Model Series: JR410

4" High-compliance Speaker (optional transformer)

Description

Model JR410 is a commercial industry standard 4" (EIA 5") speaker. that features a 10 oz. magnet for high power handling and sensitivity. It in-cludes a 1" copper voice coil, plated steel basket, and high compliance treated cloth surround and is specifically engineered to provide wide fre-quency response and wide dispersion for solid performance in paging and background music systems. It's specified for reliable performance in com-mercial, industrial, and institutional applications including offices, public buildings, airport corridors, educational and medical facilities. The driver's small size and broad beamwidth of 170-degrees make it especially use-ful in rooms with low ceilings. The loudspeaker frame is stamped 20-gauge steel with a zinc-plated finish to prevent corrosion. For versatile applica-tion, the speaker is available with a selection of factory-wired transform-ers and will fit all standard 4" ceiling grilles and backboxes. Models with a factory-wired transformer have the transformer mounted directly to the top of the magnet. Made in the USA. Meets or exceeds all applicable EIA standards.

- Industry standard 15W 4" (EIA 5") speaker provides clear, accurate reproduction of music and voice communications.

Features

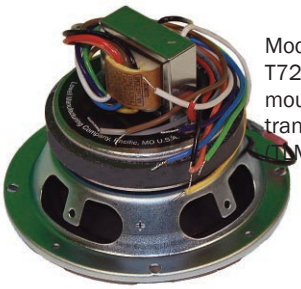
- Engineered for wide response and wide dispersion to provide even coverage with fewer drivers.
- Optional Transformer:
  - TLM-572: taps at 0.25, 0.5, 1, 2, 5W (70/25V)
  - TLM-470: taps at 0.5, 1, 2, 4W (70V)
  - TLM-870: taps at 1, 2, 4, 8W (70V)

A & E Specifications

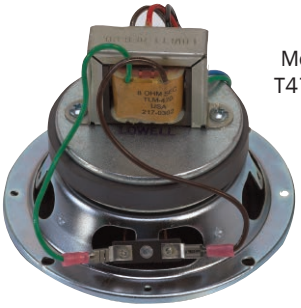
The high compliance 4-inch loudspeaker shall be Model JR410. It shall be of the permanent magnet type having a paper cone with a treated cloth surround. It shall be capable of producing a uniform audible fre-quency response over the range of 100Hz-16kHz nominal, 100Hz- 14kHz+6dB with a dispersion angle of 170 degrees @ 2000Hz-6dB. The average sensitivity shall measure 91dB (SPL at 1W/1M). Rated power handling capacity shall be 15 watts RMS. The voice coil shall have a 1-inch diameter and shall operate in a magnetic field derived from a stron-tium ferrite (ceramic) magnet having a nominal weight of 10 oz. The voice coil impedance shall be 8 ohms. The loudspeaker shall have a round, structurally reinforced stamped 20-gauge steel frame to maintain precise mechanical alignment and shall provide facilities for mounting a trans-former. The loudspeaker shall have an overall diameter of 5.03 inches with four round holes equally spaced at 90-degrees on a 4.72-inch diam-eter mounting bolt circle. The overall depth shall not exceed 2.08-inches (not including transformer—depth is up to 4.45-inches with transformer). External metal parts shall be zinc-plated to resist rust and corrosion.

For 70.7 or 25 volt distributed systems: The loudspeaker shall be equipped with a transformer, factory mounted and wired. The transformer's primary voltage shall be _____ and shall provide selectable power taps of _____ watts.

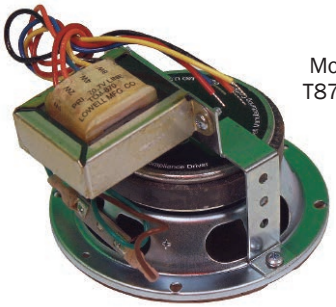
Model No. JR410: speaker



Model No. JR410-T72: speaker with mounted transformer (TLM-572)



Model No. JR410-T470: speaker with mounted transformer (TLM-470)



Model No. JR410-T870: speaker with mounted transformer (TLM-870)

Model No.	Mounted Xfmr	'A' Depth*	Weight	Xfmr Power Rating	Xfmr Primary Voltage	Xfmr Primary Taps	Xfmr Response	Xfmr Insertion Loss
JR410	-----	2.08"	1.7 lb	-----	-----	-----	-----	-----
JR410-T72	TLM-572	3.52"	2.1 lb	5 Watts	70/25V	0.25, 0.5, 1, 2, 5W	40Hz - 20kHz ±1dB	< 0.5dB
JR410-T470	TLM-470	3.71"	2.4 lb	4 Watts	70V	0.5, 1, 2, 4W	60Hz - 15kHz ±1dB	0.8dB
JR410-T870	TLM-870	3.8"	2.8 lb	8 Watts	70V	1, 2, 4, 8W	50Hz - 15kHz ±1dB	0.8dB

** Minimum depth required for the speaker transformer assembly to be rear mounted in an enclosure.*

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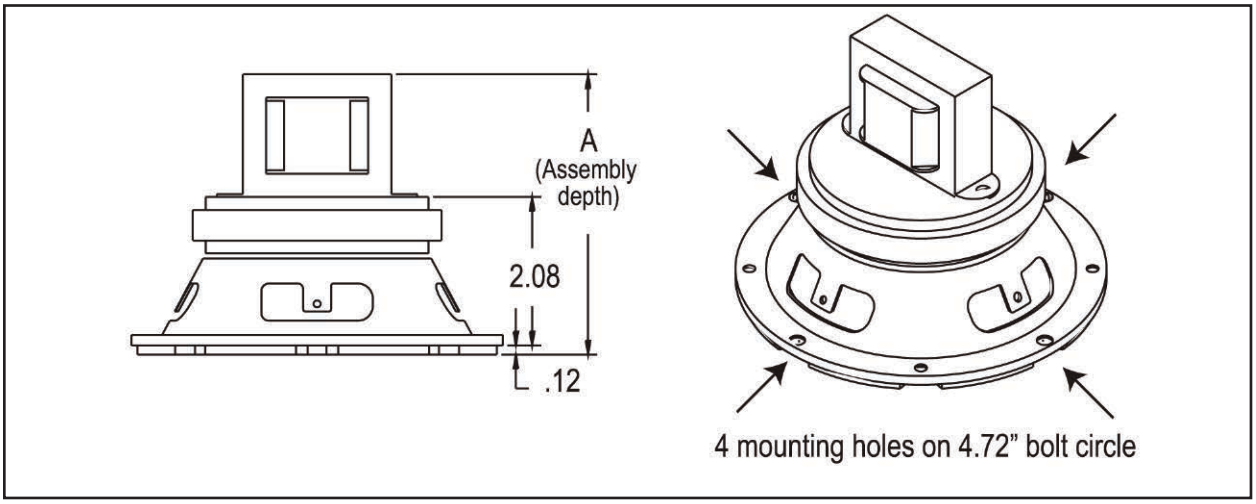
Driver Specifications:



PERFORMANCE

Power Handling	15 watts RMS (nominal) measured per EIA Standard RS-426B
Sensitivity	91dB log average SPL (1W/1M) 102.8dB maximum SPL (calculated based on power rating and measured sensitivity) 8 ohms (nominal), 8.4 ohms @480Hz (minimum)
Impedance	
Frequency Response	100Hz-16kHz (nominal), 100Hz-14kHz (+6dB)
Dispersion Angle	170° @ 2000Hz octave (-6dB)

PHYSICAL - WOOFER

Magnet Weight, Material	10oz. (264g), strontium ferrite
Voice Coil Diameter, Material	ceramic 1 inch (26mm), copper wire
Cone Material	Paper with treated cloth surround
Terminals	Quick disconnect type - spade lugs

MECHANICAL

Basket	20 gauge stamped steel with zinc plating
Outside Diameter	5.03 inch (128mm)
Mounting Bolt Circle	4.72 inch (120mm) with 4 round holes equally spaced at 90 degrees.
Cutout Diameter	4.125 inch (105mm)
Mounting Depth	2.08 inch (53mm)
Net Weight	1.7 lbs. (0.76kg)

THIELE-SMALL PARAMETERS

Pe.....15W	**Qts**.....0.59	**BL**.....4.7Tm	**Sd**.....10.2 in², 65.8cm²
Fs.....109Hz	**Qes**.....0.69	**Efficiency, h**.....0.8%	**Mms**.....3.1g
Xmax.....0.04 in., 1mm	**Qms**.....3.9	**Vas**.....4.2 liters, 255 cu.in.	**Cms**.....0.68mm/N
Re.....7.2W			

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Scope of Model JR410 performance and power tests:

Our drivers and loudspeaker systems are tested to provide specifiers and contractors with data that reflects the performance of production products. Test-ing equipment includes the GoldLine TEF-20 analyzer (for performance meas-urements) and the LinearX LMS measurement system (for Thiele-Small Parameters).

Power Handling capability is tested based on EIA Standard RS-426B.

Frequency Response data is provided which is the measured frequency re-sponse range (defined by + 6dB) which is useful in predictive engineering cal-culations.

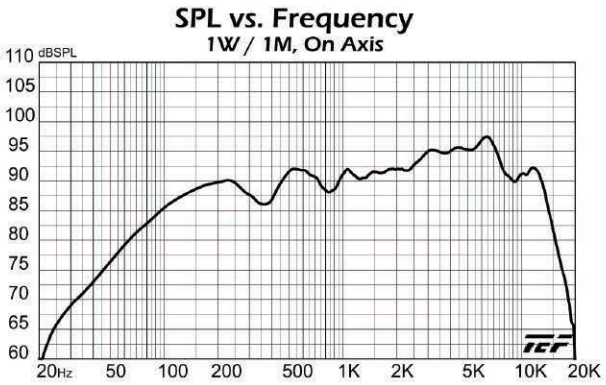
Sensitivity (SPL) data is presented in two ways: Log Average SPL is a com-puter calculated log average of the SPL measured at 1 meter with 1 watt input over the stated frequency response range. Maximum SPL is calculated based on the measured log average SPL and the 8-ohm power rating of the speaker. Maximum SPL for loudspeakers which do not include an 8 ohm input, is cal-culated based on the measured log average SPL and the highest transformer power tap.

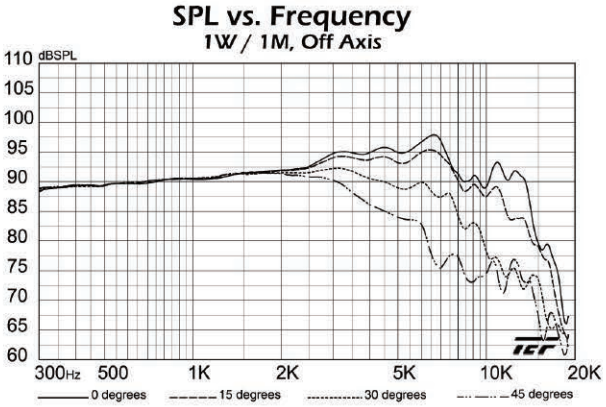
Dispersion Angle is defined as the angle of coverage that is no more than 6dB down from the on-axis value averaged over the 2000Hz octave band. Since speech intelligibility is very dependent upon the 2000Hz octave, this specification is quite useful in designing speech reinforcement systems that provide even coverage and speech intelligibility.

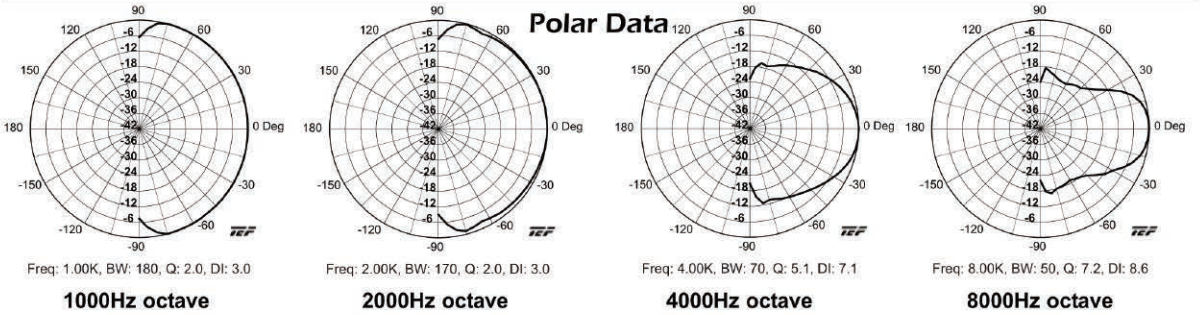
Thiele-Small Parameters for raw drivers are measured using the LinearX LMS measurement system. These parameters are useful in determining the opti-mum type and size of enclosure for a specific driver.

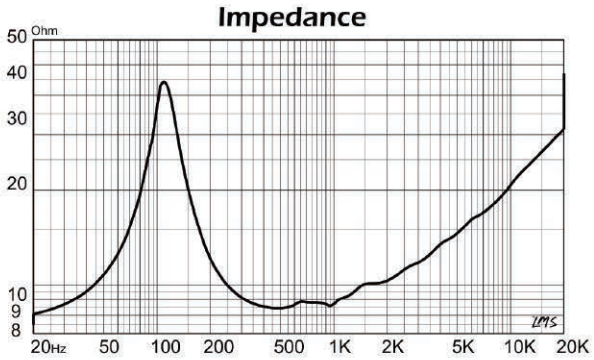
Impedance data is presented in three ways: Nominal Impedance is the gen-erally accepted impedance for use in making comparisons with competitive products, the Impedance Curve is a graphical representation of the impedance that is measured in the lab and gives the impedance of the device over the audio frequency range, Minimum Impedance is the lowest impedance meas-urement at a frequency within the specified frequency response range of the speaker. If a line matching transformer is included in the speaker assembly, rel-ative impedance curves of the primary windings of the transformer when loaded by the driver may be shown.

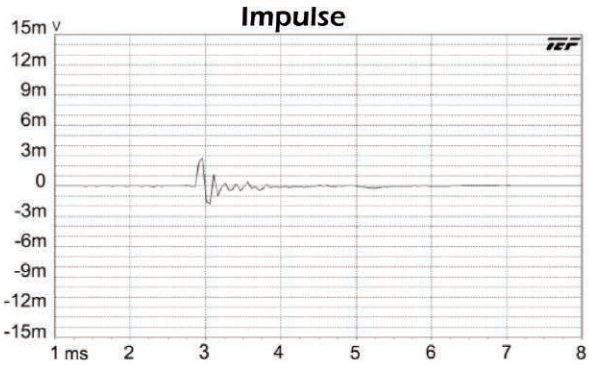
Polar data is presented for the averaged one octave band surrounding the center frequencies of 1000Hz, 2000Hz, 4000Hz, and 8000Hz. Radial polar re-sponse curves show the relative change in sound pressure level as one moves from directly on-axis to an increasingly off-axis listening position. Since coax-ial 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. Vertical and horizontal polar plots will be presented for two-way speaker systems that incorporate separate low fre-quency and high frequency drivers.











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