OVERVIEW

C-BASS is a family of very low frequency (VLF) electrodynamic sound projectors. These powerful projectors are less expensive, lighter, smaller, more efficient, and have a broader bandwidth than their peers. C-BASS makes possible applications that were previously impractical.

The omni-directional C-BASS can be used individually or in arrays to produce high-power sources with or without directivity.

CONCEPT OF OPERATIONS

- Diver deterrents to protect marine assets
- VLF ASW systems
- VLF calibration source
- AUV-based target emulation
- Underwater navigation/GPS by providing a network of beacons
- Acoustic and health monitoring
- VLF communication systems with a range exceeding 1,000 km.

FEATURES

- C-BASS is built on four stock diameters but scalable architecture allows for custom designs
- Higher resonances have greater depth capability without pressure compensation
- Active/passive pressure compensation can support operation at 100s or 1,000s of meters depth
- Dryside/wetside VLF power amplifiers optimized for C-BASS
- Electromagnetic motors designed with intrinsic heat dissipation

OPTIONS

- Resonance can be varied for a particular diameter
- An active/passive pressure compensation system is required for larger diameters and is optional for smaller diameters
- Optional GeoSpectrum amplifier allows for continuous operation at full power
- Digital or analogue control electronics.
C-BASS VLF Sound Source

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Component</th>
<th>M72-225</th>
<th>M72-325</th>
<th>M72-500</th>
<th>M72-1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>8.5 in</td>
<td>12.9 in</td>
<td>18 in</td>
<td>38 in</td>
</tr>
<tr>
<td>Mass</td>
<td>8 kg</td>
<td>20 kg</td>
<td>100 kg</td>
<td>300 kg</td>
</tr>
<tr>
<td>Thickness</td>
<td>7 in</td>
<td>7 in</td>
<td>8 in</td>
<td>8 in</td>
</tr>
<tr>
<td>SPL at ( f_{res} ) (dB re 1 ( \mu)Pa @ 1 m, continuous)</td>
<td>175 dB</td>
<td>180 dB</td>
<td>190 dB</td>
<td>195 dB</td>
</tr>
<tr>
<td>Efficiency at ( f_{res} )</td>
<td>10%</td>
<td>10%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Depth Rating Without Pressure Compensation</td>
<td>30–100 m</td>
<td>10–60 m</td>
<td>5–30 m</td>
<td>—</td>
</tr>
<tr>
<td>Depth Rating With Active/Passive Pressure Comp.</td>
<td>&gt;1,000 m</td>
<td>&gt;1,000 m</td>
<td>&gt;1,000 m</td>
<td>&gt;1,000 m</td>
</tr>
<tr>
<td>Resonant Frequencies</td>
<td>250–500 Hz</td>
<td>160–400 Hz</td>
<td>75–200 Hz</td>
<td>15–100 Hz</td>
</tr>
</tbody>
</table>

COMPONENTS

- Dryside/wetside VLF power amplifiers
- Digital or analogue control electronics
- Cables
- Power supplies
- Tow bodies.

Measured C-BASS Source Levels

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