



## WR-42 Lens Corrected Horn Antenna, 30.5 dBi Gain

### Description:

**Model SAK-AL233243-42-C2** is a custom built, K-band sector rectangular lens corrected antenna that delivers a nominal half-power beam width of 10 degrees vertically and 2.7 degrees horizontally and 30.5 dBi nominal gain at a center frequency of 24.0 GHz. The sidelobe level of the antenna is -20 dB or better and the typical return loss is 15 dB. The standard model is equipped with a WR-42 rectangular waveguide and a UG-595/U flange as its RF port. It supports linear polarized waveforms.



### Features:

- Low Sidelobes
- High Aperture Efficiency
- High Cross-Pol Rejection

### Applications:

- Airborne Radar Systems
- Communication Systems
- Sensor Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range*	23.7 GHz		24.3 GHz
Gain		30.5 dBi	
Polarization	Linear		
3 dB Beamwidth, E-Plane		10°	
3 dB Beamwidth, H-Plane		2.7°	
Sidelobes, E-Plane		-20 dB	
Sidelobes, H-Plane		-22 dB	
Polarization	Linear		
Cross Polarization		30 dB	
Return Loss		15 dB	
Specification Temperature		+25 °C	
Operation Temperature	-40 °C		+85 °C

\*The actual frequency coverage is from 22 to 26 GHz.

### Mechanical Specifications:

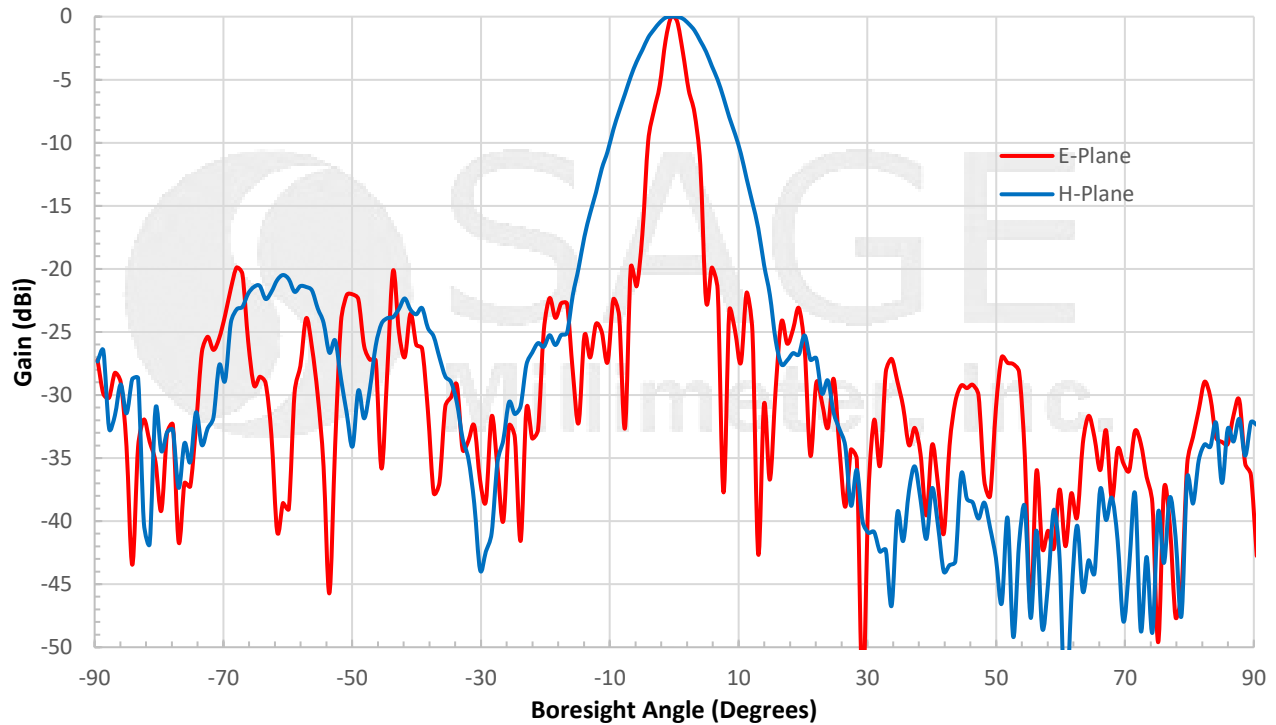
Item	Specification
Antenna Port	WR-42 Waveguide with UG-595/U Flange
Housing Material	Aluminum
Inner Finish	Silver Plated
Outer Finish	Black Paint
Weight	3.5 Lbs
Size	12.02" (L) X 12.00" (W) X 5.00" (H)
Outline	AK-AL-RK31-VP-C1



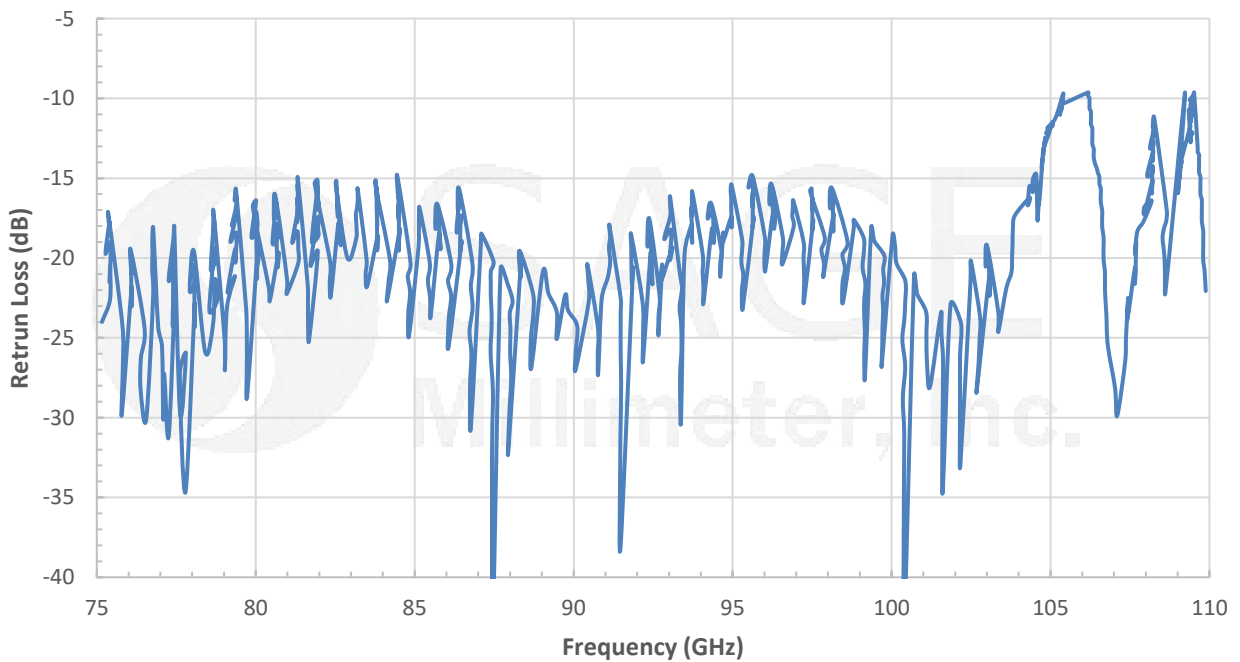


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### Measured Antenna Pattern @ 24 GHz



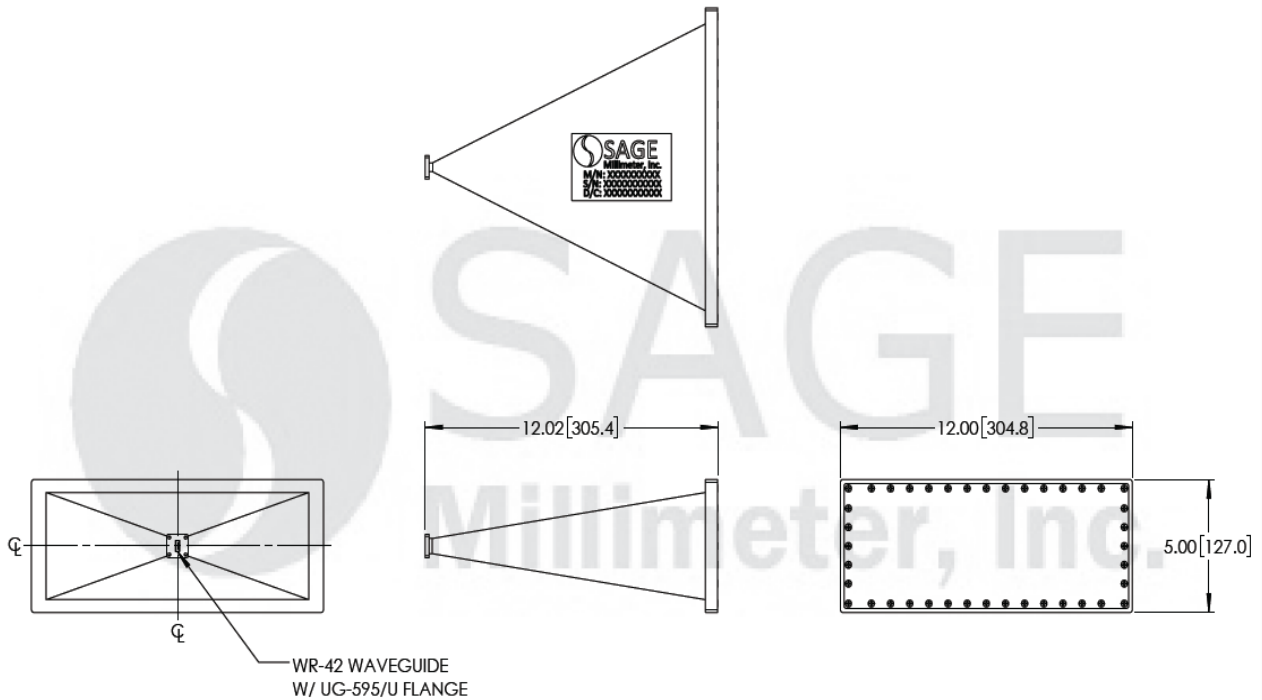
### Measured Return Loss vs. Frequency





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



**Note:**

- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under +25 °C case temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

**Caution:**

- Any foreign objects in the waveguide will cause performance degradation and possible device damage.

