

## BROADWALL DIRECTIONAL COUPLERS



- Description:**
- Full waveguide frequency range
  - Units pressure tested to 30 psi
  - Ideal for High Power Combiner/Divider

**Electrical Specifications:**  
 VSWR (MAX.) PRIMARY: 1.05 (1.10 for WR42, WR28)  
 SECONDARY: 1.10 (1.15 for WR42, WR28)  
 NOM. COUPLING (dB):  $\pm .50$  ( $\pm .75$  for WR42, WR28)  
 FREQ. SENS. (dB):  $\pm .6$  ( $\pm .75$  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= Groove  
 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                   | 5.50                 | 30.0                 |
| 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    | 15.0 - 22.0 | 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                 |
| 22-310          | WR22    | 33.0 - 50.0 | 10                   | 1.00                 | 8.00                 |

## WAVEGUIDE COMBINER-DIVIDER

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

| WG Size | Freq (GHz) | VSWR Max | Isolation Min. dB | Model No.          |
|---------|------------|----------|-------------------|--------------------|
| 284     | 2.66-2.99  | 1.15     | 26                | 284-261A-Z-6-6-6-6 |
| 28      | 36.0-40.0  | 1.15     | 26                | 28-264A-Z-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

**Electrical Specifications:**  
 VSWR: 1.1 max.  
 NOM. COUPLING:  $\pm .100$  dB  
 FREQ. SENS.:  $\pm .100$  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= Groove  
 Flange 2: See above

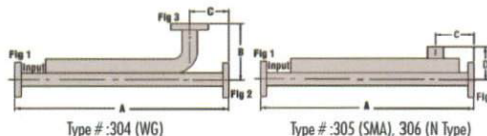
| Basic Model No. (SMA F) | Basic Model No. (N Type F) | WG Size | Freq (GHz)  | Dim. A (inches) | Dim. B (inches) | Dim. C (inches) |
|-------------------------|----------------------------|---------|-------------|-----------------|-----------------|-----------------|
| 430-307                 | 430-308                    | 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            |
| 22-307                  |                            | WR22    | 33.0 - 50.0 | 2.5             | 1.0             | 0.63            |

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



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

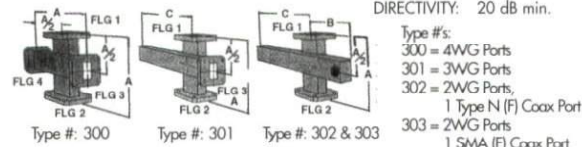
Basic Model #: 304 or 305 or 306  
 Material: A=Alum, B=Brass, C=Copper, D=Special  
 Coupling (dB): 3, 6, 10, 20, 30, 40  
 Flange 1: 1=CPRG, 2=CPRF, 6=COVER, 7=CHOKE, 8= GROOVE  
 Flange 2: See above  
 Flange 3: See above

| 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 | 60.00                | 9.00                 | 5.00                 |
| 284-Type #      | WR284   | 2.60 - 3.95 | 50.25                | 6.00                 | 2.66                 |
| 229-Type #      | WR229   | 3.30 - 4.90 | 42.00                | 6.81                 | 1.84                 |
| 187-Type #      | WR187   | 3.95 - 5.85 | 34.62                | 6.44                 | 1.81                 |
| 159-Type #      | WR159   | 4.90 - 7.05 | 32.50                | 5.25                 | 1.56                 |
| 137-Type #      | WR137   | 5.95 - 8.20 | 26.50                | 3.06                 | 1.56                 |
| 112-Type #      | WR112   | 7.05 - 10.0 | 18.62                | 3.06                 | 1.56                 |
| 90-Type #       | WR90    | 8.20 - 12.4 | 16.68                | 2.50                 | 1.50                 |
| 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                 |
| 22-Type #       | WR22    | 33.0 - 50.0 | 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

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



Ordering Information: Typical Part #: 137-300 B -30 -1 -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= Groove  
 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            |
| 22-Type #       | WR22    | 33.0 - 50.0 | 2.00           | 1.00            | 1.50            |