

# IMC12Q Series

## 12 in. 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 in. 250W (8 ohm) driver mounted in a 2.0 cu.ft. cylindrical acoustic enclosure to reproduce music with exceptional quality. It's ideal for high energy, high ceiling applications like clubs and bars, sporting facilities, concourses, hotel ballrooms, transportation terminals, convention centers and exhibit halls. Fast installation with premounted eyebolts. Optional 70V transformer (32W or 100W).

### Features

- **Driver (12Q250):** 12 in. 250W (8 ohm) driver features a robust motor structure with 77oz. magnet and 4 inch edge-wound aluminum voice coil. The 5.3 in. mylar dome tweeter features a 42oz. magnet and 1.75 in. voice coil for an exceptional combination of power handling and efficiency. A built-in crossover network with a fourth order high pass and fourth order low pass filter accomplishes proper frequency division between the two drivers. Frequency extends down to 70Hz ( $\pm 6$ dB) and sensitivity is a highly efficient 100.3dB at 1W/1M. The driver frame is cast aluminum with a black corrosion-resistant finish. The driver is mounted in the enclosure with terminations accessible through a top mounted cover plate.
- **Enclosure:** 2.0 cu.ft. precision-formed steel cylindrical enclosure (21 in. x 15.125 in.dia.) features 1-1/2 in. thick pre-mium 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. White powder epoxy finish. *Note: For architec-tural appeal, a 3 cu.ft. cylindrical enclosure is available by special order. Call for model number and pricing.*
- **Grille:** Round perforated steel grille, white powder epoxy finish.
- **Optional Transformer:** For superior music fidelity in 70V distributed applications, a 20/20 AudioVision™ transformer (32W or 100W) offers true 20Hz–20kHz performance. The tap selector switch is accessible through an opening in the grille (screwdriver adjustable). See chart for model number. *AVLELEC 20/20 AudioVision™ transformers have full frequency re-sponse and high power handling which allows the speaker to op-erate 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.*

### Model No. Summary

Model No.	Description	Driver	Transformer (70V)	Grille	Enclosure	Mtg Hardware	Weight (lbs.)
IMC12Q-2W	iMount Speaker System	12Q250	-----	round white	2.0 cu.ft. cyl.	(3) 1/4in.-20 forged eyebolts	46
IMC12Q-TS32-2W	iMount Speaker System	12Q250	TLS-3270 (32W)	round white	2.0 cu.ft. cyl.	(3) 1/4in.-20 forged eyebolts	48
IMC12Q-TS100-2W	iMount Speaker System	12Q250	TLS-10070 (100W)	round white	2.0 cu.ft. cyl.	(3) 1/4in.-20 forged eyebolts	52



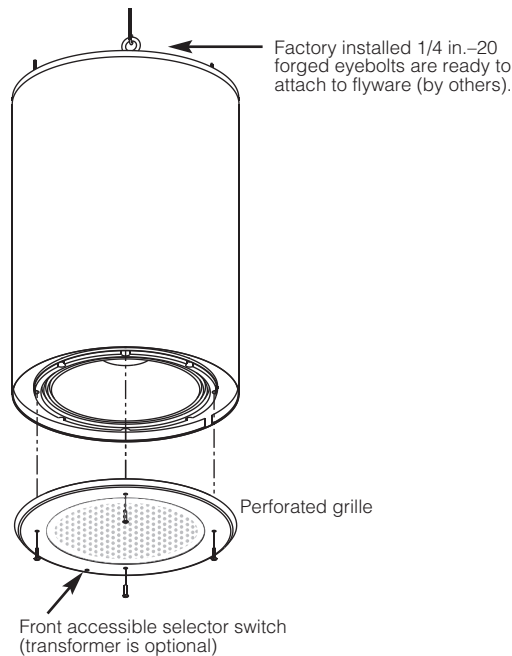
### A&E Specifications

The speaker for suspended installation shall be AVLELEC iMount® Model \_\_\_\_\_ which shall feature a 12 in. 250W (8 ohm) driver mounted in a cylindrical steel acoustic enclosure (21 in. x 15.125 in.dia.; 2.0 cu.ft. volume) with white finish, 1-1/2 inch thick acoustic lining, and forged 1/4 inch–20 eyebolts screwed into riveted mounting nuts for suspended installation using fly-ware by others. It shall include a perforated steel architectural grille with white finish. System frequency response shall be \_\_\_\_\_ with average sensitivity \_\_\_\_\_. Dispersion shall be \_\_\_\_\_ degrees @2000Hz measured 6dB down. System shall have a driver with 77oz. magnet and 4 inch edgewound aluminum voice coil; and 5.3 in. mylar dome tweeter with 42oz. magnet and 1.75 in. voice coil.

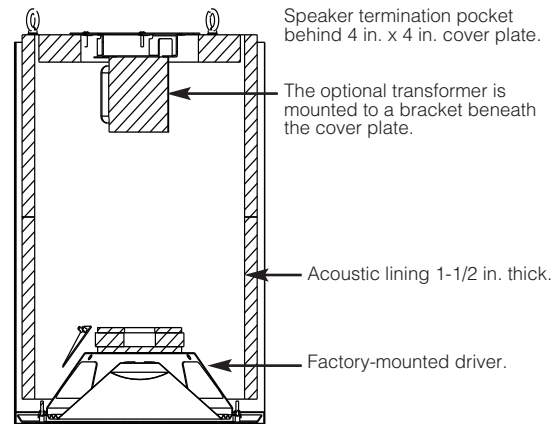
**Model No. IMC12Q-TS32-2W:** For distributed applications, the speaker shall include a wired 70V 32W transformer with screwdriver adjustable tap selections accessible through the grille.

**Model No. IMC12Q-TS100-2W:** For distributed applications, the speaker shall include a wired 70V 100W transformer with screwdriver adjustable tap selections accessible through the grille.

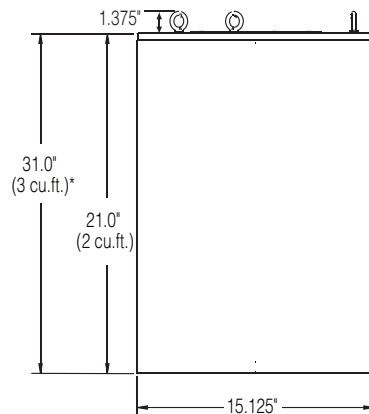
## Technical Drawings



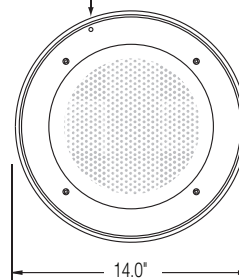
Note: A standard 4 in. x 4 in. electrical extender ring can be mounted for pass-through piping (in-out conduit).



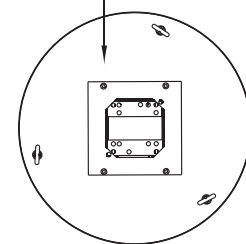
Note: A 3 cu.ft. enclosure is available by special order. Call for model number and pricing.



Access hole to transformer tap selector (screwdriver adjust)



4" x 4" top cover plate for easy access to transformer connections.



## Specifications (iMount IMC12Q Series)

Driver Model No.	Driver Rating	Driver Size	Driver Type	System Volume	System Dimensions	System Response	System Dispersion*	System Sensitivity (SPL)**
12Q250	250W	12 in. (8 ohm)	Direct radiator LF Coax. compression HF	2.0 cu.ft.	21in. x 15.125in. dia.	40Hz-20kHz±6dB	100 degrees conical @2000Hz -6dB	100.3dB Avg. @1W/1M 124.3dB Max @250W/1M

\* To determine speaker spacing, see the technical paper "Distributed System Speaker Spacing for the Integrator" — free download available at LowellMfg.com. An online spacing calculator is also available.

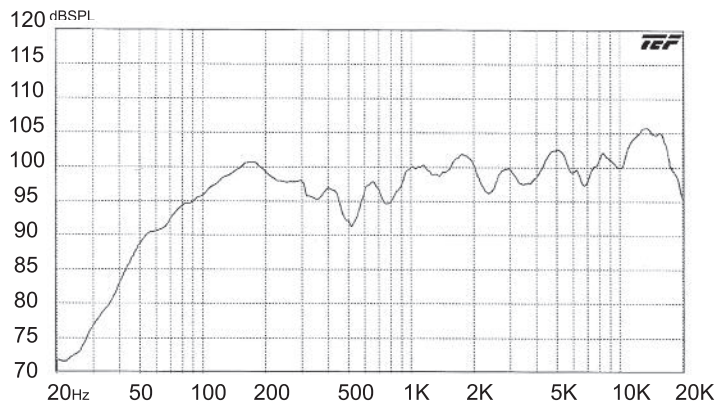
\*\* Maximum sensitivity is calculated based on the power rating and measured sensitivity.

## Transformer Specifications (Models with optional transformer only)

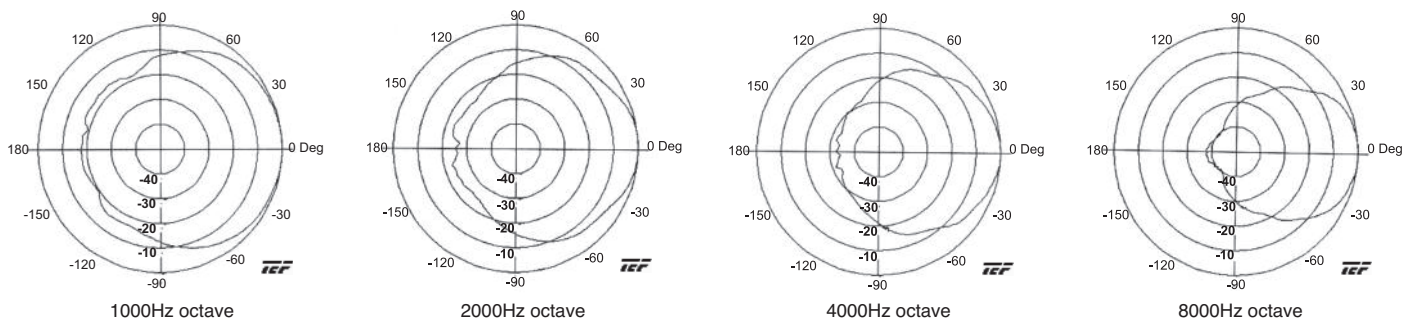
Transformer Model No.	Primary Voltage	Power Rating	Primary Taps	Secondary Impedance	Core Size	Insertion Loss	Frequency Response
TLS-3270*	70V	32W	32, 16, 8W	8, 4 ohms	1.25 x 1.25 in.	.6dB	20Hz-20kHz±1dB
TLS-10070*	70V	100W	100, 64, 32, 16W	8, 4 ohms	1.375 x 1.75 in.	.6dB	20Hz-20kHz±1dB

\* Lowell's 20/20 AudioVision<sup>TM</sup> Series offers true 20Hz-20kHz performance for full fidelity audio in distributed applications.

## SPL vs. Frequency



## Polar Data (360 degrees)



*\*Note: Measurements were taken in a 3 cu.ft.version.*

## 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](http://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.

## Installation & Wiring

The iMount cylindrical loudspeaker is designed to mount in an open area using the installed forged eyebolts and fly-ware (by others).

**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.

### Hanging Suspended by Forged Eyebolts:

The contractor shall employ the services of a qualified certified rigger for the installation of this product. Only load-rated hardware with a design factor of at least X5 should be used to suspend this product. The rigging system design is solely the responsibility of the installing contractor and the rigging design should be reviewed and certified by a professional structural engineer.

### Typical Wiring Method: (Fig. 1)

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 is positive, black is negative). Push the connections and all excess wire into the enclosure and to one side of the transformer bracket. Reattach the cover plate to the enclosure.

### Alternate Wiring Method (in/out conduit): (Fig. 2)

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 is positive, black is negative). If the unit is being installed above a ceiling, push the wiring and connectors into the enclosure and to one side of the transformer bracket.

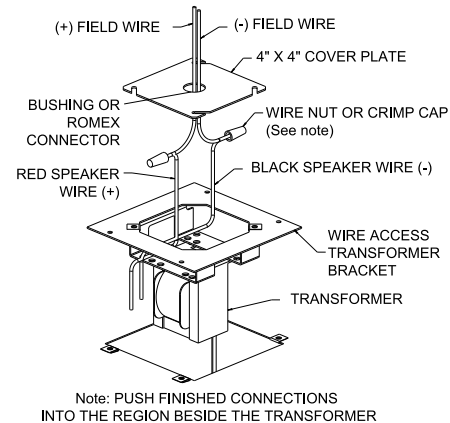
### Transformer Settings: (Fig. 3)

After the speaker system is installed, remove the grille from the enclosure. Locate the screwdriver adjustable speaker tap selector (next to the speaker cone). **Important! Before turning the power on** use a screwdriver to turn the switch counter-clockwise until you reach the lowest tap setting, then turn the switch clockwise incrementally to the desired tap setting. (Starting at the lowest position avoids accidental selection of the wrong tap.) The selector switch will still be accessible through a hole in the grille after the grille has been mounted.

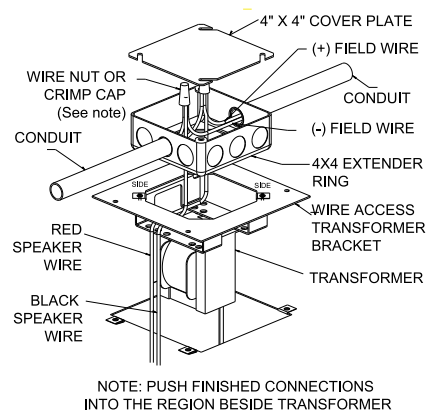
### Grille Installation:

Mount the perforated grille over the speaker cone using 8-32 screws provided.

(Fig. 1) Typical wiring diagram.



(Fig. 2) Wiring diagram when in/out conduit is specified.



(Fig. 3) Transformer power tap settings.

