

Model No.

10P125

10" 125W Coaxial Compression Driver

High output, high quality loudspeaker features a robust motor structure and is engineered for high energy, high ceiling applications such as clubs and bars, airport terminals and concourses, hotel ballrooms, and other large spaces where superior audio quality is desired.

Features

- 10-inch assembly
- 38 oz. magnet and 2-inch voice coil wound on a Kapton former.
- Compression driver tweeter is coaxially mounted behind the woofer and provides increased power handling with greater efficiency than a conventional dome tweeter.
- Built-in crossover network with second order high-pass and second order low pass filter accomplishes proper frequency division between the two drivers.
- Frequency response extends down to 34Hz, and sensitivity is a highly efficient 96dB at 1watt, 1 meter.
- Handles 125W input with 96dB average sensitivity.
- Frame is stamped 18-gauge steel with corrosion-resistant black electrocoat finish.

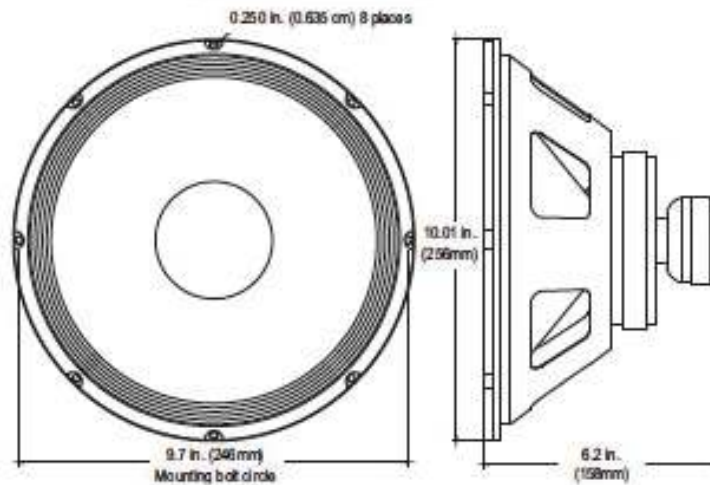
A & E Specifications

The 10 inch loudspeaker shall be Lowell Model 10P125, which shall be of the coaxial compression driver type having electrically independent high and low frequency transducers. The low frequency section shall have a 10 in. dia. cone and the high frequency section shall be a compression driver tweeter. A built-in electrical crossover network shall be employed to accomplish proper frequency division between the two drivers. Crossover shall be at 2000Hz with a 2nd order high-pass and 2nd order low-pass filter. The loudspeaker shall be capable of producing a uniform audible frequency response over the range of 34Hz–20kHz \pm 6dB with dispersion angle of 95 degrees. Average sensitivity shall measure 96dB (SPL at 1W/1M). Rated power handling shall be 125 watts RMS. The low frequency voice coil shall have a diameter of 2 inches 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 diameter of 1 inch and shall operate in a magnetic field derived from a ceramic magnet having a nominal weight of 7.7oz.. Voice coil impedance shall be



8 ohms. The speaker shall have a round, structurally reinforced stamped 18-gauge steel frame to maintain precise mechanical alignment. It shall have an overall diameter of 10 inches with eight holes equally spaced at 45 degrees on a 9.7 inch diameter mounting bolt circle. Overall depth of the driver (without transformer) shall not exceed 6.2 inches. All external metal woofer parts shall be black electrocoat to resist rust and corrosion.

Technical Drawings



Driver Specifications

PERFORMANCE:

Power Handling	125 watts RMS measured per EIA Standard RS-426B
Sensitivity	96dB Average SPL (measured 2.83V @1m) 117dB Maximum SPL (calculated based on power rating and measured sensitivity)
Impedance	<u>Driver Nominal Impedance:</u> 8 ohms <u>Driver Minimum Impedance:</u> 6.6 ohms @180Hz
Frequency Response	34Hz-20kHz (nominal), 34Hz-20kHz (±6dB)
Crossover Frequency	2000Hz, second order high-pass filter, second order low-pass filter
Dispersion Angle	95 degrees conical @2000Hz octave (-6dB)

PHYSICAL – WOOFER:

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

PHYSICAL – TWEETER:

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

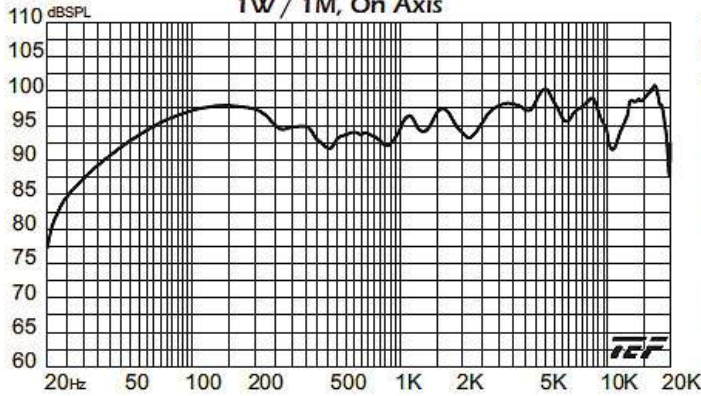
MECHANICAL:

Basket	18-gauge stamped steel with black electrocoat
Outside Diameter	10.01 in. (256mm)
Mounting Bolt Circle	9.7 in. (246mm) with 8 holes equally spaced at 45 degrees
Cutout Diameter	9.1 in. (230mm)
Mounting Depth	6.2 in. (158mm)
Net Weight	8.9 lbs. (4kg)

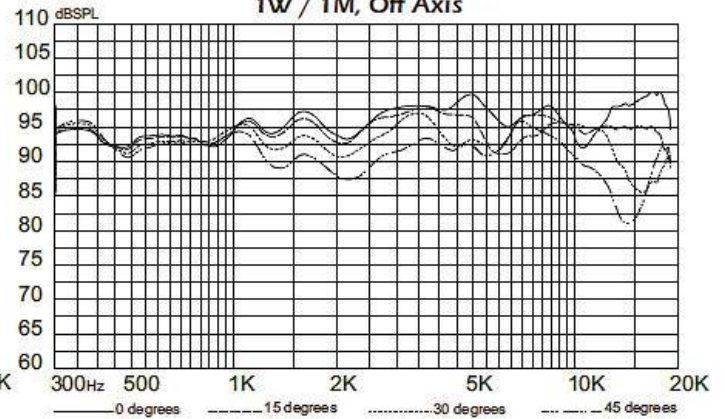
THIELE-SMALL PARAMETERS:

Pe	125W	Qts.....	0.34	BL.....	10.8 Tm	Sd	56.7 in. ² (366cm ²)
Fs	38Hz	Qes.....	0.35	Efficiency, h	1.7%	Mms.....	30g
Xmax.....	0.12 in. (3mm)	Qms.....	10.9	Vas.....	113 liters, 4 cu.in.	Cms	0.6 mm/N
Re	5.8 ohms						

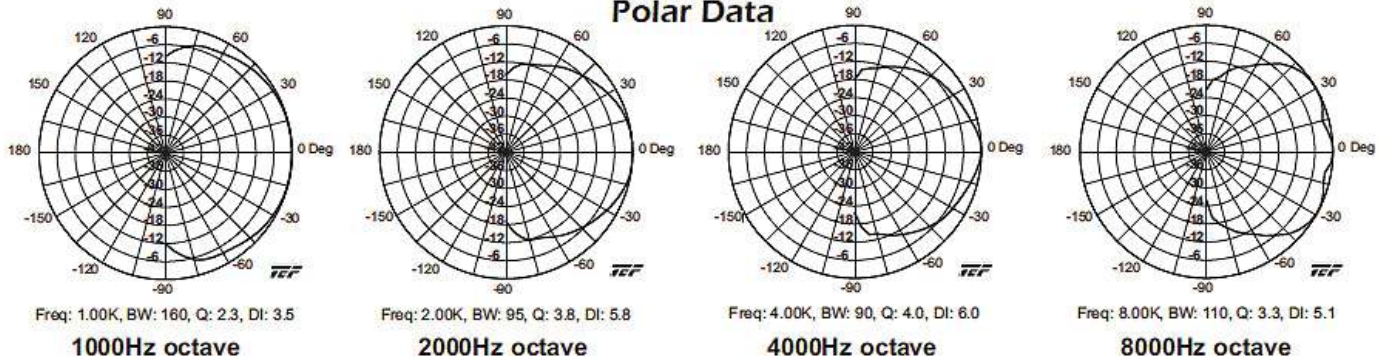
SPL vs. Frequency
1W / 1M, On Axis



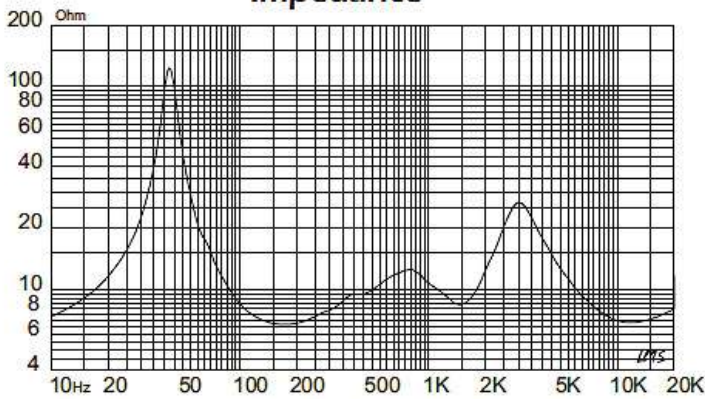
SPL vs. Frequency
1W / 1M, Off Axis



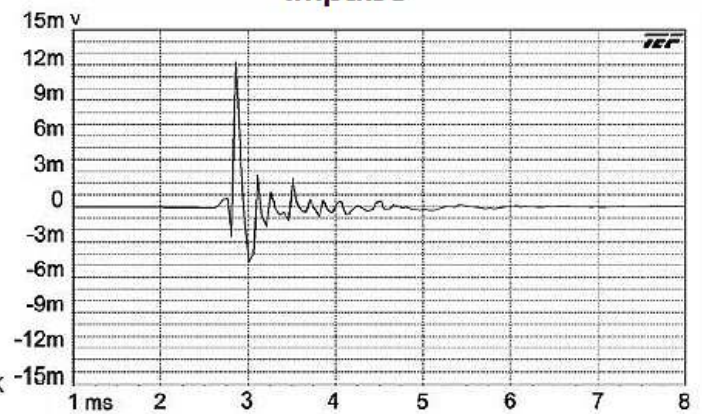
Polar Data



Impedance



Impulse



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.