



## E Band Scalar Feed Horn Antenna, 71 to 86 GHz, 16 dBi Gain

### Description:

**Model SAF-7138631630-12-S1** is an E-band scalar feed horn antenna that operates from 71 to 86 GHz. The antenna offers a 16 dBi nominal gain, 30 degree typical half power beamwidth, and -25 dB typical side lobe levels. The scalar feed horn is equipped with a WR-12 rectangular waveguide that supports vertical linear polarization. Circular waveguide ports supporting both linear and circular polarization are available under a different model number.



### Features:

- Rectangular Waveguide Interface
- Precisely Machined
- Low Side Lobe Level
- High Return Loss
- Linear 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	71 GHz		86 GHz
Gain		16 dBi	
3 dB Beamwidth, E-plane		30°	
3 dB Beamwidth, H-plane		30°	
Side Lobes, E-plane		-25 dB	
Side Lobes, H-plane		-25 dB	
Return Loss		20 dB	
Cross Polarization		-25 dB	
Polarization		Linear	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

### Mechanical Specifications:

Item	Specification
Antenna Port	WR-12 Waveguide
Flange Type	UG-387/U Flange
Material	Brass
Finish	Gold Plated
Weight	2.3 Oz
Size	2.25" (L) X 0.75" (Ø)
Outline	AF-RE16-125

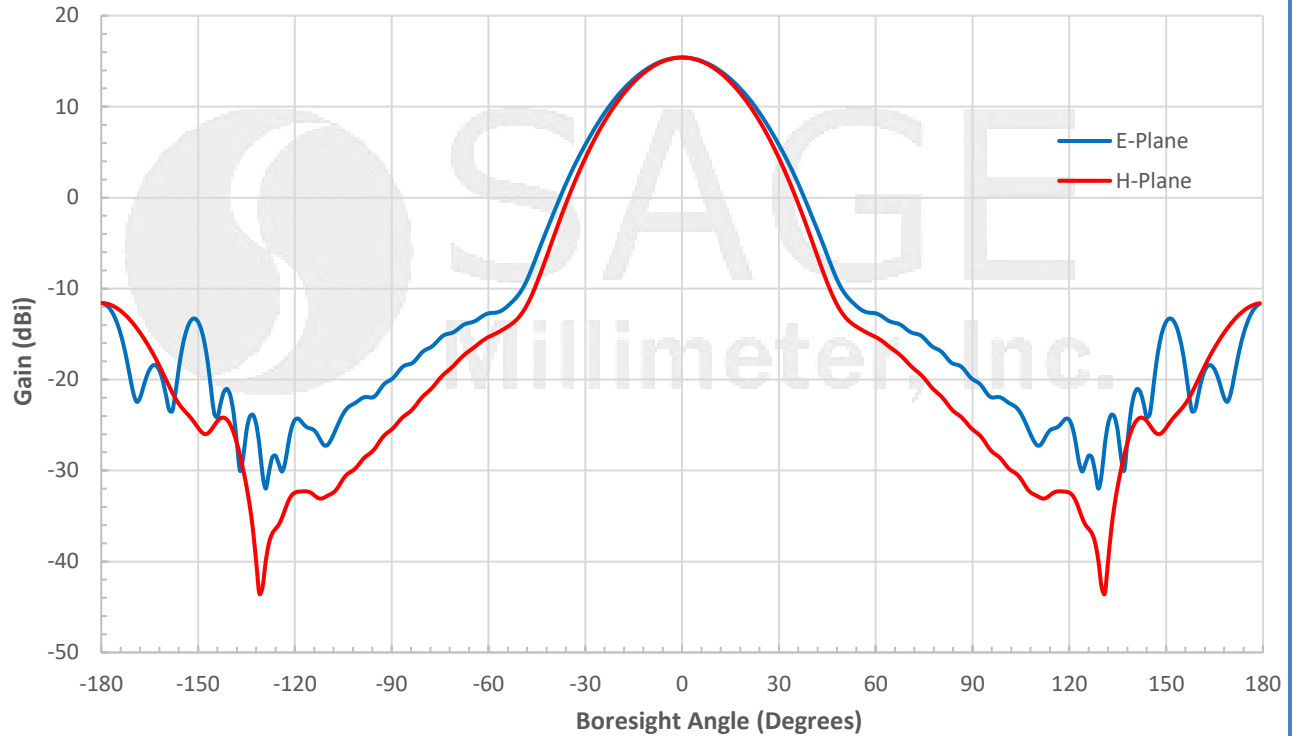


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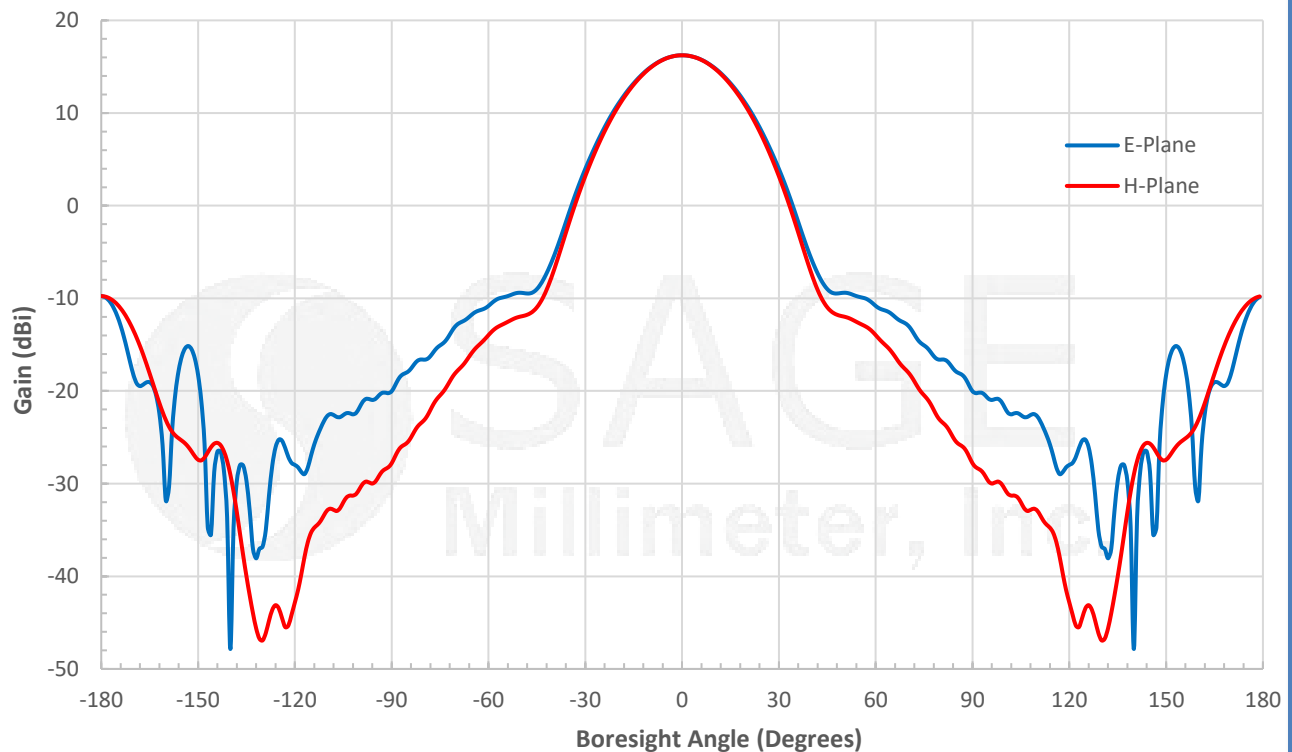


## E Band Scalar Feed Horn Antenna, 71 to 86 GHz, 16 dBi Gain

### Simulated Antenna Patterns @ 71 GHz



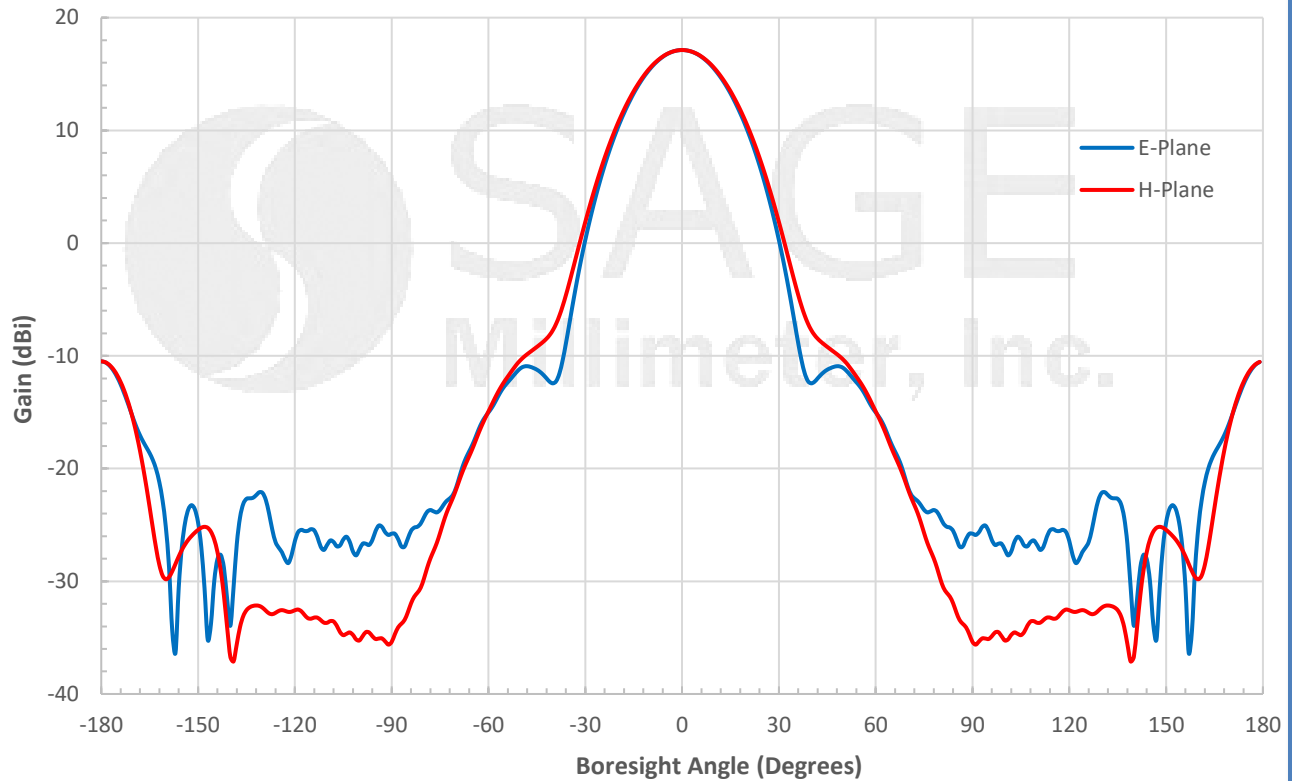
### Simulated Antenna Patterns @ 78 GHz



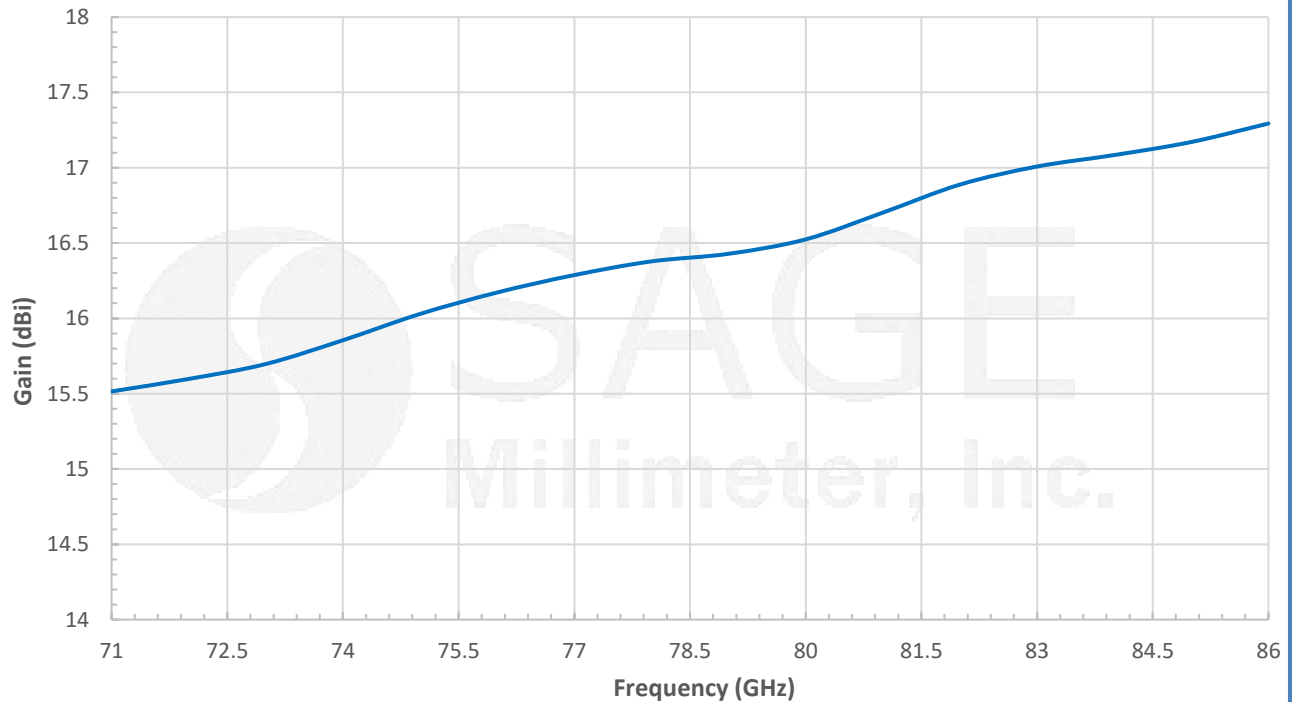


## E Band Scalar Feed Horn Antenna, 71 to 86 GHz, 16 dBi Gain

### Simulated Antenna Patterns @ 86 GHz



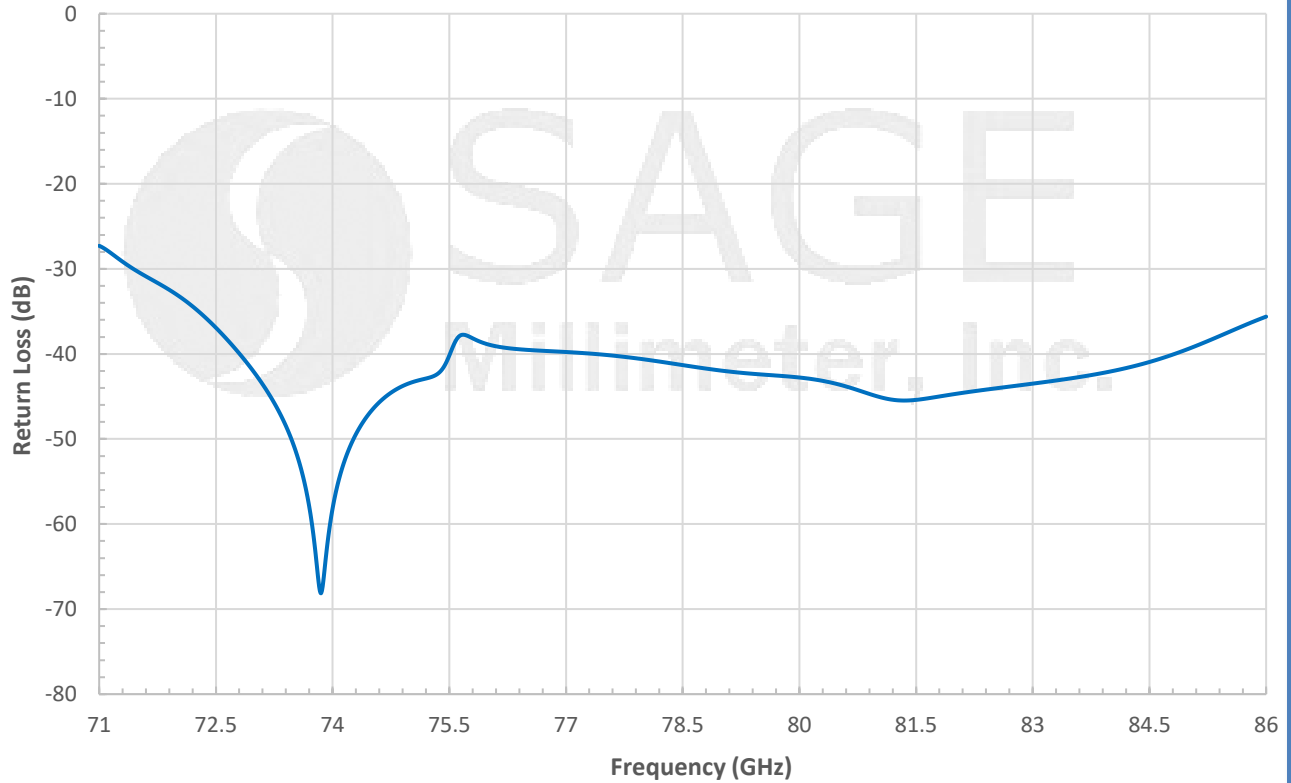
### Simulated Gain vs. Frequency



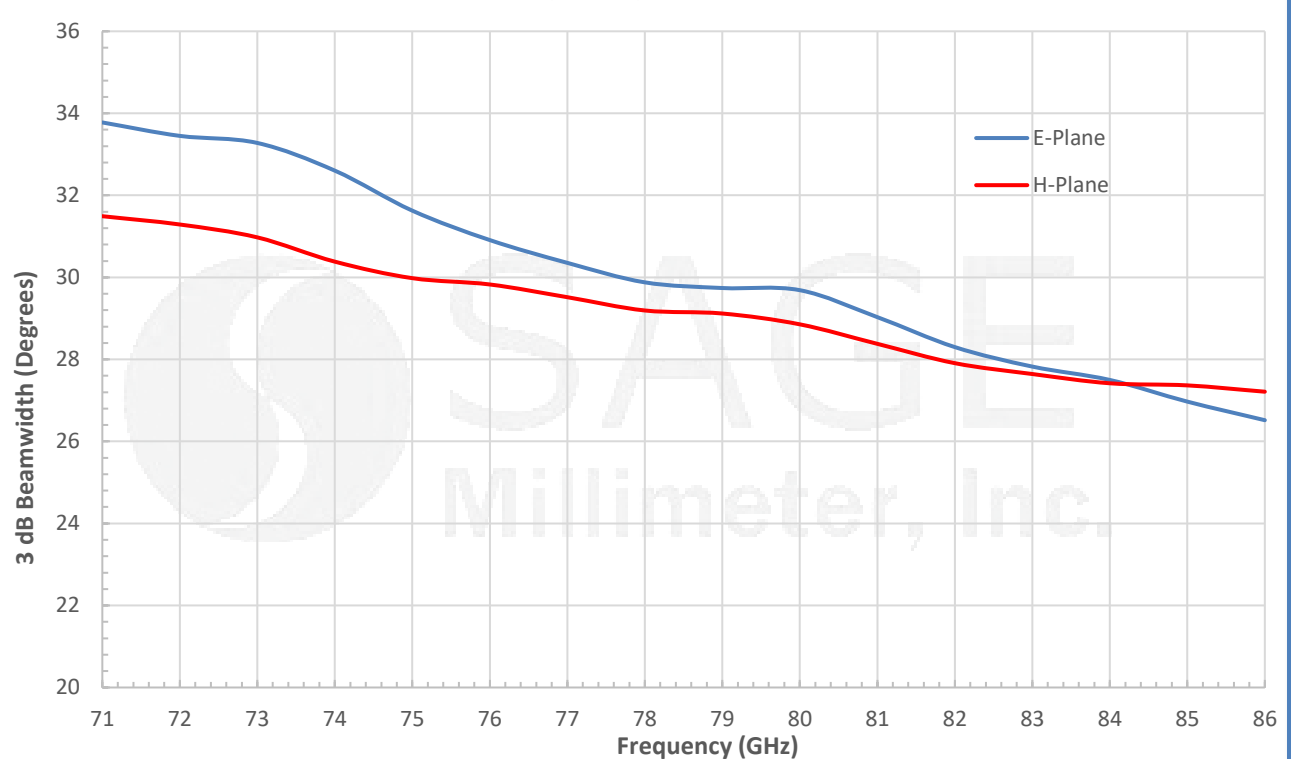


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### Simulated Return Loss vs. Frequency



### Simulated 3 dB Beamwidth vs. Frequency

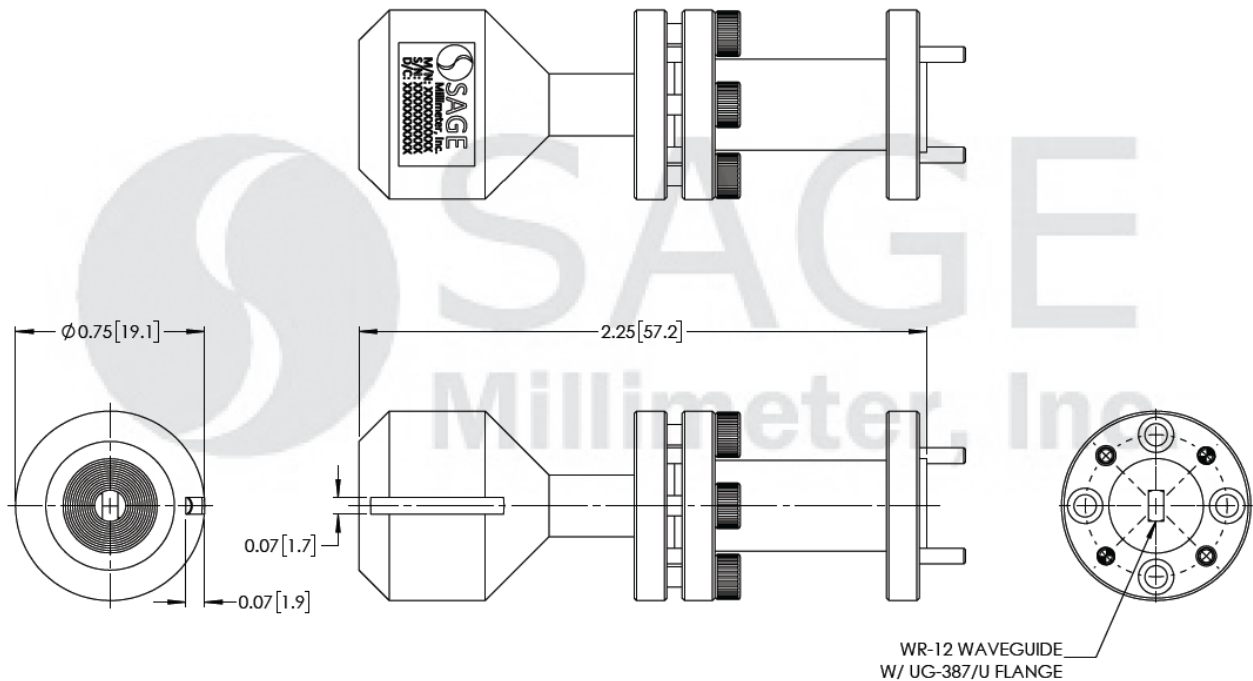


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**Mechanical Outline:** (Unless otherwise specified, all dimensions are in inches [millimeters])



**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.

