

## SAF-1141741725-082-S1

### D-Band Scalar Feed Horn Antenna, 110 to 170 GHz, 17 dBi Gain

**SAF-1141741725-082-S1** is a D-band scalar feed horn antenna that operates from 110 to 170 GHz. The antenna offers a 17 dBi nominal gain, 25 degree typical half power beamwidth, and -25 dB typical side lobe level. The scalar feed horn is equipped with a 0.082" diameter circular waveguide that supports both linear and circular polarization. A rectangular waveguide port configuration that only supports linear polarization is available under a different model number.



#### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	110 GHz		170 GHz
Gain		17 dBi	
3 dB Beamwidth, E-Plane		25°	
3 dB Beamwidth, H-Plane		25°	
Sidelobes, E-Plane		-25 dB	
Sidelobes, H-Plane		-25 dB	
Return Loss		20 dB	
Polarization	Linear and Circular		
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

#### Mechanical Specifications:

Item	Specification
Antenna Port	Ø 0.082" Circular Waveguide with UG-387/U-M Anti-Cocking Flange
Material	Brass
Finish	Gold Plated
Weight	1.8 Oz
Outline	AF-CD17-082-A

#### ECCN

EAR99

#### FEATURES

- Circular Waveguide Interface
- Precisely Machined
- Linear and Circular Polarization
- High Return Loss
- Low Side Lobe Levels

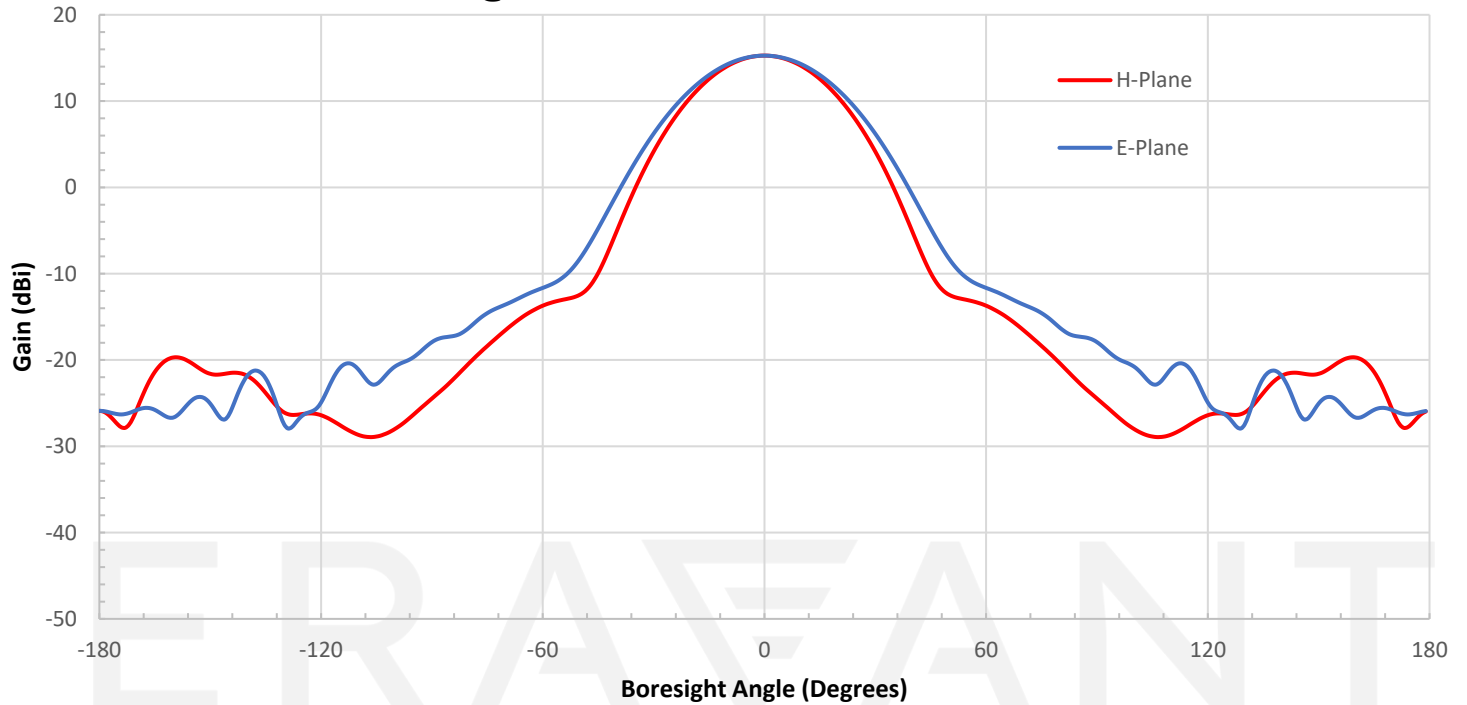
#### APPLICATIONS

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

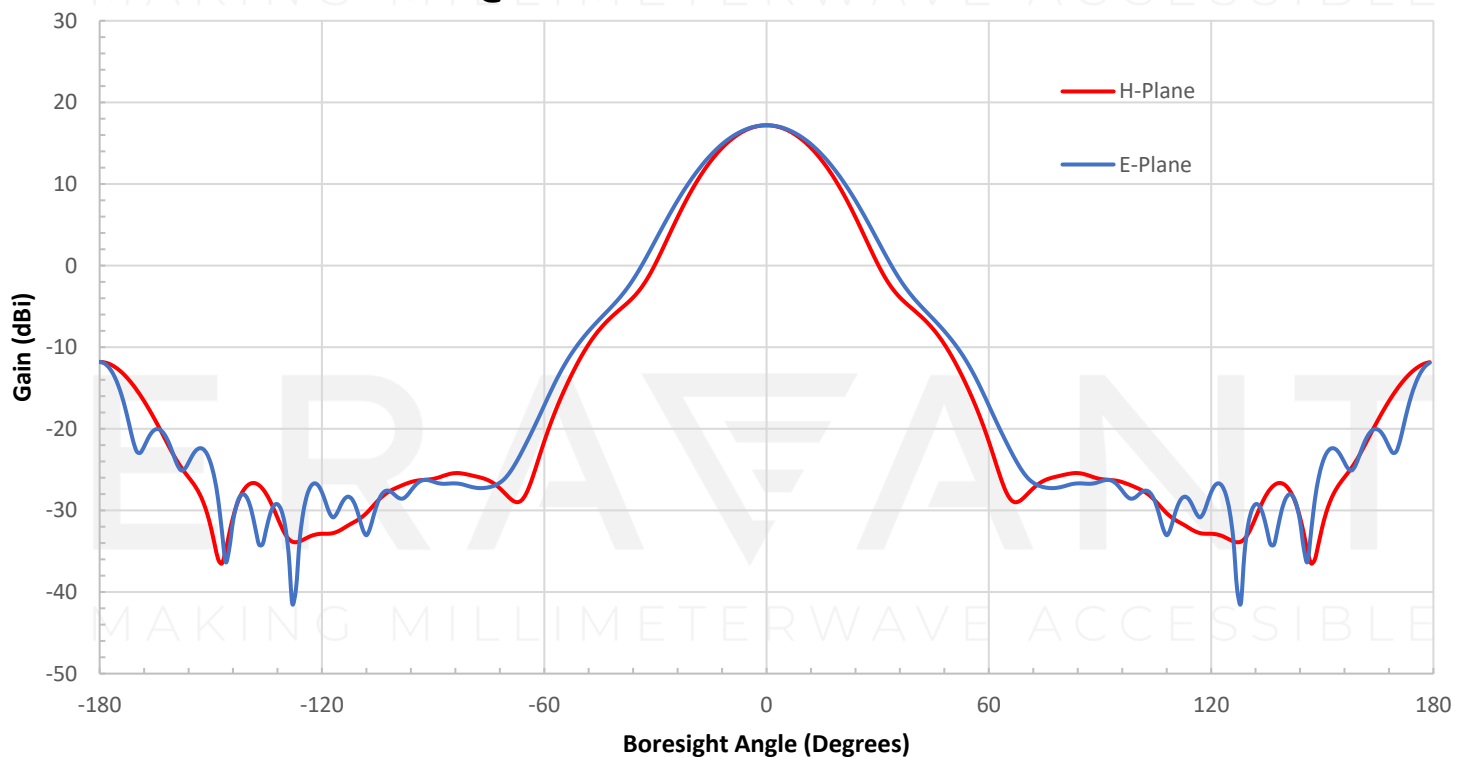
#### SUPPLEMENTAL DETAILS



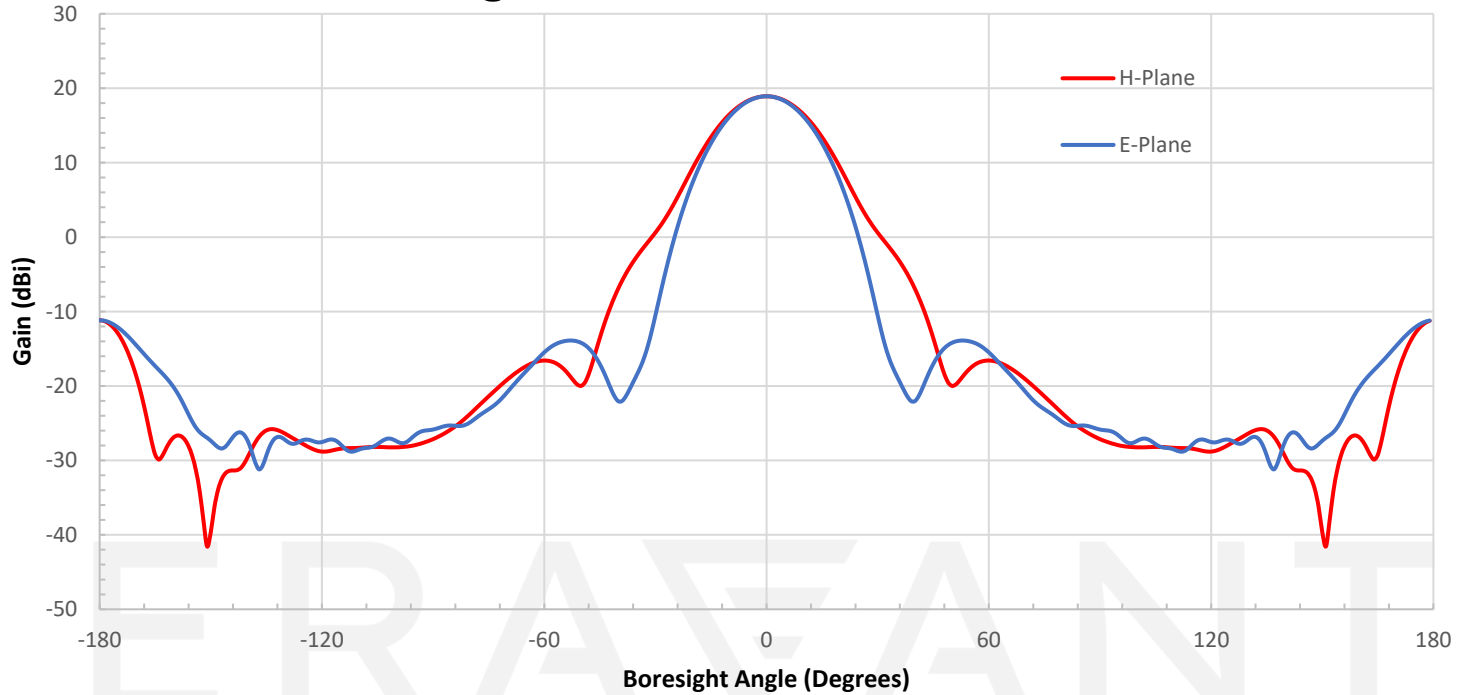
### Simulated Antenna Patterns @ 110 GHz



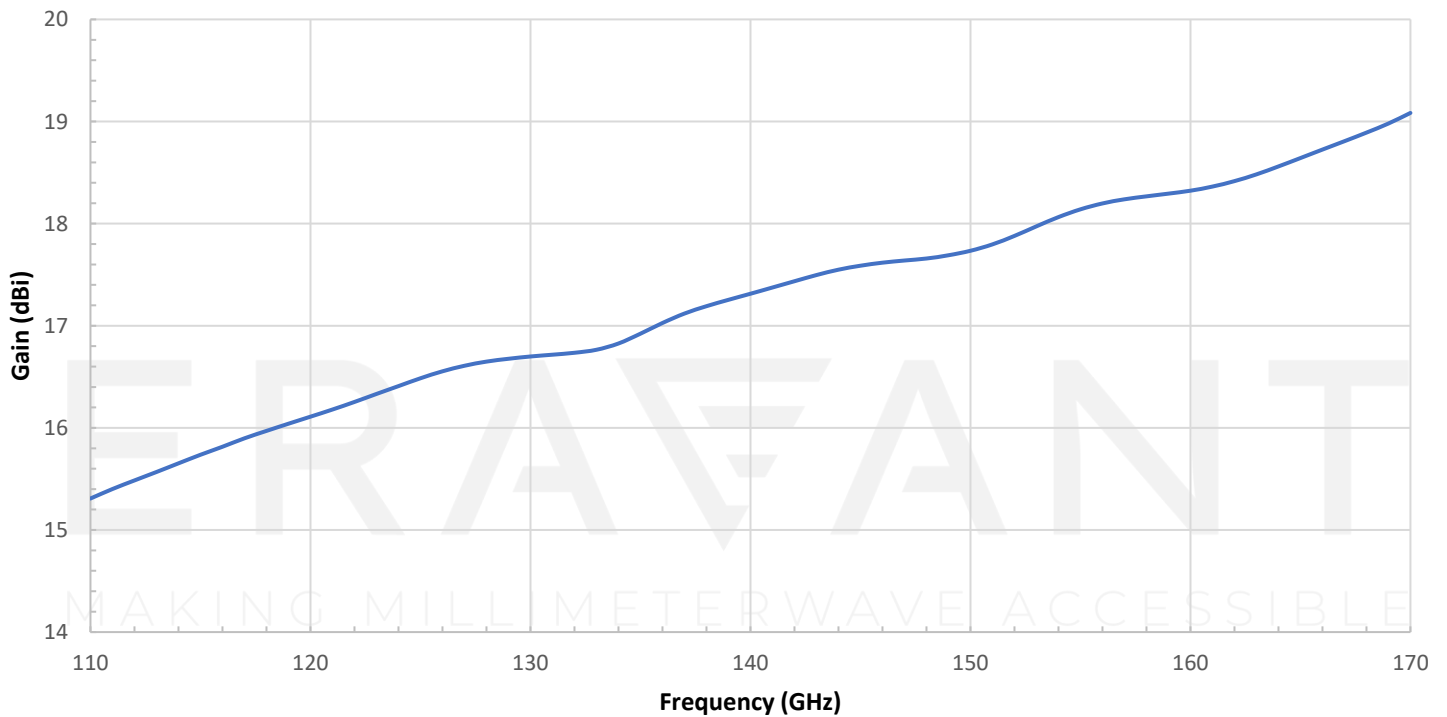
### Simulated Antenna Patterns @ 140 GHz



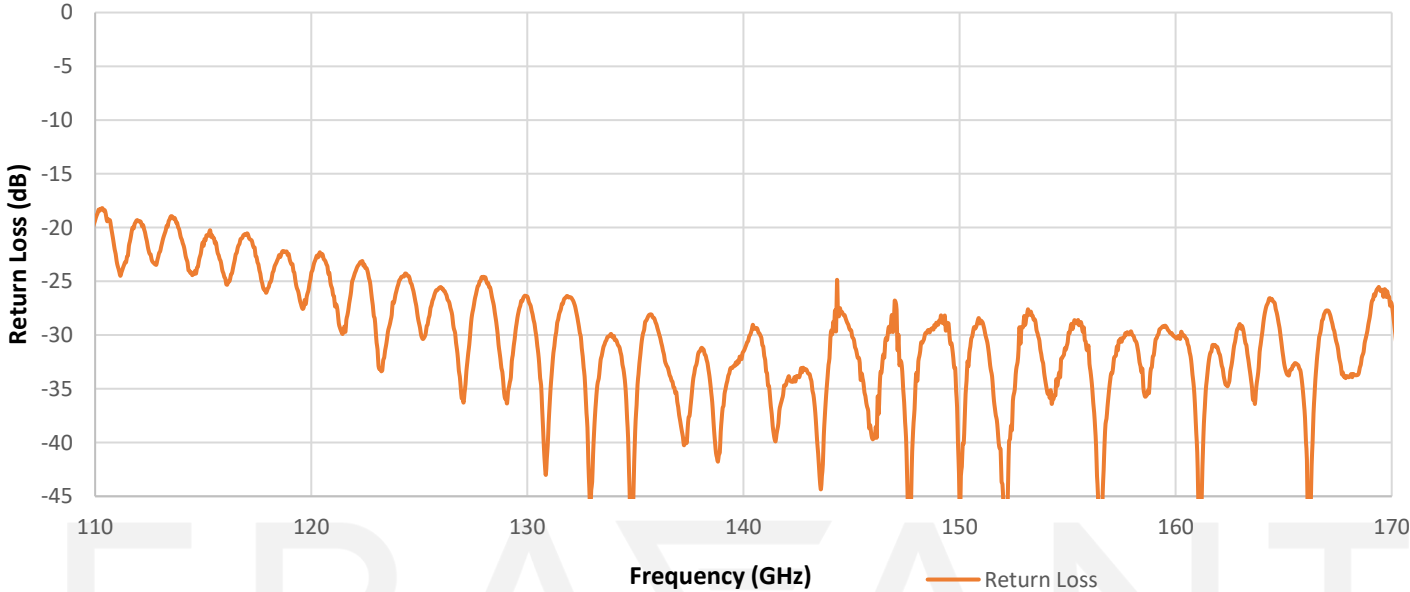
### Simulated Antenna Patterns @ 170 GHz



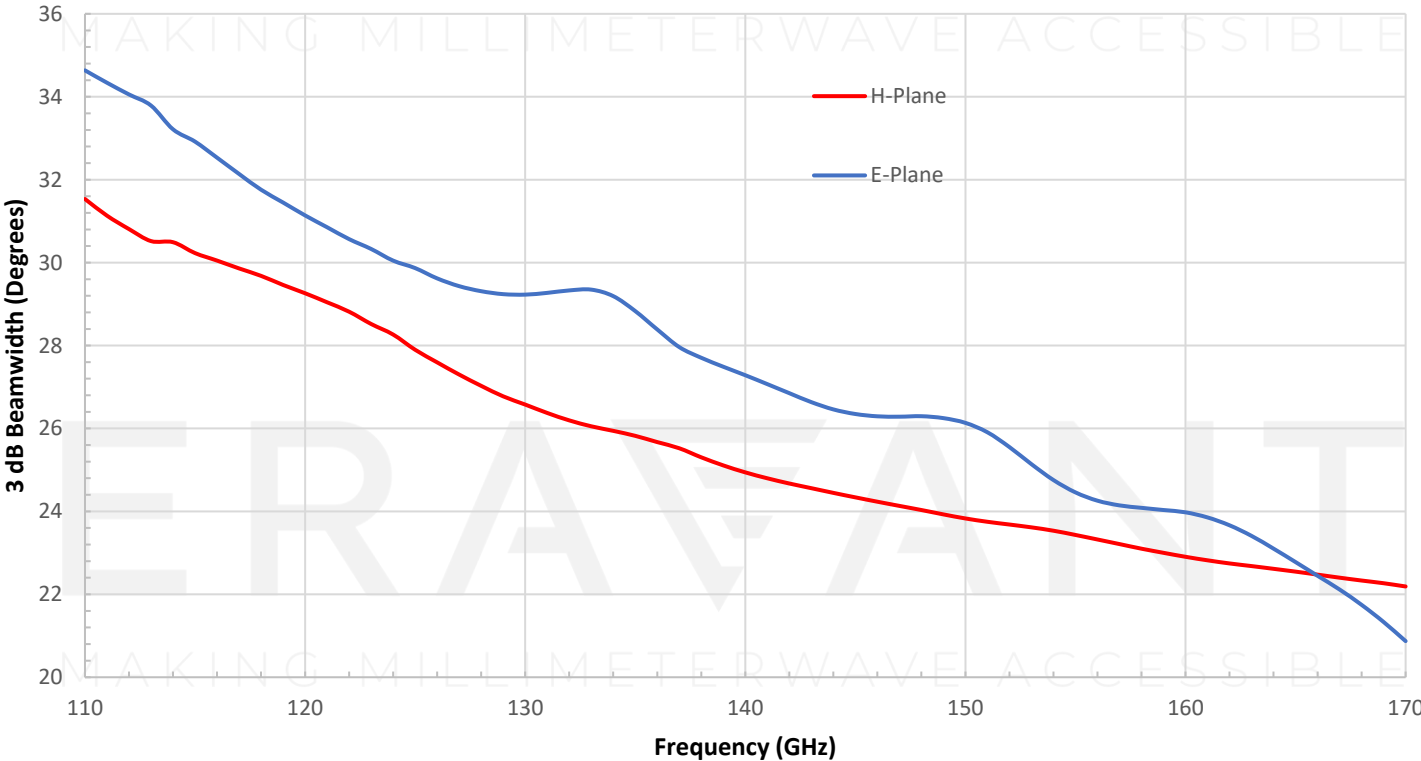
### Simulated Gain vs. Frequency



Typical Return Loss vs Frequency

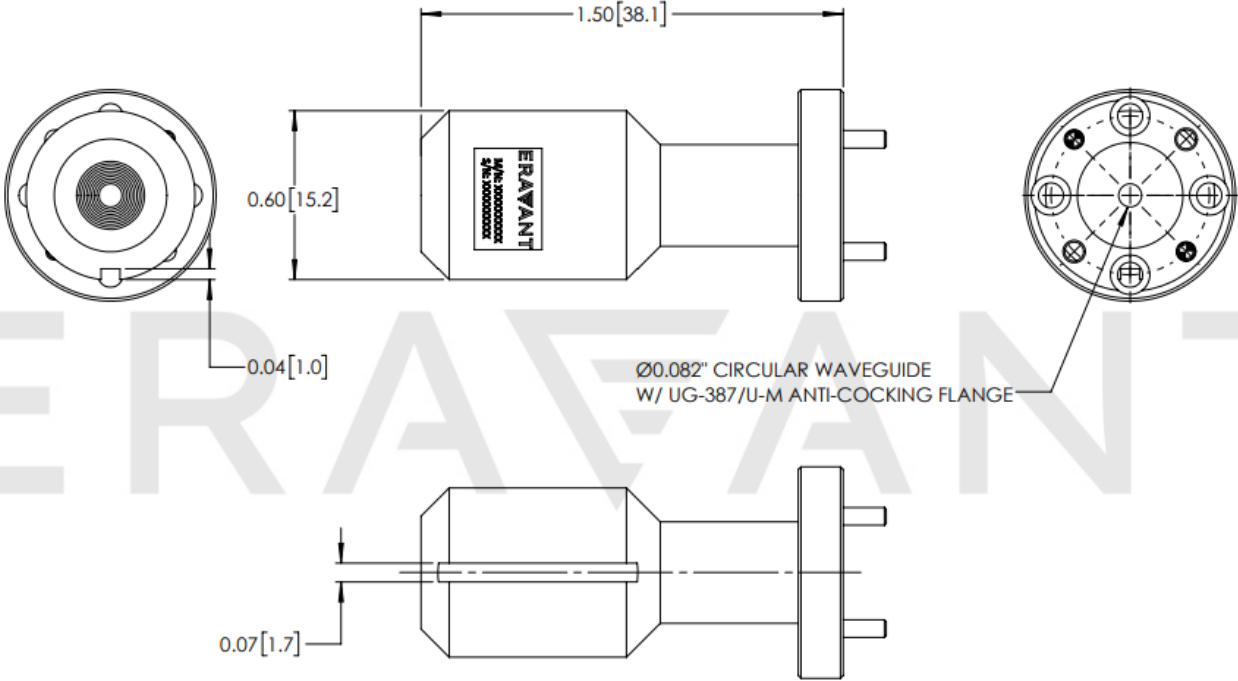


Simulated 3 dB Beamwidth vs. Frequency



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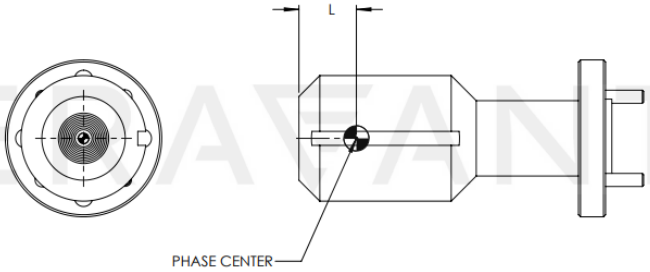
**Mechanical Outline:** Unless otherwise specified, all dimensions are in inches [millimeters]



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**Tabulated Phase Center vs Frequency:**

Frequency (GHz)	Phase Center "L" (in)
110	0.037"
120	0.066"
130	0.094"
140	0.099"
150	0.105"
160	0.105"
170	0.037"



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**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.

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