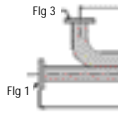


### BROADWALL DIRECTIONAL COUPLERS



**Description:**

- Full waveguide frequency range
- Units pressure tested to 30 psi
- Ideal for High Power Combiner/Divider
- Finish is a unique corrosion-resistant 316 stainless steel epoxy coating

**Electrical Specifications:**  
 VSWR (MAX.) PRIMARY: 1.05 (1.10 for WR42, WR28)  
 SECONDARY: 1.10 (1.15 for WR42, WR28)  
 NOM. COUPLING (dB): ± .50 (± .75 for WR42, WR28)  
 FREQ. SENS. (dB): ± .6 (± .75 for WR42, WR28)  
 DIRECTIVITY (dB): 40 typical, 30 min.

Ordering Information: Typical Part #: 137-310 B -10 -1 -1 -1

Basic Model #: \_\_\_\_\_  
 Material: A=Alum, B=Brass, C=Copper, D=Special  
 Coupling (dB): 3, 6, 10, 20, 30, 40  
 Flange 1: 1=CPRG, 2=CPRF, 6=Cover, 7=Choke, 8=Special  
 Flange 2: See above  
 Flange 3: See above  
 Flange 4: See above

| Basic Model No. | WG Size | Freq (GHz)  | Dimension A (inches) | Dimension B (inches) | Dimension C (inches) |
|-----------------|---------|-------------|----------------------|----------------------|----------------------|
| 650-310         | WR650   | 1.12 - 1.70 | 37                   | 8.00                 | 29.0                 |
| 430-310         | WR430   | 1.70 - 2.60 | 35                   | 6.00                 | 27.0                 |
| 284-310         | WR284   | 2.60 - 3.95 | 31                   | 6.00                 | 24.0                 |
| 229-310         | WR229   | 3.30 - 4.90 | 28                   | 5.00                 | 21.0                 |
| 187-310         | WR187   | 3.95 - 5.85 | 25                   | 4.00                 | 19.0                 |
| 159-310         | WR159   | 4.90 - 7.05 | 23                   | 3.00                 | 17.5                 |
| 137-310         | WR137   | 5.95 - 8.20 | 20                   | 3.00                 | 15.5                 |
| 112-310         | WR112   | 7.05 - 10.0 | 18                   | 2.50                 | 14.0                 |
| 90-310          | WR90    | 8.20 - 12.4 | 17                   | 2.00                 | 13.5                 |
| 75-310          | WR75    | 10.0 - 15.0 | 15                   | 1.50                 | 12.0                 |
| 62-310          | WR62    | 12.4 - 18.0 | 13                   | 1.25                 | 10.5                 |
| 51-310          | WR51    | 10.0 - 15.0 | 12                   | 1.25                 | 9.50                 |
| 42-310          | WR42    | 18.0 - 26.5 | 11                   | 1.25                 | 8.50                 |
| 34-310          | WR34    | 22.0 - 33.0 | 9                    | 1.00                 | 8.50                 |
| 28-310          | WR28    | 26.5 - 40.0 | 10                   | 1.00                 | 8.00                 |

### WAVEGUIDE COMBINER-DIVIDER

Short slot hybrid configuration  
 Symmetrical 4 port device  
 90 degree phase shift



| WG Size WR | Freq (GHz) | VSWR Max | Isolation Min. dB | Model No.       |
|------------|------------|----------|-------------------|-----------------|
| 159        | 5.80-6.50  | 1.15     | 26                | 159-410-2-2-2-2 |
| 137        | 5.80-6.50  | 1.15     | 26                | 137-410-2-2-2-2 |
| 112        | 7.90-9.00  | 1.15     | 26                | 112-410-6-6-6-6 |
| 75         | 13.0-15.0  | 1.15     | 26                | 75-410-2-2-2-2  |
| 62         | 13.5-15.6  | 1.15     | 26                | 62-410-6-6-6-6  |

Flange Code: 2=CPRG; 6=Cover; 7=Choke

### LOOP COUPLERS

**Description:**

- Full waveguide frequency range
- Units pressure tested to 30 psi
- Ideal for High Power Sensing
- Finish is a unique corrosion-resistant 316 stainless steel epoxy coating

**Electrical Specifications:**  
 VSWR: 1.1 max.  
 NOM. COUPLING: +/- 1.00 dB  
 FREQ. SENS.: +/- 1.00 dB max.  
 DIRECTIVITY: 15 dB min.

Ordering Information: Typical Part #: 75-307 B -30 -6 -6

Basic Model #: SMA F=307, N Type F=308  
 Material: A=Alum, B=Brass, C=Copper, D=Special  
 Coupling (dB): 30, 40, 50, 60 (Std.) others available  
 Flange 1: 1=CPRG, 2=CPRF, 6=Cover, 7=Choke, 8=Special  
 Flange 2: See above

| Basic Model No. (SMA F) | Basic Model No. (N Type F) | WG Size     | Freq (GHz)  | Dim. A (inches) | Dim. B (inches) | Dim. C (inches) |
|-------------------------|----------------------------|-------------|-------------|-----------------|-----------------|-----------------|
| 430-307                 | 430-308                    | WR430       | 1.70 - 2.60 | 4.5             | 1.0             | 1.63            |
| 284-307                 | 284-308                    | WR284       | 2.60 - 3.95 | 4.5             | 1.0             | 1.63            |
| 229-307                 | 229-308                    | WR229       | 3.30 - 4.90 | 4.0             | 1.0             | 1.38            |
| 187-307                 | 187-308                    | WR187       | 3.95 - 5.85 | 3.5             | 1.0             | 1.13            |
| 159-307                 | 159-308                    | WR159       | 4.90 - 7.05 | 3.5             | 1.0             | 0.88            |
| 137-307                 | 137-308                    | WR137       | 5.95 - 8.20 | 3.0             | 1.0             | 0.88            |
| 112-307                 | 112-308                    | WR112       | 7.05 - 10.0 | 3.0             | 1.0             | 0.88            |
| 90-307                  | 90-308                     | WR90        | 8.20 - 12.4 | 3.0             | 1.0             | 0.88            |
| 75-307                  | 75-308                     | WR75        | 10.0 - 15.0 | 3.0             | 1.0             | 0.88            |
| 62-307                  | 62-308                     | WR62        | 12.4 - 18.0 | 3.0             | 1.0             | 0.88            |
| 51-307                  | WR51                       | 15.0 - 22.0 | 3.0         | 1.0             | 0.88            |                 |
| 42-307                  | WR42                       | 18.0 - 26.5 | 2.5         | 1.0             | 0.63            |                 |
| 34-307                  | WR34                       | 22.0 - 33.0 | 2.5         | 1.0             | 0.63            |                 |
| 28-307                  | WR28                       | 26.5 - 40.0 | 2.5         | 1.0             | 0.63            |                 |

### BROADWALL DIRECTIONAL COUPLERS

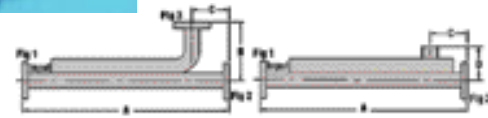
**Description:**

- Full waveguide frequency range
- Units pressure tested to 30 psi

- Ideal for High Power Combiner/Divider
- Finish is a unique corrosion-resistant 316 stainless steel epoxy coating



**Electrical Specifications:**  
 VSWR (MAX.) PRIMARY: 1.05 (1.10 for WR42, WR28)  
 SECONDARY: 1.10 (1.15 for WR42, WR28)  
 NOM. COUPLING (dB): ± .50 (± .75 for WR42, WR28)  
 FREQ. SENS. (dB): ± .6 (± .75 for WR42, WR28)  
 DIRECTIVITY (dB): 40 typical, 30 min.



Ordering Information: Typical Part #: 137-304 B -10 -1 -1 -1

Basic Model #: 304 or 305 or 306  
 Material: A=Alum, B=Brass, C=Copper, D=Special  
 Coupling (dB): 3, 6, 10, 20, 30, 40  
 Flange 1: 1=CPRG, 2=CPRF, 6=COVER, 7=CHOKE, 8= SPECIAL  
 Flange 2: See above  
 Flange 3: See above

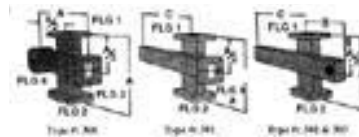
| Basic Model No. | WG Size | Freq (GHz)  | Dimension A (inches) | Dimension B (inches) | Dimension C (inches) |
|-----------------|---------|-------------|----------------------|----------------------|----------------------|
| 650-Type #      | WR650   | 1.12 - 1.70 |                      |                      |                      |
| 430-Type #      | WR430   | 1.70 - 2.60 |                      |                      |                      |
| 284-Type #      | WR284   | 2.60 - 3.95 | 50.25                | 9.18                 | 2.66                 |
| 229-Type #      | WR229   | 3.30 - 4.90 | 42.00                | 6.81                 | 1.00                 |
| 187-Type #      | WR187   | 3.95 - 5.85 | 34.62                | 6.44                 | 1.81                 |
| 159-Type #      | WR159   | 4.90 - 7.05 | 32.50                | 5.25                 | 0.88                 |
| 137-Type #      | WR137   | 5.95 - 8.20 | 26.50                | 3.06                 | 1.56                 |
| 112-Type #      | WR112   | 7.05 - 10.0 | 18.62                | 3.06                 | 0.94                 |
| 90-Type #       | WR90    | 8.20 - 12.4 | 16.68                | 1.94                 | 0.81                 |
| 75-Type #       | WR75    | 10.0 - 15.0 | 15.00                | 2.50                 | 1.25                 |
| 62-Type #       | WR62    | 12.4 - 18.0 | 13.75                | 2.18                 | 0.66                 |
| 51-Type #       | WR51    | 15.0 - 22.0 | 11.50                | 1.25                 | 0.66                 |
| 42-Type #       | WR42    | 18.0 - 26.5 | 9.50                 | 1.25                 | 0.75                 |
| 34-Type #       | WR34    | 22.0 - 33.0 | 9.00                 | 1.25                 | 0.75                 |
| 28-Type #       | WR28    | 26.5 - 40.0 | 8.00                 | 1.12                 | 0.75                 |

### CROSSGUIDE DIRECTIONAL COUPLERS

**Description:**

- Full waveguide frequency range
- Units pressure tested to 30 psi
- Ideal for High Power Combiner/Divider
- Finish is a unique corrosion-resistant 316 stainless steel epoxy coating

**Electrical Specifications:**  
 VSWR PRIMARY: 1.05 max.  
 COAX SECONDARY: 1.25 max.  
 NOM. COUPLING: ± 0.50 dB  
 FREQ. SENS.: ± 1.00 dB max.  
 DIRECTIVITY: 20 dB min.



Type #s:  
 300 = 4WG Ports  
 301 = 3WG Ports  
 302 = 2WG Ports,  
 1 Type N (F) Coax Port  
 303 = 2WG Ports,  
 1 SMA (F) Coax Port

Ordering Information: Typical Part #: 137-300 B -30 -1 -1 -1

Basic Model #: \_\_\_\_\_  
 Material: A=Alum, B=Brass, C=Copper, D=Special  
 Coupling (dB): 30, 40, 50  
 Flange 1: 1=CPRG, 2=CPRF, 6=Cover, 7=Choke, 8=Special  
 Flange 2: See above  
 Flange 3: See above  
 Flange 4: See above

| Basic Model No. | WG Size | Freq (GHz)  | Dim A (inches) | Dim B (inches) | Dim C (inches) |
|-----------------|---------|-------------|----------------|----------------|----------------|
| 430-Type #      | WR430   | 1.70 - 2.60 | 7.50           | 5.00           | 8.00           |
| 284-Type #      | WR284   | 2.60 - 3.95 | 7.50           | 3.75           | 5.00           |
| 229-Type #      | WR229   | 3.30 - 4.90 | 7.00           | 3.50           | 4.75           |
| 187-Type #      | WR187   | 3.95 - 5.85 | 6.50           | 3.25           | 4.50           |
| 159-Type #      | WR159   | 4.90 - 7.05 | 6.00           | 3.00           | 4.00           |
| 137-Type #      | WR137   | 5.95 - 8.20 | 6.00           | 3.00           | 4.00           |
| 112-Type #      | WR112   | 7.05 - 10.0 | 4.20           | 2.10           | 3.00           |
| 90-Type #       | WR90    | 8.20 - 12.4 | 4.00           | 2.00           | 2.75           |
| 75-Type #       | WR75    | 10.0 - 15.0 | 3.75           | 1.87           | 2.50           |
| 62-Type #       | WR62    | 12.4 - 18.0 | 3.50           | 1.75           | 2.37           |
| 51-Type #       | WR51    | 15.0 - 22.0 | 3.10           | 1.50           | 2.25           |
| 42-Type #       | WR42    | 18.0 - 26.5 | 2.20           | 1.10           | 1.50           |
| 34-Type #       | WR34    | 22.0 - 33.0 | 2.20           | 1.10           | 1.50           |
| 28-Type #       | WR28    | 26.5 - 40.0 | 2.00           | 1.00           | 1.50           |