

# 559 Series Broadband Directional Couplers

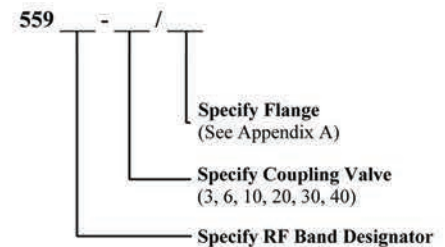
**MI-WAVE**  
Millimeter Wave Products Inc.



## Features

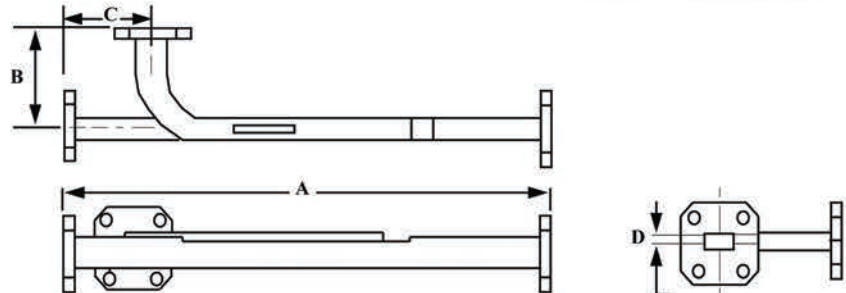
- Broadband
- Low VSWR
- High Directivity
- Rugged Construction
- High Coupling Accuracy
- Calibrated Coupling Values
- Minimum Coupling Variation with Frequency

## Ordering Information



## Description

Mi-Wave's 559 series broadband directional couplers are broadwall multi-hole energy-coupling devices. The 559 series couplers are designed in 7 waveguide sizes from 18.0 to 110 GHz. Nominal couplings of 3, 6, 10, 20, 30, and 40 dB are offered to complement specific test set requirements. Other custom configurations are available upon request.



## Applications

The 559 series directional couplers provide an efficient and convenient means for sampling a finite quantity of power flowing in a transmission line or for injecting a desired signal into the line.

### Other Waveguide Bands Available:

WR-90  
WR-75  
WR-51  
WR-34

## Dimensional Specifications

Model No	A		B		C		D	
	in	mm	in	mm	in	mm	in	mm
559K/10, 20, 30, 40	11.50	292.0	2.00	50.8	1.50	38.1	.25	6.35
559K/3, 6 dB	12.75	323.9	2.00	50.8	1.50	38.1	.25	6.35
559A/10, 20, 30, 40	9.62	244.0	1.75	44.5	1.38	35.1	.16	4.06
559A/3, 6 dB	12.0	304.8	1.75	44.5	1.38	35.1	.16	4.06
559B/10, 20, 30, 40	8.40	213.0	1.64	41.7	1.30	33.0	.13	3.30
559B/3, 6 dB	10.25	259.1	1.64	41.7	1.30	33.0	.13	3.30
559U/10, 20, 30, 40	7.38	187.4	1.38	35.1	1.12	28.5	.11	2.80
559U/3, 6 dB	9.12	231.6	1.38	35.1	1.12	28.5	.11	2.80
559V/10, 20, 30, 40	6.25	159.0	1.13	28.6	0.88	22.4	.08	2.03
559V/3, 6 dB	7.25	184.1	1.13	28.7	0.88	22.4	.08	2.03
559E/10, 20, 30, 40	5.50	140.0	1.13	28.5	0.88	22.4	.07	1.78
559E/3, 6 dB	6.62	168.1	1.13	28.7	0.88	22.4	.07	1.78
559W/10, 20, 30, 40	4.50	114.0	1.00	25.4	0.81	20.6	.06	1.52
559W/3, 6 dB	5.50	139.7	1.00	25.4	0.81	20.6	.06	1.52

## Technical Specifications (typical)

Model Number	559K	559A	559B	559U	559V	559E	559W
Frequency Band (GHz)	18.0-26.5	26.5-40.0	33.0-50.0	40.0-60.0	50.0-75.0	60.0-90.0	75.0-110.0
Coupling (dB)	3, 6, 10, 20, 30, 40						
Coupling Variation (dB)	± 0.6	± 0.6	± 0.6	± 0.8	± 1.0	± 1.0	± 1.0
Coupling Accuracy (dB)	± 1.0	± 1.0	± 1.0	± 1.2	± 1.5	± 1.5	± 1.5
Directivity (dB) Typical	40	40	40	40	40	40	40
Main Line VSWR	1.05	1.05	1.05	1.10	1.10	1.10	1.10
Auxiliary Line VSWR	1.12	1.12	1.12	1.15	1.15	1.15	1.17