



Quality Features

- Provides clear and accurate reproduction of music and voice communications.
- Available with an 8 watt or 4 watt 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 4-watt or 8-watt 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.



CT830

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

AUDIO

12"/10"
Speakers & Accessories

8"
Speakers & Accessories

6"
Speakers & Accessories

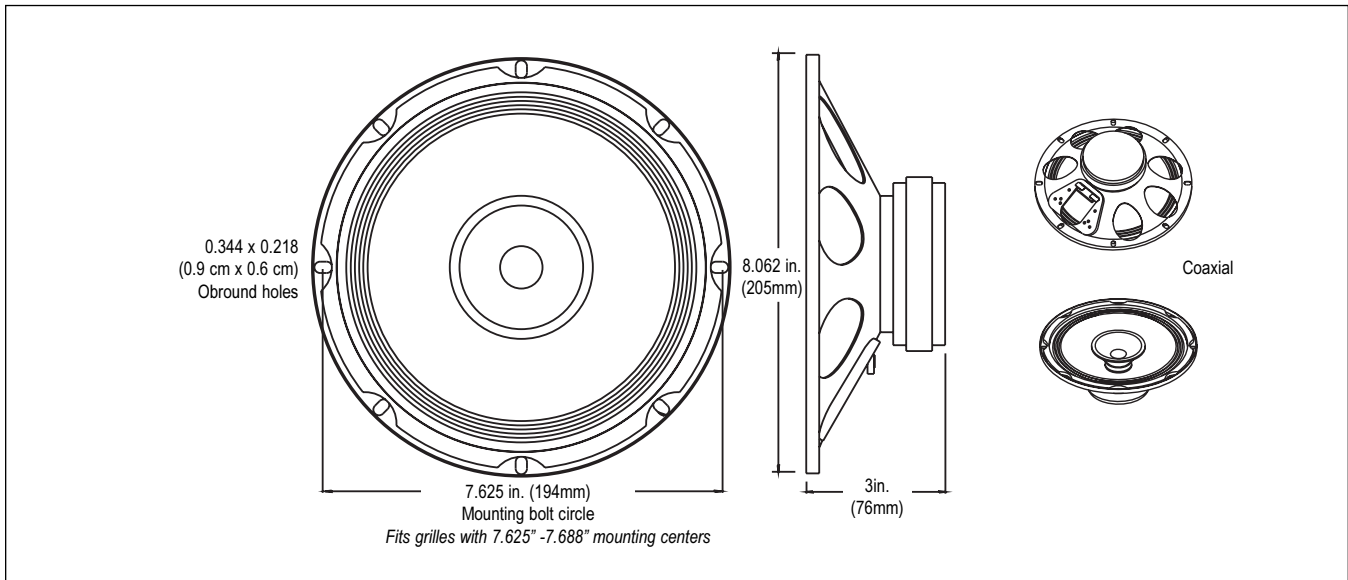
4"
Speakers & Accessories

Horn
Speakers & Accessories

Masking
Speakers & Generators

Control
Accessories & Electronics

Drivers



Specifications: Lowell Model CT830 Coaxial Driver

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, η1.8%	Mms6.5g
Xmax.....0.06 in., 1.5mm	Qms.....4.6	Vas26.8 liters, 1635 cu.in.	Cms0.41mm/N
Re7.6Ω			

CT830 Factory-Wired Loudspeaker / Transformer Assemblies

Assembly Model	Mounted Xfmr	Assembly Depth*	Assembly Weight	Xfmr Power Rating	Xfmr Primary Voltage	Xfmr Primary Taps	Xfmr Response	Xfmr Insertion Loss
CT830-T25	TLM25	3.0"	2.8 lb	4 Watts	25V	.25, .5, 1, 2, 4W	100Hz - 10kHz +1dB	1dB
CT830-T70	TLM70	3.0"	2.8 lb	4 Watts	70V	.25, .5, 1, 2, 4W	100Hz - 10kHz +1dB	1dB
CT830-T72	TLM72	3.0"	2.8 lb	4 Watts	25/70V	.5, 1, 2, 4W	100Hz - 10kHz +1dB	1dB
CT830-T470	TLM470	3.0"	2.9 lb	4 Watts	70V	.5, 1, 2, 4W	60Hz - 15kHz +1dB	0.8dB
CT830-T825	TLM825	3.1"	3.2 lb	8 Watts	25V	1, 2, 4, 8W	50Hz - 15kHz +1dB	0.8dB
CT830-T870	TLM870	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

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

Scope of Lowell Model CT830 performance and power tests

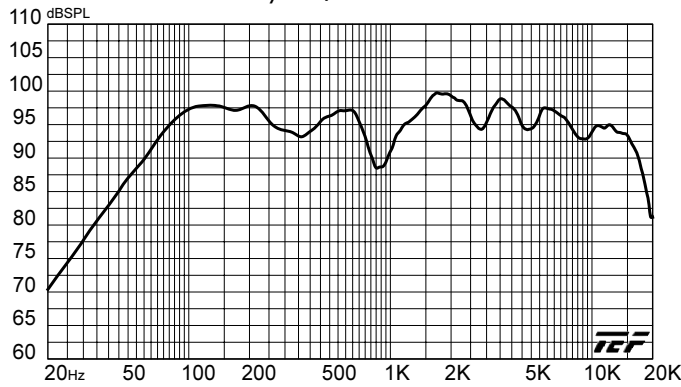
Lowell loudspeakers are thoroughly tested to provide specifiers and contractors with solid data that accurately reflects the performance of production drivers. Performance tests are conducted on randomly selected final production assemblies. Testing equipment includes the GoldLine TEF-20 analyzer and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

Frequency Response data is provided in two ways: *Nominal* - which is the generally usable response range and *Limited Bandwidth* - (defined by \pm dB) which is useful in predictive engineering calculations. Resonance frequency (F_s) is also provided in Thiele-Small parameters as the recommended limit from which to drive a speaker. Sensitivity (SPL) is presented two ways: *Peak* - used by many manufacturers (and presented here for comparison purposes) is a rating based on a narrow portion of the frequency response curve, and *Average* - which is a computer calculation of the

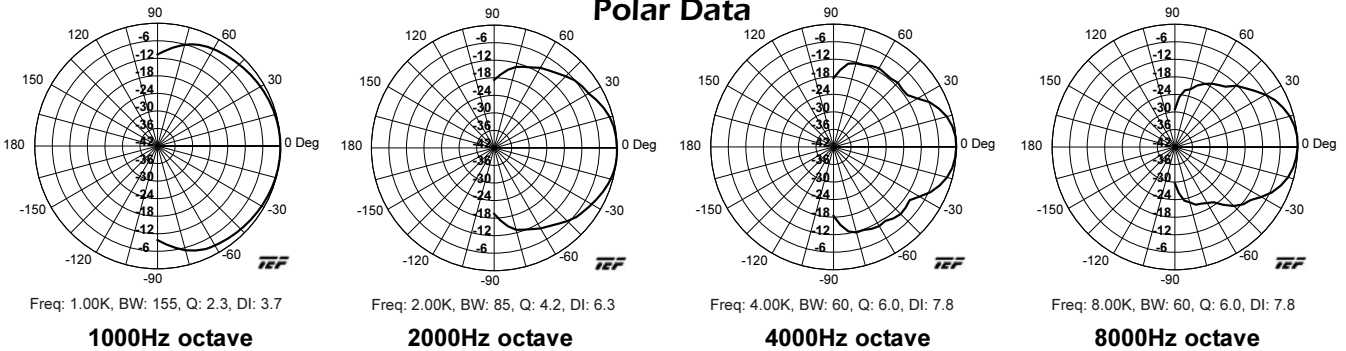
octave-weighted average over the entire engineering bandwidth as shown in the frequency response (\pm dB). Dispersion Angle is defined as the angle of coverage that is no more than 6dB down from the on-axis value averaged over the 2000 Hz octave band. Since speech intelligibility is very dependent upon 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.

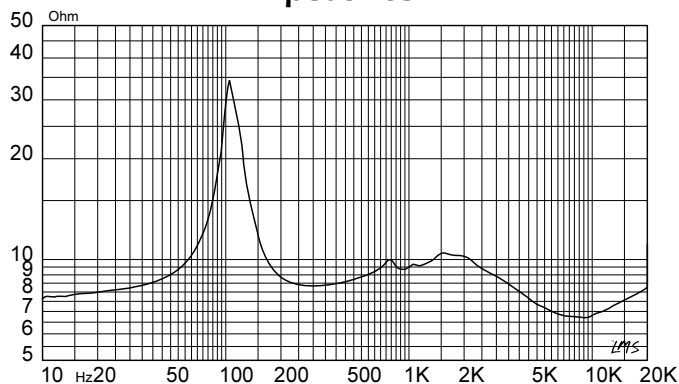
SPL vs. Frequency 1W / 1M, On Axis



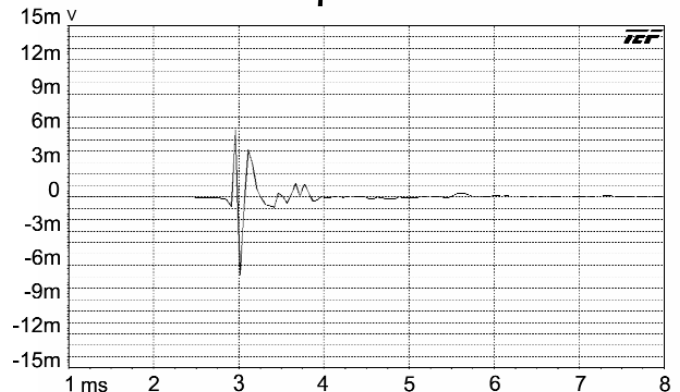
Polar Data



Impedance



Impulse





CT830

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

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.

For 25 or 70.7 volt distributed systems:

The Model CT830 coaxial loudspeaker shall be equipped with Lowell Model _____ transformer, factory mounted and wired. The transformers primary voltage shall be _____ (25V, 70.7V) 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. The loudspeaker and transformer assembly specified herein shall be referred to as the Lowell Model CT830-____ (T25, T70, T72, T470, T825, T870).

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.



CP810
CP87 / CP84

Recessed Backboxes for Screw-Mount Grilles - Partial selection on right

CP84	CRS 11.938Dia x 4.063D, Ext. lip for sheetrock
CP87	CRS 11.938Dia x 6.687D, Ext. lip for sheetrock + batting
CP810	CRS 11.938Dia x 10.063D, Ext. lip for sheetrock + batting



DX108 / DX58

DX58	CRS .5cuft 11.938Dia x 8D, Ext. lip for sheetrock + batting
DX108	CRS 1cuft 15Dia x 10.125D, Ext. lip for sheetrock + batting



IX810

IX810	CRS 10.063Dia x 10.063D Direct mnt 8in spkr-no load on grille+ batting
-------	--

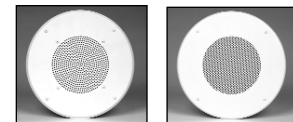


XCP810
XCP87 / XCP84

Recessed Backboxes for Screw or Torsion Grilles - Partial selection on right

XCP84	CRS 10.063Dia x 4.063D, flat flange for tile ceiling
XCP87	CRS 10.063Dia x 6.687D, flat flange for tile ceiling + batting
XCP810	CRS 10.063Dia x 10.063D, flat flange for tile ceiling + batting

Screw-Mount grilles



A8-AW

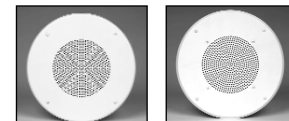
CS-8H



LO8-P

OM8-P

RS8-A



WB-8

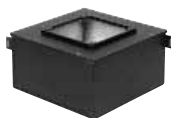
WB-8H

Torsion-Mount, visibly hardware free grilles (mount IX and XCP backboxes only)



CN-8M

CS-8W



DX198

Recessed Backboxes for Screw-Mount Grilles - Partial selection on right

DX198	CRS 1cuft 15Sq x 8D, Ext. lip for sheetrock + batting
-------	---

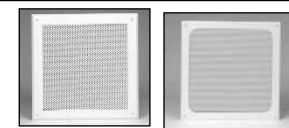


P68X

P68X	CRS 10Sq x 4D
P68X-6	CRS 10Sq x 6D

Surface Slope Front Wall Baffle (includes cloth grille)

SL8-W	Wood 10.5H x 9.438W
-------	---------------------



FW-8

JG-8X



SL8-W