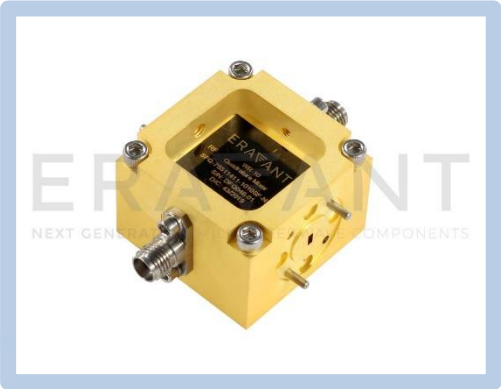
SFQ-75311415-1010SF-N1-M-WP

Rev 1.0

W-Band Quadrature Mixer or Phase Detector, 75 to 108 GHz

Description:



Model SFQ-75311415-1010SF-N1-M-WP is a W Band quadrature mixer that covers the frequency range of 75 to 108 GHz. The typical conversion loss of the quadrature mixer is 17 dB with an LO driving power of +15 dBm. Since the IF port of the quadrature mixer is DC coupled, the mixer can be used as a phase detector. In addition, the mixer can be readily configured into an image rejection mixer or single sideband modulator by adding an IF quadrature coupler.

Features:

- Compact Package
- Low Conversion Loss
- High Port Isolations
- IF Port DC Coupled for Phase Detection

Applications:

- Phase Detection
- Speed and Ranging Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	75 GHz		108 GHz
LO Frequency	75 GHz		108 GHz
LO Pumping Power		+15 dBm	+20 dBm
IF Frequency	DC		20 GHz
Conversion Loss		17 dB	
I/Q Amplitude Unbalance		±1.0 dB	
I/Q Phase Unbalance		±15°	
LO to RF Isolation		30 dB	
Combined Damage RF & LO Power			+20 dBm
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

Mechanical Specifications:

Item	Specification
RF Port	WR-10 Waveguide with Anti-Cocking UG-387/U-M
LO Port	WR-10 Waveguide with Anti-Cocking UG-387/U-M
IF-I, IF-Q Ports	SMA(F), SMA(F)
Case Material	Aluminum
Finish	Gold Plated
Weight	0.68 Oz
Size	1.25” (L) 1.25” (W) X 0.88” (H)
Outline	FQ-W1M-A

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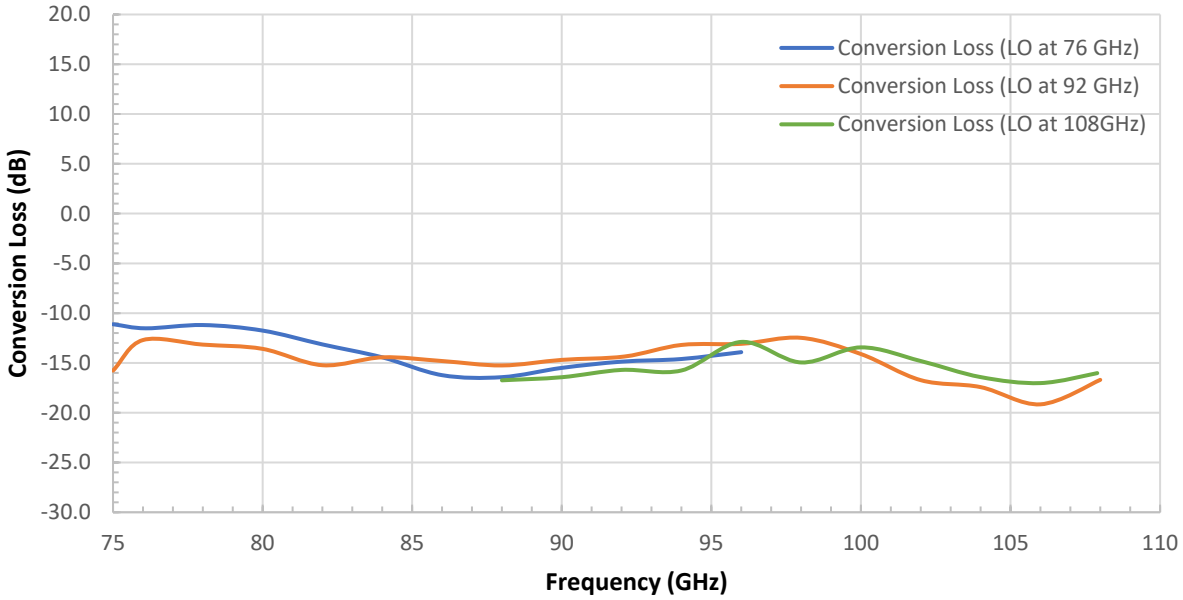
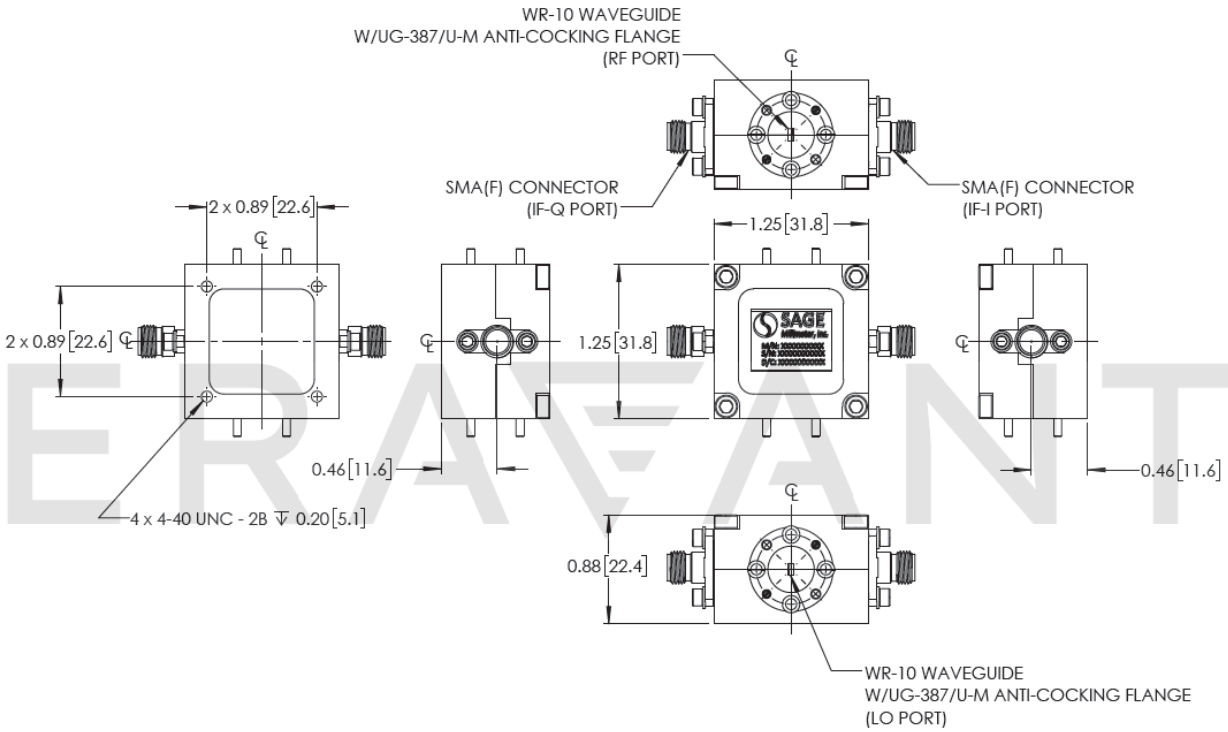
W-Band Quadrature Mixer or Phase Detector, 75 to 108 GHz

Typical Conversion Loss vs. Frequency

RF: -20 dBm; LO: +15 dBm



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



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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 I/Q mixer can be configured as an image rejection mixer or used as an I/Q up-converter, single sideband modulator and phase detector.
- Eravant reserves the right to change the information presented without notice.

Caution:

- Exceeding absolute maximum ratings will damage the device.
- The mixer is a static sensitive device. Always follow ESD rules when working with the device.
- The IF ports are DC coupled. Use DC blocks if necessary. **Do not apply an external bias voltage to the IF port.**
- Proper torque, 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm), should be applied. **Eravant torque wrench, model SCH-08008-S1, is highly recommended.**