

Model No.: CT830

8" Coaxial Speaker (optional transformer)

Description

Lowell Model CT830 is a high performance 8-inch coaxial speaker. 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 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. 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. Optional factory-wired transformer for ready-to-install convenience in 70V or 25V distributed system applications.

Features

- Speaker frame is 20-ga. stamped steel with zinc-plated finish to prevent corrosion and punched holes to mount a transformer.
- Provides clear, accurate reproduction of music and voice communications.
- Made in the USA; meets or exceeds all applicable EIA standards
- Provides optimum low-end performance when teamed with Lowell's acoustic DX-series backbox (1-3 cu.ft.) or protective backbox with acoustic fiberglass batting.
- Compatible with Lowell 8" grilles.
- Optional factory-wired transformer:
 - TLM-572: taps at 0.25, 0.5, 1, 2, 5W (70/25V)
 - TLM-470: taps at 0.5, 1, 2, 4W (70V)
 - TLM-870: taps at 1, 2, 4, 8W (70V)

A&E Specifications

The coaxial 8-inch loudspeaker shall be Lowell Model CT830. 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 10 oz. 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



Model No. CT830



Model No. CT830-T72



Model No. CT830-T470



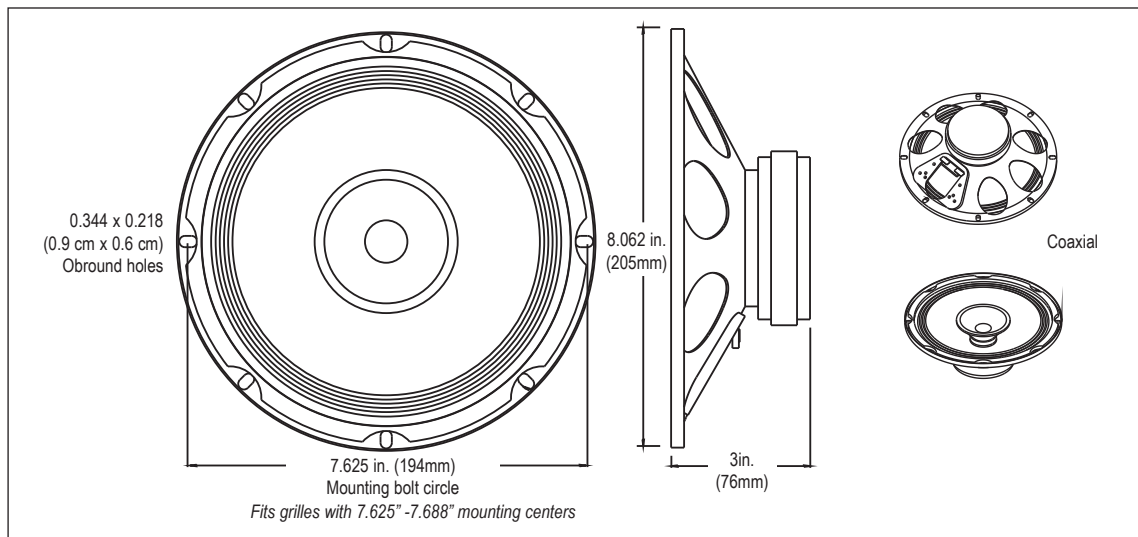
Model No. CT830-T870

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.

For 25 or 70.7 volt distributed systems: The loudspeaker shall be equipped with a transformer, factory mounted and wired. The transformer's primary voltage shall be _____ and shall provide selectable power taps of _____ watts. The transformer frequency response shall be from _____ to _____ Hz ± _____ dB, with a maximum insertion loss of _____ dB.

| Model No. | Mounted Xfmr | Assembly Depth* | Assembly Weight | Xfmr Power Rating | Xfmr Primary Voltage | Xfmr Primary Taps | Xfmr Response | Xfmr Insertion Loss |
|------------|--------------|-----------------|-----------------|-------------------|----------------------|-------------------|--------------------|---------------------|
| CT830 | --- | --- | --- | --- | --- | --- | --- | --- |
| CT830-T72 | TLM-572 | 3.0" | 2.8 lb | 4 Watts | 25/70V | .5, 1, 2, 4W | 100Hz - 10kHz ±1dB | 1dB |
| CT830-T470 | TLM-470 | 3.0" | 2.9 lb | 4 Watts | 70V | .5, 1, 2, 4W | 60Hz - 15kHz ±1dB | 0.8dB |
| CT830-T870 | TLM-870 | 3.1" | 3.2 lb | 8 Watts | 70V | 1, 2, 4, 8W | 50Hz - 15kHz ±1dB | 0.8dB |

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



CT830 Coaxial Driver Specifications:

PERFORMANCE

| | |
|-------------------------|--|
| Power Handling, Nominal | 20 watts RMS (nominal) measured per EIA Standard RS-426A |
| Sensitivity | 100dB SPL (peak), 96dB SPL (avg) 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, 1st order high pass filter |
| Dispersion Angle | 85° @ 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

| | | | |
|--------------------------|--------------|-----------------------------------|---|
| Pe20W | Qts.....1.0 | BL4.8Tm | Sd33.2 in ² , 214cm ² |
| Fs96Hz | Qes1.3 | Efficiency, h1.8% | Mms6.5g |
| Xmax.....0.06 in., 1.5mm | Qms.....4.6 | Vas26.8 liters, 1635 cu.in. | Cms0.41mm/N |
| Re7.6W | | | |

Optional Accessories (order separately):

| Recessed Backbox (for screw-mount grille) | | Recessed Backbox (for screw-mount or torsion grille) | |
|---|--|--|---|
| CP84 | 11.938Dia x 4.063D, Ext. lip for sheetrock | XCP84 | 10.063Dia x 4.063D, flat flange for tile ceiling |
| CP87 | 11.938Dia x 6.687D, Ext. lip for sheetrock + batting | XCP87 | 10.063Dia x 6.687D, flat flange for tile ceiling + batting |
| CP810 | 11.938Dia x 10.063D, Ext. lip for sheetrock + batting | XCP810 | 10.063Dia x 10.063D, flat flange for tile ceiling + batting |
| DX58 | .5cuft 11.938Dia x 8D, Ext. lip for sheetrock + batting | | |
| DX108 | 1cuft 15Dia x 10.125D, Ext. lip for sheetrock + batting | | |
| IX810 | 10.063Dia x 10.063D Direct mnt 8in spkr-no load on grille+ batting | | |
| DX198 | 1cuft 15Sq x 8D, Ext. lip for sheetrock + batting | | |
| P68X | 10Sq x 4D | | |
| P68X-6 | 10Sq x 6D | | |

Scope of Lowell Performance & Power Tests:

Lowell drivers and loudspeaker systems are tested to provide specifiers and contractors with data that reflects the performance of production products. Testing equipment includes the GoldLine TEF-20 analyzer (for performance measurements) and the LinearX LMS measurement system (for Thiele-Small Parameters).

Power Handling capability is tested based on EIA Standard RS-426B.

Frequency Response data is provided which is the measured frequency response range (defined by + 6dB) which is useful in predictive engineering calculations.

Sensitivity (SPL) data is presented in two ways: Log Average SPL is a computer calculated log average of the SPL measured at 1 meter with 1 watt input over the stated frequency response range. Maximum SPL is calculated based on the measured log average SPL and the 8-ohm power rating of the speaker. Maximum SPL for loudspeakers which do not include an 8 ohm input, is calculated based on the measured log average SPL and the highest transformer power tap.

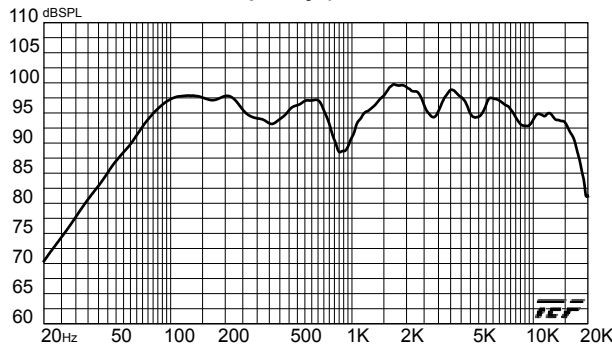
Dispersion Angle is defined as the angle of coverage that is no more than 6dB down from the on-axis value averaged over the 2000Hz octave band. Since speech intelligibility is very dependent upon the 2000Hz octave, this specification is quite useful in designing speech reinforcement systems that provide even coverage and speech intelligibility.

Thiele-Small Parameters for raw drivers are measured using the LinearX LMS measurement system. These parameters are useful in determining the optimum type and size of enclosure for a specific driver.

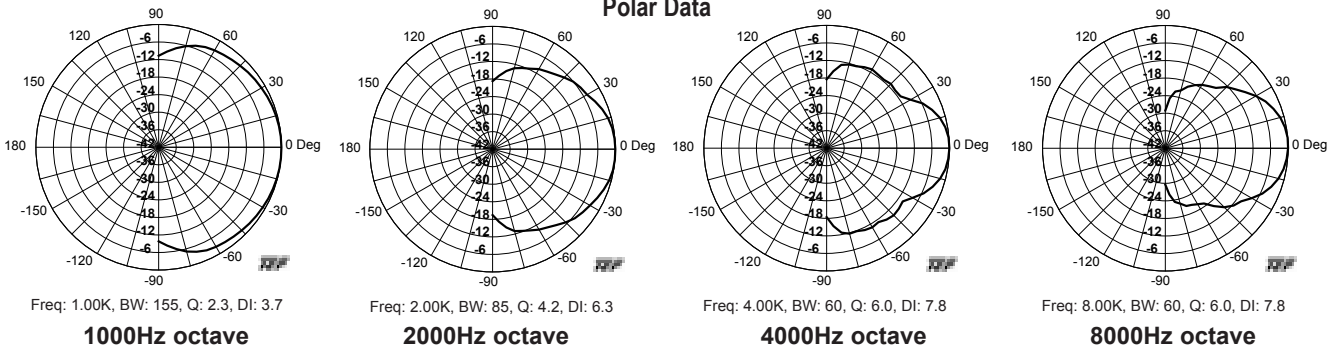
Impedance data is presented in three ways: Nominal Impedance is the generally accepted impedance for use in making comparisons with competitive products, the Impedance Curve is a graphical representation of the impedance that is measured in the lab and gives the impedance of the device over the audio frequency range. Minimum Impedance is the lowest impedance measurement at a frequency within the specified frequency response range of the speaker. If a line matching transformer is included in the speaker assembly, relative impedance curves of the primary windings of the transformer when loaded by the driver may be shown.

Polar data is presented for the averaged one octave band surrounding the center frequencies of 1000Hz, 2000Hz, 4000Hz, and 8000Hz. Radial polar response curves show the relative change in sound pressure level as one moves from directly on-axis to an increasingly off-axis listening position. Since coaxial speaker drivers are symmetrical in the vertical and horizontal directions, only one set of polar plots will be presented for coaxial drivers and speaker systems incorporating coaxial drivers. Vertical and horizontal polar plots will be presented for two-way speaker systems that incorporate separate low frequency and high frequency drivers.

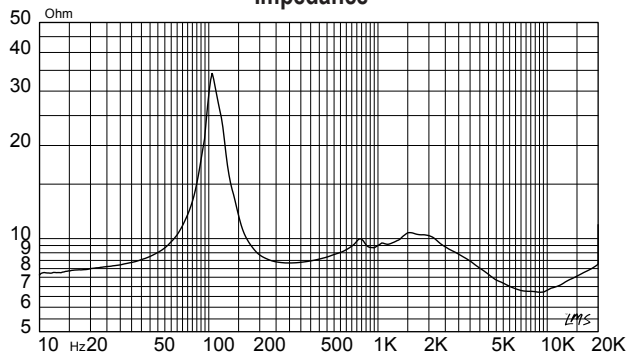
SPL vs. Frequency (1W / 1M, On Axis)



Polar Data



Impedance



Impulse

