



## WR-12 Pyramidal Horn Antenna, 20 dBi Gain with 1 mm Coax Input

### Description:

**Model SAR-2013-121F-E2** is an E-band pyramidal horn antenna with a end launch (180°) 1 mm (F) coax connector to cover the frequency range of 60 GHz to 90 GHz. The antenna offers 20 dBi nominal gain and a typical half power beamwidth of 14 degrees on the E-plane and 15 degrees on the H-plane. The antenna supports linear polarized waveforms. The model with 1 mm (M) connector is offered under model number SAR-2013-121M-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                 | 60 GHz  |         | 90 GHz    |
| Gain                      |         | 20 dBi  |           |
| Polarization              |         | Linear  |           |
| 3 dB Beamwidth, E-Plane   |         | 14°     |           |
| 3 dB Beamwidth, H-Plane   |         | 15°     |           |
| Sidelobes, E-Plane        |         | -14 dB  |           |
| Sidelobes, H-Plane        |         | -30 dB  |           |
| Return Loss               |         | 15 dB   |           |
| Power Handling            |         |         | 10 W (CW) |
| Specification Temperature |         | +25 °C  |           |
| Operating Temperature     | -40 °C  |         | +85 °C    |

### Mechanical Specifications:

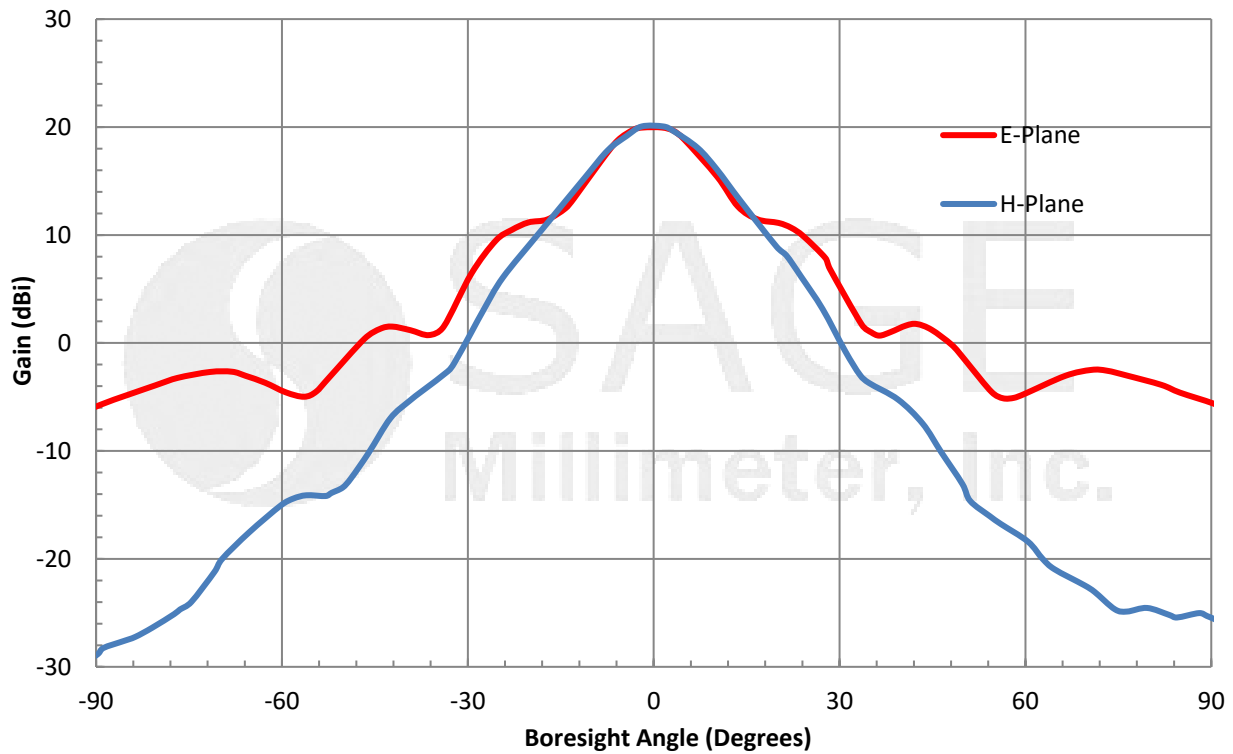
| Item         | Specification                    |
|--------------|----------------------------------|
| Antenna Port | 1 mm Female                      |
| Material     | Brass                            |
| Finish       | Gold Plated                      |
| Weight       | 1 Oz                             |
| Size         | 1.41" (L) X 0.79" (W) X 0.64"(H) |
| Outline      | AR-EC1-E                         |



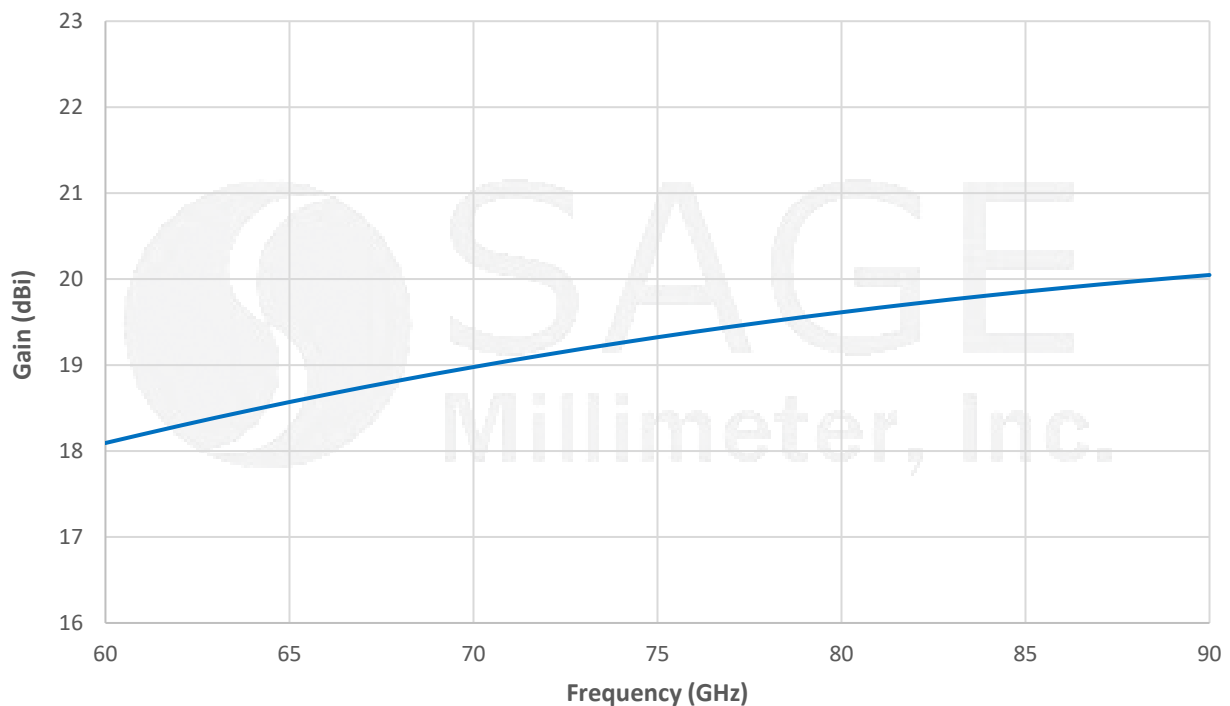


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### Typical Antenna Pattern @ 75 GHz



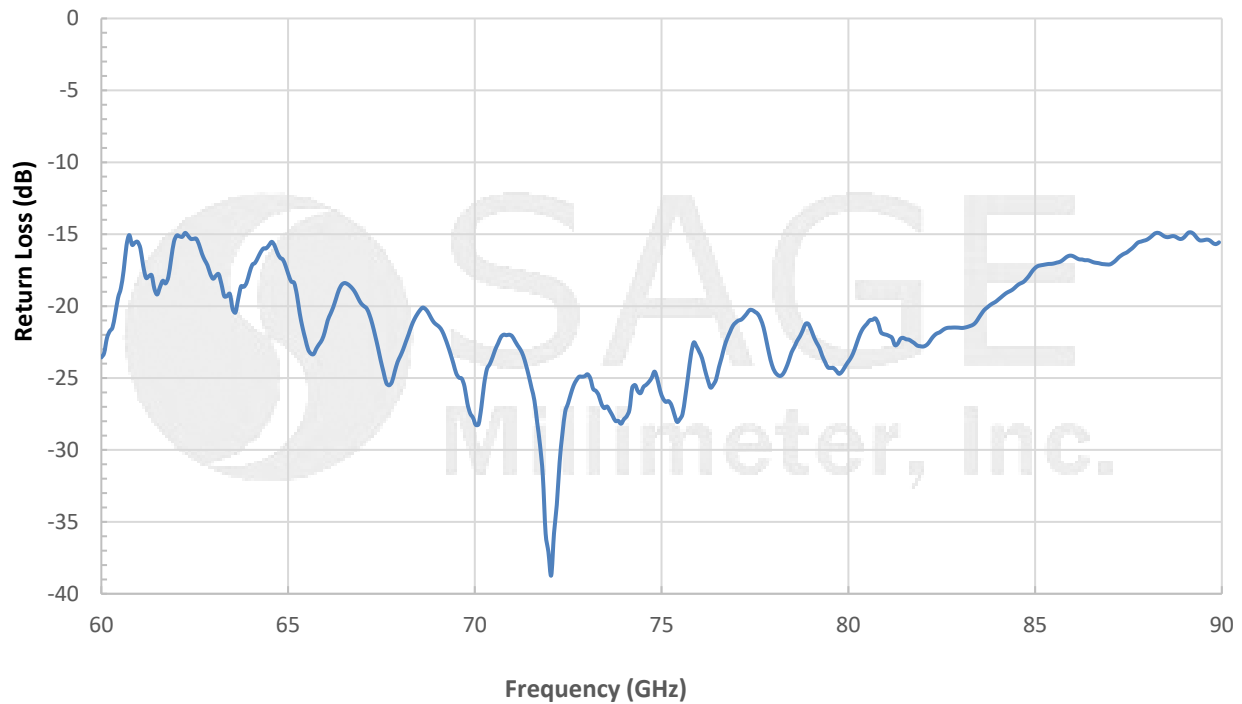
### Typical Gain vs. Frequency



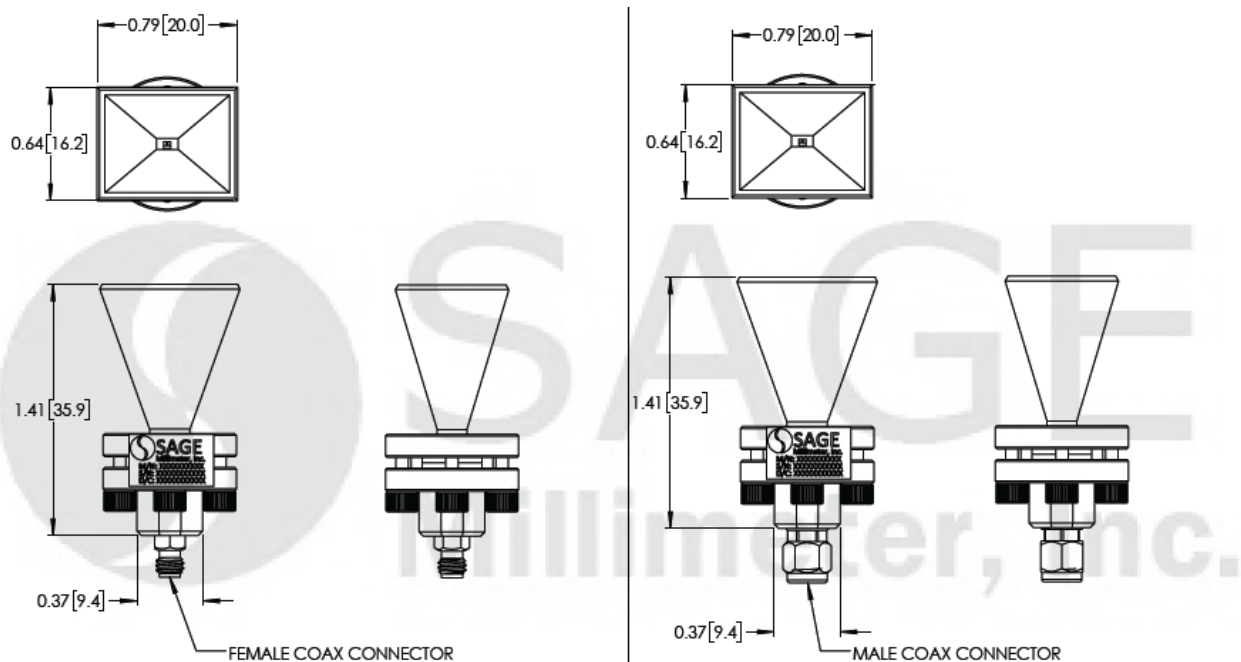


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### Typical Return Loss vs. Frequency



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



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### Note:

- 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 waveguide will cause performance degradation and possible device damage.
- Proper torque,  $4.0 \pm 0.15$  inch-pounds ( $0.45 \pm 0.02$  Nm), should be used. **Eravant torque wrench, model SCH-06004-S1, is highly recommended.**

