



## Full Waveguide Band, G-Band Noise Source with Isolator

### Description:

**Model STZ-05-I1** is a G-Band noise source that delivers a 12 dB ENR with extreme flatness across the frequency range of 140 to 220 GHz. The noise source is integrated with SAGE Millimeter's high quality Faraday isolator (STF-05-S1) to improve the port VSWR and load pull for more reliable and accurate noise figure measurements. The noise source can work in either CW or pulse AM mode by applying a TTL triggering signal via a female SMA connector. This feature can also be used in automatic test systems to remotely turn the noise source on and off. In addition, a toggle switch (power/triggering inversion switch) is provided to turn the noise source on and off manually.



### Features:

- Full Waveguide Band Operation
- TTL or Manual On and Off Switches
- CW or Pulsed AM Operation Modes
- Precision Calibrated and Flat ENR

### Applications:

- Test Labs
- Instrumentations
- Radiometric Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency Range	140.0 GHz		220.0 GHz
ENR	11.0 dB	12.0 dB	
ENR Flatness		±2.0 dB	
Temperature Stability		0.01 dB/°C	
Long Term Temperature Stability		0.05 dB/day	
AM Modulation Trigger		TTL	
AM Modulation Rate		1.0 KHz	
Port Return Loss		14 dB	
DC Bias	+18 V <sub>DC</sub> /35 mA	+28 V <sub>DC</sub> /60 mA	+30 V <sub>DC</sub> /75 mA
Specification Temperature		+25°C	
Case Temperature	0°C		+50°C

### Mechanical Specifications:

Item	Specification
RF Output	WR-05 Waveguide with UG-387/U-M Flange
Bias Port Connector Type	BNC (F)
AM Modulation Connector Type	SMA (F)
Size	4.99" (L) x 1.97" (Ø)
Waveguide Flange Material	Brass
Noise Source Finish	Silver Plated and Black Paint
Isolator Finish	Gold Plated and Black Anodized
Weight	9.6 Oz
Outline	TZ-WG

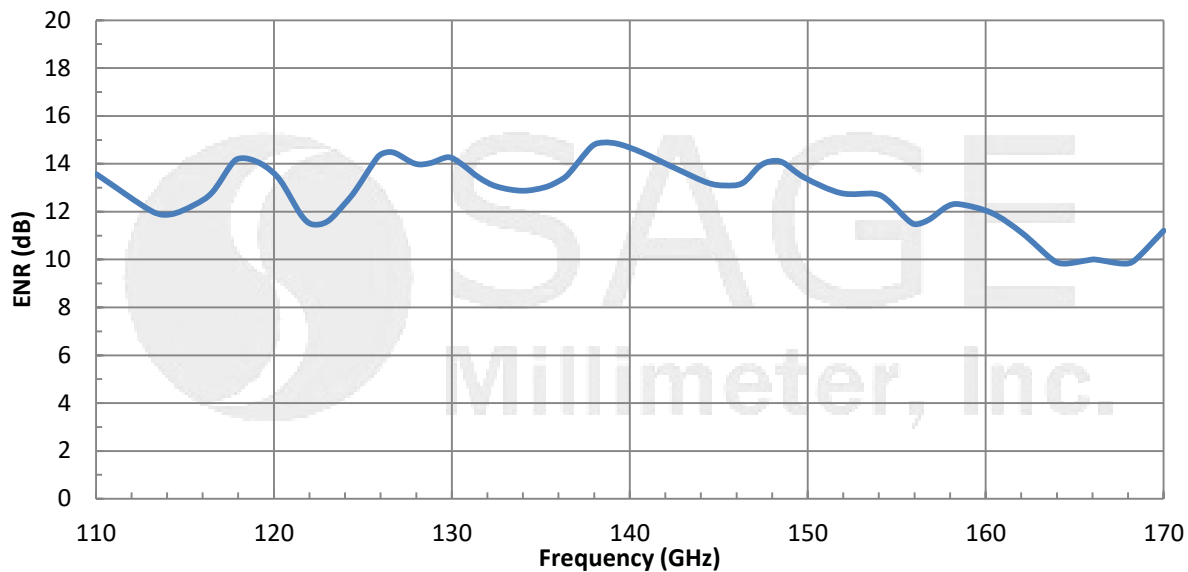




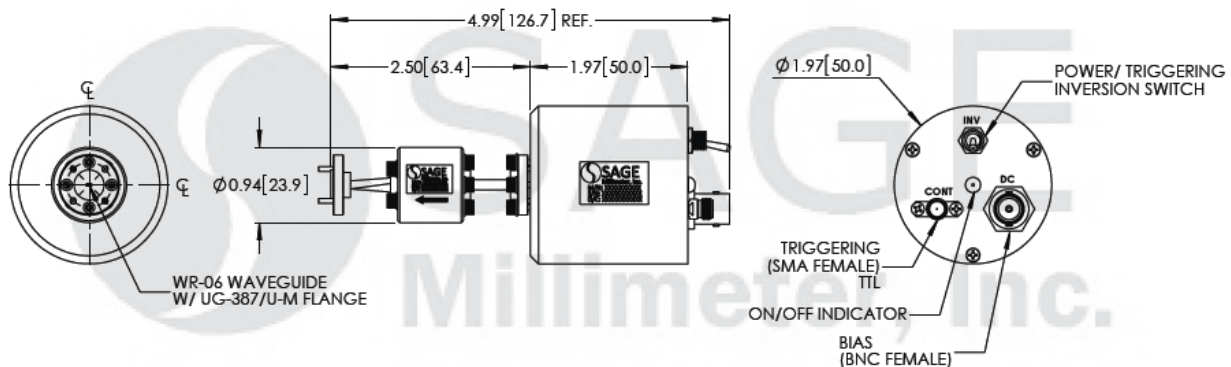
## Full Waveguide Band, G-Band Noise Source with Isolator

### Typical ENR vs. Frequency

$V_{DC} = +28\text{ V}$ ,  $I_{DC} = 60\text{ mA}$



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



#### Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under +25°C case temperature.
- The **Triggering Port** (female SMA connector) of the noise source is provided to turn the noise source on and off via a TTL control signal any time the **Bias** is applied. The switching frequency is limited to 1 KHz.
- The **Power/Triggering Inversion Switch** of the noise source is provided to manually turn the noise source on and off any time the **Bias** is applied. When the switch is in the “ON” position, the LED light will be illuminated.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

#### Caution:

- Exceeding absolute maximum ratings will damage the device.



www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505  
Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com

## Full Waveguide Band, G-Band Noise Source with Isolator

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

