



with domestic &  
global components

Model No.

# 12P150

## 12" 150W Coaxial Driver

High output, high quality driver with robust motor structure is engineered for high energy, high ceiling applications such as clubs and sports bars, airport terminals and concourses, hotel ball-rooms, and convention center exhibit floors.

### Construction & Features

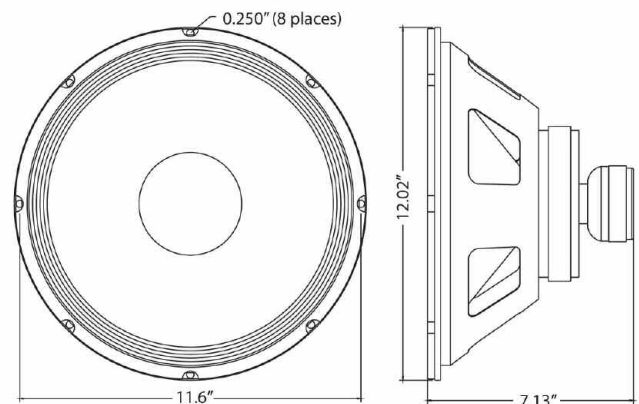
- 38 oz. magnet, 2" voice coil wound on Kapton former
- High frequency compression driver is coaxially mounted behind the woofer and provides increased power handling with greater efficiency than a conventional dome tweeter.
- Built-in crossover network with a second order high pass and second order low pass filter accomplishes proper frequency division between the two drivers.
- Power rating 150W input with 96.5dB avg. sensitivity
- Frequency response 40Hz-20kHz (+6dB)
- 18-ga. steel stamped frame with corrosion-resistant black electrocoat finish.
- Made in the USA
- Meets or exceeds all applicable EIA standards.

### A&E Specifications

The 12" driver shall be AVLELEC Model No. 12P150 which shall be of the coaxial compression type having electrically independent high and low frequency transducers. The low frequency section shall have a 12" diameter cone and the high frequency section shall be a compression driver. A built-in electrical crossover network shall be employed to accomplish the proper frequency division between the two drivers. The crossover shall be at 2500 Hz with a second order high-pass filter and second order low-pass filter. The driver shall be capable of producing a uniform audible frequency response over the range of 40Hz-20kHz (+6dB) with dispersion angle of 70 degrees. Average sensitivity shall measure 96.5dB (SPL at 1W/1M). Power rating shall be 150 watts RMS. The low frequency voice coil shall have a 2" dia. and operate in a magnetic field derived from a strontium ferrite (ceramic) magnet with 38 oz. nominal weight. The high frequency voice coil shall have a 1" diameter and operate in a magnetic field derived from a ceramic magnet with 7.7 oz. nominal weight. Voice coil impedance shall be 8ohms. The driver shall have a round, structurally reinforced stamped 18-gauge steel frame to maintain precise mechanical alignment. The driver shall have a 12" overall diameter and eight holes equally spaced at 45 degrees on 11.6" dia. mounting bolt circle. Overall depth shall not exceed 7.13". External metal woofer parts shall be black electrocoat to resist rust and corrosion.



### Drawings



**PERFORMANCE**

Power Rating	150 watts RMS measured per EIA Standard RS-426B
Sensitivity	96.5dB Average SPL (measured 2.83V @ 1m) 118.3dB Maximum SPL (calculated based on power rating and measured sensitivity) 8 ohms (nominal), Minimum 3.8ohms @4551Hz
Impedance Frequency Response Crossover Frequency Dispersion Angle	40Hz-20kHz (+6dB) 2500Hz, second order high pass filter, second order low pass filter 70° conical @ 2000Hz octave (-6dB)

**PHYSICAL - WOOFER**

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

**PHYSICAL - HIGH FREQUENCY DRIVER**

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

**MECHANICAL**

Basket	18 gauge stamped steel with black electrocoat
Outside Diameter	12.02 inch (305mm)
Mounting Bolt Circle	11.6 inch (295mm) with 8 holes equally spaced at 45 degrees.
Cutout Diameter	11 inch (279mm)
Mounting Depth	7.13 inch (182mm)
Net Weight	9.75 lbs. (4.4kg)

**THIELE-SMALL PARAMETERS**

Pe .....150 W	Qts .....0.48	BL .....9.5 Tm	Sd .....82.5 in <sup>2</sup> , 532cm <sup>2</sup>
Fs .....38 Hz	Qes .....0.51	Efficiency, h .....2.2 %	Mms .....34g
Xmax.....0.12 in., 3mm	Qms .....7.4	Vas.....206 liters, 7.3 cu.ft.	Cms.....0.51 uM/N
Re .....5.6 ohms			

**Scope of Performance and Power Tests**

AVLELEC 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  $\pm 6$ dB) which is useful in predictive engineering calculations.

**Sensitivity (SPL)** data is presented in two ways: 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. Maximum SPL is calculated based on the measured log average SPL and the 8ohm power rating of the speaker.

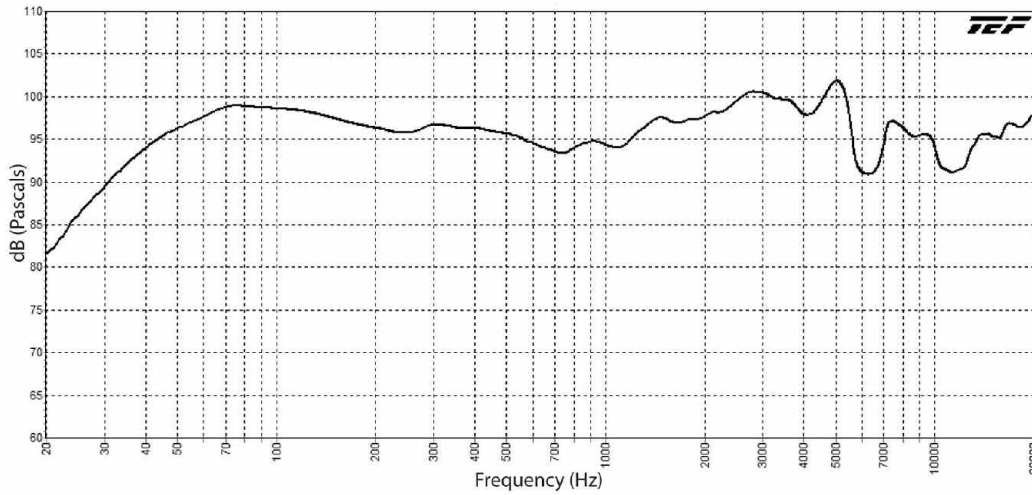
**Dispersion Angle** is defined as the angle of coverage that is no more than 6dB down from the on-axis value averaged over the 2000Hz octave band. Since speech intelligibility is very dependent upon the 2000Hz octave, this specification is quite useful in designing speech reinforcement systems that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

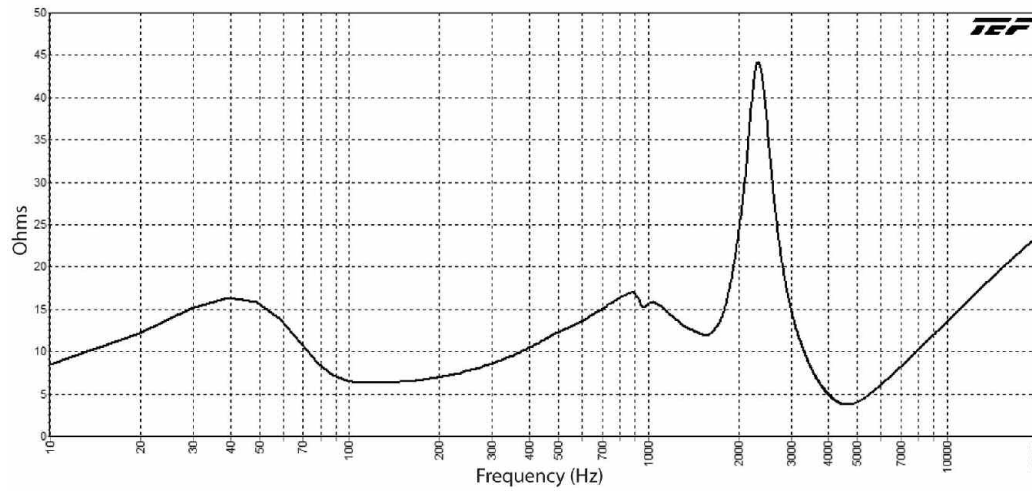
**Impedance** data is presented in three ways: Nominal Impedance is the generally accepted impedance for use in making comparisons with competitive products; the Impedance Curve is a graphical representation of the impedance that is measured in the lab and gives the impedance of the device over the audio frequency range; Minimum Impedance is the lowest impedance measurement at a frequency within the specified frequency response range of the speaker.

**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.

**SPL vs. Frequency 1W/1M (half space) On-axis**



**Impedance**



**Polar Data (half space)**

