

Model No.

8P100

8-inch 100W Coaxial Compression Driver

INCLUDES:

- 8-inch 100W coaxial compression driver



THE 8P100 is a high output driver engineered for high ceiling/high energy applications like sports clubs, bars, hotel ballrooms, multi-purpose areas, convention centers, sporting facilities, concourses, transportation terminals, and similar venues.

FEATURES

DESCRIPTION: Robust motor structure with 38 oz. magnet and 2-inch voice coil wound on a Kapton former. The high frequency compression driver is coaxially mounted behind the woofer and provides increased power handling with greater efficiency than a conventional dome tweeter. The built-in crossover network with second order high-pass and second order lowpass filter accomplishes proper frequency division between the two drivers.

FRAME: Stamped 18-gauge steel with corrosion-resistant black electrocoat finish.

POWER RATING: 100W RMS

FREQUENCY RESPONSE: 46Hz–20kHz (± 6 dB);
40Hz–20kHz (± 6.9 dB)

DISPERSION ANGLE: 105 degrees conical @ 2kHz octave (-6dB).

SENSITIVITY: Average SPL = 93.8dB (@1W/1M);
Maximum SPL = 113.8dB (calculated based on power rating and measured sensitivity).

MOUNTING DEPTH: 5.4 inches

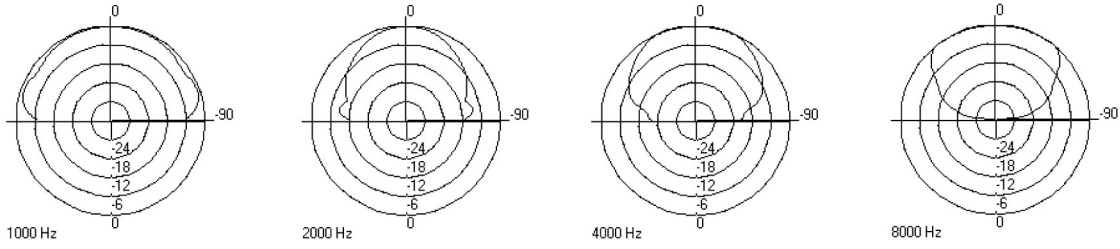
NET WEIGHT: 8.7 lbs.

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

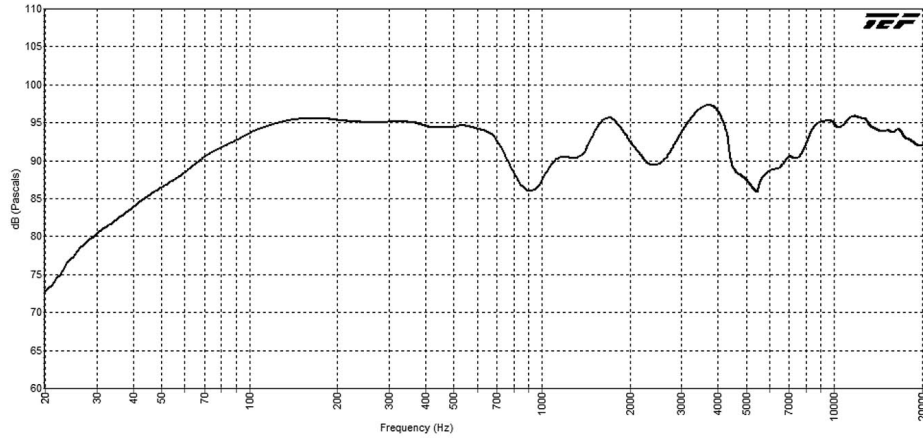
A&E SPECIFICATIONS

The 8-inch driver shall be Lowell Model 8P100 which shall be of the coaxial compression type having electrically independent high and low frequency transducers. The low frequency section shall have an 8-inch diameter cone and the high frequency section shall be a compression driver 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 2400Hz with a second order high-pass and a second order low-pass filter. The driver shall be capable of producing a uniform audible frequency response over the range of 46Hz–20kHz (± 6 dB) with a dispersion angle of 105 degrees @2kHz octave (-6dB). Average sensitivity shall measure 93.8dB (SPL at 1W/1M). Power rating shall be 100W RMS. The low frequency voice coil shall have a 2-inch diameter and shall operate in a magnetic field derived from a strontium ferrite (ceramic) magnet having a nominal weight of 38 oz. The high frequency voice coil shall have a 1-inch diameter and operate in a magnetic field derived from a ceramic magnet having a nominal weight of 7.7 oz. Voice coil impedance shall be 8ohms. The driver shall have a round, structurally reinforced stamped 18-gauge steel frame with 8 inch overall diameter and eight holes equally spaced at 45 degrees on a 7.75-inch diameter mounting bolt circle. Overall depth of the driver shall not exceed 5.4 inches. External metal woofer parts shall be black electrocoat to resist rust and corrosion.

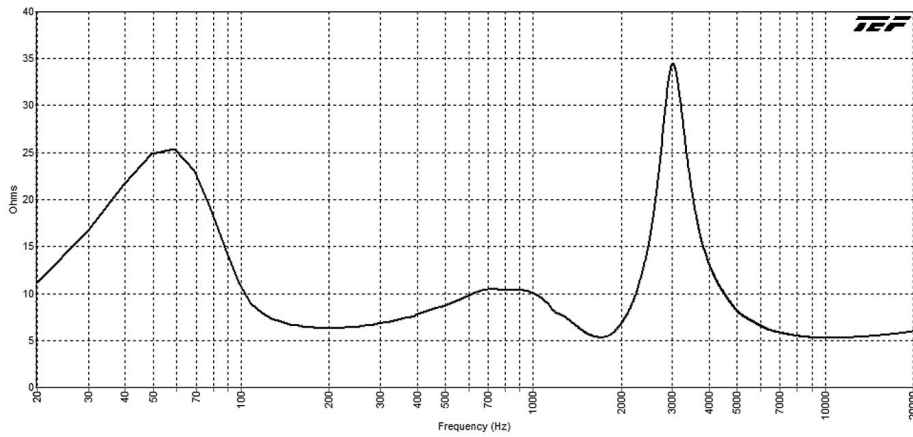
POLAR DATA (HALF SPACE)



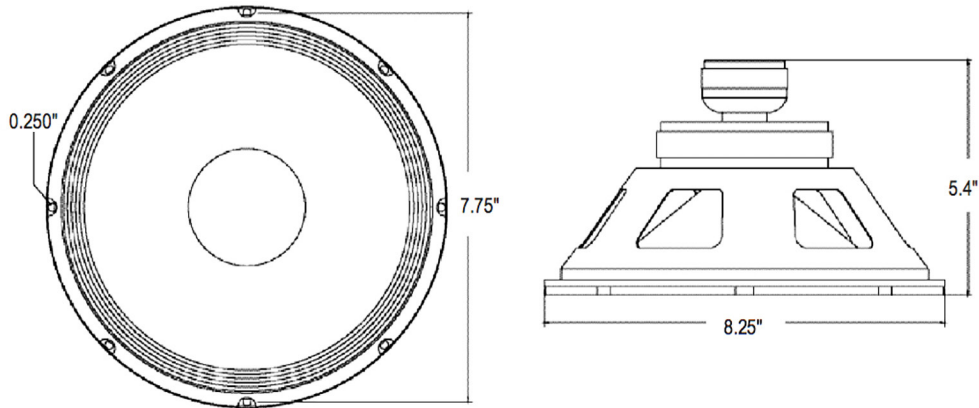
SPL VS. FREQUENCY (1W/1M, HALF SPACE, ON-AXIS)



IMPEDANCE



DRAWINGS



DRIVER SPECIFICATIONS

PERFORMANCE:

Power Rating	100 watts RMS measured per E.I.A. Standard RS-426B
Sensitivity	93.8dB Average SPL (measured 2.83V @1m)
	113.8dB Maximum SPL (calculated based on power rating and measured sensitivity)
Impedance	Driver Nominal Impedance: 8 ohms
	Driver Minimum Impedance: 5.3 ohms @1650Hz
	Driver Measured Impedance: 10.0 ohms @ 1kHz
Frequency Response	46–20kHz (±6dB) , 40Hz–20kHz (±6.9dB)
Crossover Frequency	2400Hz, second order high-pass filter, second order low-pass filter
Dispersion Angle	105 degrees conical @ 2kHz octave (-6dB)

PHYSICAL – WOOFER:

Cone	Treated paper with cloth surround
Magnet	38 oz. (1077g), strontium ferrite ceramic
Voice Coil	2 in. (51mm) diameter, copper wire over Kapton former
Terminals	Quick disconnect type, spade lugs

PHYSICAL – HIGH FREQUENCY DRIVER:

Type.....	Compression driver
Magnet	7.7 oz. (217g), ferrite ceramic
Voice Coil	1 in. (26mm) diameter, copper wire
Ferrofluid	Yes
Diaphragm.....	Phenolic

MECHANICAL:

Basket	18-gauge stamped steel with black electrocoat
Outside Diameter	8.25 in. (209mm)
Mounting Bolt Circle.....	7.75 in. (197mm) with 8 holes equally spaced at 45 degrees
Cutout Diameter	7.13 in. (181mm)
Mounting Depth	5.4 in. (137mm)
Net Weight.....	8.7 lbs. (3.95kg)

THIELE-SMALL PARAMETERS:

Pe	100 W	Qts.....	0.29	BL.....	9.3 Tm	Sd	33.2 in ² (214cm ²)
Fs	49 Hz	Qes.....	0.30	Efficiency, h.....	1.7 %	Mms.....	15 g
Xmax.....	0.12 in.	Qms.....	9.8	Vas	45.7 liters	Cms	0.7 uM/N
Re	5.7 ohms				2789 cu. in.		

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 $\pm 6\text{dB}$) 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.

8P100 OVERVIEW

THIS SPEC

Model No.	Driver	Transformer	Transformer Primary Taps	Mounting Depth*	Outside Diameter	Net Weight	Sensitivity***	System Specs Frequency Response	Dispersion Angle****
8P100	8" 100W coaxial compression	---	---	5.4"	8.25"	8.7 lbs.	93.8 dB	46Hz–20kHz ($\pm 6\text{dB}$) 40Hz–20kHz ($\pm 6.9\text{dB}$)	105°

* 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 (-6dB)

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.