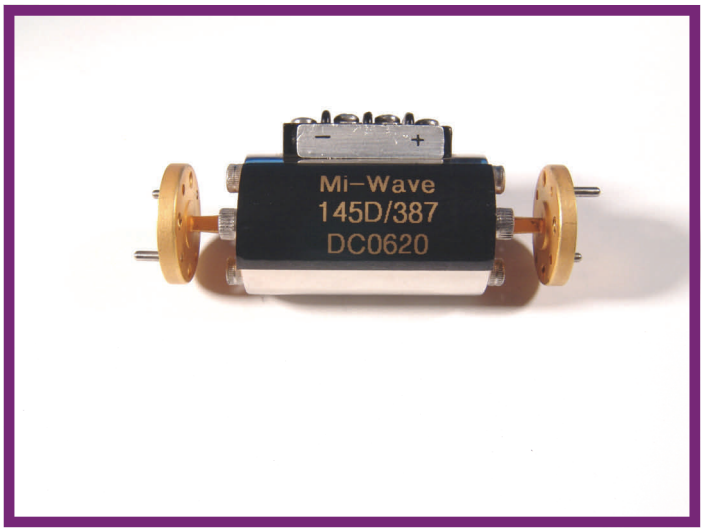
145 Series Polarization Switches



Features

- Low VSWR
- Low Insertion Loss
- Faraday Rotation Devices
- Low Cross-Polarized Components

Description 145 Series Polarization Switches

Mi-Wave's **145 series polarization switch is a TE_{11} mode device with both the input and output in circular waveguide. It is equipped with a standard pin-aligned circular flange similar to most of *Mi-Wave's* standard 200 series antenna components.**

Typical units are continuously adjustable over ±90º of rotation. Please note that the rotation in Faraday rotators is frequency sensitive. The instantaneous bandwidth of these devices is limited to approximately 1% of the center frequency for a fixed drive current value.

Ordering Information

145

Specify RF Band Designator

Applications

Used primarily in conjunction with the antenna product line, the 145 series polarization switch provides a means of remote controlled polarization change. These switches can be used to align polarization between satellite and ground station communication when the satellite polarization is unknown. They are also useful in the test and measurement of circular TE_{11} mode components where axial ratio and elipticity must be calculated.

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145 Series Polarization Switches

Technical Specifications

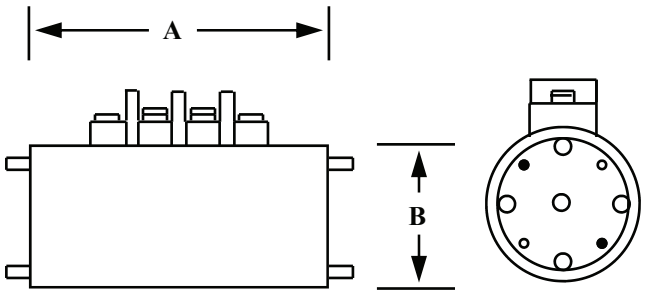
Circular waveguide components usually have different frequency bands than the rectangular waveguide components. Therefore, it is usually incorrect to refer to the common rectangular waveguide letter designations when specifying circular waveguide. For the ease of describing electrical specifications, it is convenient to group components in the standard rectangular waveguide frequency bands. Please refer to the circular waveguide chart for actual waveguide sizes.

Model Number	145A	145B	145U	145V	145E	145W	145F
Frequency Band (GHz)	26.5-40.0	33.0-50.0	40.0-60.0	50.0-70.0	60.0-90.0	75.0-110.0	90.0-140.0
Insertion Loss (dB) [1]	0.5	0.5	0.6	0.6	0.7	0.7	1.0
Cross Polarization (dB)	20	20	20	20	20	20	20
VSWR Max. [2]	1.25	1.25	1.25	1.25	1.30	1.30	1.30
Average Power (Watts)	12.0	8.0	3.0	3.0	2.0	1.5	1.0
Peak Power (kW)	4.0	2.5	1.0	1.0	0.7	0.5	0.3
Bandwidth (GHz)[1]	2	2	2	3	3	3	3
Coil Resistance (Ohms)	12	12	12	5	5	5	3
Coil Inductance (mH)	4	4	4	2	2	2	1.5
Switching Speed (usec)	5-10	5-10	5-10	2-5	2-5	2-5	2-5
Current Drive (mA)	0-250						

1. Insertion Loss and cross-polarization figures are shown for instantaneous bandwidths of approximately 1%. Drive current must be adjusted over the full RF bandwidth.
2. VSWR was measured using two ***Mi-Wave*** series 284 transitions.

Dimensional Specifications

Model No.	A		B	
	in	mm	in	mm
145-550	3.25	82.6	1.75	44.5
145-396	3.00	76.2	1.25	31.8
145-328	2.50	63.5	1.25	31.8
145-281	2.50	63.5	1.25	31.8
145-250	2.50	63.5	1.25	31.8
145-219	2.50	63.5	1.25	31.8
145-188	2.50	63.5	1.25	31.8
145-172	On Request			
145-165	1.69	42.9	.88	22.4
145-141	On Request			
145-125	1.69	42.9	.88	22.4
145-110	1.69	42.9	.88	22.4
145-094	1.69	42.9	.88	22.4
145-082	On Request			
145-075	On Request			
145-067	1.50	38.1	.88	22.4
145-059	On Request			



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