SAR-2018-90NF-R3-WP

Rev 1.0

WR-90 Rectangular Horn Antenna, 20 dBi Gain with N Type Coax Connector

Description:

Model SAR-2018-90NF-R3-WP is a X-band pyramidal horn antenna with a right angle (90°) N type coax connector to cover the frequency range of 8.2 GHz to 12.4 GHz. The antenna offers 20 dBi nominal gain and a typical half power beamwidth of 17 degrees on the E-plane and 19 degrees on the H-plane. The antenna supports linear polarized waveforms. Part has gray paint instead of black.

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	8.2 GHz		12.4 GHz
Gain		20 dBi	
Polarization		Linear	
3 dB Beamwidth, E-Plane		17°	
3 dB Beamwidth, H-Plane		19°	
Side Lobes, E-Plane		-13 dB	
Side Lobes, H-Plane		-36 dB	
Return Loss		18 dB	
Power Handling			50 W (CW)
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

Mechanical Specifications:

Item	Specification
Antenna Port (F)	N Type Female for Model Number: SAR-2018-90NF-R3
Material	Aluminum
Connector Material	Stainless Steel
Finish	Silver Plated
Weight	14.8 Oz
Size	10.04” (L) X 5.43” (W) X 4.21” (H)
Outline	AR-XC1-R-H1

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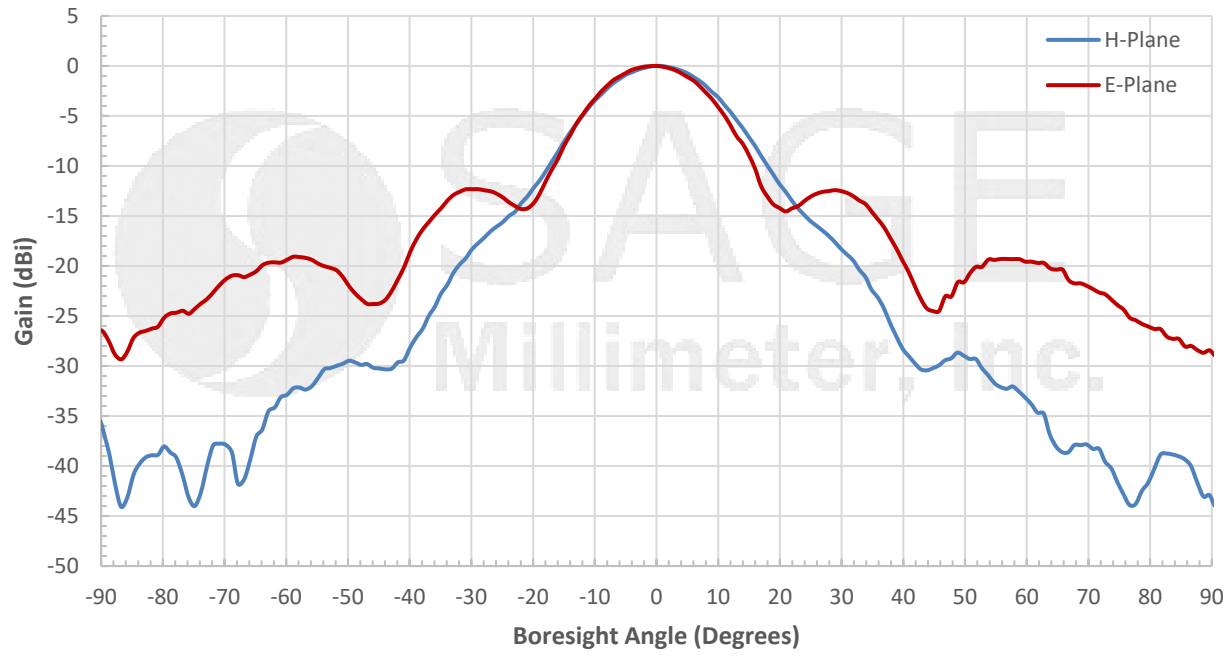
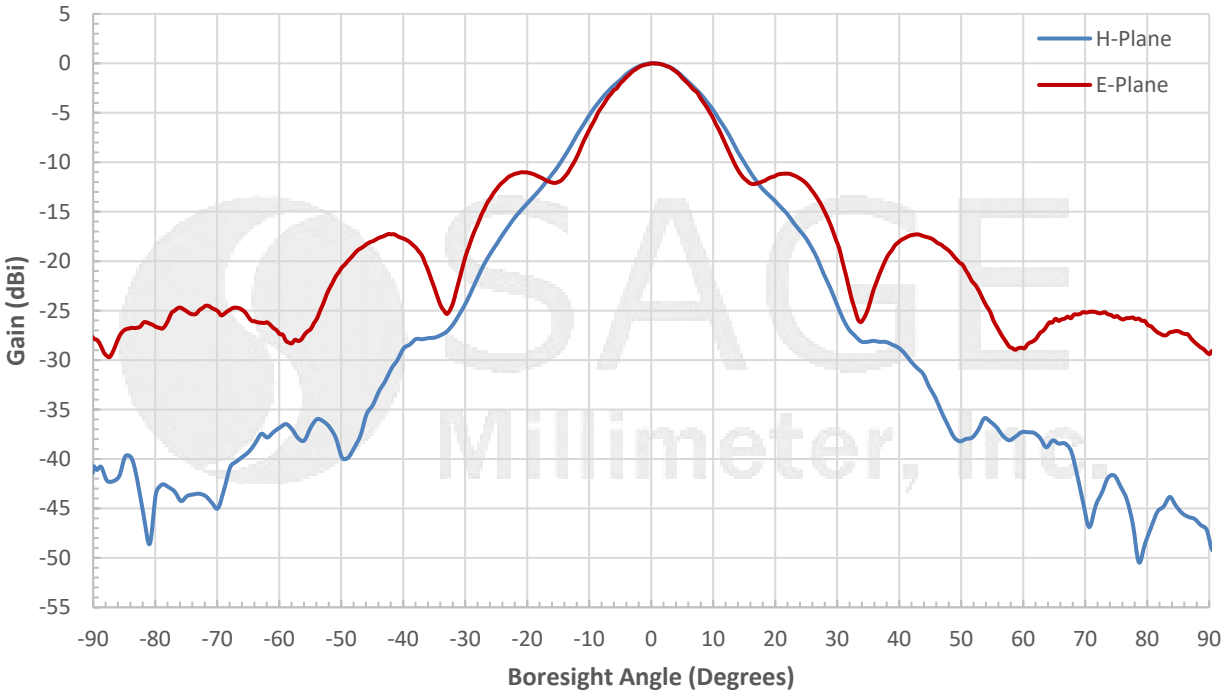
WR-90 Rectangular Horn Antenna, 20 dBi Gain with N Type Coax Connector

Simulated Antenna Patterns @ 8.2 GHz



Simulated Antenna Patterns @ 10.35 GHz



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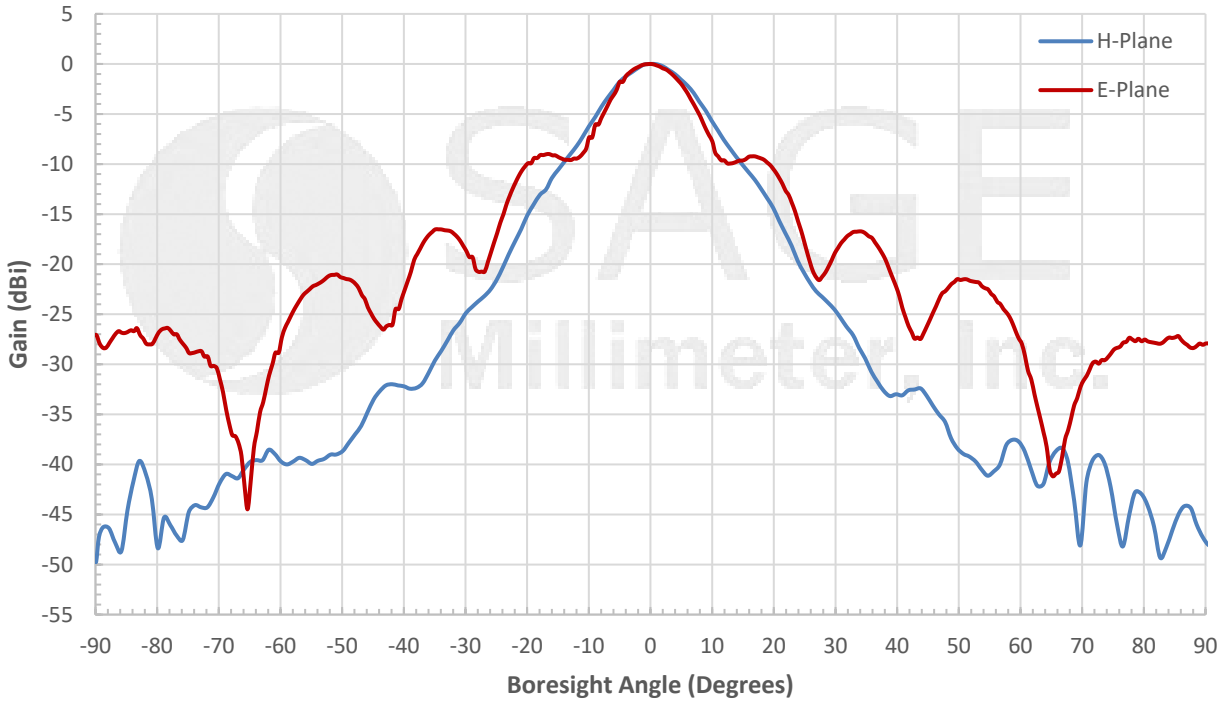
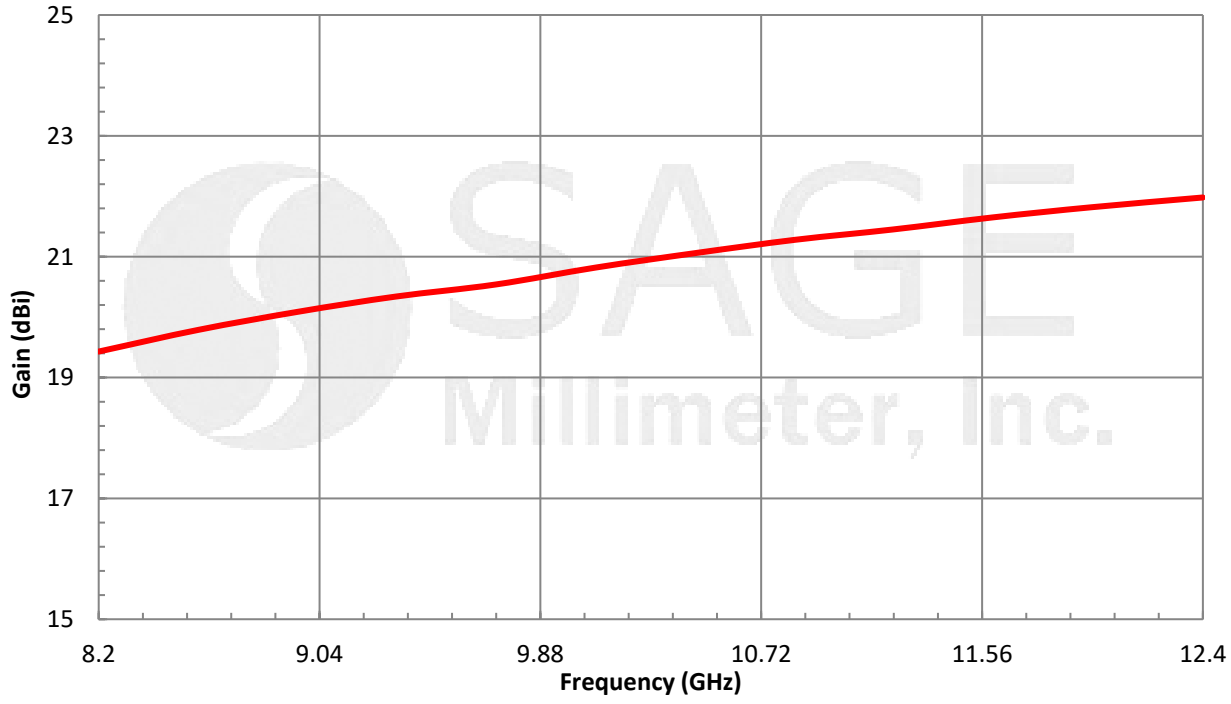
Simulated Antenna Patterns @ 12.5 GHz



Measured Gain vs. Frequency



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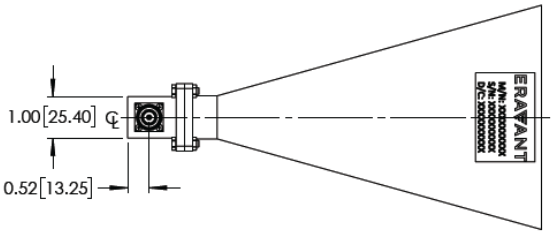
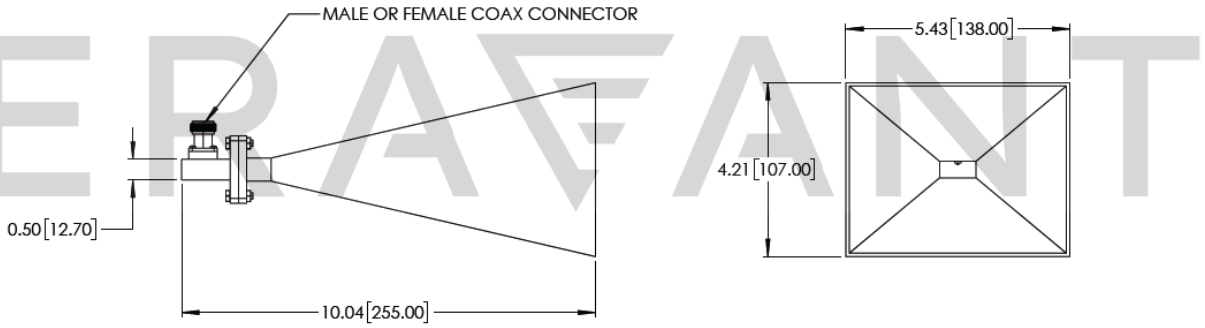
Measured Gain vs. Frequency in Tabular Format

Frequency (GHz)	Gain (dBi)	Frequency (GHz)	Gain (dBi)
8.20	19.43	10.47	21.06
8.58	19.79	10.85	21.28
8.96	20.09	11.22	21.45
9.33	20.34	11.60	21.65
9.71	20.54	11.98	21.82
10.09	20.82	12.40	21.98

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.
- All testing was performed under +25 °C room temperature.
- Eravant reserves the right to change the information presented without notice.

Caution:

- Proper torque, 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm), should be applied. **Eravant torque wrench, model SCH-08008-S1, is highly recommended.**
- Any foreign objects in the horn antenna will cause performance degradation and possible device damage.

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