SAH-2434231060-328-S1-280-DP

Rev. 1.1

WR-28 Dual Polarized Choke Flange Feed Horn Antenna, 24 to 42 GHz

Description:

Model SAH-2434231060-328-S1-280-DP is a dual polarized, WR-28 choke flange feed horn antenna assembly that covers several popular 5G bands in the frequency range of 24 to 42 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 30 dB cross polarization rejections. At center frequency, the horn antenna exhibits 10 dBi nominal gain and a typical half power beamwidth of 60 degrees and -25 dB sidelobe level for E plane and -35 dB for H Plane. The antenna exhibits 35 dB typical port isolation between the horizontal and vertical ports. The horizontal and vertical ports are WR-28 waveguides with UG-599/U flanges and 4-40 threaded holes.

Features:

- 24 to 42 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	24 GHz	33 GHz	42 GHz
Gain		10 dBi	
3 dB Beamwidth, E-plane @ 33 GHz		60°	
3 dB Beamwidth, H-plane @ 33 GHz		60°	
Sidelobes, E-plane		-25 dB	
Sidelobes, H-plane		-35 dB	
V and H Port Isolation		35 dB	
Cross Polarization Rejection		35 dB	
Port Return Loss		15 dB	
Specification Temperature		+25 ˚C	
Operating Temperature	-40 ˚C		+85 ˚C

Mechanical Specifications:

Item	Specification
Horizontal and Vertical Ports	WR-28 Waveguide with UG-599/U Threaded Flange
Material	Aluminum, Brass
Finish	Gold Plated
Weight	5.6 Oz
Size	4.10” (L) x 1.48” (W) x 0.75” (H)
Outline	AH-CA10-328-280-DP

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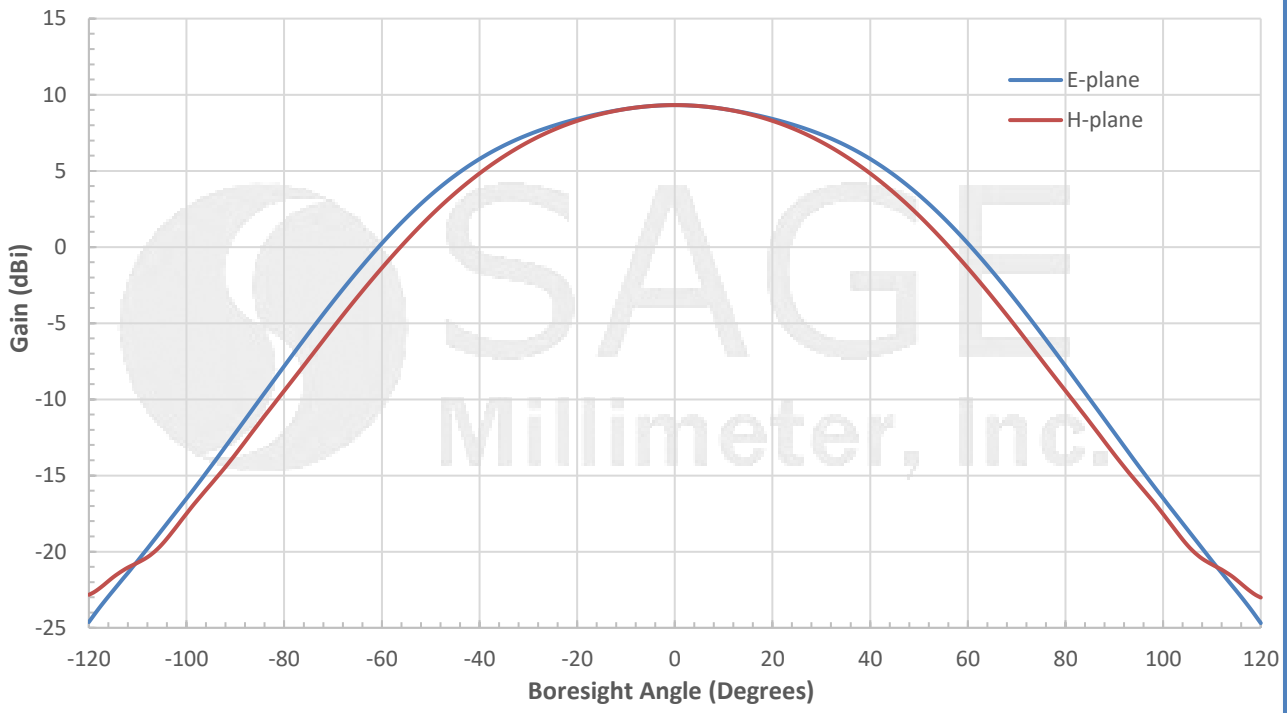
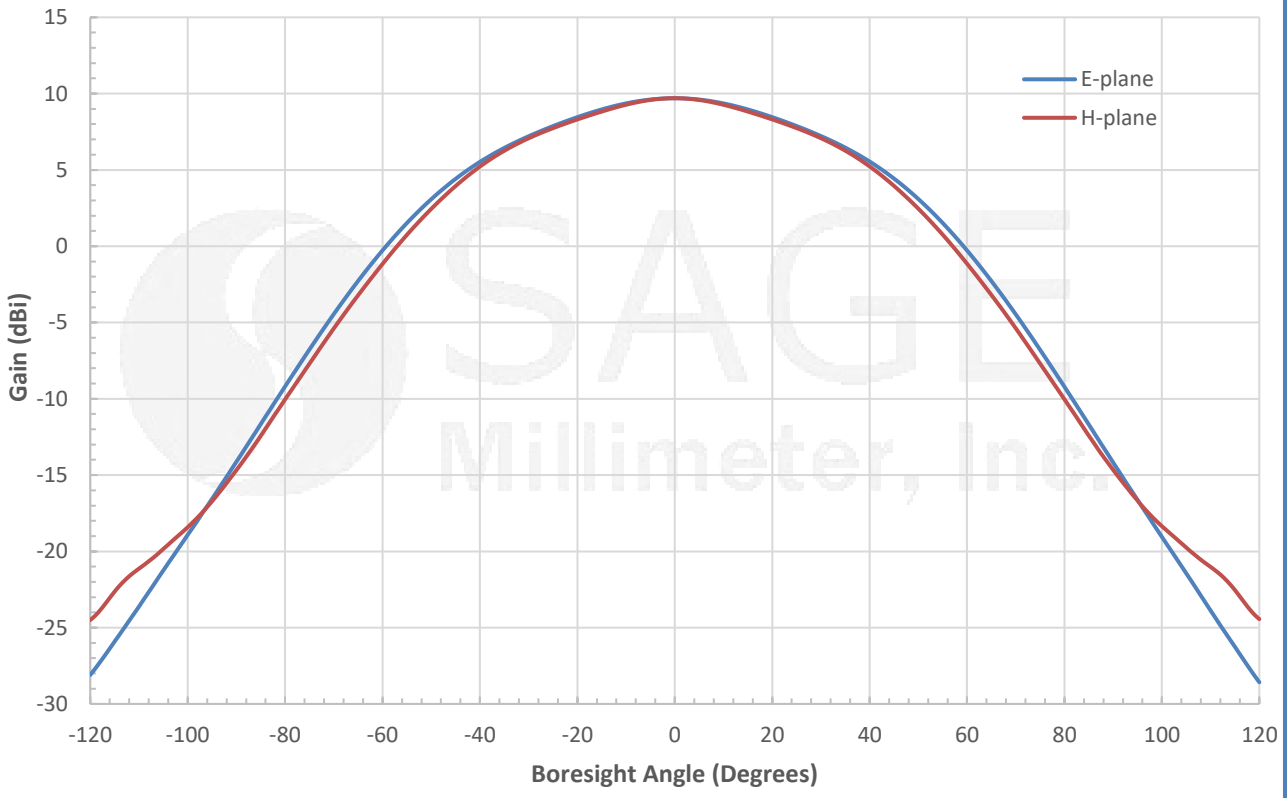
WR-28 Dual Polarized Choke Flange Feed Horn Antenna, 24 to 42 GHz

Simulated Antenna Patterns @ 24 GHz



Simulated Antenna Patterns @ 30 GHz



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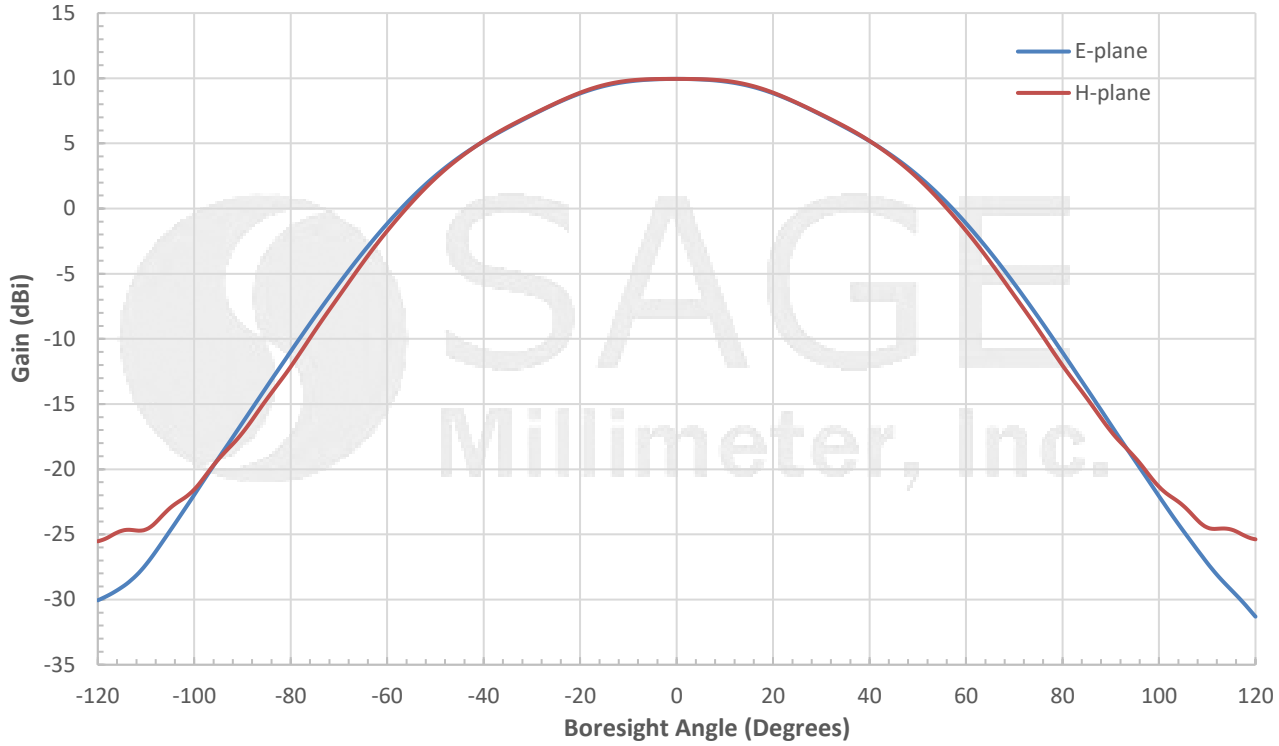
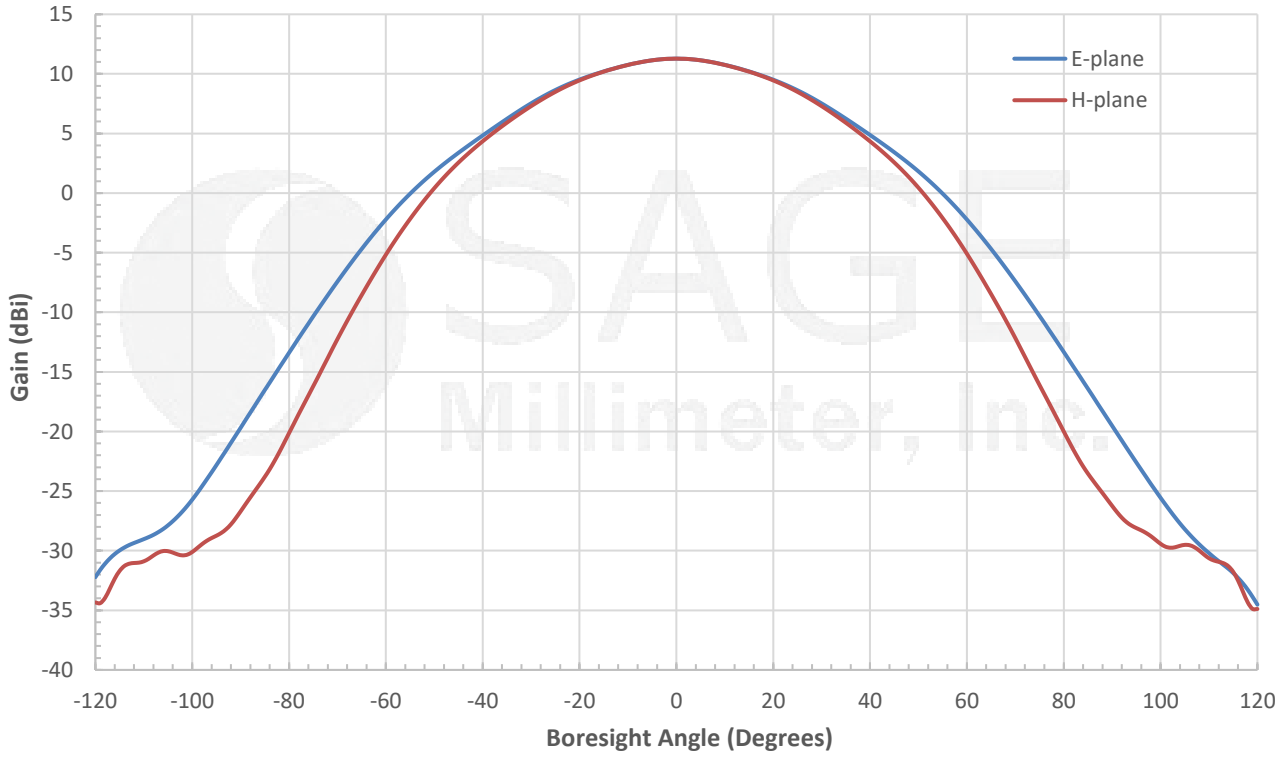
Simulated Antenna Patterns @ 36 GHz



Simulated Antenna Patterns @ 42 GHz



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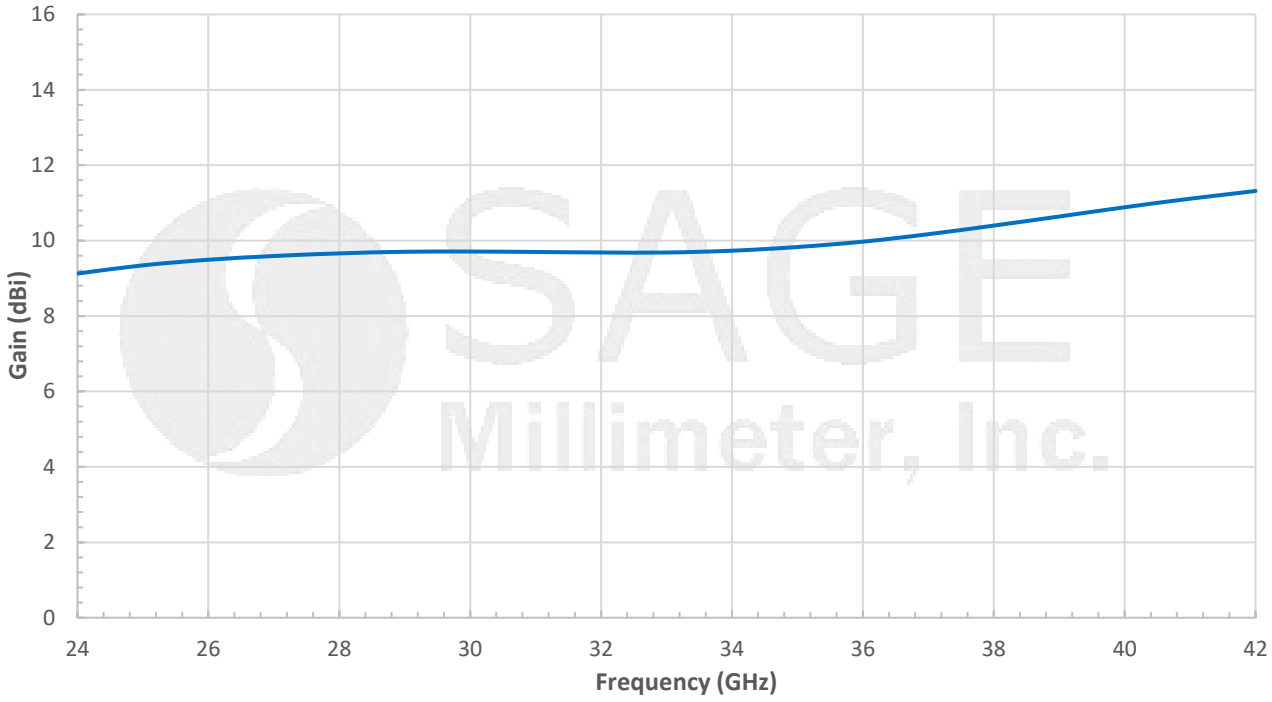
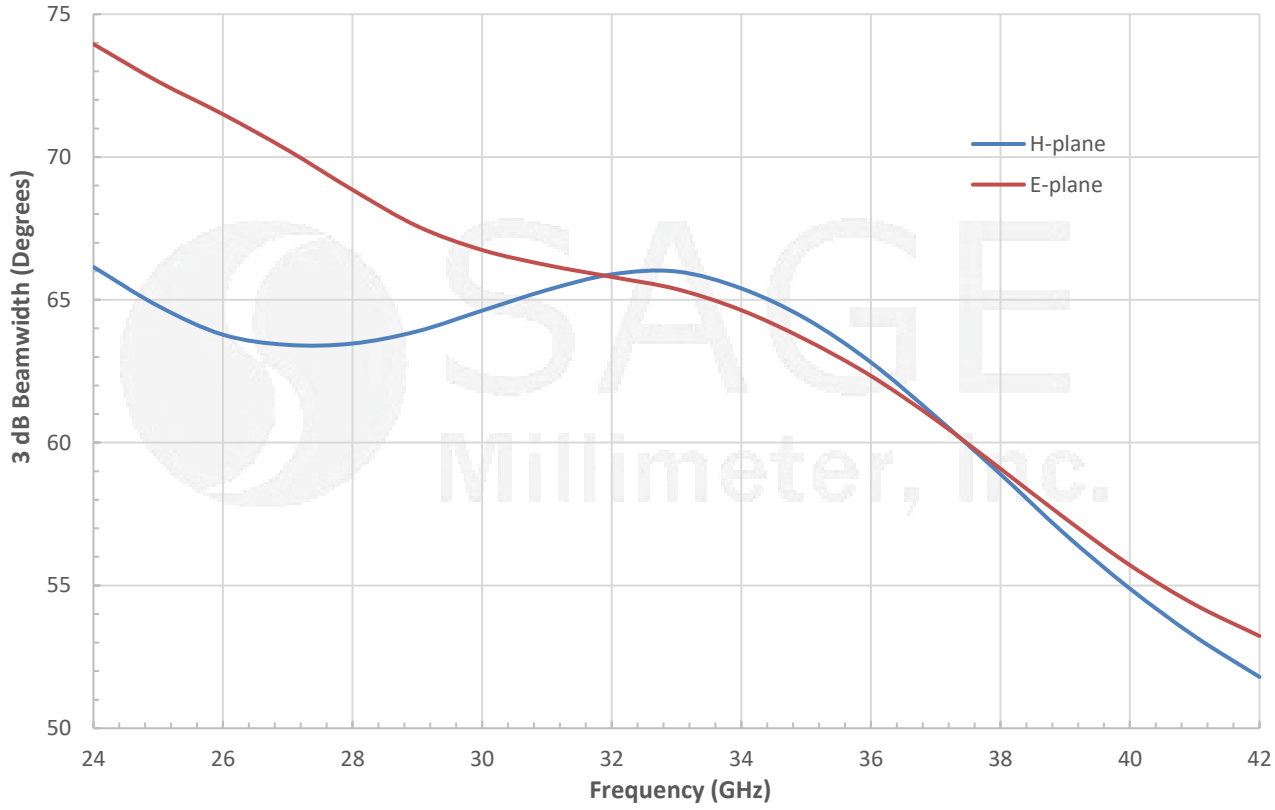
Simulated Gain vs. Frequency



Simulated E and H Plane 3dB Beamwidth vs. Frequency



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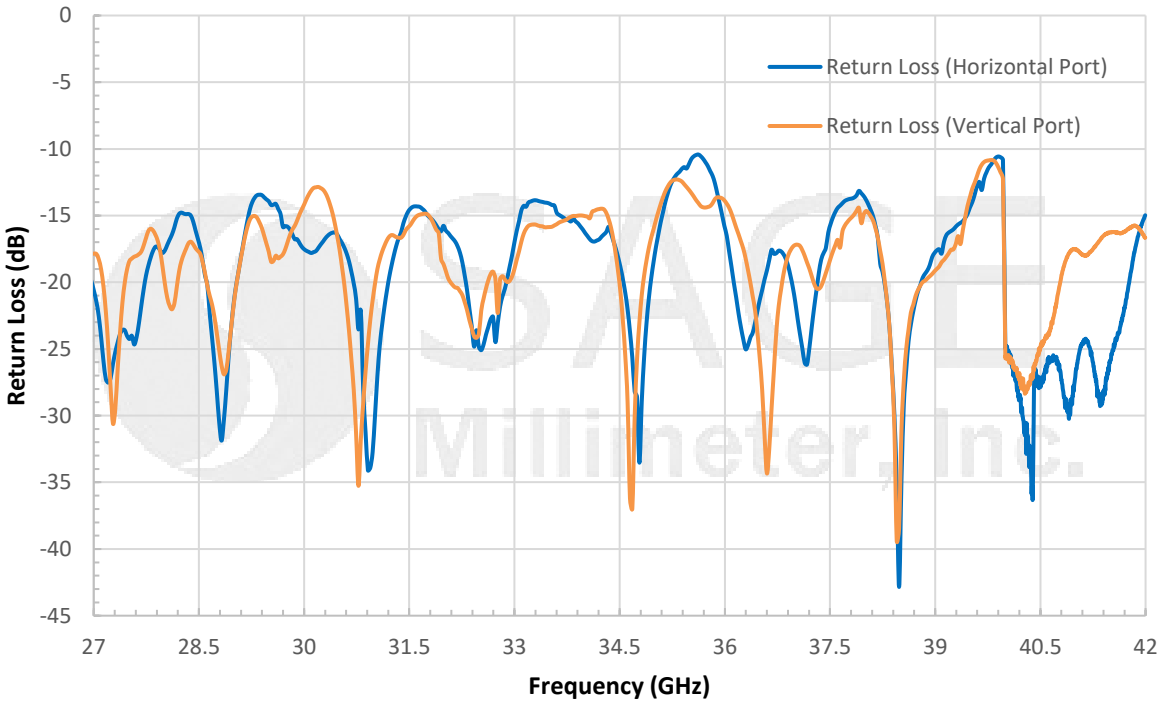
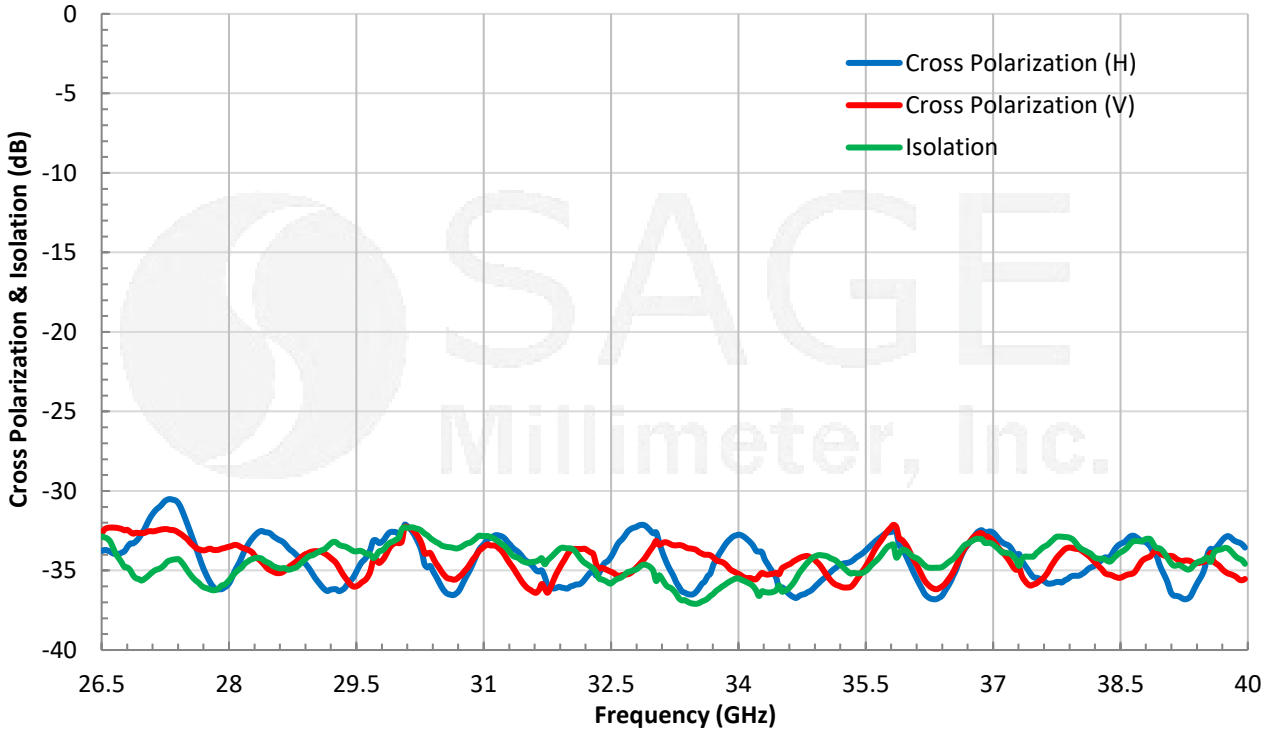
Typical Return Loss vs. Frequency



Measured Port Cross Polarization & Isolation vs. Frequency



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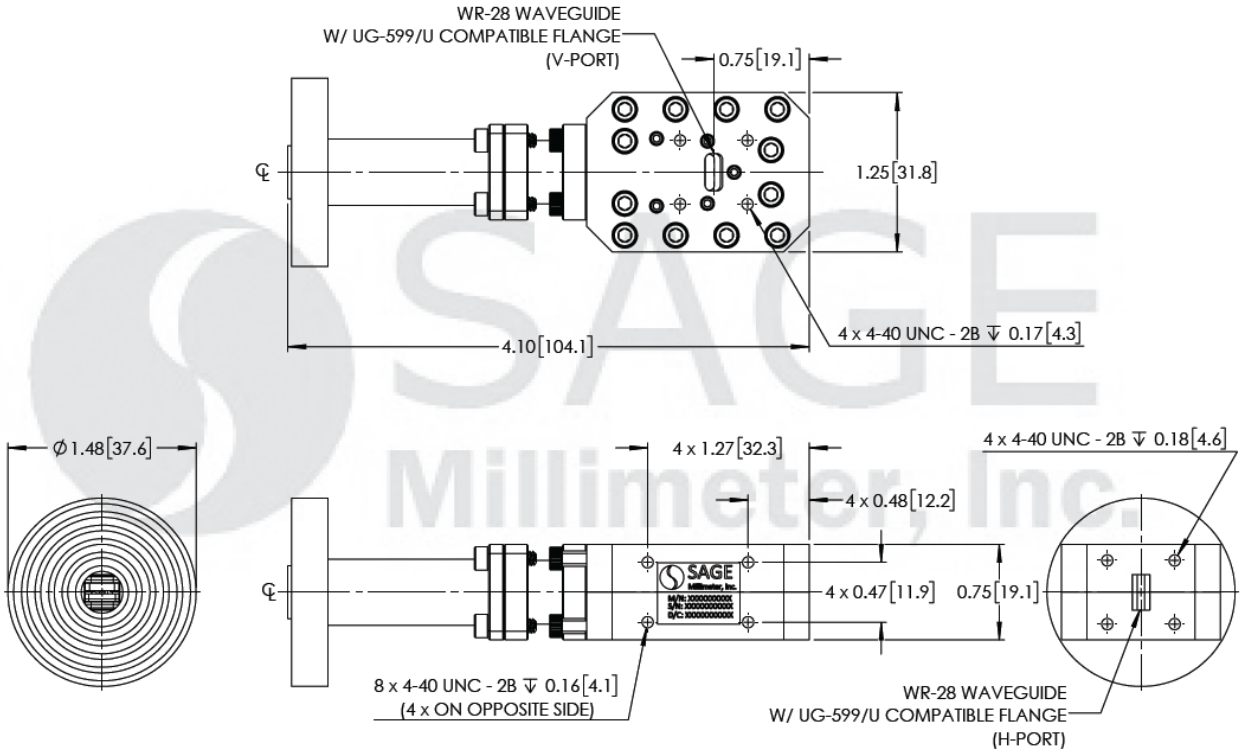
Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



Note:

- Antenna Pattern, Gain, & 3 dB Beamwidth data are simulated. Actual data may vary, sightly.
- Return Loss, Cross-polarization and Isolation data 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.

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