

## SAR-1248-90-S3

### WR-90 Pyramidal Horn Antenna, 12 dBi Gain

**SAR-1248-90-S3** is an X-band pyramidal horn antenna that operates from 8.2 GHz to 12.4 GHz. The antenna offers 12 dBi nominal gain and a typical half power beamwidth of 44 degrees on the E-plane and 45 degrees on the H-plane. The antenna supports linear polarized waveforms. The input of this antenna is a WR-90 waveguide with UG-39/U flange.



#### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	8.2 GHz	10.3 GHz	12.4 GHz
Gain		12 dBi	
Polarization		Linear	
3 dB Beamwidth, E-Plane		44°	
3 dB Beamwidth, H-Plane		45°	
Sidelobes, E-Plane		-20 dB	
Sidelobes, H-Plane		-25 dB	
Return Loss		20 dB	
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

#### Mechanical Specifications:

Item	Specification
Antenna Port	WR-90 Waveguide with UG-39/U Flange
Material	Aluminum
Finish	Inside: Chromate Conversion; Outside: Black Paint
Weight	8.0 Oz
Size	1.97" (L) X 1.46" (W) X 1.85" (H)
Outline	AR-X12-H1

#### ECCN

EAR99

#### FEATURES

- Rectangular Waveguide Interface
- Precisely Machined
- Linear Polarization
- High Return Loss

#### APPLICATIONS

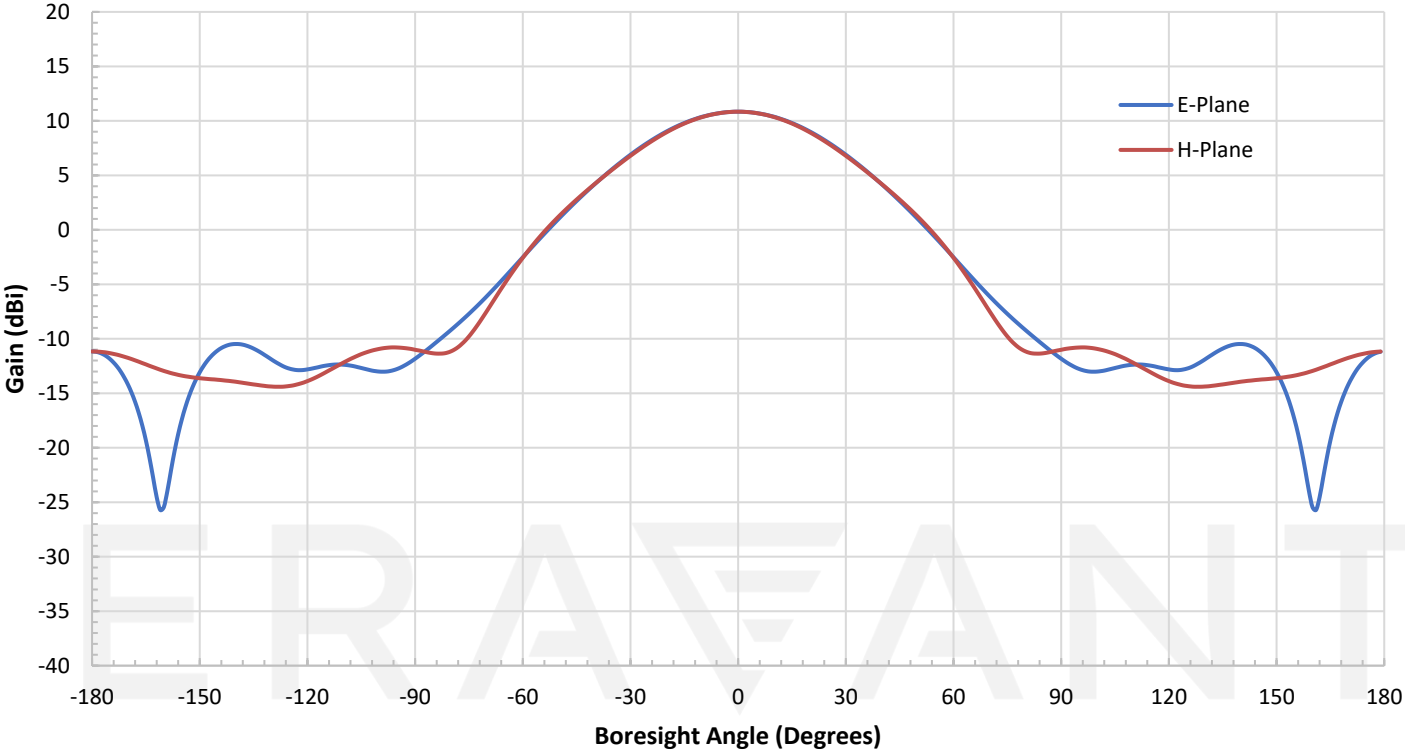
- Antenna Ranges
- Antenna Gain Measurements
- System Setups

#### SUPPLEMENTAL DETAILS

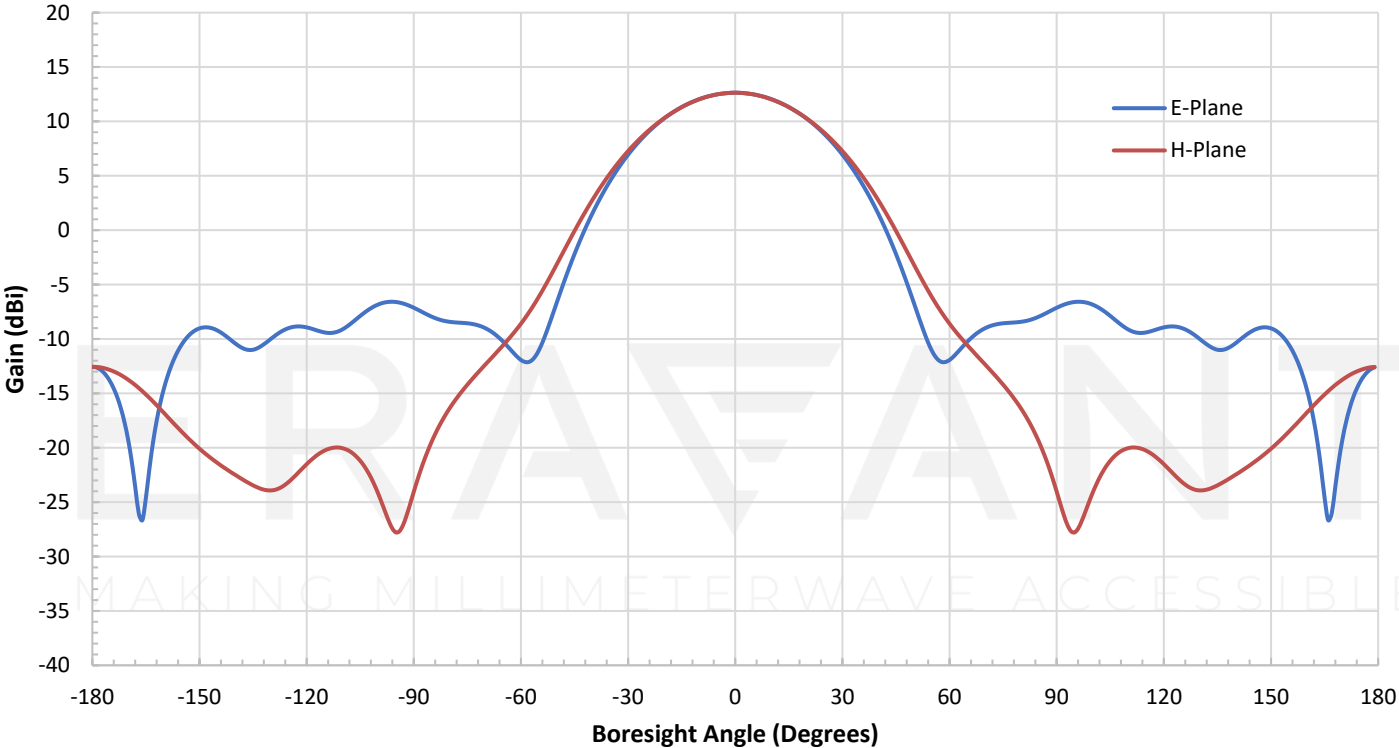


SAR-1248-90-S3

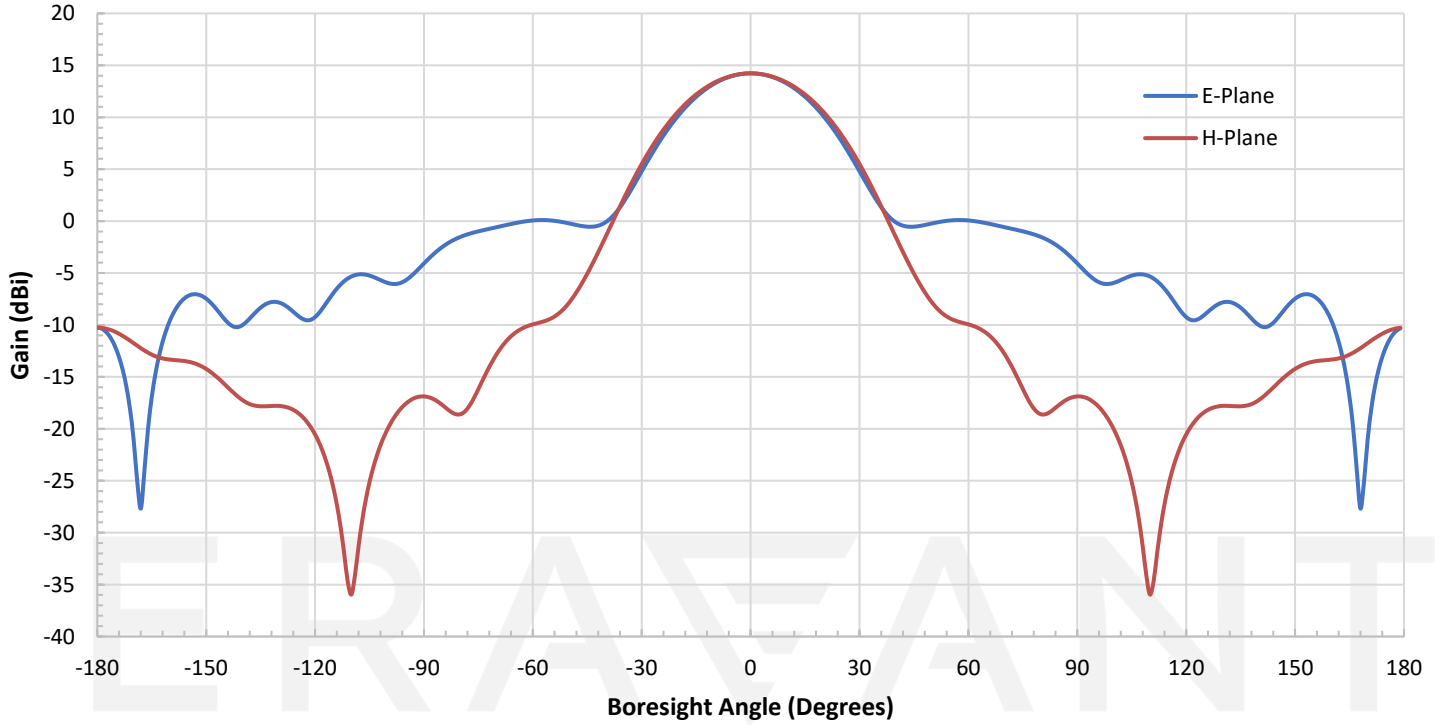
Simulated Antenna Patterns @ 8.2 GHz



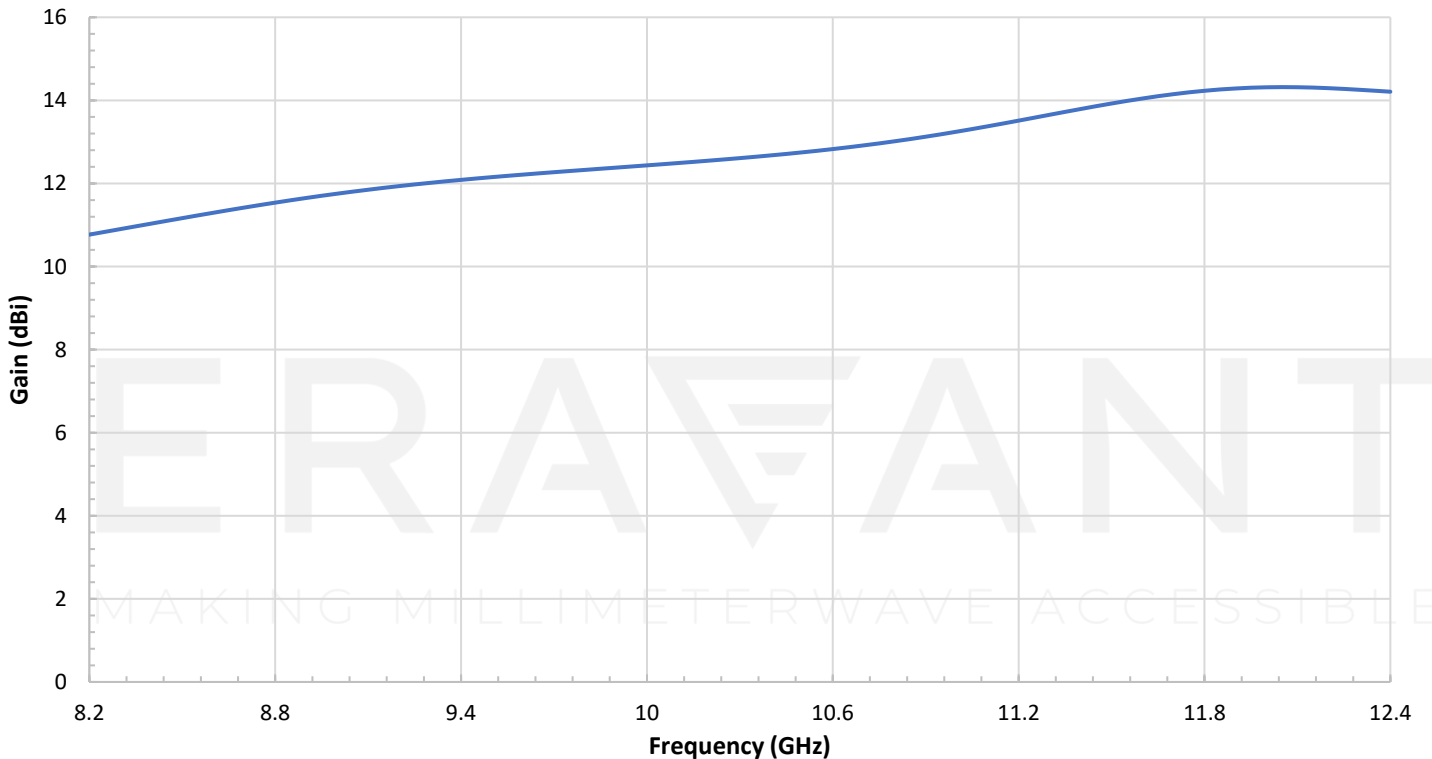
Simulated Antenna Patterns @ 10.3 GHz



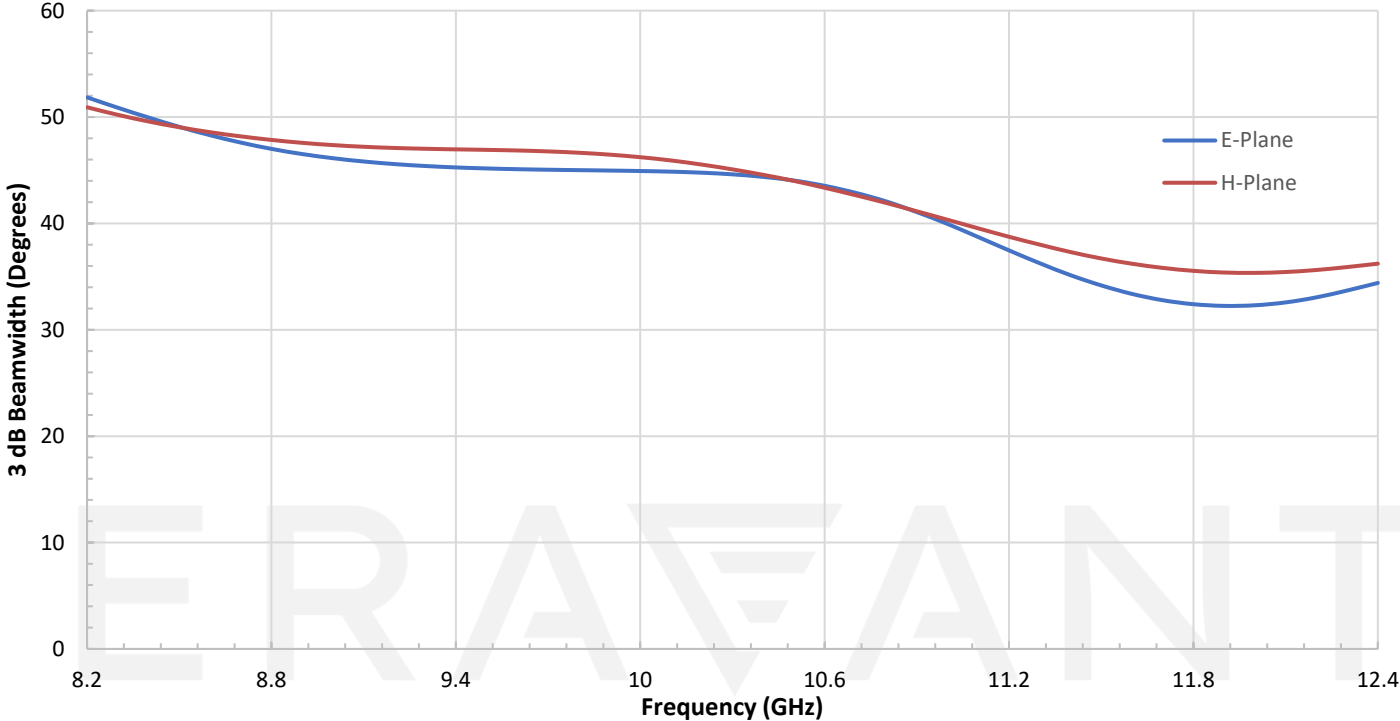
### Simulated Antenna Patterns @ 12.4 GHz



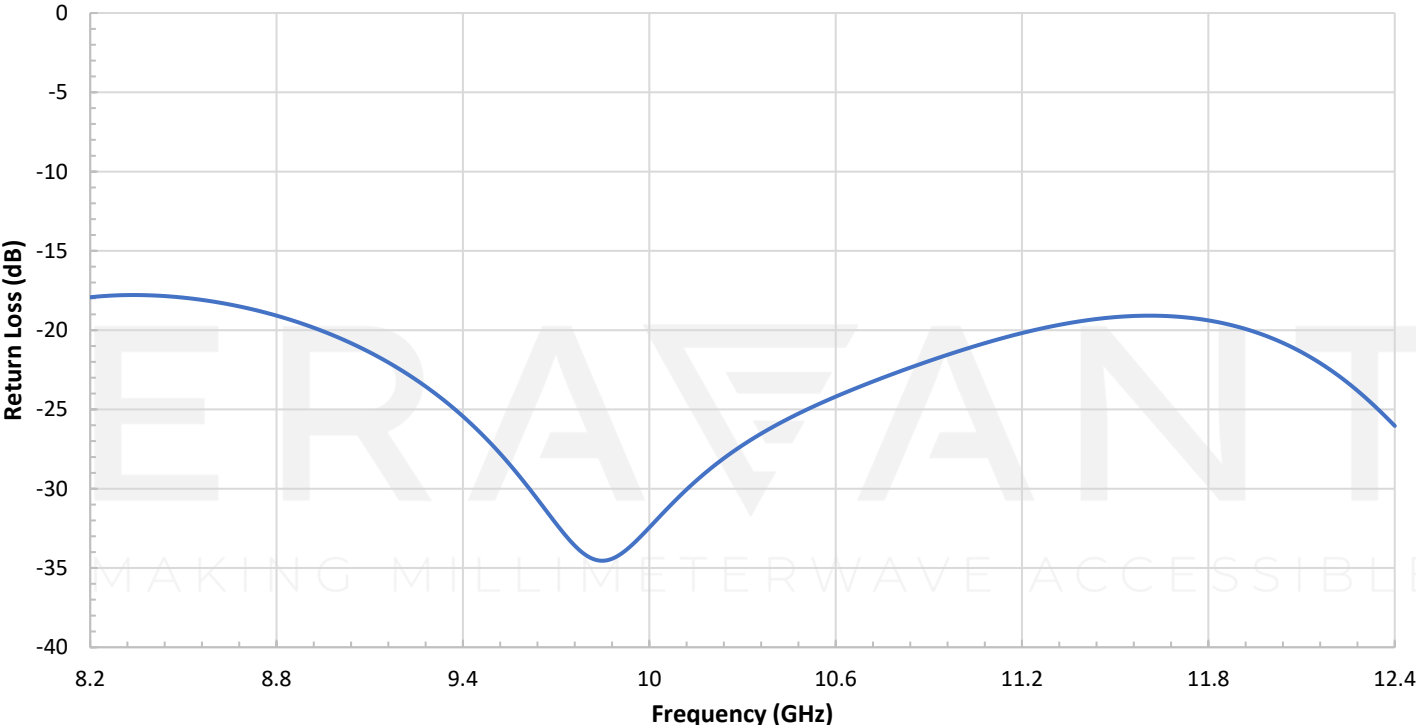
### Simulated Gain vs. Frequency



Simulated 3 dB Beamwidth vs. Frequency

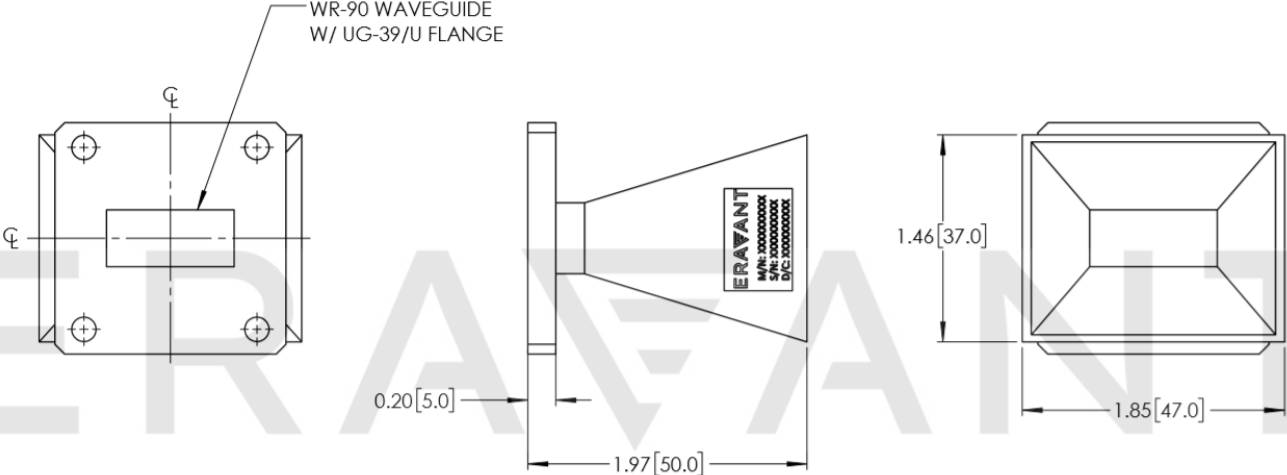


Simulated Return Loss vs. Frequency



## SAR-1248-90-S3

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



**NOTE:**

- This antenna is a mature product. The reasons for only providing simulated data can be found in the following blog [here](#).
- Eravant reserves the right to change the information presented without notice.

**CAUTION:**

- If a waveguide is present, any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.
- Any foreign objects in the antenna will cause performance degradation and possible device damage.