



## WR-19 Scalar Feed Horn Antenna, 40 to 60 GHz, 13 dBi

### Description:

**Model SAF-4036031340-219-S1** is a WR-19 scalar feed horn antenna assembly that covers several popular 5G bands in the frequency range of 40 to 60 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 return loss of 20 dB, and -25 dB side lobe levels on the E-Plane and H-Plane. The antenna is equipped with a  $\varnothing 0.219''$  circular waveguide with a UG-383/U-M flange.



### Features:

- 40 to 60 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

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	40 GHz		60 GHz
Gain		13 dBi	
3 dB Beamwidth, E-plane		40°	
3 dB Beamwidth, H-plane		40°	
Side Lobe, E-Plane		-25 dB	
Side Lobe, H-Plane		-25 dB	
Return Loss		20 dB	
Polarization		Linear and Circular	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

### Mechanical Specifications:

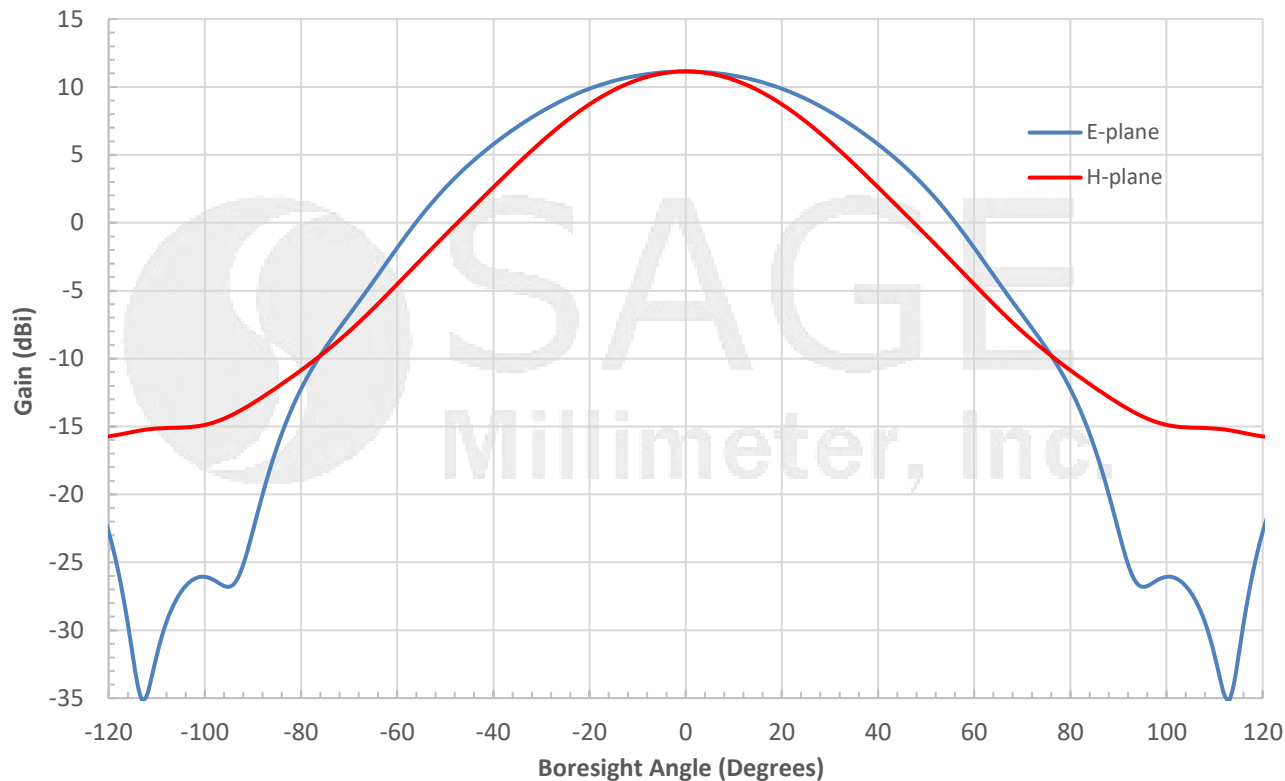
Item	Specification
Horizontal and Vertical Ports	0.219" Dia Circular Waveguide with UG-383/U-M Flange
Material	Brass
Finish	Gold Plated
Weight	1 oz
Size	0.63" (L) x 0.70" (Ø)
Outline	AF-CU13-219



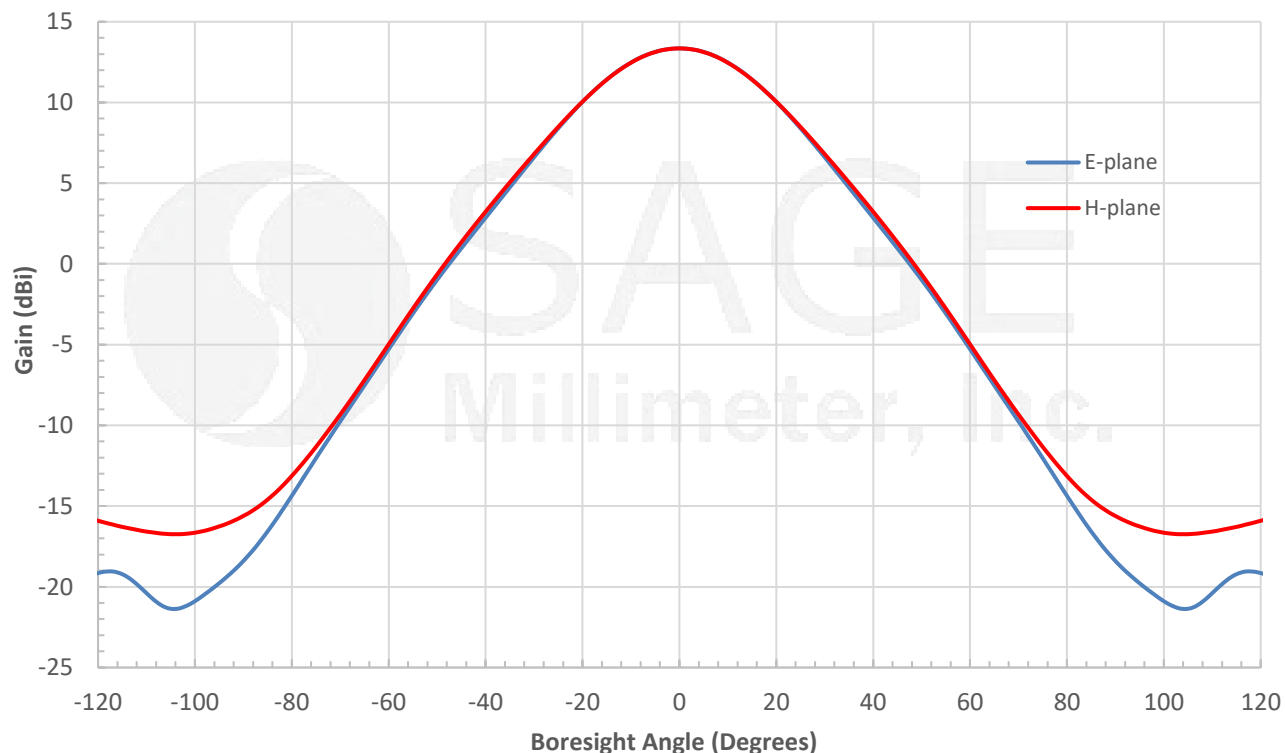


## WR-19 Scalar Feed Horn Antenna, 40 to 60 GHz, 13 dBi

### Simulated Antenna Patterns @ 40 GHz



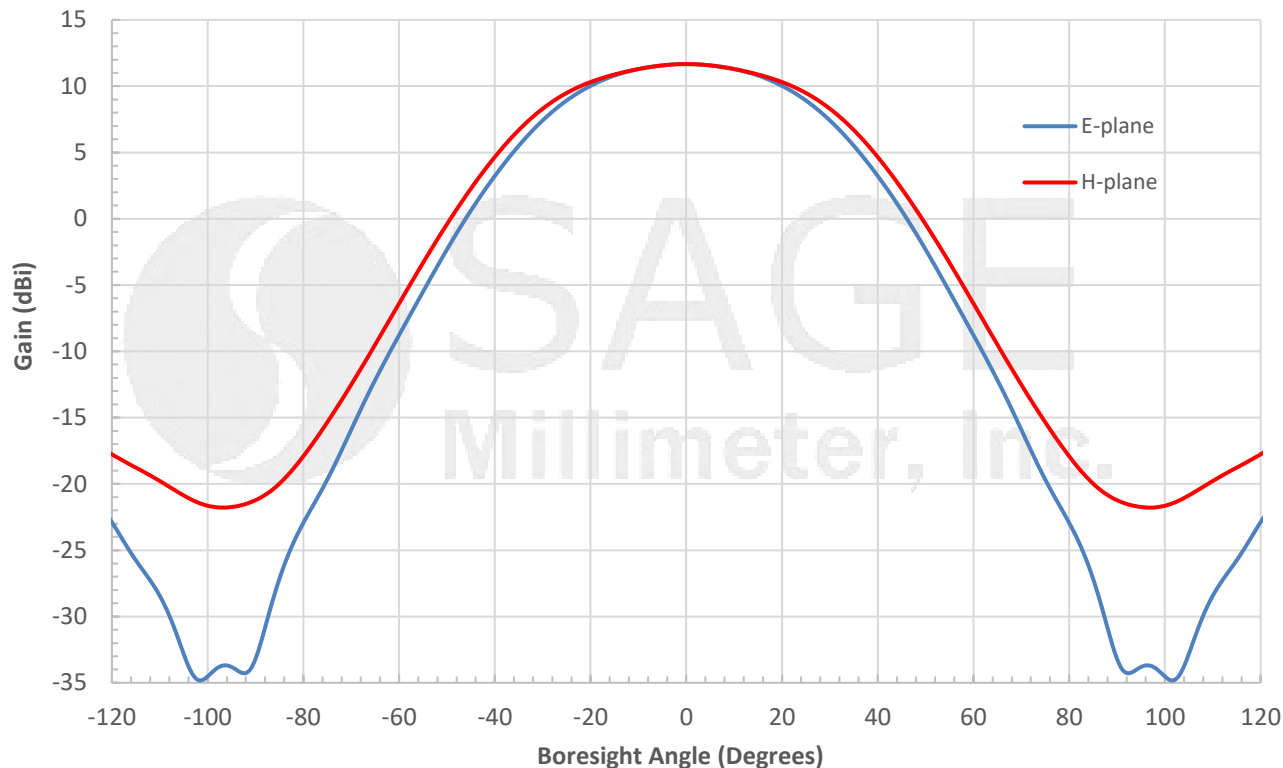
### Simulated Antenna Patterns @ 50 GHz



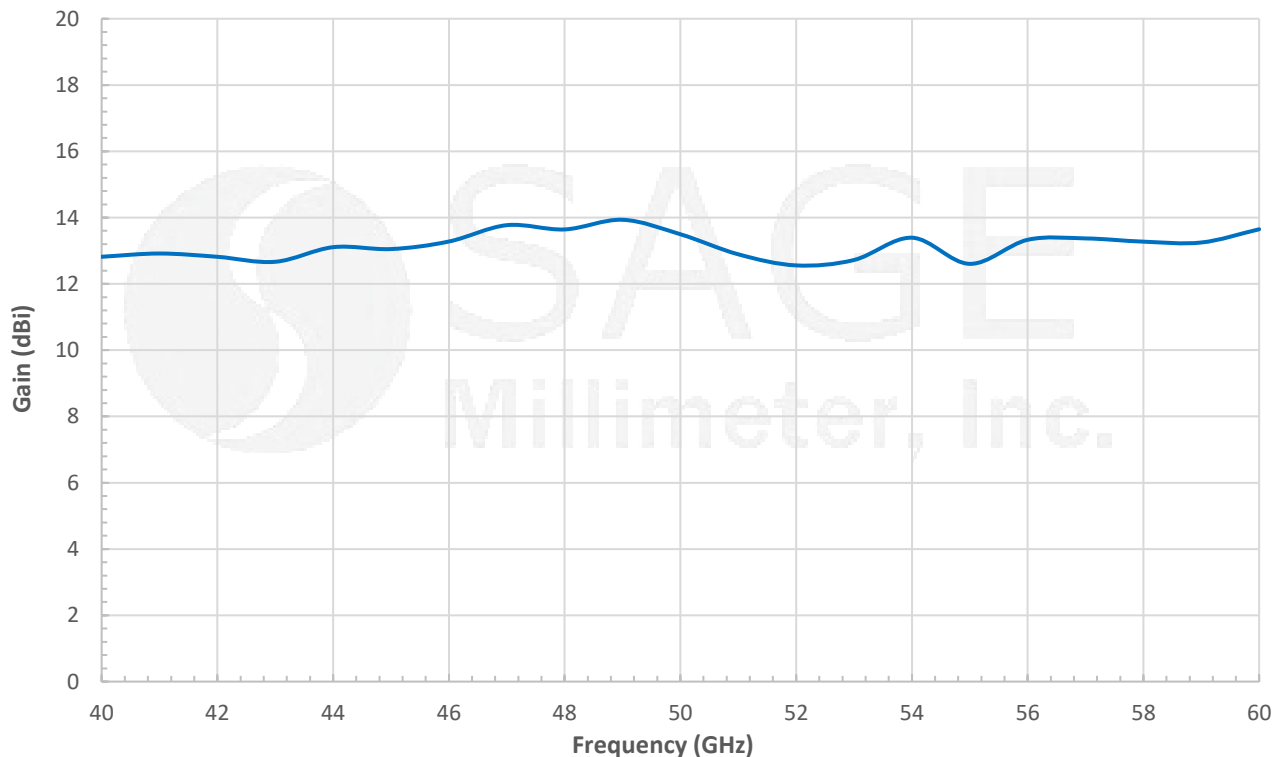


### WR-19 Scalar Feed Horn Antenna, 40 to 60 GHz, 13 dBi

#### Simulated Antenna Patterns @ 60 GHz



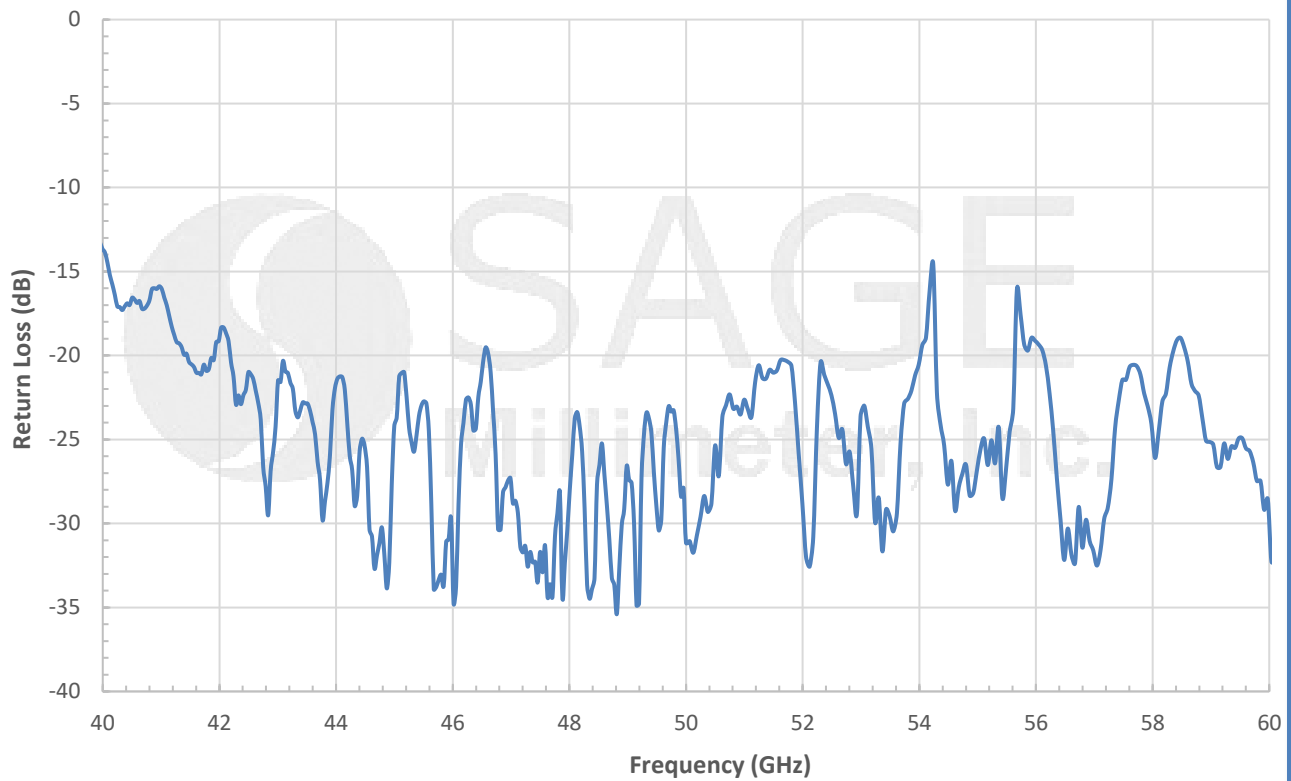
#### Measured Gain vs. Frequency



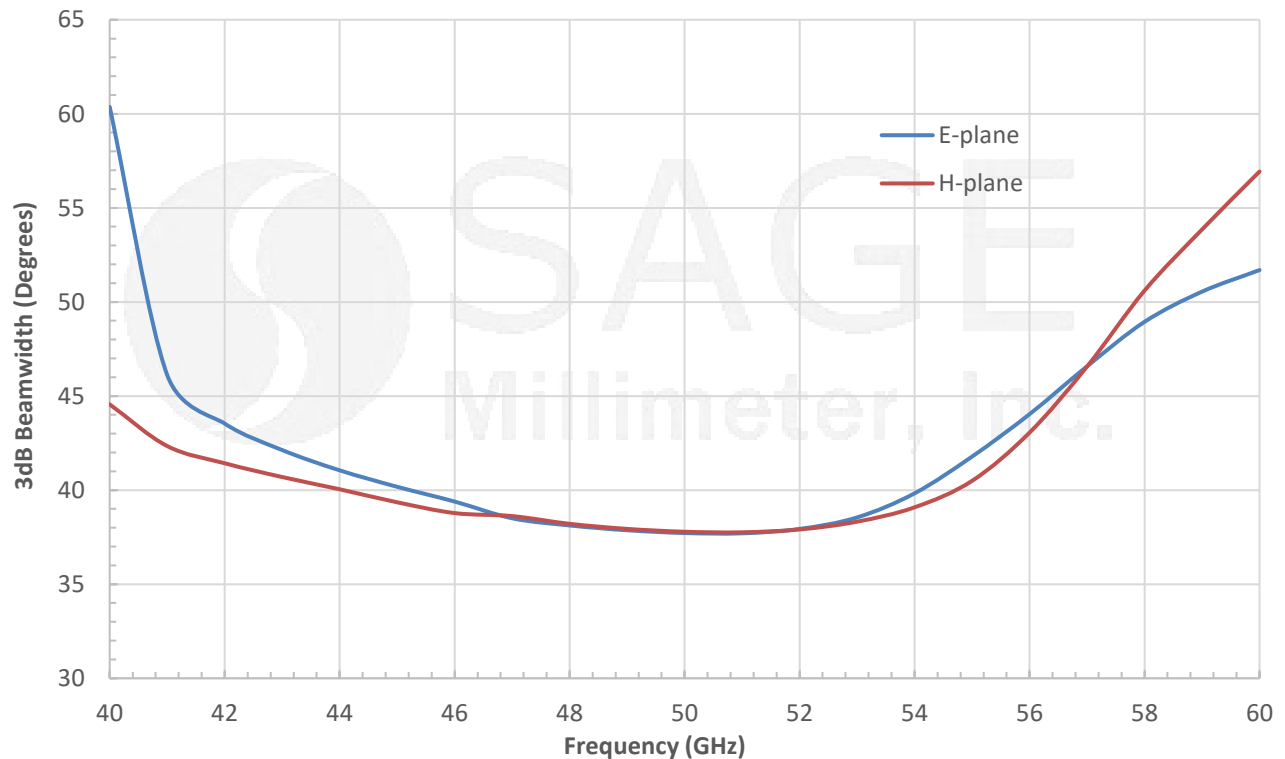


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### Measured Return Loss vs. Frequency



### Simulated 3dB Beamwidth vs. Frequency

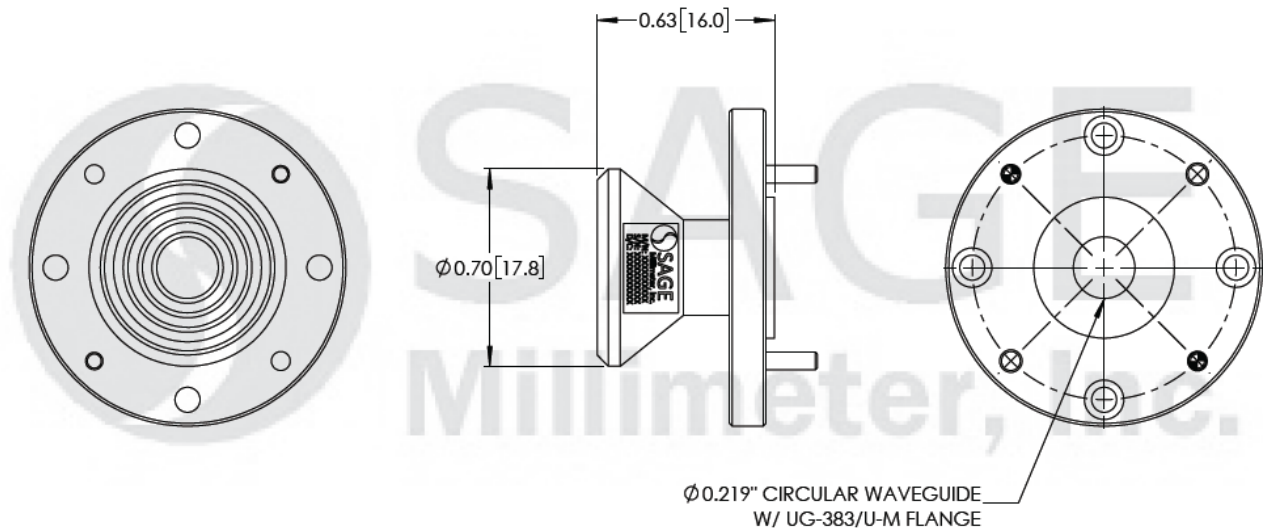


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**Mechanical Outline:** (Unless otherwise specified, all dimensions are in inches [millimeters])



**Note:**

- Gain and Return Loss data presented are collected from a sample lot. Actual data may vary unit to unit, slightly.
- Antenna patterns and 3 dB beamwidth are simulated. Actual data may vary.
- All testing was performed under +25 °C room temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

**Caution:**

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

