

WR-08 Dual Polarized Scalar Feed Horn Antenna, 90 to 140 GHz, 13 dBi Gain

Description:

SAF-9031441335-094-S1-080-DP is a dual polarized, WR-08 scalar feed horn antenna assembly that covers the frequency range of 90 to 140 GHz. The assembly 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 form. At center frequency, the horn antenna exhibits 13 dBi nominal gain, typical half power beamwidth of 35 degrees and sidelobe levels of -25 dB or lower. The OMT exhibits 30 dB typical port isolation between the horizontal and vertical ports. The horizontal and vertical ports are WR-08 waveguides with UG-387/U-M anti-cocking flanges. Coaxial port configurations are also available under different model numbers. The orthomode transducer (**Model SAT-FF-08008-S1**), compact square to circular transition (**Model SWT-080094-SB-C-QC**), and scalar feed horn antenna (**Model SAF-9031441535-094-S1**) can be purchased separately.



Features:

- 90 to 140 GHz Operations
- Linear and Circular Polarizations
- High Port Isolation

Applications:

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

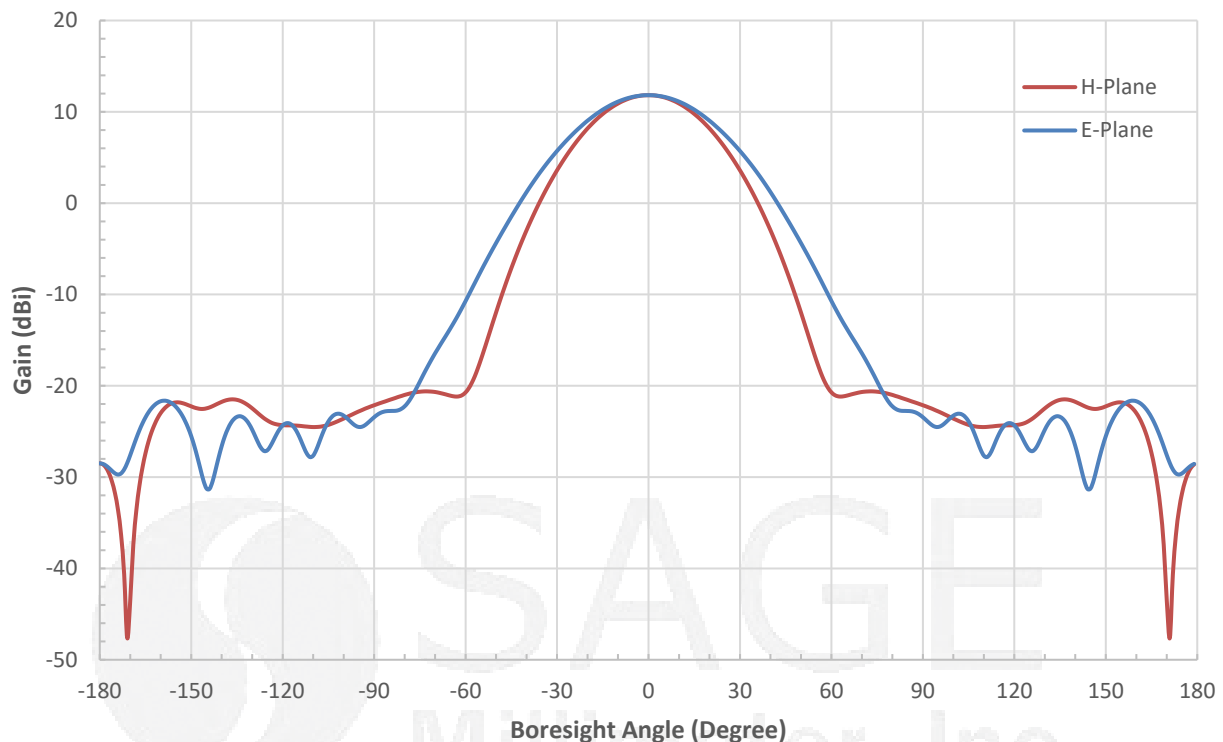
Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	90 GHz	115 GHz	140 GHz
Gain		13 dBi	
3 dB Beamwidth, E-plane		35°	
3 dB Beamwidth, H-plane		35°	
Sidelobes, E-plane		-25 dB	
Sidelobes, H-plane		-25 dB	
Isolation		30 dB	
Return Loss		15 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C



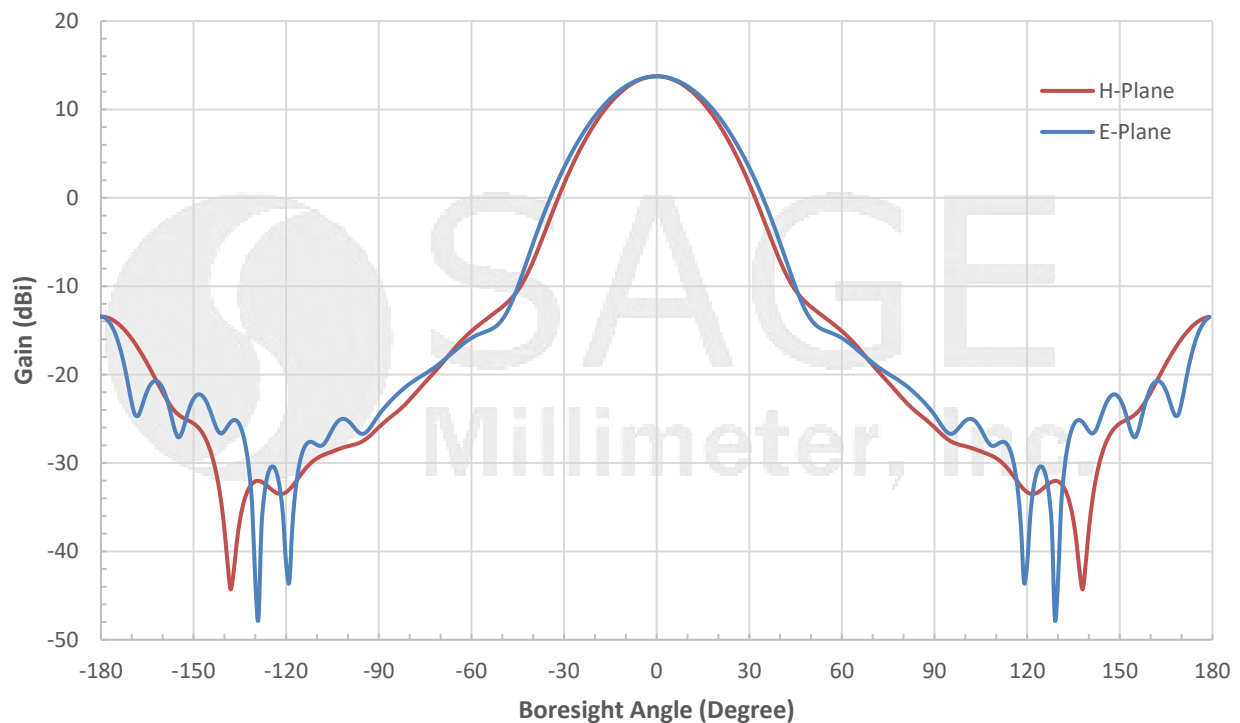
WR-08 Dual Polarized Scalar Feed Horn Antenna, 90 to 140 GHz, 13 dBi Gain**Mechanical Specifications:**

Item	Specification
Horizontal and Vertical Ports	WR-08 Waveguide with UG-387/U-M Anti-Cocking Flange
Material	Aluminum, Brass
Finish	Gold Plated
Weight	3.6 Oz
Size	3.50" (L) x 0.80" (W) x 0.80" (H)
Outline	AF-CF13-094-080-A-DP

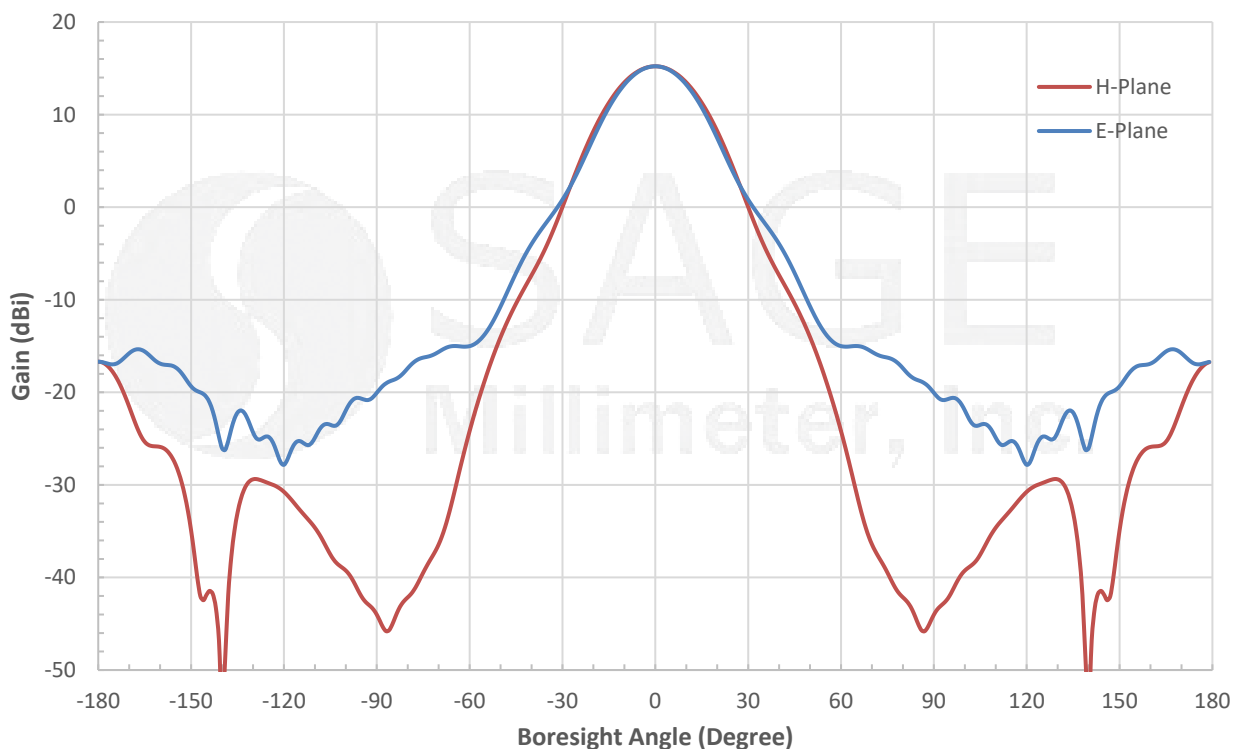
Simulated Antenna Patterns @ 90 GHz

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Simulated Antenna Patterns @ 115 GHz

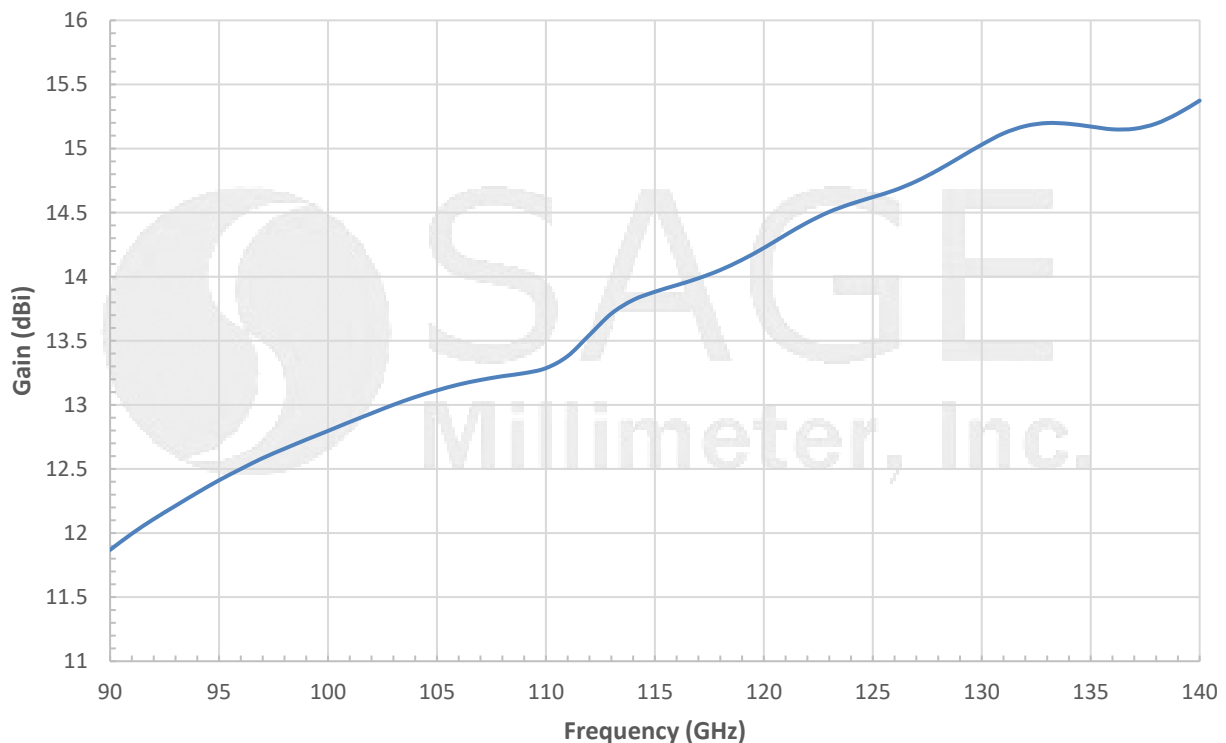


Simulated Antenna Patterns @ 140 GHz

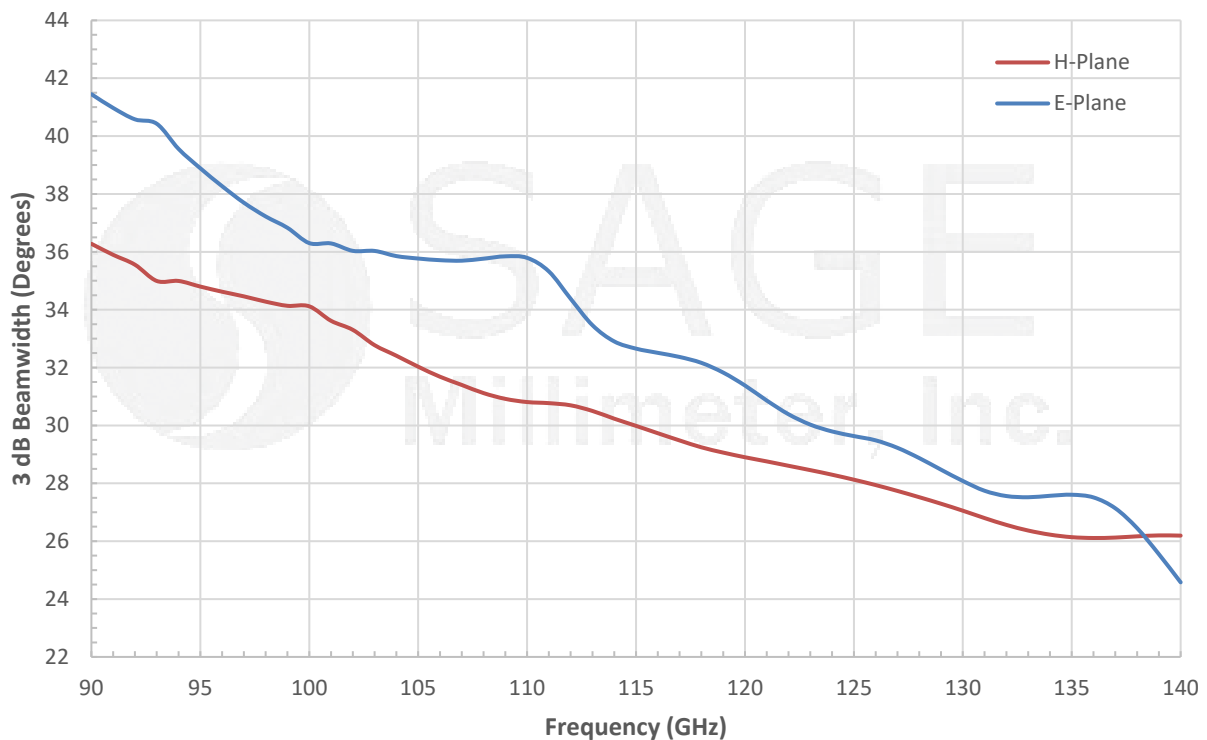


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Simulated Gain vs. Frequency

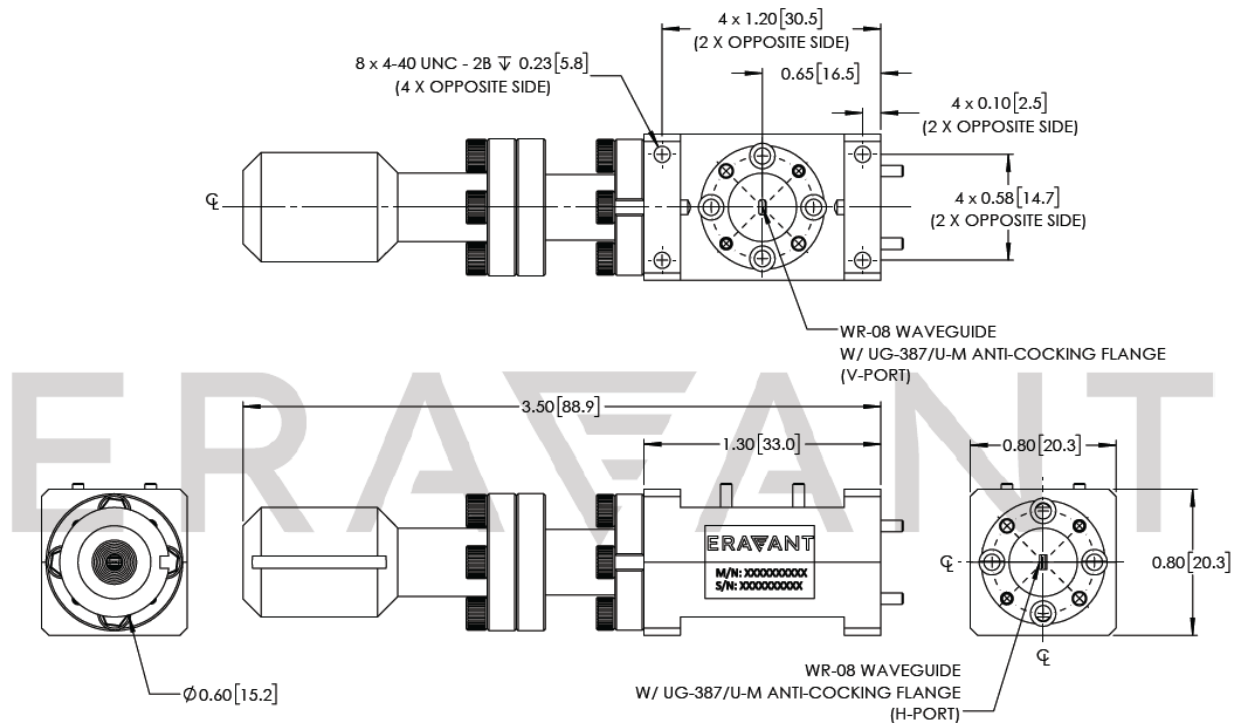


Simulated 3 dB Beamwidth vs. Frequency



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



Note:

- Antenna Patterns, Gain, & 3 dB Beamwidth data are simulated. Actual data may vary, 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 or waveguide will cause performance degradation and possible device damage.

