

Model No.

# CT830A

Coaxial Driver

INCLUDES:

- 8-inch 20W (8ohm) coaxial driver



THE CT830A HIGH-PERFORMANCE DRIVER features a post-mounted, coaxially positioned tweeter for improved performance over traditional full-range (dual cone) speaker. The 3-inch tweeter provides wide dispersion in the high frequency range, enhancing speech/music intelligibility areas between speakers. This model is an outstanding choice for quality paging, public address, and background music applications that demand accurate voice/music reproduction.

## FEATURES:

**DESCRIPTION:** The 8-inch high-frequency coaxial driver has a first order high pass filter to protect it from harmful bass energy. It features precision ground, highly efficient ceramic magnets (12oz. LF, 2.1oz. HF) and permanently aligned voice coils (1-in. LF; 0.563-in. HF) to achieve outstanding smoothness and intelligibility. The driver provides optimum low end performance when teamed with a protective backbox with acoustic fiberglass batting.

**FRAME:** Stamped 20-gauge steel with zinc-plated finish to prevent corrosion.

**POWER RATING:** 20W RMS

**FREQUENCY RESPONSE:** 57Hz-14kHz ( $\pm 6$ dB), 44Hz-20kHz ( $\pm 7.6$ dB).

**DISPERSION ANGLE:** 80 degrees conical @2kHz octave (-6dB).

**SENSITIVITY:** Average SPL = 97.0dB (@1W/1M)  
Maximum SPL = 110.0dB (calculated based on power rating and measured sensitivity)

**MOUNTING DEPTH:** 3.2 inches

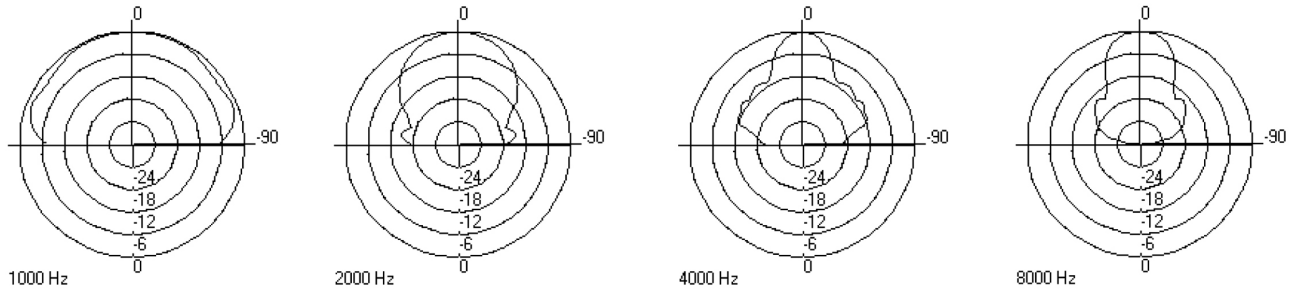
**NET WEIGHT:** 2.4 lbs.

**COUNTRY OF ORIGIN:** Assembled in U.S.A. with global components.

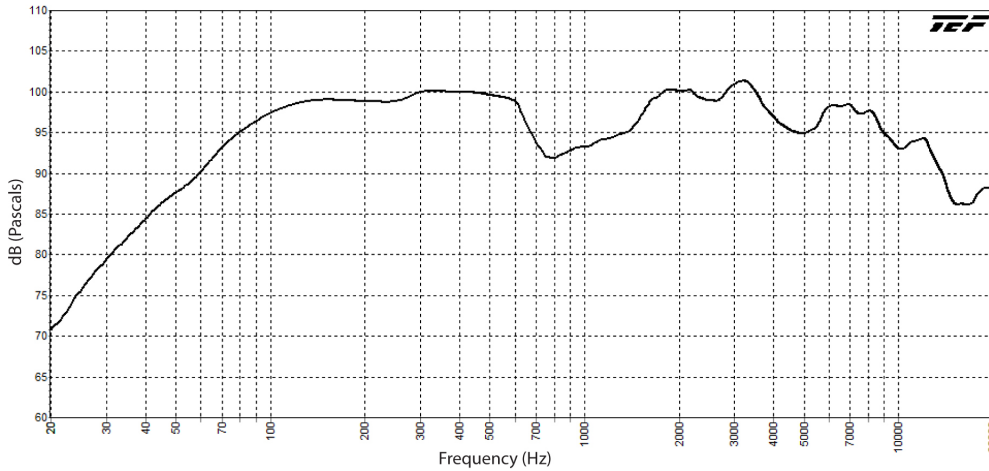
## A&E SPECIFICATIONS:

The 8-inch speaker driver shall be Lowell Model CT830A, which 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; the high frequency section shall have a 3-inch diameter cone. A built-in electrical crossover network shall be employed to accomplish proper frequency selection between the two drivers. Crossover frequency shall be at 4000Hz. The speaker shall be capable of producing a uniform audible frequency response over the range 57Hz-14kHz ( $\pm 6$ dB); 44Hz-20kHz ( $\pm 7.6$ dB) with dispersion angle of 80 degrees @2000Hz (-6dB). Average sensitivity shall measure 97.0dB (SPL at 1W/1M). Power rating shall be 20 watts RMS. The low frequency voice coil shall have a 1-inch diameter and shall operate in a magnetic field derived from a strontium ferrite (ceramic) magnet having a nominal weight of 12 oz. The high frequency voice coil shall have a 0.57-inch diameter and operate in a magnetic field derived from a strontium ferrite (ceramic) magnet having a nominal weight of 2.1 oz. Voice coil impedance shall be 8ohms. The speaker shall have a round, structurally reinforced stamped 20-gauge steel frame for precise mechanical alignment and shall provide facilities for mounting a transformer. It shall have an overall diameter of 8.062-inches and eight obround holes equally spaced at 45 degrees on a 7.625"-in. diameter mounting bolt circle. Overall depth shall not exceed 3.2 inches. External metal parts shall be zinc-plated to resist rust and corrosion.

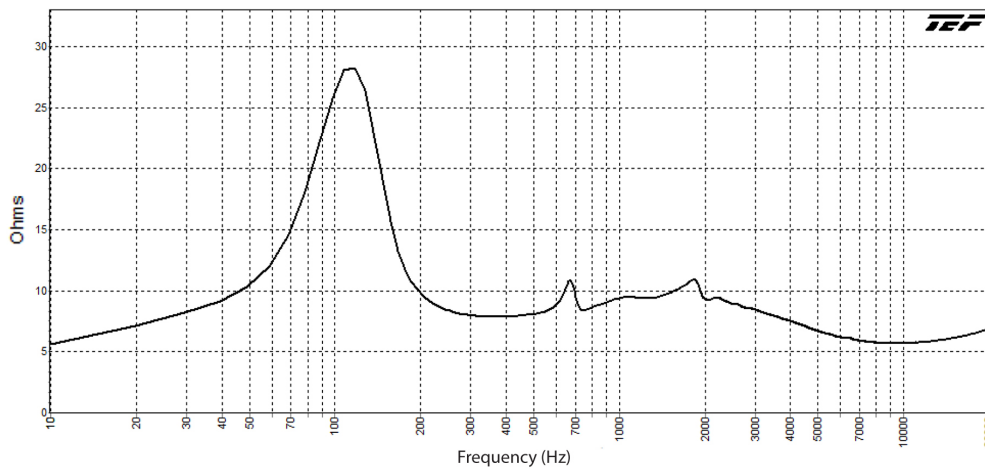
## POLAR DATA: (HALF SPACE)



## SPL VS. FREQUENCY: (1W/1M, HALF SPACE, ON-AXIS)



## IMPEDANCE:



## DRIVER SPECIFICATIONS:

### PERFORMANCE:

Power Rating .....	20 watts RMS (nominal) measured per E.I.A. Standard RS-426B
Sensitivity .....	97.0dB Average SPL (measured 2.83V @1m) 110.0dB Maximum SPL (calculated based on power rating and measured sensitivity)
Impedance .....	Driver Nominal Impedance: 8 ohms Driver Minimum Impedance: 5.7 ohms @11338Hz
Frequency Response .....	54Hz–14kHz ( $\pm 6$ dB); 44Hz–20kHz ( $\pm 7.6$ dB)
Crossover Frequency .....	4000Hz first order high pass filter
Dispersion Angle .....	80 degrees conical @2kHz octave (-6dB)

### PHYSICAL – WOOFER:

Cone .....	Damped paper with self edge surround
Magnet .....	12 oz. (264g), strontium ferrite ceramic
Voice Coil .....	1 in. (26mm) diameter, copper wire over aluminum former
Terminals .....	Quick disconnect type, spade lugs

### PHYSICAL – TWEETER:

Cone .....	Paper
Magnet .....	2.1 oz. (60g), strontium ferrite ceramic
Voice Coil .....	0.57 in. (14.4mm) diameter, copper wire
Diameter .....	3.04 in. (77mm)

### MECHANICAL:

Basket .....	20-gauge stamped steel with zinc plating
Outside Diameter .....	8.062 in. (205mm)
Mounting Bolt Circle.....	7.625 in. (194mm) with 8 obround holes equally spaced at 45 degrees
Cutout Diameter .....	7.15 in. (182mm)
Mounting Depth .....	3.2 in. (81.28mm)
Net Weight.....	2.4 lbs. (1.1kg)

### THIELE-SMALL PARAMETERS:

Pe .....	20 W	Qts.....	0.621	BL.....	6.41 Tm	Sd.....	226.9 cm <sup>2</sup>
Fs .....	93 Hz	Qes.....	0.720	Efficiency, h.....	2.86 %	Mms .....	6.9 g
Xmax.....	0.6 mm	Qms.....	4.48	Vas .....	31.9 liters	Cms.....	372.1 uM/N
Re .....	7.4 ohms						

SCOPE OF PERFORMANCE AND 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 Rating is tested based on EIA Standard RS-426B.

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

Sensitivity (SPL) data is presented in two ways:

1. 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.
2. Maximum SPL is calculated based on the measured log average SPL and the 8ohm power rating of the speaker. Maximum SPL for speakers that do not include an 8ohm 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.

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.

Impedance Data may be represented in four different ways depending on the particular model:

1. Nominal Impedance is the generally accepted impedance value for use in making comparisons with competitive products.
2. Impedance Curve is a graphical representation of the 8ohm driver impedance measured in the lab and gives the impedance of the device over the audio frequency range.
3. Minimum Impedance is the lowest impedance measurement of the 8ohm driver at a frequency within the specified frequency response range of the speaker.
4. Impedance Measured at 1kHz is the reading expected to be measured by a technician in the field using a typical industry 1kHz impedance meter.

## CT830A SERIES OVERVIEW

Model No.	Driver	Transformer	Transformer Primary Taps	Mounting Depth*	Outside Diameter	Net Weight	Sensitivity**	System Specs	Dispersion Angle***
								Frequency Response	
THIS SPEC ▶ CT830A	8" 20W coaxial	---	---	3.2"	8.062"	2.4 lbs.	97.0 dB	57Hz-14kHz (±6dB) 44Hz-20kHz (±7.6dB)	80°
CT830A-T72	8" 20W coaxial	25V/70V	.25, .5, 1, 2, 5W	3.2"	8.062"	2.8 lbs.	97.4 dB	57Hz-13.5kHz (±6dB) 44Hz-20kHz (±8.4dB)	80°
CT830A-T470	8" 20W coaxial	70V	.5, 1, 2, 4W	3.2"	8.062"	3.0 lbs.	96.7 dB	57Hz-13.3kHz (±6dB) 44Hz-20kHz (±8.7dB)	80°
CT830A-T870	8" 20W coaxial	70V	1, 2, 4, 8W	3.3"	8.062"	3.3 lbs.	97.1 dB	53Hz-14.3kHz (±6dB) 44Hz-20kHz (±7.1dB)	80°

\* Mounting Depth: Minimum depth required for assembly to be rear-mounted to grille in an enclosure.

\*\* Sensitivity: Average SPL (measured 2.83V @ 1M)

\*\*\* Dispersion Angle: Conical @ 2kHz octave (-6dB)

**Note on Speaker Spacing:** Conical dispersion measurements are provided for comparison with other speakers. To determine correct speaker spacing, see the technical paper "Distributed System Speaker Spacing for the Integrator" ([www.Lowellmfg.com](http://www.Lowellmfg.com)) which explains the difference between conical and linear dispersion and the measurements to use for best results. For quick calculations, a calculator for speaker spacing is also available online under Resources – Interactive Tools.