



WR-22 Pyramidal Horn Antenna, 23 dBi Gain with 1.85 mm Coax Input

Description:

Models SAR-2309-22VF-E2 and SAR-2309-22VM-E2 are Q-band pyramidal horn antennas with end launch (180°) 1.85 mm coax connectors to cover the frequency range of 33 GHz to 50 GHz. The antennas offer 23 dBi nominal gain and a typical half power beamwidth of 10 degrees on the E-plane and 11 degrees on the H-plane. The antennas support linear polarized waveforms. Right angle (90°) 1.85 mm connector configurations are available under models SAR-2309-22VF-R2 and SAR-2309-22VM-R2.



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 | 21.5 dBi | 23 dBi | 24 dBi |
| Polarization | Linear | | |
| 3 dB Beamwidth, E-Plane | | 10° | |
| 3 dB Beamwidth, H-Plane | | 11° | |
| 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:

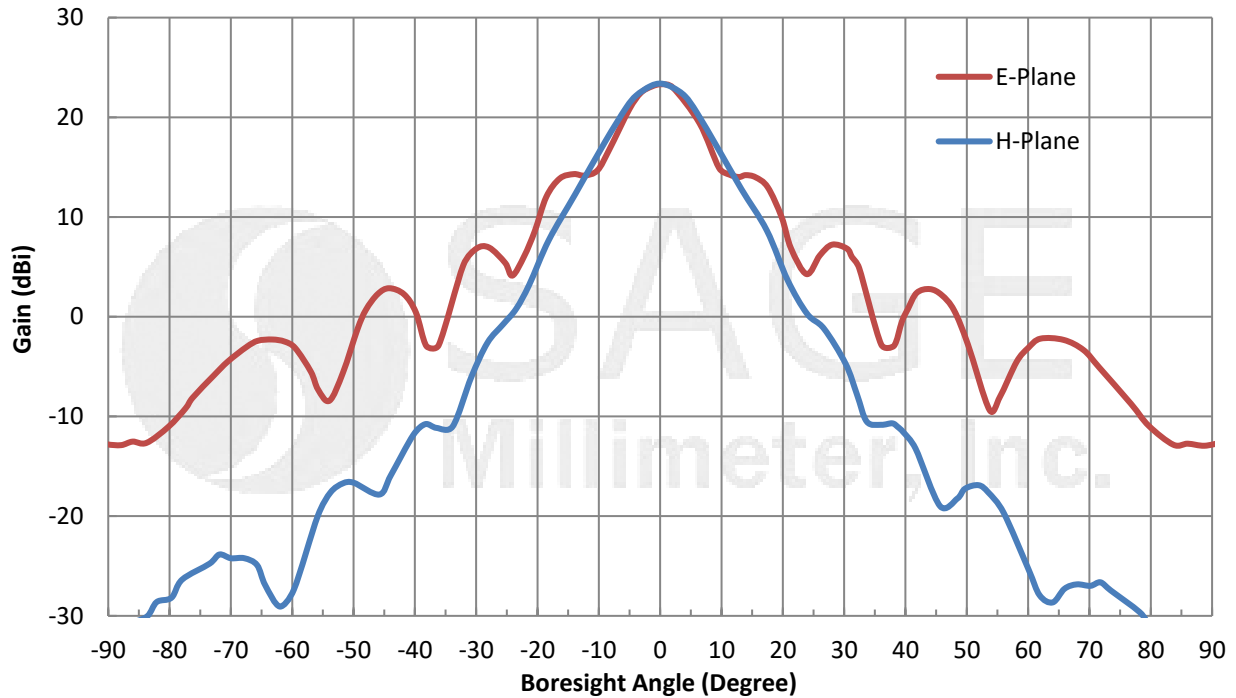
| Item | Specification |
|--------------------|--|
| Antenna Port (F) | 1.85 mm Female for Model Number : SAR-2309-22VF-E2 |
| Antenna Port (M) | 1.85 mm Male for Model Number : SAR-2309-22VM-E2 |
| Size | 4.32" (L) X 1.86" (W) X 1.51" (H) |
| Material | Aluminum |
| Finish | Gold Plated |
| Connector Material | Stainless Steel |
| Weight | 1.5 Oz |
| Outline | AR-QC2-E |



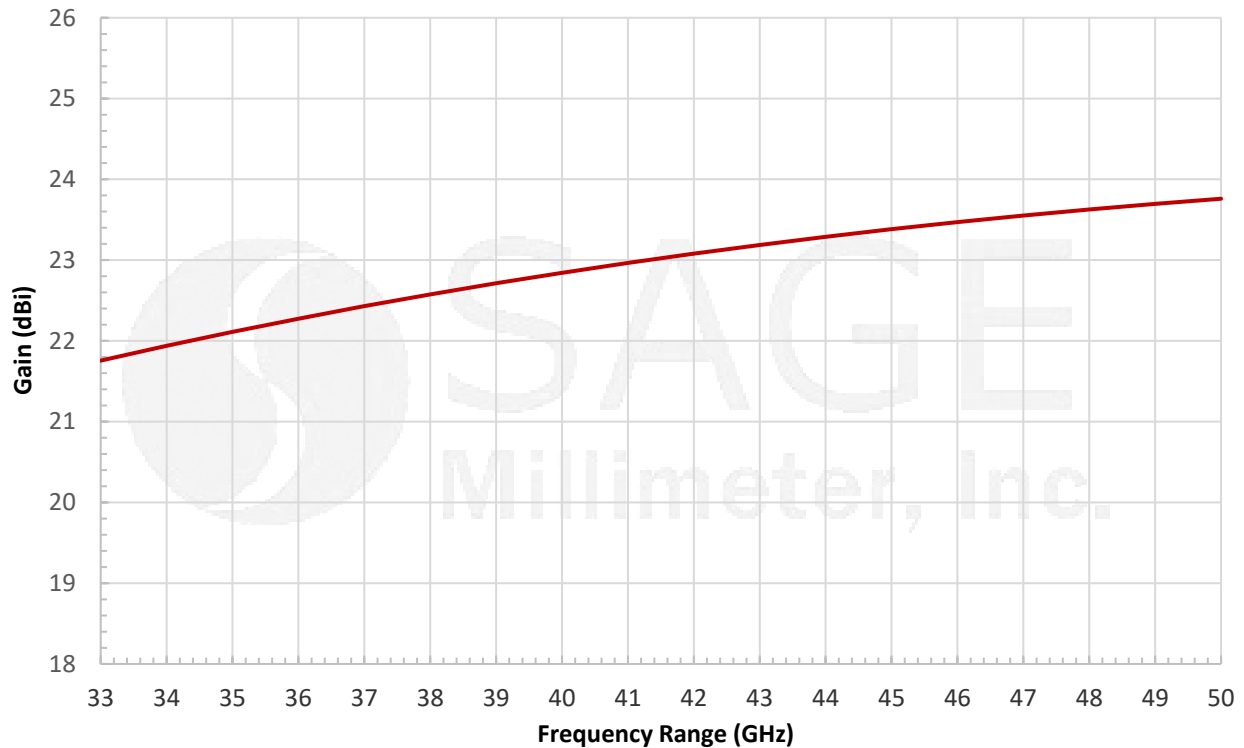


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Typical Antenna Pattern @ 41.5 GHz

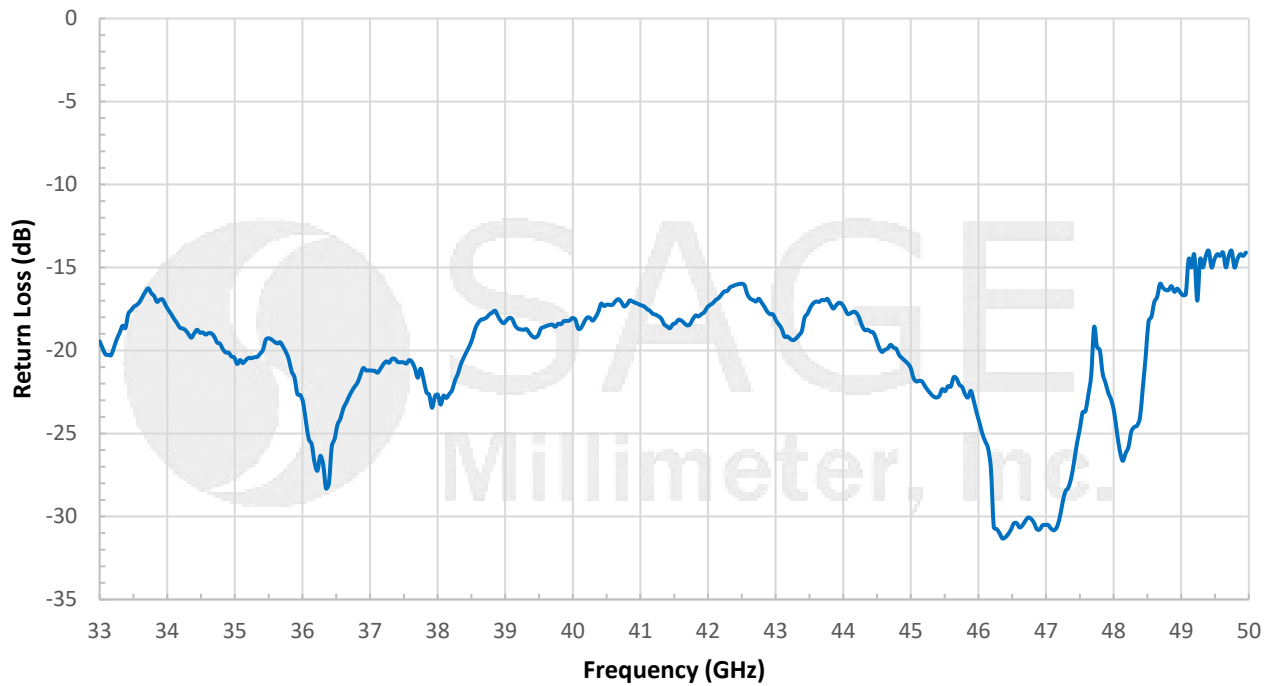


Typical Gain vs. Frequency

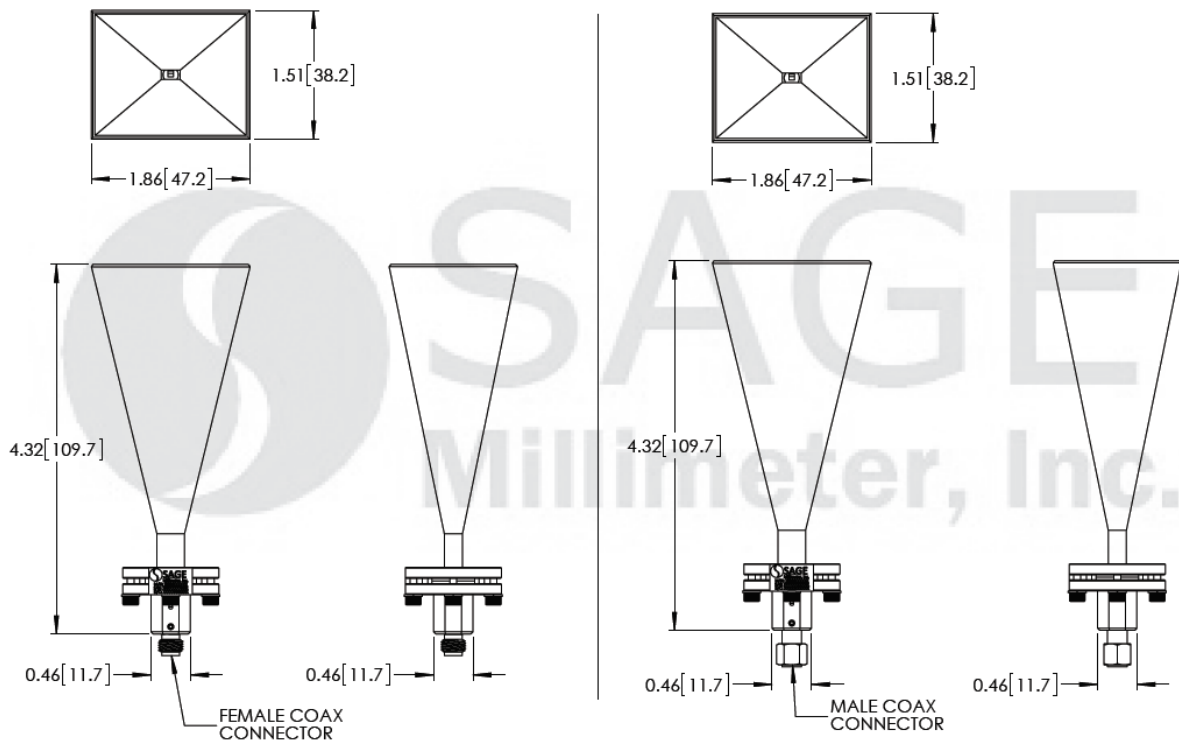


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Typical Measured Return Loss vs. Frequency



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 ± 0.15 inch-pounds (0.92 ± 0.05 Nm), should be applied. **Eravant torque wrench, model SCH-08008-S1, is highly recommended.**

