

## SAF-9031441340-094-S1

### F-Band Scalar Feed Horn Antenna, 90 to 140 GHz, 13 dBi

**SAF-9031441340-094-S1** is an F-band scalar feed horn antenna that covers the frequency range of 90 to 140 GHz. At center frequency, the horn antenna exhibits 13 dBi nominal gain and a typical half power beamwidth of 40 degrees. The antenna has a typical return loss of 20 dB, and -25 dB nominal side lobes on the E-Plane and H-Plane. The antenna is equipped with a  $\varnothing$  0.094" circular waveguide with a UG-387/U-M anti-cocking flange.



#### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	90 GHz		140 GHz
Gain		13 dBi	
3 dB Beamwidth, E-Plane		40°	
3 dB Beamwidth, H-Plane		40°	
Sidelobes, E-Plane		-25 dB	
Sidelobes, H-Plane		-25 dB	
Return Loss		20 dB	
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

#### Mechanical Specifications:

Item	Specification
Antenna Port	$\varnothing$ 0.094" Circular Waveguide with UG-387/U-M Anti-Cocking Flange
Material	Brass
Finish	Gold Plated
Weight	0.32 Oz
Outline	AF-CF13-094-A

#### ECCN

EAR99

#### FEATURES

- 90 to 140 GHz Operations
- Linear and Circular Polarization
- High Return Loss
- Low Side Lobe Levels

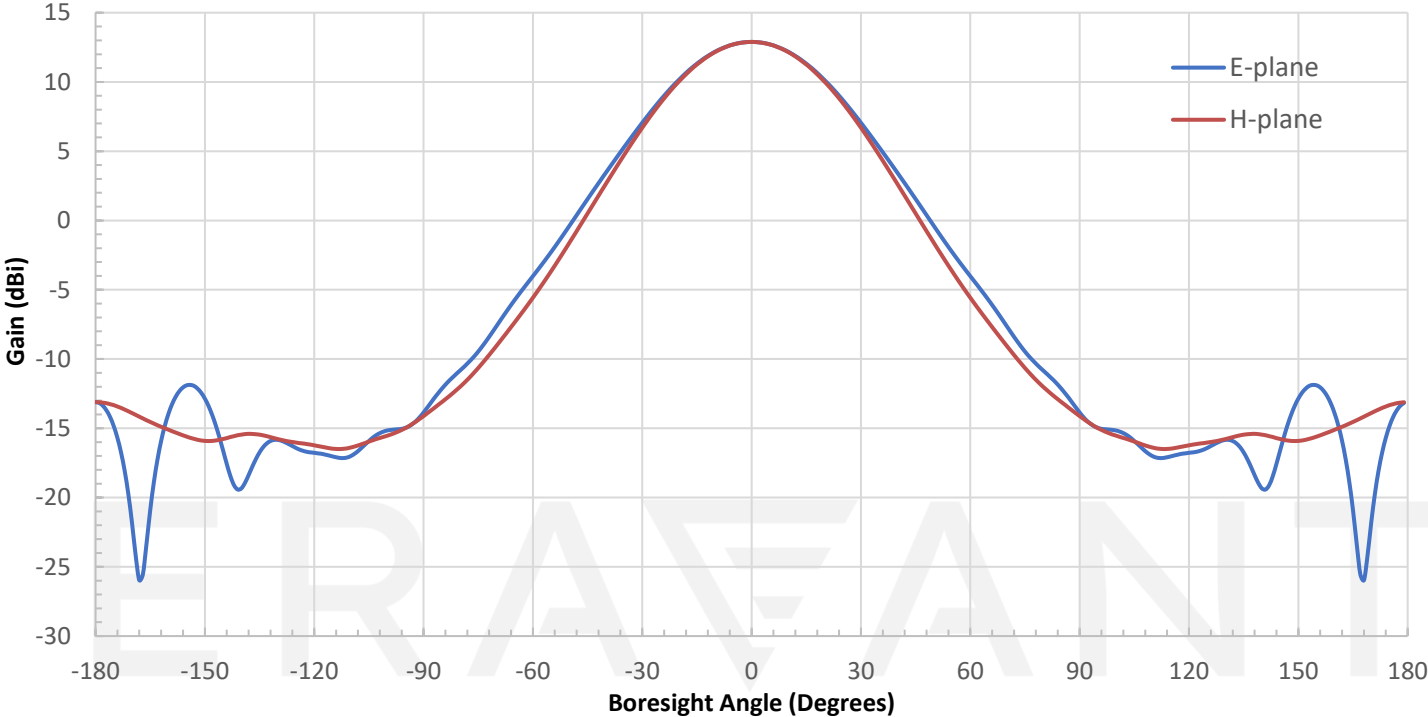
#### APPLICATIONS

- Feed Horn for Gaussian Optical Antennas
- Feed Horn for Cassegrain Antennas
- Rapid System Setups
- Engineering Setups

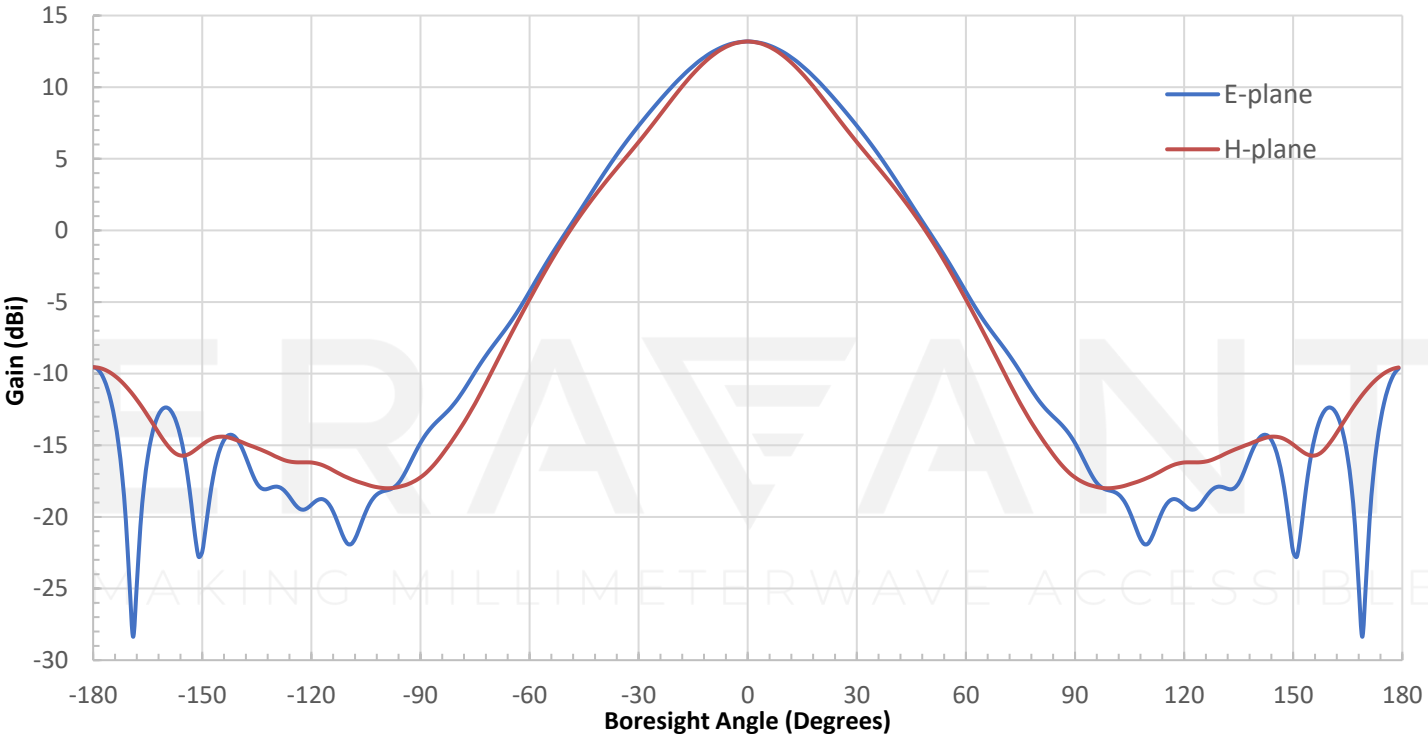
#### SUPPLEMENTAL DETAILS



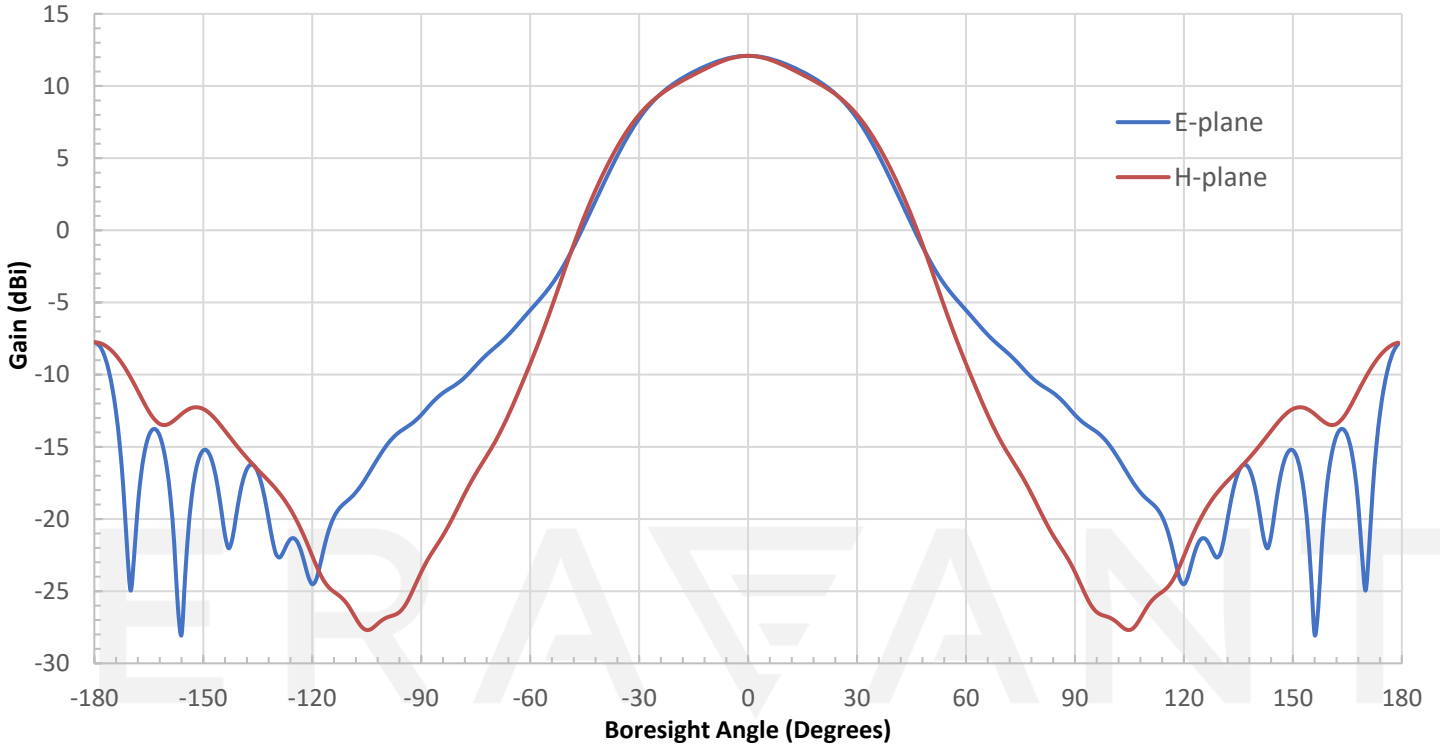
Simulated Antenna Patterns @ 90 GHz



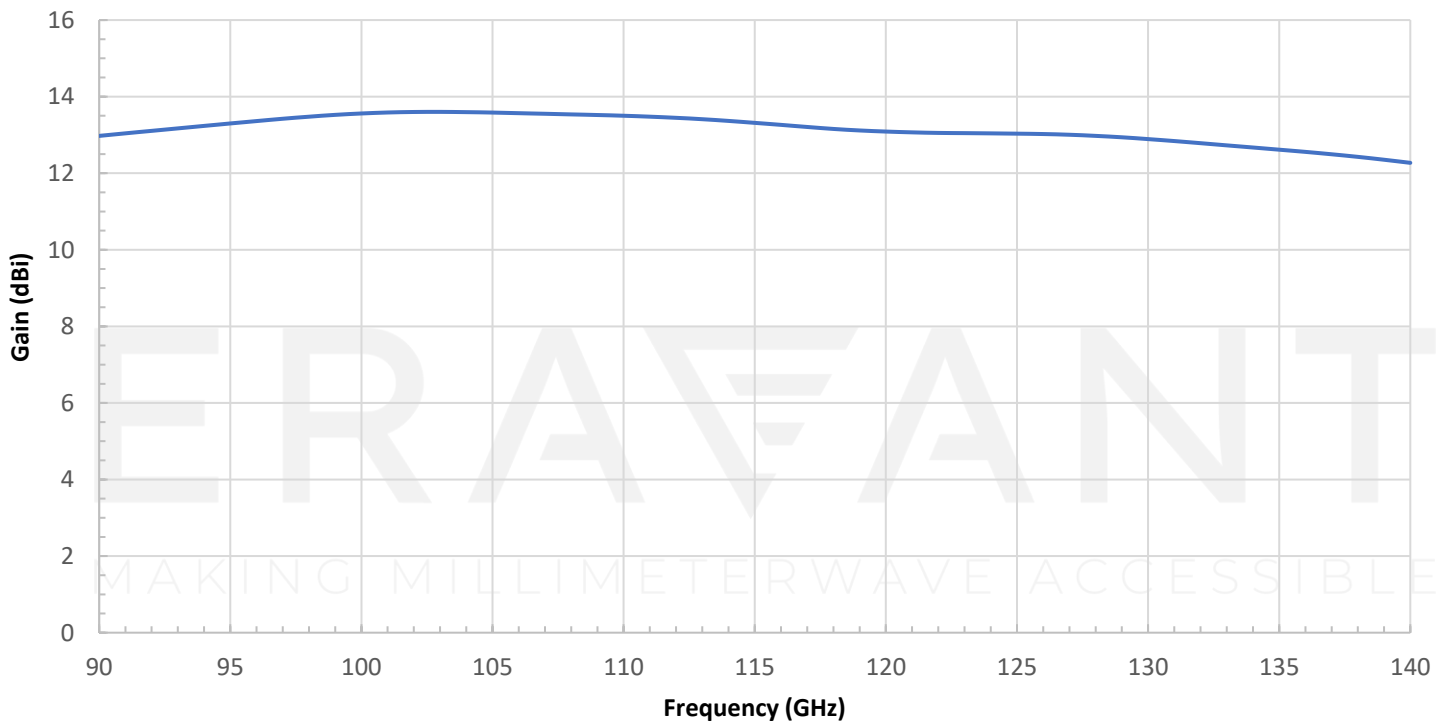
Simulated Antenna Patterns @ 115 GHz



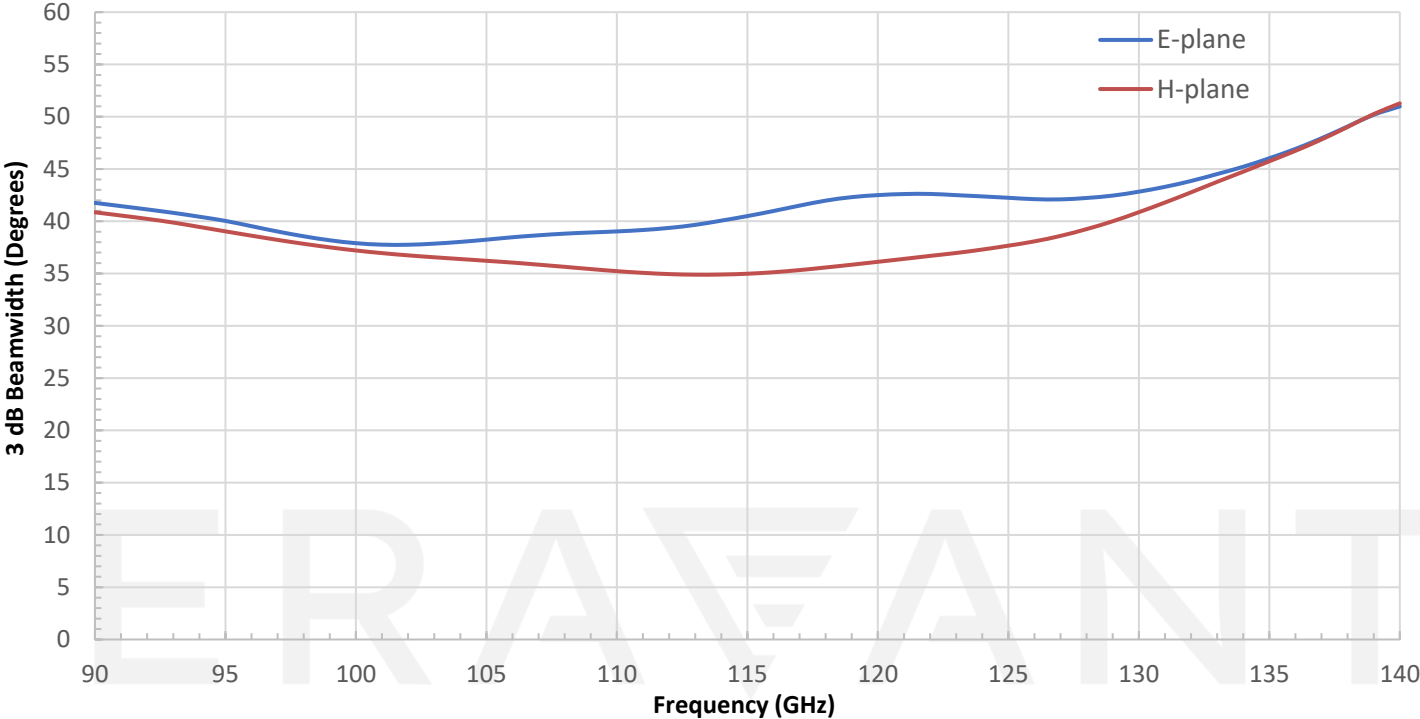
### Simulated Antenna Patterns @ 140 GHz



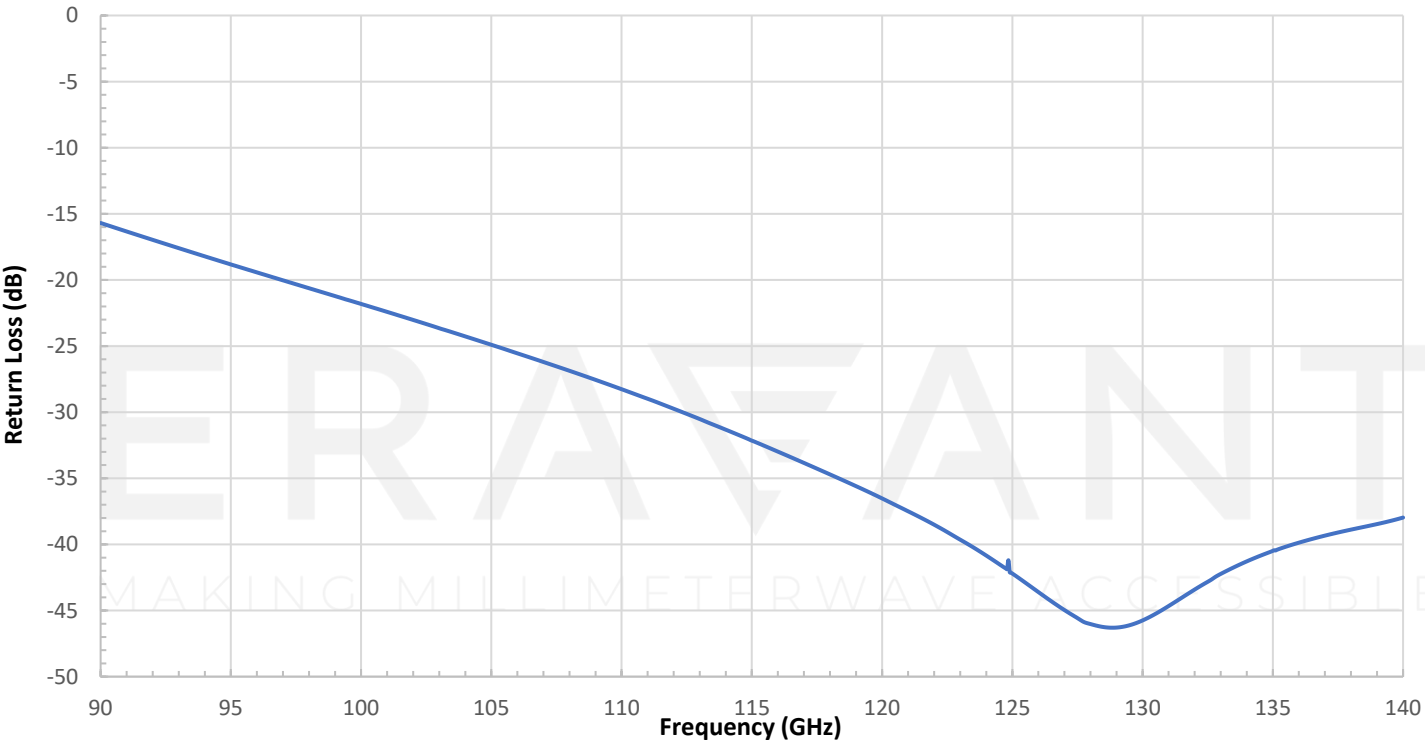
### Simulated Gain vs. Frequency



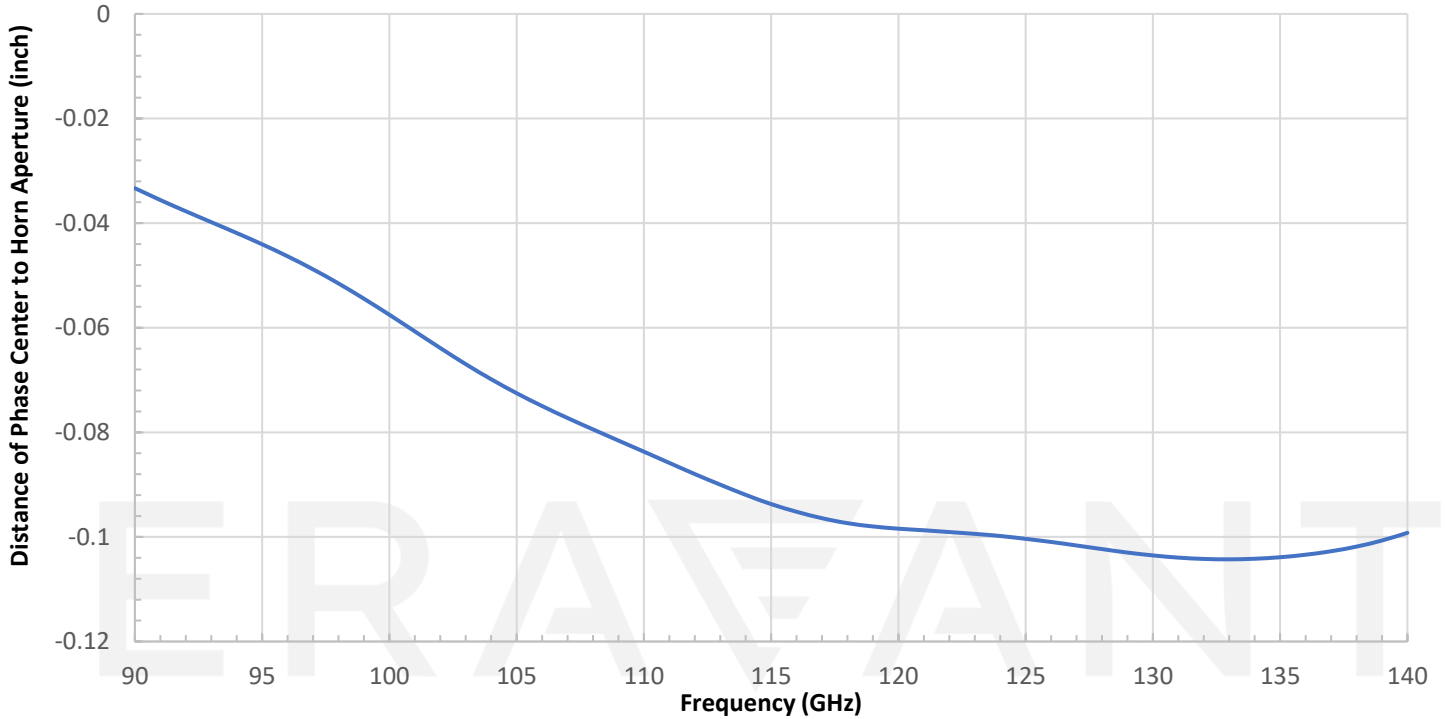
Simulated 3 dB Beamwidth vs. Frequency



Simulated Return Loss vs. Frequency

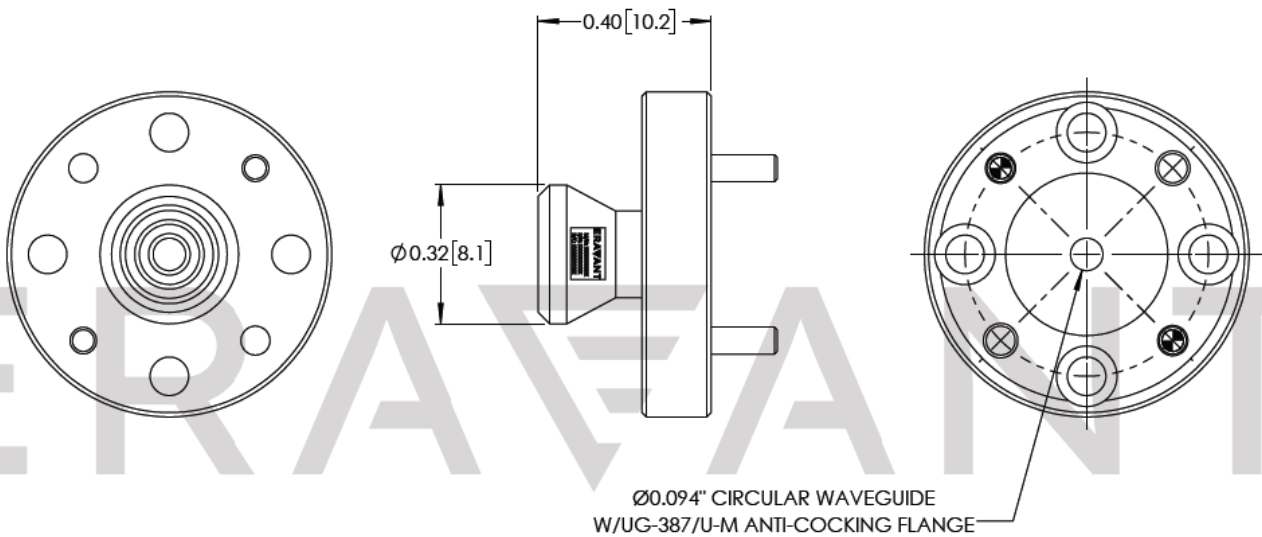


### Simulated Phase Center vs. Frequency



MAKING MILLIMETERWAVE ACCESSIBLE

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



**NOTE:**

- On condition that simulated test data is provided, actual measured data may slightly vary.
- Eravant reserves the right to change the information presented without notice.

**CAUTION:**

- If a waveguide is present, any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.
- Any foreign objects in the antenna will cause performance degradation and possible device damage.

