



## E-Band Faraday Isolator, 90° Twist Input

### Description:

**Model STF-12-91** is a full band Faraday isolator that operates from 60 to 90 GHz. The Faraday isolator is constructed with a longitudinal, magnetized ferrite rod that causes a Faraday rotation of the incoming RF signal. The Faraday isolator offers 28 dB nominal isolation and 1.5 dB typical insertion loss with good flatness. The return loss of the isolator is 16 dB. The input and output ports are WR-12 waveguides with UG-387/U flanges and feature a 90° twist.



### Features:

- Full Waveguide Band Operation
- Moderate Insertion Loss
- High Isolation
- Instrumentation Grade
- 90 Degree Configuration

### Applications:

- Test Labs
- Instrumentations
- Sub-assemblies

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	60 GHz		90 GHz
Insertion Loss		1.5 dB	2.0 dB
Isolation		28 dB	
Return Loss		16 dB	
Power Handling		1.0 W (CW)	1.2 W (CW)
Specification Temperature		+25 °C	
Operation Temperature	-40 °C		+85 °C

### Mechanical Specifications:

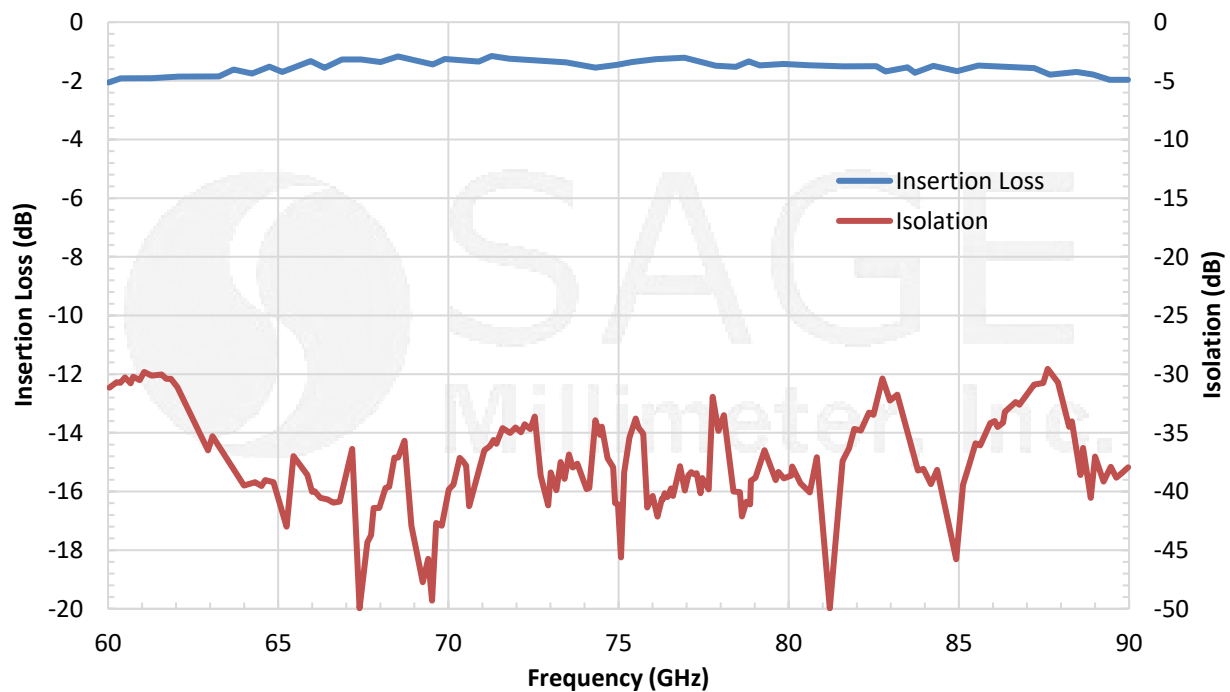
Item	Specification
RF Input and Output Ports	WR-12 Waveguide with UG-387/U Flange
Waveguide Flange Material	Brass
Waveguide Flange Finish	Gold Plated
Cover Material	Aluminum
Cover Finish	Black Anodized
Weight	2.2 Oz
Insertion Length	2.75"
Outline	TF-SE-9



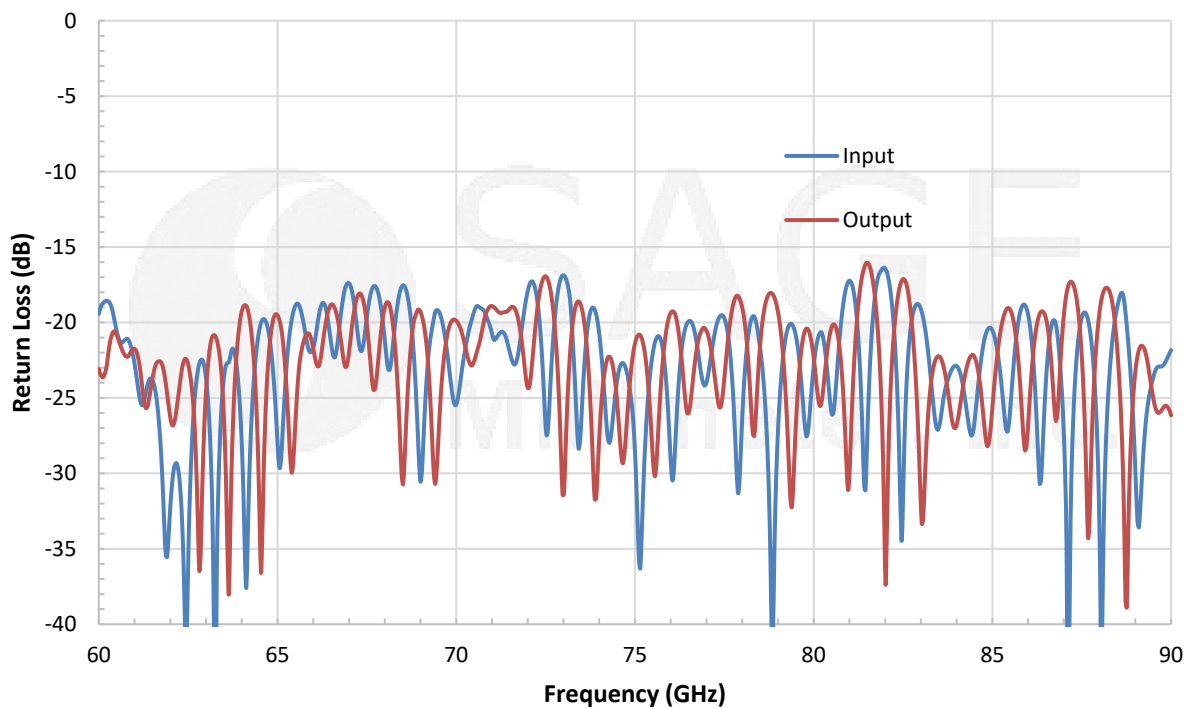


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### Typical Performance vs. Frequency



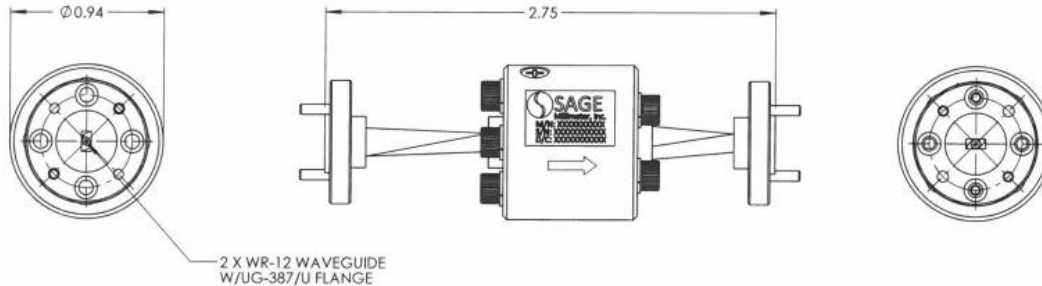
### Typical Return Loss vs. Frequency





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



**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 standard model is offered under model number **STF-12-S1**.
- The compact version is offered under model number **STF-12-91-C**.
- Other custom 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 will damage the device.
- The device is sensitive to magnetic fields. Always keep magnet fields 6 inches away.
- Any foreign objects in the waveguide will cause performance degradation and may damage the device.

