



## WR-22 Pyramidal Horn Antenna, 20 dBi Gain with 1.85 mm Coax Input

### Description:

**Model SAR-2013-22VF-E2** is a Q-band pyramidal horn antenna with a end launch (180°) 1.85 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 1.85 mm (M) connector is offered under model number SAR-2013-22VM-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		18 dB	
Power Handling			30 W (CW)
Specification Temperature		+25 °C	
Operating Temperature	-45 °C		+85 °C

### Mechanical Specifications:

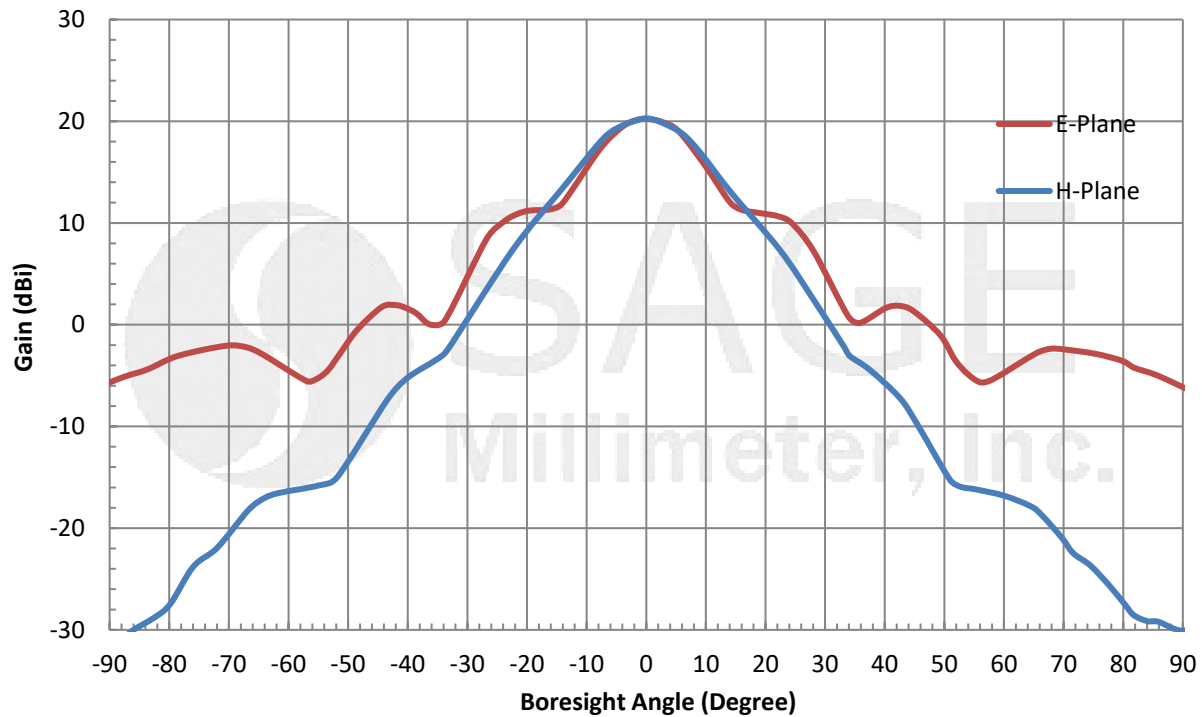
Item	Specification
Antenna Port (F)	1.85 mm Female for Model Number : SAR-2013-22VF-E2
Antenna Port (M)	1.85 mm Male for Model Number : SAR-2013-22VM-E2
Size	2.62" (L) X 1.35" (W) X 1.07" (H)
Material	Aluminum
Finish	Gold Plated
Connector Material	Stainless Steel
Weight	2.1 Oz
Outline	AR-QC1-E



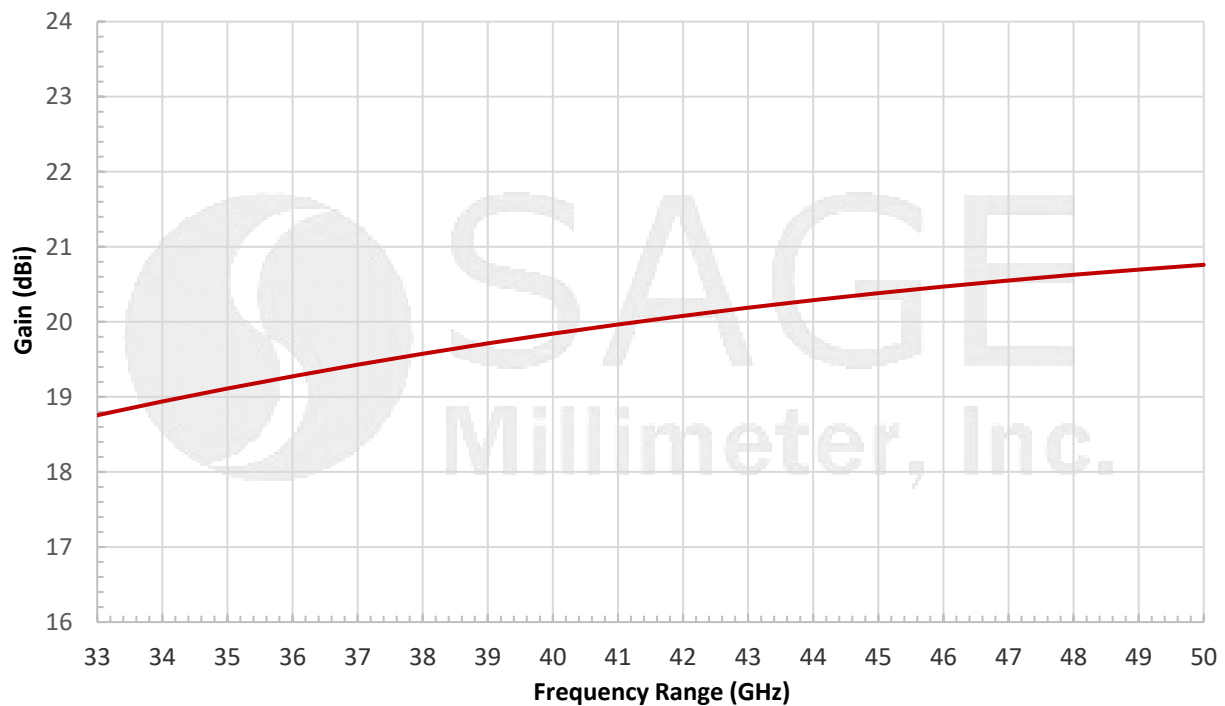


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### Typical Antenna Pattern @ 41.5 GHz



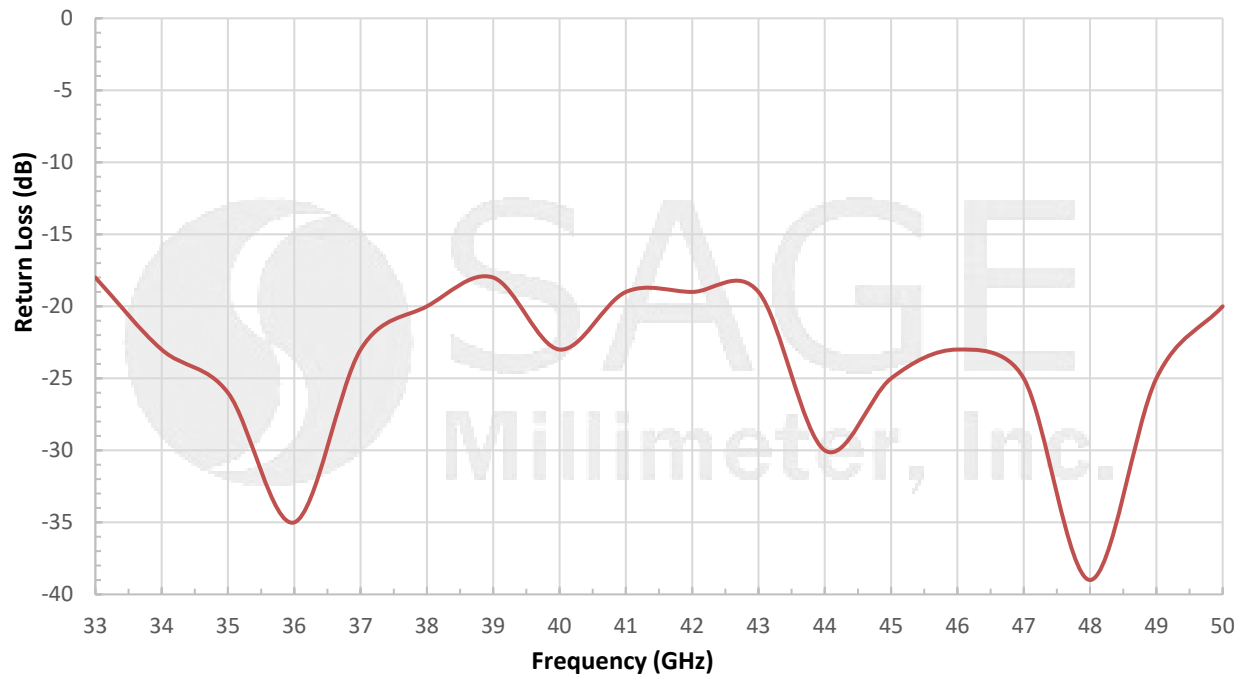
### Typical Gain vs. Frequency



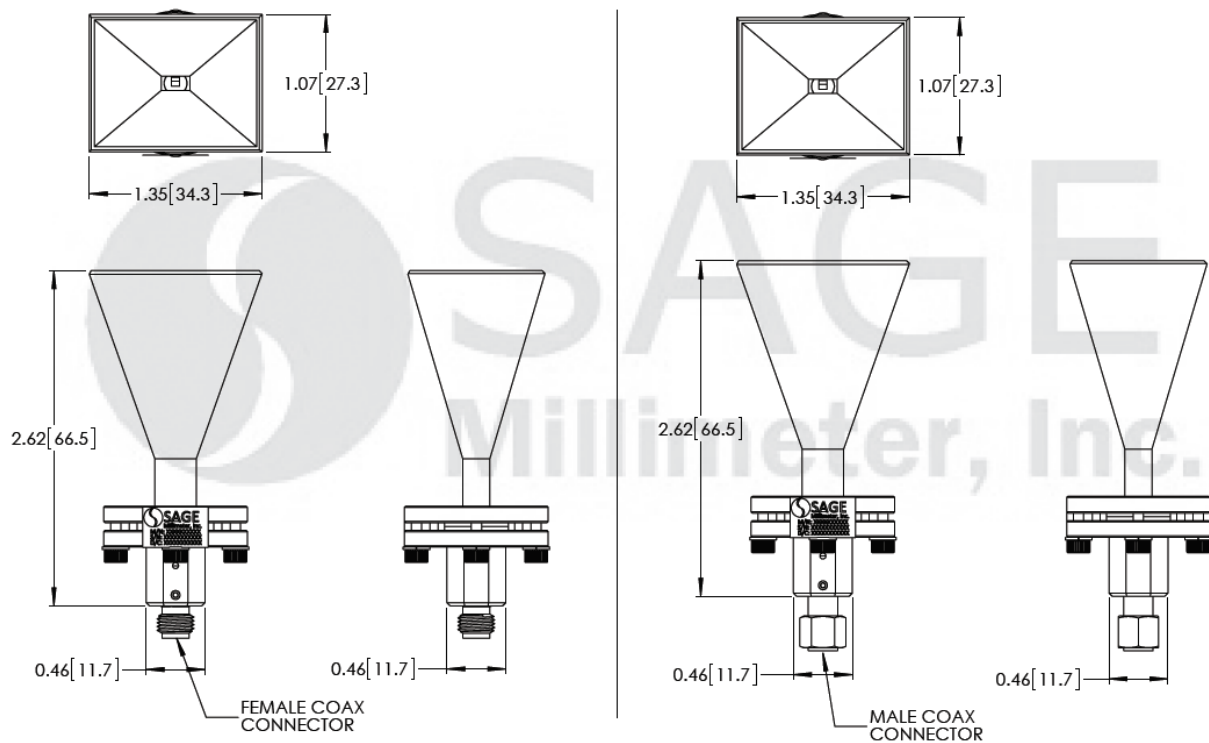


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### Typical Measured Return Loss vs. Frequency



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





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### Note:

- This antenna is a mature product. The reasons for only providing simulated data can be found in the following blog [here](#).
- All testing was performed under +25°C room temperature.
- Eravant 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 ( $0.90 \pm 0.02$  Nm), should be applied. **Eravant torque wrench, model SCH-08008-S1, is highly recommended.**

