

IM12Q Series

12 in. 8ohm 250W ready-to-install speaker system



- Includes driver, grille and enclosure with forged eyebolts
- Optional transformer

High performance, ready-to-install loudspeaker system for suspended installations features a 12 inch 8ohm 250W driver mounted in a 3 cu.ft. acoustic enclosure with white grille. The iMount® speaker system reproduces music with exceptional quality and is ideally suited to high ceiling/high energy applications like clubs and bars, sporting facilities, concourses, hotel ballrooms, transportation terminals, convention centers and exhibit halls. Fast installation with premounted eyebolts. Optional transformer.

Features

- **Driver (12Q250):** 12 in. 8ohm 250W driver with robust motor structure, 77oz. magnet and 4 inch edgewound aluminum voice coil. The 5.3 inch mylar dome tweeter features a 42oz. magnet and 1.75 inch voice coil for an exceptional combination of power handling and efficiency. A built-in crossover network with fourth order high-pass and fourth order low-pass filter accomplishes proper frequency division between the two drivers. Frequency response extends down to 68Hz (+6dB), and sensitivity is a highly efficient 100.8dB at 1W1M. The loudspeaker frame is cast aluminum with a black corrosion-resistant finish. A steel plate is mounted over the speaker to protect it during shipping and installation. Remove it to mount the grille.
- **Optional Transformer (TLS-10070):** For superior music fidelity in 70V distributed applications, iMount Speaker Model IM12Q-TS100-3SW includes a 100W transformer with tap selector switch behind the grille. This 20/20 AudioVision™ transformer offers true 20Hz–20kHz performance. *AVLELEC 20/20 AudioVision™ transformers have full frequency response and high power handling which allows the speaker to operate at full potential while providing a stable load to the amplifier. The transformer allows a distributed speaker system to sound imperceptibly the same as a transformer-less direct to voice coil system but with easier wiring, less expense and reduced labor.*
- **Enclosure:** 3 cu.ft. precision-formed steel enclosure (23.937 in. x 18.19 in. x 12 in.) features anti-vibration ribs, soundstop board, 1-1/2 in. thick premium acoustic lining, and forged 1/4 in.–20 eyebolts screwed into riveted mounting nuts for secure suspended installation using flyware by others. Externally accessible connections are terminated through a 4 in. x 4 in. flush cover plate. Black powder epoxy finish.
- **Grille:** Square perforated steel grille is ideal for applications where the speaker is suspended in a tile, sheetrock or plaster ceiling. White powder epoxy finish.



A&E Specifications

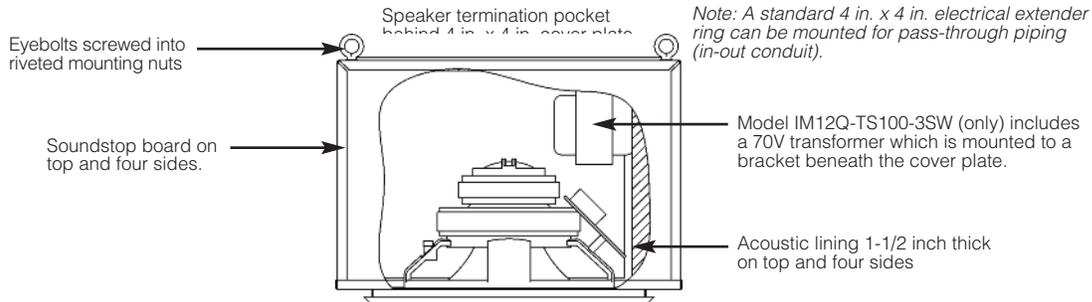
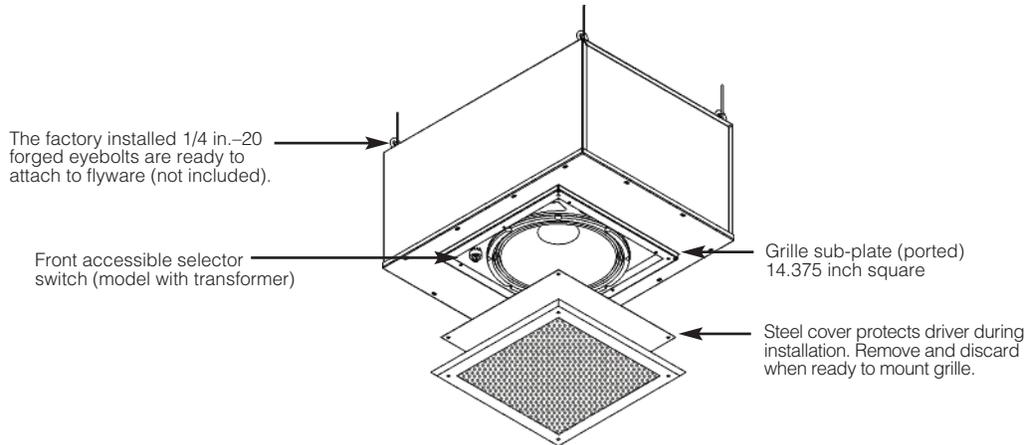
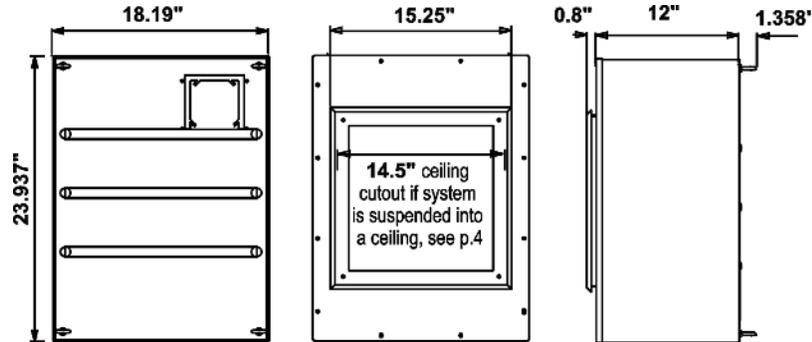
The speaker system for suspended installation shall be AVLELEC iMount® Model _____ (IM12Q-3SW, IM12Q-TS100-3SW) with 12 in. 250W driver mounted in a welded steel acoustic en-closure (23.937 inch x 18.19 inch x 12 inch; 3 cu.ft. volume) featuring anti-vibration ribs, soundstop board, 1-1/2 inch thick acoustic lining, and forged 1/4 inch–20 eyebolts screwed into riveted mounting nuts for suspended installation using flyware by others. It shall include a white perforated steel architectural grille. System frequency response shall be _____ with average sensitivity _____. Dispersion shall be _____ degrees @2000Hz measured 6dB down. System driver shall have a motor structure with 77 oz magnet, 4 inch edgewound aluminum voice coil, 5.3 inch mylar dome tweeter with 42 oz. magnet and 1.75 inch voice coil. It shall include a built-in crossover network with a fourth order high-pass and fourth order low-pass filter.

IM12Q-TS100-3SW (only): For distributed applications, the speaker shall include a wired 70V 100W transformer with adjustable tap selections on front of assembly.

Model No. Summary

Model No.	Description	Driver	Transformer (70V)	Grille	Enclosure	Mtg Hardware	Weight (lbs.)
IM12Q-3SW	iMount Speaker System	12Q250	----	square white	3 cu.ft.	1/4in.–20 forged eyebolts	69
IM12Q-TS100-3SW	iMount Speaker System	12Q250	TLS-10070	square white	3 cu.ft.	1/4in.–20 forged eyebolts	75

Technical Drawings



Specifications

Driver Model No.	Driver Rating	Driver Size	Driver Type	System Volume	System Dimensions (approx)	System Response	System Dispersion *	System Sensitivity (SPL) **
12Q150	250W (8 ohm)	12 in.	Direct radiator LF Coax. compression HF	3 cu.ft.	12in x 18in x 24in	68Hz-19.5kHz ±6dB 63Hz-20kHz ±7.2dB	100 degrees conical @2000Hz -6dB	100.8dB Avg. @1W/1M 124.8dB Max. @250W/1M

An online spacing calculator is also available.

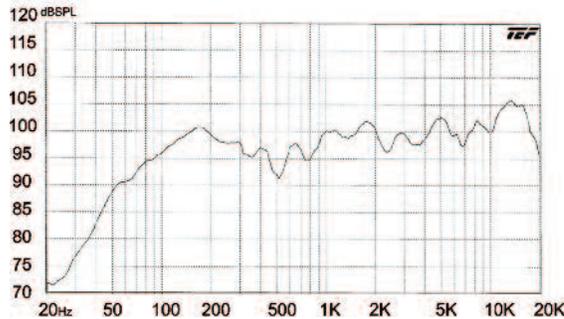
** Maximum sensitivity is calculated based on the power rating and measured sensitivity.

Transformer Specifications (Model IM12Q-TS100-3SW only)

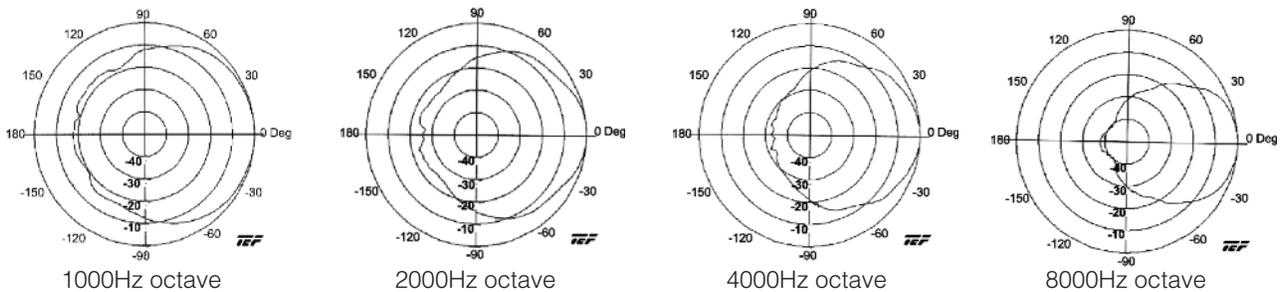
Transformer Model No.	Primary Voltage	Power Rating	Primary Taps	Secondary Impedance	Core Size	Insertion Loss	Frequency Response
TLS-10070*	70V	100W	100, 64, 32, 16W	8, 4 ohms	1.375 x 1.75 in.	.6dB	20Hz-20kHz +1dB

* AVLELEC's 20/20 AudioVision Series offers true 20Hz-20kHz performance for full fidelity audio in distributed applications.

SPL vs. Frequency (1W/1M)



Polar Data (360°)



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 +6dB) 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 power rating of the speaker.

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.

Dispersion Angles: For more information on dispersion angles visit lowellmfg.com to download the white paper "Distributed System Speaker Spacing for the Integrator" or try the online Speaker Spacer app for quick calculations.

- **Conical Dispersion** is the angle of coverage where the SPL at an equal distance from the speaker is not more than 6dB down from the on-axis value over the 2000Hz octave band. Conical Dispersion can be used to compare two speakers, if the conical dispersion is provided for each.
- **Linear Dispersion** is the angle of coverage where the SPL at the average listening height (where listeners' ears would be) is not more than 6dB down from the on-axis value over the 2000Hz octave band. Linear Dispersion is used to determine the proper speaker spacing in distributed speaker systems.

Heard Everywhere Since 1947

Installation & Wiring

MOUNTING NOTE: The speaker system must be mounted in accordance with local, state, Federal and industry regulations. It is the owner and/or user's responsibility to evaluate the reliability of any rigging/support method for their application. Rigging/installation should be carried out only by experienced professionals.

There are three basic ways to install this speaker system:

1. Hang the system using the installed forged eyebolts and flyware (by others) so that it is suspended in an open area (Fig.1).
2. Hang the system using the installed forged eyebolts and flyware (by others) so that it is suspended into a rigid or tile ceiling (Fig.2).
3. Hard mount or "rear anchor" the system to structural members or unistrut using bolts by (others). *Not pictured.*

Typical Wiring Method: (Fig.3)

Remove the 4 in. x 4 in. cover plate located on the rear of the enclosure. Remove the knockout plug in the plate and install a UL Listed conduit connector or cable clamp as appropriate. Connect the field signal wiring to the two conductors sticking out of the rear of the enclosure (red=positive, black=negative.) Push connections and all excess wire into the enclosure to one side of the transformer bracket. Re-attach the 4x4 cover plate.

Alternate Wiring Method (in/out conduit): (Fig.4)

Use when in/out conduit is specified: Remove the 4 in. x 4 in. cover plate located on the rear of the enclosure. Install an approved 4 x 4 extender ring, attaching it to the mounting holes where the cover plate was secured. Select wiring entry positions on the side of the extender ring and remove the corresponding knockouts. Install conduit connectors and secure conduit. Make wiring connections (red=positive, black=negative). If the unit is being installed above a ceiling, push wiring and connectors into the enclosure to one side of the transformer bracket.

Transformer Settings: (Fig.5)

After the speaker system is installed, locate the tap selector by the speaker cone. **IMPORTANT! Before turning power on,** use a screwdriver to turn the switch counter-clockwise to the lowest tap setting. Then turn the switch clockwise incrementally until you reach the setting desired. Starting at the lowest position avoids accidental selection of the wrong tap. The selector switch will be covered when the grille is mounted.

Grille Installation:

Remove and discard the plate that protected the speaker during shipping. Mount the perforated grille over the speaker cone using 8-32 screws (provided), installing it in the holes previously used by the cover plate.

Fig.1: Suspended in an open area (360 degree full space mounting).

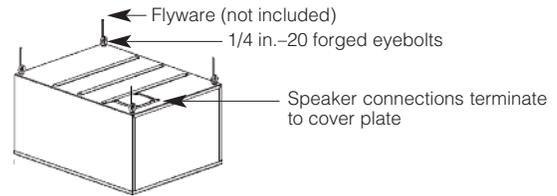


Fig.2: Suspended into a rigid or tile ceiling (180 degree half space mounting). Note: Load support is on eyebolts, not ceiling.

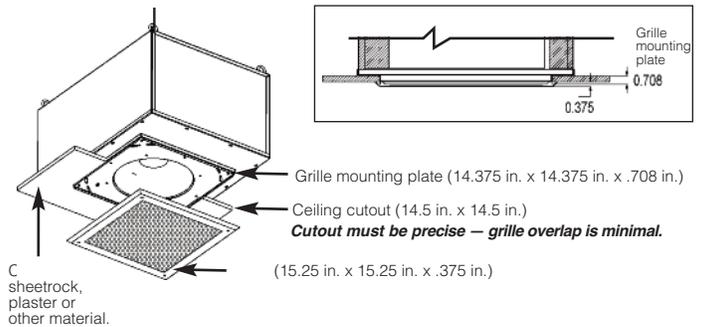


Fig.3: Typical wiring diagram.

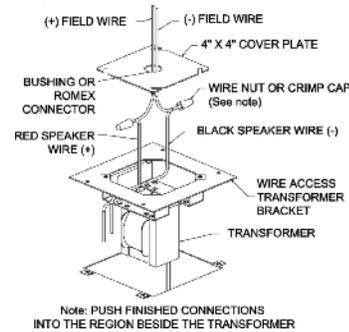


Fig.4: Wiring diagram when in/out conduit is specified.

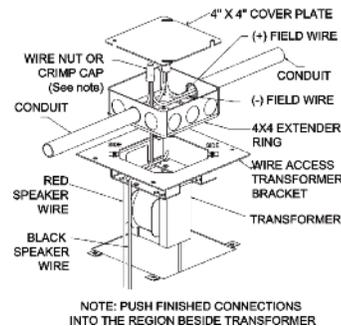


Fig.5: Transformer power tap settings.

Switch Position	Transformer TLS-10070
1	16
2	32
3	64
4	100
5	OFF
6	OFF