

SAQ-103039-90-S1

X-Band Spot-Focusing Lens Antenna, 10.3 GHz, 3.94" Focal Length

SAQ-103039-90-S1 is an X-Band spot-focusing lens antenna that delivers a nominal 3 dB spot size of 1.02" at the focal length of 3.94", and a typical return loss of 15 dB across the frequency range of 8.2 to 12.4 GHz. The antenna employs a low loss lens to offer excellent aperture efficiency at 10.3 GHz. The spot-focusing lens antenna is equipped with a WR-90 waveguide with UG-39/U flange as its antenna port. It supports linear polarized waveforms.



Electrical Specifications:

Parameter		Minimum	Typical	Maximum
Frequency		8.2 GHz	10.3 GHz	12.4 GHz
Focal Length			3.94"	
Peak to First Null	Spot Size		2.51"	
	Power Captured		83.8%	
10 dB Below Peak	Spot Size		1.75"	
	Power Captured		78.9%	
3 dB Below Peak	Spot Size		1.02"	
	Power Captured		47.4%	
Polarization			Linear	
Return Loss			15 dB	
Specification Temperature			+25 °C	
Operating Temperature		-45 °C		+85 °C

Mechanical Specifications:

Item	Specification
Antenna Port	WR-90 Waveguide with UG-39/U Flange
Horn/Lens Material	Aluminum/HDPE
Finish	Chem Film
Weight	1.32 lbs
Lens Diameter	4.00"
Dimensions	8.50" (L) x 4.58" (Ø)
Outline	AQ-RX-4.0

ECCN

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FEATURES

- Rugged Mechanical Configurations
- High Efficiency and Low Loss

APPLICATIONS

- Scientific Instruments
- Material Research Instruments

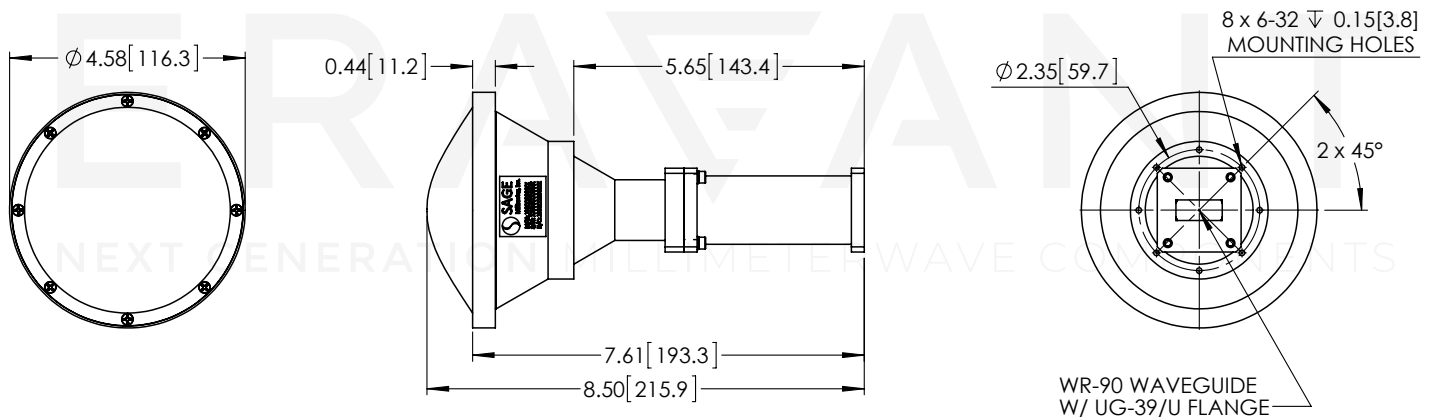
SUPPLEMENTAL DETAILS



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Mechanical Outline:

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



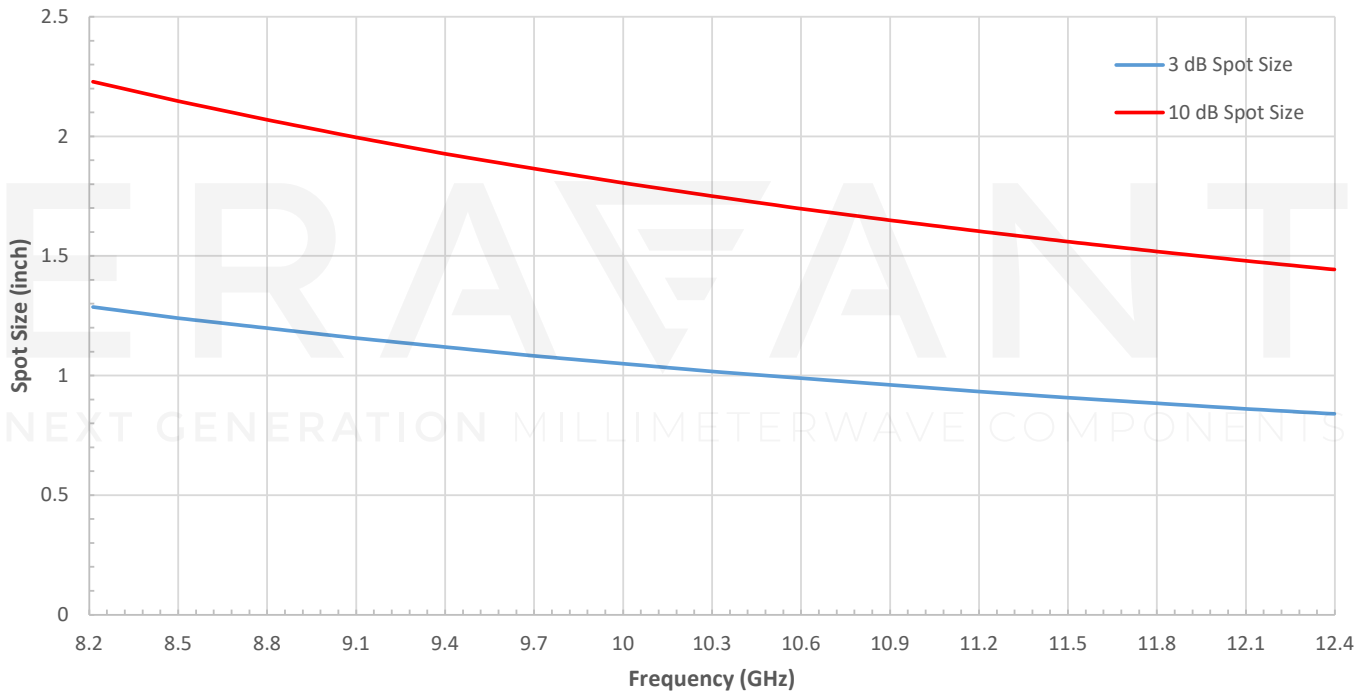
NOTE:

- 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.

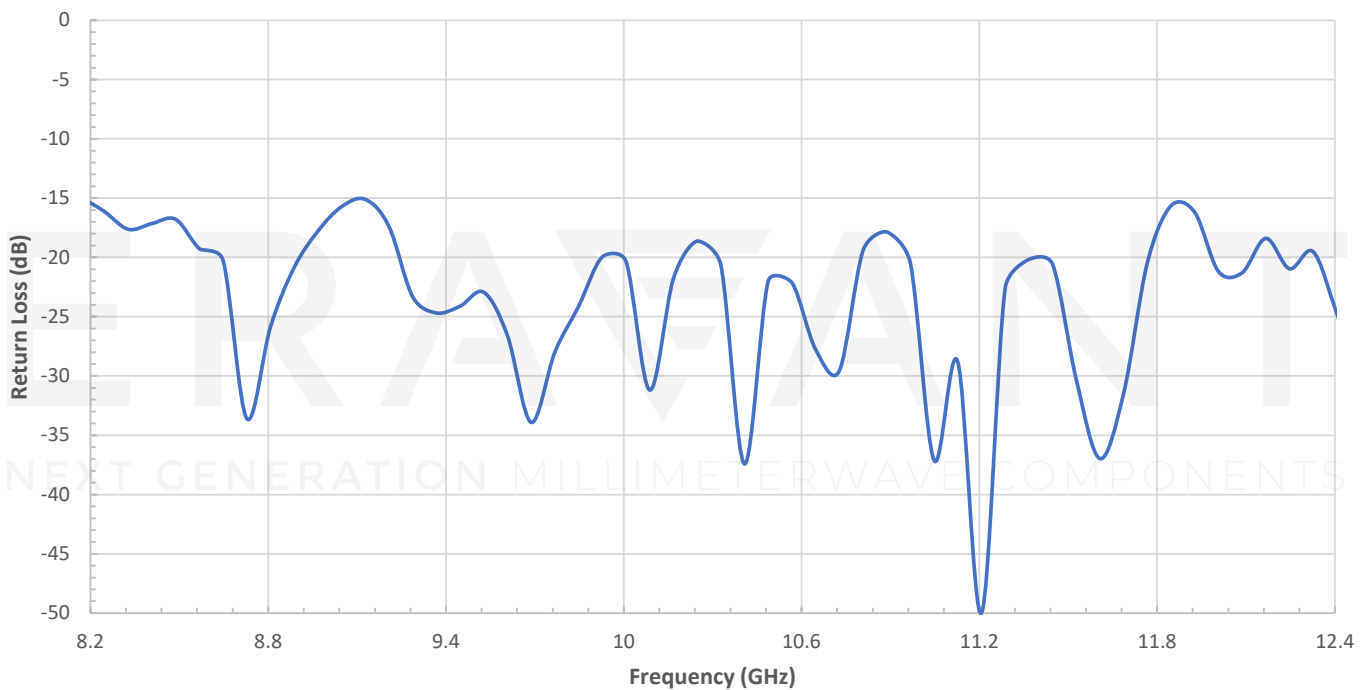
CAUTION:

- 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 ± 0.15 inch-pounds (0.45 ± 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 ± 0.15 inch-pounds (0.90 ± 0.02 Nm). Torque wrench model [SCH-08008-S1](#) is highly recommended.

Theoretical Spot Size vs Frequency

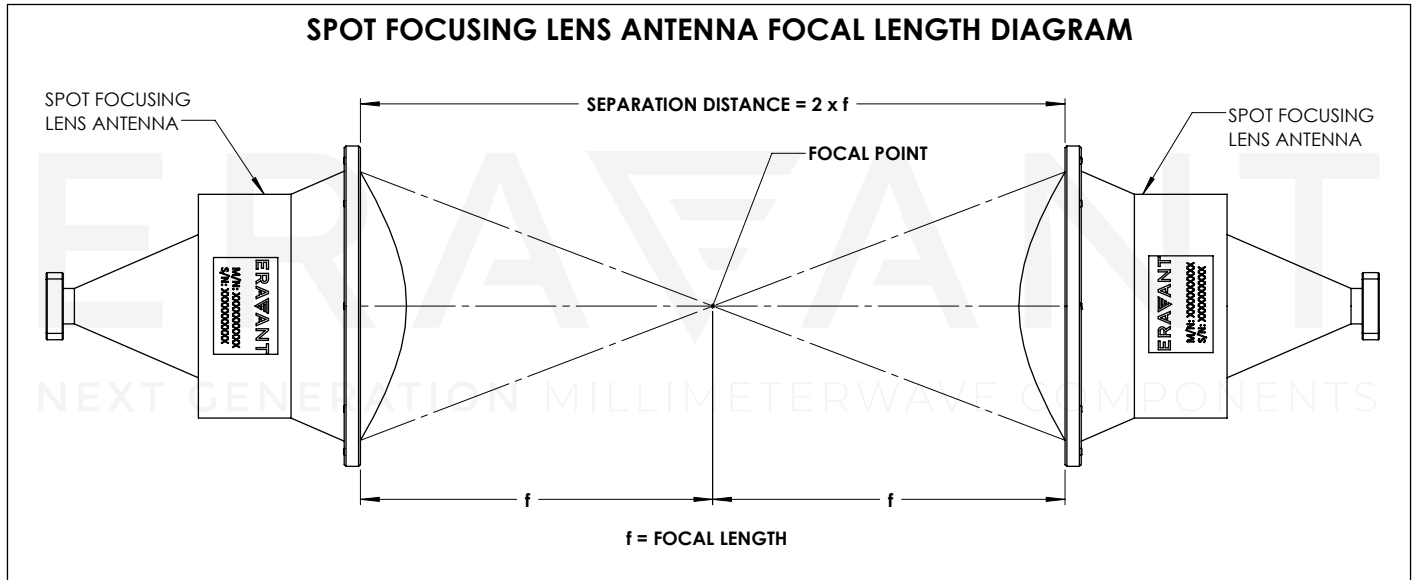


Typical Measured Return Loss vs Frequency



Focal Length Diagram:

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



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