



## W-Band Bench Top Low Noise Amplifier, 35 dB Gain, 5 dB NF

### Description:

**Model STB-7531143550-1010-L1** is a W Band bench top low noise amplifier with a typical small signal gain of 35 dB, a nominal  $P_{1dB}$  of -5 dBm across the frequency range of 75 to 110 GHz. The power supply required is a single phase AC voltage in the range of 100 to 240 V<sub>AC</sub>, which can be supplied by a wall outlet. The LED light helps to indicate the working status of the amplifier. The input and output port configurations are both WR-10 waveguide with UG387/U-M flanges.



### Features:

- Full Waveguide Band Coverage
- Low Noise Figure
- Rugged Design

### Applications:

- Test Labs
- Gain Boosting
- System Noise Figure Improvement

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	75 GHz		110 GHz
Gain		35 dB	
Noise Figure		5 dB	
$P_{1dB}$		-5 dBm	
$P_{in}$			+15 dBm
Input Return Loss		6 dB	
Output Return Loss		8 dB	
Power Supply (AC Adapter Provided)	100 V <sub>AC</sub>		240 V <sub>AC</sub>
Specification Temperature		+25 °C	
Case Temperature	0 °C		+50 °C

### Mechanical Specifications:

Item	Specification
Input	WR-10 Waveguide with UG-387/U-M Flange
Output	WR-10 Waveguide with UG-387/U-M Flange
DC Bias	2.5 mm DC Jack (AC-to-DC power converter included)
DC Bias Switch	On-Off Rocker Switch with Indicator Light
Enclosure Material	Extruded Aluminum
Finish	Black Anodized
Weight	3 lbs
Size	5.51" (L) x 4.72" (W) x 2.81" (H)
Outline	TB-SW

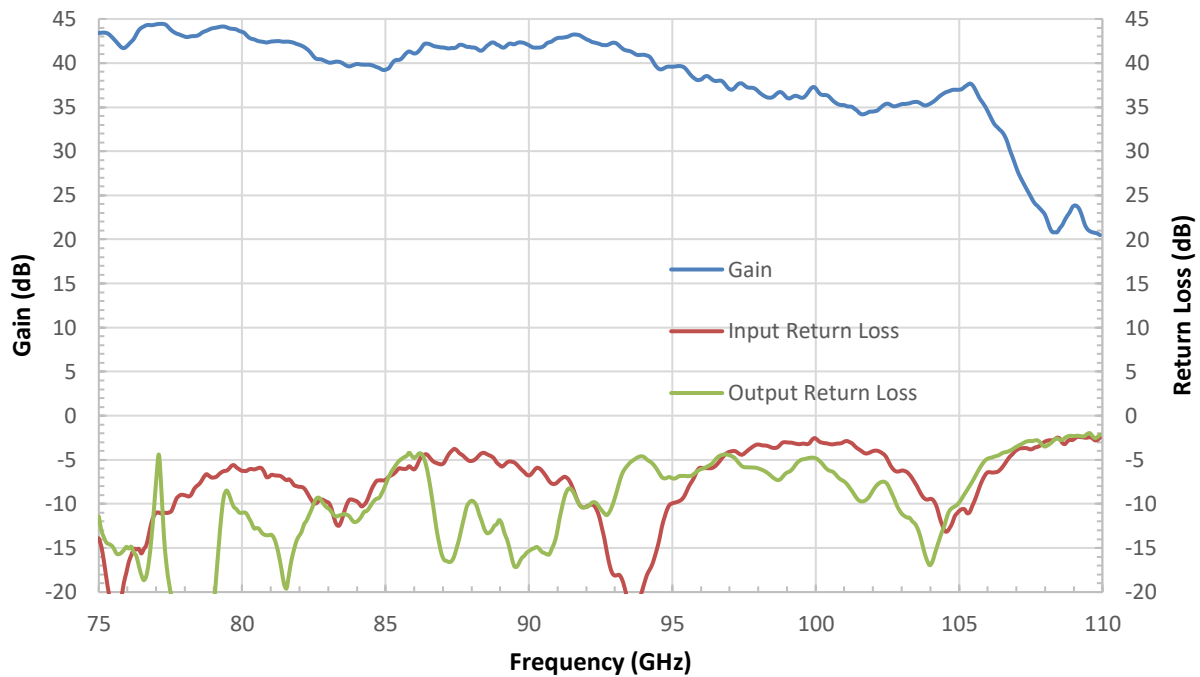




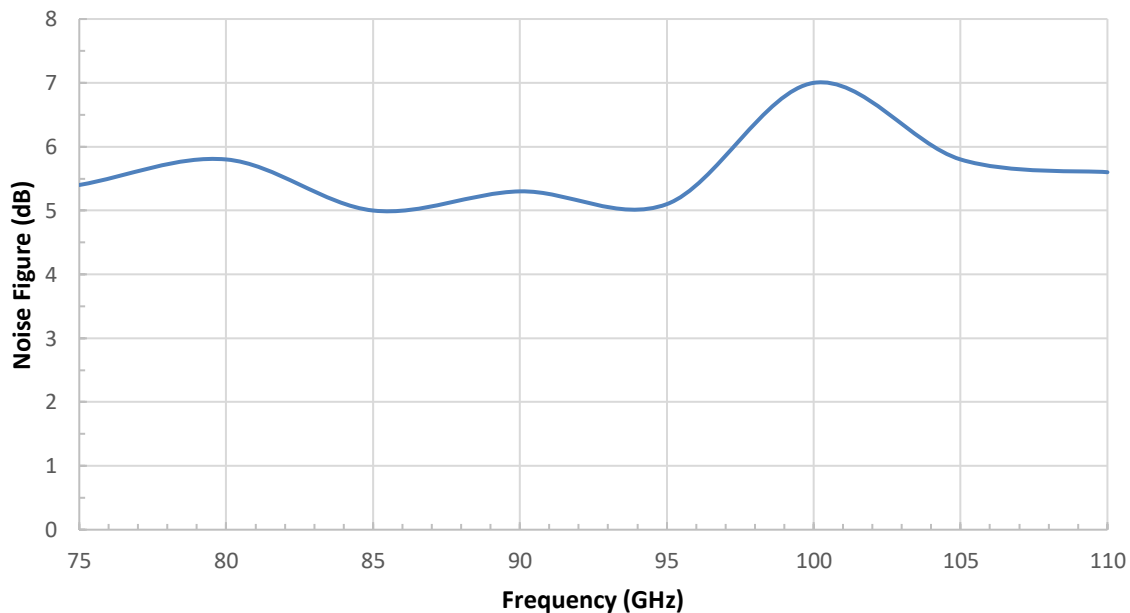
## W-Band Bench Top Low Noise Amplifier, 35 dB Gain, 5 dB NF

### Test Data:

#### Gain and Return Loss vs. Frequency



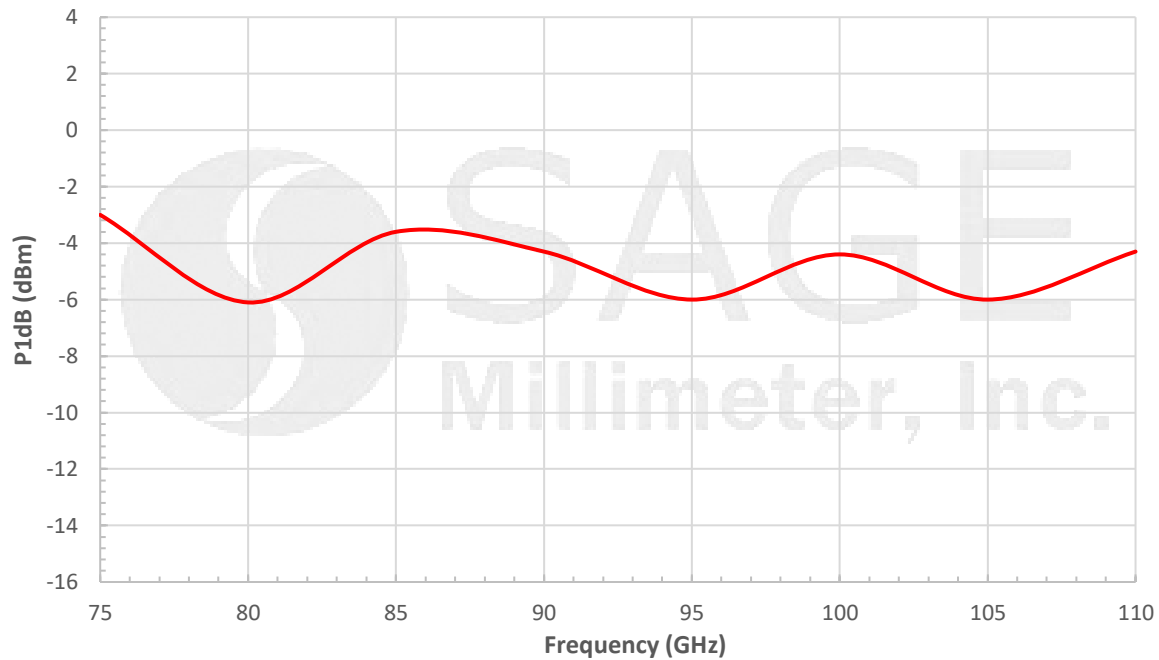
#### Noise Figure vs. Frequency



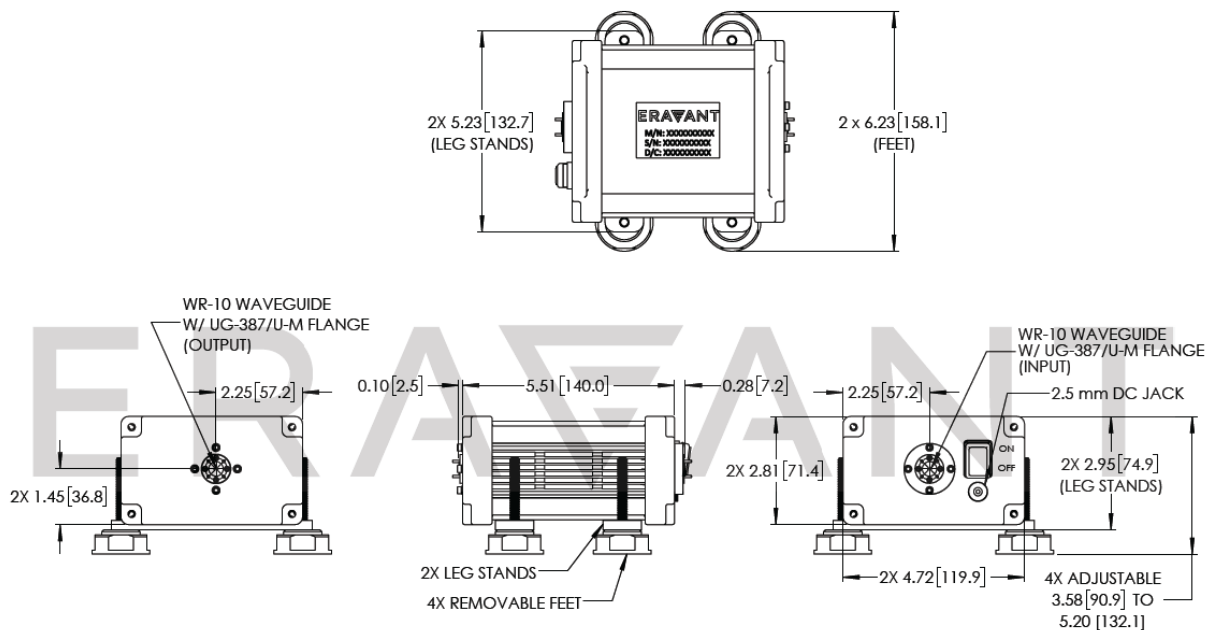


## W-Band Bench Top Low Noise Amplifier, 35 dB Gain, 5 dB NF

Typical  $P_{1dB}$  vs. 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.
- All testing was performed under +25 °C case temperature.





## W-Band Bench Top Low Noise Amplifier, 35 dB Gain, 5 dB NF

- Other mechanical configurations are available under different model numbers.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

### Caution:

- Exceeding absolute maximum ratings shown 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 possible device damage.
- The case temperature of the device shall never exceed +50°C. Use proper heatsink or fan if necessary.

