



## WR-22 Pyramidal Horn Antenna, 20 dBi Gain with 2.40 mm Coax Input

### Description:

**Model SAR-2013-222F-E2** is a Q-band pyramidal horn antenna with a end launch (180°) 2.4 mm (F) coax connector to cover the frequency range of 33.0 GHz to 50 GHz. The antenna offers 20 dBi nominal gain and a typical half power beamwidth of 15 degrees on the E-plane and 16 degrees on the H-plane. The antenna supports linear polarized waveforms. The model with a 2.4 mm (M) connector is offered under model number SAR-2013-222M-E2.



### Features:

- Inline Configuration
- Linear Polarization
- DC Short Circuit at Input

### Applications:

- Antenna Ranges
- Antenna Gain Measurements
- System Setups

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	33 GHz		50 GHz
Gain	18.5 dBi	20 dBi	21 dBi
Polarization	Linear		
3 dB Beamwidth, E-Plane		15°	
3 dB Beamwidth, H-Plane		16°	
Sidelobes, E-Plane		-14 dB	
Sidelobes, H-Plane		-30 dB	
Return Loss		15 dB	
Power Handling			40 W (CW)
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

### Mechanical Specifications:

Item	Specification
Antenna Port (F)	2.4 mm Female for Model Number : SAR-2013-222F-E2
Antenna Port (M)	2.4 mm Male for Model Number : SAR-2013-222M-E2
Material	Aluminum
Finish	Gold Plated
Connector Material	Stainless Steel
Weight	2.1 Oz
Size	2.62" (L) X 1.35" (W) X 1.07" (H)
Outline	AR-QC1-E

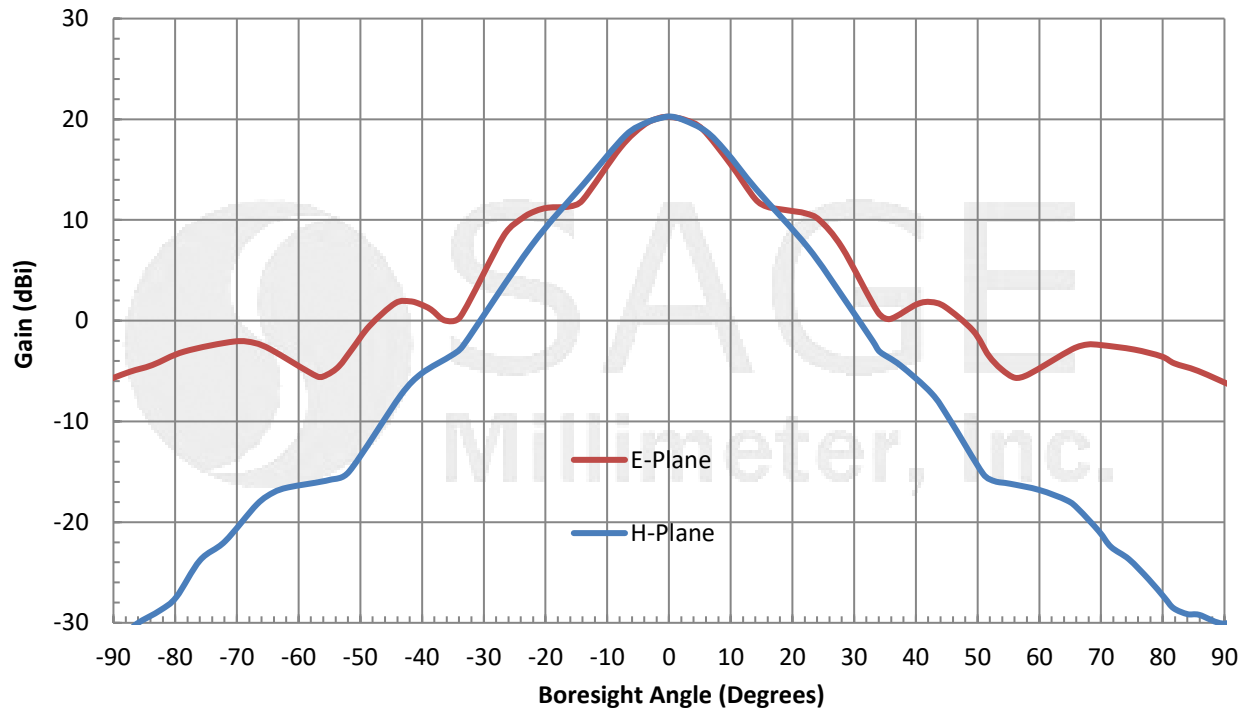


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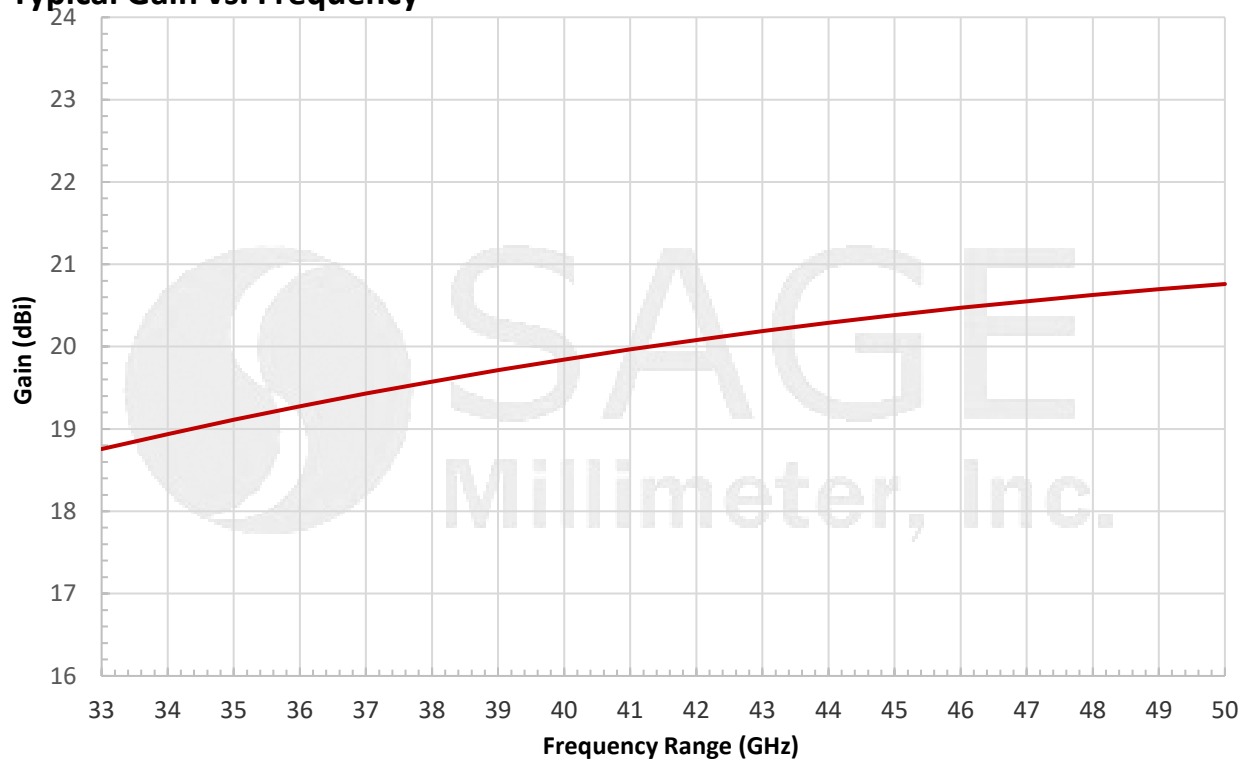


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### Typical Antenna Pattern @ 41.5 GHz



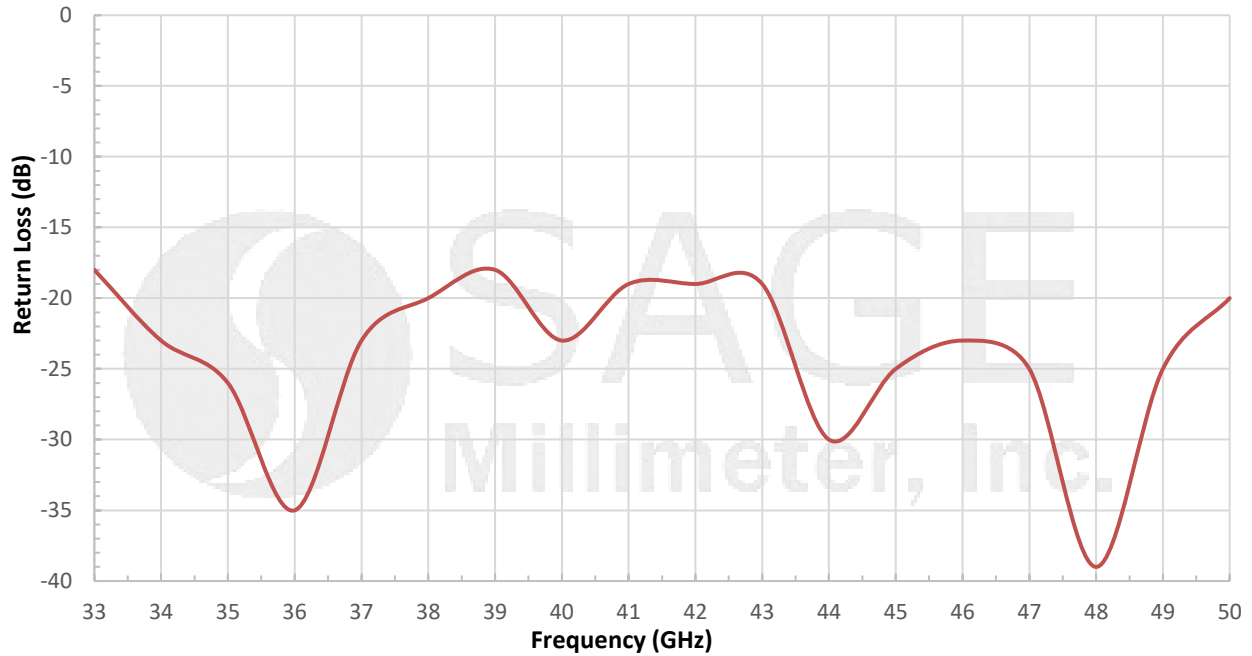
### Typical Gain vs. Frequency



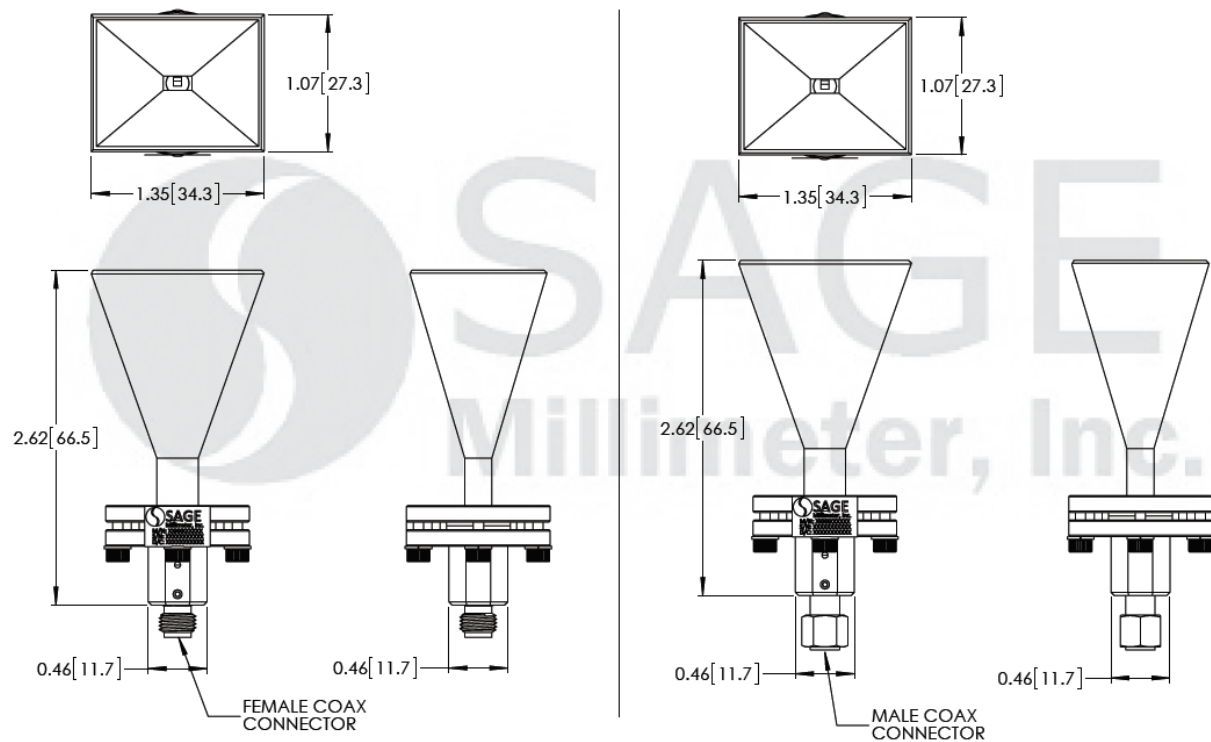


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### Typical Return Loss vs. Frequency



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





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### Note:

- The antenna patterns presented are simulated. Actual data may vary.
- The return loss data presented is collected from a sample lot. Actual data may vary unit to unit.
- 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.
- Proper torque,  $8.0 \pm 0.15$  inch-pounds ( $0.92 \pm 0.05$  Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

