



WR-28 Dual Polarized Scalar Feed Horn Antenna, 24 to 42 GHz, 17 dBi

Description:

SAF-2434231725-328-S1-280-DP is a dual polarized, WR-28 scalar feed horn antenna assembly that covers several popular 5G bands in the frequency range of 24 to 42 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 17 dBi nominal gain, typical half power beamwidth of 25 degrees and sidelobe levels of -25 dB or lower. The OMT exhibits 35 dB typical port isolation between the horizontal and vertical ports. The horizontal and vertical ports are WR-28 waveguides with UG-599/U compatible flanges with 4-40 threaded holes. Coaxial port configurations are also available under different model numbers. The orthomode transducer (**Model SAT-333-28028-S1**), compact square to circular transition (**Model SWT-280328-SA-C-QC**), and scalar feed horn antenna (**Model SAF-2434231725-328-S1**) can be purchased separately.



Features:

- 24 to 42 GHz Operations
- Linear and Circular Polarizations
- High Port Isolation

Applications:

- 5G Systems
- Radar Systems
- Communication Systems
- Circular and Linear Waveform Separation and Combination

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	24 GHz	33 GHz	42 GHz
Gain		17 dBi	
3 dB Beamwidth, E-plane		25°	
3 dB Beamwidth, H-plane		25°	
Sidelobes, E-plane		-25 dB	
Sidelobes, H-plane		-25 dB	
V and H Port Isolation		35 dB	
Port Return Loss		15 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C



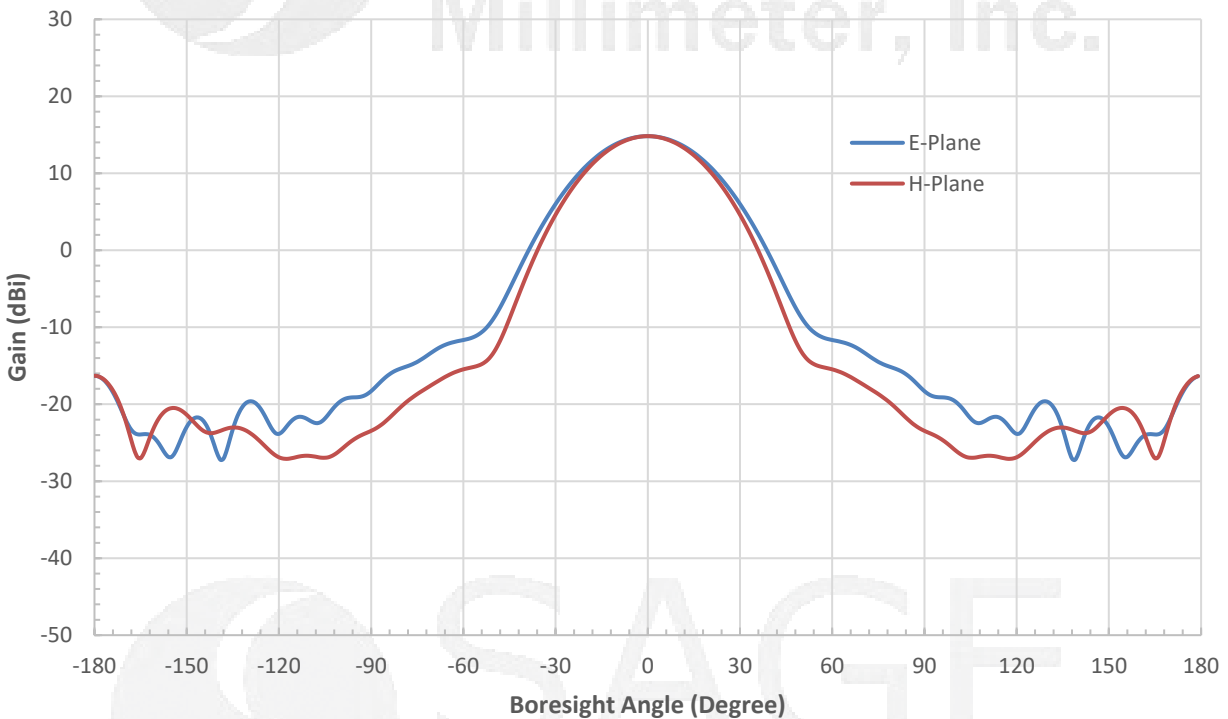


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Mechanical Specifications:

Item	Specification
Horizontal and Vertical Ports	WR-28 Waveguide with UG-599/U Compatible Flange
Material	Aluminum
Finish	Gold Plated
Weight	6.0 Oz
Size	4.90" (L) x 1.50" (Ø) x 1.25" (W) x 0.75" (H)
Outline	AF-RA17-328-280-DP

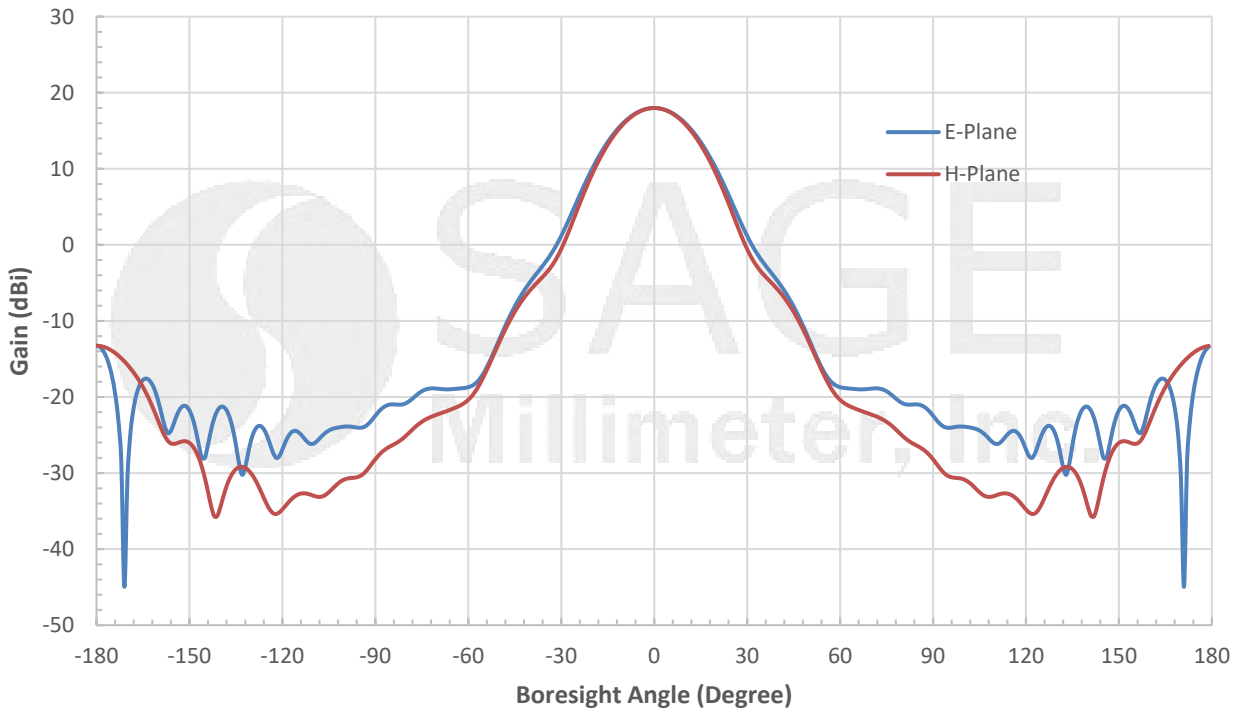
Simulated Antenna Patterns @ 24 GHz



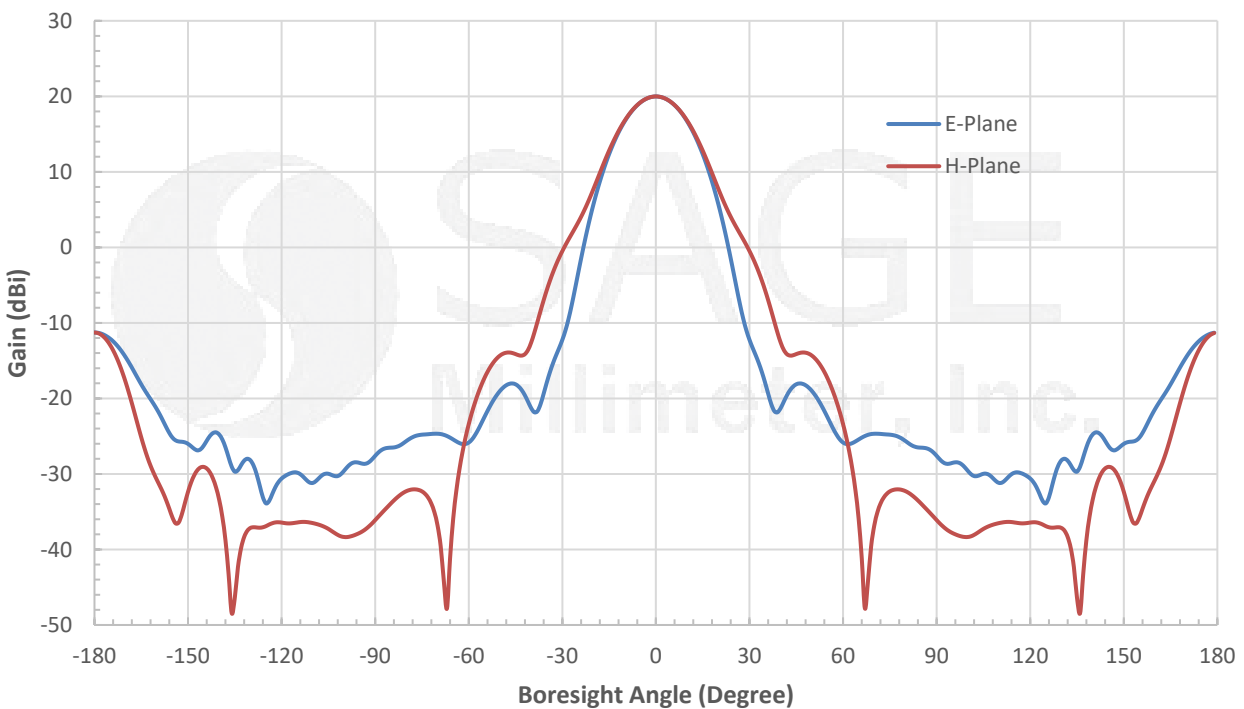


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Simulated Antenna Patterns @ 33 GHz



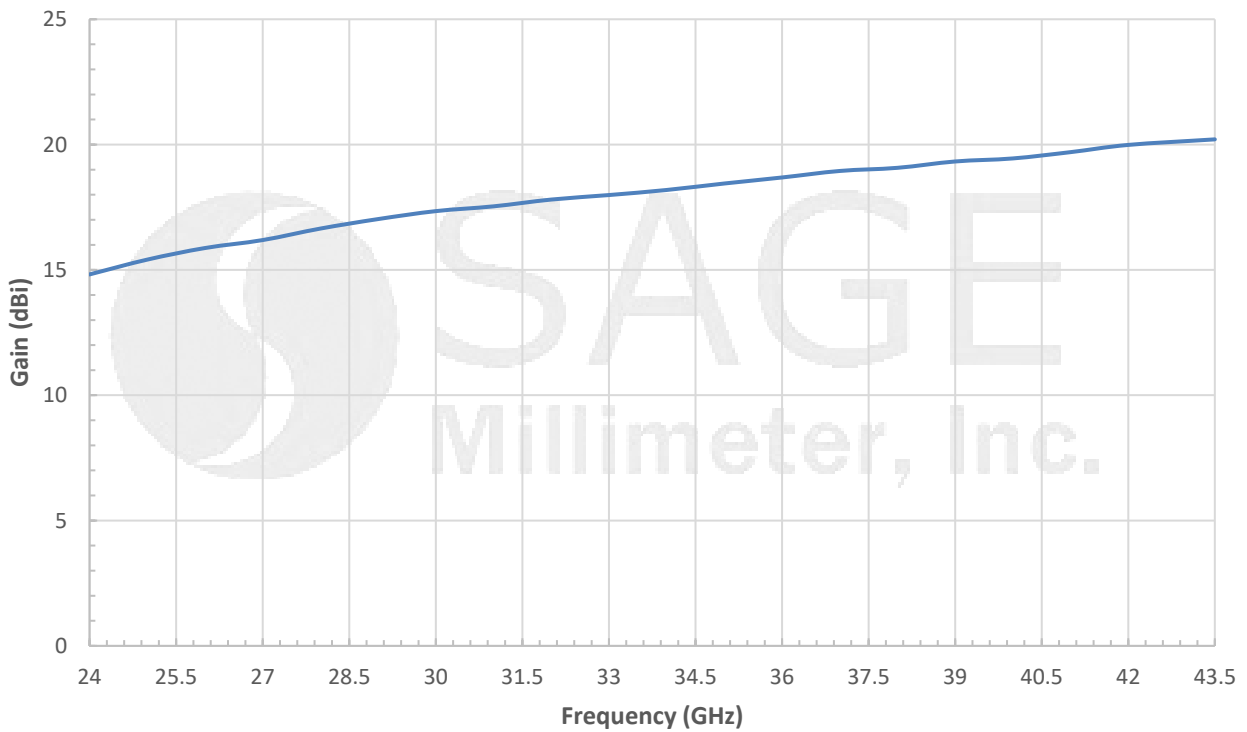
Simulated Antenna Patterns @ 42 GHz



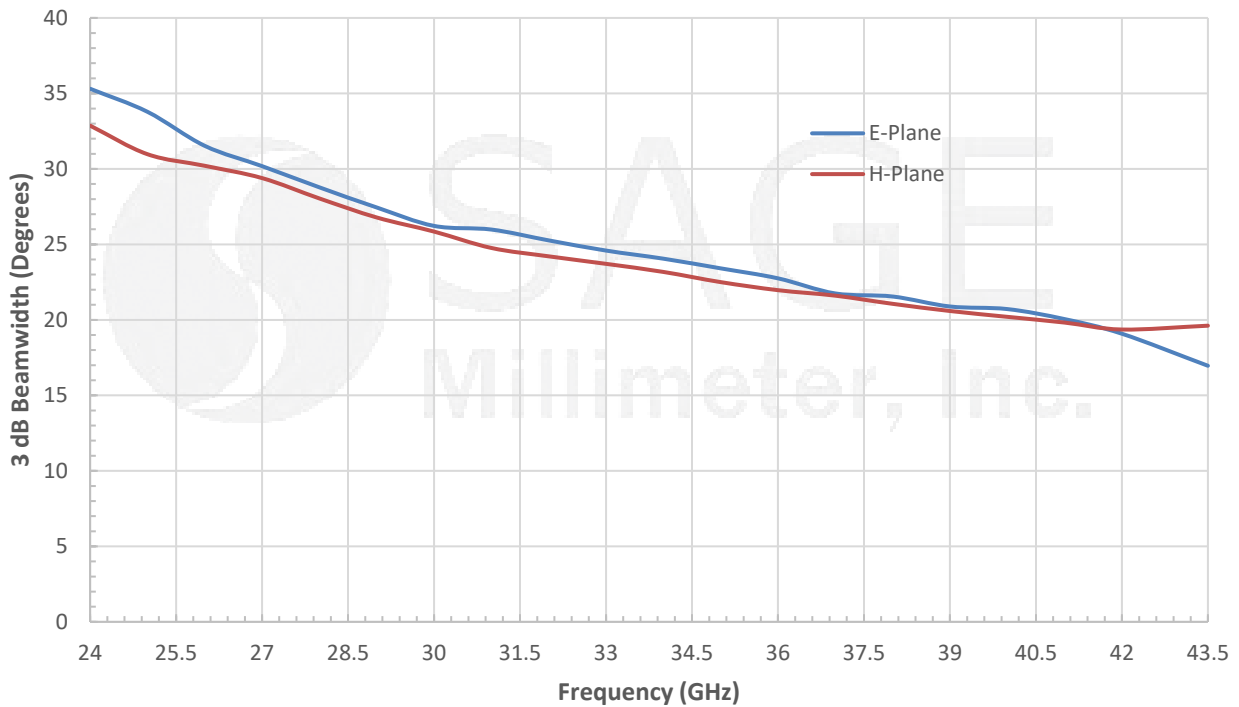


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Simulated Gain vs. Frequency



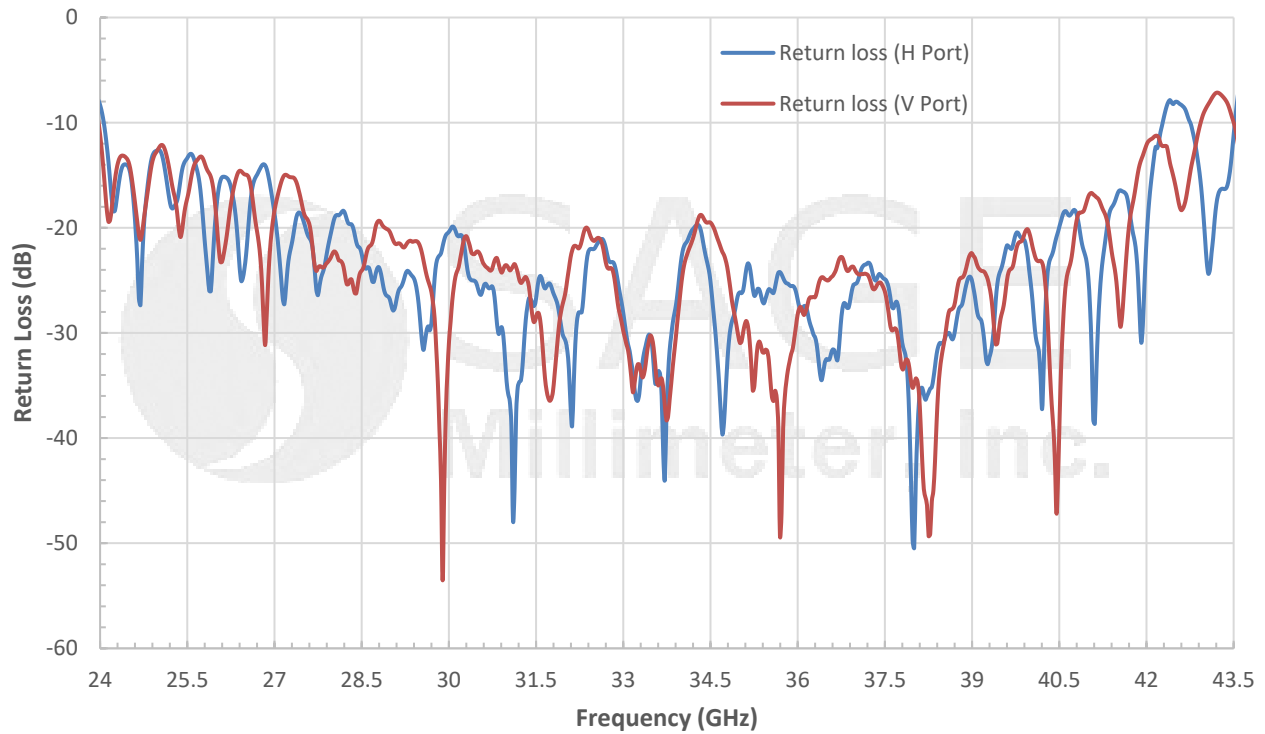
Simulated 3dB Beamwidth vs. Frequency



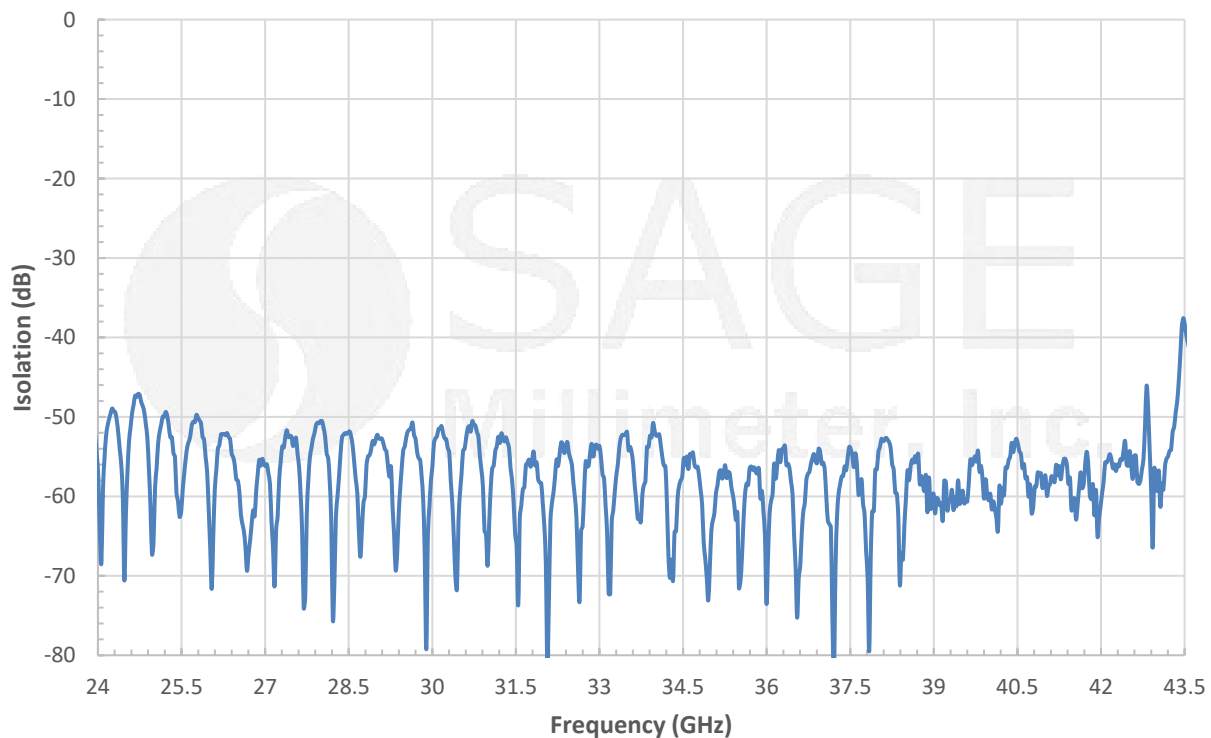


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Typical Return Loss vs Frequency



Typical Isolation vs Frequency

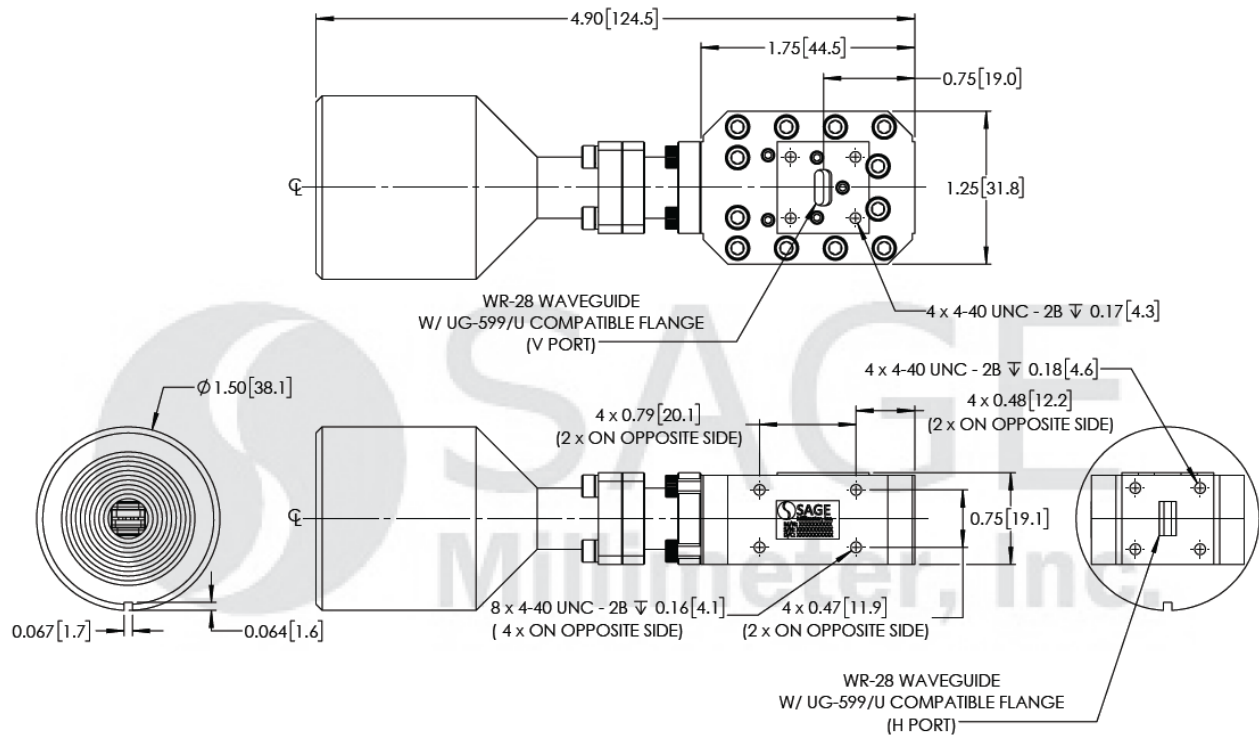


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Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



Note:

- Antenna Patterns, Gain, & 3 dB Beamwidth data are simulated. Actual data may vary, slightly.
- Return Loss and Isolation data are 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 or waveguide will cause performance degradation and possible device damage.

