SAR-2018-100-S2-DP

W-Band Dual Polarized Horn Antenna, 20 dBi Gain

SAR-2018-100-S2-DP is a full band, dual polarized, WR-10 horn antenna assembly that covers the frequency range of 75 to 110 GHz. The antenna features an integrated orthomode transducer (OMT) that provides high port isolation. The OMT enables the antenna to separate a circular or elliptical polarized waveform into two linear, orthogonal waveforms or vice versa. The dual polarized horn also supports either vertical or horizontal polarized waveguide forms. At center frequency, the horn antenna offers 20 dBi nominal gain and a typical half power beamwidth of 16 degrees on the E-plane and 18 degrees on the H-plane. The antenna exhibits 45 dB typical port isolation between the horizontal and vertical ports. The horizontal and vertical ports are WR-10 waveguides with UG-387/U-M anti-cocking flanges and 4-40 threaded holes.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	75 GHz		110 GHz
Gain		20 dBi	
3 dB Beamwidth, E Plane @ 92.5 GHz		16°	
3 dB Beamwidth, H Plane @ 92.5 GHz		18°	
Sidelobe Levels		-19 dB	
V and H Port Isolation		45 dB	
Return Loss		15 dB	
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

Mechanical Specifications:

Item	Specification
Horizontal and Vertical Ports	WR-10 Waveguide
Flange Type	UG-387/U-M Anti-Cocking Flange
Material	Aluminum
Finish	Gold Plated
Weight	1.6 Oz
Outline	AR-W1-100-A-DP

ECCN

EAR99

FEATURES

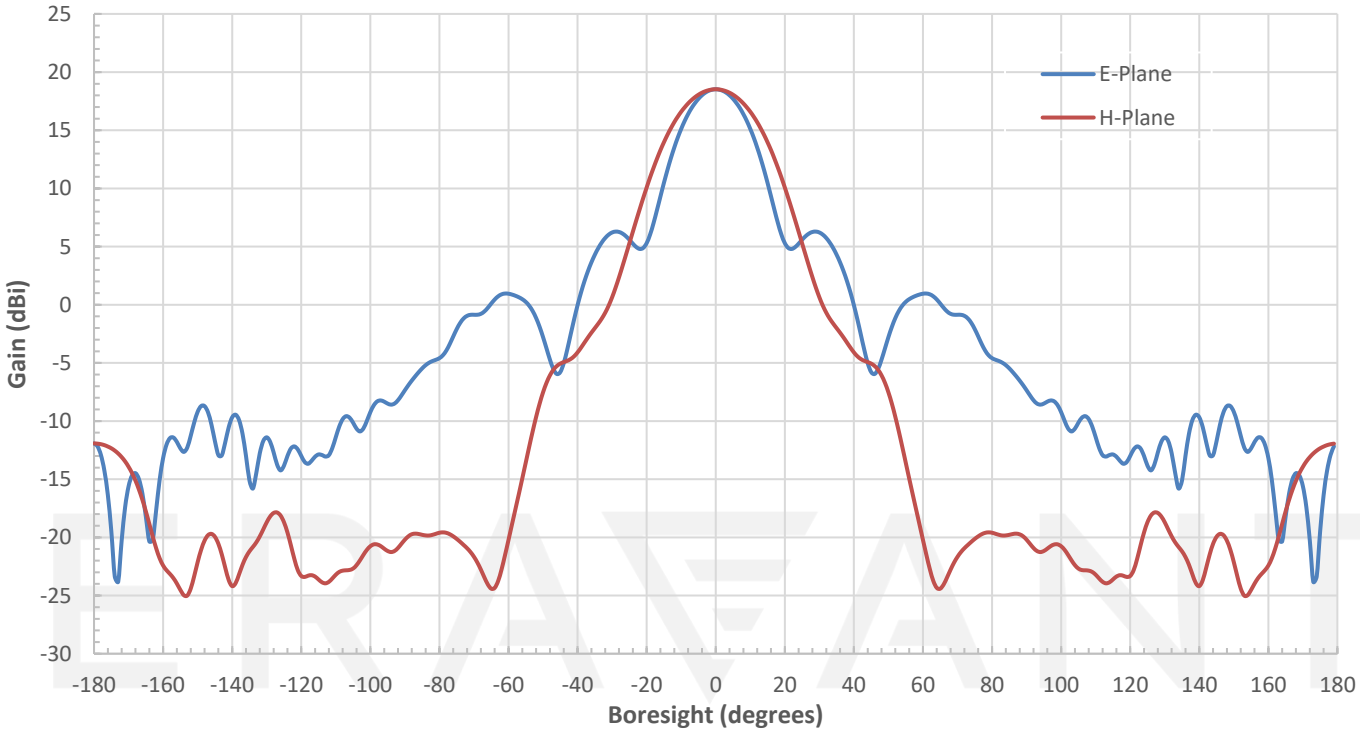
- High Isolation
- Low Insertion Loss
- Full Band Performance

APPLICATIONS

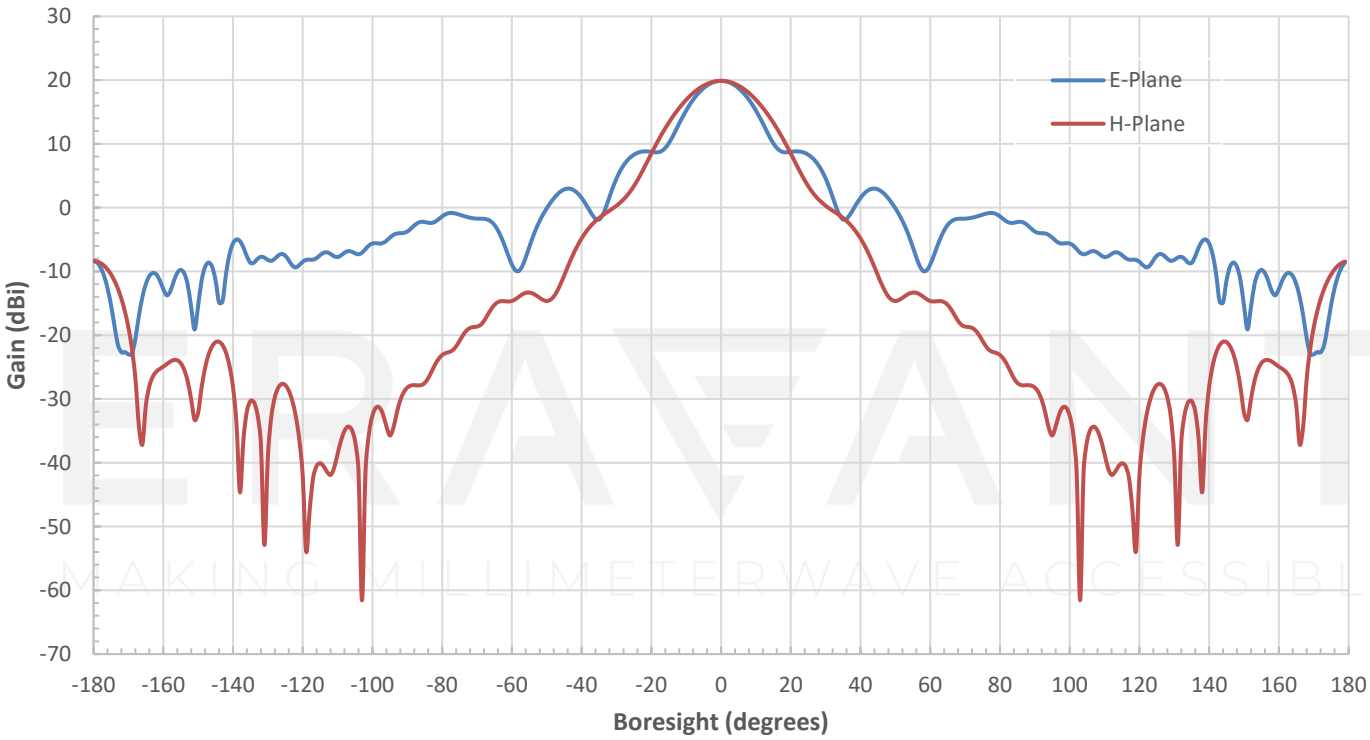
- Radar Systems
- Communication Systems
- Circular an Linear Waveform Separation and Combination

SUPPLEMENTAL DETAILS

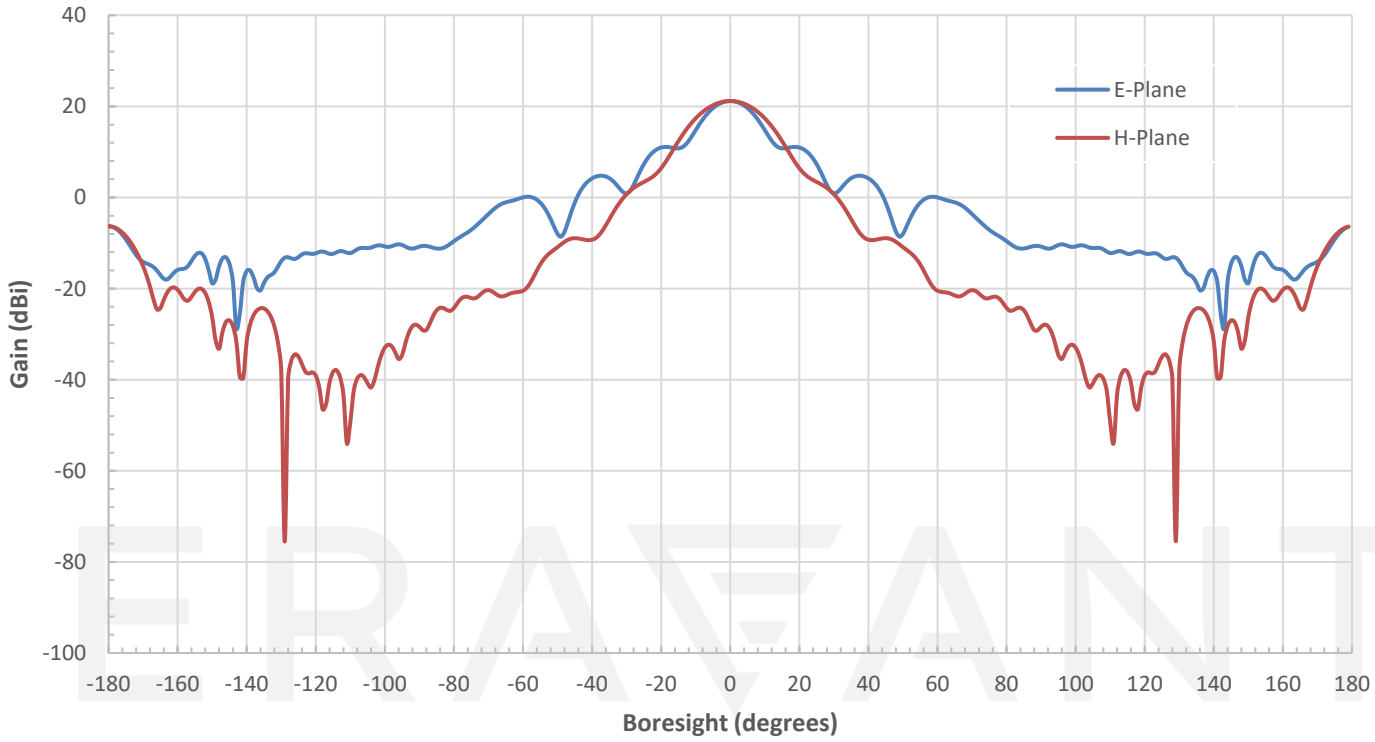
Simulated Antenna Patterns @ 75 GHz



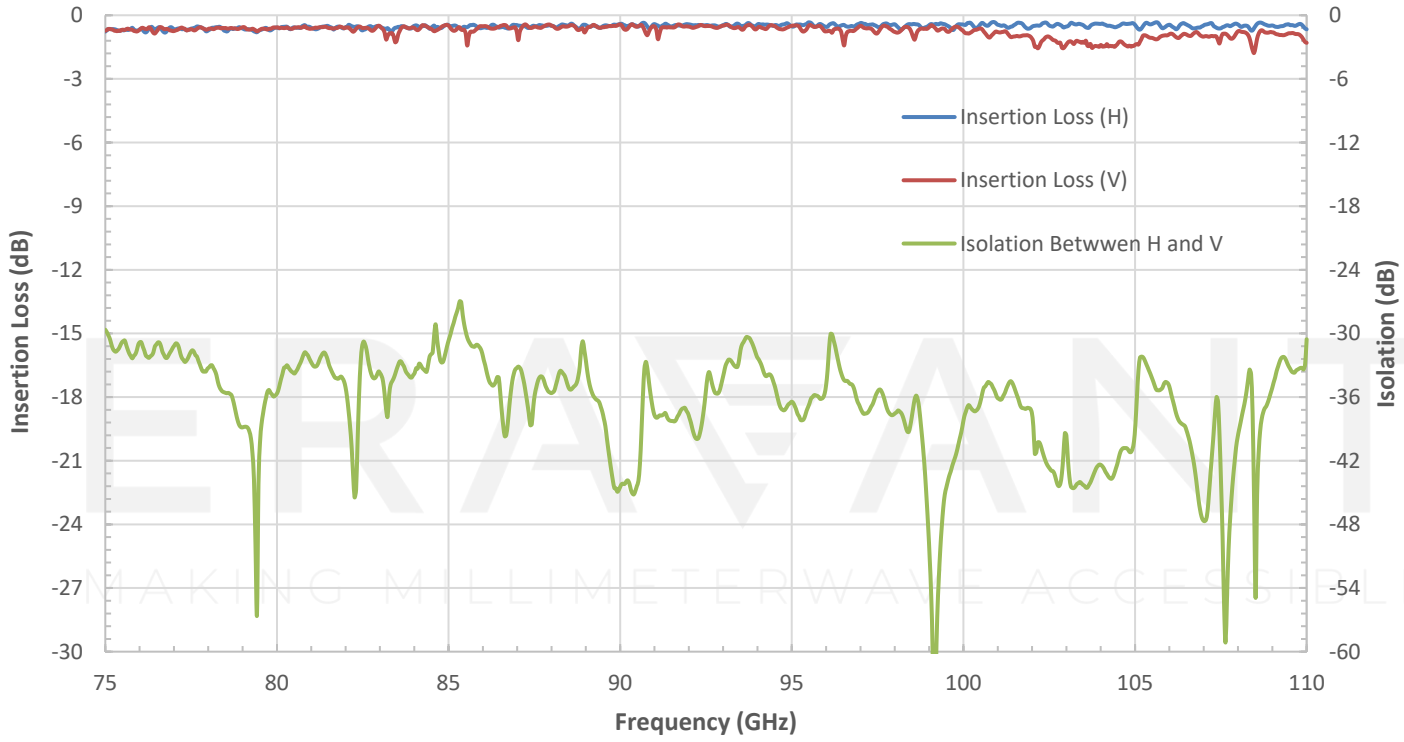
Simulated Antenna Patterns @ 92.5 GHz



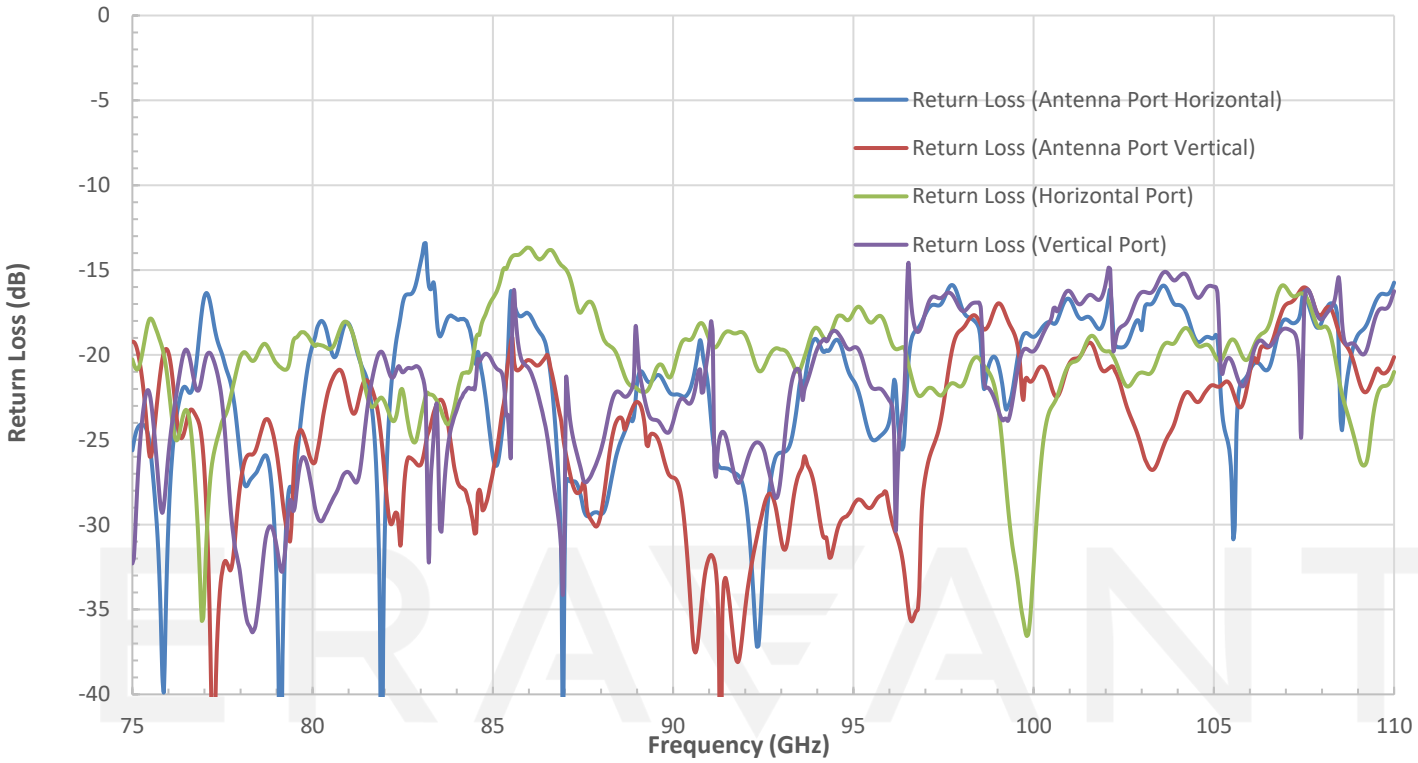
Simulated Antenna Patterns @ 110 GHz



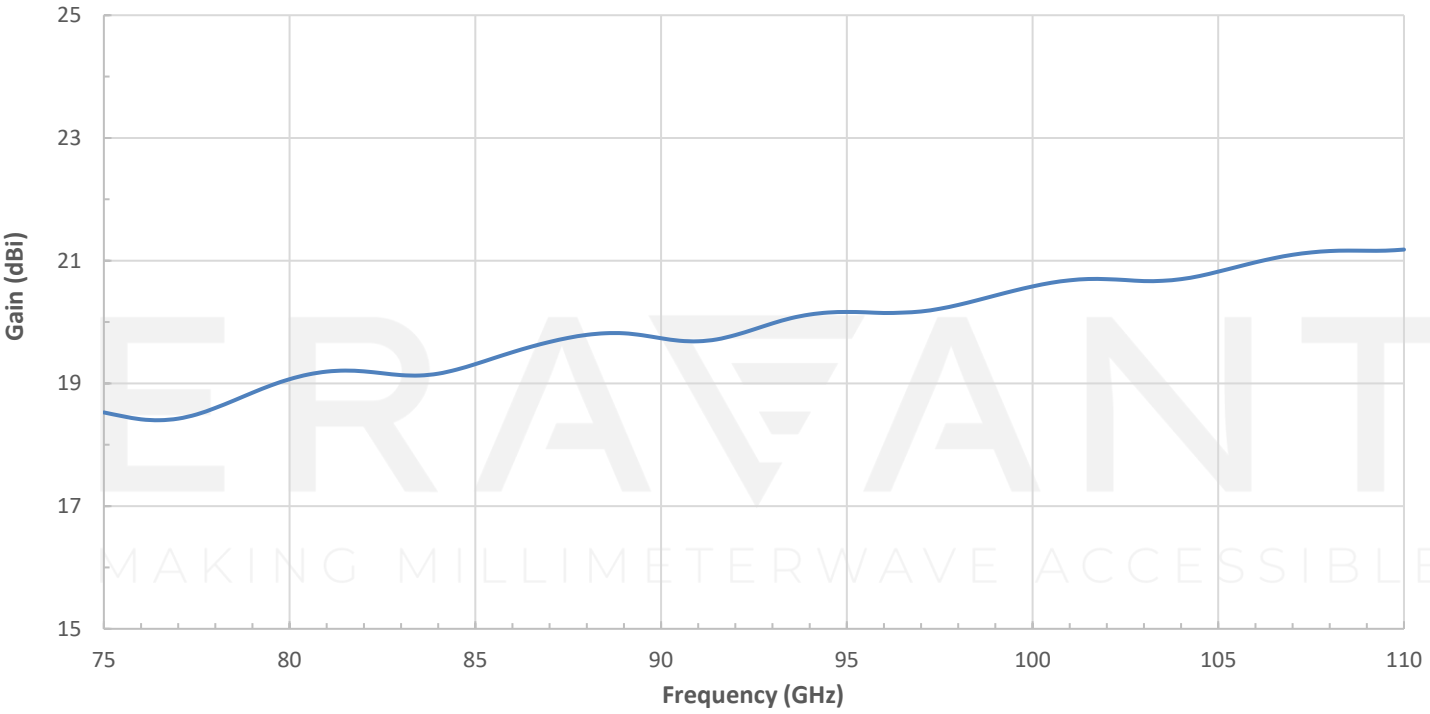
Measured Port Performance vs. Frequency



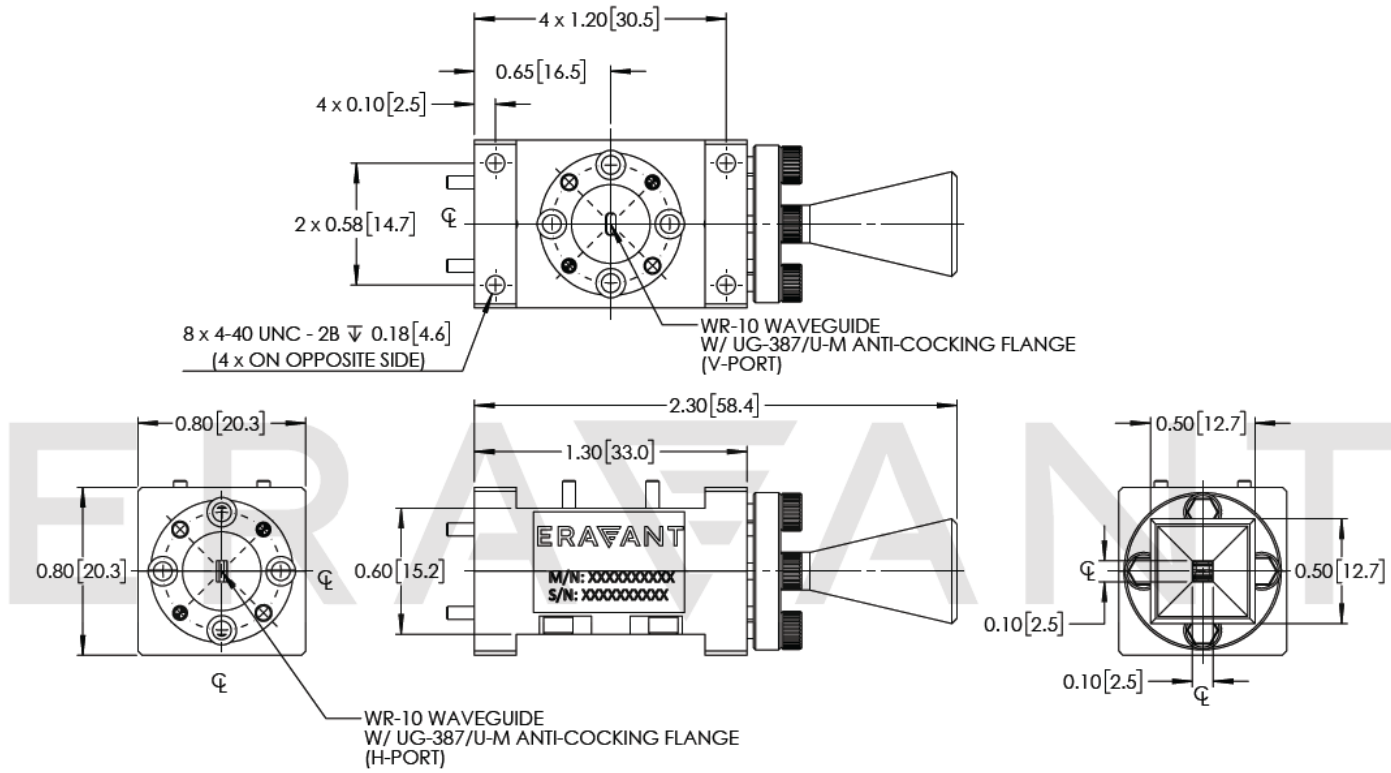
Measured Port Return Loss vs. Frequency



Simulated Gain vs. Frequency



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.
- Antenna Pattern and Gain data presented is simulated. Actual data may vary, slightly.
- 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.