

## F Band Scalar Feed Horn Antenna, 17 dBi Gain

### Description:

**Model SAF-9031441725-094-S1** is an F-band scalar feed horn antenna that operates from 90 to 140 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 0.094" 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.



### Features:

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

### Applications:

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

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	90 GHz	115 GHz	140 GHz
Gain		17 dBi	
3 dB Beamwidth, E-plane		25°	
3 dB Beamwidth, H-plane		25°	
Side Lobes, E-plane		-25 dB	
Side Lobes, 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	0.094" Diameter Circular Waveguide
Flange Type	UG-387/U-M
Material	Brass
Finish	Gold Plated
Weight	1.44 Oz
Size	1.50" (L) X 0.60" (Ø)
Outline	AF-CF17-094

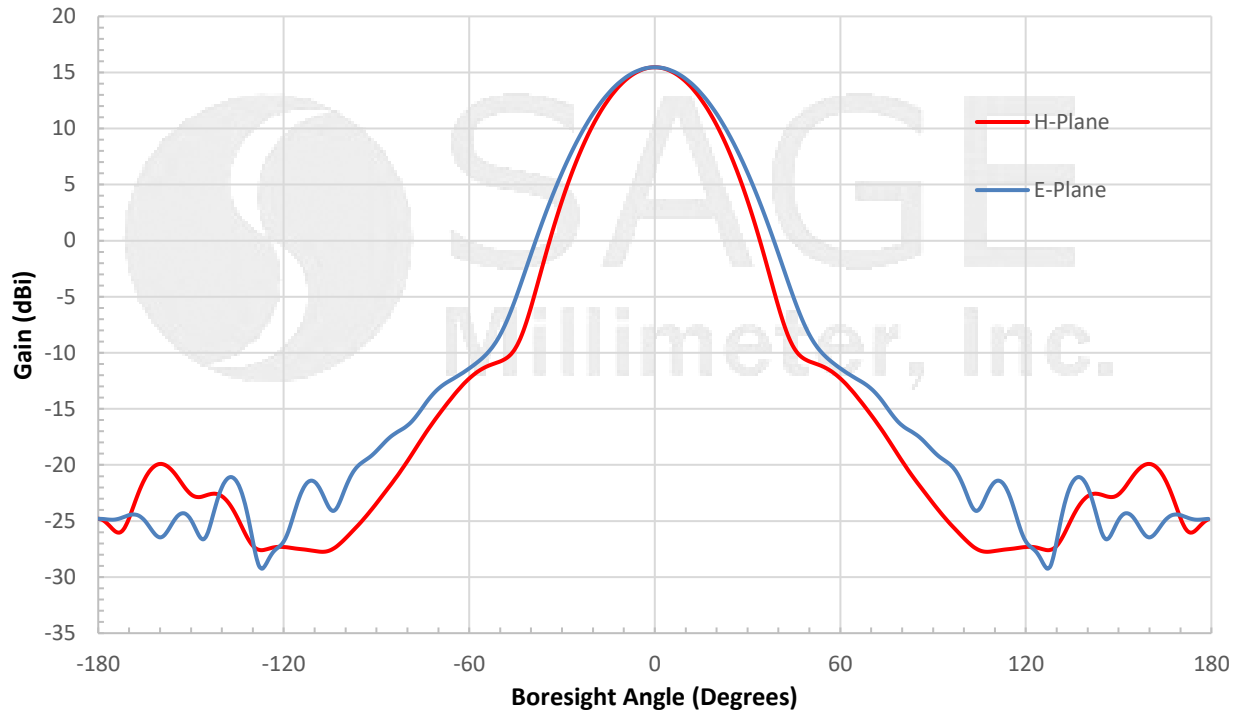


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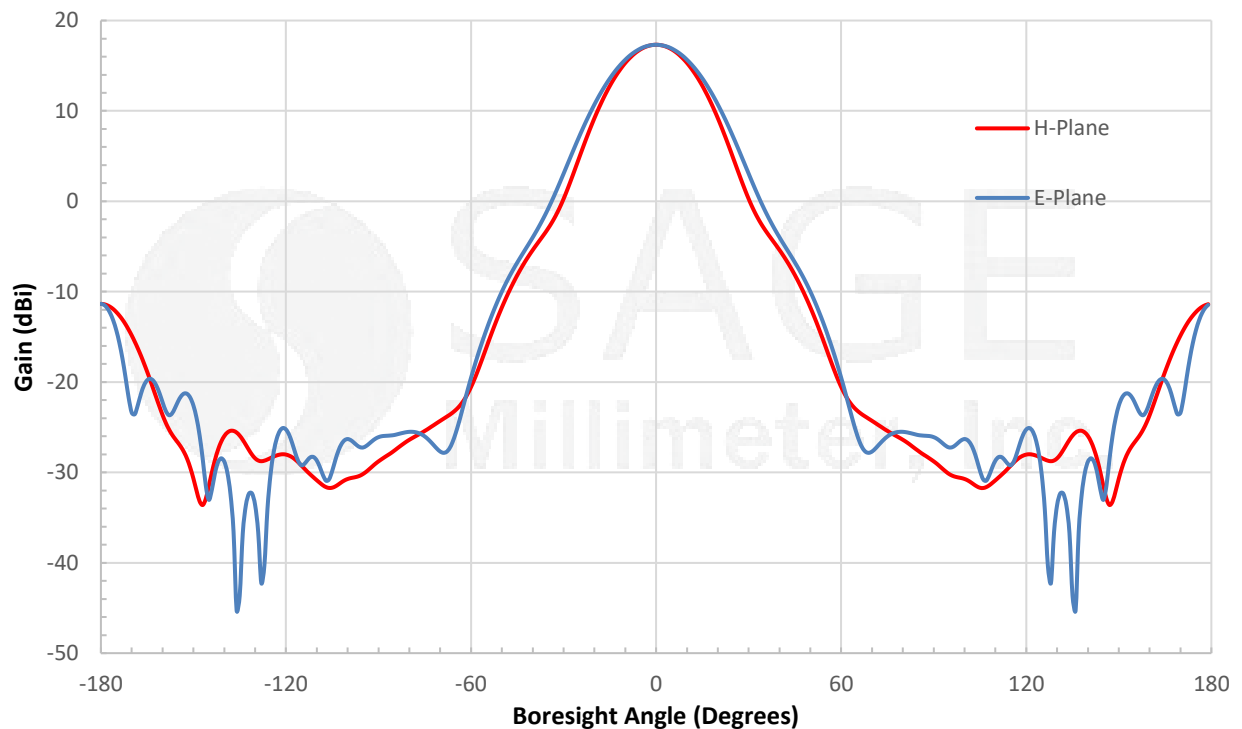


## F Band Scalar Feed Horn Antenna, 17 dBi Gain

### Simulated Antenna Patterns @ 90 GHz



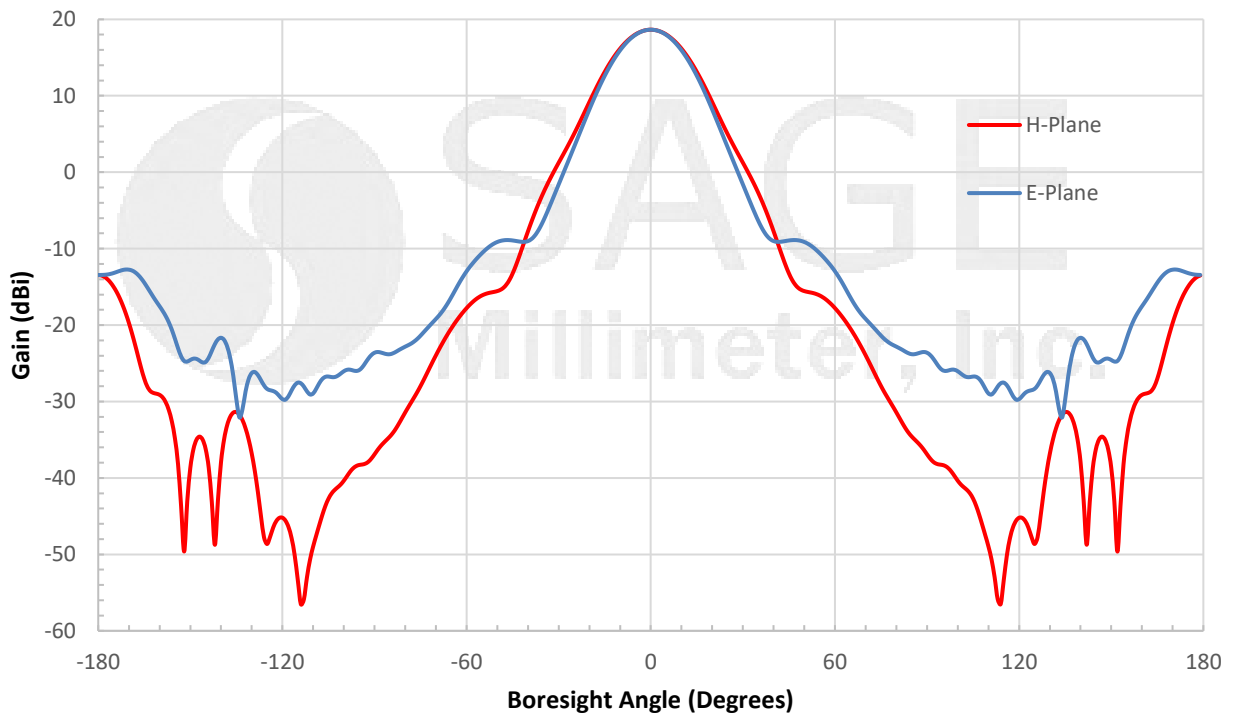
### Simulated Antenna Patterns @ 115 GHz



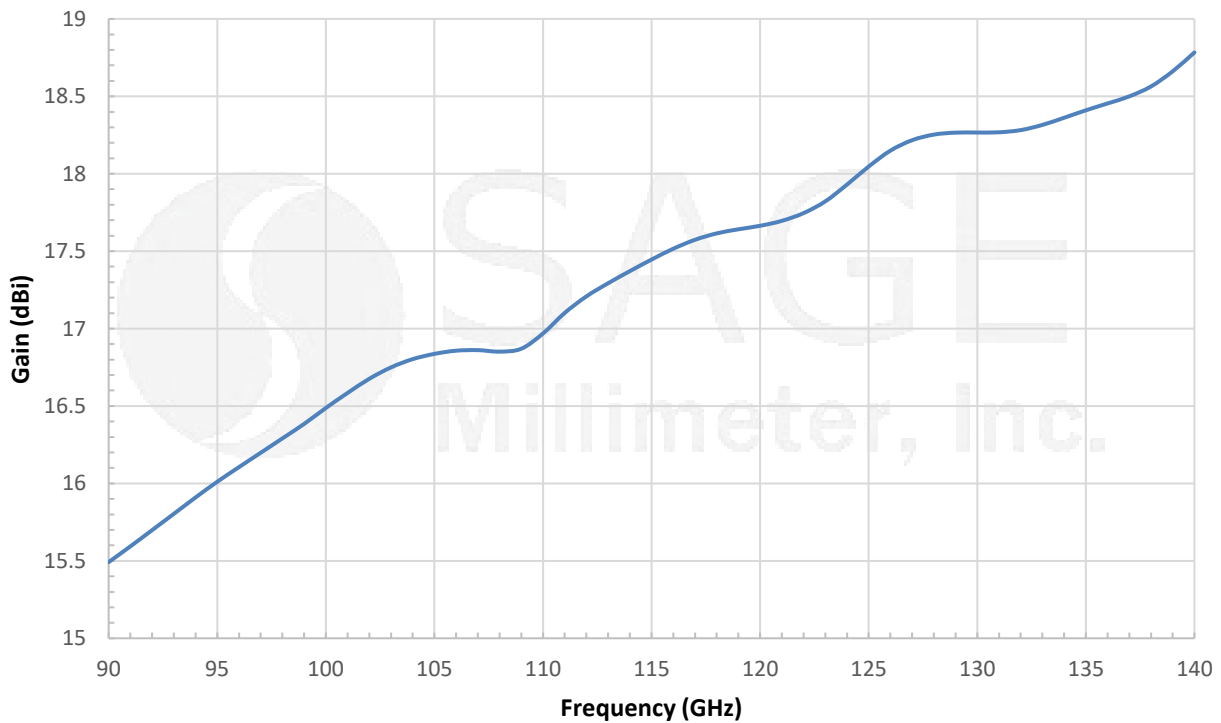


## F Band Scalar Feed Horn Antenna, 17 dBi Gain

### Simulated Antenna Patterns @ 140 GHz



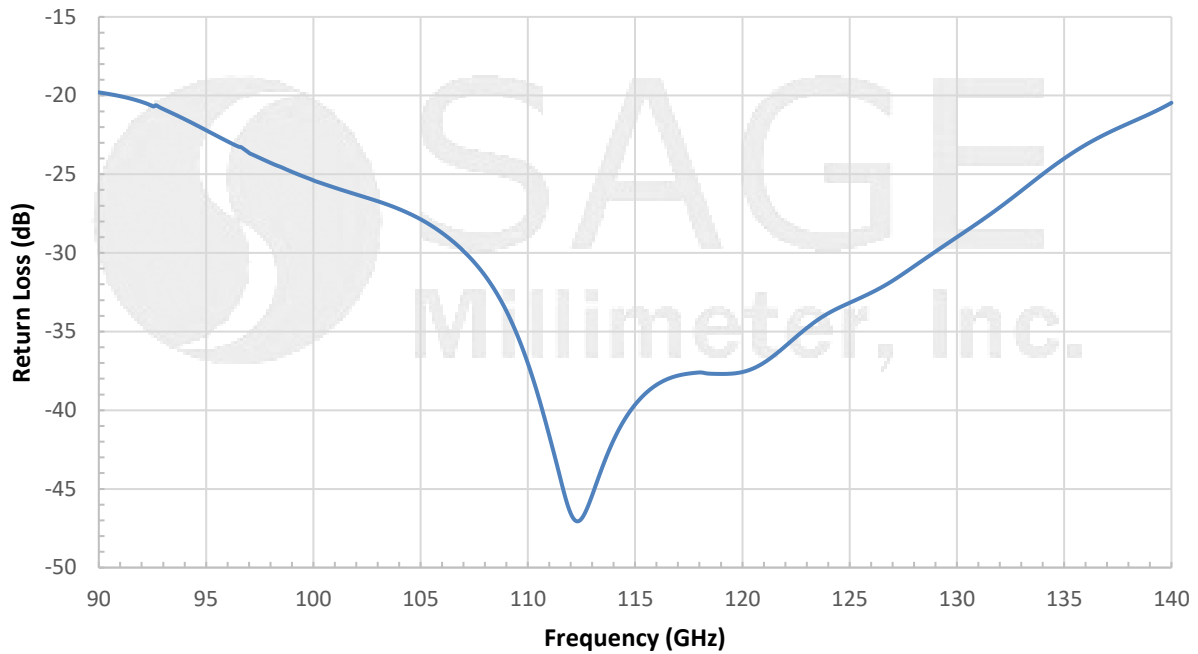
### Simulated Gain vs. Frequency



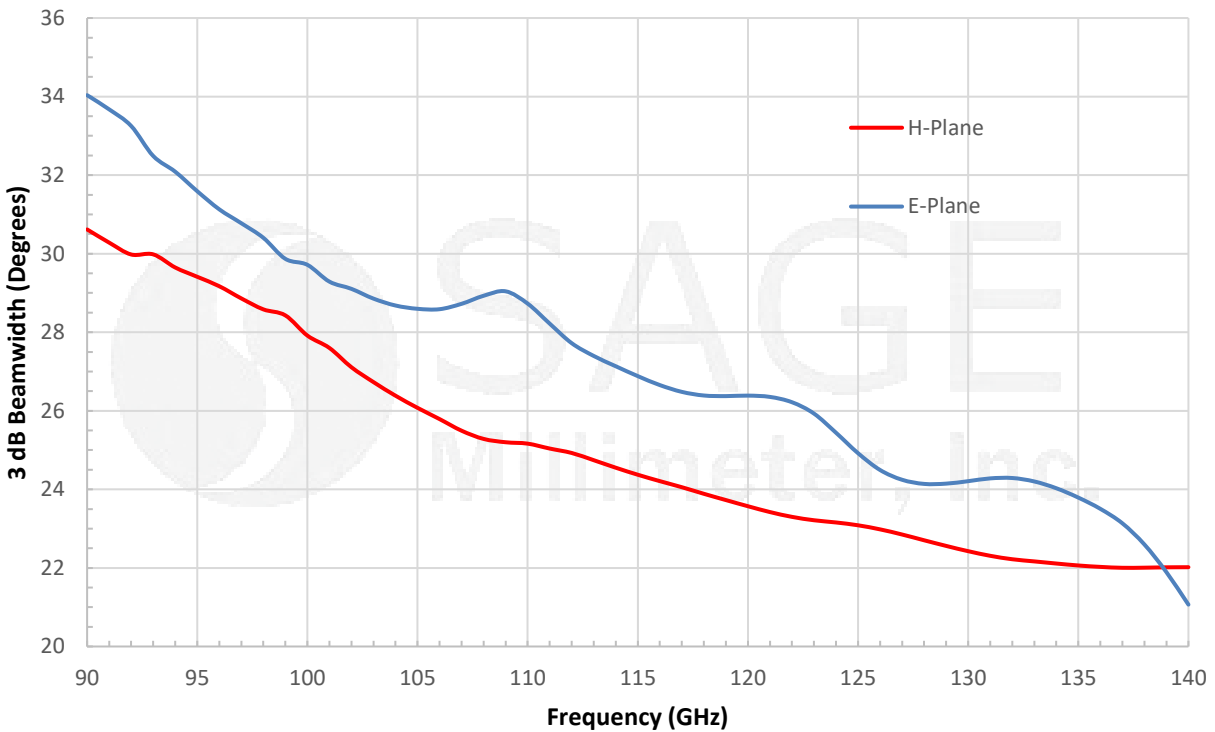


## F Band Scalar Feed Horn Antenna, 17 dBi Gain

### Simulated Return Loss vs. Frequency



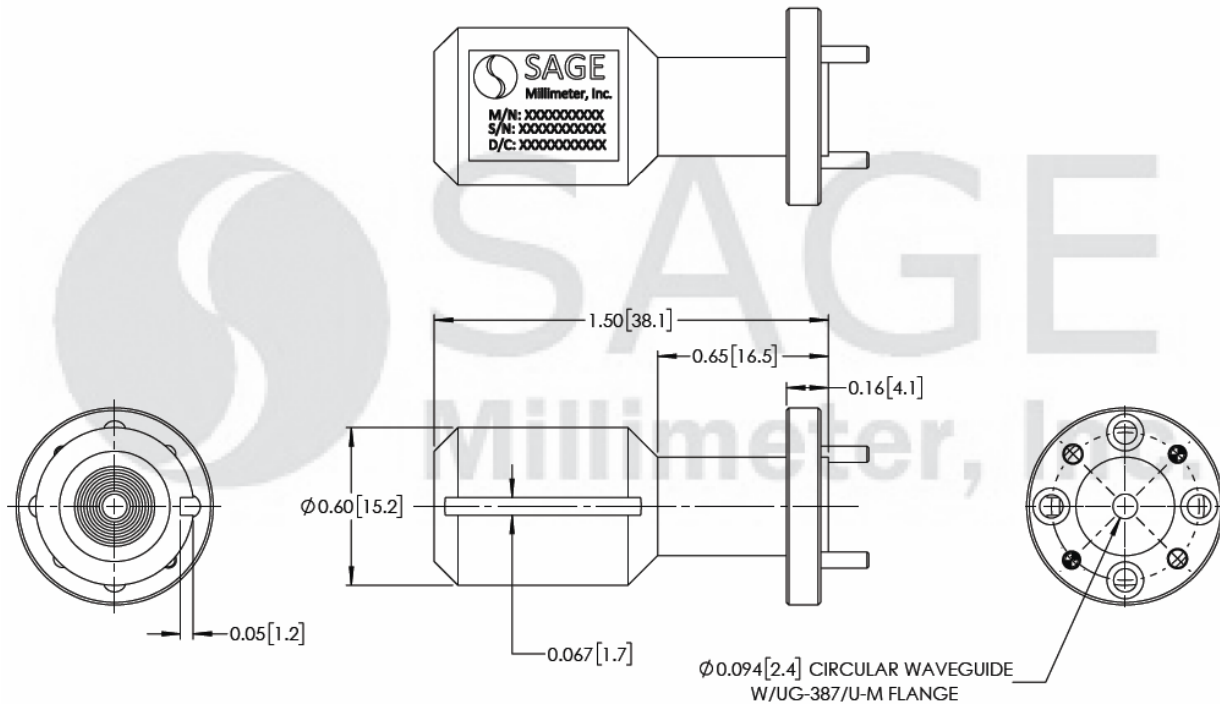
### Simulated 3 dB Beamwidth vs. Frequency





## F Band Scalar Feed Horn Antenna, 17 dBi Gain

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



**Note:**

- All data presented is simulated. Actual data may vary slightly.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

**Caution:**

- Any foreign objects in the waveguide will cause performance degradation and possible device damage.

