



W-Band Lens Corrected Antenna, 75 to 110 GHz, 30 dBi Gain

Description:

Model SAL-7531143004-094-S1 is a W-band lens corrected antenna that operates from 75 to 110 GHz. At a center frequency of 94 GHz, the antenna delivers 30 dBi nominal gain, 4.3 degrees typical half power beamwidth on the E-plane, and 5.3 degrees typical half power beamwidth on the H-plane. The antenna employs a low loss lens to offer excellent aperture efficiency and low sidelobe levels. The lens corrected antenna is equipped with a 0.094" diameter circular waveguide and UG-387/U-M flange as its input port. It supports linear and circular polarized waveforms. SAGE Millimeter also offers model **SAL-7531143004-10-S1** with the input port of WR-10 waveguide to support only linear polarized waveforms.



Features:

- Center Fed
- Low Sidelobes
- Low Cross Polarization

Applications:

- Radar Systems
- Communication Systems
- Sensor Systems

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	75 GHz	94 GHz	110 GHz
Gain		30 dBi	
3 dB Beamwidth, E-Plane		4.3°	
3 dB Beamwidth, H-Plane		5.3°	
Sidelobes, E-Plane		-17 dB	
Sidelobes, H-Plane		-25 dB	
Polarization	Linear and Circular		
Return Loss		20 dB	
Specification Temperature		+25 °C	
Operating Temperature	-45 °C		+85 °C

Mechanical Specifications:

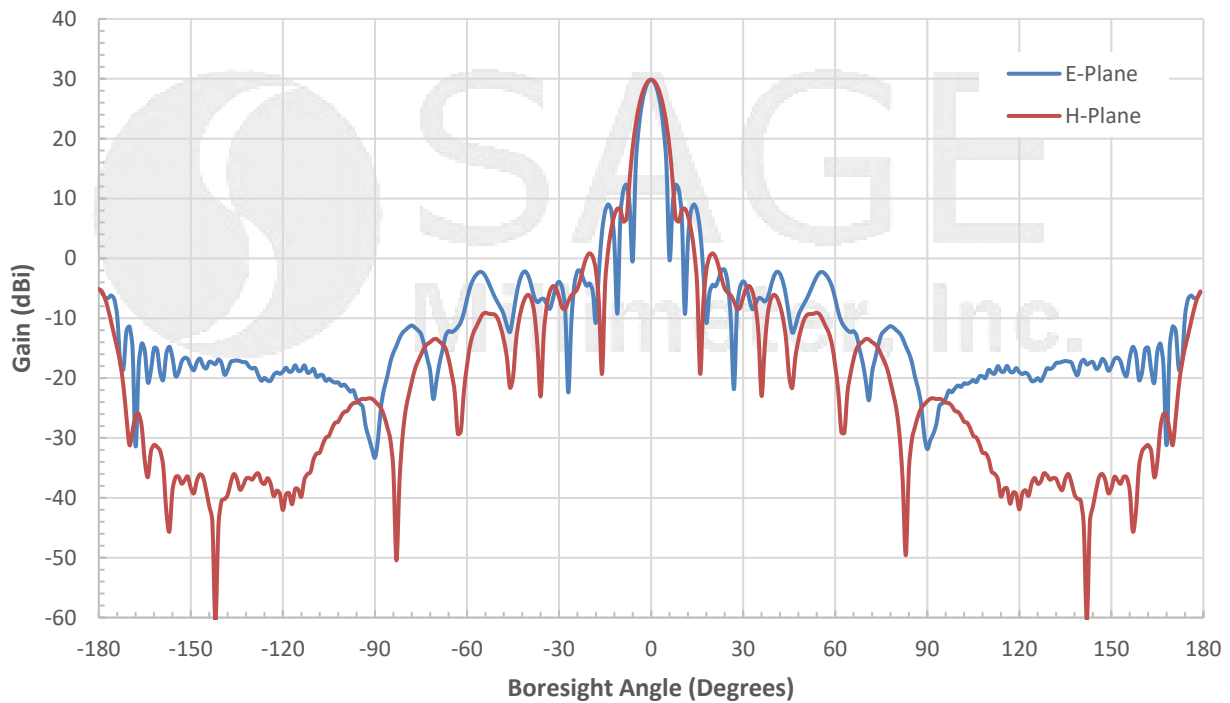
Item	Specification
Antenna Port	Ø 0.094" Circular Waveguide with UG-387/U-M Flange
Lens Diameter	1.75"
Lens Material	HDPE
Horn Material	Aluminum
Finish	Gold Plated
Weight	1.8 Oz
Outline	AL-CW30-094



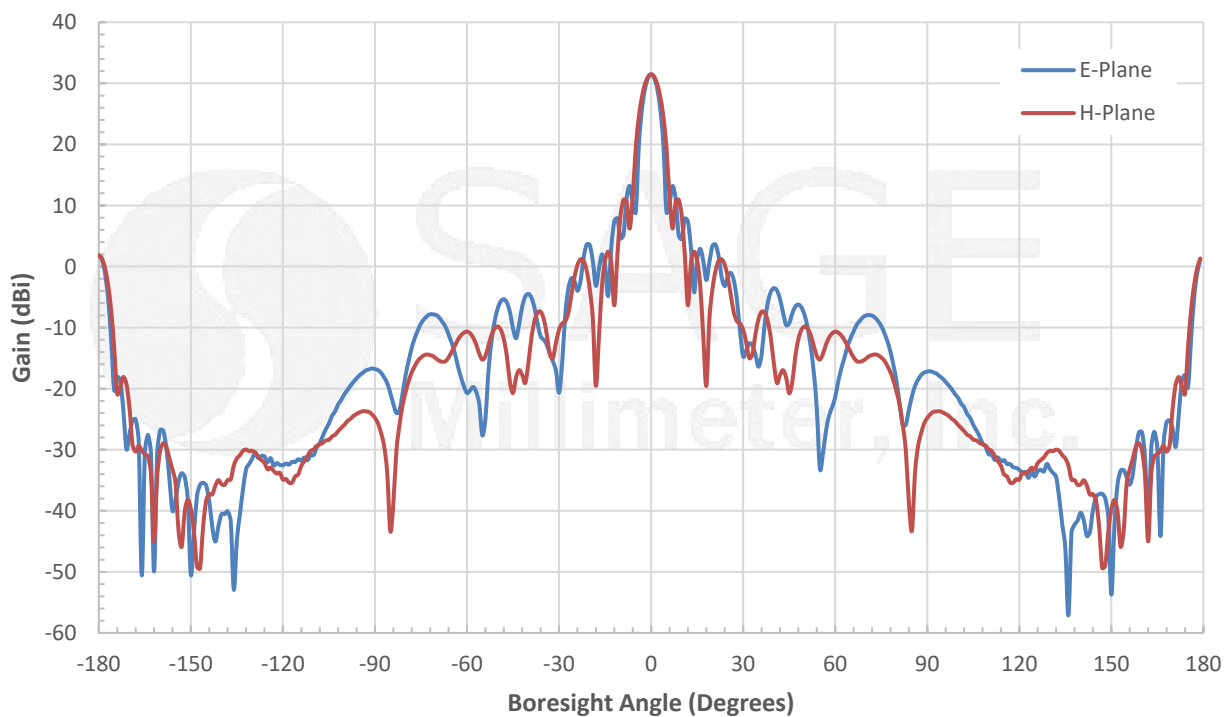


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Simulated Antenna Patterns @ 75 GHz



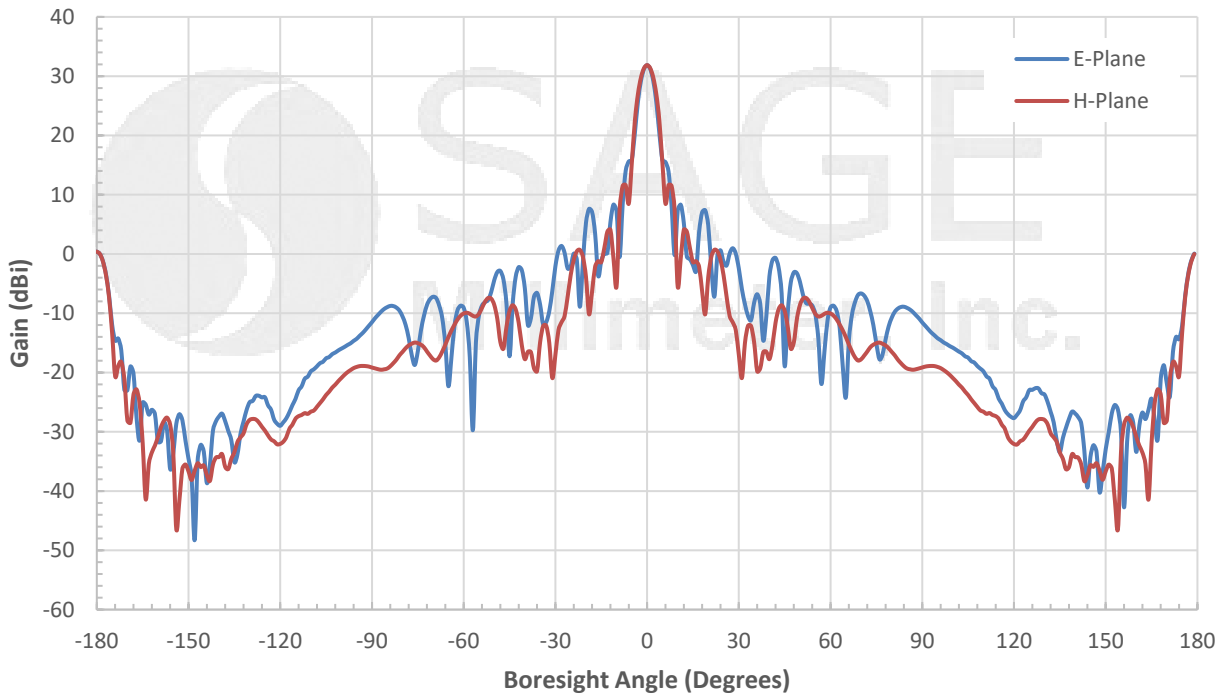
Simulated Antenna Patterns @ 92 GHz



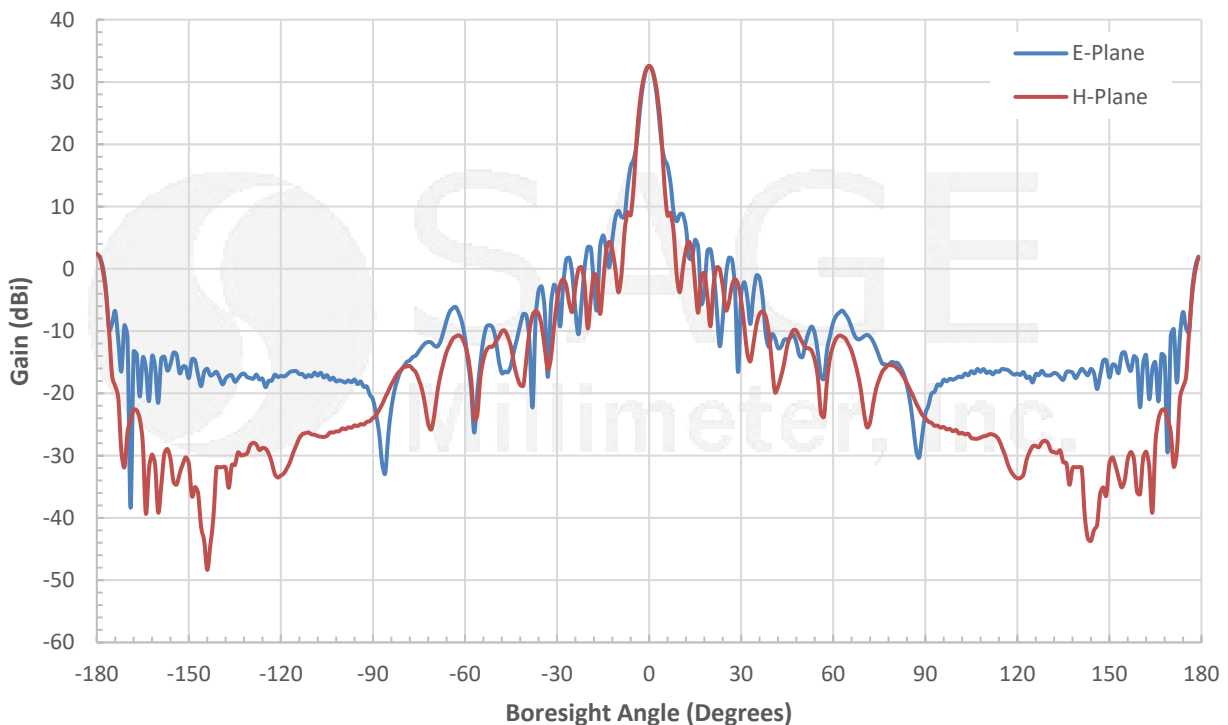


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Simulated Antenna Patterns @ 93 GHz



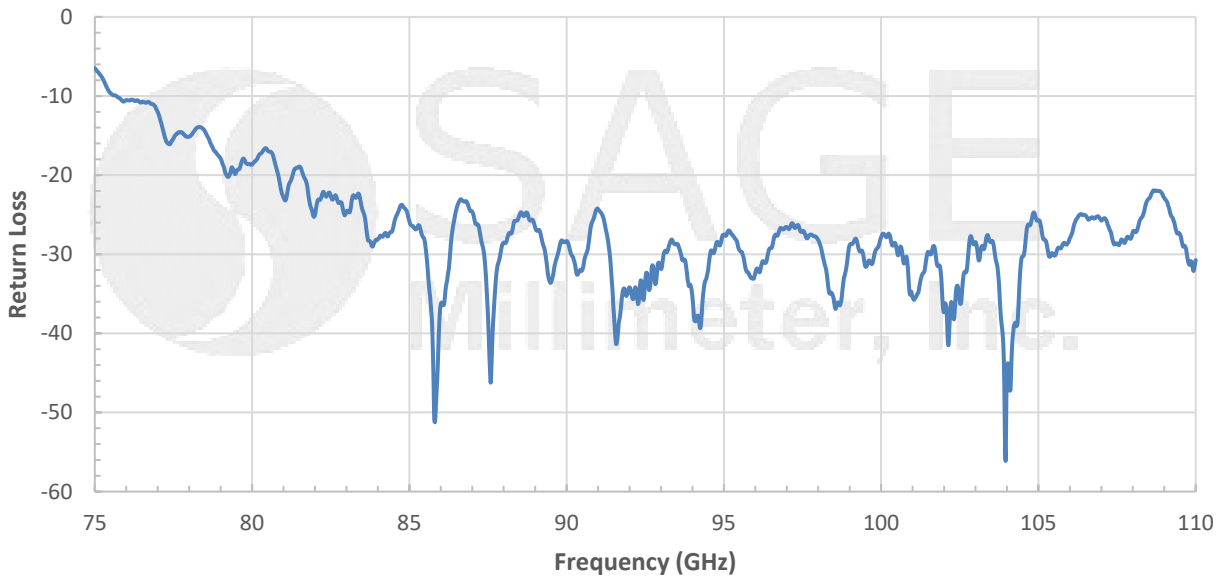
Simulated Antenna Patterns @ 110 GHz



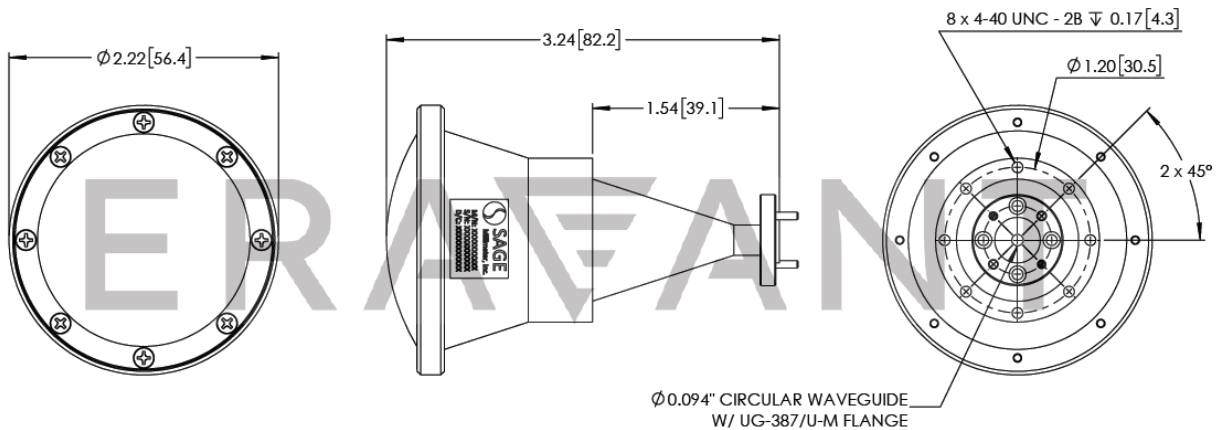


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Typical Measured Return Loss vs Frequency



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



Note:

- Antenna patterns and gain presented are simulated. Actual data may vary unit to unit, slightly.
- Return loss data presented is collected from a sample lot. Actual data may vary unit to unit.
- 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.

