

Model No.

810

Dual Cone Driver

INCLUDES:

- 8-inch 15W (8ohm) dual cone driver



THE 810 DRIVER with 10 oz. magnet provides a step up in full range performance from the commercial industry standard 8-inch 5 oz. driver. It provides solid performance and value in just about any basic paging or background music system requiring clear reproduction of music and voice communications.

FEATURES

DESCRIPTION: Highly efficient magnetic structure energized by 10 oz. ceramic magnet features a 3/4-inch hard fiber whizzer cone mechanically coupled to 1-inch voice coil for extended high frequency response with fine clarity. The molded fibre cone enhances mid- and low-range frequency performance.

FRAME: Stamped 20-gauge steel with zinc-plated finish to prevent corrosion.

POWER RATING: 15W RMS

FREQUENCY RESPONSE: 54Hz–11.6kHz (± 6 dB), 50Hz–20kHz (± 6.6 dB).

DISPERSION ANGLE: 95 degrees conical @2kHz octave (-6dB).

SENSITIVITY: Average SPL = 97.9dB (@1W/1M)
Maximum SPL = 109.7dB (calculated based on power rating and measured sensitivity).

MOUNTING DEPTH: 2.84 inches

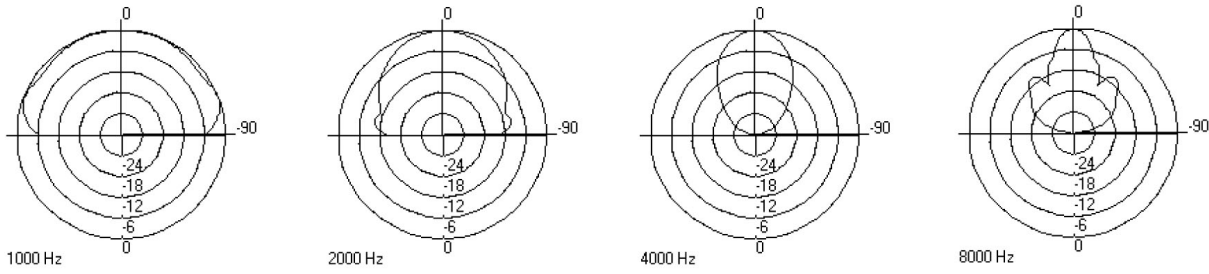
NET WEIGHT: 2.0 lbs.

COUNTRY OF ORIGIN: Assembled in U.S.A. with global components.

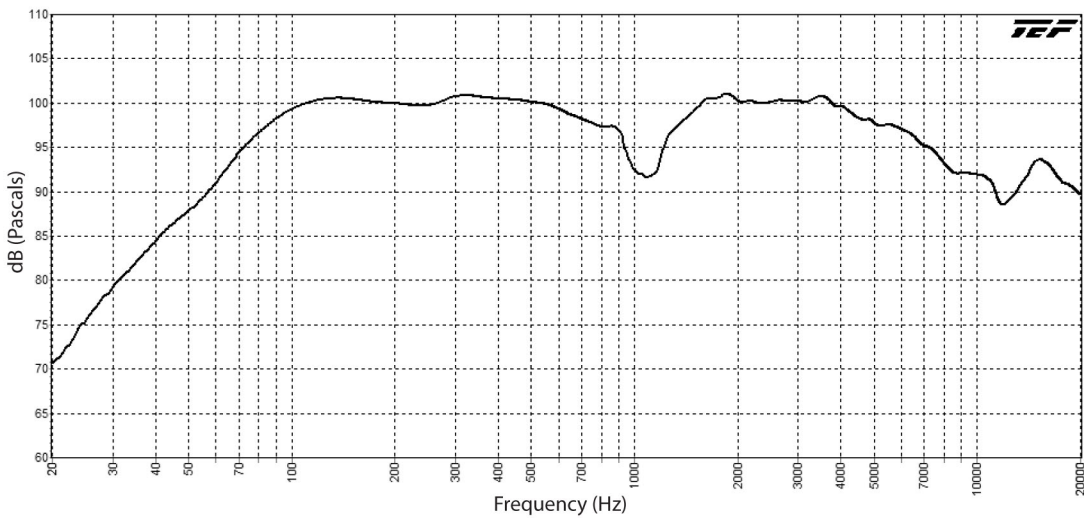
A&E SPECIFICATIONS:

The 8-inch dual-cone driver shall be Lowell Model 810, which shall be of the permanent magnet type having a seamless molded fiber cone with a hard fiber whizzer cone mechanically coupled to a voice coil for extended high frequency response. It shall be capable of producing a uniform audible frequency response over the range of 54Hz-11.6kHz (± 6 dB), 50Hz-20kHz (± 6.6 dB) with dispersion angle of 95 degrees @2000Hz (-6dB). Average sensitivity shall measure 97.9dB (SPL at 1W/1M). Power rating shall be 15 watts RMS. The voice coil shall have a 1-inch diameter and shall operate in a magnetic field derived from a strontium ferrite (ceramic) magnet having a nominal weight of 10 oz. Voice coil impedance shall be 8ohms. The driver shall have a round, structurally reinforced stamped 20-gauge steel frame with 8.062-inch overall diameter and eight obround holes equally spaced at 45 degrees on a 7.625-inch diameter mounting bolt circle. Overall depth shall not exceed 2.84 inches. External metal parts shall be zinc-plated to resist rust and corrosion.

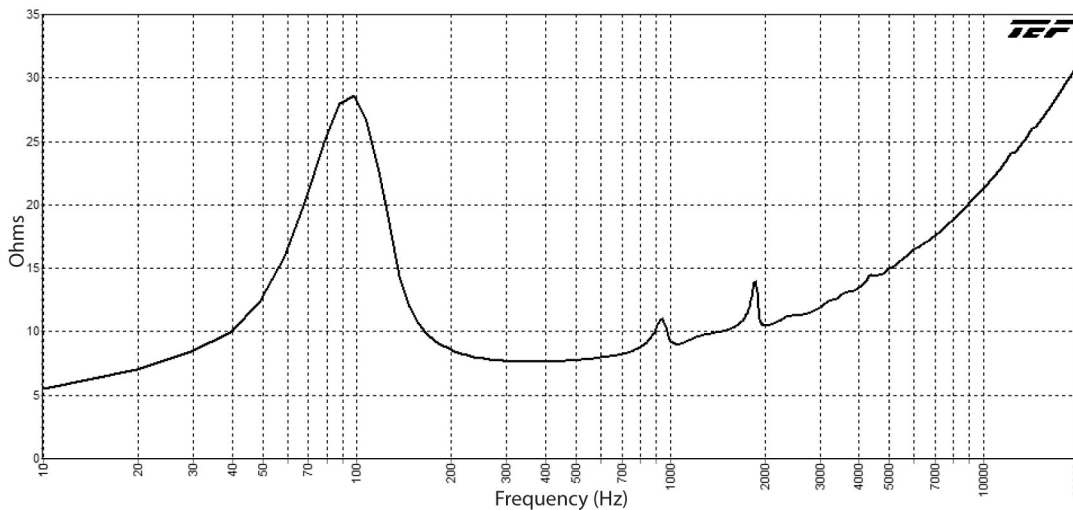
POLAR DATA (HALF SPACE)



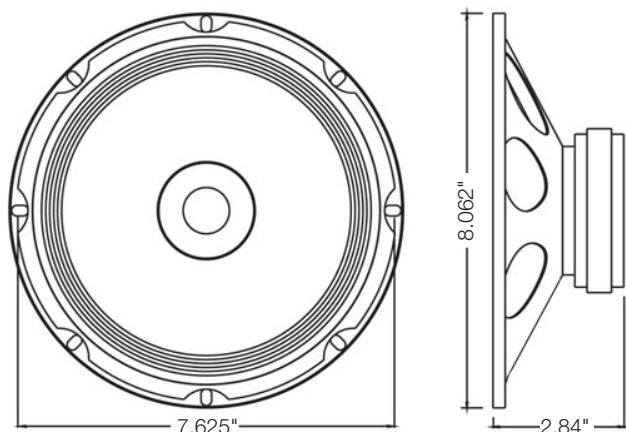
SPL VS. FREQUENCY (1W/1M, HALF SPACE, ON-AXIS)



IMPEDANCE



DRAWINGS



Fits grilles with 7.625–7.688" mounting centers

DRIVER SPECIFICATIONS

PERFORMANCE:

Power Rating	15 watts RMS measured per E.I.A. Standard RS-426B
Sensitivity	97.9dB Average SPL (measured 2.83V @1m)
	109.7dB Maximum SPL (calculated based on power rating and measured sensitivity)
Impedance	Driver Nominal Impedance: 8 ohms
	Driver Minimum Impedance: 7.6 ohms @342Hz
Frequency Response	54Hz–11.6kHz (±6dB); 50Hz–20kHz (±6.6dB)
Dispersion Angle	95 degrees conical @2kHz octave (-6dB)

PHYSICAL – WOOFER:

Cone	Dual cone paper with self edge surround
Magnet	10 oz. (264g), strontium ferrite ceramic
Voice Coil	1 in. (26mm) diameter, copper wire
Terminals	Quick disconnect type, spade lugs

MECHANICAL:

Basket	20-gauge stamped steel with zinc plating
Outside Diameter	8.062 in. (205mm)
Mounting Bolt Circle.....	7.625 in. (194mm) with 8 obround holes equally spaced at 45 degrees
Cutout Diameter	7.15 in. (182mm)
Mounting Depth	2.84 in. (72mm)
Net Weight.....	2.0 lbs. (0.91kg)

THIELE-SMALL PARAMETERS:

Pe	15W	Qts.....	0.779	BL.....	5.9 Tm	Sd	227.0 cm ²
Fs	96.8 Hz	Qes.....	0.859	Efficiency, h.....	2.8%	Mms.....	7.23 g
Xmax.....	0.3 mm	Qms.....	8.43	Vas.....	27.4 liters, 1672 cu.in.	Cms	374.8 uM/N
Re	6.9 ohms						

SCOPE OF PERFORMANCE AND POWER TESTS: Lowell 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 ± 6 dB) which is useful in predictive engineering calculations.

Sensitivity (SPL) data is presented in two ways:

1. 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.
2. Maximum SPL is calculated based on the measured log average SPL and the 8ohm power rating of the speaker. Maximum SPL for speakers that do not include an 8ohm input, is calculated 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 optimum type and size of enclosure for a specific driver.

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.

Impedance Data may be represented in four different ways depending on the particular model:

1. Nominal Impedance is the generally accepted impedance value for use in making comparisons with competitive products.
2. Impedance Curve is a graphical representation of the 8ohm driver impedance measured in the lab and gives the impedance of the device over the audio frequency range.
3. Minimum Impedance is the lowest impedance measurement of the 8ohm driver at a frequency within the specified frequency response range of the speaker.
4. Impedance Measured at 1kHz is the reading expected to be measured by a technician in the field using a typical industry 1kHz impedance meter.

810 SERIES OVERVIEW

THIS SPEC

Model No.	Driver	Transformer	Transformer Primary Taps	Mounting Depth**	Outside Diameter	Net Weight	Sensitivity***	System Specs Frequency Response	Dispersion Angle****
810	8" 15W dual cone*	---	---	2.84"	8.06"	2.0 lbs.	97.9 dB	54Hz–11.6kHz (± 6 dB) 50Hz–20kHz (± 6.6 dB)	95°
810-T72	8" 15W dual cone	25V/70V	.25, .5, 1, 2, 5W	2.84"	8.06"	2.4 lbs.	97.9 dB	51Hz–11.6kHz (± 6 dB) 50Hz–20kHz (± 6.4 dB)	95°
810-T470	8" 15W dual cone	70V	.5, 1, 2, 4W	2.84"	8.06"	2.6 lbs.	97.3 dB	51Hz–11.4kHz (± 6 dB) 50Hz–20kHz (± 6.7 dB)	95°
810-T870	8" 15W dual cone	70V	1, 2, 4, 8W	3.0"	8.06"	2.9 lbs.	97.9 dB	50Hz–11.6kHz (± 6 dB) 50Hz–20kHz (± 6.4 dB)	95°

* 8ohm

** Mounting Depth: Minimum depth required for assembly to be rear-mounted to grille in an enclosure.

*** Sensitivity: Average SPL (measured 2.83V @ 1M)

**** Dispersion Angle: Conical @ 2kHz octave (-6 dB)

Note on Speaker Spacing: Conical dispersion measurements are provided for comparison with other speakers. To determine correct speaker spacing, see the technical paper "Distributed System Speaker Spacing for the Integrator" (www.Lowellmfg.com) which explains the difference between conical and linear dispersion and the measurements to use for best results. For quick calculations, a calculator for speaker spacing is also available online under Resources – Interactive Tools.