

## SAF-1141741525-082-S1-065-DP

### WR-06 Dual Polarized Scalar Feed Horn Antenna, 110 to 170 GHz, 15 dBi Gain

**SAF-1141741525-082-S1-065-DP** is a dual polarized, WR-06 scalar feed horn antenna assembly that covers the frequency range of 110 to 170 GHz. The assembly features an integrated orthomode transducer (OMT) that provides high port isolation and a broad band scalar horn that provides low sidelobe levels. 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 exhibits 15 dBi nominal gain, typical half power beamwidth of 25 degrees and sidelobe levels of -25 dB or lower. The OMT exhibits 30 dB typical port isolation between the horizontal and vertical ports. The horizontal and vertical ports are WR-06 waveguides with UG-387/U-M anti-cocking flanges. Coaxial port configurations are also available under different model numbers. The orthomode transducer (**Model SAT-FD-06506-S1**), compact square to circular transition (**Model SWT-065082-SB-C-QC**), and scalar feed horn antenna (**Model SAF-1141741725-082-S1**) can be purchased separately.



#### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	110 GHz	140 GHz	170 GHz
Gain		15 dBi	
3 dB Beamwidth, E-plane		25°	
3 dB Beamwidth, H-plane		25°	
Sidelobes, E-plane		-25 dB	
Sidelobes, H-plane		-25 dB	
Isolation		30 dB	
Return Loss		15 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

#### Mechanical Specifications:

Item	Specification
Horizontal and Vertical Ports	WR-06 Waveguide with UG-387/U-M Anti-Cocking Flange
Material	Aluminum, Brass
Finish	Gold Plated
Weight	2.3 Oz
Outline	AF-CD15-082-065-A-DP

#### ECCN

EAR99

#### FEATURES

- 110 to 170 GHz Operations
- Linear and Circular Polarizations
- High Port Isolation

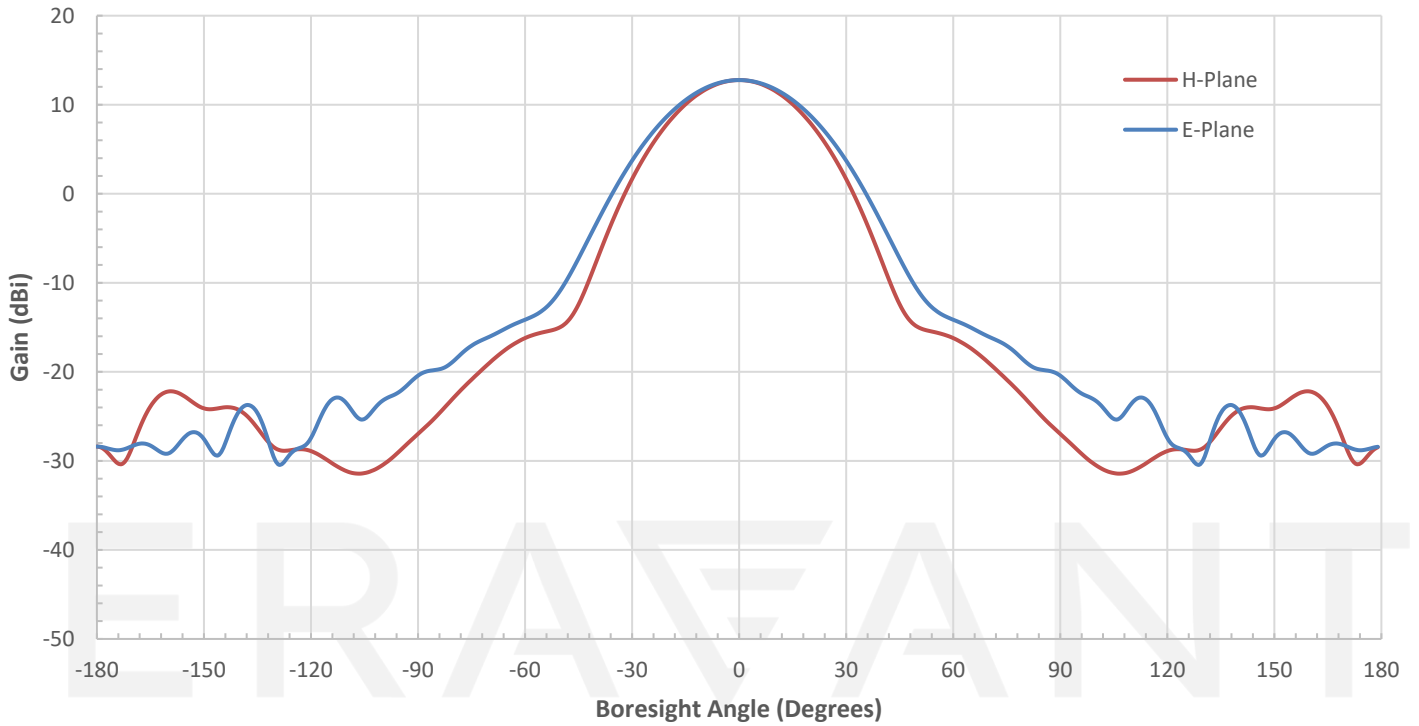
#### APPLICATIONS

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

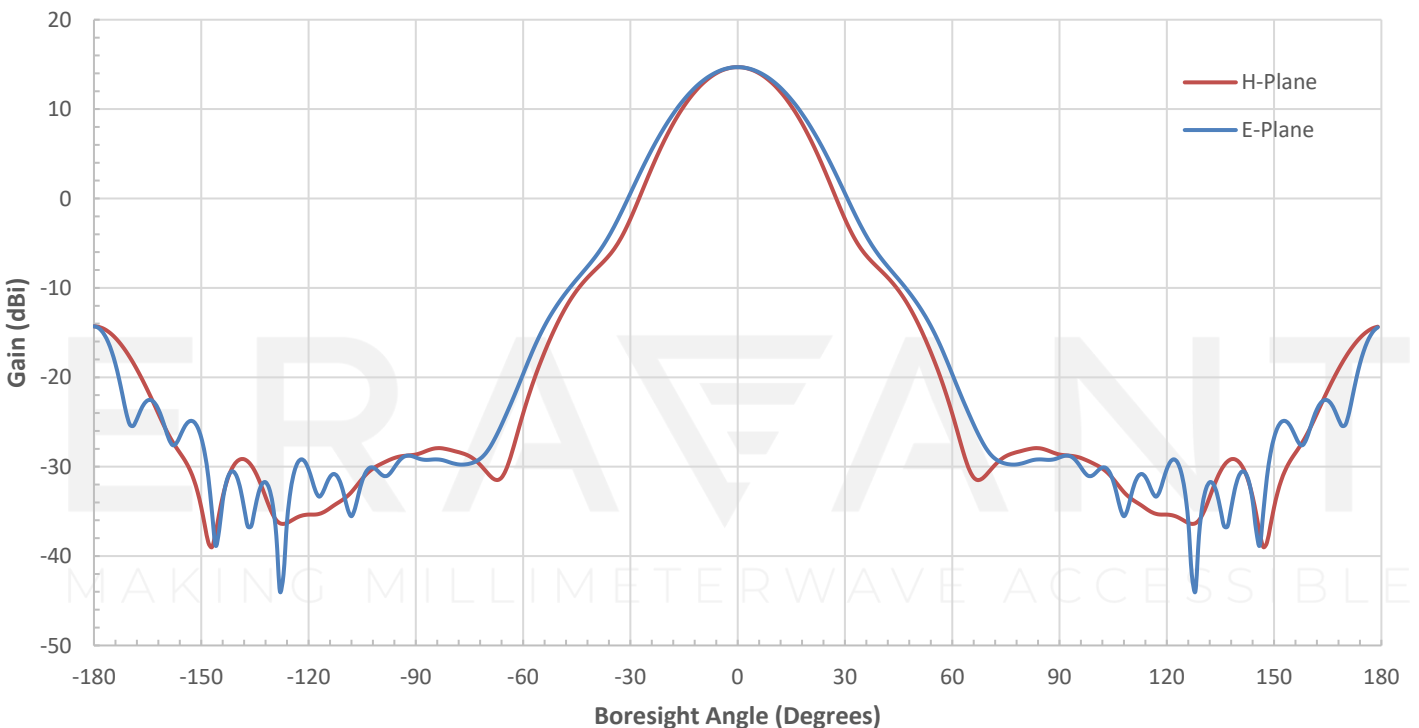
#### SUPPLEMENTAL DETAILS



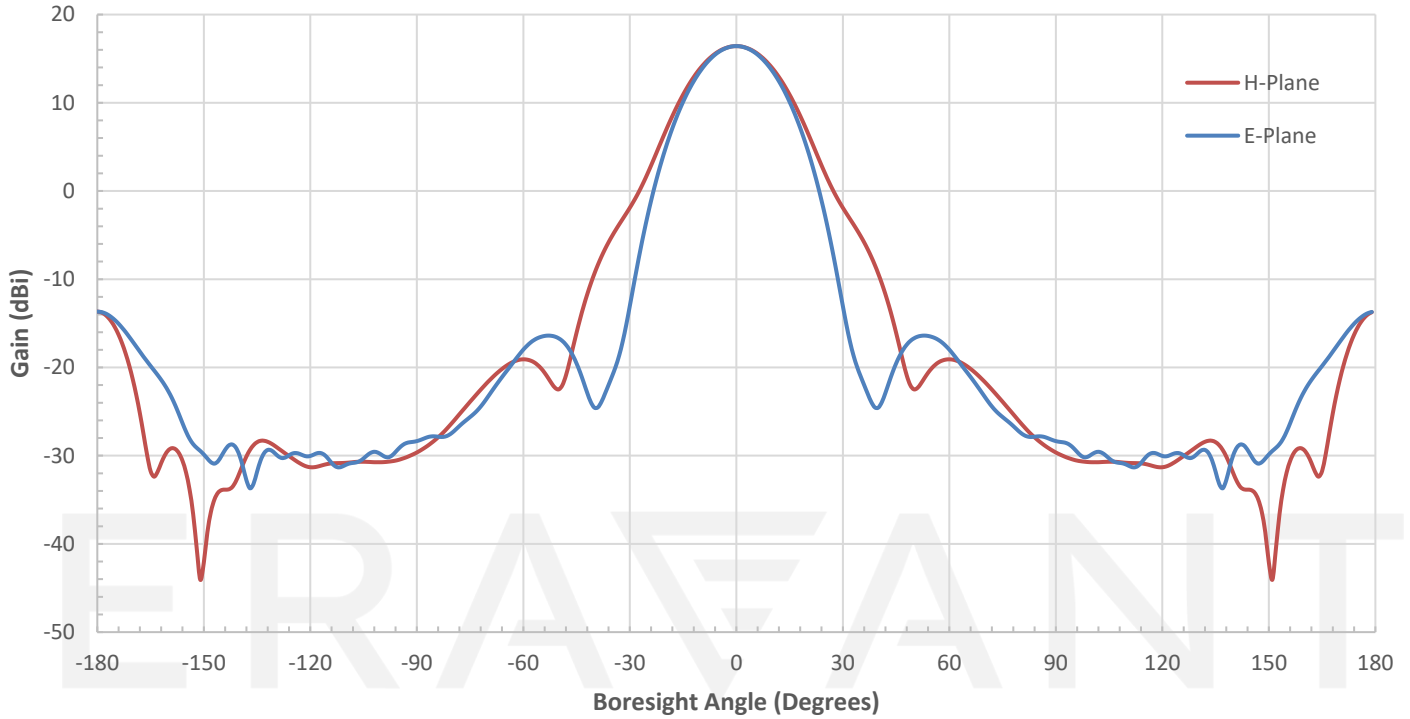
### Simulated Antenna Patterns @ 110 GHz



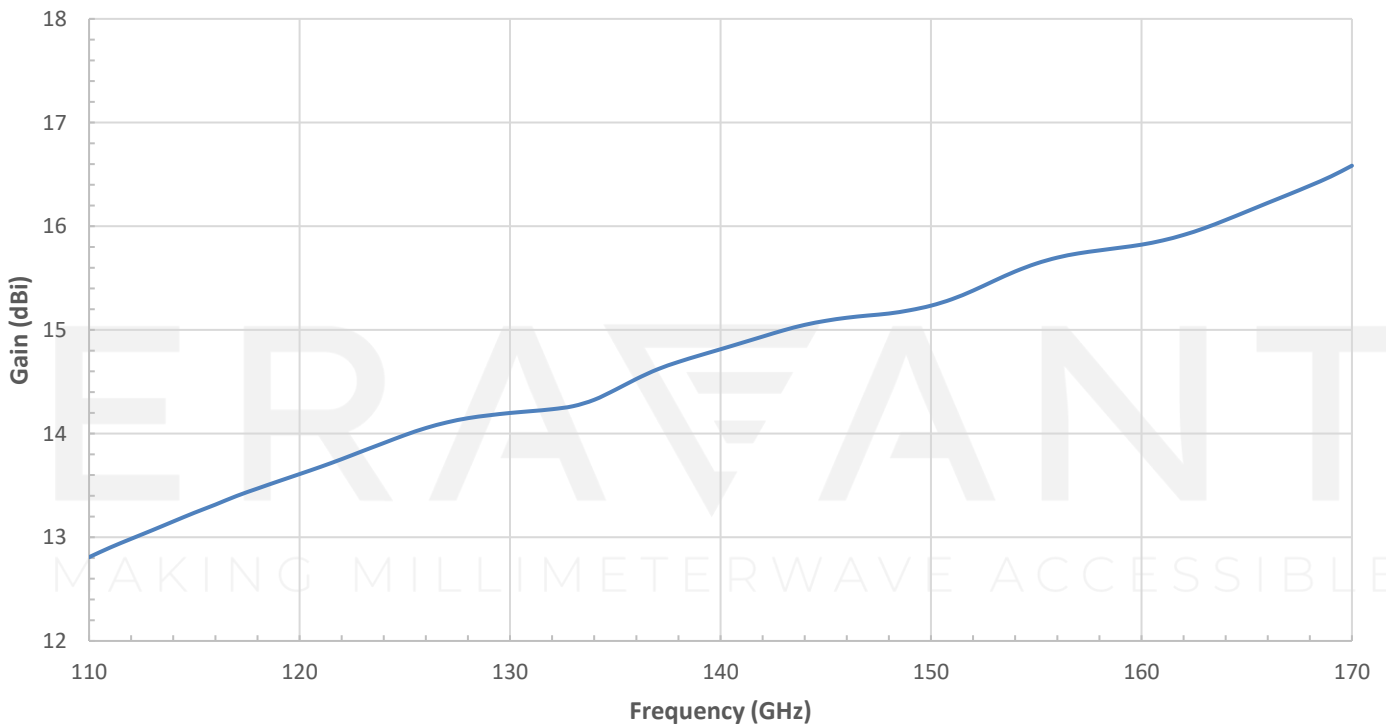
### Simulated Antenna Patterns @ 140 GHz



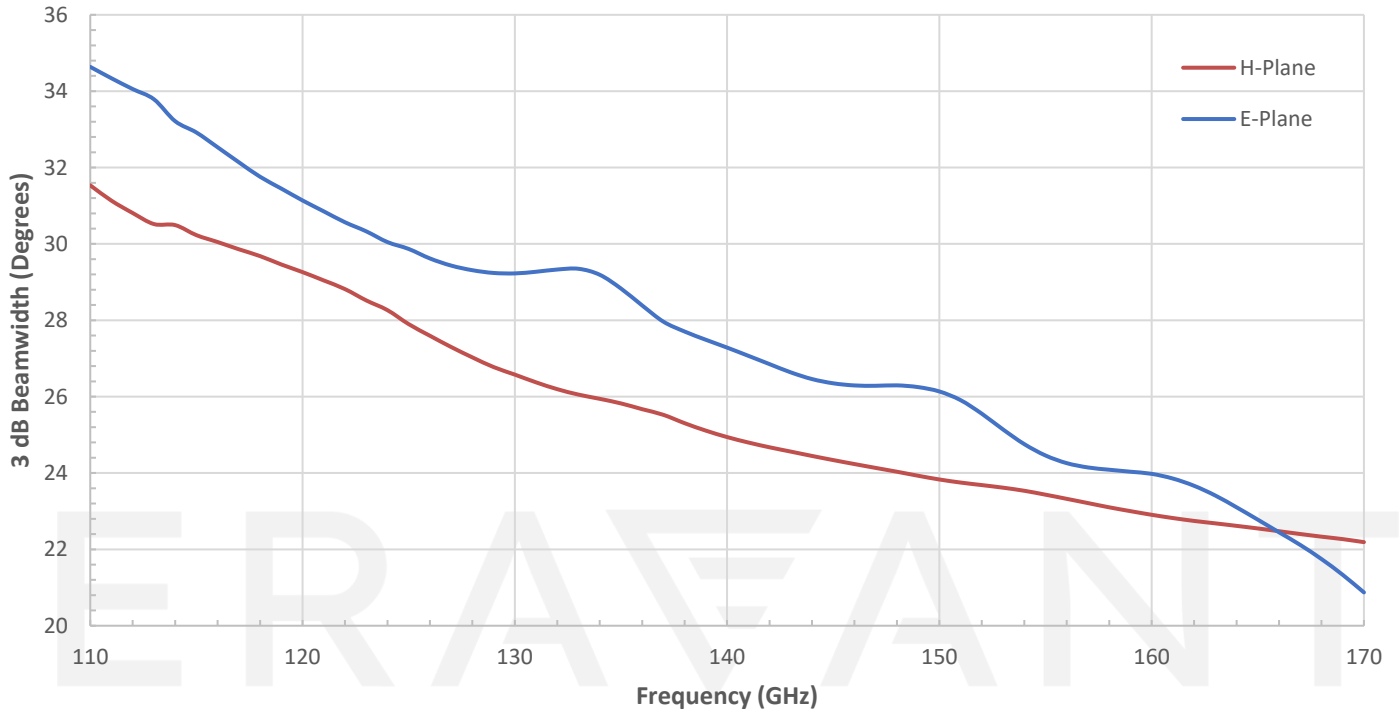
### Simulated Antenna Patterns @ 170 GHz



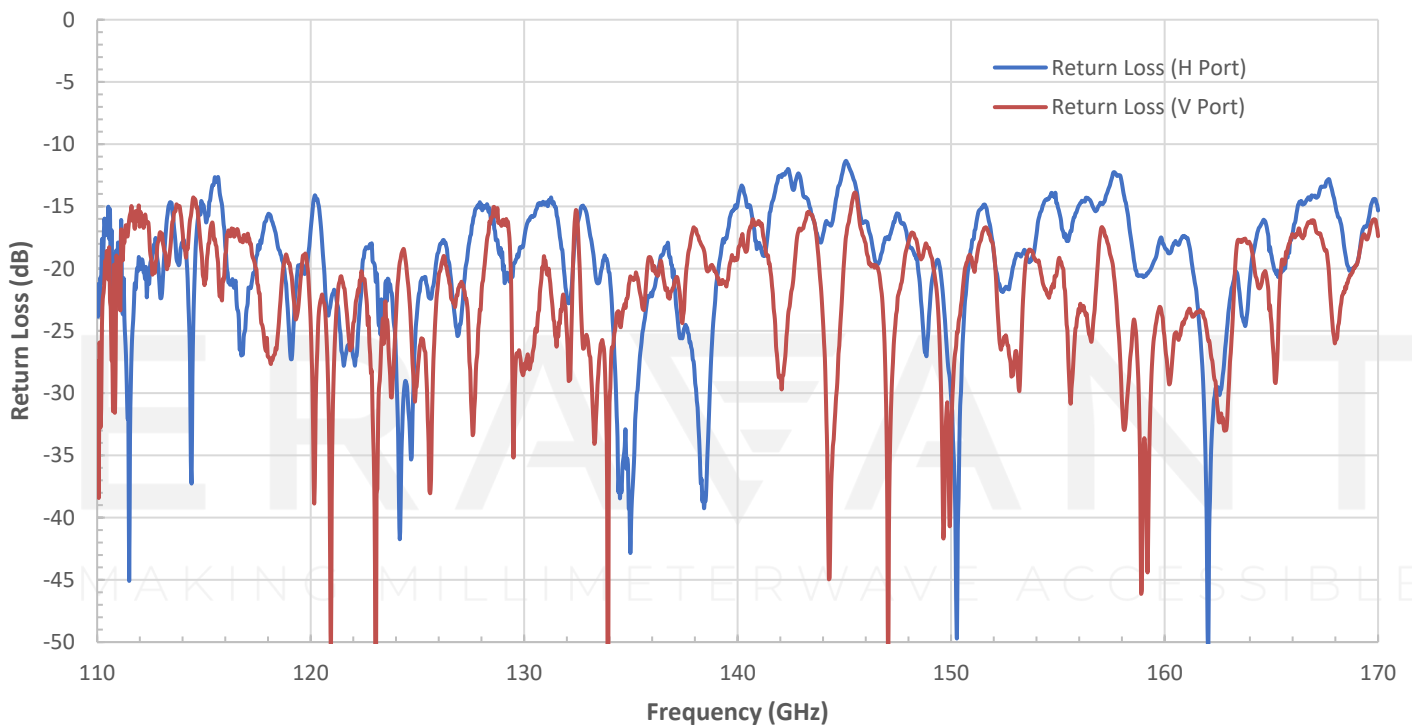
### Simulated Gain vs. Frequency



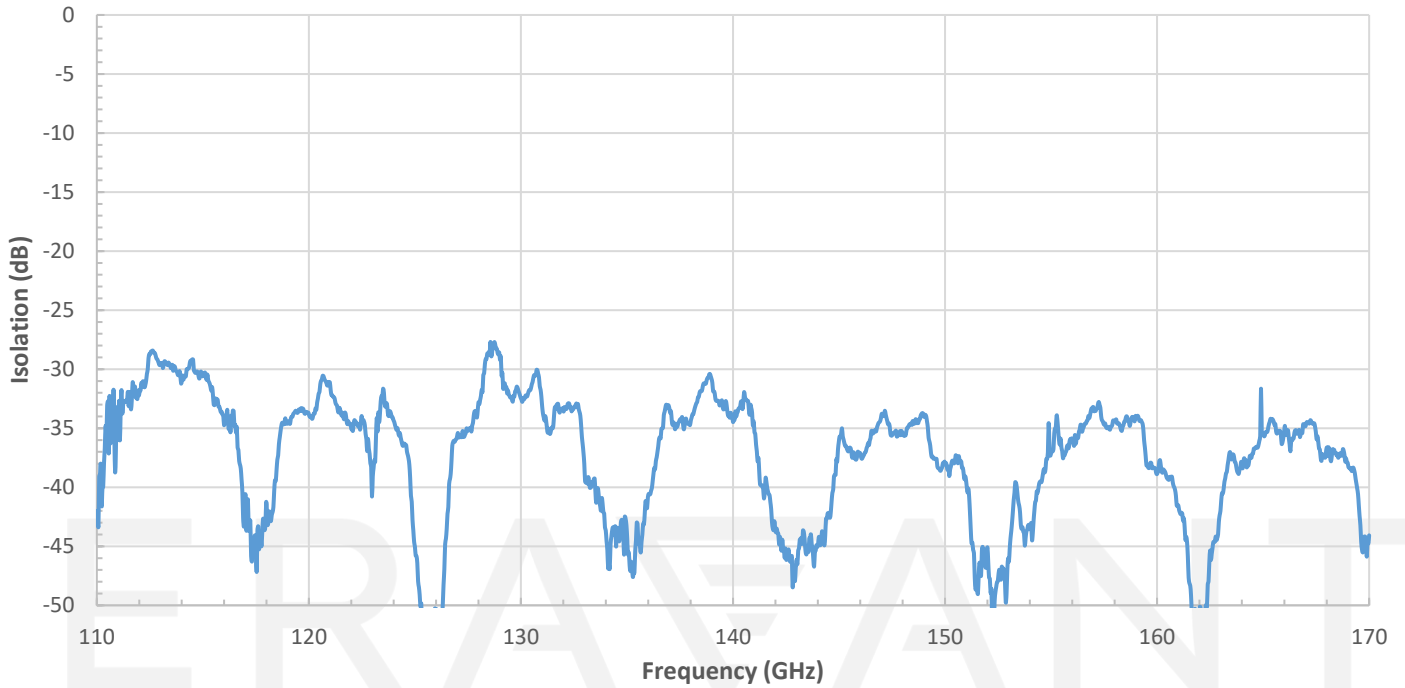
### Simulated 3 dB Beamwidth vs. Frequency



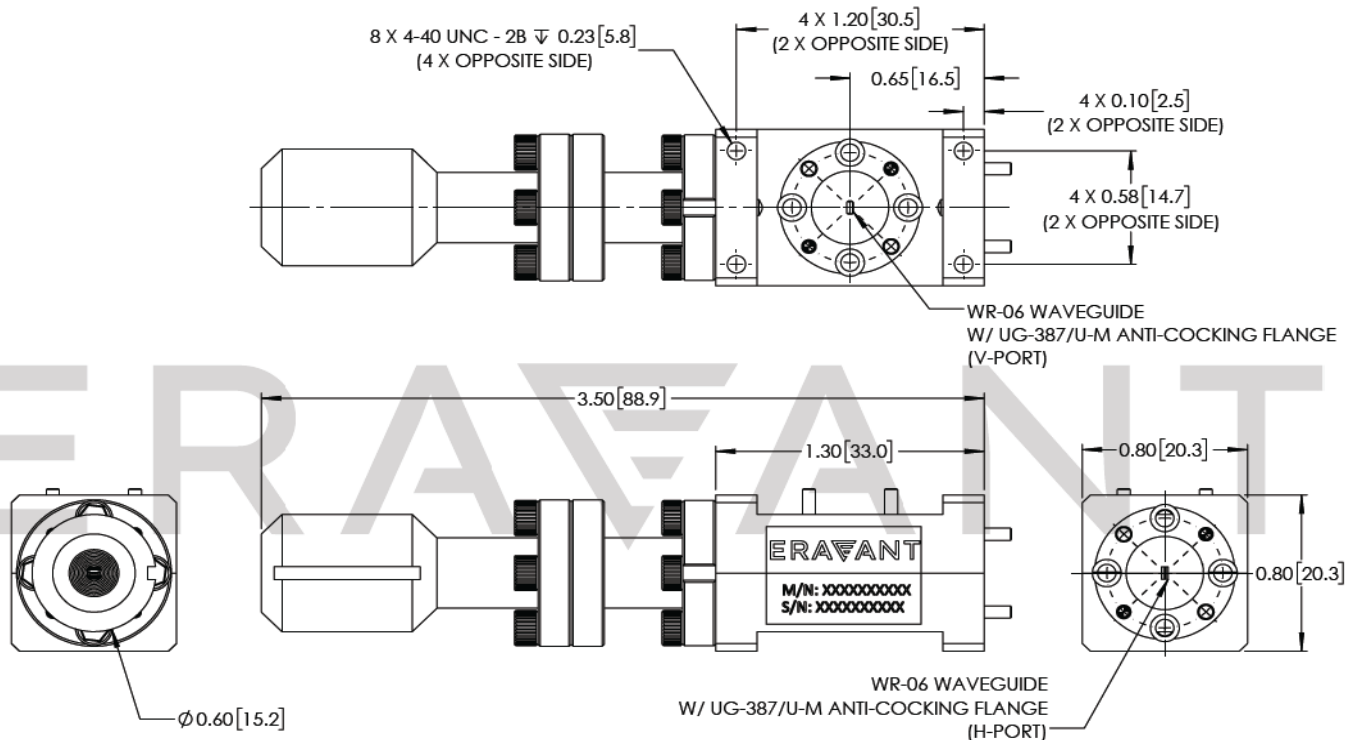
### Typical Measured Return Loss vs. Frequency



### Typical Measured Isolation vs. Frequency



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



**Note:**

- Antenna Patterns, Gain and 3 dB Beamwidth are simulated. Actual data may vary.
- Port Return Loss and Isolation data presented is collected from a sample lot. Actual data may vary unit to unit, slightly.
- 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.

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