

## E-Band Gaussian Optics Antenna, 71 to 86 GHz, 40 dBi Gain, 6"

### Description:

**Model SAG-7138634002-110-S1** is a 6" E-Band Gaussian antenna that operates from 71 to 86 GHz. The Gaussian antenna delivers a 40 dBi nominal gain and 1.8-degree typical half power beamwidth at center frequency. The antenna supports linear and circular polarized waveforms and employs a corrugated feed horn to offer excellent aperture efficiency, high cross polarization rejections, and low sidelobe levels. This model is equipped with a  $\varnothing$  0.110" circular waveguide with UG-387/U-M flange as its input port. By adding a mode transition, model **SWT-12110-SB**, the input port becomes a standard WR-12 rectangular waveguide, which can only support linear polarized waveforms.



### Features:

- Center Fed
- Low Sidelobes
- Low Cross Polarization
- Linear and Circular Polarized Waveforms

### Applications:

- Radar Systems
- Communication Systems
- Plasma Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	71 GHz		86 GHz
Gain		40 dBi	
3 dB Beamwidth		1.8°	
Sidelobes		-20 dB	
Polarization	Linear and Circular		
Return Loss		15 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

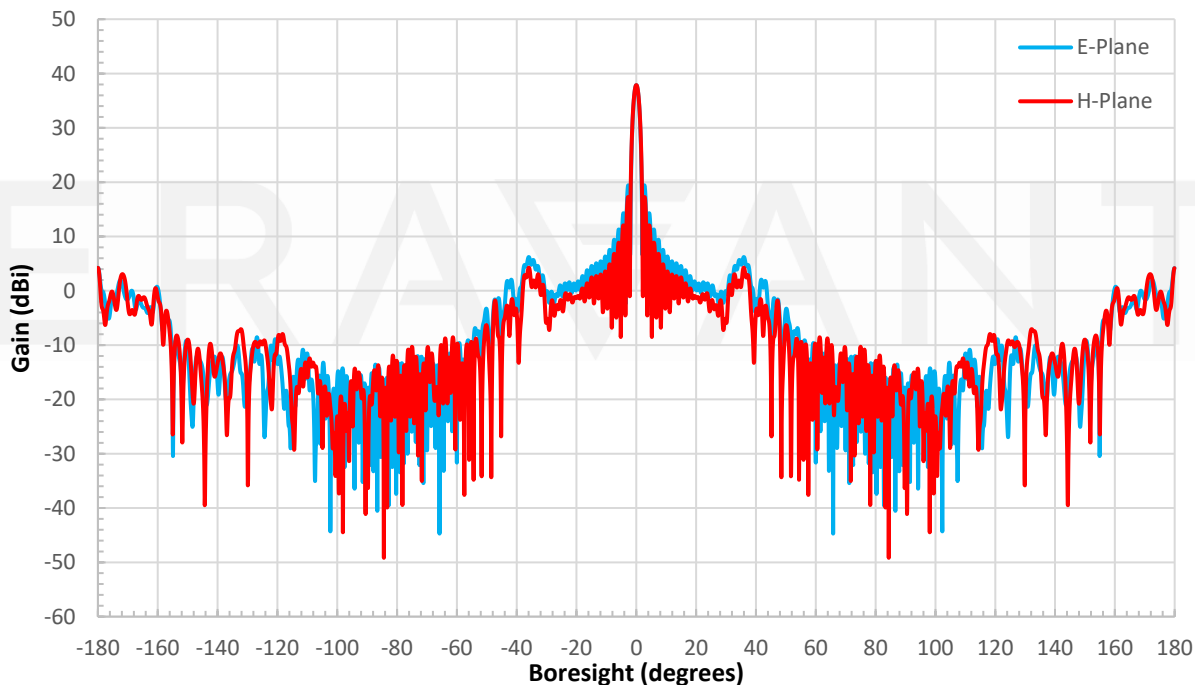
### Mechanical Specifications:

Item	Specification
Antenna Port	$\varnothing$ 0.110" Circular Waveguide with UG-387/U-M Flange
Material	Aluminum
Finish	Black Anodized
Weight	7.5 lbs.
Lens Diameter	6.0"
Outline	AG-CE40-110

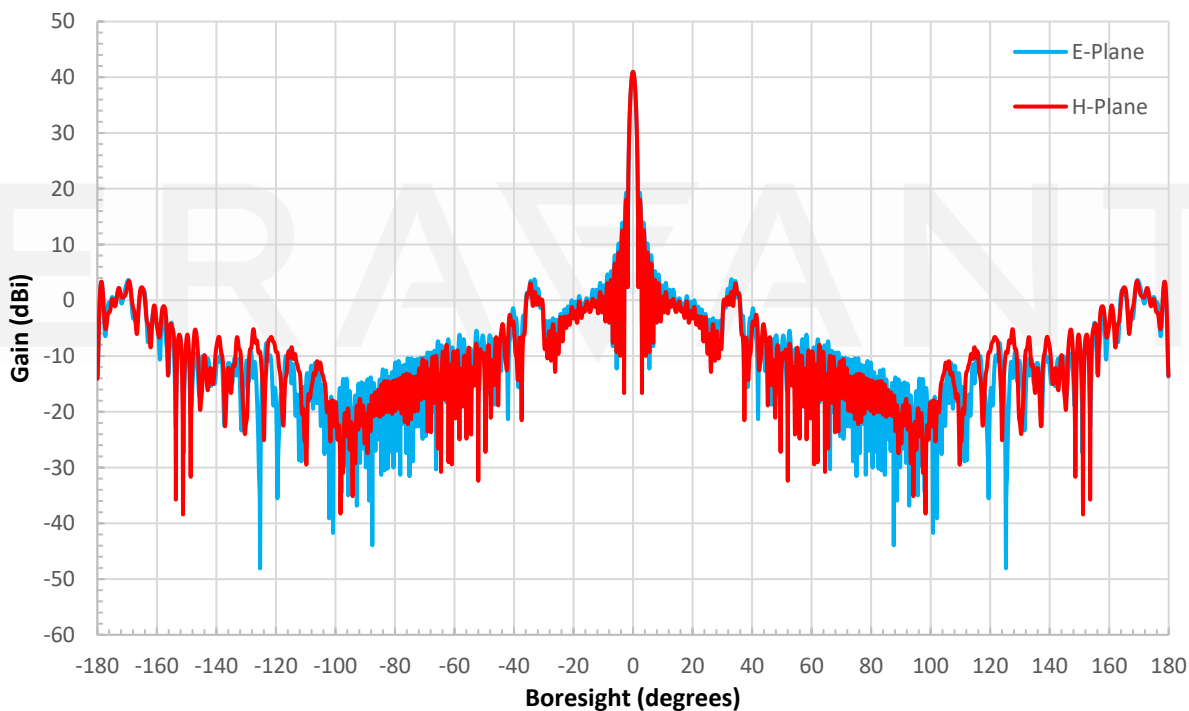


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### Simulated Antenna Patterns @ 70 GHz

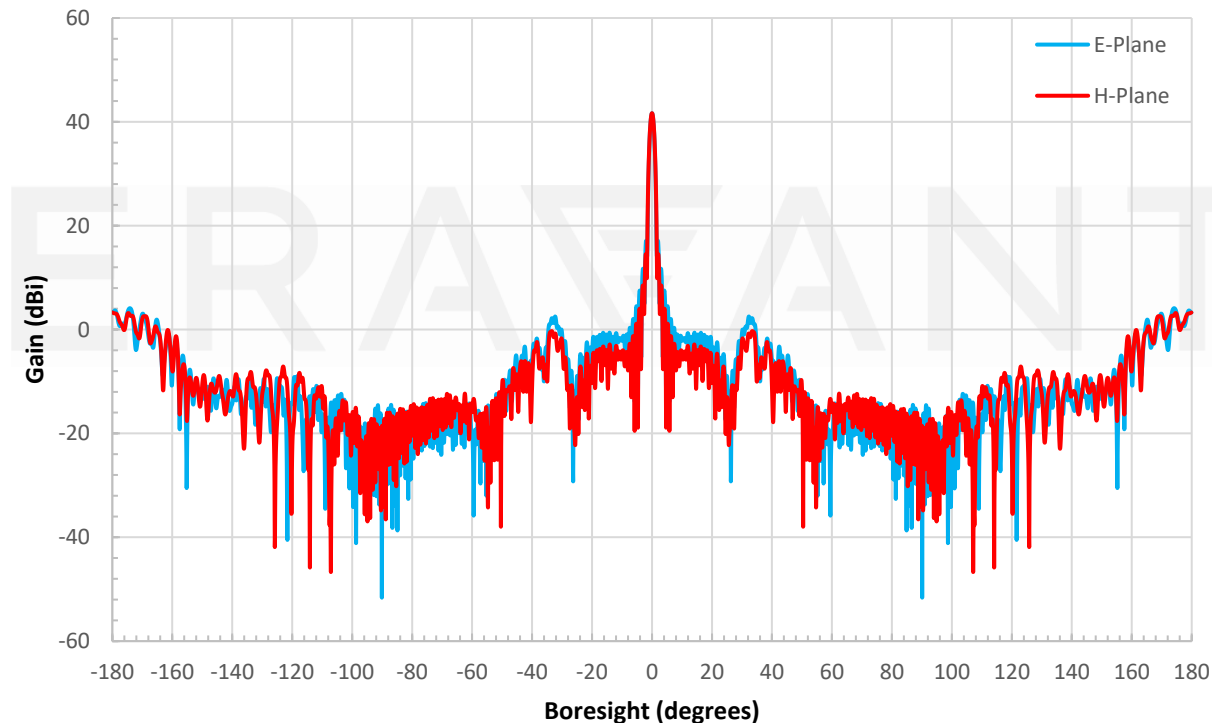


### Simulated Antenna Patterns @ 85 GHz

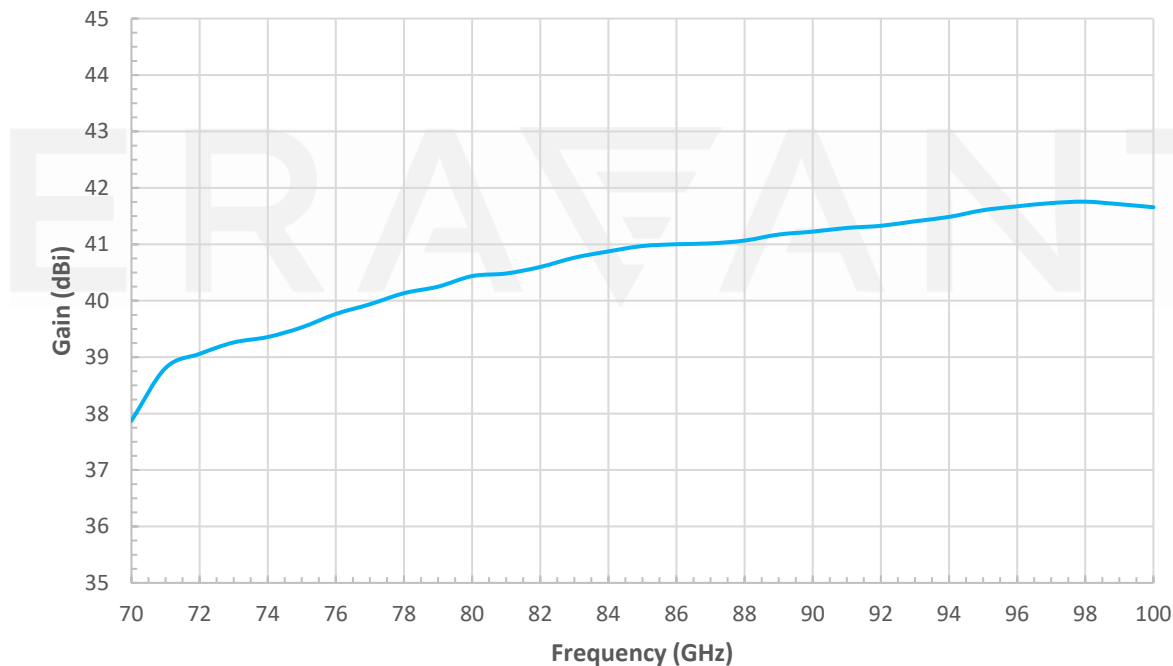


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### Simulated Antenna Patterns @ 100 GHz

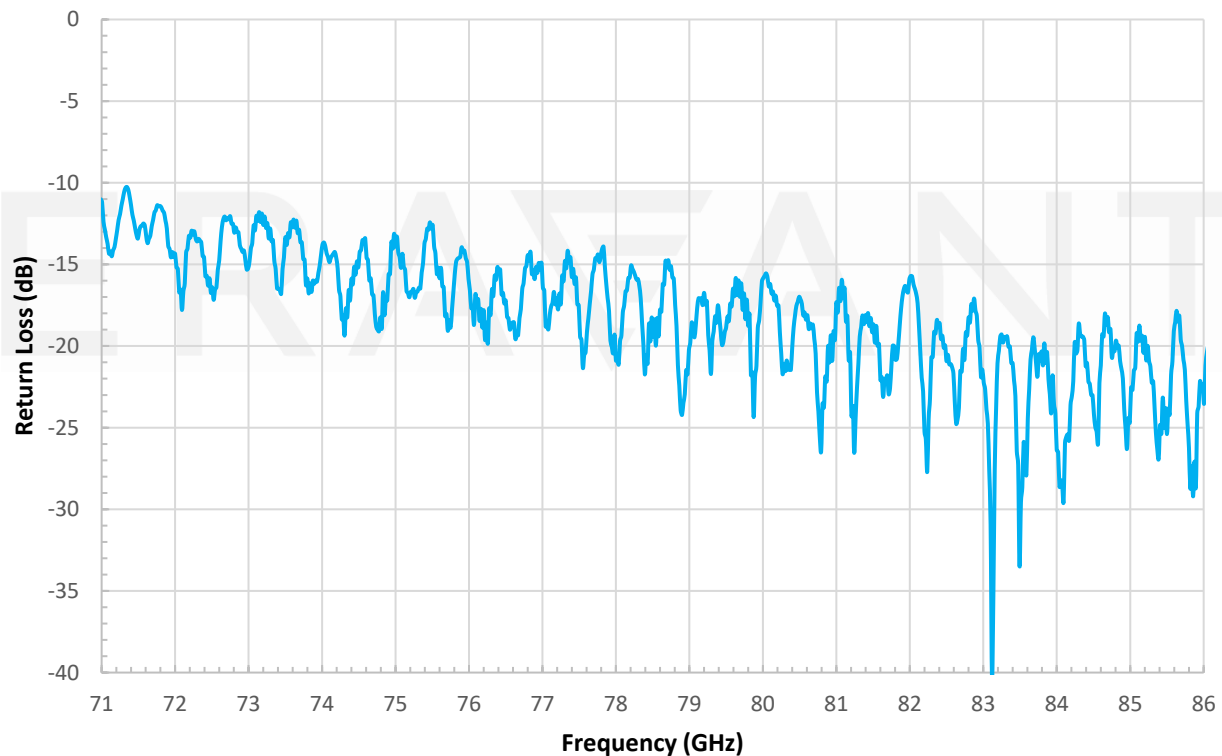


### Simulated Gain vs. Frequency

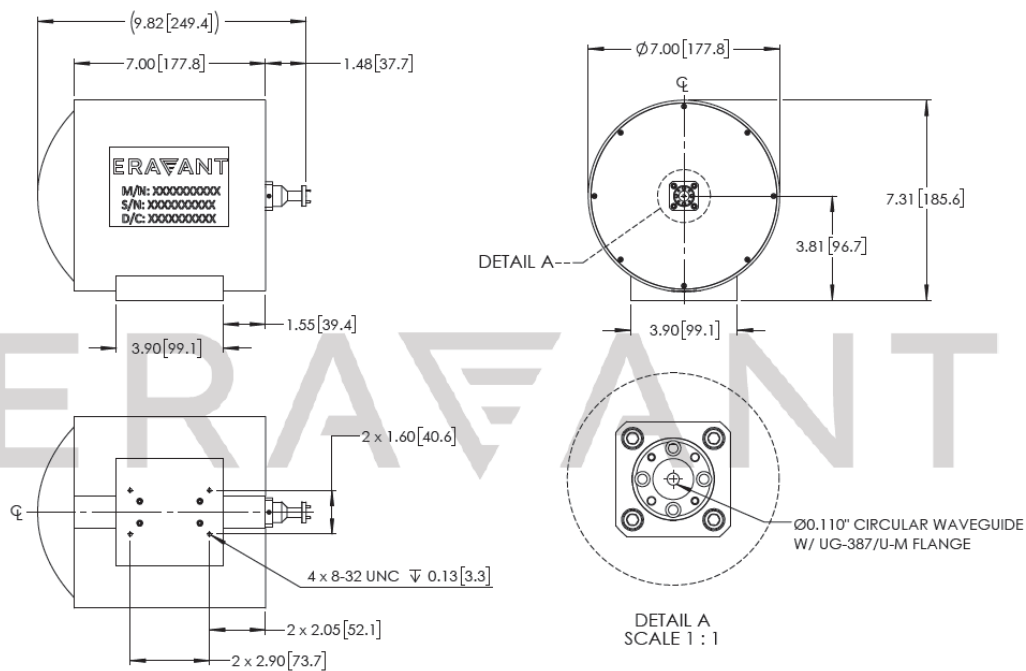


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### Measured Return Loss vs. Frequency



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



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### Note:

- All antenna pattern and gain data presented is simulated. Actual data may vary, slightly.
- Return loss data was presented using a limited sample lot. Actual data may vary unit to unit.
- Eravant reserves the right to change the information presented without notice.
- The operation frequency of the antenna can be extended to a wider range with small performance degradation at the edges of the band.

### Caution:

- Foreign objects in the waveguide will affect device performance and may damage the antenna.

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