

# Loop Couplers

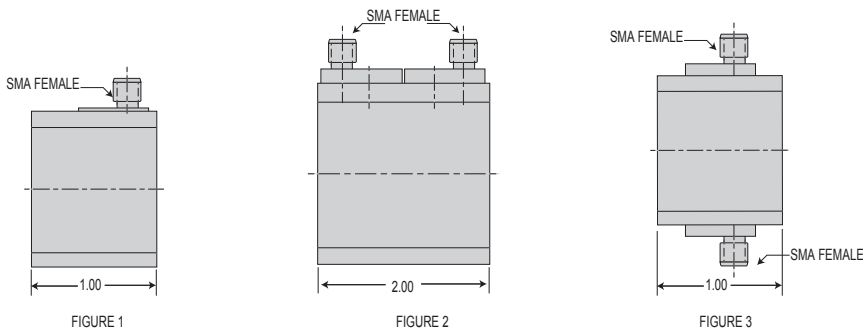
MDL waveguide loop coupler cover the frequency spectrum from WR90 to WR2100, and are widely used in RF circuits requiring directional power injection or extraction.

These units are available as uni- or bi-directional couplers. Modifications to the standard designs are available on request.

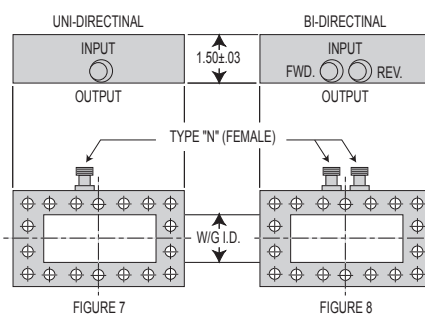
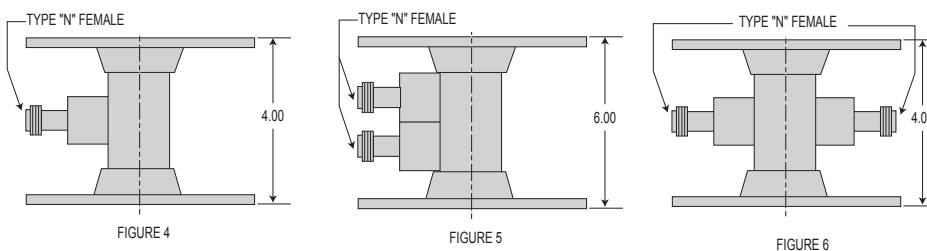
| W/G SIZE | FREQ. RANGE (GHz) | MIN COUPLING VALUE (dB) | WITH BI-DIRECTIONAL CONNECTORS        |                 |                           |       |         |       |
|----------|-------------------|-------------------------|---------------------------------------|-----------------|---------------------------|-------|---------|-------|
|          |                   |                         | WITH UNI-DIRECTIONAL CONNECTORS (FIG) | SAME SIDE (FIG) | ONE TOP/ ONE BOTTOM (FIG) | (FIG) | (FIG)   | (FIG) |
| WR90     | 8.20-12.40        | 20 to 70                | 90LT16                                | 1*              | 90LT26                    | 2*    | 90LT36  | 3*    |
| WR112    | 7.05-10.00        | 25 to 70                | 112LT16                               | 1*              | 112LT26                   | 2*    | 112LT36 | 3*    |
| WR137    | 5.85-8.20         | 30 to 70                | 137LT16                               | 4               | 137LT26                   | 5     | 137LT36 | 6     |
| WR159    | 4.90-7.05         | 30 to 70                | 159LT16                               | 4               | 159LT26                   | 5     | 159LT36 | 6     |
| WR187    | 3.95-5.85         | 30 to 70                | 187LT16                               | 4               | 187LT26                   | 5     | 187LT36 | 6     |
| WR229    | 3.30-4.90         | 35 to 70                | 229LT16                               | 4               | 229LT26                   | 5     | 229LT36 | 6     |
| WR284    | 2.60-3.95         | 35 to 70                | 284LT16                               | 4               | 284LT26                   | 5     | 284LT36 | 6     |
| WR430    | 1.70-2.60         | 40 to 70                | 430LT16                               | 7               | 430LT26                   | 8     |         |       |
|          |                   |                         |                                       | 4               | 430LT46                   | 5     | 430LT56 | 6     |
| WR650    | 1.12-1.70         | 40 to 70                | 650LT16                               | 7               | 650LT26                   | 8     |         |       |
|          |                   |                         |                                       | 4               | 650LT46                   | 5     | 650LT56 | 6     |

## ELECTRICAL DATA

|                       |   |
|-----------------------|---|
| Frequency:            | Bandwidth to be specified.  |
| Coupling Value:       | To be specified.  |
| Coupling Sensitivity: | Approximately +/- 1dB for 20% bandwidth.  |
| Directivity:          | 25dB for 2% of the waveguide band<br>20dB for 20% of the waveguide band<br>15dB for coupling values < 30dB for 20% of the waveguide band. |
| VSWR:                 | Main arm: 1.05 max. typical for coupling values greater than 30dB.  |
| Power:                | The main arm will handle approximately 90% of waveguide rating. The internal load in the loop will handle 5 watts average power at 25°C.  |
| Output Connectors:    | WR90 to 112 SMA female<br>WR137 to 2100 type "N" female.  |



Flange faces equivalent to STD cover flange except tapped holes.



\*All lengths as shown are for cover flanges only. When couplers are made with choke, cover or choke, choke lengths are greater.