FEATURES

- Rugged Waveguide Configuration
- Full Band Operation
- Low Cost

APPLICATIONS

- Test Equipment
- Subsystems
- Prototypes

DESCRIPTION:

Cernexwave's CSS, CWB, and CTS Series waveguide components line cover 1 to 325 GHz in seven waveguide bands. Other frequency bands are available per request.

Straight waveguide sections (CSS) offer the inter-connections between the waveguide ports and are available in 1” to 8” standard length in 1” increments as well as customer-specified lengths.

Waveguide bends (CWB) change the direction in the waveguide assembly and are available in H plane and E-plane version with bend angles of 30°, 45°, 60° and 90°.

Waveguide twists (CTS) allow changing the orientation of the waveguide port and are available with twisting angles of 45° or 90°.

SPECIFICATIONS:

<table>
<thead>
<tr>
<th>Waveguide Band</th>
<th>L</th>
<th>La</th>
<th>Sa</th>
<th>Sb</th>
<th>S</th>
<th>Cl</th>
<th>ClI</th>
<th>Cs</th>
<th>XI</th>
<th>XII</th>
<th>X</th>
<th>Xs</th>
<th>Ku</th>
<th>Kb</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range (GHz)</td>
<td>1.12 to 1.70</td>
<td>1.70 to 2.60</td>
<td>2.20 to 3.30</td>
<td>2.60 to 3.95</td>
<td>3.30 to 4.90</td>
<td>3.95 to 5.85</td>
<td>4.90 to 7.05</td>
<td>5.85 to 8.20</td>
<td>7.05 to 10.0</td>
<td>7.00 to 11.00</td>
<td>8.20 to 12.40</td>
<td>10.0 to 15.0</td>
<td>12.4 to 18.0</td>
<td>15.00 to 22.00</td>
<td>18.0 to 26.5</td>
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</tbody>
</table>
Waveguide Sections, Bends, and Twist

Waveguide Bends

WR-28 90 DEGREE H-PLANE WAVEGUIDE BEND 1" (CWB28H9001 -XX)

WR28 WAVEGUIDE BEND (CWB28E9004-XX)

WR28 WAVEGUIDE BEND (CWB28E9003-XX)
WR28 WAVEGUIDE BEND (CWB28E9003-XX)

WAVEGUIDE TWISTS

<table>
<thead>
<tr>
<th>Waveguide Band</th>
<th>Kc</th>
<th>Ka</th>
<th>Q</th>
<th>U</th>
<th>V</th>
<th>E</th>
<th>W</th>
<th>F</th>
<th>D</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range (GHz)</td>
<td>22.0 to 33.0</td>
<td>26.5 to 40.0</td>
<td>33.0 to 50.0</td>
<td>40.0 to 60.0</td>
<td>50.0 to 75.0</td>
<td>60.0 to 90.0</td>
<td>75.0 to 100.0</td>
<td>90.0 to 140.0</td>
<td>110.0 to 170.0</td>
<td>140.0 to 220.0</td>
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<tr>
<td>Waveguide Size</td>
<td>WR-34</td>
<td>WR-28</td>
<td>WR-22</td>
<td>WR-19</td>
<td>WR-15</td>
<td>WR-12</td>
<td>WR-10</td>
<td>WR-8</td>
<td>WR-6</td>
<td>WR-5</td>
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</table>
Double-Ridge Waveguide Twists

<table>
<thead>
<tr>
<th>Waveguide Band</th>
<th>Kc</th>
<th>Ka</th>
<th>Q</th>
<th>U</th>
<th>V</th>
<th>E</th>
<th>W</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range (GHz)</td>
<td>18 to 40</td>
<td>2 to 4.8</td>
<td>2.6 to 7.8</td>
<td>3.5 to 8.2</td>
<td>4.75 to 11</td>
<td>5.8 to 16</td>
<td>6.5 to 18</td>
<td>7.5 to 18</td>
</tr>
<tr>
<td>Waveguide Size</td>
<td>WRD180</td>
<td>WRD200</td>
<td>WRD250</td>
<td>WRD350</td>
<td>WRD475</td>
<td>WRD580</td>
<td>WRD650</td>
<td>WRD750</td>
</tr>
<tr>
<td>VSWR (Typ)</td>
<td>1.15:1</td>
<td>1.15:1</td>
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<td>1.15:1</td>
<td>1.15:1</td>
</tr>
<tr>
<td>Insertion Loss (dB)</td>
<td>&lt; 0.1</td>
<td>&lt; 0.1</td>
<td>&lt; 0.1</td>
<td>&lt; 0.1</td>
<td>&lt; 0.1</td>
<td>&lt; 0.1</td>
<td>&lt; 0.1</td>
<td>&lt; 0.1</td>
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</tbody>
</table>

Double-Ridge Waveguide Bend

<table>
<thead>
<tr>
<th>Waveguide Band</th>
<th>Kc</th>
<th>Ka</th>
<th>Q</th>
<th>U</th>
<th>V</th>
<th>E</th>
<th>W</th>
<th>F</th>
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<td>18 to 40</td>
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<td>7.5 to 18</td>
</tr>
<tr>
<td>Waveguide Size</td>
<td>WRD180</td>
<td>WRD200</td>
<td>WRD250</td>
<td>WRD350</td>
<td>WRD475</td>
<td>WRD580</td>
<td>WRD650</td>
<td>WRD750</td>
</tr>
<tr>
<td>VSWR (Typ)</td>
<td>1.10:1</td>
<td>1.10:1</td>
<td>1.10:1</td>
<td>1.10:1</td>
<td>1.10:1</td>
<td>1.10:1</td>
<td>1.10:1</td>
<td>1.10:1</td>
</tr>
<tr>
<td>Insertion Loss (dB)</td>
<td>&lt; 0.1</td>
<td>&lt; 0.1</td>
<td>&lt; 0.1</td>
<td>&lt; 0.1</td>
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**HOW TO ORDER:**

- **Straight Waveguide Sections**
  Specify Model Number

  ![Straight Waveguide Sections Diagram](image)

  CSS – WG LL
  
  Block
  
  Waveguide Size
  
  Length

  ![Block Waveguide Sections Diagram](image)

  CSSB – WG LL
  
  Waveguide Size
  
  Length
Example: To order a 2" long, WR-15 straight waveguide section, specify CSS-1502.

• Waveguide Bends
  Specify Model Number

  \[
  \text{CWB} - \text{WG} \quad \text{DD} \quad \text{LL}
  \]

  Waveguide Size

  Length

  Degrees

  E For E-plane Bend
  H For H-plane Bend

  \[
  \text{CWBB} - \text{WG} \quad \text{DD} \quad \text{LL}
  \]

  Block

  Waveguide Size

  Length

  Degrees

  E For E-plane Bend
  H For H-plane Bend

Example: To order a WR-28, E-plane, 30° waveguide bend 1" Long, specify CWB-28E301.

• Waveguide Twists
  Specify Model Number

  \[
  \text{CTS} - \text{WG} \quad \text{DD} \quad \text{LL} \quad \text{WW}
  \]

  CW (Clockwise)
  CCW (Counter Clockwise)

  Waveguide Size

  Length

  Degrees

Example: To order a 45°, 1" long, WR-12 waveguide twist, specify CTS-124501.

CERNEXWAVE RESERVE THE RIGHT TO CHANGE THE SPECIFICATIONS WITHOUT NOTICE.