

SERIES POL/WAC

LINEAR-CIRCULAR POLARIZERS AND CIRCULAR-TO-RECTANGULAR WAVEGUIDE ADAPTERS



FEATURES:

- Low insertion loss and axial ratio
- Broadband operation

APPLICATIONS:

- Antennas and quasioptics
- Radar front ends

DESCRIPTION

Millitech series POL linear-circular polarizers convert a linearly-polarized signal to a circularly-polarized signal (or vice versa) in a circular waveguide. They operate over a maximum bandwidth of 10% of the center frequency with a typical axial ratio of 1 dB. The polarizers can be connected to an orthomode transducer or circular-to-rectangular transition as applicable.

Millitech series WAC circular-to-rectangular waveguide adapters are available to provide transition from standard rectangular waveguide to circular waveguide. These adapters can be used with conical and scalar feedhorns, and provide wide bandwidth with low VSWR. Transitions to convert appropriate rectangular waveguide bands to applicable circular waveguide are available in a complete range of flange patterns.

MECHANICAL SPECIFICATIONS

Linear-circular Polarizers

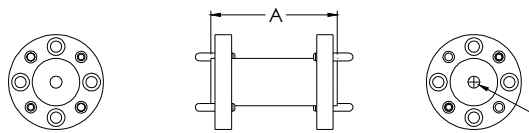
Model Number	POL-42	POL-28	POL-22	POL-19	POL-15	POL-12	POL-10	POL-08	POL-06
A (in/mm)	1.50/38.1	1.38/35.052	1.23/31.242	1.03/26.162	1.00/25.4	1.00/25.4	1.00/25.4	1.00/25.4	1.00/25.4

Circular-to-rectangular Waveguide Adapters

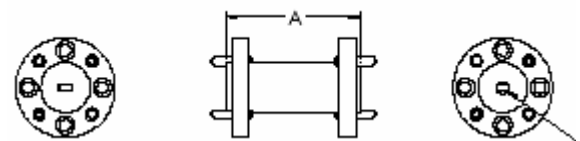
Model Number	WAC-42	WAC-28	WAC-22	WAC-19	WAC-15	WAC-12	WAC-10	WAC-08	WAC-06
A (in/mm)	2.0/50.8	1.50/38.1	1.25/31.8	1.00/25.4	1.00/25.4	1.00/25.4	1.00/25.4	1.00/25.4	1.00/25.4

OUTLINE DRAWINGS*

Series POL



Series WAC



*The outlines shown may not reflect the latest information. Please contact Millitech for current outline drawings.

ELECTRICAL SPECIFICATIONS

Performance Parameter	Linear-circular	Circular-to-rectangular Waveguide Adapters
Frequency range (GHz)	18 to 170	18 to 170
Axial ratio, 10% bandwidth (dB) (typ)	1.0	---
Cross-polarization isolation (dB) (typ)	---	>25
VSWR (typ)	1.3:1	1.15:1

HOW TO ORDER

Specify Model Number
WAC-XX-ABBC* (circular-to-rectangular waveguide adapters)
XX = Waveguide Band WR – number
A = Flange Type R – round (not available in WR-42) S – square (WR-42 and WR-28 only) P – pin contact (WR-08 and WR-06 only)
BBB = Circular Waveguide Diameter (in) See Waveguide Sizes Table (next page)
C = Flange Type (circular waveguide) R – round (not available in WR-42) S – square (WR-42 and WR-28 only) P – pin contact (WR-08 and WR-06 only)
*Please specify frequency range when ordering

Specify Model Number
POL-XX-ABBBØ* (linear-circular polarizers)
XX = Waveguide Band WR – number
A = Flange Type R – round (not available in WR-42) S – square (WR-42 and WR-28 only) P – pin contact (POL only)
BBB = Circular Waveguide Diameter (in) See Waveguide Sizes Table (next page)
*Please specify center frequency or frequency range when ordering

CIRCULAR WAVEGUIDE SIZES

Rectangular Waveguide Band	Circular Diameter Size	Frequency Range (GHz)*	Circular Waveguide Diameter (in/mm)	Specify When Ordering
K	Large	17.5-20.5	0.455/11.56	455
	Medium	20.0-24.5	0.396/10.06	396
	Small	24.0-26.5	0.328/8.33	328
Ka	Large	26.5-33.0	0.315/8.00	315
	Medium	33.0-38.5	0.250/6.35	250
	Small	38.5-40.0	0.219/5.56	219
Q	Large	33.0-38.5	0.250/6.35	250
	Medium	38.5-43.0	0.219/5.56	219
	Small	43.0-50.0	0.188/4.78	188
U	Large	40.0-43.0	0.210/5.33	210
	Medium	43.0-50.0	0.188/4.78	188
	Small	50.0-60.0	0.165/4.19	165
V	Large	50.0-58.0	0.165/4.19	165
	Medium	58.0-68.0	0.141/3.58	141
	Small	68.0-75.0	0.125/3.18	125
E	Large	60.0-66.0	0.136/3.45	136
	Medium	66.0-82.0	0.125/3.18	125
	Small	82.0-90.0	0.094/2.39	094
W	Large	75.0-88.0	0.112/2.84	112
	Small	88.0-110.0	0.094/2.39	094
F	Large	90.0-115.0	0.089/2.26	089
	Small	115.0-140.0	0.075/1.91	075
D	Large	110.0-140.0	0.073/1.85	073
	Small	140.0-160.0	0.059/1.50	059
G	Large	140.0-180.0	0.058/1.47	058
	Small	180.0-220.0	0.045/1.14	045

*If the required frequencies fall within two waveguide diameter sizes, the larger one should be selected.