

Model No.

8A50

Coaxial Driver

INCLUDES:

- 8-inch 50W coaxial driver



THE 8A50 DRIVER represents an upgrade in performance over standard commercial coaxial drivers — with greater power handling, lower distortion, and smoother musical sound. The driver is engineered for very high quality music and paging, especially in large venues such as restaurants, hotel lobbies, retail stores and similar locations where the listening experience is a key part of customer satisfaction.

FEATURES

DESCRIPTION: 20oz. LF magnet coupled with 1.4 inch copper voice coil drive a polypropylene cone with half-roll rubber surround for long cone travel and good edge damping. The post-mounted tweeter is a 1-inch balanced-drive dome protected by Ferrofluid and a first-order high-pass filter.

FRAME: Stamped 20-gauge steel with black enamel finish and zinc-plated back-plate.

POWER RATING: 50W RMS

FREQUENCY RESPONSE: 50Hz–20kHz (± 7.5 dB) with a crossover at 4kHz.

DISPERSION ANGLE: 90 degrees conical @2kHz octave (-6dB). The driver's capacity to deliver a wide angle of sound distribution over a large area with uniform response and voice clarity ensures complete coverage with minimum units.

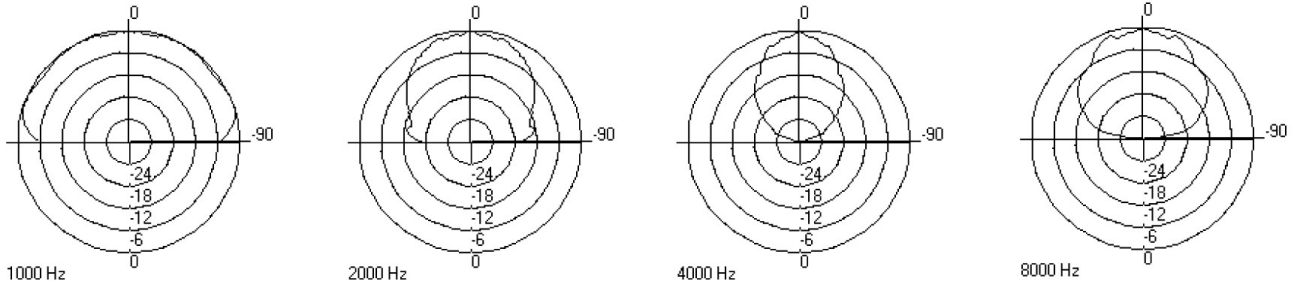
AVERAGE SENSITIVITY: 89.6dB (SPL@1W/1M)

COUNTRY OF ORIGIN: China

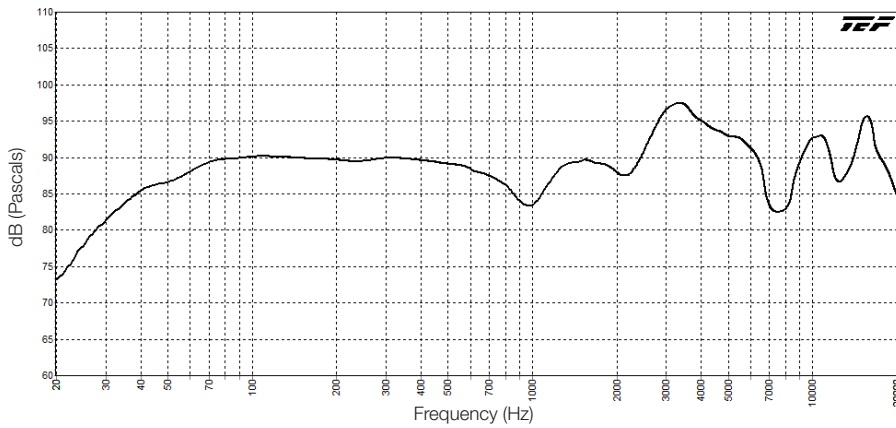
A&E SPECIFICATIONS:

The 8-inch driver shall be Lowell Model 8A50, which shall be of the coaxial type having electrically independent high and low frequency transducers. The low frequency section shall have an 8 in. diameter polypropylene cone and the high frequency section shall have a tweeter with a 1-inch balanced-drive dome. A built-in electrical crossover network shall be employed to accomplish the proper frequency division between the two drivers. Crossover frequency shall be at 4000Hz with a first order high-pass filter. The driver shall be capable of producing a uniform audible frequency response over the range of 50Hz–20kHz (± 7.5 dB), with a dispersion angle of 90 degrees conical @2kHz octave (-6dB). Average sensitivity shall measure 89.6dB (SPL at 1W/1M). Power rating shall be 50 watts RMS. The low frequency voice coil shall have a diameter of 1.4-in. and operate in a magnetic field derived from a ferrite (ceramic) magnet with nominal weight of 3.5 lbs. The high frequency voice coil shall have 0.53-in. diameter and operate in a magnetic field derived from a ferrite (ceramic) magnet with 2 oz. nominal weight. Voice coil impedance shall be 8 ohms. The driver shall have a round, structurally reinforced stamped 20-gauge steel frame with 8.08-in. overall diameter and 8 obround holes equally spaced at 45 degrees on 7.625-in. diameter mounting bolt circle. Overall depth shall not exceed 3.85-in. External metal parts shall be finished in black enamel coating or zinc plating to resist rust and corrosion.

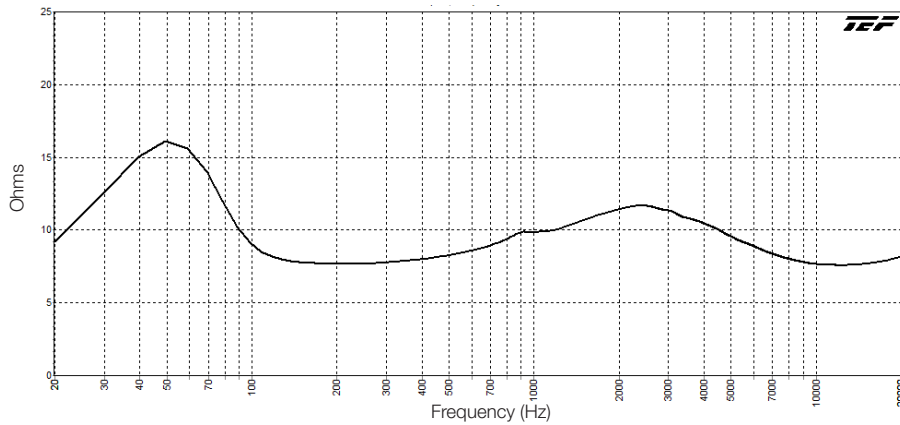
POLAR DATA (FULL SPACE)



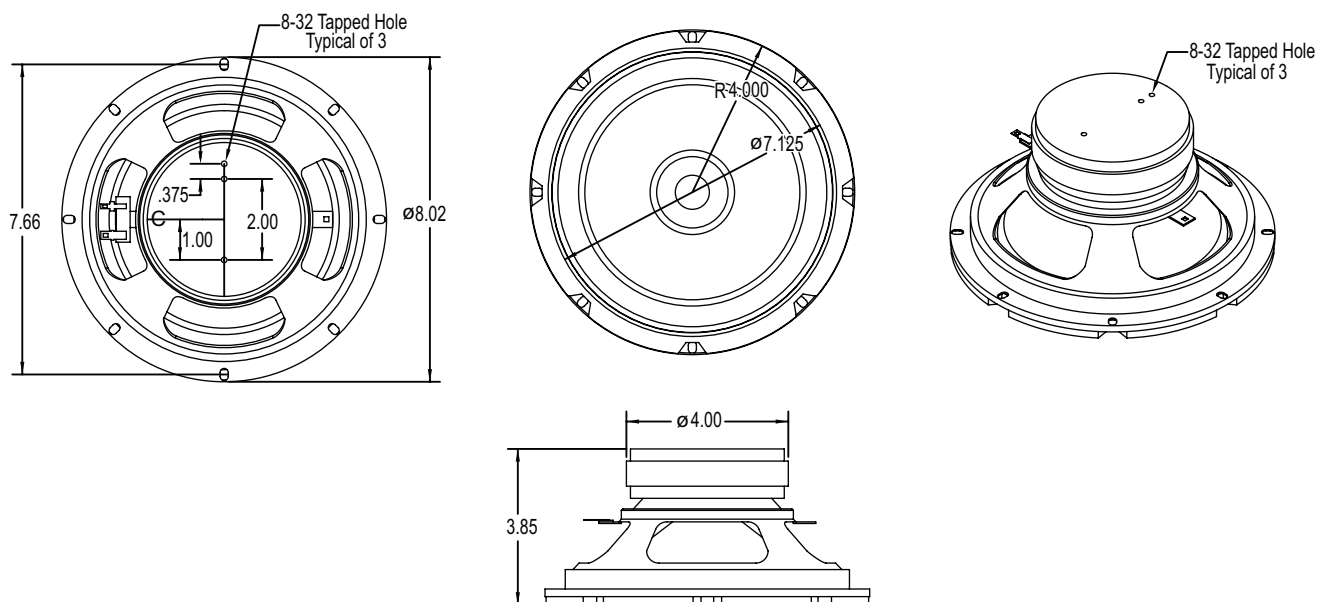
SPL VS. FREQUENCY (1W/1M, FULL SPACE, ON-AXIS)



IMPEDANCE



DRAWINGS



DRIVER SPECIFICATIONS

PERFORMANCE:

Power Rating	50 watts RMS (nominal) measured per EIA Standard RS-426B
Sensitivity	89.6dB Average SPL (measured 2.83V @1m)
	106.6dB Maximum SPL (calculated based on power rating and measured sensitivity)
Impedance	Driver Nominal Impedance: 8 ohms
	Driver Minimum Impedance: 7.6 ohms @10093Hz
	Driver Measured Impedance: 9.8 ohms @1kHz
Frequency Response	50Hz–20kHz (±7.5dB)
Crossover Frequency	4000Hz, first order high-pass filter
Dispersion Angle	90 degrees conical @2kHz octave (-6dB)

PHYSICAL – WOOFER:

Cone	Polypropylene with rubber half-roll (up) surround
Magnet	20 oz. (567g), strontium ferrite ceramic
Voice Coil	1.4 in. (36mm), copper wire over aluminum former
Terminals	Quick disconnect type, spade lugs

PHYSICAL – TWEETER:

Diameter	2.05 in. (52mm) housing with 1 in. (26mm) diameter balanced-drive dome
Magnet	2 oz. (57g), ceramic
Voice Coil	0.53 in. (13.5mm), copper wire and ferrofluid

MECHANICAL:

Basket	20-gauge stamped steel with black enamel finish
Outside Diameter	8.02 in. (203.7mm)
Mounting Bolt Circle.....	7.625–7.688 in. with 8 obround holes equally spaced at 45 degrees
Cutout Diameter	7.2 in. (182mm)
Mounting Depth	3.85 in. (94mm)
Net Weight.....	3.5 lbs. (1.6kg)

THIELE-SMALL PARAMETERS:

Pe	50W	Qts.....	0.68	BL.....	7.5 Tm	Sd	33.2 in. ² (214cm ²)
Fs	52Hz	Qes.....	0.87	Efficiency, h.....	0.47%	Mms.....	20.6g
Xmax.....	0.21 in. (6mm)	Qms.....	3.1	Vas.....	29.2 liters, 1782 cu.in.	Cms	0.45 uM/N
Re	7.2 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 ± 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.

8A50 SERIES OVERVIEW

THIS SPEC

Model No.	Driver	Transformer	Transformer Primary Taps	Mounting Depth*	Outside Diameter	Net Weight	Sensitivity**	System Specs Frequency Response	Dispersion***
8A50	8" 50W coaxial	---	---	3.85"	8.02"	3.5 lbs.	89.6 dB	50Hz–20kHz (± 7.5 dB)	90°
8A50-T870	8" 50W coaxial	70V	1, 2, 4, 8W	6.25"	8.02"	4.4 lbs.	92.0 dB	40Hz–19.4kHz (± 6 dB)	90°
8A50-T870-S	8" 50W coaxial	70V	1, 2, 4, 8W	4.10"	8.02"	4.4 lbs.	90.6 dB	40Hz–19.0kHz (± 6 dB)	90°
8A50-TM1670	8" 50W coaxial	70V	4, 8, 16W	6.25"	8.02"	5.5 lbs.	91.8 dB	40Hz–17.7kHz (± 6 dB)	90°
8A50-TM1670-S	8" 50W coaxial	70V	4, 8, 16W	4.10"	8.02"	5.5 lbs.	90.8 dB	40Hz–17.4kHz (± 6 dB)	90°
8A50-TS3270	8" 50W coaxial	70V	8, 16, 32W	7.80"	8.02"	8.2 lbs.	91.1 dB	40Hz–17.5kHz (± 6 dB)	90°

* Minimum depth required to be rear-mounted to a grille in an enclosure.

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

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

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) 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.