

6 1/2" in-ceiling Coaxial Speaker System

Description:

The ES-62T speaker system produces excellent intelligibility for speech and full-frequency response for soundmasking, soundmask-music, making it ideal for retail, commercial, industrial, institutional and residential applications. This self-contained, recessed, in-ceiling speaker system with 6-1/2" (165mm) coaxial driver has a high-frequency PEI tweeter with acoustic lens that provides the kind of crisp, high-frequency response that's expected from high-quality coaxial speaker designs. The ported enclosure is tuned for extended low-frequency response. And the speaker's wide dispersion can actually reduce the number of speakers required to produce even coverage in distributed speaker systems. Built-in reversible mounting dogs aid fast installation, while allowing speaker to be mounted in drywall, wood, tile or almost any type of ceiling with thickness up to 2.25" (57mm).

Features:

- 6-1/2" coaxial driver (7.5 lbs. each)
- Low-profile front baffle formed from UV-rated high-impact plastic
- Durable 20-ga. zinc-plated steel enclosure
- Built-in reversible mounting dogs for fast installation
- Ported enclosure tuned for extended bass response
- Tap selector switch mounted behind grille for internal 32W transformer. Tap selections for 25V, 70V or 100V speaker systems and 4 ohm (UL minimum) transformer bypass position.
- Removable (four-pin) Phoenix-style connector with two terminals for input to speaker, and two parallel terminals for output to next speaker in string.
- Mounting C-ring and two support rails prevent sagging when installed in lay-in tile ceilings.
- White, press-fit, fine-mesh grille with scrim & pull tool
- Paper template to assist in cutting mounting holes
- Plastic shield to protect speaker when painting
- Third party listings:
 - UL1480 fifth edition general signaling (USA)
 - UL2043 suitable for use in return air plenum space
 - CSA C22.2 No. 205-M1983 general signaling (Canada)
- Sold in pairs

Optional: (order separately)

- **ES-6-RIB:** Rough-in bridge for new construction (drywall or plaster ceiling) before finished ceiling is installed.
- **ES-6-RTR:** Retrofit trim ring mounts ES-62T to an existing (installed) 8" speaker enclosure with 11.25" dia. mounting bolt circle. Includes hardware and rubber bumpers. **Minimum enclosure depth:** 9.5" from edge of ring that touches ceiling to rear of enclosure. **Minimum backbox opening diameter:** 10.375" (allows dog ears to fit through backbox opening). **Note:** Backbox must have straight sides (not tapered).



The UL Listed ES-62T includes a 6-1/2" coaxial driver, transformer, enclosure, fine-mesh grille with scrim and pull tool, support rails, C-ring, plastic paint shield, and paper template to assist in cutting mounting holes.

OPTIONAL: (order separately)

ES-6-RIB:
rough-in bridge



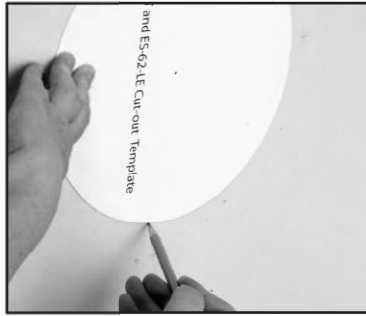
ES-6-RTR:
retrofit trim ring



Model No.	Description	Speaker	Transformer	Grille	Enclosure	C-ring	Rails
ES-62T *	UL Listed in-ceiling speaker system	6-1/2" coaxial	32W	press-fit	ported / steel	mounting	1-pr.
ES-6-RIB	Rough-in bridge	---	---	---	---	---	---
ES-6-RTR	Retrofit trim ring	---	---	---	---	---	---

* Speakers are sold in pairs.

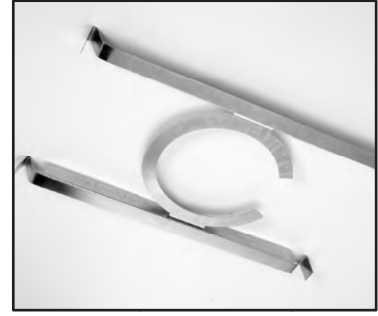
Easy Install Features:



Use the paper template to mark the ceiling or wall for cut-outs.



A plastic shield is included to protect the speaker should you need to paint the enclosure.



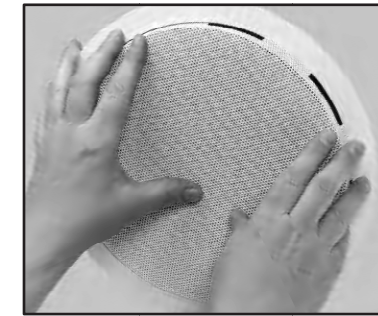
Support rails and C-ring distribute speaker weight to avoid sagging ceiling tiles.



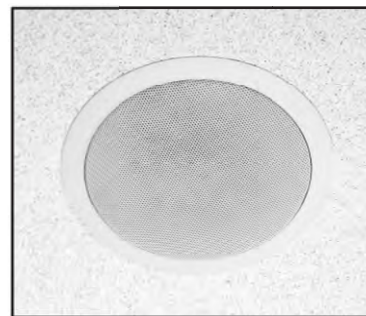
Use dog ears to speed installation in almost any type of ceiling.



Front tap selector switch is protected behind the grille.



Press the fine-mesh grille into position.



The ES-62T blends beautifully with acoustic tile ceilings.

Optional retrofit trim ring (ES-6-RTR):



Optional retrofit trim ring mounts speaker to existing (installed) enclosure with 11.25" dia. mounting bolt circle.

Minimum enclosure depth: 9.5" from edge of ring (touching ceiling) to rear of enclosure.

Minimum backbox opening diameter: 10.375" (allows dog ears to fit through backbox opening). Note: Backbox must have straight sides (not tapered).

Performance Specifications:

Power Handling: 50W RMS (at 8 ohms) measured per EIA Standard RS-426B

Sensitivity: 88.6 dB log average SPL (at 8 ohms) @ 1W/1M over the frequency response range, measured in half-space.

Maximum SPL: 105.6 dB (calculated based on power rating and measured 8 ohm sensitivity).

Impedance: 8 ohms (nominal), 4.0 ohms @ 12461 Hz (minimum). *Note: Selector knob shows 4 ohm position as mandated by UL for minimum impedance.*

Frequency Response: 64Hz – 20kHz ± 6dB

Dispersion Angle: 120° conical @ 2kHz octave (-6dB)

Crossover Frequency: 3kHz

Transformer Taps: 100V (32, 16, 8, 4.2W)
70V (32, 16, 8, 4, 2W)
25V (4.4, 2.2, 1.1, .55, .28W)

Mechanical:

Input Terminals: 4-conductor removable Phoenix-style connector.

Net Weight (speaker & grille): 7.5 lbs. (3.4kg)

Shipping Weight (pair): 22.4 lbs. (10.2kg)

Mounting Accessories:

C-ring: One included with each speaker

Tile Support Rails: Two included with each speaker

Rough-in Bridge: Optional rough-in bridge for new construction (drywall or plaster ceiling) before the finished ceiling is installed. Order Model No. ES-6-RIB separately.

Physical — Full range speaker:

Woofer Cone: Specially formulated polypropylene

Surround: Rubber

Woofer Magnet Weight: 15.45 oz. (438.1g)

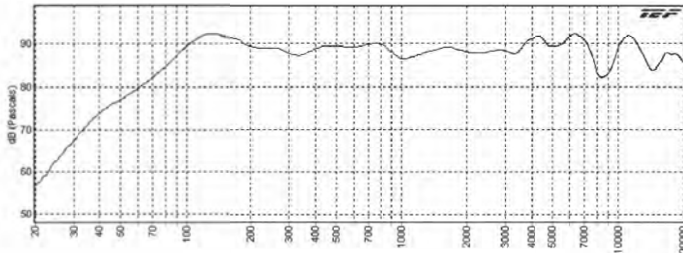
Woofer Voice Coil dia.: 1" (25.47mm)

Tweeter Cone: PEI with acoustical lens

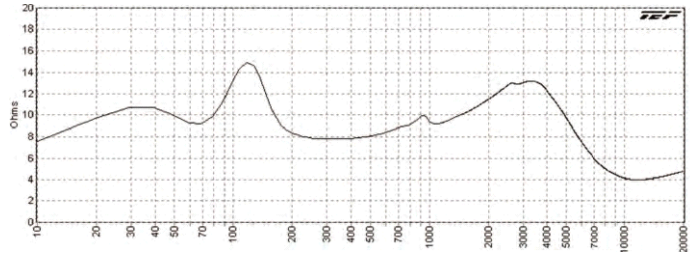
Tweeter Magnet Weight: 0.64 oz. (18.09g)

Tweeter Voice Coil dia.: 1" (25.47mm)

SPL vs. Frequency
1W/1M

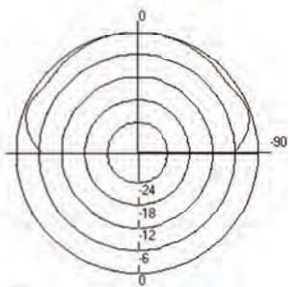


Impedance

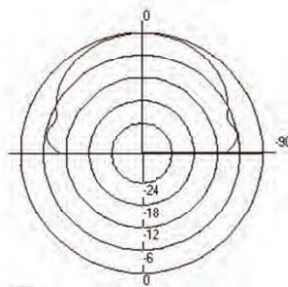


Impedance reading expected from a typical 1kHz impedance meter is 9.5 ohms with the selector switch in the 4 ohm position.

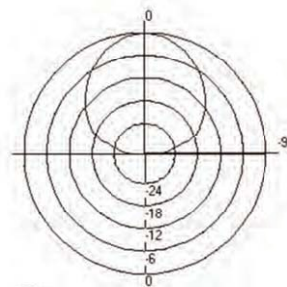
Polar Data 180°
Half space mounting



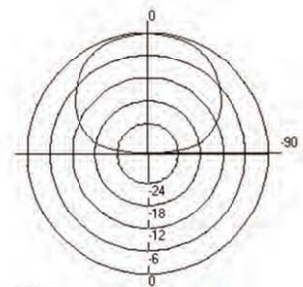
1000Hz octave



2000Hz octave

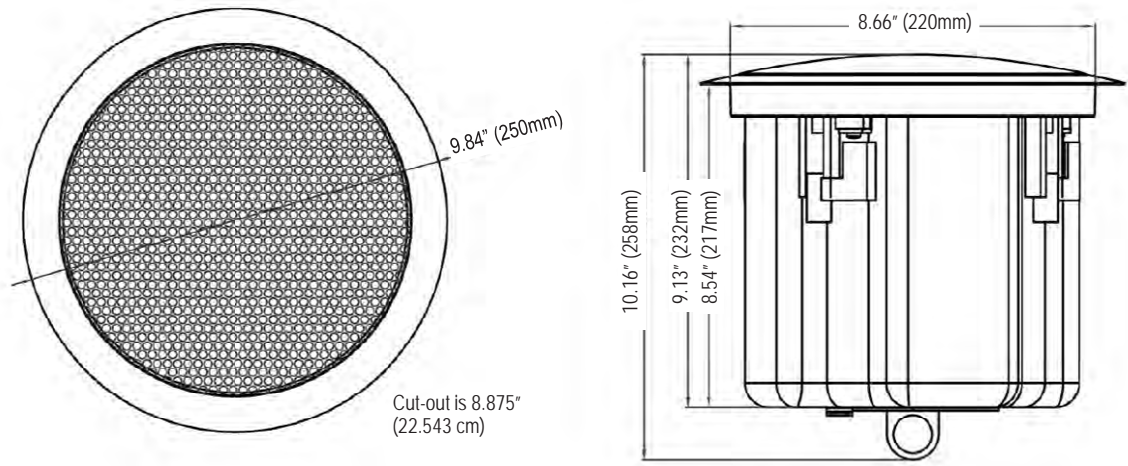


4000Hz octave

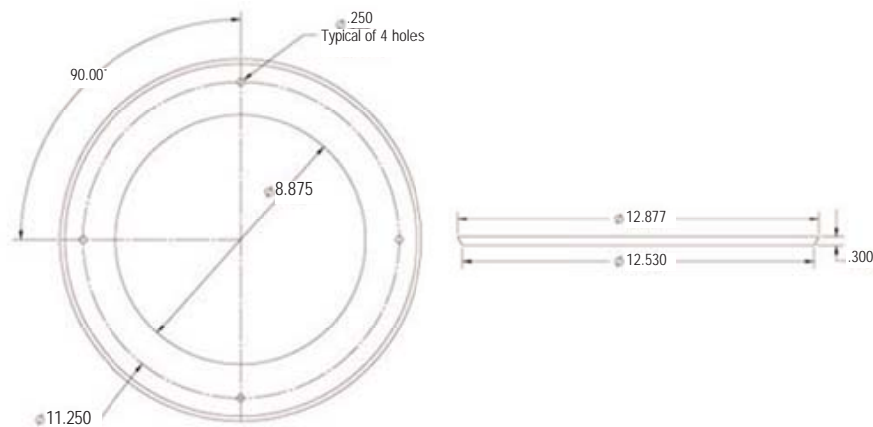


8000Hz octave

**ES-62T
Speaker System**



**ES-6-RTR
Optional retrofit trim ring
(order separately)**



A&E Specifications:

The loudspeaker system shall be AVLELEC model ES-62T. It shall include a high-performance 6-1/2" coaxial loudspeaker, ported bass reflex enclosure and press-fit grille for recessed ceiling installation. The frequency response shall be 64Hz-20kHz \pm 6dB. The sensitivity shall be 88.6 dB log average @ 1W/1M over the frequency response range, measured in half-space.

The speaker shall be constructed of a polypropylene cone with rubber surround and a PEI tweeter. The woofer magnet weight shall be a minimum of 15.45 oz. (438.1g) and the woofer voice coil diameter shall be 1" (25.47mm). The transformer shall have primary taps for 100V (32, 16, 8 and 4.2 watt); 70V (32, 16, 8, 4 and 2 watt); and 25V (4.4, 2.2, 1.1, .55 and .28 watt) with a selector switch mounted on the front under the grille and will include a 4 ohm (UL minimum) transformer bypass position.

The enclosure shall be 20-ga. zinc-plated drawn steel with internal volume of 379 cu.in. It shall have a seismic-restraint ring tie-point on the rear for use where required by code or ordinance. It shall feature four dog-mount ears that allow it to be mounted in a ceiling with a maximum thickness of 2.25" (57mm). A template shall be provided to assist in cutting mounting holes. A rear access cable or flexible conduit entrance strain relief shall be provided with a termination cavity that encloses a four-pin Phoenix-style connector. The connector shall include two terminals for input to the speaker and two parallel terminals for output to the next speaker in the string.

The system shall include a C-ring for use in reinforcing the edge of drywall ceiling cutouts, or for use with the included support rails to guard against ceiling tile sag from speaker weight. Front baffle

shall have a diameter of not more than 9.84" (249.9mm). Press-fit fine mesh grille shall be 20-ga. CRS with UV rated powder coating (epoxy white), and shall include a thin piece of white scrim and a grille-pulling tool.

Test Methodology:

AVLELEC ES-series speaker systems are thoroughly tested to provide specifiers and contractors with solid, accurate data. Test equipment includes the GoldLine TEF-20 analyzer.

- **Power Handling:** specification is based on E.I.A. Standard RS-426B.
- **Frequency Response:** describes the usable response range defined by a \pm 6dB window, which is useful in predictive engineering calculations.
- **Sensitivity:** is a computer calculation of the log average sound pressure level (SPL) over the entire engineering bandwidth as given in the Frequency Response (\pm 6dB).
- **Maximum SPL:** is calculated based on the Power Handling and the measured log average Sensitivity where Maximum SPL = (Sensitivity @ 1W1M) + 10 log (Power Handling).
- **Dispersion Angle:** is defined as the angle of coverage that is no more than 6dB down from the on-axis value averaged over the 2kHz octave band. Since speech intelligibility is dependent upon the 2kHz octave, this specification is useful in designing voice reinforcement and music systems that provide even coverage and intelligibility. The polar plots illustrate how the system performs when hung in free space (360°), or in half-space (180°) in the case of a recessed speaker.