

## SAQ-903071-10-S1

### W-Band Spot-Focusing Lens Antenna

**SAQ-903071-10-S1** is a W-Band spot-focusing lens antenna that delivers a 10 dB spot size of 0.80" at the focal length of 7.09". The antenna employs a low loss lens to offer excellent aperture efficiency at 90 GHz. The spot-focusing lens antenna is equipped with a WR-10 waveguide with UG-387/ U-M flange as its antenna port. It supports linear polarized waveforms.



#### Electrical Specifications:

Parameter		Minimum	Typical	Maximum
Frequency			90 GHz	
Focal Length			7.09"	
Peak to First Null	Spot Size		1.14"	
	Power Captured		83.8%	
10 dB Below Peak	Spot Size		0.80"	
	Power Captured		78.9%	
3 dB Below Peak	Spot Size		0.48"	
	Power Captured		47.4%	
Polarization			Linear	
Return Loss		12 dB	20 dB	
Specification Temperature			+25 °C	
Operating Temperature		-45 °C		+85 °C

#### Mechanical Specifications:

Item	Specification
Antenna Port	WR-10 Waveguide with UG-387/U-M Flange
Horn/Lens Material	Aluminum/HDPE
Finish	Gold Plated
Weight	4.7 Oz
Lens Diameter	2.0"
Dimensions	3.13" (L) x 2.50" (Ø)
Outline	AQ-RW-2.0

#### ECCN

EAR99

#### FEATURES

- Rugged Mechanical Configurations
- High Efficiency and Low Loss

#### APPLICATIONS

- Material Property Measurement Systems

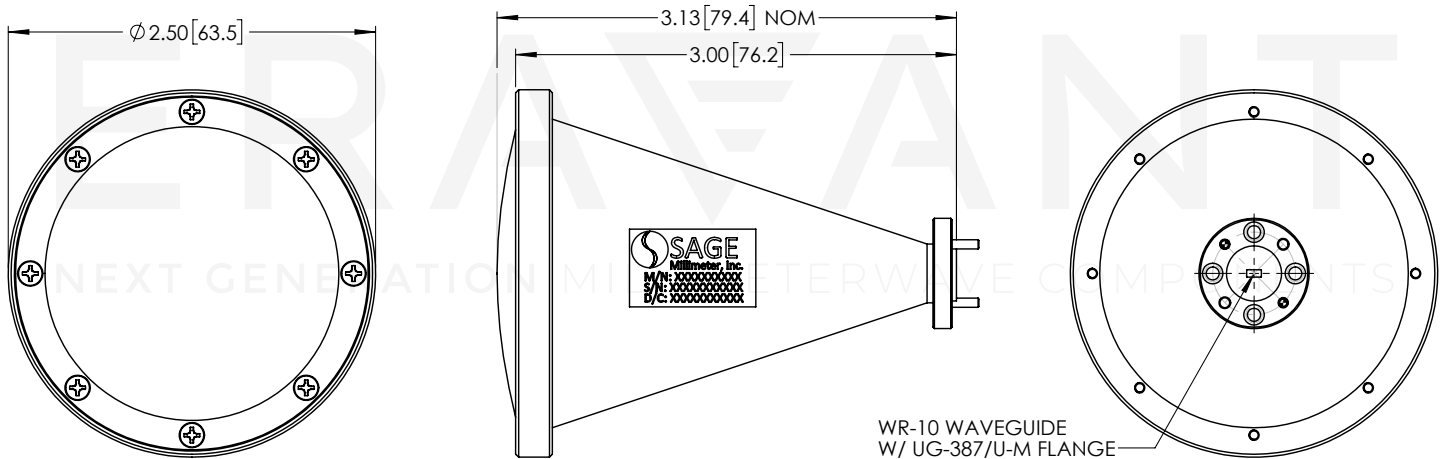
#### SUPPLEMENTAL DETAILS



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### Mechanical Outline:

Unless otherwise specified, all dimensions are in inches [millimeters]



### NOTE:

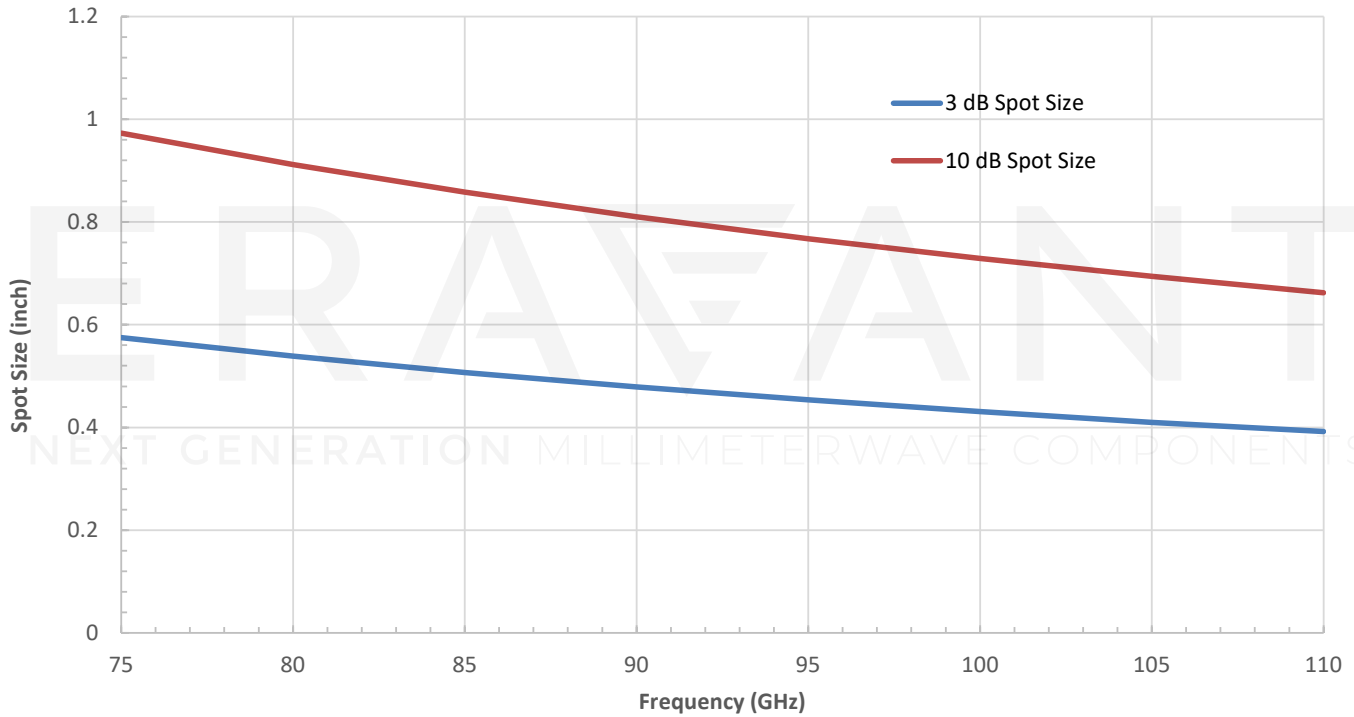
- On condition that test data is provided it is collected from a sample lot. Actual data may vary slightly from unit to unit. All testing is performed under +25 °C room temperature.
- On condition that simulated test data is provided, actual measured data may slightly vary.
- Eravant reserves the right to change the information presented without notice.

### CAUTION:

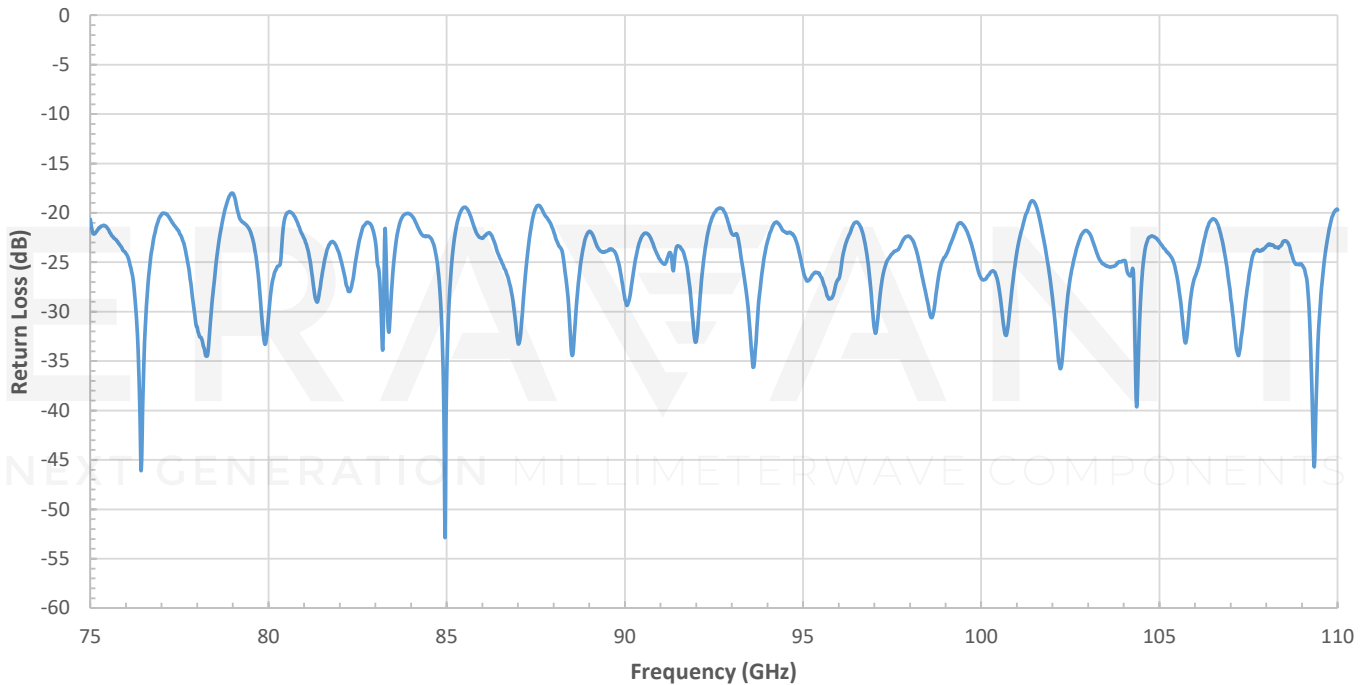
- If a waveguide is present, any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.
- Any foreign objects in the antenna will cause performance degradation and possible device damage.
- For 1 mm connectors proper torque should be applied:  $4.0 \pm 0.15$  inch-pounds ( $0.45 \pm 0.02$  Nm). Torque wrench model [SCH-06004-S1](#) is highly recommended.
- For 1.35 mm, 1.85 mm, 2.4 mm, 2.92 mm, and SMA connectors proper torque should be applied:  $8.0 \pm 0.15$  inch-pounds ( $0.90 \pm 0.02$  Nm). Torque wrench model [SCH-08008-S1](#) is highly recommended.

## SAQ-903071-10-S1

### Theoretical Spot Size vs. Frequency

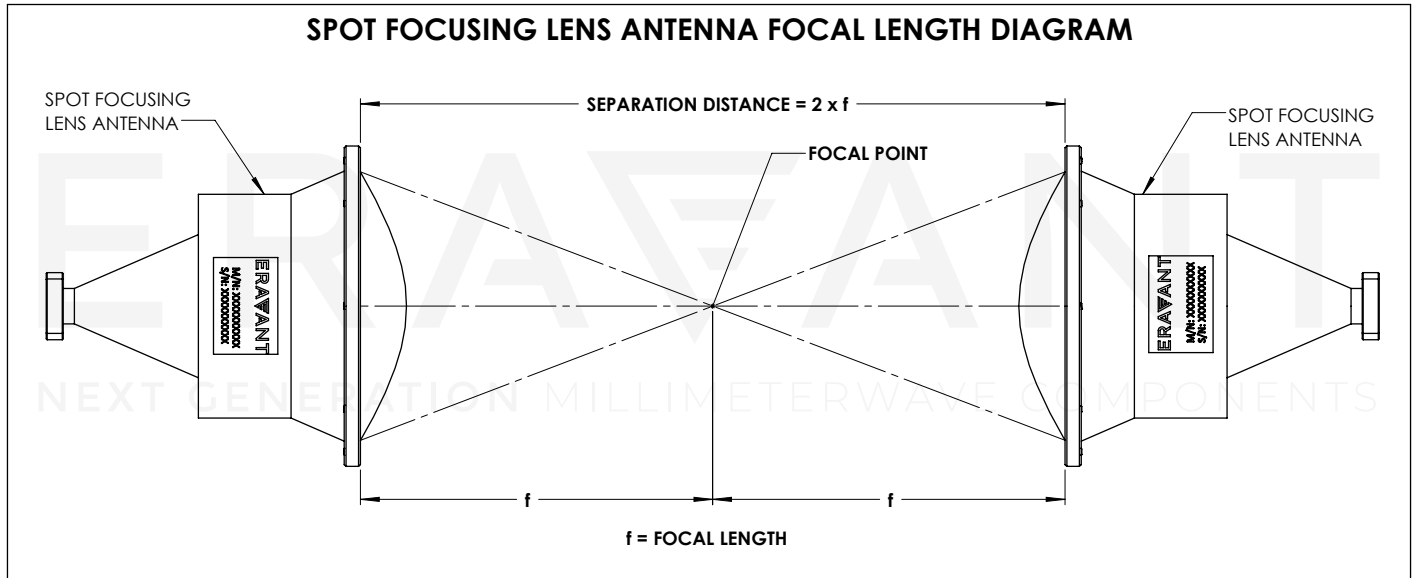


### Typical Return Loss Vs. Frequency



### Focal Length Diagram:

Focal Length is defined in the diagram below with a pair of spot-focusing lens antennas



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