

Model: 8A50 (series)

8" 50W Coaxial Speaker

Description:

Model 8A50 is a 50W coaxial speaker, the flagship of Lowell's A-series speakers that represent an upgrade in performance over standard commercial coaxial drivers—with greater power handling, lower distortion, and smoother musical sound. The 8A50 is engineered to meet the demand for very high quality music reproduction and paging in large venues such as upscale restaurants, lounges, hotel lobbies, retail stores and similar locations where the listening experience is a key part of customer satisfaction.

Features:

- 20 oz. LF magnet coupled with 1.4" copper voice coil drive a polypropylene cone with half-roll rubber surround for long cone travel and good edge damping.
- Post-mounted tweeter is a 1" balanced-drive dome protected by Ferrofluid and a first-order high-pass filter.
- Frequency response is 40Hz-20kHz+6dB with a crossover at 4 kHz. Loudspeaker's capacity to deliver a wide angle of sound distribution (110-degrees) over a large area with uniform response and voice clarity ensures complete coverage with minimum units.
- Speaker frame is stamped 20-ga. steel with black enamel finish and zinc plated backplate.
- Meets or exceeds all applicable EIA standards.
- Available with factory-wired transformer (8W, 16W or 32W) or in a shallow depth. Models with a transformer include a bracket mounted to top of magnet for secure support.

A&E Specifications:

The 8" speaker shall be Lowell Model 8A50. The speaker shall be furnished and installed at each designated location on the architectural plans and/or as specified herein. The speaker shall be of the coaxial type having electrically independent high and low frequency transducers. The low frequency section shall have an 8" diameter polypropylene cone and the high frequency section shall have a tweeter with a 1" balanced-drive dome. A built-in electrical crossover network shall be employed to accomplish the proper frequency division between the 2 drivers. The crossover frequency shall be at 4000Hz with a first order high-pass filter. The speaker shall be capable of producing a uniform audible frequency response over the range of 40Hz-20kHz+6dB with a dispersion angle of 110-degrees @ 2000Hz-6dB. The average sensitivity shall measure 90dB (SPL at 1W/1M). Rated power handling shall be 50 watts RMS. The low frequency voice coil shall have a diameter of 1.4" and shall operate in a magnetic field derived from a ferrite (ceramic) magnet having a nominal weight of 3.5 lbs. The high frequency voice coil shall have a diameter of 0.53" and operate in a magnetic field derived from a ferrite (ceramic) magnet



Speaker model 8A50 is available alone or with a factory-wired transformer.

Optional transformer is available in four models:



TLS3270



TLM3270A



TLM1670A



TLM870



Note: Speaker/transformer assemblies have the transformer mounted on the back plate (top of speaker as shown on model 8A50-TM1670 at left), which increases the overall depth of the assembly.



Two "shallow" models feature the transformer mounted sideways on the back plate of the speaker, with an added plate placed above it as shown on model 8A50-T870-S (bottom photo).

having a nominal weight of 2 oz. The voice coil impedance shall be 8 ohms. The speaker shall have a round, structurally reinforced stamped 20-ga. steel frame to maintain precise mechanical alignment and shall provide facilities for mounting a transformer. The speaker shall have an overall diameter of 8.08" with 8 obround holes equally spaced at 45-degrees on a 7.7" diameter mounting bolt circle. The overall depth shall not exceed 3.85" (not including transformer). External metal parts shall be finished in black enamel coating or zinc plating to resist rust and corrosion.

For 70.7 volt distributed systems: The 8A50 speaker shall be equipped with transformer model _____, factory mounted and wired. The transformer's primary voltage shall be 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 speaker/transformer assembly specified herein shall be referred to as the Lowell Model _____.

Compatible Components: (order separately)

Grilles (torsion): Speaker is not for use with torsion grilles unless IX-series backbox is used.

Grilles (screw): A8AW, CS8H, RS8-AW, WB8, WB8H

Model No.	Description	Taps	XFMR Power Rating	Assembly Depth*	Assembly Weight
8A50	8" speaker	---	---	3.85"	5 lbs.
8A50-TS3270	8" speaker #8A50 with xfmr #TLS3270	8, 16, 32W @ 70V	32W	7.8"	8.2 lbs.
8A50-TM3270	8" speaker #8A50 with xfmr #TLM3270A	8, 16, 32W @ 70V	32W	7.1"	6.7 lbs.
8A50-TM1670	8" speaker #8A50 with xfmr #TLM1670A	4, 8, 16W @ 70V	16W	6.25"	5.5 lbs.
8A50-TM1670-S	8" speaker #8A50 with xfmr #TLM1670A, shallow	4, 8, 16W @ 70V	16W	4.1"	5.5 lbs.
8A50-T870	8" speaker #8A50 with xfmr #TLM870	1, 2, 4, 8W @ 70V	8W	6.25"	4.4 lbs.
8A50-T870-S	8" speaker #8A50 with xfmr #TLM870, shallow	1, 2, 4, 8W @ 70V	8W	4.1"	4.4 lbs.

*The minimum depth required for the assembly to be rear-mounted into an enclosure.

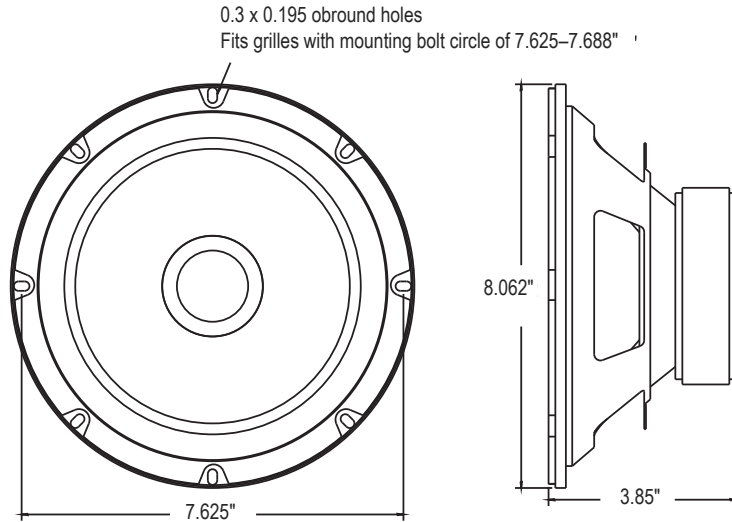
Spec. No. **2d-107**
(rev. 12.06.10)
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Performance:

Power Handling 50 watts RMS (nominal) measured per EIA Standard RS-426B
 Sensitivity 90dB Average SPL (measured 2.83V @ 1m)
 107 dB Maximum SPL (calculated based on power rating and measured sensitivity).
 Impedance 8 ohms (nominal), 8 ohms @180Hz (minimum)
 Frequency Response 40Hz-20kHz (nominal), 40Hz-20kHz (± 6 dB)
 Crossover Frequency 4000Hz, 1st order high-pass filter
 Dispersion Angle 110-degrees conical @ 2000Hz octave (-6dB)

Physical: Woofer

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

Physical: Tweeter

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

Mechanical:

Basket 20 gauge stamped steel with black enamel finish
 Outside Diameter 8.08 inch (205mm)
 Mounting Bolt Circle 7.625-7.688 inch with 8 obround holes equally spaced at 45 degrees.
 Cutout Diameter 7.2 inch (182mm)
 Mounting Depth 3.85 inch (94mm)
 Net Weight 3.5 lbs. (1.6kg)

Thiele-Small Parameters:

Pe50W	Qts0.68	BL7.5Tm	Sd33.2 in ² , 214cm ²
Fs52Hz	Qes0.87	Efficiency, h0.47%	Mms20.6g
Xmax0.21 in., 6mm	Qms3.1	Vas29.2 liters, 1782 cu.in	Cms0.45mm/N
Re7.2W			

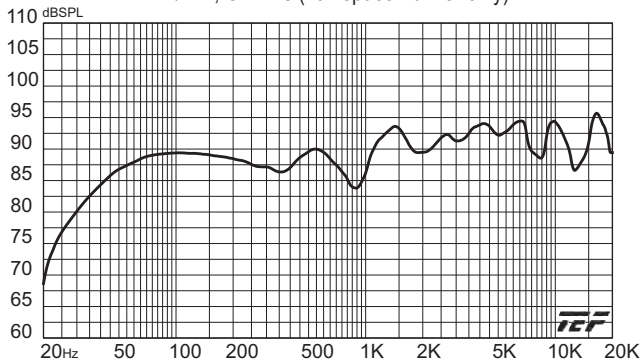
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Performance Tests:

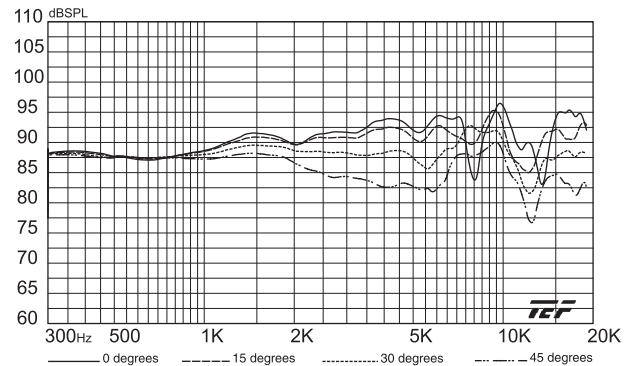
Lowell speakers are thoroughly tested to provide solid data that accurately reflects the performance of production drivers. Performance tests are conducted on randomly selected final production assemblies. Testing equipment includes the GoldLine TEF-20 analyzer and a LinearX LMS measurement system. Power handling is based on EIA standard RS-426B. **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: *Average* - which is based on a computer measurement and calculation of the log average SPL over the given frequency response bandwidth with 1 watt input measured at 1 meter. *Maximum* - which is calculated based on the average sensitivity and the power rating of the driver. **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, off-axis frequency response and impulse curves are presented. **Off-axis Response** is another way of looking at the polar response of a speaker. It is especially useful in displaying the relative change in the sound of a speaker as one increasingly moves off-axis. Each curve is the average of response over a 15° range. Therefore, the 0° curve is the average of -5°, 0°, and +5°. The 15° curve is the average of -10°, -15°, -20°, +10°, +15°, and +20°. The final graph is an **Impulse Curve** which displays how well the electromagnetic motor and the mechanical suspension work together to control the motion of the cone.

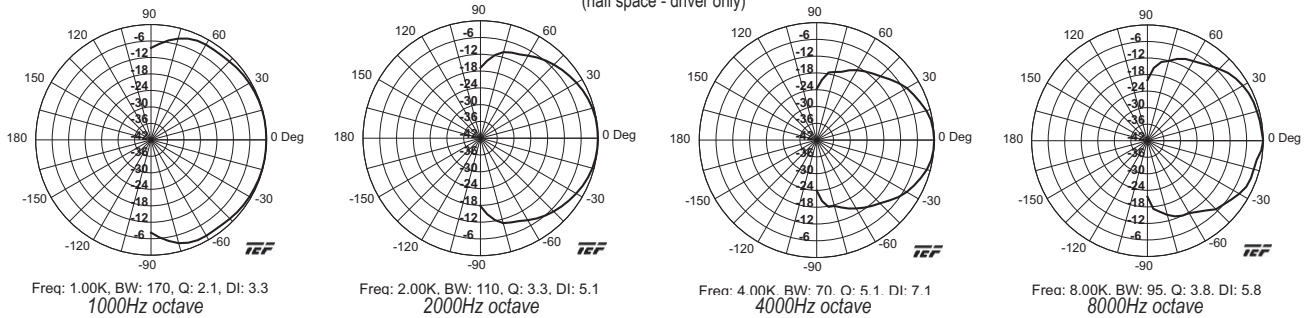
SPL vs. Frequency
1W / 1M, On Axis (half space - driver only)



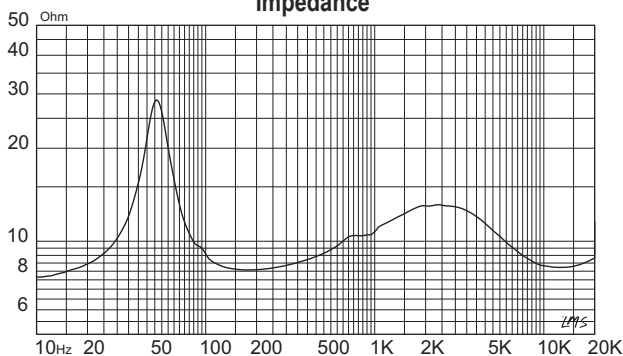
SPL vs. Frequency
1W / 1M, Off Axis (half space - driver only)



Polar Data
(half space - driver only)



Impedance



Impulse

