

Characteristics

- ◆ Compact Size
- ◆ Low Insertion Loss
- ◆ Excellent Coupling Accuracy and Good Directivity



Product Description

QuinStar Technology's **QJC** series of compact **precision crossguide directional couplers** cover the frequency range of 18 to 170 GHz in nine waveguide bands. Three- and four-port configurations are available for standard models with midband nominal coupling values of 20, 30 and 40 dB. Other coupling values are available as custom products. Crossguide couplers are ideal devices for sampling or inserting RF energy in a waveguide transmission

line without affecting the transmitting signal. Typical applications include frequency monitoring, power sampling and built-in testing. The crossguide type of directional coupler has the advantage of lower insertion loss, smaller size and lower cost when compared to broadwall directional couplers. QuinStar can provide custom configurations and application-specific interfaces to suit unique needs.

Specifications

FREQUENCY BAND	K	Ka	Q	U	V	E	W	F	D
Frequency Range (GHz)	18-26.5	26.5-40	33-50	40-60	50-75	60-90	75-110	90-140	110-170
Waveguide Size	WR-42	WR-28	WR-22	WR-19	WR-15	WR-12	WR-10	WR-8	WR-6
Coupling Values (dB at center frequency)	Standard (20, 30 and 40 ± 1); Custom (17 to 40)								
Bandwidth (min)	20% of waveguide band								
Insertion Loss (dB max) ¹	0.4	0.4	0.5	0.6	0.6	0.8	1.0	1.2	1.3
Directivity (dB typ) ²	20	20	20	20	20	20	20	15	15
Main Line VSWR (max)	1.15:1	1.15:1	1.15:1	1.15:1	1.2:1	1.2:1	1.2:1	1.2:1	1.25:1
Secondary Line VSWR (max)	1.2:1	1.2:1	1.2:1	1.2:1	1.25:1	1.25:1	1.25:1	1.25:1	1.25:1
Coupling Flatness (± dB typ)	1.5	1.5	1.5	1.5	1.8	1.8	1.8	2.0	2.0

¹ Insertion loss is defined as the power loss in excess of the loss due to coupling.

² Directivity is the difference between power levels at the coupled port when input and output ports are interchanged.

Outline Drawings/Mechanical Specifications



WR-42 and WR-28

WR-22 through WR-6

FREQUENCY BAND	WAVEGUIDE SIZE	FLANGE PATTERN	OUTLINE DIMENSIONS, inches/mm	
			A	B, C
K	WR-42	UG-595/U	1.25/31.8	1.25/31.8
Ka	WR-28	UG-599/U	0.90/22.9	1.00/25.4
Q	WR-22	UG-383/U	1.38/35.1	1.38/35.1
U	WR-19	UG-383/U	1.38/35.1	1.38/35.1
V	WR-15	UG-385/U	0.84/21.3	1.00/25.4
E	WR-12	UG-387/U	0.84/21.3	1.00/25.4
W	WR-10	UG-387/U	0.84/21.3	1.00/25.4
F	WR-8	UG-387/U	0.84/21.3	1.00/25.4
D	WR-6	UG-387/U	0.84/21.3	1.00/25.4

Ordering Information

Model Number **QJC -**

AB CD E F



Please specify exact center frequency when ordering.

center frequency rounded to nearest GHz
(1A = 100-109 GHz, 1B = 110-119 GHz, etc.)

coupling value in dB (20, 30, 40 for standard products)

waveguide band designator

K = K-band E = E-band
A = Ka-band W = W-band
Q = Q-band F = F-band
U = U-band D = D-band
V = V-band

number of ports

3 = 3 ports
4 = 4 ports