



# RECTANGULAR WAVEGUIDE BROAD-WALL MULTI-HOLE DIRECTIONAL COUPLERS

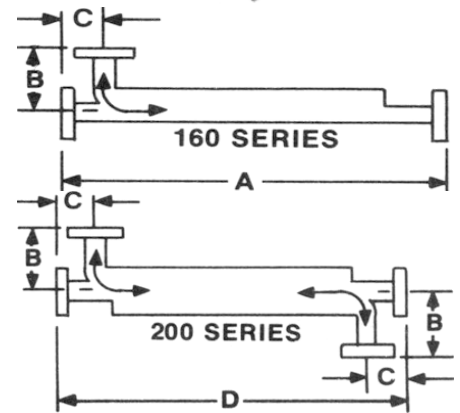
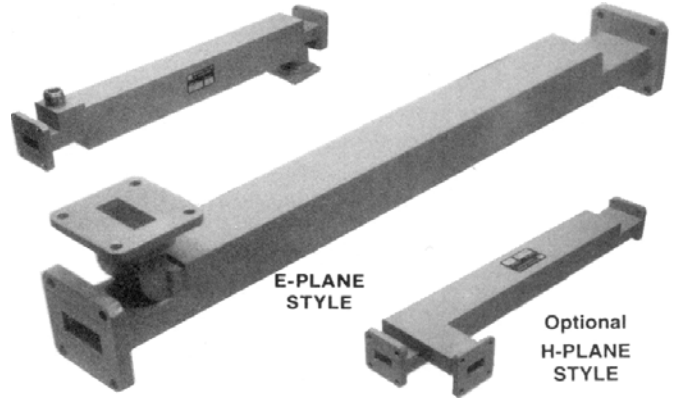
## 160 SERIES                      200 SERIES

**DATA  
SHEET  
No. T31D**

- HIGH DIRECTIVITY
- FLAT COUPLING
- WAVEGUIDE OR COAXIAL PORTS

### DESCRIPTION

These directional Couplers consist of rectangular waveguide primary and secondary lines with a common broad wall where high directivity coupling is achieved over the full waveguide band by a Tchebyscheff multi-hole coupling structure and a precision termination in the secondary arm. Waveguide cover flanges are provided on the main line while secondary lines are available with either cover flanges or coaxial connectors. Both single directional (160 Series) and dual directional (200 Series) couplers have minimum size consistent with electrical performance. These couplers are ideal in reflectometer set-ups to measure VSWR's as low as 1.04:1 over full waveguide bands. They are also well suited as samplers in leveling loops or as power dividers and combiners. Finish is chromate conversion per MIL-C-5541, Class 3 for aluminum, and corrosion-resistant coatings for all others when specified, painted with gray epoxy enamel.



### SPECIFICATIONS

Directivity	40 dB Min.	VSWR 1.05 Max., Main Line
Coupling	10, 20, 30, 40, 50, dB	1.10 Max., Waveguide Secondary
Coupling	±0.4 dB	1.35 Max., Coaxial Secondary
Frequency Sensitivity		±0.5 dB Max.

Model Number		Frequency Range (GHz)	Waveguide Size	Equivalent Flange	Dimensions (Inches)			
Single	Dual				A	B	C	D*
S160	S200	2.60 – 3.95	WR-284	UG-584/U	33.00	3.57	2.90	66.00
B160	B200	3.30 – 4.90	WR-229	CMR-229	33.00	3.49	1.62	66.00
G160	G200	3.95 – 5.85	WR-187	UG-407/U	26.00	2.98	2.40	26.00
D160	D200	4.90 – 7.05	WR-159	CMR-159	21.00	1.90	1.46	21.00
J160	J200	5.85 – 8.20	WR-137	UG-441/U	21.00	1.88	1.81	21.00
H160	H200	7.05 – 10.0	WR-112	UG-138/U	14.00	1.85	1.19	14.00
W160	W200	7.0 – 11.0	WR-102	M3922/70-002	14.00	1.55	1.10	14.00
X160	X200	8.2 – 12.4	WR-90	UG-135/U	13.00	1.67	1.05	13.00
M160	M200	10.0 – 15.0	WR-75	M3922/53-008	12.00	1.30	1.00	12.00
P160	P200	12.4 – 18.0	WR-62	UG-1665/U	11.00	1.14	0.91	11.00
N160	N200	15.0 – 22.0	WR-51	M3922/70-011	11.00	.97	0.91	11.00
K160	K200	18.0 – 26.5	WR-42	UG-597/U	9.00	.82	0.69	9.00
Y160	Y200	22.0 – 33.0	WR-34	M3922/63-010	8.50	.75	0.95	8.50
A160	A200	26.5 – 40.0	WR-28	UG-599/U**	6.50	.64	0.62	6.50

\*For dual 10 dB couplers, two single couplers are used back to back resulting in D = 2A

\*\*Aluminum

### ORDERING INFORMATION

- (1) Order by model number and add suffix as follows to designate coupling level:  
 -10 for 10 dB                      -20 for 20 dB                      -30 for 30 dB                      -40 for 40 dB                      -50 for 50 dB
  - (2) To specify coaxial secondary add suffix as follows:  
 -3 for SMA female                      -T for TNC female                      -N for type N female                      -7 for precision 7 mm
- For a complete listing of connectors available, refer to data sheet T100
- (3) Other coupling values form 3 dB and up are available. Over-all length may vary.
  - (4) Other frequencies, directivity, style and power options available.

