SAS-19-219-M1

U-band Linear to Circular Polarizer, 40 to 60 GHz, Switchable

SAS-19-219-M1 is a U band, linear to circular manual switchable polarizer that operates from 40 GHz to 60 GHz. The polarizer features a 5-position manual lever for switching between output polarization modes such as linear to left or right hand circular polarization depending on the input signal and linear to linear signals. The polarizer offers a typical insertion loss of 0.6 dB, typical axial ratio of 1.2, and a typical return loss of 20 dB. The polarizer is often combined with Eravant's rectangular to circular waveguide transition (**SWT-19219-SB**) and **(SAC-2309-219-S2)** for various system applications.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	40 GHz		60 GHz
Insertion Loss		0.6 dB	
Axial Ratio		1.2	
Return Loss		20 dB	
Specification Temperature		+25°C	
Operating Temperature	-40°C		-85°C

Mechanical Specifications:

Item	Specification
RF Ports	Ø0.219" Circular Waveguide with 383/U-M Anti-Cocking Flange
Waveguide Material and Finish	Gold Plated Aluminum
Casing Material and Finish	Black Anodized Aluminum
Weight	6.7 Oz
Outline	AS-MUF-219-A

ECCN

EAR99

FEATURES

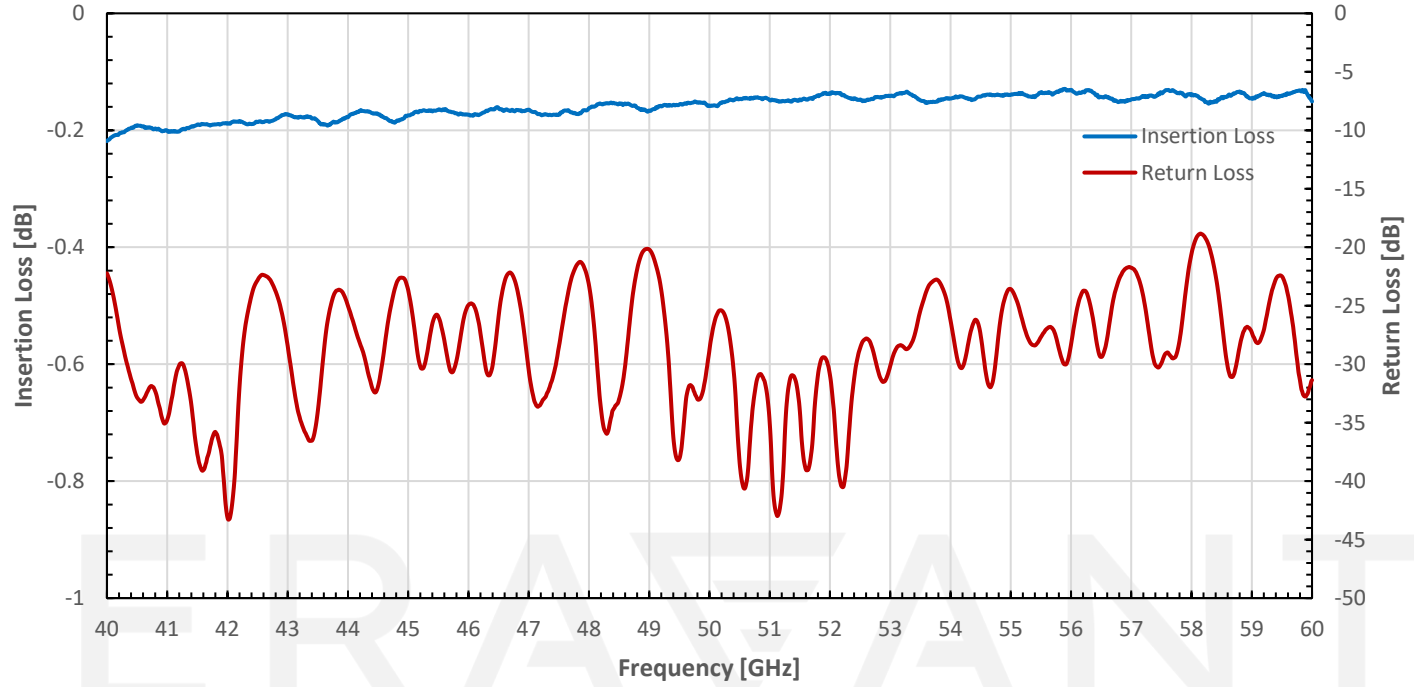
- Lever Operated Polarization Mode Selector
- Full Band Coverage
- Compact Size
- Good Axial Ratio

APPLICATIONS

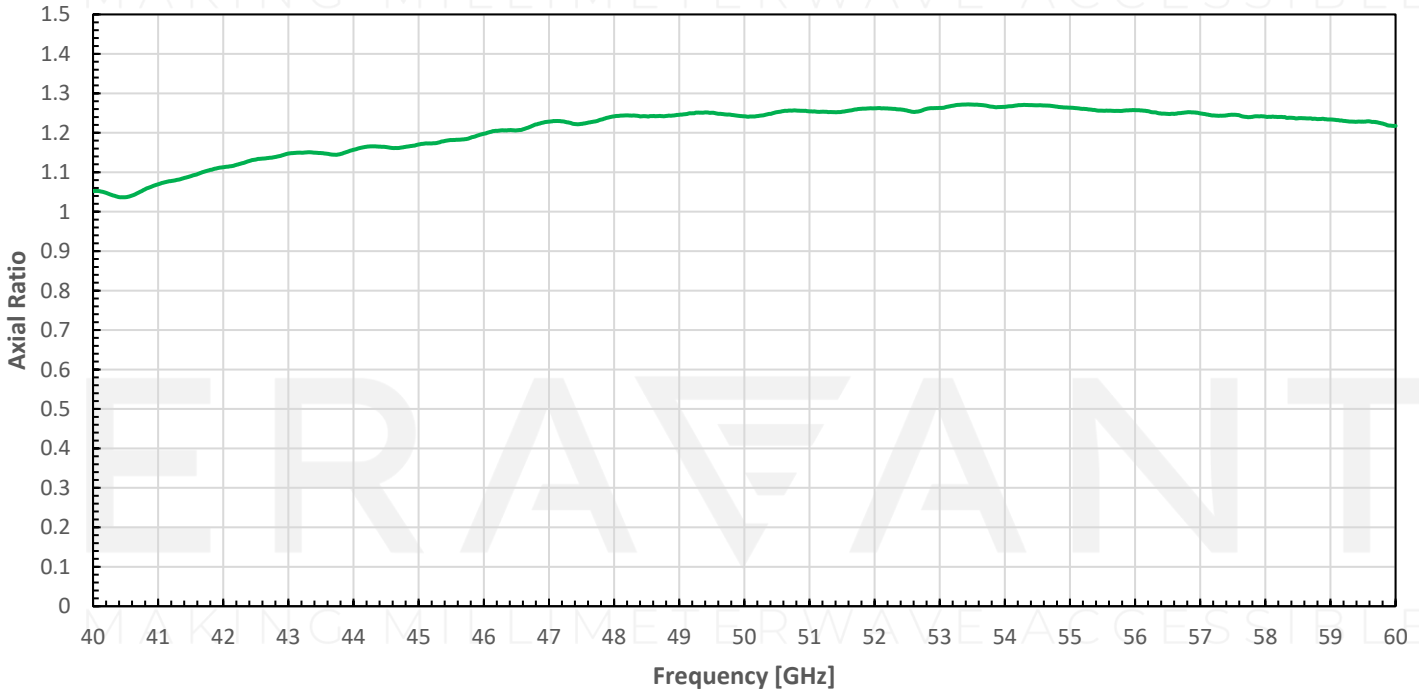
- Antenna Ranges
- Waveguide Polarization Selection
- Communication Systems

SUPPLEMENTAL DETAILS

Typical Insertion Loss and Return Loss vs Frequency

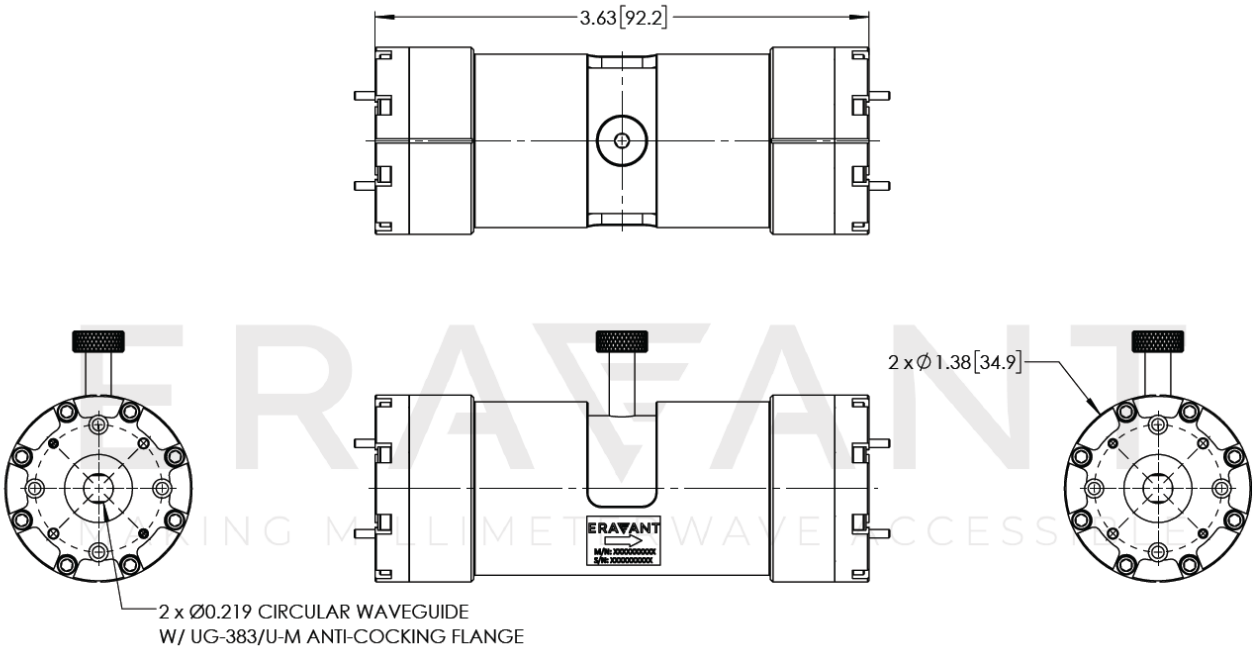


Typical Axial Ratio Vs Frequency



Mechanical Outline:

Unless otherwise specified, all dimensions are in inches [millimeters])



NOTE:

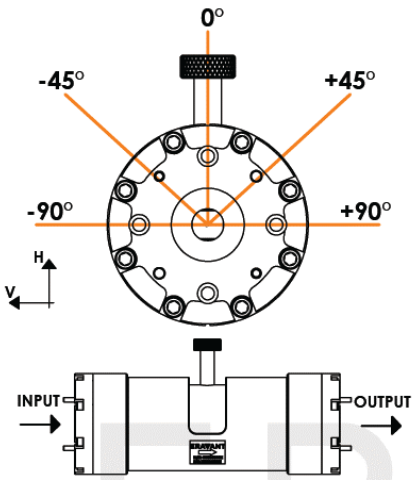
- Product is currently in development. Shown mechanical outline, mechanical specifications, and product photo are subject to change after finalization of design.
- Test data is collected from a sample lot. Actual data may vary slightly from unit to unit. All testing is performed under +25 °C room temperature.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

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

Polarizer Mode Configuration Notes and Diagram:

- The polarizer's product label indicates the direction of the input signal.
- Diagram and table for each lever position is provided below. As indicated in the table, certain positions are more optimal that others for transmitting linear signals in regard to insertion loss and return loss.
- To obtain a **Left-Handed Circular Polarized (LHCP)** signal at the output port, set the lever at the +45° position while feeding a linear vertical signal at the input port. Similarly, LHCP can be obtained by setting the lever at the -45° position while feeding a linear horizontal signal.



POSITION	INPUT	OUTPUT
-90°	LINEAR H SIGNAL	LINEAR H SIGNAL (OPTIMAL)
	LINEAR V SIGNAL	LINEAR V SIGNAL
-45°	LINEAR H SIGNAL	LHCP
	LINEAR V SIGNAL	RHCP
0°	LINEAR H SIGNAL	LINEAR H SIGNAL
	LINEAR V SIGNAL	LINEAR V SIGNAL (OPTIMAL)
+45°	LINEAR H SIGNAL	RHCP
	LINEAR V SIGNAL	LHCP
+90°	LINEAR H SIGNAL	LINEAR H SIGNAL (OPTIMAL)
	LINEAR V SIGNAL	LINEAR V SIGNAL