Lowell HEARD EVERYWHERE®

12Q250

250-Watt 12" Coaxial Compression Driver

Quality Features

- Handles 250W input with 100.3dB average sensitivity.
- Professional grade, high-fidelity performance driver provides a superior price-to-value ratio.
- The 12Q250 driver is available premounted in Lowell's ***iMount™ Q-Series*** high performance systems for labor-saving suspended or bolt-in installation (see page 4).
- Optional transformer available with 100W or 32W transformer in high performance *20/20 AudioVision™* full bandwidth Series TLS, or standard Series TLM versions (see specs on page 2).

TLS10070 . . . . . .100W

TLS3270 . . . . . 32W

TLM10070 . . . . . .100W

TLM3270A 32W

Description

Model 12Q250 driver is a premium component in Lowell's iMount Q-Series high quality *'Consultant-choice'* speaker systems. The 250-watt 12-inch driver features a robust motor structure with a 77oz. magnet and a 4-inch edgewound aluminum voice coil. The 5.3-inch mylar dome tweeter features a 42oz magnet and a 1.75-inch 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 response extends down to 70Hz, and sensitivity is a highly efficient 100.3dB at 1watt, 1 meter.

The 12Q250 is engineered for high ceiling and/or high energy applications such as convention centers, hotel ballrooms, athletic and educational facilities, airport terminals, and entertainment venues. For distributed systems, 100W or 32W transformers are available in high performance and full bandwidth (TLS Series 20/20 AudioVision™) versions.

The loudspeaker frame is cast aluminum with a black corrosion-resistant finish.

Model 12Q250 is engineered to Lowell Manufacturing Company's specifications. It is manufactured in the E.U. and meets or exceeds all applicable EIA standards. Lowell also manufactures an extensive selection of architectural ceiling grilles, acoustic, protective, and special application backboxes and baffles to facilitate speaker installation wherever audio communications are desired.

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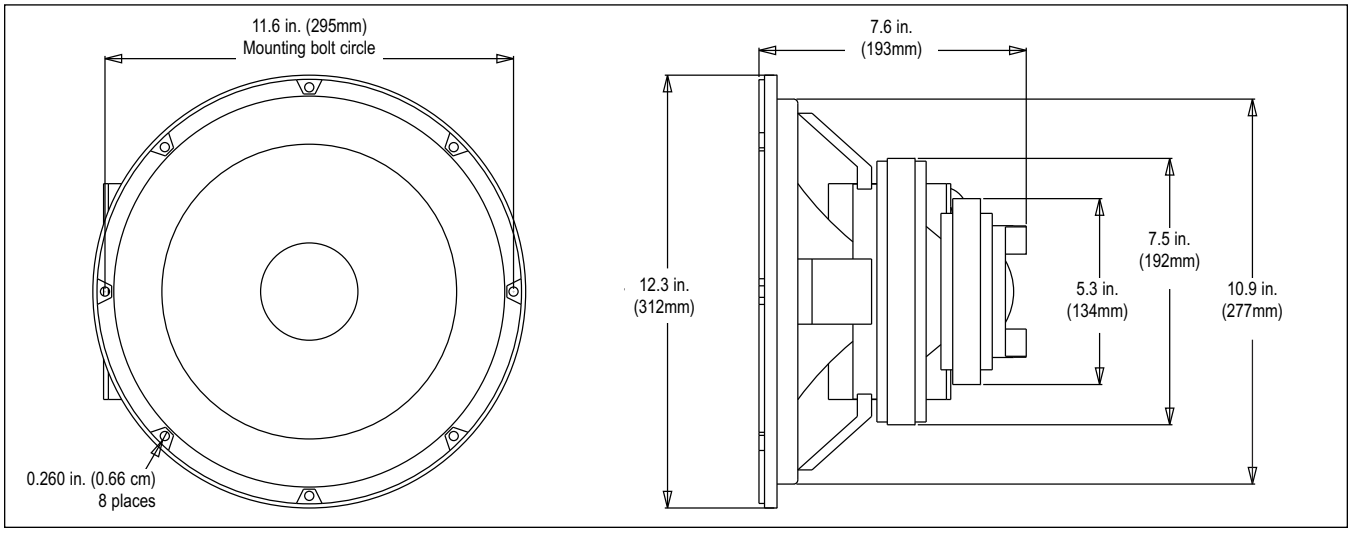


12Q250 Driver Specifications

PERFORMANCE

Power Handling	300 watts (nominal), 250 watts measured per EIA Standard 426-B
Sensitivity	106dB SPL (peak), 100.3dB SPL (avg) measured 2.83V @ 1m
Impedance	8 ohms (nominal), 5.8 ohms @270Hz (minimum)
Frequency Response	40Hz-20kHz (nominal), 70Hz-20kHz (±6dB) measured in 3cu.ft. enclosure w/ported subplate
Crossover Frequency	1200Hz, 4th order high pass filter, 4th order low pass filter
Dispersion Angle	100° @ 2000Hz octave (-6dB)

PHYSICAL - WOOFER

Cone Material	Paper cone with latex-treated cloth surround
Magnet Weight, Material	77oz. (2200g), ferrite
Voice Coil Diameter, Material	4 inch (100mm), edgewound aluminum wire
Top Plate Thickness	0.28in (7mm)
Terminals	Quick disconnect type - spade lugs
Outside Diameter	12.3 inch (312mm)

PHYSICAL - TWEETER

Cone (Dome) Material	Mylar
Magnet Weight, Material	42oz. (1200g), ferrite
Voice Coil Diameter, Material	1.75 inch (44mm),edgewound aluminum wire
Top Plate Thickness	0.34 inch (8.6mm)
Outside Diameter	5.3 inch (134mm)

MECHANICAL

Basket	Cast aluminum
Mounting Bolt Circle	11.6 inch (295mm) with 8 holes equally spaced at 45 degrees (EIA RS-278-B)
Cutout Diameter	10.95 inch (278mm)
Mounting Depth	7.6 inch (193mm)
Net Weight	26 lbs. 7oz. (12kg)

THIELE-SMALL PARAMETERS

Pe.....250W	**Qts**.....0.24	**BL**.....16.1Tm	**Sd**.....77.5 in^2, 500cm^2
Fs.....42Hz	**Qes**.....0.25	**Efficiency, η**.....4%	**Mms**.....42.5g
Xmax.....0.16 in., 4mm	**Qms**.....6	**Vas**.....120 liters, 7325 cu.in.	**Cms**.....0.34mm/N
Re.....5.8Ω			

Optional Transformer Specifications (order separately)*

Xfmr Model (NOT mounted)	Xfmr Weight	Xfmr Power Rating	Xfmr Primary Voltage	Xfmr Primary Taps	Xfmr Response	Xfmr Insertion Loss
TLS10070	7.5 lb	100 Watts	70V	16, 32, 64, 100W	20Hz - 20kHz ±1dB	0.6dB
TLS3270	4.7 lb	32 Watts	70V	8, 16, 32W	20Hz - 20kHz ±1dB	0.6dB
TLM10070	4.5 lb	100 Watts	70V	16, 32, 64, 100W	50Hz - 15kHz ±1dB	0.6dB
TLM3270	3.2 lb	32 Watts	70V	8, 16, 32W	50Hz - 15kHz ±1dB	0.6dB

*Note: The transformer mounts independantly; not to the driver.

Scope of Lowell Model 12Q250 performance and power tests

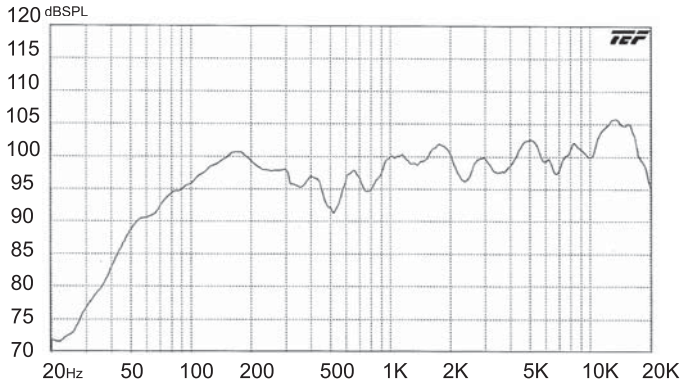
Lowell loudspeakers are thoroughly tested to provide specifiers and contractors with solid data that accurately reflects the performance of production drivers. Performance tests are conducted on randomly selected final production assemblies. Testing equipment includes the GoldLine TEF-20 analyzer and a LinearX LMS measurement system. The power handling capability 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 ± __dB) which is useful in predictive engineering calculations. Resonance frequency (Fs) is also provided in Thiele-Small parameters as the recommended limit from which to drive a speaker.

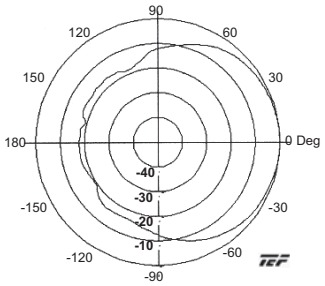
Sensitivity (SPL) is presented two ways: *Peak* - used by many manufacturers (and presented here for comparison purposes) is a rating based on a narrow portion of the frequency response curve, and *Average* - which is a computer calculation of the octave-weighted average over the entire engineering bandwidth as shown in the frequency response (± __dB). 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 are 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.

SPL vs. Frequency

1W / 1M

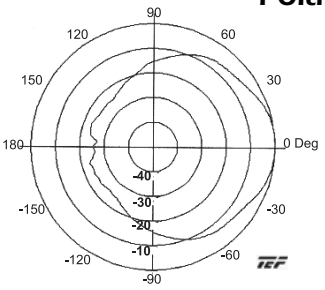


Polar Data



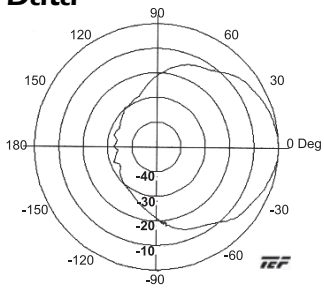
Freq: 1.00K

1000Hz octave



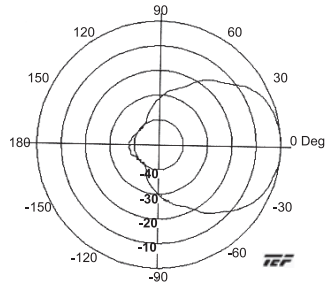
Freq: 2.00K

2000Hz octave



Freq: 4.00K

4000Hz octave



Freq: 8.00K

8000Hz octave

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A & E Specifications

The coaxial 12 inch loudspeaker shall be Lowell Model 12Q250. Loudspeaker shall be furnished and installed at each designated location on the architectural plans and/or as specified herein. The loudspeaker shall be of the coaxial compression driver type having electrically independent high and low frequency transducers. The low frequency section shall have a 12 inch diameter cone and the high frequency section shall have a 5.3 inch mylar tweeter. A built-in electrical crossover network shall be employed to accomplish the proper frequency division between the two drivers. The crossover shall be at 1200 Hz with a 4th order high-pass filter and a 4th order low-pass filter.

The loudspeaker shall be capable of producing a uniform audible frequency response over the range of 70Hz - 20kHz ±6dB with a dispersion angle of 100 degrees. The average sensitivity shall measure 100.3dB (SPL at 1W/1M). Rated power handling shall be 250-watts RMS. The low frequency voice coil shall have a diameter of 4 inches and shall operate in a magnetic field derived from a ferrite magnet having a nominal weight of 77oz. The high frequency voice coil shall have a diameter of 1.75 inch and shall operate in a magnetic field derived from a ferrite magnet having a nominal weight of 42oz. The voice coil impedance shall be 8 ohms. The loudspeaker shall have a round, structurally reinforced cast aluminum frame to maintain precise mechanical alignment. The loudspeaker shall have an overall diameter of 12.3 inches with eight holes equally spaced at 45 degrees on a 11.6 inch diameter mounting bolt circle. The overall depth of the driver shall not exceed 7.6 inches. All external metal woofer parts shall be painted or of materials that resist rust and corrosion. The loudspeaker specified herein shall be Model 12Q250 as supplied by Lowell Manufacturing Company, Pacific, Missouri, 63069 U.S.A.

For 70.7 volt distributed systems:
The Model 12Q250 coaxial compression driver shall be field wired to a separately mounted Lowell transformer Model _____ (TS10070, TS3270, TM10070, TM3270). The transformer 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.

Complete System Assemblies Provide Easy Ordering and Labor Saving Installation

Ready-to-install System Assemblies

iMount™ Q-Systems for flown or unistrut installations are factory wired assemblies that are easy to order and install. Complete systems include Model 12Q250 driver with selected transformer loaded in to a fiberglass-lined 3cu.ft. or 2cu.ft. acoustic enclosure as shown (rectangular or cylindrical) with grille and forged eyebolts. ***iMount™ Q-Systems*** are shipped with the eyebolts installed and the speaker connections brought to a flush 4" x 4" cover plate for time and labor-saving field installation.

3 cu.ft. Rectangular System	System Driver	System Transformer	System Grille*	System Hardware Installed
IM12Q-3SW	12Q250	---	Square, White*	4 forged eyebolts, 4"x4" cover plate
IM12Q-TS100-3SW	12Q250	TLS10070	Square, White*	4 forged eyebolts, 4"x4" cover plate
IM12Q-TS32-3SW	12Q250	TLS3270	Square, White*	4 forged eyebolts, 4"x4" cover plate

3 cu.ft. Cylindrical System	2 cu.ft. Cylindrical System	System Driver	System Transformer	System Grille**	System Hardware Installed
IMC12Q-3B	**IMC12Q-2B**	12Q250	---	Round, Black**	3 forged eyebolts, 4"x4" cover plate
IMC12Q-TS100-3B	**IMC12Q-TS100-2B**	12Q250	TLS10070	Round, Black**	3 forged eyebolts, 4"x4" cover plate
IMC12Q-TS32-3B	**IMC12Q-TS32-2B**	12Q250	TLS3270	Round, Black**	3 forged eyebolts, 4"x4" cover plate

*iMount™ rectangular systems include a square white grille. To order a different grille style, simply change the model suffix from **SW** (Square White) to **SB** (Square Black).

iMount™ cylinders and grilles are finished in black powder epoxy. To order a white assembly simply change the Model suffix from **B to **W**.