Waveguide Crossguide Couplers, SWX Series

FEATURES:

- Frequency coverage: 18 to 110 GHz
- Waveguide or split block styles
- Three or four port configurations
- Various coupling levels
- Low insertion loss and moderate directivity
- Instrumentation grade

APPLICATIONS:

- Test labs
- Instrumentations
- Sub-assemblies

DESCRIPTION:

SWX series waveguide crossguide couplers are offered for power sampling where certain directivity is a concern. Compared to multi-hole directional couplers, the crossguide couplers feature lower insertion loss and a more compact size. These couplers are offered in both waveguide and split block versions in seven waveguide bands to cover the frequency range from 18 to 110 GHz. While the waveguide version offers the advantage of light weight and ease flange connections from both directions, the block version possesses the advantage of more compact size and shorter insertion length. Although both versions can be offered in three and four port configurations, only four port configurations are offered as catalog models. Contact factory for three port configurations.

CATALOG MODELS:

Band	Model Number	WG	Frequency Range (GHz)	Band Width (GHz)	Coupling (dB)[1]	Insertion Loss (dB)[2]	Directivity (dB)[3]	VSWR	Outline
K	SWX-F1NF2NCC-42-4B	WR-42	18.0 to 26.5	4.0	20, 30, 40	0.50	15	1.1:1	WX-BK-4
K	SWX-F1NF2NCC-42-4W	WR-42	18.0 to 26.5	4.0	20, 30, 40	0.70	15	1.1:1	WX-WK-4
Ka	SWX-F1NF2NCC-28-4B	WR-28	26.5 to 40.0	6.0	20, 30, 40	0.50	15	1.1:1	WX-BA-4
Ka	SWX-F1NF2NCC-28-4W	WR-28	26.5 to 40.0	6.0	20, 30, 40	0.70	15	1.1:1	WX-WA-4
Q	SWX-F1NF2NCC-22-4B	WR-22	33.0 to 50.0	7.0	20, 30, 40	0.60	15	1.1:1	WX-BQ-4
Q	SWX-F1NF2NCC-22-4W	WR-22	33.0 to 50.0	7.0	20, 30, 40	0.80	15	1.1:1	WX-WQ-4
U	SWX-F1NF2NCC-19-4B	WR-19	40.0 to 60.0	8.0	20, 30, 40	0.60	15	1.1:1	WX-BU-4
U	SWX-F1NF2NCC-19-4W	WR-19	40.0 to 60.0	8.0	20, 30, 40	0.80	15	1.1:1	WX-WU-4
V	SWX-F1NF2NCC-15-4B	WR-15	50.0 to 75.0	10.0	20, 30, 40	0.70	15	1.1:1	WX-BV-4
V	SWX-F1NF2NCC-15-4W	WR-15	50.0 to 75.0	10.0	20, 30, 40	0.90	15	1.1:1	WX-WV-4
E	SWX-F1NF2NCC-12-4B	WR-12	60.0 to 90.0	10.0	20, 30, 40	0.70	15	1.1:1	WX-BE-4
E	SWX-F1NF2NCC12-4W	WR-12	60.0 to 90.0	10.0	20, 30, 40	0.90	15	1.1:1	WX-WE-4
W	SWX-F1NF2NCC10-4B	WR-10	75.0 to 110	10.0	20, 30, 40	0.80	15	1.1:1	WX-BW-4
W	SWX-F1NF2NCC-10-4W	WR-10	75.0 to 110	10.0	20, 30, 40	1.00	15	1.1:1	WX-WW-4

W

Note: 1) Insertion loss is the power loss on top of the coupling loss. For example, 20 dB block type crossguide coupler with model number SWX-30336320-28-4B has 20.5 dB total power loss.
2) Directivity is load dependent for four port couplers.

CUSTOM DESIGNED MODELS:

Sage Millimeter's custom designed crossguide coupler model numbers are configured per following format. Customers may refer to the format below and specify their own model numbers accordingly when placing the order.

SWX - F1N F2N CC - WG - XY

F1N: Start frequency in MHz x 10N. For example: 85 GHz = 853
F2N: Stop frequency in MHz x 10N. For example: 95 GHz = 953
CC: Coupling factor in dB. For example: 30 dB = 30
WG is the waveguide type. For example: WR-10 = 10
X is for number of port. "3" is for three port coupler and "4" is for four port coupler.
Y is for coupler type. "B" is for split block type and "W" is for waveguide type.

Example: SWX-85395330-10-4B is a custom designed crossguide coupler with frequency range from 85 to 95 GHz and coupling level of 30 dB. It is a four port block type coupler.