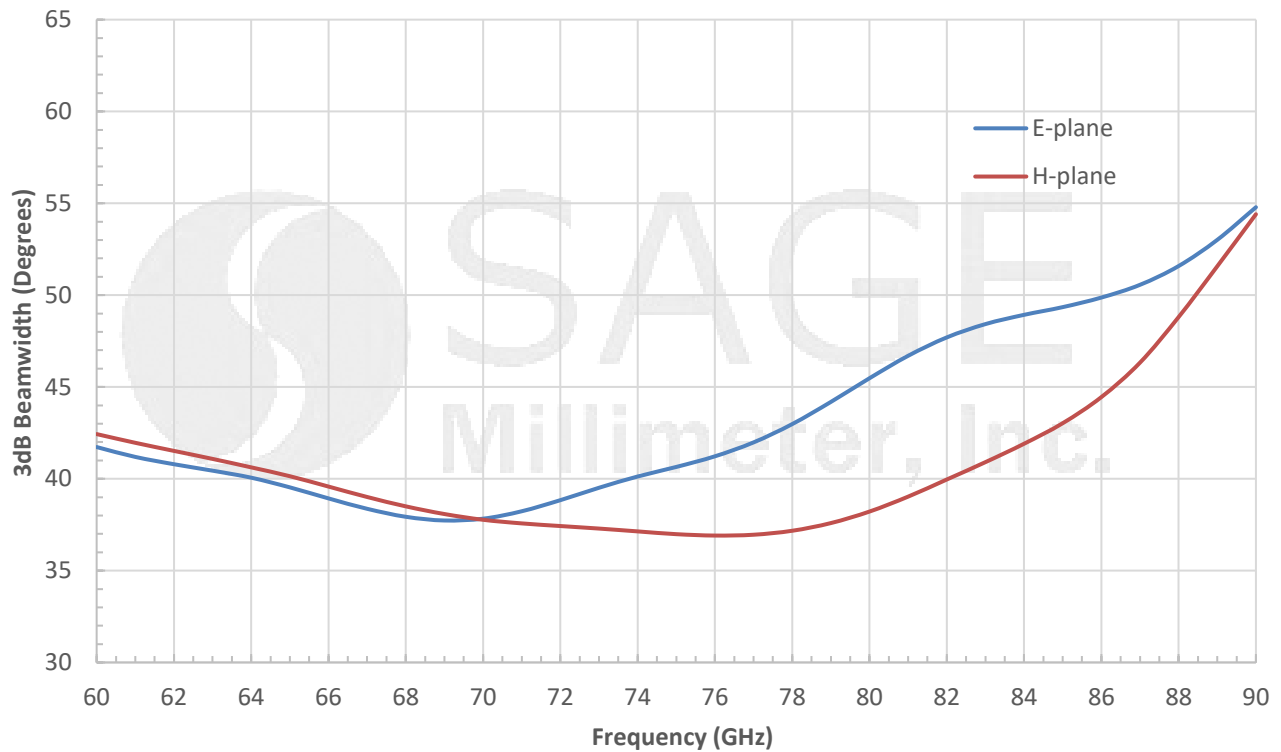


www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505
Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com

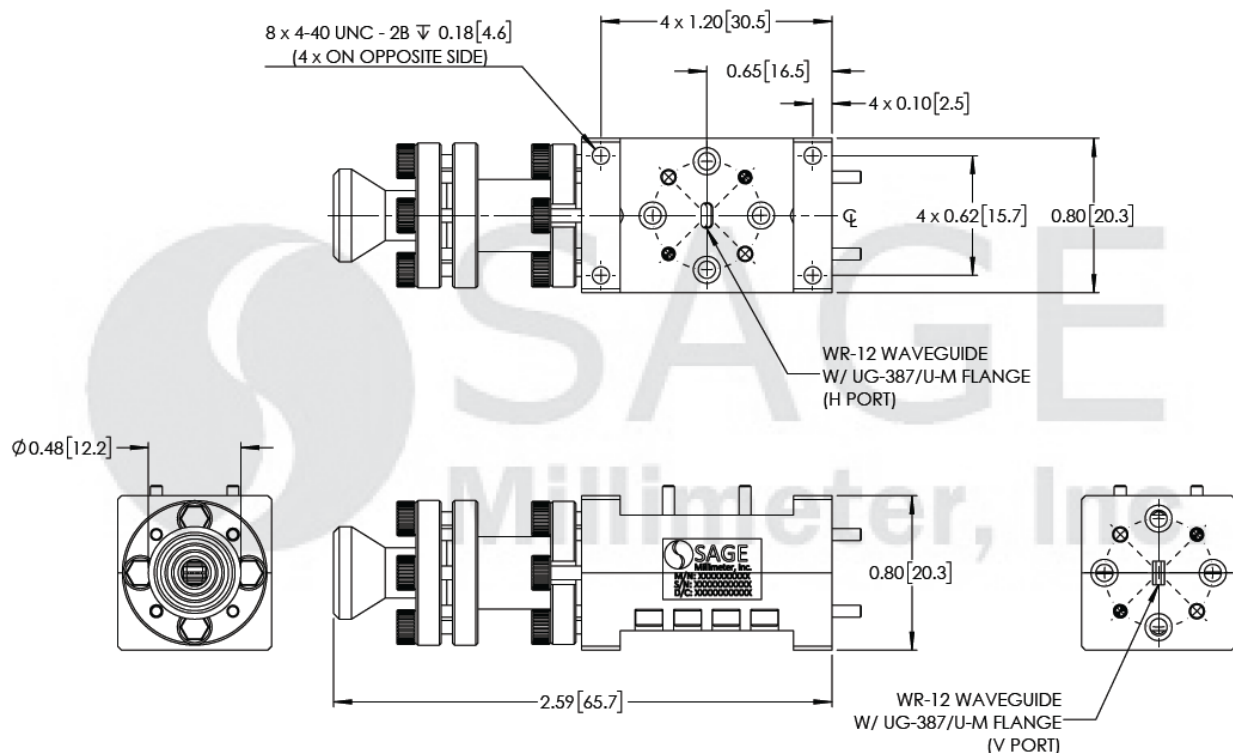


WR-12 Dual Polarized Scalar Feed Horn Antenna, 60 to 90 GHz, 13 dBi

Simulated 3dB Beamwidth vs. Frequency



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



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

WR-12 Dual Polarized Scalar Feed Horn Antenna, 60 to 90 GHz, 13 dBi

Note:

- Antenna patterns and 3 dB beamwidth are simulated. Actual data may vary.
- Gain, Port Return Loss, Cross Polarization, and Isolation data presented is collected from a sample lot. Actual data may vary unit to unit, slightly.
- All testing was performed under +25°C room temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Any foreign objects in the antenna will cause performance degradation and possible device damage.

