CT830

20-Watt 8" Coaxial Driver 10oz. LF / 2.1oz. HF Magnet

Quality Features

- Provides clear and accurate reproduction of music and voice communications.

- Available with optional factory-wired transformer for fast installation in distributed applications.

- Provides optimum low-end performance when teamed with Lowell’s acoustic DX Series backboxes (1-3 cu.ft.) or protective backboxes with acoustic fiberglass batting (see page 4).

- Compatible with Lowell’s extensive selection of 8" grilles including steel, aluminum or plastic styles with standard screw mount or visually hardware-free torsion design.

Description

Lowell Model CT830 is a high performance 8-inch coaxial driver. The 20 watt assembly features a two driver system (woofer and tweeter) with a post mounted, coaxially positioned tweeter for improved performance over a traditional full-range (dual cone) speaker. The 3-inch tweeter provides wide dispersion in the high frequency range; helping to enhance speech and music intelligibility in the region between speaker locations. The high frequency driver is equipped with a first order high pass filter to protect it from harmful bass energy. Frequency response of the CT830 assembly is 50Hz-17.5kHz+6dB with a crossover at 4000Hz.

The CT830 is an outstanding choice for quality paging, public address and background music applications that demand clear intelligibility with accurate voice and music reproduction. Assembly is available with a variety of factory wired transformers for ready-to-install convenience in 70V or 25V distributed system applications.

Model CT830 utilizes precision ground, highly efficient ceramic magnets (10oz. LF, 2.1oz. HF) and permanently aligned voice coils (1" LF, .563" HF) to achieve outstanding smoothness and intelligibility. The loudspeaker frame is 20-gauge stamped steel with a zinc plated finish to prevent corrosion. The frame also includes pre-punched holes for transformer mounting. See factory wired speaker/transformer assemblies on page 2.

Model CT830 is manufactured in the United States of America and meets or exceeds all applicable EIA standards. Lowell also manufactures a complete selection of architectural ceiling grilles, acoustic, protective, and special application backboxes and baffles to facilitate speaker installation wherever audio communications are desired.
Specifications: Lowell Model CT830 Coaxial Driver

**PERFORMANCE**
- Power Handling, Nominal: 20 watts RMS (nominal) measured per EIA Standard RS-426B
- Sensitivity: 96dB Average SPL (measured 2.83V @ 1m)
- Impedance: 8 ohms (nominal), 8.5 ohms @280Hz (minimum)
- Frequency Response: 50Hz-19kHz (nominal), 50Hz-17.5kHz (+6dB)
- Crossover Frequency: 4000Hz, 1rst order high pass filter
- Dispersion Angle: 85° conical @ 2000Hz octave (-6dB)

**PHYSICAL - WOOFER**
- Cone Material: Damped paper with self edge surround
- Magnet Weight, Material: 10oz. (264g), strontium ferrite ceramic
- Voice Coil Diameter, Material: 1 inch (26mm), copper wire over aluminum former
- Terminals: Quick disconnect type - spade lugs

**PHYSICAL - TWEETER**
- Diameter: 3.04 inch (77mm)
- Cone Material: Paper
- Magnet Weight, Material: 2.1oz. (60g), strontium ferrite ceramic
- Voice Coil Diameter, Material: 0.57 inch (14.4mm), copper wire

**MECHANICAL**
- Basket: 20 gauge stamped steel with zinc plating
- Outside Diameter: 8.062 inch (205mm)
- Mounting Bolt Circle: 7.625 inch (194mm) with 8 obround holes equally spaced at 45 degrees.
- Cutout Diameter: 7.15 inch (182mm)
- Mounting Depth: 3.0 inch (77mm)
- Net Weight: 2.4 lbs. (1.1kg)

**THIELE-SMALL PARAMETERS**

<table>
<thead>
<tr>
<th>Pe</th>
<th>Qts</th>
<th>Qts</th>
<th>BL</th>
<th>Sd</th>
</tr>
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<tbody>
<tr>
<td>20W</td>
<td>1.0</td>
<td>1.3</td>
<td>4.81m</td>
<td>33.2 in&lt;sup&gt;2&lt;/sup&gt;, 214cm&lt;sup&gt;2&lt;/sup&gt;</td>
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</table>

<table>
<thead>
<tr>
<th>Fs</th>
<th>Qes</th>
<th>Efficiency, η</th>
<th>Mms</th>
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<tbody>
<tr>
<td>96Hz</td>
<td>1.3</td>
<td>1.8%</td>
<td>6.5g</td>
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<table>
<thead>
<tr>
<th>Xmax</th>
<th>Qms</th>
<th>Vas</th>
<th>Cms</th>
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<tbody>
<tr>
<td>0.06 in, 1.5mm</td>
<td>4.6</td>
<td>26.8 liters, 1635 cu.in.</td>
<td>0.41mm/N</td>
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**CT830 Factory-Wired Loudspeaker / Transformer Assemblies**

<table>
<thead>
<tr>
<th>Assembly Model</th>
<th>Mounted Xfmr</th>
<th>Assembly Depth*</th>
<th>Assembly Weight</th>
<th>Xfmr Power Rating</th>
<th>Xfmr Primary Voltage</th>
<th>Xfmr Primary Taps</th>
<th>Xfmr Response</th>
<th>Xfmr Insertion Loss</th>
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<tbody>
<tr>
<td>CT830-T72</td>
<td>TLM572</td>
<td>3.0&quot;</td>
<td>2.8 lb</td>
<td>5 Watts</td>
<td>25/70V</td>
<td>0.25, 0.5, 1, 2, 5W</td>
<td>40Hz - 20kHz +1dB</td>
<td>&lt;0.5dB</td>
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<tr>
<td>CT830-T470</td>
<td>TLM470</td>
<td>3.0&quot;</td>
<td>2.9 lb</td>
<td>4 Watts</td>
<td>70V</td>
<td>0.5, 1, 2, 4W</td>
<td>60Hz - 15kHz +1dB</td>
<td>0.8dB</td>
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<tr>
<td>CT830-T870</td>
<td>TLM870</td>
<td>3.1&quot;</td>
<td>3.2 lb</td>
<td>8 Watts</td>
<td>70V</td>
<td>1, 2, 4, 8W</td>
<td>50Hz - 15kHz +1dB</td>
<td>0.8dB</td>
</tr>
</tbody>
</table>

*Minimum depth required for the speaker transformer assembly to be rear mounted in an enclosure.

Lowell Manufacturing Company • 100 Integram Drive • Pacific, Missouri 63069 U.S.A.
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Lowell makes every effort to provide accurate information and reserves the right to change specifications and/or improve manufacturing methods.
Scope of Lowell Model CT830 performance and power tests

Lowell loudspeakers are thoroughly tested to provide specifiers and contractors with solid data that accurately reflects the performance of production drivers. Performance tests are conducted on randomly selected final production assemblies. Testing equipment includes the GoldLine TEF-20 analyzer and a LinearX LMS measurement system. The power handling capability is based on EIA Standard RS-426B.

Frequency Response data is provided in two ways: Nominal - which is the generally usable response range and Limited Bandwidth - (defined by ± dB) which is useful in predictive engineering calculations. Resonance frequency (Fs) is also provided in Thiele-Small parameters as the recommended limit from which to drive a speaker. Sensitivity (SPL) is presented two ways: Average - which is based on a computer measurement and calculation of the log average SPL over the given frequency response bandwidth with 1 watt input measured at 1 meter. Maximum - which is calculated based on the average sensitivity and the power rating of the driver. Dispersion Angle is defined as the angle of coverage that is no more than 6dB down from the on-axis value averaged over the 2000 Hz octave band. Since speech intelligibility is very dependent upon the 2000 Hz octave, this specification is quite useful in designing paging systems that provide even coverage and intelligibility. Thiele-Small Parameters were measured with the LMS system using the delta mass method. These parameters are useful in determining the appropriate type and size of enclosure for a specific driver.

In addition to the standard frequency response (on axis), impedance, and polar curves, an impulse curve is presented. This final graph displays how well the electro-magnetic motor and the mechanical suspension work together to control the motion of the cone.
A & E Specifications

The coaxial 8 inch loudspeaker shall be Lowell Model CT830. Loudspeaker shall be furnished and installed at each designated location on the architectural plans and or as specified herein. The loudspeaker shall be of the coaxial type having electrically independent high and low frequency transducers. The low frequency section shall have an 8 inch diameter cone and the high frequency section shall have a 3 inch diameter cone. A built-in electrical crossover network shall be employed to accomplish the proper frequency selection between the two drivers. The crossover frequency shall be at 4000Hz.

The loudspeaker shall be capable of producing a uniform audible frequency response over the range of 50Hz-17.5kHz+6dB with a dispersion angle of 85 degrees @ 2000Hz+6dB. The average sensitivity shall measure 96dB (SPL at 1W/1M). Rated power handling shall be 20 watts RMS. The low frequency voice coil shall have a diameter of 1 inch and shall operate in a magnetic field derived from a strontium ferrite (ceramic) magnet having a nominal weight of 10oz. The high frequency voice coil shall have a diameter of 0.57 inches and shall operate in a magnetic field derived from a strontium ferrite (ceramic) magnet having a nominal weight of 2.1 oz. The voice coil impedance shall be 8 ohms.

The loudspeaker shall have a round, structurally reinforced stamped 20-gauge steel frame for precise mechanical alignment and shall provide facilities for mounting a transformer. The loudspeaker shall have an overall diameter of 8.062 inches with eight obround holes equally spaced at 45 degrees on a 7.625 inch diameter mounting bolt circle. The overall depth shall not exceed 3 inches (not including transformer). All external metal parts shall be zinc plated to resist rust and corrosion. The loudspeaker specified herein shall be Model CT830 as supplied by Lowell Manufacturing Company, Pacific, Missouri, 63069 U.S.A.

Companion Backboxes and Grilles (partial selection)

To meet performance, installation, and aesthetic requirements, CT830 drivers may be matched with a variety of backboxes and attractive architectural grilles. Backbox models with batting include 1-1/2" thick acoustic fiberglass. Please note, a much larger selection of backboxes and grilles is available from Lowell; refer to the current Lowell catalog or website for complete information.