

WR-10 Dual Polarized Scalar Feed Horn Antenna, 75 to 110 GHz, 13 dBi**Description:**

SAF-7531141340-110-S1-100-DP is a dual polarized, WR-10 scalar feed horn antenna assembly that covers several popular 5G bands in the frequency range of 75 to 110 GHz. The antenna features an integrated orthomode transducer (OMT) that provides high port isolation 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. 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 30 dB typical port isolation between the horizontal and vertical ports. The horizontal and vertical ports are WR-10 waveguides with UG-387/U-M Anti-Cocking flanges and 4-40 threaded holes.

**Features:**

- 75 to 110 GHz Operations
- Linear and Circular Polarizations
- High Port Isolation

Applications:

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

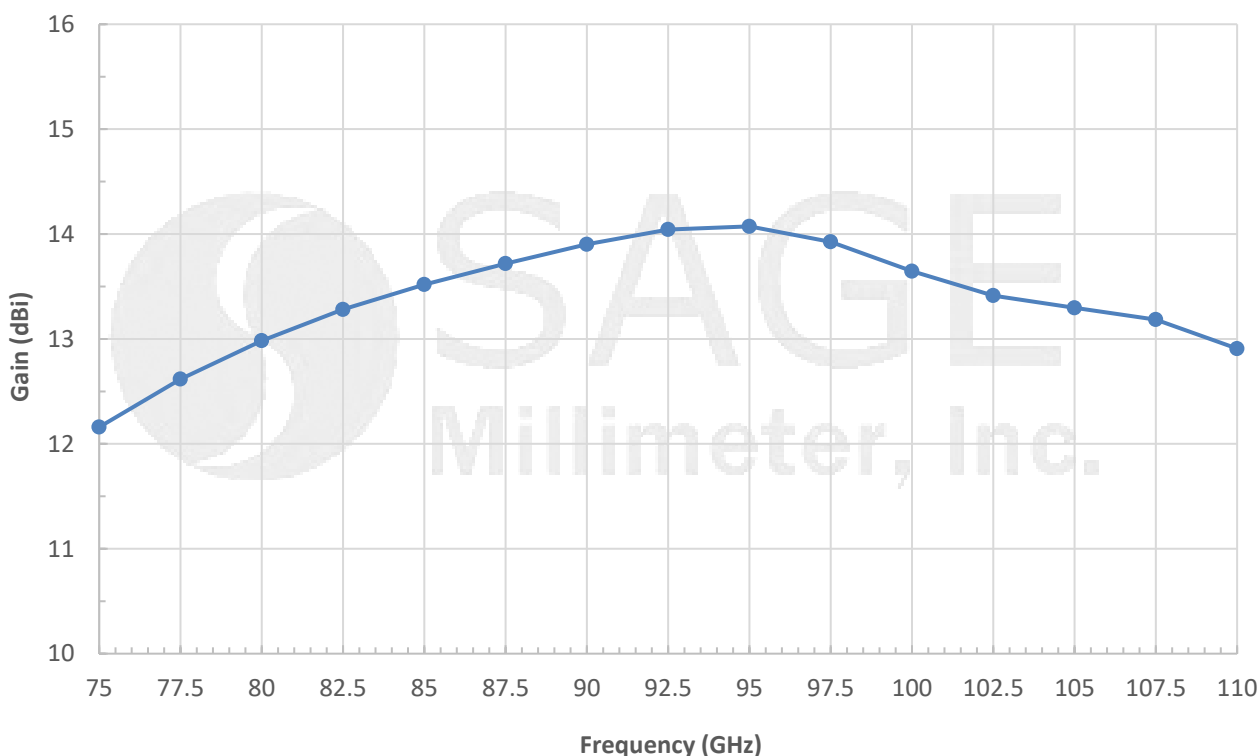
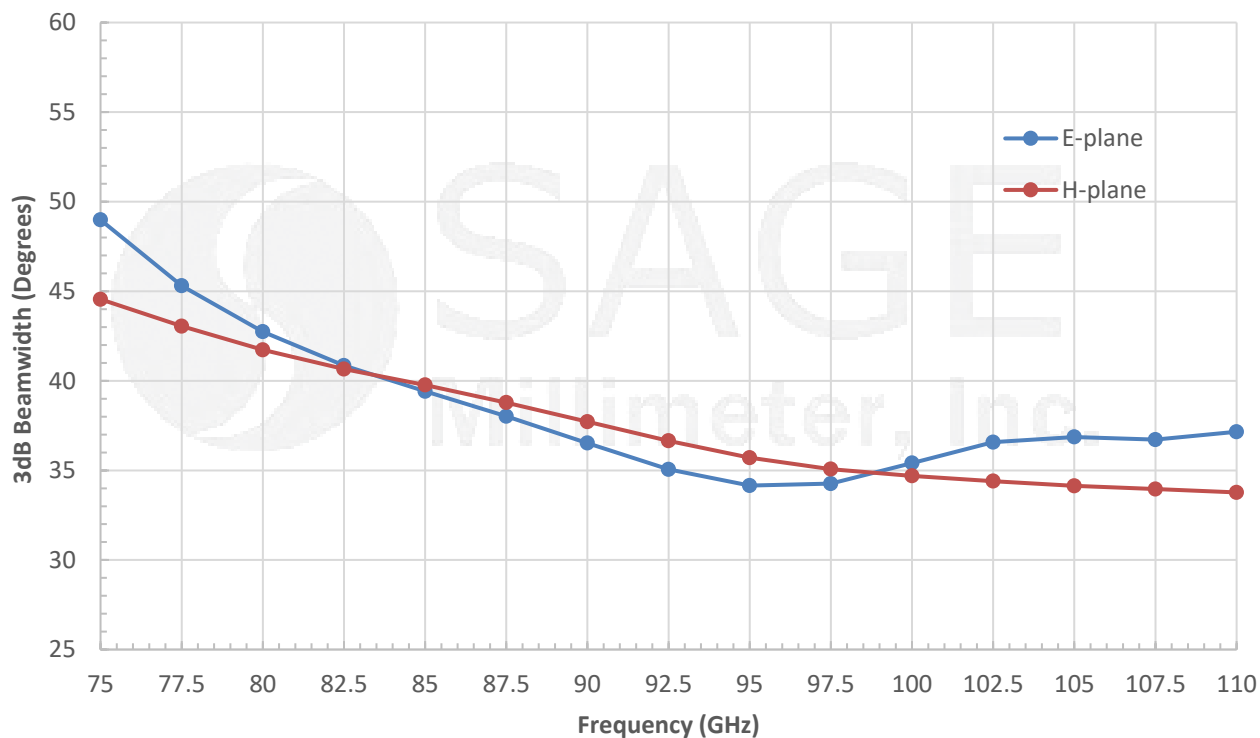
Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	75 GHz	92.5 GHz	110 GHz
Gain		13 dBi	
3 dB Beamwidth, E-plane		40°	
3 dB Beamwidth, H-plane		40°	
Sidelobe Levels		-25 dB	
V and H Port Isolation		30 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-10 Waveguide with UG-387/U-M Anti-Cocking Threaded Flange
Material	Aluminum, Brass
Finish	Gold Plated
Weight	0.1 lbs
Size	2.70" (L) x 0.8" (W) x 0.8" (H)
Outline	AF-CW13-110-100-A-DP

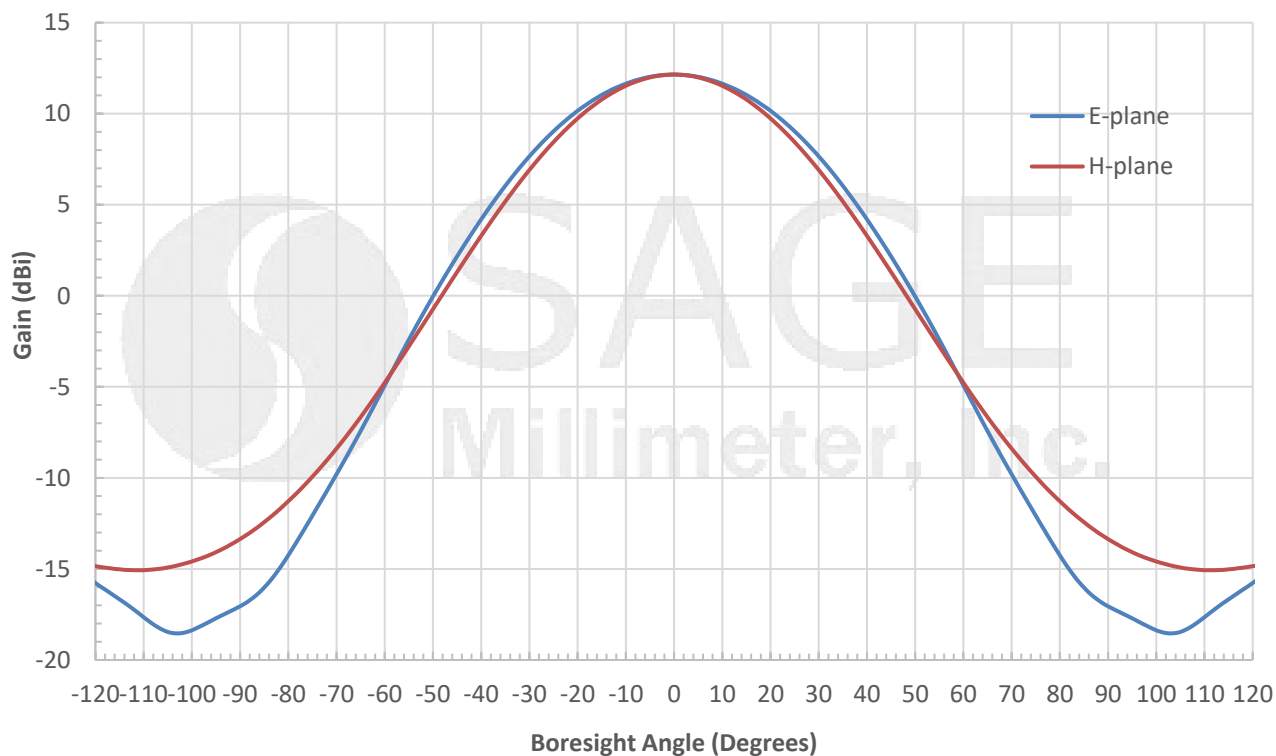


**WR-10 Dual Polarized Scalar Feed Horn Antenna, 75 to 110 GHz, 13 dBi****Simulated Gain vs. Frequency****Simulated E and H Plane 3 dB Beamwidth vs. Frequency**

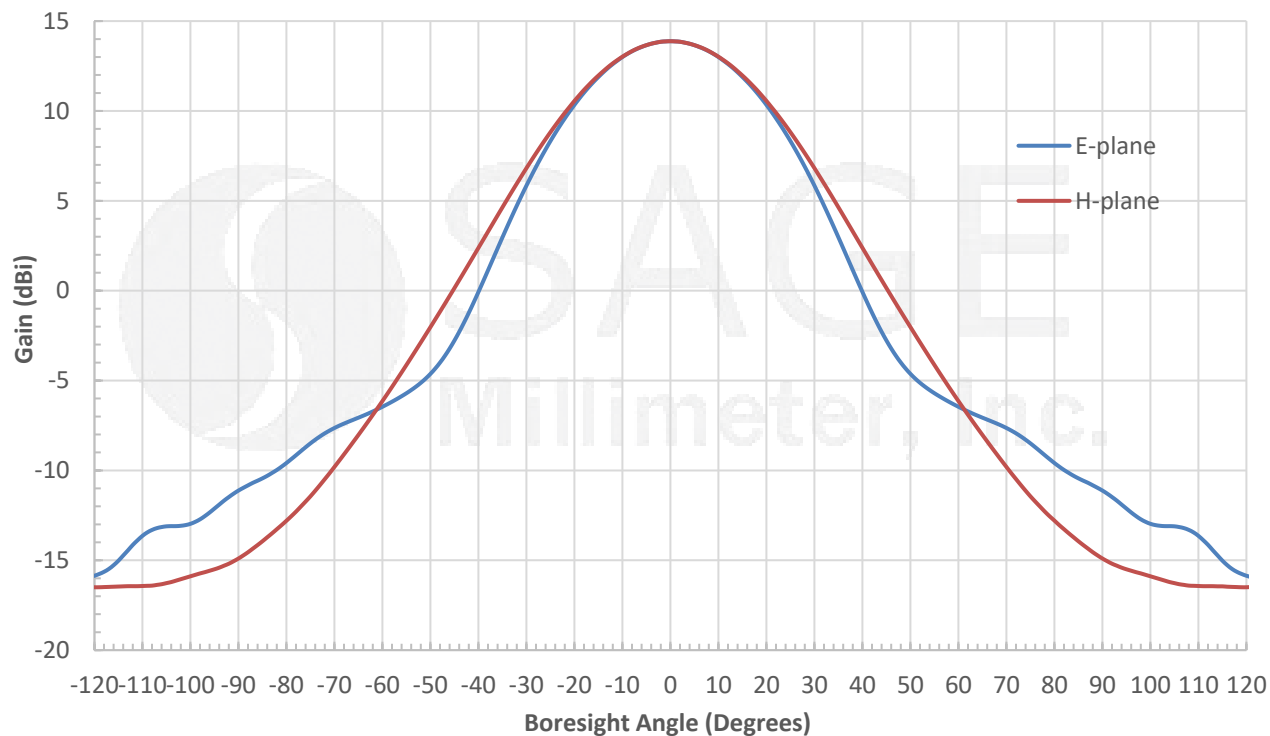


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Simulated Antenna Patterns @ 75 GHz



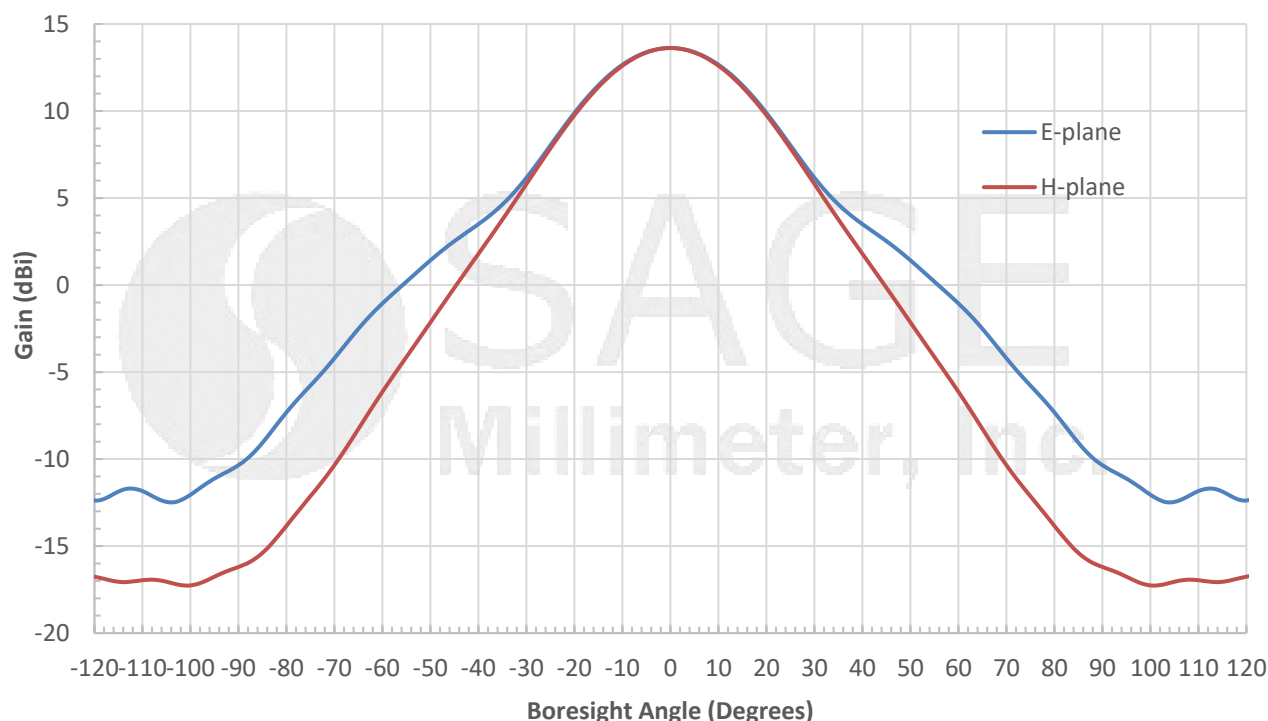
Simulated Antenna Patterns @ 90 GHz



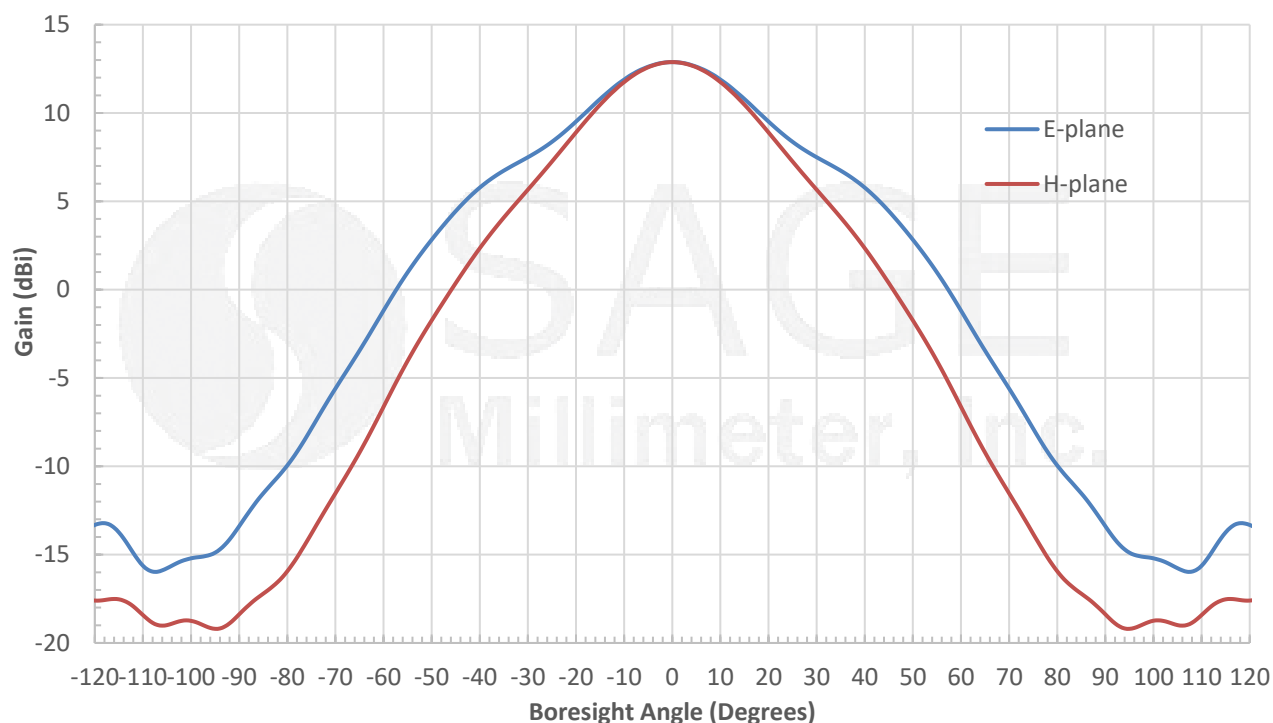


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Simulated Antenna Patterns @ 100 GHz

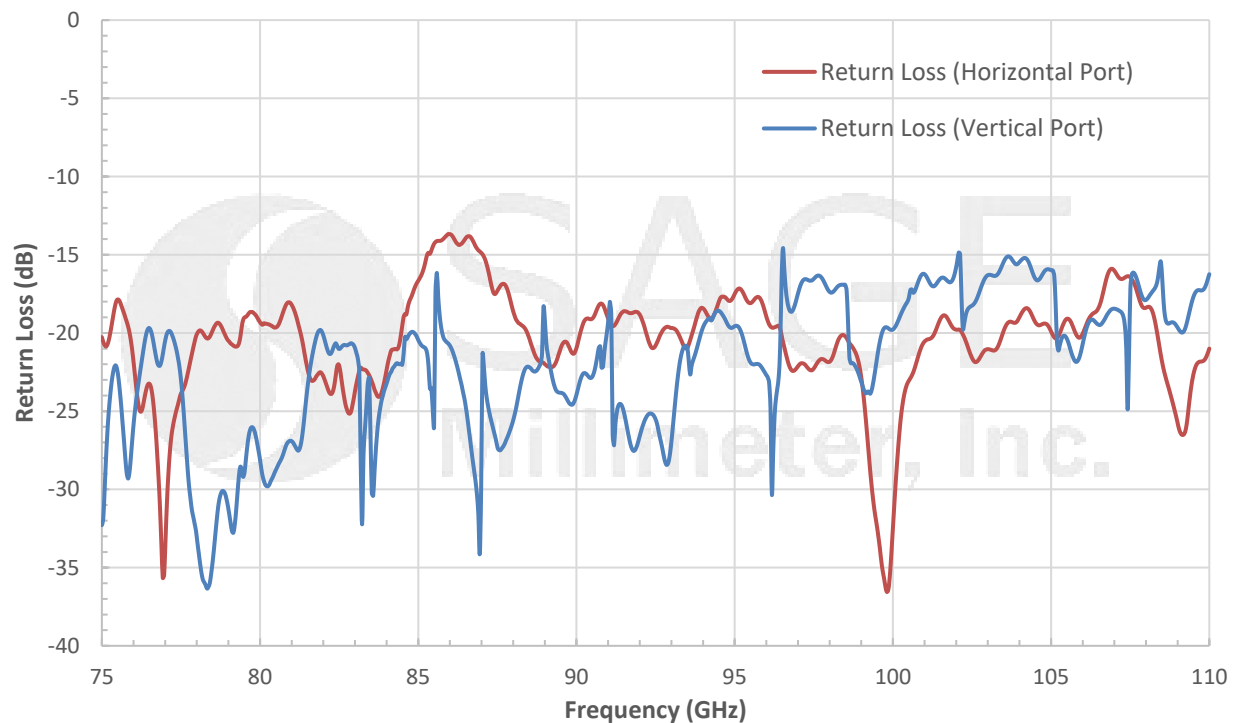


Simulated Antenna Patterns @ 110 GHz

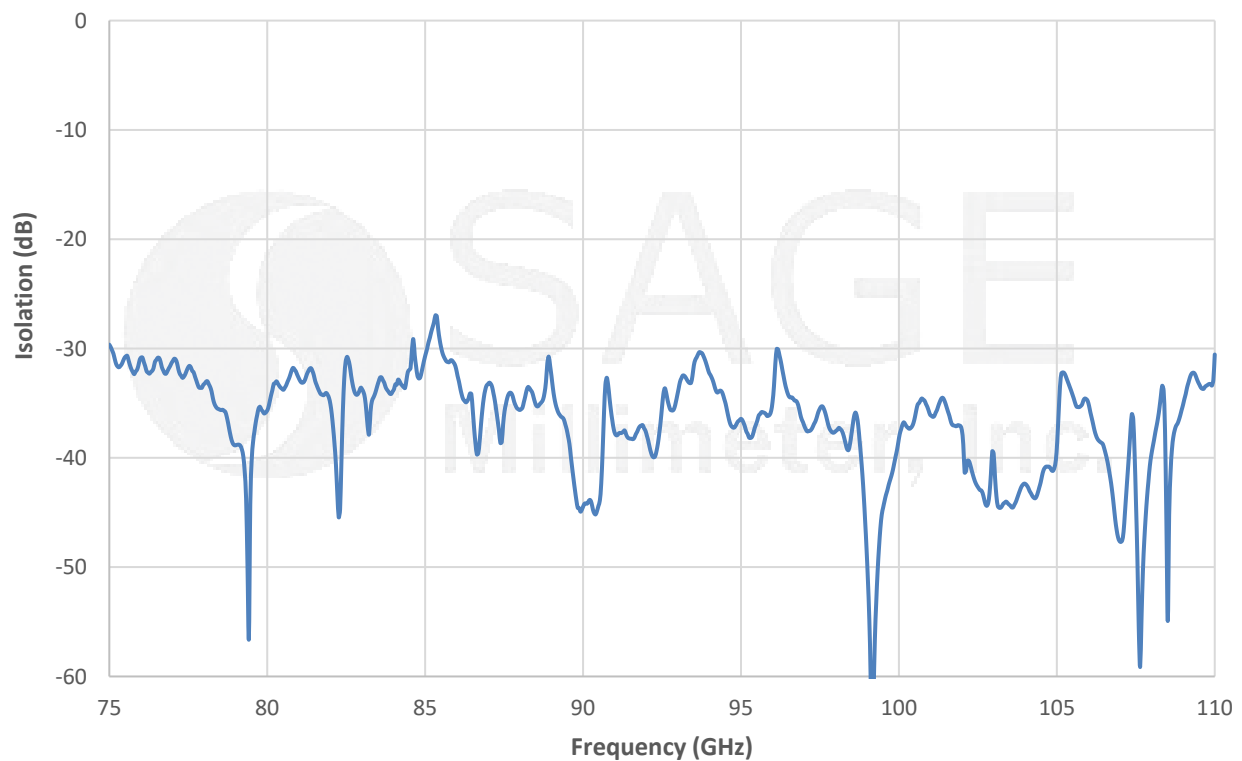


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Measured Return Loss vs. Frequency

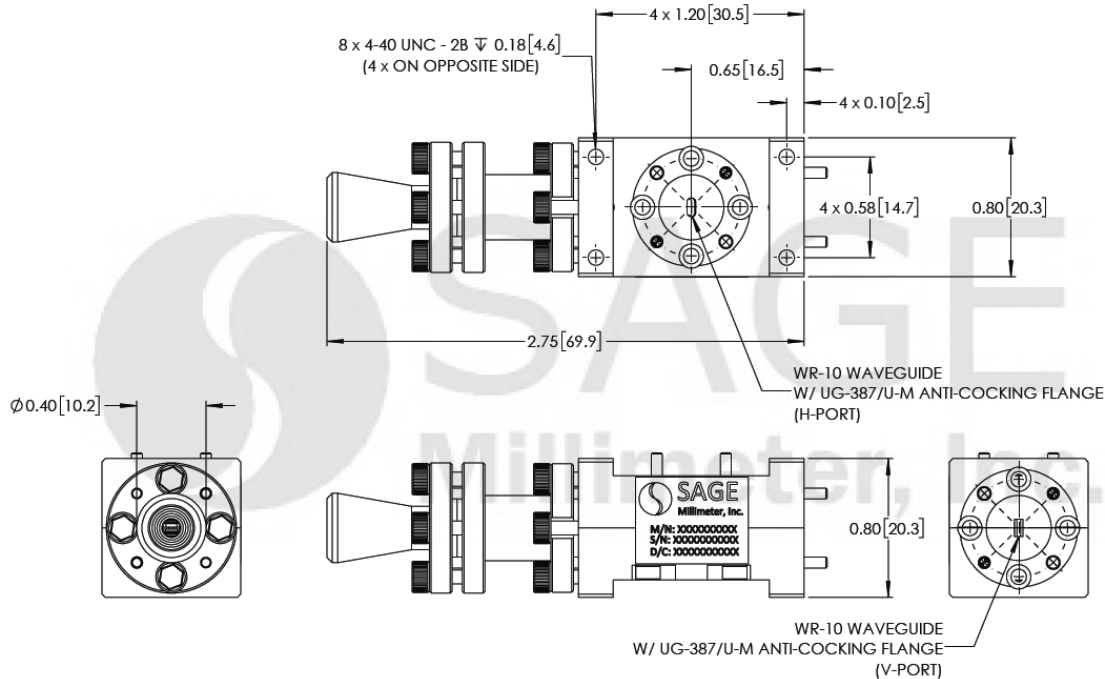


Measured Isolation vs. Frequency



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



Note:

- Antenna Patterns, Gain and 3 dB Beamwidth are simulated. Actual data may vary.
- Port Return Loss 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.
- Eravant 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.

