

- High quality, economical 12-inch coaxial driver/transformer assembly suitable for commercial applications with medium height (to 20 ft.) ceilings and medium ambient noise levels.
- Handles 100W input with 95dB average sensitivity and peak SPL of 115dB.
- Includes premounted 60W 70V transformer with taps at 7.5W, 15W, 30W and 60W.
- Mounts to variety of acoustic backboxes and grilles. Driver can also be specified as part of a complete speaker system (see MDX-series).



DESCRIPTION

Model 12E100-T60 is a high-quality coaxial driver/transformer package. The 100W assembly is engineered to provide clear music and voice reproduction in commercial venues that have medium height ceilings (up to 20 feet) and medium ambient noise levels such as retail stores, hotel lobbies, restaurants, educational facilities, training centers, health clubs, Houses of Worship and businesses with higher than average ceilings.

Excellent performance combines with economical pricing to offer solid value to contractors and owners. The 12E100-T60 100W 8-ohm driver features a frequency response of 43Hz-18.5kHz (± 6 dB) with an average sensitivity of 95dB and peak SPL of 115dB. The woofer is comprised of a 30 oz. magnet and 1.5-inch voice coil with a coaxially mounted, silk dome, horn-loaded tweeter with a 1-inch voice coil. The crossover frequency is 2kHz and the dispersion coverage is 95°.

The 12E100-T60 includes a 60W 70V transformer for cost-effective installation of distributed music and voice systems. The transformer is premounted and tapped at 60W. Additional taps are available at 30W, 15W and 7.5W by changing the jumper setting on the circuit board. The transformer may also be bypassed by changing the jumper to the 8-ohm position.

The loudspeaker frame is cast aluminum with an outside diameter of 12.2-inches and a mounting bolt circle of 11.6-inches to fit standard 12-inch accessories. Overall weight of the driver/transformer assembly is 10.2 lbs.

Model 12E100-T60 is designed and engineered in the USA. It meets or exceeds all applicable EIA standards.

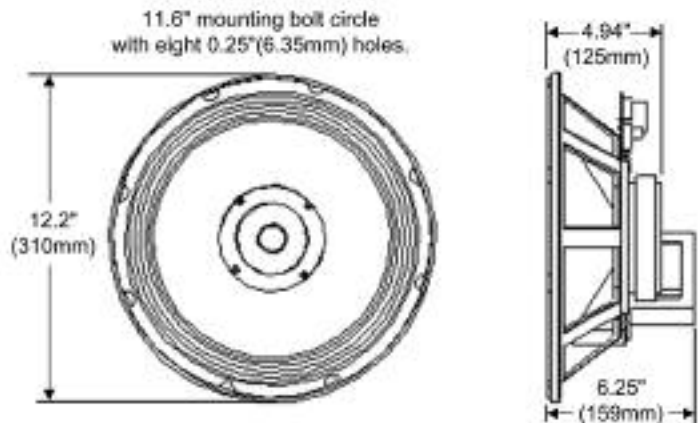


A&E SPECIFICATIONS

The coaxial 12-inch loudspeaker with 70V transformer shall be Lowell Model 12E100-T60. Loudspeaker shall be furnished and installed at each designated location on the architectural plans and/or as specified herein. The loudspeaker shall be of the coaxial driver type having electrically independent high and low frequency transducers. The low frequency section shall have a 12-inch diameter cone and the high frequency section shall be a silk dome horn-loaded 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 2kHz.

The loudspeaker shall be capable of producing a uniform audible frequency response over the range of 43Hz – 18.5kHz ± 6 dB with a dispersion angle of 95 degrees. The average sensitivity shall measure 95dB (SPL at 1W/1M). Rated power handling shall be 100 watts RMS. The low frequency voice coil shall have a diameter of 1.5-inches and shall operate in a magnetic field derived from a strontium ferrite (ceramic) magnet having a nominal weight of 30 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 8 oz. The voice coil impedance shall be 8 ohms. The loudspeaker shall have a cast aluminum frame. The loudspeaker shall have an overall diameter of 12.2-inches with 8 holes on a 11.6-inch diameter mounting bolt circle. The overall depth of the driver (including transformer) shall not exceed 6.25-inches. All external metal woofer parts shall be painted black to resist rust and corrosion. The premounted 60W transformer shall have primary voltage of 70V. It shall be factory set at the 60W power tap and shall provide jumper selectable taps at 7.5W, 15W, 30W, and 60W.

The loudspeaker specified herein shall be Model 12E100-T60 as supplied by Lowell Manufacturing Company, Pacific, Mo., USA.



SCOPE OF PERFORMANCE & POWER TESTS

Performance Tests are conducted on randomly selected final production assemblies. Testing equipment includes the GoldLine TEF-20 analyzer.

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

Frequency Response Data is provided which is the measured generally usable frequency response range (defined by $\pm 6\text{dB}$) that's useful in predictive engineering calculations.

Sensitivity (SPL) Data is presented in two ways: Average SPL is a computer calculated log average of the SPL over the stated frequency response. Max SPL is based on the 1 watt 1 meter measured value of the SPL and the calculated max SPL at the maximum power rating of the driver.

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 2000 Hz octave, this specification is 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 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. Vertical and horizontal polar plots will be presented for two-way speaker systems that incorporate separate low frequency and high frequency drivers.

PERFORMANCE

| | |
|---------------------|--|
| Power Handling | 100 watts RMS measured per EIA Standard RS-426B |
| Sensitivity | 95dB SPL (avg) measured 2.83V @ 1m 115dB SPL (max) calculation based on power rating and measured sensitivity |
| Impedance | 8 ohms (nominal), 6.6 ohms @8kHz (minimum) |
| Frequency Response | 43Hz-18.5kHz ($\pm 6\text{dB}$), 40Hz-20kHz (nominal) |
| Crossover Frequency | 2kHz |
| Dispersion Angle | 95° @ 2000Hz octave (-6dB) |

PHYSICAL: WOOFER

| | |
|-------------------------------|--|
| Cone Material | Cloth and paper |
| Magnet Weight, Material | 30oz. (850.5g), strontium ferrite ceramic |
| Voice Coil Diameter, Material | 1.5-in. (38.4mm), copper wire |
| Terminals | Quick disconnect type, push-on (Faston-type) terminals |

PHYSICAL: TWEETER

| | |
|-------------------------------|--------------------------------|
| Type | Silk dome horn loaded tweeter |
| Magnet Weight, Material | 8oz. (226.8g), ferrite ceramic |
| Voice Coil Diameter, Material | 1-in. (25mm), copper wire |
| Outside Diameter | 4-in. |

MECHANICAL

| | |
|----------------------|--|
| Input Terminals | Push post terminals (max wire gauge 12AWG) |
| Basket | Cast aluminum |
| Outside Diameter | 12.2-in. (310mm) |
| Mounting Bolt Circle | 11.6-in. (295mm) |
| Cutout Diameter | 11-in. (279mm) |
| Mounting Depth | 6.25-in. (159mm) |
| Net Weight | 10.2 lbs. (4.63kg) |

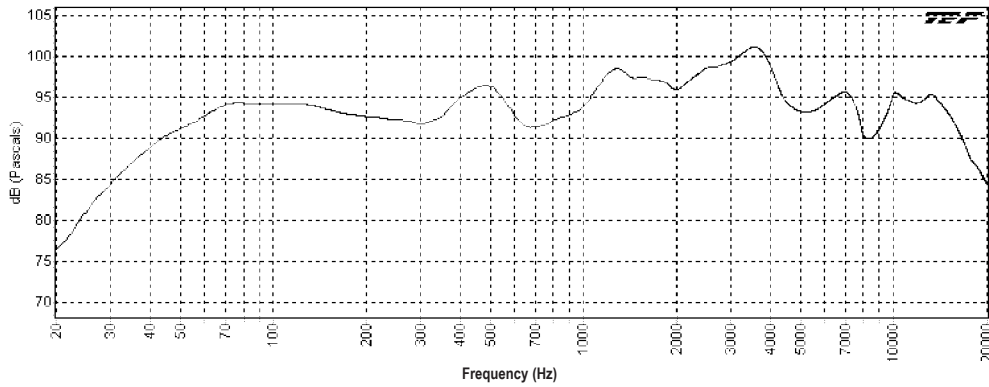
TRANSFORMER

| | |
|--------------------|---|
| Primary Voltage | 70V |
| Taps Available | 7.5W, 15W, 30W, 60W (transformer ships with tap set at 60W) |
| Tap Selection | Jumpers on the crossover circuit board |
| Bypass Transformer | Jumpers on the crossover circuit board may be set to bypass transformer for 8 ohm use |

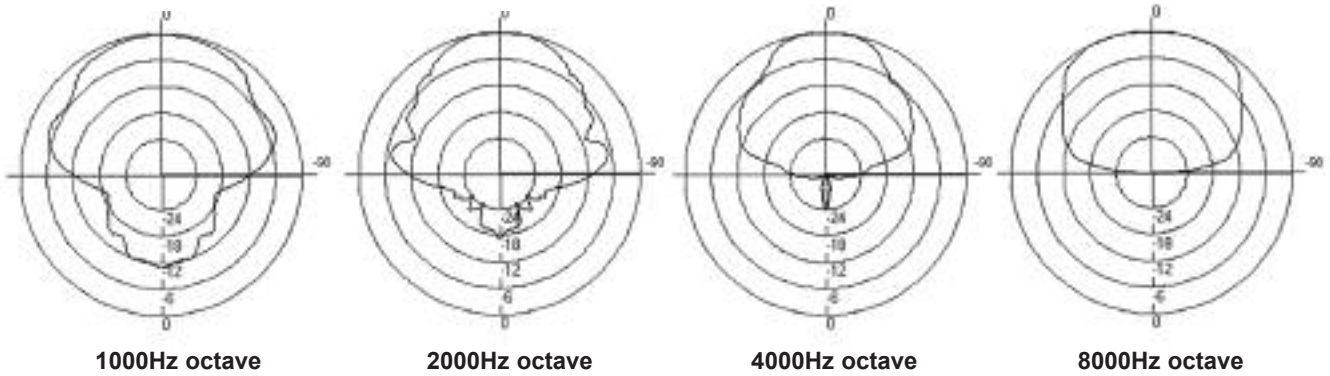
THIELE-SMALL PARAMETERS

| | |
|--------------------|--|
| Pe | 100W |
| Fs | 60.9Hz |
| Xmax | 0.197-in. (5mm) |
| Re | 6.9 Ω |
| Qts | 0.76 |
| Qes | 0.98 |
| Qms | 3.4 |
| BL | 9.66Tm |
| Efficiency, η | 1.7% |
| Vas | 75.6 liters (2.67 cu.ft.) |
| Sd | 23.25-in. ² (150cm ²) |
| Mms | 34.5g |
| Cms | 0.0078-in./N (0.198mm/N) |
| Le | 3.4mH @ 1kHz |

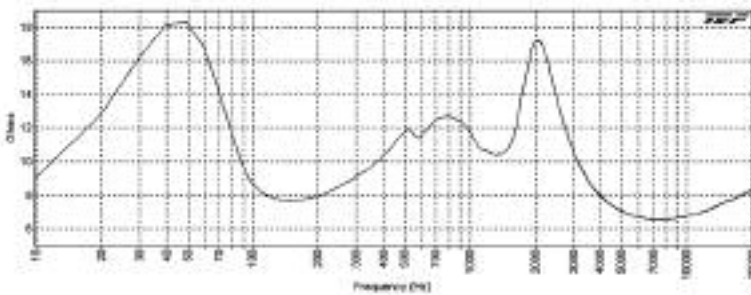
SPL vs. FREQUENCY (1W / 1M):



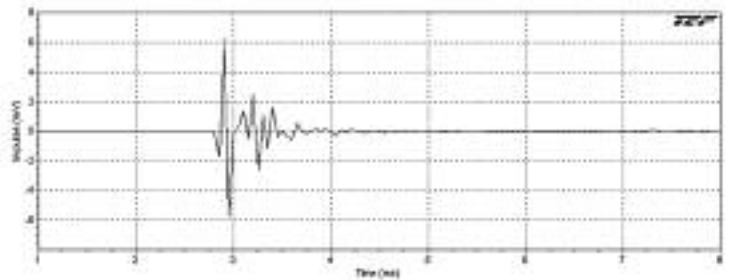
POLAR DATA:



IMPEDANCE:



IMPULSE:



ASSOCIATED PRODUCTS (order separately):

RECESSED BACKBOX:

| <i>Model No.</i> | | | |
|------------------|-------|---------------------------------|---------------------------------------|
| CP1210 | steel | 16.63-in. diameter (10.5D) | extended lip for sheetrock |
| XCP1210 | steel | 16.63-in. diameter (10.5D) | flat lip for acoustic tile |
| DX1312 | steel | 1.9 cu.ft. (23L x 18W x 8D) | extended lip for sheetrock & tabs |
| DX1512 | steel | 2.9 cu.ft. (23L x 18W x 12D) | extended lip for sheetrock & tabs |
| DX1612 | steel | 4.0 cu.ft. (23L x 18W x 16.75D) | extended lip for sheetrock & eyebolts |
| DX1712 | steel | 5.9 cu.ft. (29.5L x 23W x 15D) | extended lip for sheetrock & eyebolts |

MATCH with GRILLE:

| <i>Model No.</i> | |
|------------------|--------|
| RS12AW or WB12 | round |
| RS12AW or WB12 | round |
| FW12 | square |
| FW12 | square |
| FW12 | square |
| FW12 | square |