



## N(F) Rectangular Horn Antenna, 7.0 to 12.0 GHz

### Description:

**Model SAK-AR073123-96-C2** is a custom built, airborne WR-96 rectangular antenna. At center frequency, the antenna delivers a typical gain of 18.3 dBi and a half power beamwidth of 27.5 degrees on the E-plane and 16.5 degrees on the H-plane. The cross polarization of the antenna is 35 dB typical on the E-plane and 33 dB on the H-plane and the return loss is 14 dB. This antenna is equipped with a WR-96 waveguide to female N coax adapter, Eravant model SWK-WC96NF-K1, as its input port.



### Features:

- High Aperture Efficiency
- High Cross-Pol Isolation
- Light Weight

### Applications:

- Airborne Radar Systems
- Communication Systems
- Sensor Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	7.0 GHz	9.5 GHz	12.0 GHz
Gain		18.3 dBi	
3 dB Beamwidth, E-Plane		27.5°	
3 dB Beamwidth, H-Plane		16.5°	
Cross Polarization, E-Plane		35 dB	
Cross-Polarization, H-Plane		33 dB	
Return Loss		14 dB	
Phase Center from the Lip of the Horn*		-3.38"	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

\* Note: The calculation of the phase center is based on taking the cone with half-angle of 20 degrees.

### Mechanical Specifications:

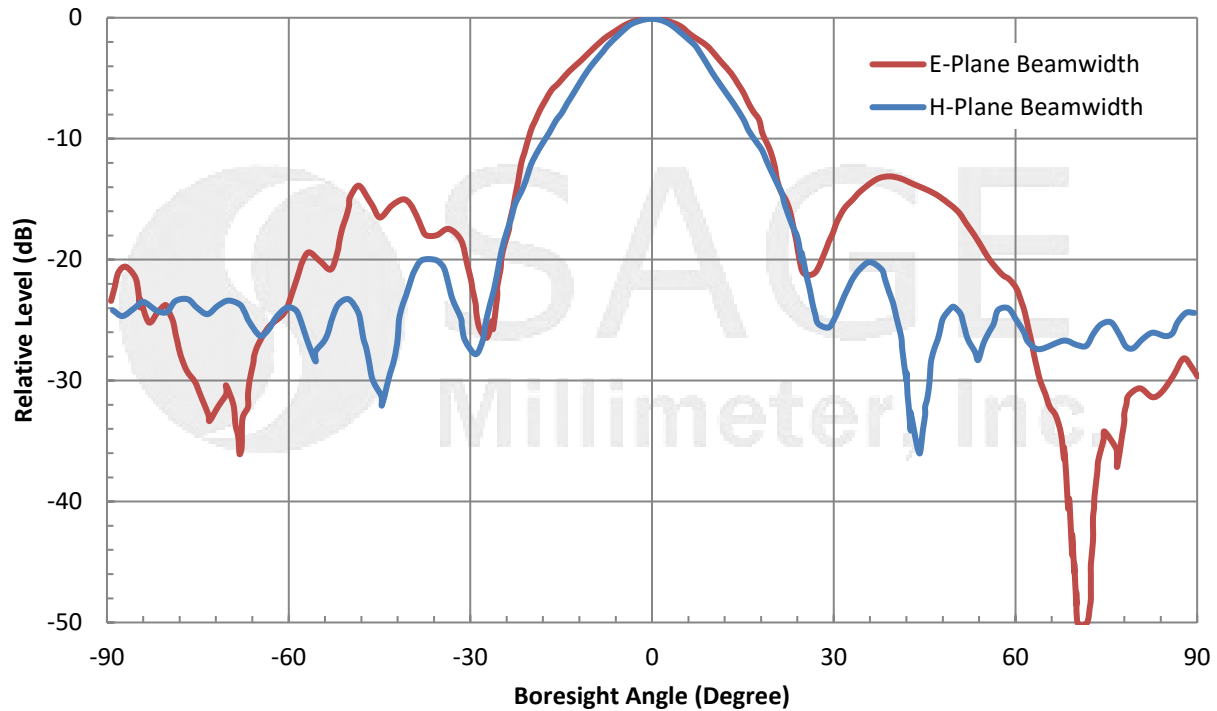
Item	Specification
Antenna Port	N(F)
Waveguide	0.960" x 0.400", Nonstandard
Material	Aluminum
Inner Finish	Silver Plated
Outer Finish	Black Paint
Weight	7.4 Oz
Dimensions	3.73" (W) x 4.09" (H) x 7.75" (L)
Outline	AK-96GG-VP-KW1



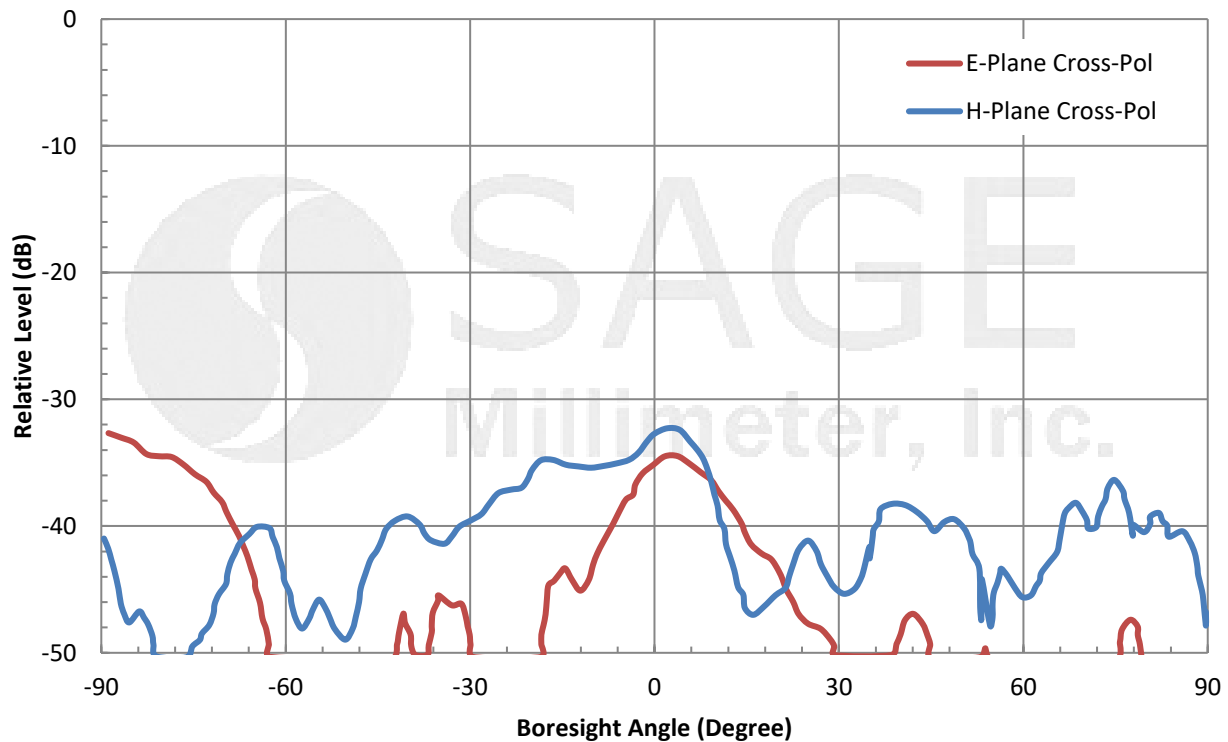


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Typical Antenna Pattern @ 9.5 GHz



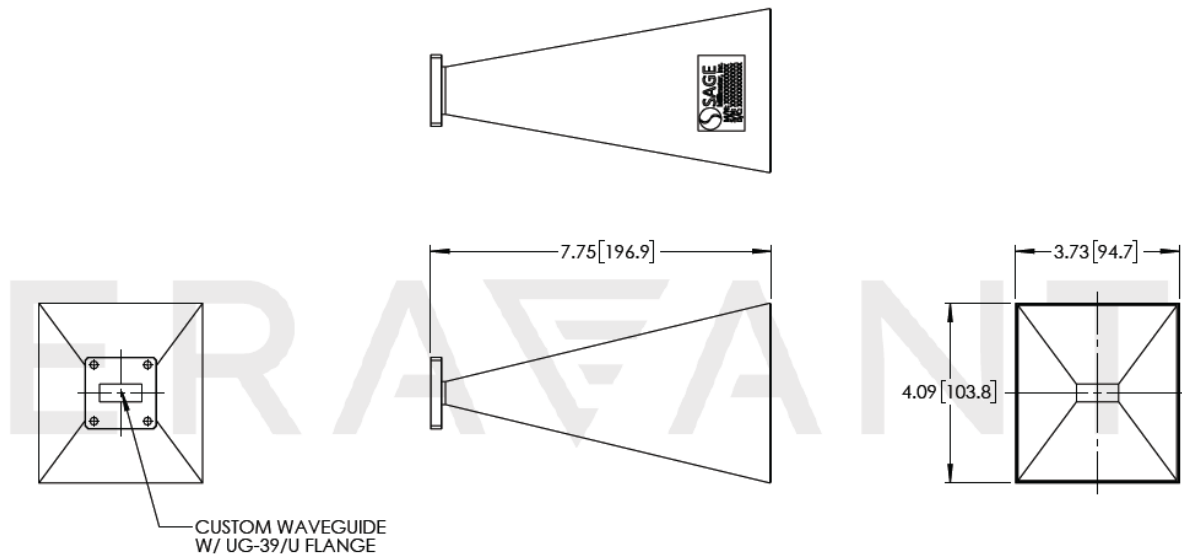
Typical Cross Pol @ 9.5 GHz





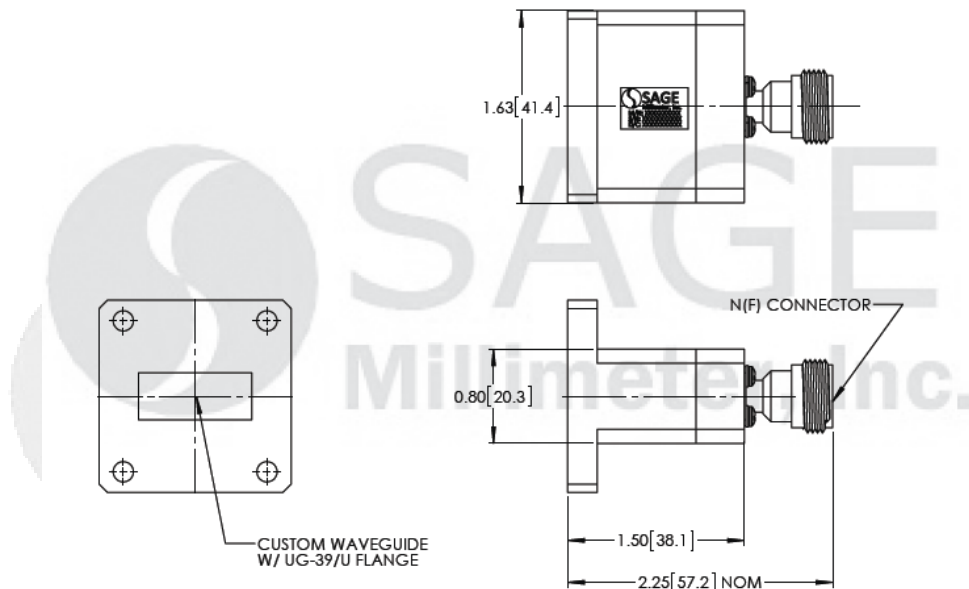
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**Mechanical Outline:** (Unless otherwise specified, all dimensions are in inches [millimeters])



Note: The antenna's waveguide port is a nonstandard size: 0.96" x 0.400". A custom waveguide to coax adapter, **Model SWK-WC96NF-K1**, is included with this antenna to convert the port to a standard RF interface.

### Model SWK-WC96NF-K1 Outline:



**Note:**

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

**Caution:**

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

