

Model No.

CT830A

8" 20W Coaxial Speaker

High performance 8" 20W coaxial speaker with post mounted, coaxially positioned tweeter for improved performance over a traditional full-range (dual cone) speaker. The 3" tweeter provides wide dispersion in the high frequency range enhancing speech/music intelligibility in the area between speakers. This speaker is an outstanding choice for quality paging, public address, and background music applications demanding accurate voice/music reproduction.

Construction & Features

- 8" 20W coaxial speaker
- High frequency driver with first order high pass filter to protect it from harmful bass energy.
- Frequency response is 57Hz-14kHz (± 6 dB); 44Hz-20kHz (± 7.6 dB)
- Dispersion angle of 80 degrees @2000Hz (-6dB).
- Precision ground, highly efficient ceramic magnets (12 oz. LF, 2.1 oz. HF) and permanently aligned voice coils (1" LF; 0.563" HF) to achieve outstanding smoothness and intelligibility
- 20-ga. stamped steel frame with zinc plated finish to prevent corrosion and punched holes (to mount a transformer)
- 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.
- Made in the USA with domestic and imported components
- Meets or exceeds all applicable EIA standards
- Compatible with AVLELEC 8" grilles

A&E Specifications

The 8" speaker shall be AVLELEC Model No. CT830A which shall be of the coaxial type having electrically independent high and low frequency transducers. The low frequency section shall have an 8" diameter cone; the high frequency section shall have a 3" dia. 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 (± 6 dB); 44Hz-20kHz (± 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" 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" dia. 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-ga. steel frame for precise mechanical alignment and shall provide facilities for mounting a transformer. It shall have an overall diameter of 8.062" and eight obround holes equally spaced at 45 degrees on a 7.625" diameter mounting bolt circle. Overall depth shall not exceed 3.2". External metal parts shall be zinc-plated to resist rust and corrosion.

Driver CT830A Specifications

PERFORMANCE

Power Rating.....	20 watts RMS (nominal) measured per EIA Standard RS-426B
Sensitivity	97.0dB Avg. SPL (measured 2.83V @1m)
.....	110.0dB Maximum SPL (calculated based on power rating and measured sensitivity)
Impedance.....	8 ohms nominal, minimum 5.7ohms @11,338Hz
Frequency Response	57Hz-14kHz (± 6 dB); 44Hz-20kHz (± 7.6 dB)
Crossover Frequency	4000Hz first order high pass filter
Dispersion Angle	80 degrees @ 2000Hz octave (-6dB)

PHYSICAL – WOOFER

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

PHYSICAL – TWEETER

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

MECHANICAL

Basket	20-gauge stamped steel with zinc plating
Outside Diameter	8.062" [205mm]
Mounting Bolt Circle	7.625" (194mm) with 8 obround holes equally spaced at 45 degrees
Cutout Diameter	7.15" [182mm]
Mounting Depth.....	3.2" [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 ²
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

AVLELEC 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 ± 6 dB) 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.

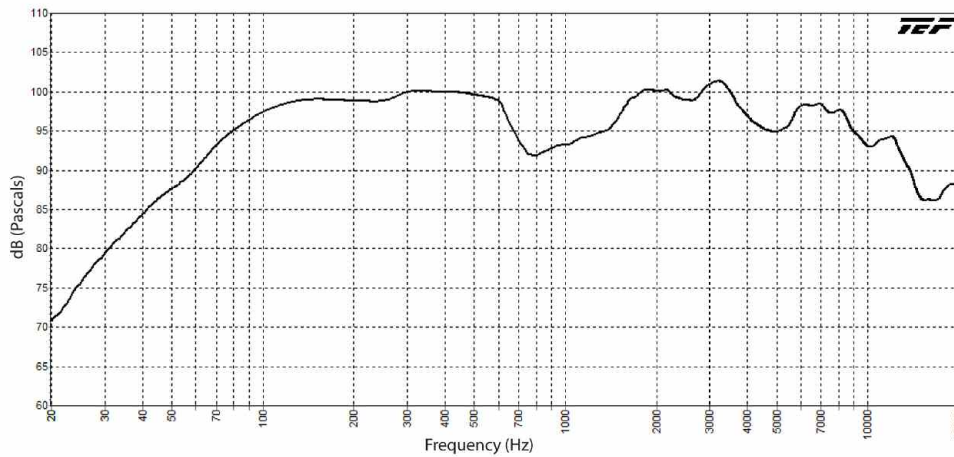
Dispersion Angle is defined as the angle of coverage that is no more than 6dB down from the on-axis value averaged over the 2000Hz octave band. Since speech intelligibility is very dependent upon the 2000Hz octave, this specification is quite useful in designing speech reinforcement systems that provide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

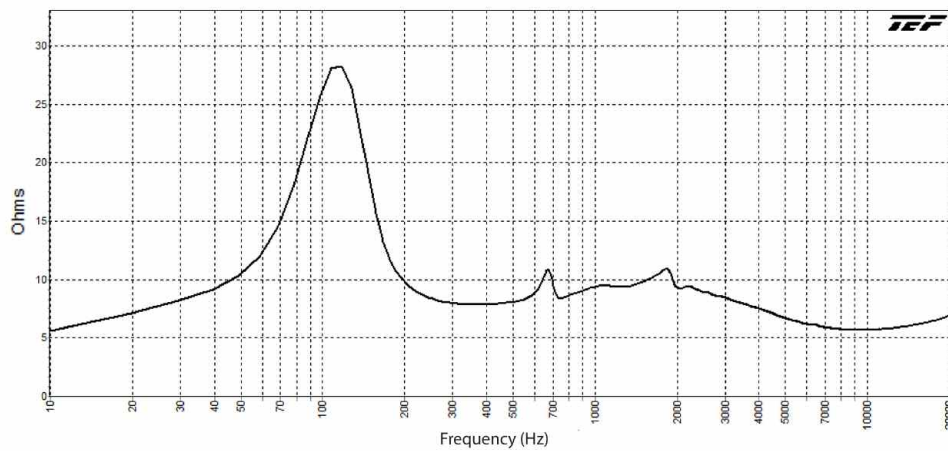
Impedance data is presented in three ways: Nominal Impedance is the generally accepted impedance for use in making comparisons with competitive products; the Impedance Curve is a graphical representation of the impedance that is measured in the lab and gives the impedance of the device over the audio frequency range; Minimum Impedance is the lowest impedance measurement at a frequency within the specified frequency response range of the speaker.

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.

SPL vs. Frequency 1W/1M (half space) On-axis



Impedance



Polar Data (half space)

