

## SAQ-133075-688-S1

### Ku-Band Spot-Focusing Lens Antenna, 13.4 GHz, 7.5" Focal Length

**SAQ-133075-688-S1** is a Ku-Band spot-focusing lens antenna that delivers a nominal 3 dB spot size of 1.00" at the focal length of 7.5", and a typical return loss of 15 dB across the frequency range of 12.9 to 13.9 GHz. The antenna employs a low loss lens to offer excellent aperture efficiency at 13.4 GHz. The spot-focusing lens antenna is equipped with a 0.688" diameter circular waveguide with UG-419/U-M flange as its antenna port. It supports linear and circular polarized waveforms.



#### Electrical Specifications:

| Parameter                 |                | Minimum             | Typical  | Maximum  |
|---------------------------|----------------|---------------------|----------|----------|
| Frequency                 |                | 12.9 GHz            | 13.4 GHz | 13.9 GHz |
| Focal Length              |                |                     | 7.50"    |          |
| Peak to First Null        | Spot Size      |                     | 2.40"    |          |
|                           | Power Captured |                     | 83.8%    |          |
| 10 dB Below Peak          | Spot Size      |                     | 1.70"    |          |
|                           | Power Captured |                     | 78.9%    |          |
| 3 dB Below Peak           | Spot Size      |                     | 1.00"    |          |
|                           | Power Captured |                     | 47.4%    |          |
| Polarization              |                | Linear and Circular |          |          |
| Return Loss               |                |                     | 15 dB    |          |
| Specification Temperature |                |                     | +25 °C   |          |
| Operating Temperature     |                | -40 °C              |          | +85 °C   |

#### Mechanical Specifications:

| Item               | Specification                                      |
|--------------------|--|
| Antenna Port       | Ø 0.688" Circular Waveguide with UG-419/U-M Flange |
| Horn/Lens Material | Aluminum/HDPE                                      |
| Finish             | Chem Film  |
| Weight             | 3.16 lbs   |
| Lens Diameter      | 6.8"   |
| Dimensions         | 9.39" (L) x 7.45" (Ø)                              |
| Outline            | AQ-C6-6.8-C688                                     |

#### ECCN

EAR99

#### FEATURES

- Rugged Mechanical Configurations
- High Efficiency and Low Loss

#### APPLICATIONS

- Scientific Instruments
- Material Research Instruments

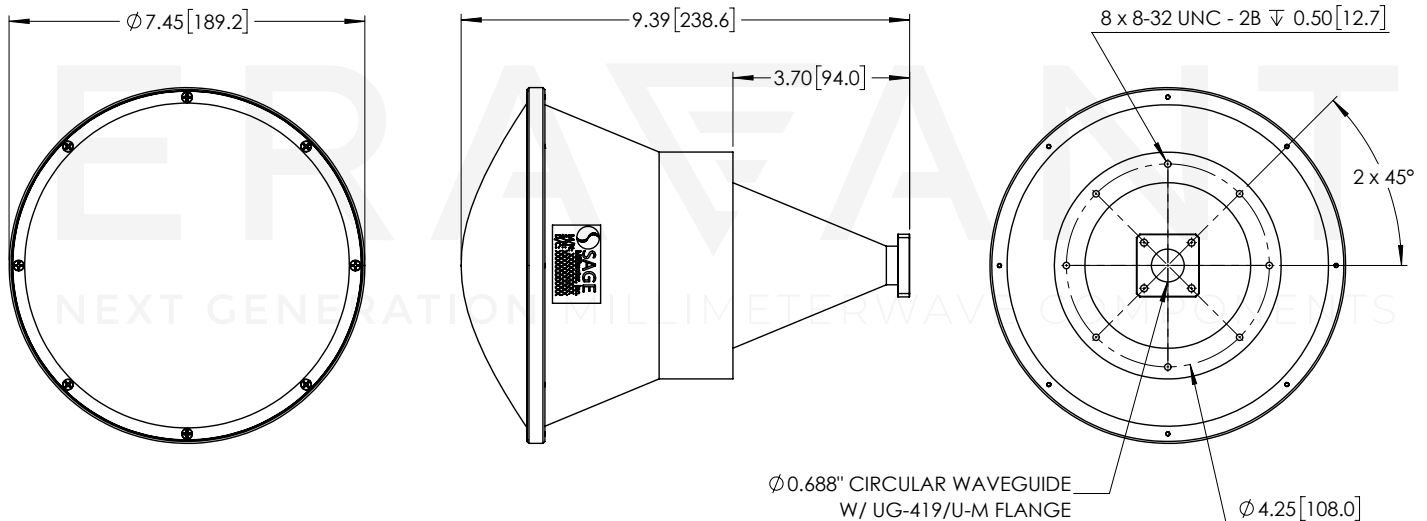
#### SUPPLEMENTAL DETAILS



## SAQ-133075-688-S1

### Mechanical Outline:

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



### NOTE:

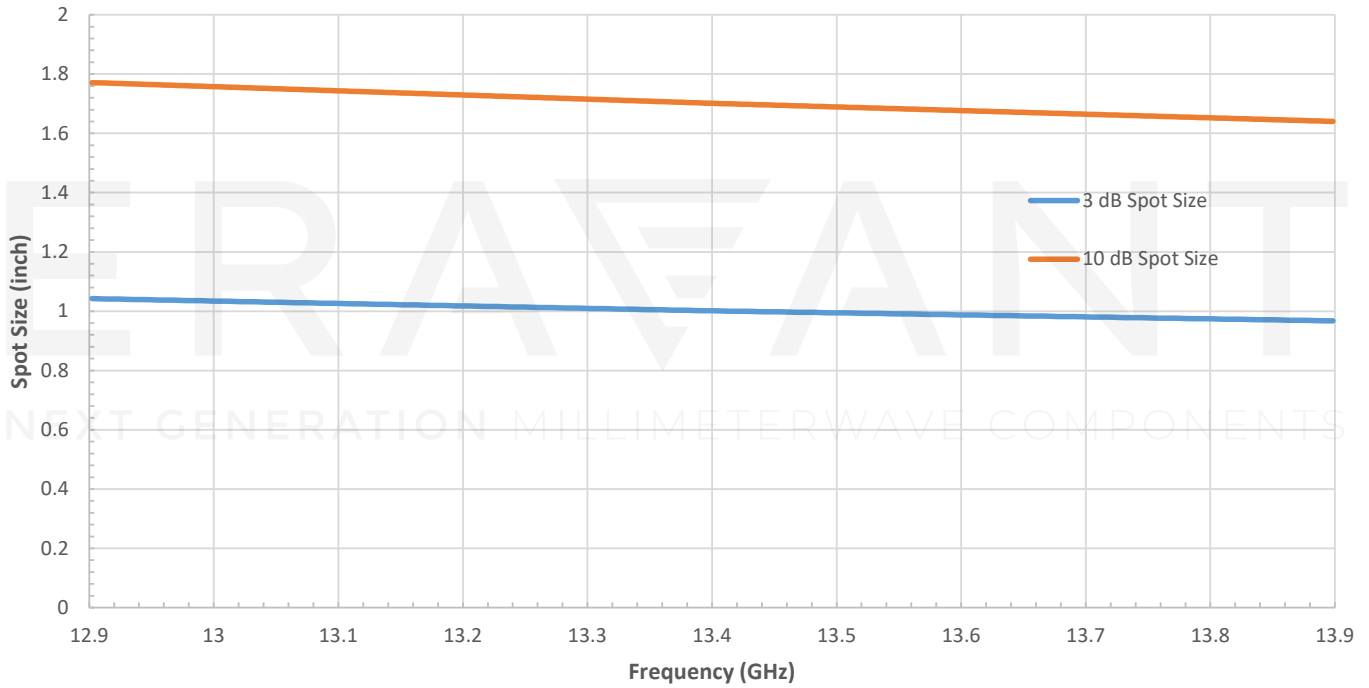
- On condition that test data is provided it is collected from a sample lot. Actual data may vary slightly from unit to unit. All testing is performed under +25 °C room temperature.
- On condition that simulated test data is provided, actual measured data may slightly vary.
- Eravant reserves the right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

### CAUTION:

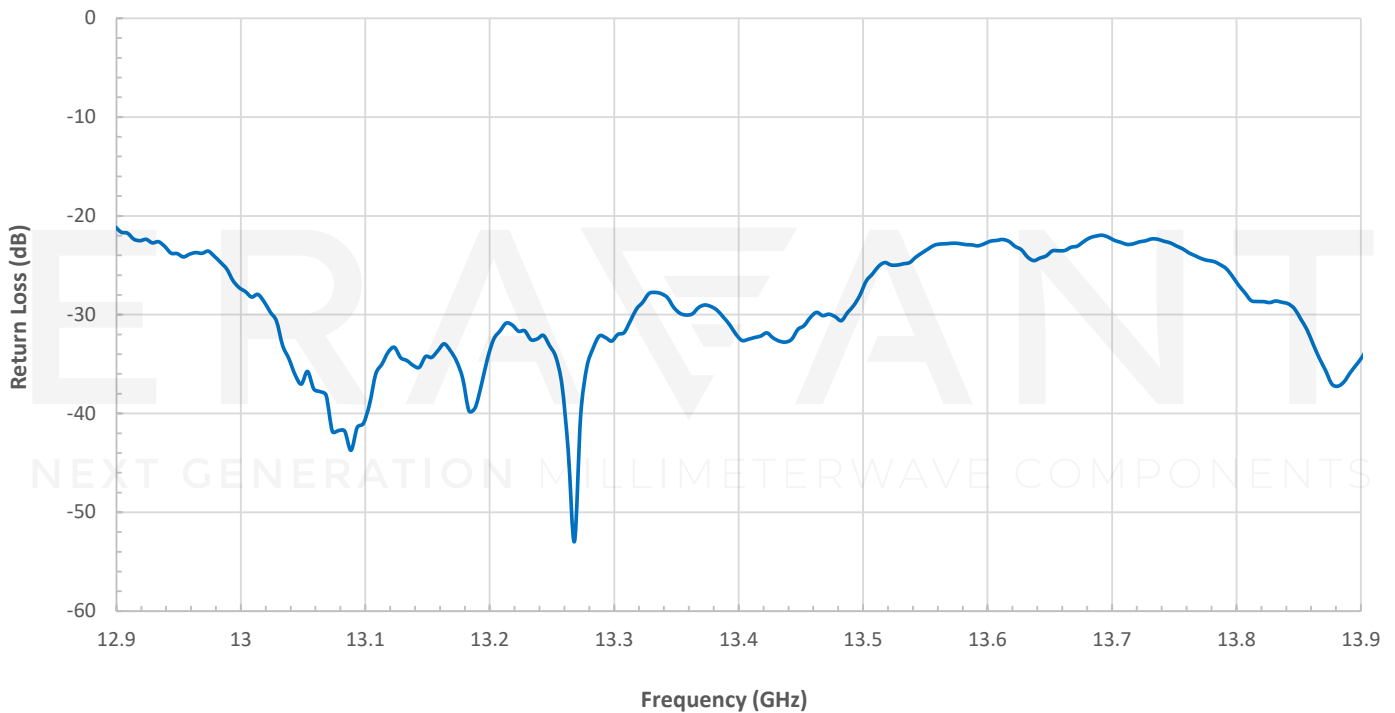
- If a waveguide is present, any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.
- Any foreign objects in the antenna will cause performance degradation and possible device damage.
- For 1 mm connectors proper torque should be applied:  $4.0 \pm 0.15$  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-133075-688-S1

### Theoretical Spot Size vs Frequency

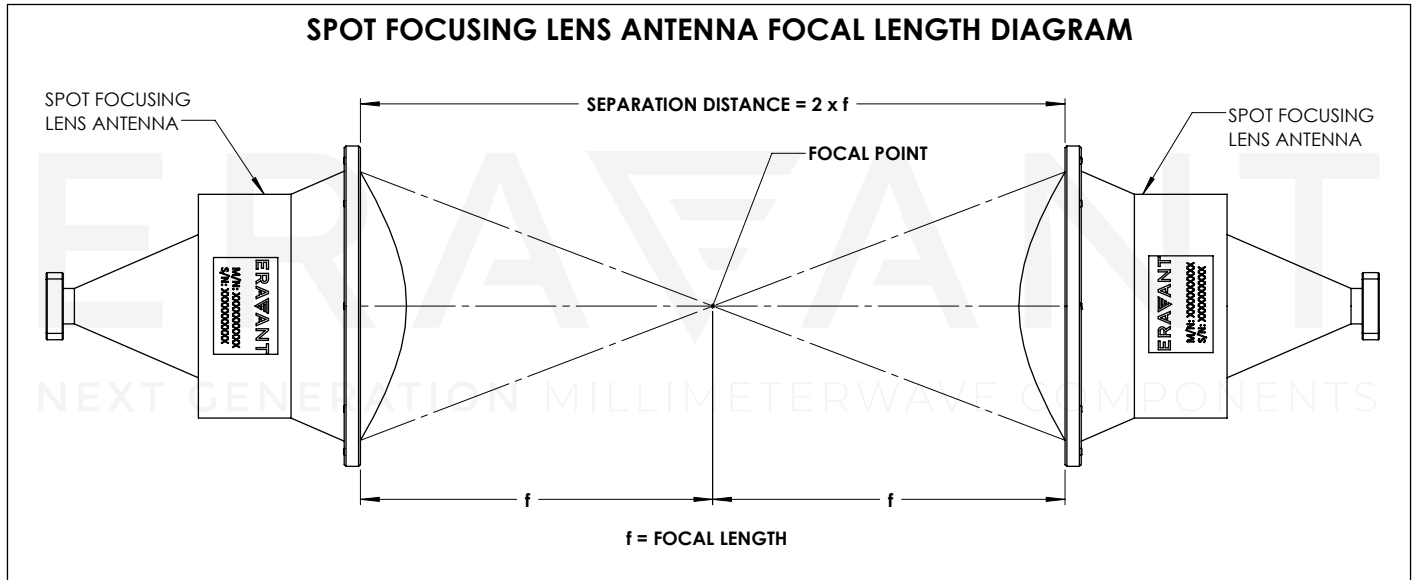


### Mesured Return Loss vs. Frequency



### Focal Length Diagram:

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



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