STD-12SF-NI

Rev. 1.2

E-Band Waveguide Detector, Negative Polarity

Description:

Model STD-12SF-NI is an E Band waveguide detector that covers the frequency range of 60 to 90 GHz. The detector is zero biased and intended for small signal detection and network analyzer applications. Due to the proprietary circuitry design and careful diode selection, the detector exhibits high sensitivity and extremely flat output characteristics. The detector is designed to have a 10 MHz video bandwidth and a 1 MΩ video output impedance. The minimum detectable signal level is approximately -50 dBm. The Faraday isolator is integrated to improve the input port return loss.

Features:

- Full Waveguide Band Operation
- High Sensitivity Without Tuning
- Integrated Faraday Isolator

Applications:

- Test Lab
- Network Analyzer Systems
- Test instrumentations

Electrical Specifications:

Parameter		Minimum	Typical	Maximum
Frequency Range		60 GHz		90 GHz
Sensitivity			900 mV/mW	
Sensitivity Flatness			±2.0 dB	
RF Input Power		-50 dBm	-20 dBm	
RF Damage Level				+17 dBm
Return Loss			15 dB	
Video Bandwidth			10 MHz	
Output Voltage Polarity			Negative*	
Specification Temperature			+25 ˚C	
Operating Temperature		0 ˚C		+50 ˚C

***Note:** Positive output voltage polarity is available under the model number **STD-12SF-PI**.

Mechanical Specifications:

Item	Specification
RF Port	WR-12 Waveguide with UG-387/U Flange
DC Port	SMA (F)
Flange	Brass
Finish	Gold Plated and Black Anodized
Weight	2.8 Oz
Size	3.50” (L) x 0.94” (Ø)
Outline	TD-E1

www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505
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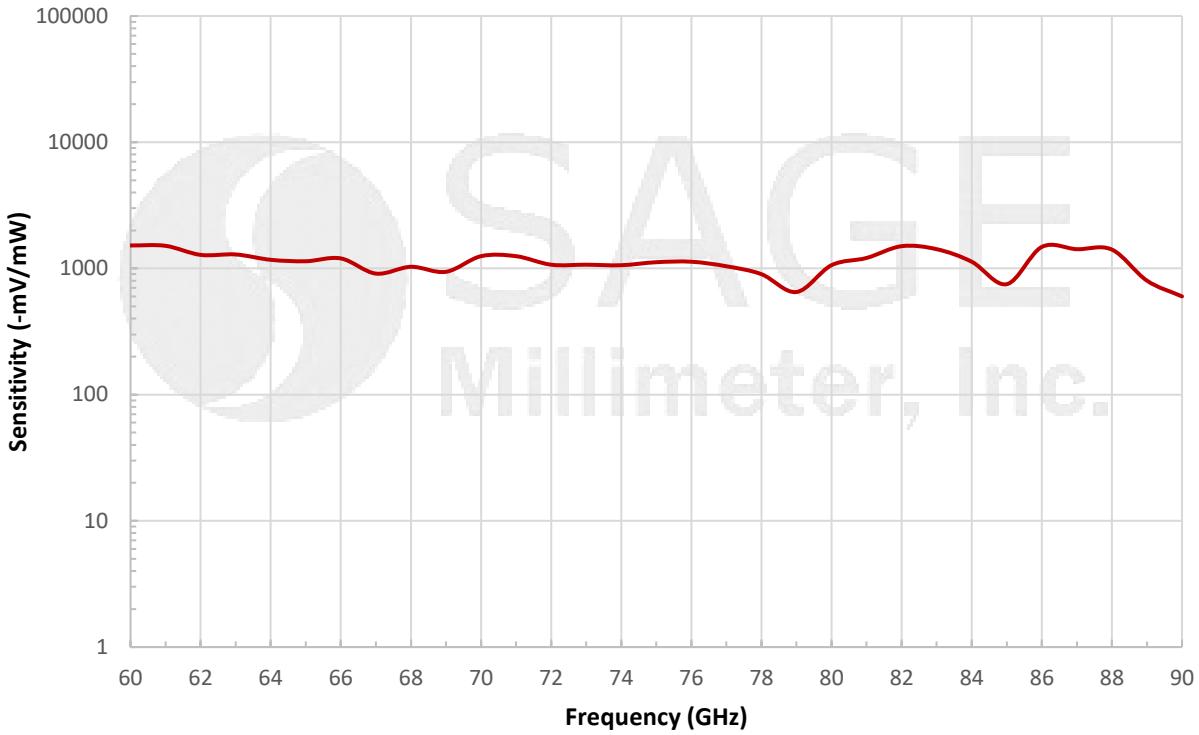
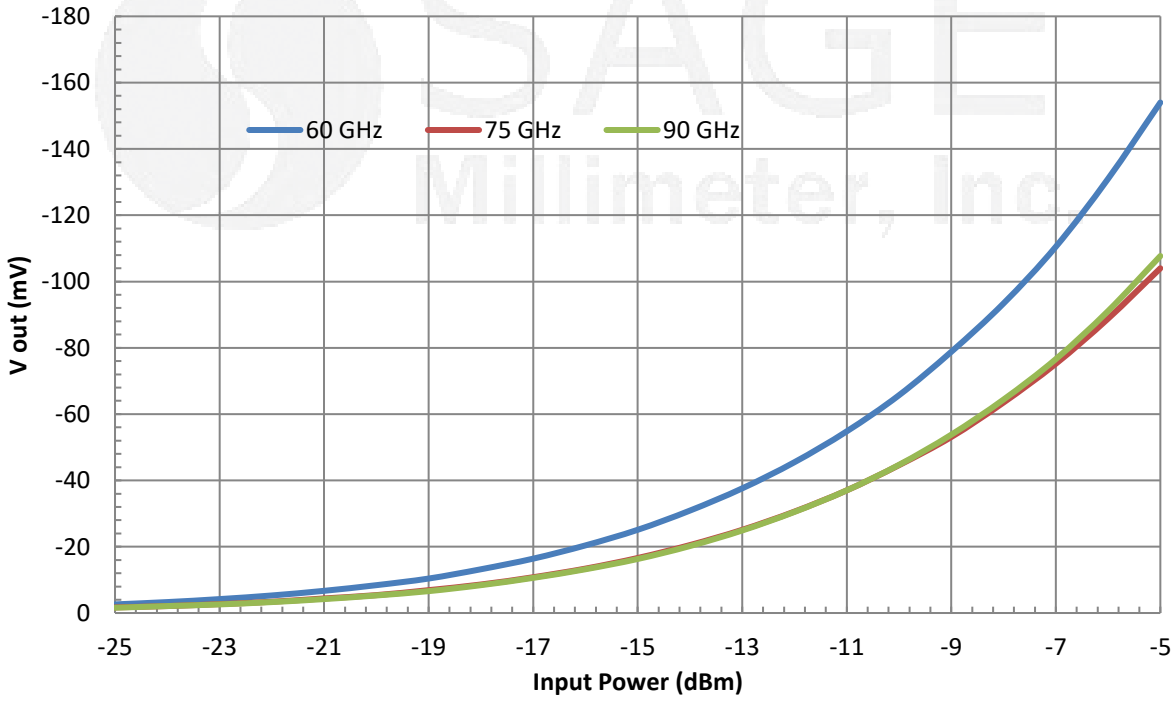
E-Band Waveguide Detector, Negative Polarity

Typical Performance vs. Frequency

P_{in}= -20 dBm



Typical Detected Voltage vs. Input Power



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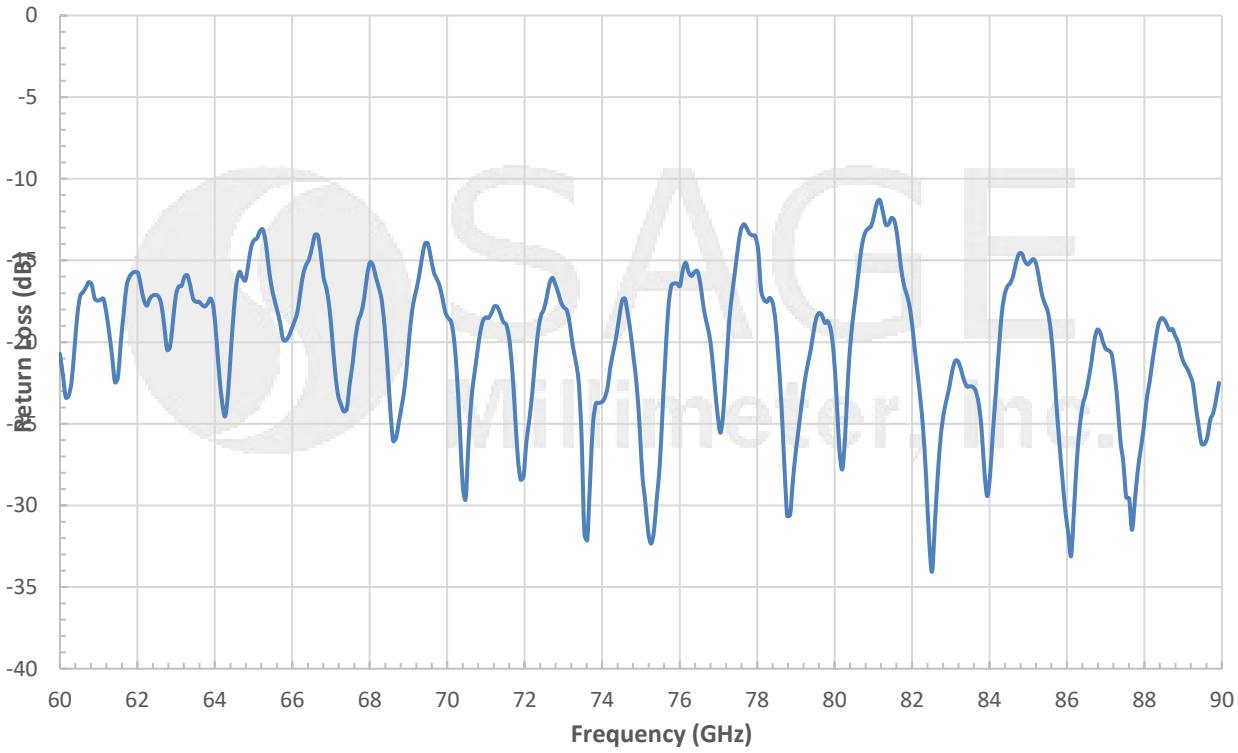
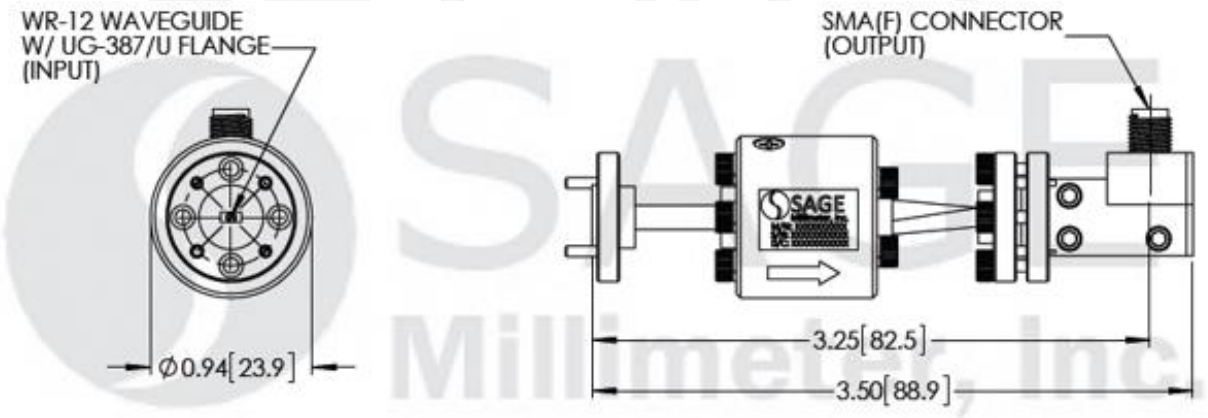
Typical Return Loss vs. Input Frequency



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, slightly.
- All testing was performed under +25 °C case temperature.
- The detector is for small signal detection. For linear signal detection, the recommended signal level is -30 dBm or below.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.
- Positive output voltage polarity is available under the model number **STD-12SF-PI.**

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Caution:

- Exceeding absolute maximum ratings will damage the device.
- The device is static sensitive. Always follow ESD rules when working with the device.
- Any foreign objects in the waveguide will cause performance degradation and can possibly damage the device.
- Proper torque, 8.0 ± 0.4 inch-pounds (0.90 ± 0.02 Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

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