



## D Band Gaussian Optics Antenna, 0.059" Dia Circular Waveguide, 3"

### Description:

**Model SAG-1441544002-059-S1** is a 3" D-Band Gaussian antenna that operates from 140 to 150 GHz. The Gaussian antenna delivers a 40 dBi nominal gain and 1.9 degree half power beamwidth. The antenna supports both 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 0.059" diameter circular waveguide and UG-387/U-M anti-cocking flange as its input port, which support both linear and circular polarized waveforms. By adding the mode transition, Eravant model number SWT-06059-SB, the input port becomes a standard WR-06 waveguide, which can support only linear polarized waveform.



### Features:

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

### Applications:

- Radar Systems
- Communication Systems
- Plasma Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	140 GHz		150 GHz
Gain		40 dBi	
3 dB Beamwidth		1.9°	
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	0.059" Dia Circular Waveguide with UG-387/U-M Anti-Cocking Flange
Material	Aluminum
Finish	Black Anodized
Weight	1.66 lb
Lens Diameter	3.0"
Dimensions	3.67" (H) x 5.45" (L)
Outline	AG-CD40-059-A

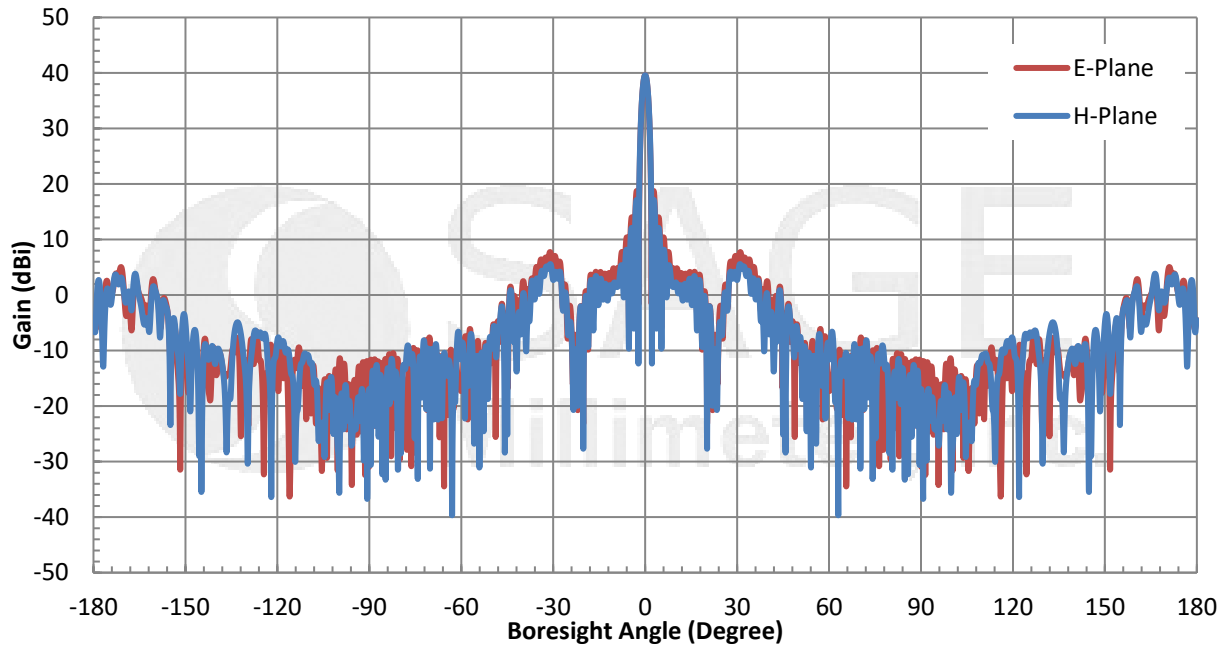


www.eravant.com | 501 Amapola Ave, Torrance, CA 90501  
 Phone: 424-757-0168 | Fax: 424-757-0188 | Email: support@eravant.com

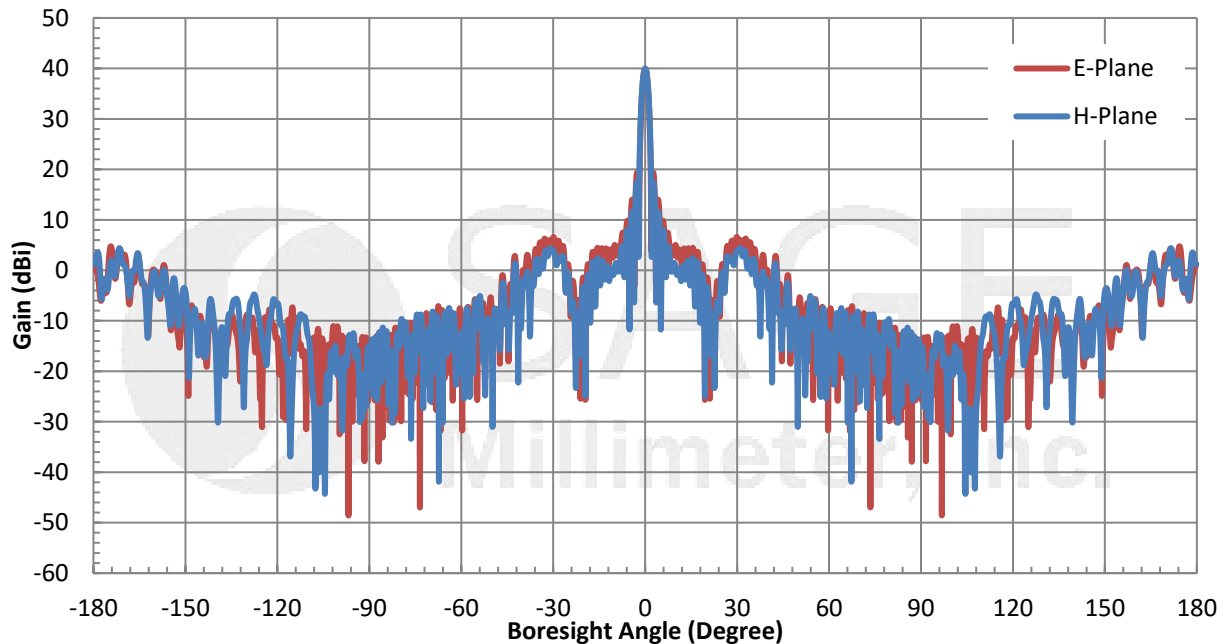


## D Band Gaussian Optics Antenna, 0.059" Dia Circular Waveguide, 3"

### Simulated Antenna Pattern @ 140 GHz



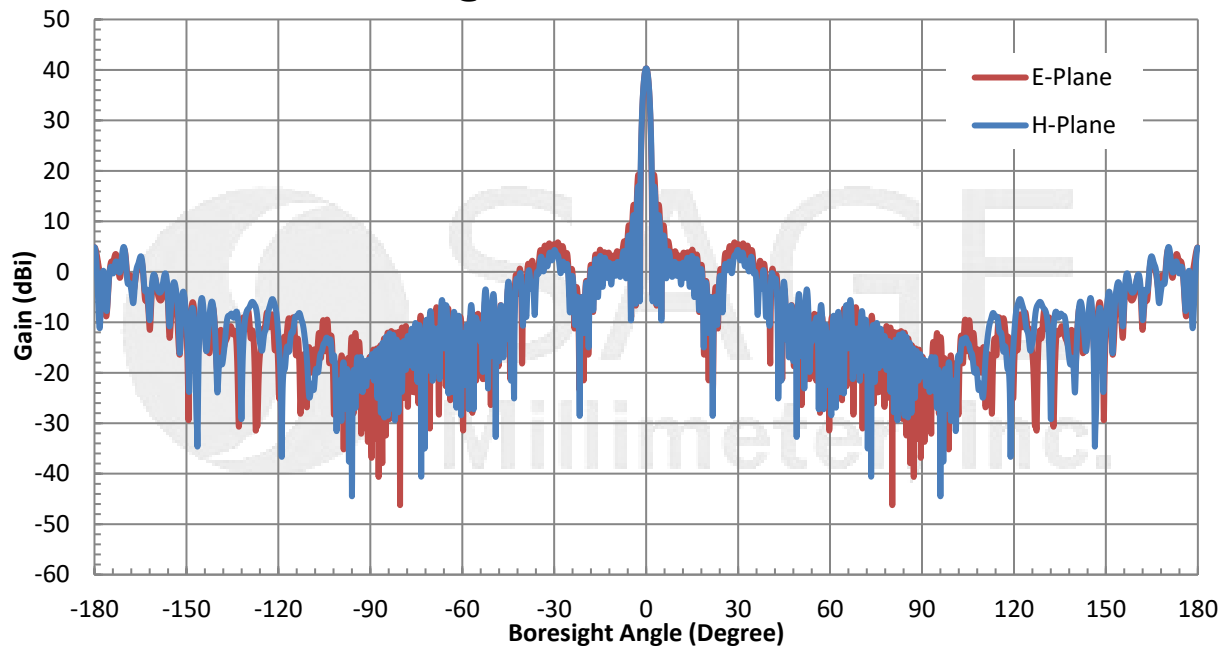
### Simulated Antenna Pattern @ 145 GHz



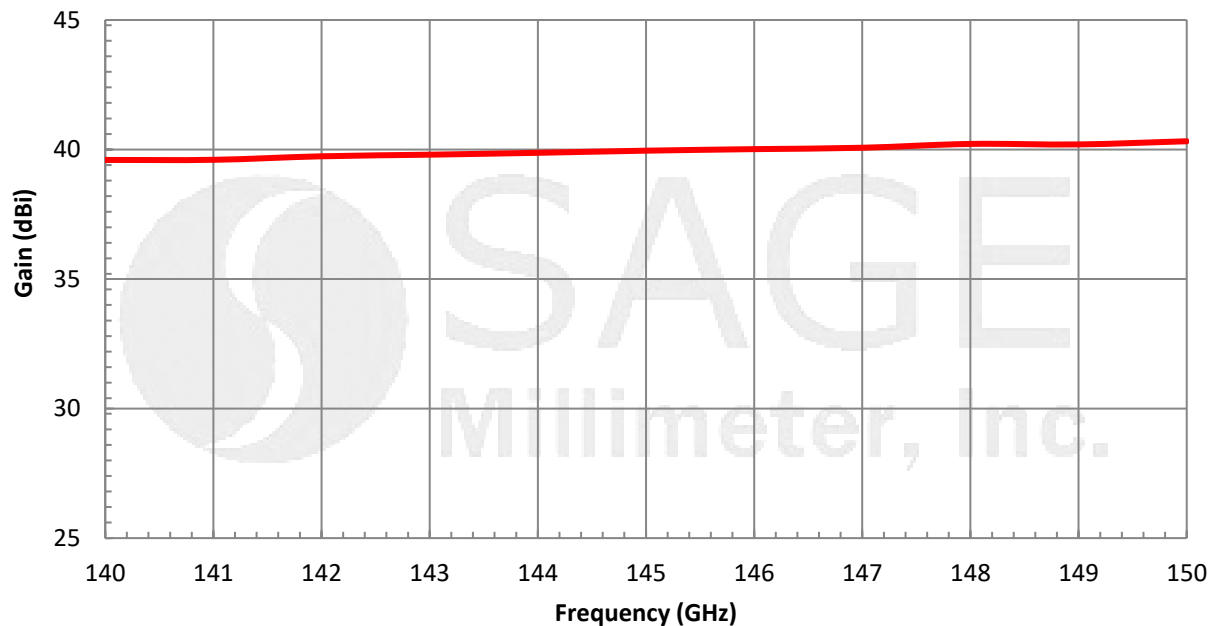


## D Band Gaussian Optics Antenna, 0.059" Dia Circular Waveguide, 3"

### Simulated Antenna Pattern @ 150 GHz



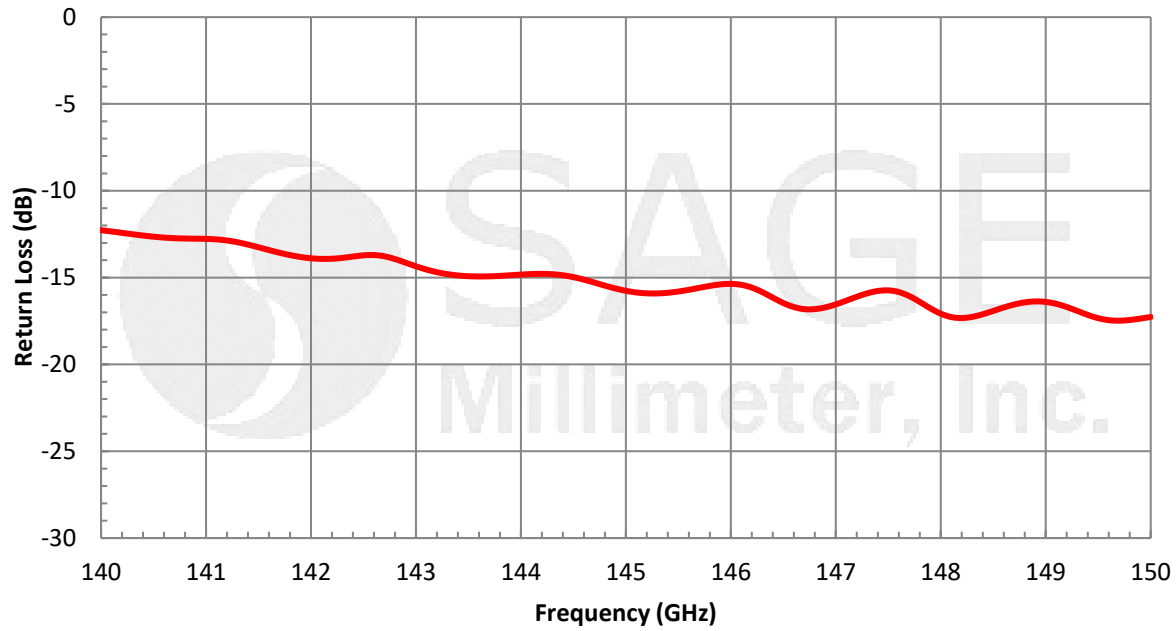
### Simulated Gain vs. Frequency



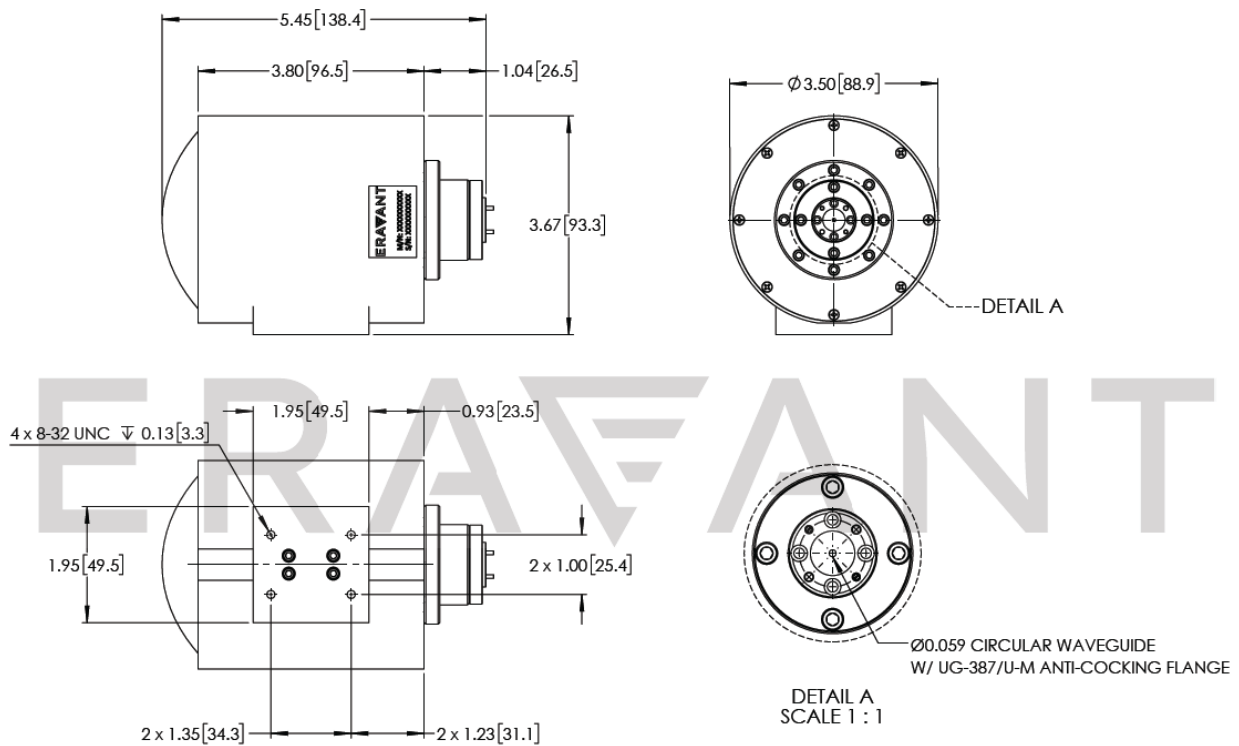


## D Band Gaussian Optics Antenna, 0.059" Dia Circular Waveguide, 3"

Simulated Return Loss vs. Frequency



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



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**Note:**

- 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.

