



## Radar Target Simulator, Level Setting, 76.5 GHz

### Description:

**Model STR-773-12-L1** is a radar doppler simulator that operates at 76.5 GHz with a bandwidth of  $\pm 250$  MHz and a WR-12 waveguide input/output. The simulator utilizes a single-sideband-modulator to modulate the incoming signal transmitted by the radar under test and sends back either a higher or lower band signal through a diplexer. The frequency-shifted signal is transmitted back to the radar under test as the Doppler signal. Target characteristics can be adjusted by changing the I and Q channel frequency and phase. The routing attenuation is adjusted by the level setting attenuator which can be calibrated to simulate the radar cross section (RCS).



### Features:

- Single Sideband Output
- Simulated Target Speed and Size Adjustable
- Simulated Target Moving Direction Switchable
- Instrumentation Grade

### Applications:

- Doppler Target Simulations
- Radar System Testing

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency		76.5 GHz	
RF Bandwidth		$\pm 250$ MHz	
Carrier Rejection		30 dB	
Image Rejection		20 dB	
Routing Loss Range		30 to 80 dB	
I/Q Frequency Range	DC		250 MHz
I/Q Voltage		$\pm 10$ V <sub>p-p</sub>	$\pm 12$ V <sub>p-p</sub>
I/Q Current		$\pm 2.5$ mA	$\pm 5$ mA
I/Q Phase Error		$\pm 5^\circ$	
Specification Temperature		+25 °C	
Operating Temperature	+0 °C		+50 °C

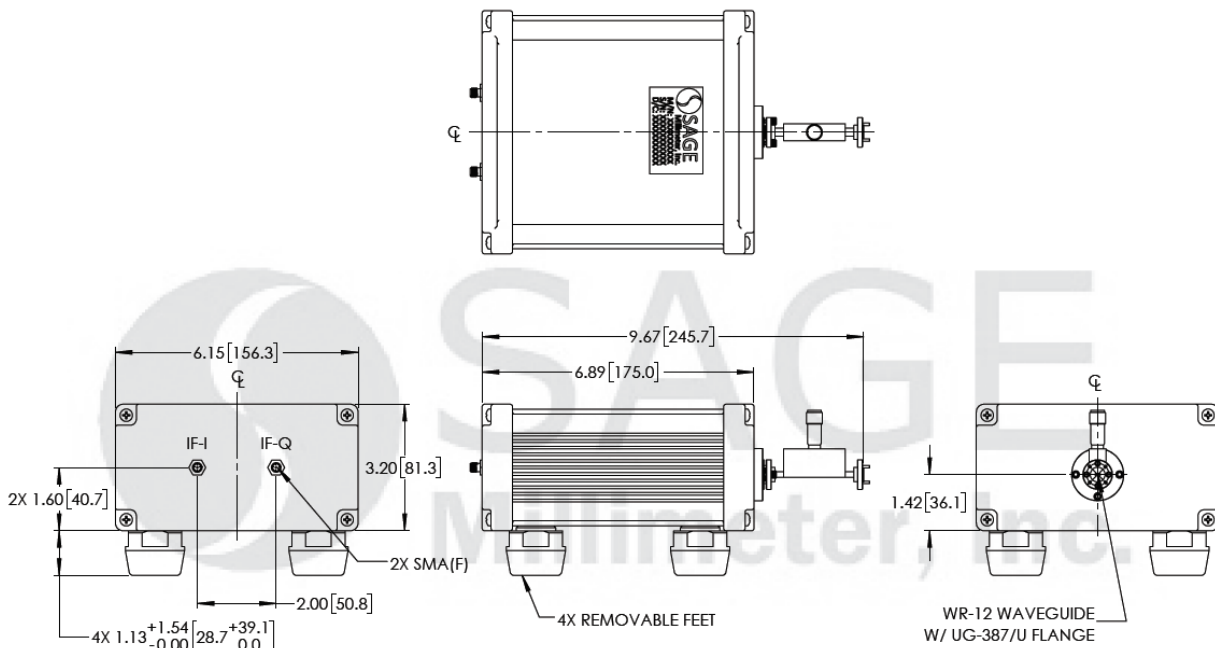
### Mechanical Specifications:

Item	Specification
RF Port	WR-12 Waveguide with UG-387/U Flange
I/Q Ports	SMA(F)
Finish	Black Anodized
Size	9.67" (L) x 6.15" (W) x 4.33" (H)
Outline	TR-EL



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

**Note:**

- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.
- Models with different operation frequencies are available under a different model numbers.
- The 79 to 81 GHz Radar Target Simulator with a **direct reading attenuator**, instead of a level setting attenuator, is available as model **STR-773-12-D1**.

**Caution:**

- Exceeding absolute maximum ratings will damage the device.
- Any foreign objects in the waveguide will cause performance degradation and may damage the device.
- Proper torque,  $8.0 \pm 0.15$  inch-pounds ( $0.92 \pm 0.05$  Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

