

Crossguide Couplers

MDL directional crossguide couplers, utilizing a new type of coupling aperture, exhibit high power-handling characteristics and are excellent for flat coupling over a given bandwidth. When calibrated, these couplers also perform efficiently as secondary standards for attenuating by known factors. MDL crossguide couplers are organized by WR number waveguide designations. For specific applications, MDL can design couplers to meet critical requirements for mean coupling values and directivity over limited bandwidths. Type "N" and "SMA" connectors can be supplied on the secondary arm output upon request overall dimensions remaining the same, or a standard AC adapter may be attached.

Either left or right directions of coupling are available. Left coupling will be supplied as standard, unless otherwise specified.

W/G SIZE FREQ. RANGE (GHz)	MDL MODEL NUMBERS	STYLE NO. OF PORTS	MEAN COUPLING (dB) *	DIRECT- IVITY (dB MIN)	MAX . VSWR	MECHANICAL DIMENSIONS (INCHES)		
						A	B	C
WR28 26.50 GHz to 39.00 GHz	28XT326	3	20 ¹	15	1.25	1.50	2.50	.75
	28XT336		30 ²	20	1.10	1.50	2.50	.75
	28XT346		40 ³	20	1.10	1.50	2.50	.75
	28XT426	4	20 ¹	20	1.25	1.50	1.50	.75
	28XT436		30 ²	20	1.10	1.50	1.50	.75
28XT446	40 ³	20	1.10	1.50	1.50	.75		
WR42 18.00 GHz to 26.50 GHz	42XT326	3	20 ⁴	20	1.25	2.00	3.50	1.00
	42XT336		30	20	1.15	2.00	3.50	1.00
	42XT346		40	20	1.10	2.00	3.50	1.00
	42XT356	4	50	20	1.08	2.00	3.50	1.00
	42XT366		60	20	1.08	2.00	3.50	1.00
	42XT426		20 ⁴	20	1.25	2.00	2.00	1.00
	42XT436		30	20	1.15	2.00	2.00	1.00
	42XT446	40	20	1.10	2.00	2.00	1.00	
	42XT456	50	20	1.08	2.00	2.00	1.00	
	42XT466	60	20	1.08	2.00	2.00	1.00	
WR51 15.00 GHz to 22.00 GHz	51XT326	3	20 ⁴	20	1.25	2.25	4.00	1.12
	51XT336		30 ⁵	20	1.15	2.25	4.00	1.12
	51XT346		40 ⁵	20	1.10	2.25	4.00	1.12
	51XT356	4	50	20	1.08	2.25	4.00	1.12
	51XT366		60	20	1.08	2.25	4.00	1.12
	51XT426		20 ⁴	20	1.25	2.25	2.25	1.12
	51XT436		30 ⁵	20	1.15	2.25	2.25	1.12
	51XT446		40 ⁵	20	1.10	2.25	2.25	1.12
	51XT456		50	20	1.08	2.25	2.25	1.12
51XT466	60	20	1.08	2.25	2.25	1.12		
WR62 12.40 GHz to 17.50 GHz	62XT326	3	20 ⁴	20	1.25	2.25	4.00	1.12
	62XT336		30 ⁴	20	1.15	2.25	4.00	1.12
	62XT346		40	20	1.10	2.25	4.00	1.12
	62XT356	4	50	20	1.08	2.25	4.00	1.12
	62XT366		60	20	1.08	2.25	4.00	1.12
	62XT426		20 ⁴	20	1.25	2.25	2.25	1.12
	62XT436		30 ⁴	20	1.15	2.25	2.25	1.12
	62XT446		40	20	1.10	2.25	2.25	1.12
	62XT456		50	20	1.08	2.25	2.25	1.12
62XT466	60	20	1.08	2.25	2.25	1.12		

Notes: *Tolerance all values +/- 1.0dB

¹ Variation = +/- 3dB, 26.5GHz to 39GHz

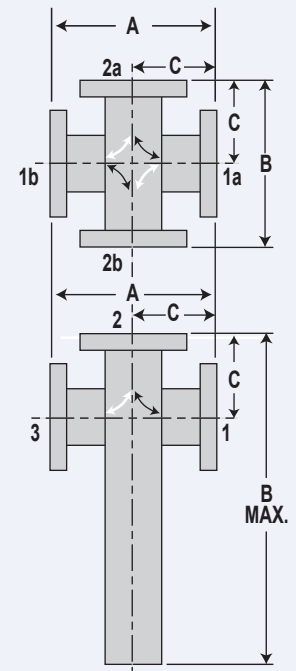
² Variation = +/- 2.5dB, 26.5GHz to 40GHz

³ Variation = +/- 1.0dB, 26.5GHz to 40GHz

⁴ Variation = +/- .8dB

⁵ Variation = +/- .8dB

CROSSGUIDE COUPLERS



Right coupling indicated by white arrows
Left coupling indicated by black arrows

Variation

20 = +/- .5dB

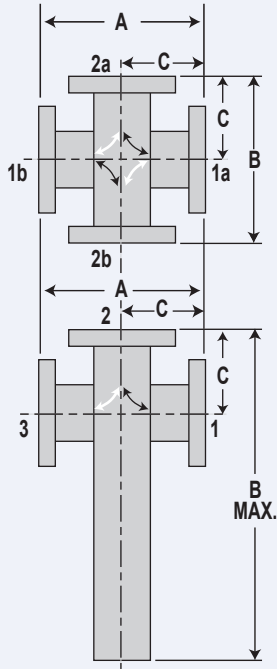
30 = +/- .5dB

40 = +/- .4dB

50 = +/- .3dB

60 = +/- .3dB

Crossguide Couplers



Right coupling indicated by white arrows
Left coupling indicated by black arrows

- Variation
- 20 = +/- .5dB
 - 30 = +/- .5dB
 - 40 = +/- .4dB
 - 50 = +/- .3dB
 - 60 = +/- .3dB

W/G SIZE FREQ. RANGE (GHz)	MDL MODEL NUMBERS	STYLE NO. OF PORTS	MEAN COUPLING (dB) *	DIRECT- IVITY (dB MIN)	MAX. VSWR	MECHANICAL DIMENSIONS (INCHES)		
						A	B	C
WR75 10.00 GHz to 14.50 GHz	75XT326	3	20 ⁴	20	1.25	2.50	5.25	1.25
	75XT336		30 ⁴	20	1.15	2.50	5.25	1.25
	75XT346		40 ⁶	20	1.10	2.50	5.25	1.25
	75XT356	4	50	20	1.08	2.50	5.25	1.25
	75XT366		60	20	1.08	2.50	5.25	1.25
	75XT426		20 ⁴	20	1.25	2.50	2.50	1.25
	75XT436		30 ⁴	20	1.15	2.50	2.50	1.25
	75XT446	4	40 ⁶	20	1.10	2.50	2.50	1.25
	75XT456		50	20	1.08	2.50	2.50	1.25
	75XT466		60	20	1.08	2.50	2.50	1.25
WR90 8.20 GHz to 14.50 GHz	90XT326		3	20 ⁵	20	1.15	2.63	5.81
90XT336	30 ⁵	20		1.10	2.63	5.81	1.31	
90XT346	40	20		1.07	2.63	5.81	1.31	
90XT356	4	50	20	1.05	2.63	5.81	1.31	
90XT366		60	20	1.05	2.63	5.81	1.31	
90XT426		20 ⁵	20	1.15	2.63	2.63	1.31	
90XT436		30 ⁵	20	1.10	2.63	2.63	1.31	
90XT446	4	40	20	1.07	2.63	2.63	1.31	
90XT456		50	20	1.05	2.63	2.63	1.31	
90XT466		60	20	1.05	2.63	2.63	1.31	
WR102 7.00 GHz to 11.00 GHz		102XT326	3	20 ⁹	20 ^{**}	1.30	2.75	6.00
102XT336	30 ⁸	20 ^{**}		1.15	2.75	6.00	1.37	
102XT346	40	20 ^{**}		1.10	2.75	6.00	1.37	
102XT356	4	50	20 ^{**}	1.08	2.75	6.00	1.37	
102XT366		60	20 ^{**}	1.08	2.75	6.00	1.37	
102XT426		20 ⁹	20 ^{**}	1.30	2.75	2.75	1.37	
102XT436		30 ⁸	20 ^{**}	1.15	2.75	2.75	1.37	
102XT446	4	40	20 ^{**}	1.10	2.75	2.75	1.37	
102XT456		50	20 ^{**}	1.08	2.75	2.75	1.37	
102XT466		60	20 ^{**}	1.08	2.75	2.75	1.37	

- Notes: *Tolerance all values +/- 1.0dB
 **15dB from 7.0 to 7.5GHz
 4 Variation +/- .8dB
 5 Variation +/- .6dB
 6 Variation +/- .5dB
 7 Variation +/- 1.5dB
 8 Variation +/- 1.0dB
 9 Variation +/- 1.4dB

Crossguide Couplers

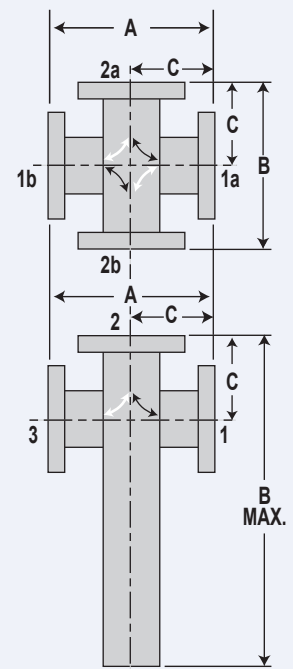
W/G SIZE FREQ. RANGE (GHz)	MDL MODEL NUMBERS	STYLE NO. OF PORTS	MEAN COUPLING (dB) *	DIRECT- IVITY (dB MIN)	MAX. VSWR	MECHANICAL DIMENSIONS (INCHES)		
						A	B	C
WR112 7.00 GHz to 10.00 GHz	112XT326	3	20	20	1.15	3.25	5.00	1.62
	112XT336		30	20	1.10	3.25	5.00	1.62
	112XT346		40	20	1.07	3.25	5.00	1.62
	112XT356	4	50	20	1.05	3.25	5.00	1.62
	112XT366		60	20	1.05	3.25	5.00	1.62
	112XT426		20	20	1.15	3.25	3.25	1.62
	112XT436		30	20	1.10	3.25	3.25	1.62
	112XT446	4	40	20	1.07	3.25	3.25	1.62
	112XT456		50	20	1.05	3.25	3.25	1.62
	112XT466		60	20	1.05	3.25	3.25	1.62
112XT466	60		20	1.05	3.25	3.25	1.62	
WR137 5.40 GHz to 8.20 GHz	137XT326	3	20	20	1.15	4.00	8.00	2.00
	137XT336		30	20	1.10	4.00	8.00	2.00
	137XT346		40	20	1.07	4.00	8.00	2.00
	137XT356	4	50	20	1.05	4.00	8.00	2.00
	137XT366		60	20	1.05	4.00	8.00	2.00
	137XT426		20	20	1.15	4.00	4.00	2.00
	137XT436		30	20	1.10	4.00	4.00	2.00
	137XT446	4	40	20	1.07	4.00	4.00	2.00
	137XT456		50	20	1.05	4.00	4.00	2.00
	137XT466		60	20	1.05	4.00	4.00	2.00
137XT466	60		20	1.05	4.00	4.00	2.00	
WR159 4.90 GHz to 6.85 GHz	159XT326	3	20 ⁷	20	1.25	4.50	9.50	2.25
	159XT336		30	20	1.15	4.50	9.50	2.25
	159XT346		40 ⁶	20	1.10	4.50	9.50	2.25
	159XT356	4	50	20	1.08	4.50	9.50	2.25
	159XT366		60	20	1.08	4.50	9.50	2.25
	159XT426		20 ⁷	20	1.25	4.50	4.50	2.25
	159XT436		30	20	1.15	4.50	4.50	2.25
	159XT446	4	40 ⁶	20	1.10	4.50	4.50	2.25
	159XT456		50	20	1.08	4.50	4.50	2.25
	159XT466		60	20	1.08	4.50	4.50	2.25
159XT466	60		20	1.08	4.50	4.50	2.25	

Notes: *Tolerance all values +/- 1.0dB

⁶ Variation +/- .5dB

⁷ Variation +/- 1.5dB

CROSSGUIDE COUPLERS



Right coupling indicated by white arrows
Left coupling indicated by black arrows

Variation

20 = +/- .5dB

30 = +/- .5dB

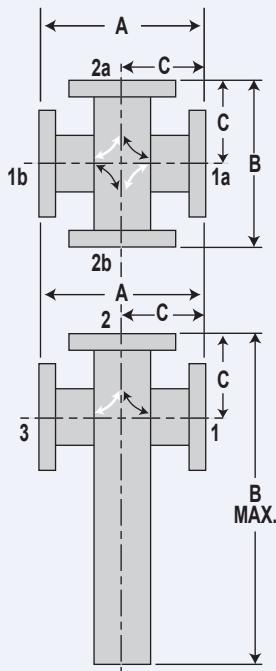
40 = +/- .4dB

50 = +/- .3dB

60 = +/- .3dB

Crossguide Couplers

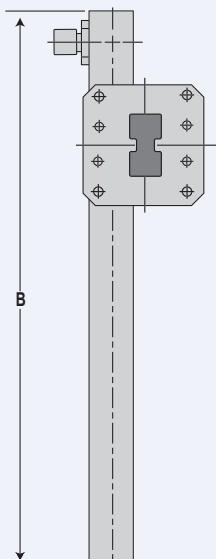
CROSSGUIDE COUPLERS



Right coupling indicated by white arrows
Left coupling indicated by black arrows

Variation

- 20 = +/- .5dB
- 30 = +/- .5dB
- 40 = +/- .4dB
- 50 = +/- .3dB
- 60 = +/- .3dB



W/G SIZE FREQ. RANGE (GHz)	MDL MODEL NUMBERS	STYLE NO. OF PORTS	MEAN COUPLING (dB) *	DIRECT- IVITY (dB MIN)	MAX. VSWR	MECHANICAL DIMENSIONS (INCHES)		
						A	B	C

WR187 3.95 GHz to 5.85 GHz	187XT326	3	20	20	1.15	5.00	10.00	2.50	
	187XT336		30	20	1.10	5.00	10.00	2.50	
	187XT346		40	20	1.07	5.00	10.00	2.50	
		187XT356	4	50	20	1.05	5.00	10.00	2.50
		187XT366		60	20	1.05	5.00	10.00	2.50
		187XT426		20	20	1.15	5.00	5.00	2.50
		187XT436		30	20	1.10	5.00	5.00	2.50
187XT446		40		20	1.07	5.00	5.00	2.50	
187XT456		50		20	1.05	5.00	5.00	2.50	
187XT466		60		20	1.05	5.00	5.00	2.50	
WR229 3.30 GHz to 4.90 GHz	229XT326	3	20 ⁴	20	1.15	7.00	12.00	3.50	
	229XT336		30 ⁴	20	1.10	7.00	12.00	3.50	
	229XT346		40 ⁶	20	1.07	7.00	12.00	3.50	
		229XT356	4	50	20	1.05	7.00	12.00	3.50
		229XT366		60	20	1.05	7.00	12.00	3.50
		229XT426		20 ⁴	20	1.15	7.00	7.00	3.50
		229XT436		30 ⁴	20	1.10	7.00	7.00	3.50
		229XT446		40 ⁶	20	1.07	7.00	7.00	3.50
		229XT456		50	20	1.05	7.00	7.00	3.50
		229XT466		60	20	1.05	7.00	7.00	3.50
WR284 2.60 GHz to 3.95 GHz	284XT326	3	20 ⁵	20	1.15	8.00	13.00	4.00	
	284XT336		30 ⁵	20	1.10	8.00	13.00	4.00	
	284XT346		40	20	1.07	8.00	13.00	4.00	
		284XT356	4	50	20	1.05	8.00	13.00	4.00
		284XT366		60	20	1.05	8.00	13.00	4.00
		284XT426		20 ⁵	20	1.15	8.00	8.00	4.00
		284XT436		30 ⁵	20	1.10	8.00	8.00	4.00
		284XT446		40	20	1.07	8.00	8.00	4.00
		284XT456		50	20	1.05	8.00	8.00	4.00
		284XT466		60	20	1.05	8.00	8.00	4.00

W/G SIZE FREQ. RANGE (GHz)	MDL MODEL NUMBERS	STYLE NO. OF PORTS	MEAN COUPLING (dB) *	DIRECT- IVITY (dB MIN)	MAX. VSWR	MECHANICAL DIMENSIONS (INCHES)		
						A	B	C

Double Ridge Crossguide Couplers

WRD-750 8.00-16.00	D750XT346	3	40	15	1.05	2.50	6.00	1.25
	D750XT356		50	15	1.05	2.50	6.00	1.25
WRD-475 5.00-9.50	D475XT346		40	15	1.05	4.50	8.50	2.25
	D475XT356		50	15	1.05	4.50	8.50	2.25

Notes: *Tolerance all values +/- 1.0dB

⁴ Variation +/- .8dB

⁵ Variation +/- .6dB

⁶ Variation +/- .5dB