



# Fullband Isolators and Modulators

## QIF/QIM

### Characteristics

- ◆ Full Waveguide Bandwidths
- ◆ Low Insertion Loss and VSWR
- ◆ High Wideband Isolation



### Product Description

QuinStar Technology's **QIF series fullband isolators and modulators** are available in six waveguide bands covering the frequency range of 26.5 to 110 GHz. These isolators are Faraday-rotation type ferrite devices with bandwidths covering a full waveguide band.

Series QIF isolators provide a minimum of 25 dB of isolation and typically more than 30 dB across most of the waveguide bands. The isolators and modulators can handle power levels from one Watt at W-band to two Watts at Ka-band. They provide isolation over wider bandwidths than single-junction waveguide isolators. The wide bandwidth of these isolators makes them ideally suited for

broadband or swept frequency applications and wideband measurement systems.

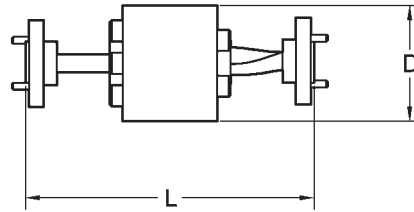
Series QIM modulators provide an on-off ratio of more than 25 dB across most of the waveguide band. They also provide an isolation of greater than 20 dB in reverse direction when biased in the low insertion loss state. A magnetic bias is applied through a solenoid coil wound around the ferrite core. An optional external driver unit (model QCM-0000-AA) applies current to the coil to bias the ferrite to a minimum insertion loss state. Rise time from 10% to 90% is typically 3μs

### Specifications

FREQUENCY BAND	Ka	Q	U	V	E	W
Frequency Range (GHz)	26.5-40	33-50	40-60	50-75	60-90	75-110
Waveguide Size	WR-28	WR-22	WR-19	WR-15	WR-12	WR-10
<b>FULLBAND ISOLATORS</b>						
Insertion Loss (dB max)	1.3	1.4	1.6	1.7	2.0	2.2
Isolation (dB min)	25	27	27	27	27	27
VSWR (max)	1.45:1	1.4:1	1.4:1	1.4:1	1.4:1	1.4:1
Power Rating (W max)	2.0	1.5	1.5	1.0	1.0	1.0
<b>FULLBAND MODULATORS</b>						
Forward Insertion Loss (dB max)	1.7	1.7	1.8	1.8	2.0	2.5
On-Off Ratio (dB typ)	25	25	25	25	25	25
Input/Output (VSWR (max.))	1.5:1	1.5:1	1.5:1	1.5:1	1.5:1	1.5:1
Power Rating (W max)	2.0	1.5	1.5	1.0	1.0	1.0

Other waveguide sizes are available.

### Outline Drawing/Mechanical Specifications



(round flange pattern shown)

FREQUENCY BAND	WAVEGUIDE SIZE	FLANGE PATTERN	OUTLINE DIMENSIONS, inches/mm	
			L	D
Ka	WR-28	UG599/U	2.95/74.9	1.31/33.3
Q	WR-22	UG-383/U	2.69/68.3	1.31/33.3
U	WR-19	UG-383/U	2.69/68.3	1.31/33.3
V	WR-15	UG-385/U	2.50/63.5	1.00/25.4
E	WR-12	UG-387/U	2.50/63.5	1.00/25.4
W	WR-10	UG-387/U	2.50/63.5	1.00/25.4

### Ordering Information

Model Number **QI - A 00000**

model prefix

- F = isolator
- M = modulator

waveguide band designator

- A = Ka-band
- Q = Q-band
- U = U-band
- V = V-band
- E = E-band
- W = W-band