



Transducers

COAXIAL TRANSDUCERS



PAS Coaxial Transducers are a solution to the need for compact, high-performance loudspeaker systems in a variety of monitoring and sound reinforcement applications.

The coaxial or concentric design radiates both high and low frequencies through the same acoustic "window". When used with dividing networks with Time Offset Correction (TOC™), the result is smooth, phase coherent response with transient accuracy. TOC™ causes all frequencies to appear to radiate from the same plane, i.e.: The same acoustic source point.

When used in stereo pairs, the results are precise imaging and localization with a sense of space equal to the best audiophile systems.

PAS has chosen to use a constant coverage for the high frequency section rather than the cone of the low frequency section as other manufacturers currently do. This provides much better loading of the compression driver at low frequencies. This also reduces the amount of high frequency equalization required by directing the energy where it is needed rather than allowing it to go where it is not.

The CX-1280C, CX-1580C and CXL-1580C will mount any one-inch exit compression driver that mounts using a two or three bolt pattern. This allows the high frequency component to be tailored to specific application, budgets or listener preferences.

The CXL-2580C will mount any large format compression driver with a two-inch (48mm) exit.



The CX-1280C, CX-1580C and CXL-1580C have 3 inch diameter voice coils while that of the CXL-2580C is 4 inches in diameter. These voice coils are edge wound with copper ribbon wire which is insulated with Kapton. This is chemically bonded to a Kapton former using a patented technique which creates exceptional adhesion between the wire and the former even under the extreme temperatures generated by high power levels.

The top and back plates of the magnet assemblies are blanchard ground for the most intimate contact between components. The center pole is undercut to focus the magnetic field into the voice coil gap. This improves linearity by reducing flux leakage outside of this gap. The result is lower distortion.

Coaxial Transducer Features:

- Constant coverage 30°x 60° horns
- Smooth, phase coherent response when used with TOC™ (Time Offset Correction) dividing networks.
- One-inch and two-inch throat versions. The one-inch version will accept compression drivers with two bolt or three bolt mounting pattern.

Professional Audio Systems

2270 Cosmos Court
Carlsbad, California 92009
FAX: (760) 431-9496
TEL: (760) 431-9924

Specifications

CX-1280C

Diameter: 300 mm (12 inches)
Nominal Impedance: 8 ohms
Frequency Range: (LF) 80 Hz to 2 kHz
HF Coverage angles: (-6 dB points, nom.)
60° H x 30° V
HF Directivity: 11 dB, 2 kHz-16 kHz (+1, -3dB)
Recommended Crossover Frequency:
1.2 kHz (TOC™ 1R12)
Power Capacity: (LF) 300 watts
Sensitivity: (LF) 99 dB (@ 2.83v @ 1 m)
Voice Coil Diameter: 76 mm (3 inches)
Voice Coil Material: edge wound copper
Winding Length: 13 mm (0.51 inches)
Former Material: Kapton
Magnetic Gap Length: 10.5 mm (0.413 in.)
Magnet Weight: 2.7 kg (5 lb 15 oz)
Magnet Assembly Weight: 8.4 kg (18 lb 7oz)
BL Product: 18.4 Tesla Meters
Effective Piston Diameter: 0.26 m (10.2 in.)
Total Moving Mass (Mms): 42 grams
Mechanical Compliance (Cms): 196 µM/N

Small Signal Parameters:

F_s 56 Hz
 Q_{ts} 0.23
 Q_{ms} 10.1
 Q_{es} 0.24
 V_{as} 61 L (2.1 ft³)
 R_e 5.6 ohms
 η_0 4.4 %
 L_e 0.9 mHy

Large Signal Parameters:

S_d 0.047m² (73 in²)
 x_{max} 1.8 mm (0.07 in)
 V_d 84 cm³ (5.2 in³)

Mounting Information:

Diameter: 311 mm (12 1/4 in)
Bolt Circle: 292 mm (11 1/2 in)
Baffle Cutout: 279 mm (11 in)
Depth: 143 mm (5 5/8 in)
Net Weight: 11.4 kg (25 lbs)
Shipping Weight: 12.7 kg (28 lbs)

CX-1580C

Diameter: 380 mm (15 inches)
Nominal Impedance: 8 ohms
Frequency Range: (LF) 50 Hz to 2 kHz
HF Coverage angles: (-6 dB points, nom.)
60° H x 30° V
HF Directivity: 11 dB, 2 kHz-16 kHz (+1, -3dB)
Recommended Crossover Frequency:
1.2 kHz (TOC™ 1R15)
Power Capacity: (LF) 300 watts
Sensitivity: (LF) 100 dB (@ 2.83v @ 1 m)
Voice Coil Diameter: 76 mm (3 inches)
Voice Coil Material: edge wound copper
Winding Length: 13 mm (0.51 inches)
Former Material: Kapton
Magnetic Gap Length: 10.5 mm (0.413 in.)
Magnet Weight: 2.7 kg (5 lb 15 oz)
Magnet Assembly Weight: 8.4 kg (18 lb 7oz)
BL Product: 18 Tesla Meters
Effective Piston Diameter: 0.317 m (12.5 in.)
Total Moving Mass (Mms): 71 grams
Mechanical Compliance (Cms): 244 µM/N

Small Signal Parameters:

F_s 38 Hz
 Q_{ts} 0.28
 Q_{ms} 9.5
 Q_{es} 0.29
 V_{as} 185 L (6.5 ft³)
 R_e 5.6 ohms
 η_0 3.5 %
 L_e 0.9 mHy

Large Signal Parameters:

S_d 0.073 m² (113 in²)
 x_{max} 2.3 mm (0.09 in)
 V_d 167 cm³ (10.2 in³)

Mounting Information:

Diameter: 389 mm (15 5/16 in)
Bolt Circle: 365 mm (14 3/8 in)
Baffle Cutout: 355.6 mm (14 in)
Depth: 184 mm (7 1/4 in)
Net Weight: 12.3 kg (17 lbs)
Shipping Weight: 13.6 kg (30 lbs)

CXL-1580C

Diameter: 380 mm (15 inches)
Nominal Impedance: 8 ohms
Frequency Range: (LF) 30 Hz to 2 kHz
HF Coverage angles: (-6 dB points, nom.)
60° H x 30° V
HF Directivity: 11 dB, 2 kHz-16 kHz (+1, -3 dB)
Recommended Crossover Frequency:
1.2 kHz (TOC™ 1R15)
Power Capacity: (LF) 400 watts
Sensitivity: (LF) 100 dB (@ 2.83v @ 1 m)
Voice Coil Diameter: 76 mm (3 inches)
Voice Coil Material: edge wound copper
Winding Length: 19.5 mm (0.768 inches)
Former Material: Kapton
Magnetic Gap Length: 10.5 mm (0.413 in.)
Magnet Weight: 2.7 kg (5 lb 15 oz)
Magnet Assembly Weight: 8.4 kg (18 lb 7oz)
BL Product: 17.6 Tesla Meters
Effective Piston Diameter: 0.317 m (12.5 in.)
Total Moving Mass (Mms): 64 grams
Mechanical Compliance (Cms): 321 µM/N

Small Signal Parameters:

F_s 35 Hz
 Q_{ts} 0.25
 Q_{ms} 5.2
 Q_{es} 0.26
 V_{as} 243 L (8.6 ft³)
 R_e 5.8 ohms
 η_0 3.8 %
 L_e 1.0 mHy

Large Signal Parameters:

S_d 0.073 m² (113 in²)
 x_{max} 6.4 mm (0.25 in)
 V_d 463 cm³ (28.25 in³)

Mounting Information:

Diameter: 389 mm (15 5/16 in)
Bolt Circle: 365 mm (14 3/8 in)
Baffle Cutout: 355.6 mm (14 in)
Depth: 184 mm (7 1/4 in)
Net Weight: 12.3 kg (17 lbs)
Shipping Weight: 13.6 kg (30 lbs)

CXL-2580C

Diameter: 380 mm (15 inches)
Nominal Impedance: 8 ohms
Frequency Range: 35 Hz to 1.5kHz
HF Coverage angles: (-6dB points, nom.)
60° H x 30° V
HF Directivity: 11 dB, 1.2 kHz-16 kHz (±3dB)
Recommended Crossover Frequency:
1.2 kHz (TOC™ 2B15)
Power Capacity: (LF) 500 watts
Sensitivity: (LF) 99 dB (@ 2.83v @ 1 m)
Voice Coil Diameter: 100 mm (4 ")
Voice Coil Material: edge wound copper
Winding Length: 19.5 mm (0.768")
Former Material: Kapton
Magnetic Gap Length: 10.5 mm (0.413 in.)
Magnet Weight: 2.7 kg (5 lb 15 oz)
Magnet Assembly Weight: 9.7 kg (21 lb 7oz)
BL Product: 22.6 Tesla Meters
Effective Piston Diameter: 0.317m (12.5 in.)
Total Moving Mass (Mms): 81 grams
Mechanical Compliance (Cms): 185 µM/N

Small Signal Parameters:

F_s 41 Hz
 Q_{ts} 0.24
 Q_{ms} 12.1
 Q_{es} 0.25
 V_{as} 137 L (4.8 ft³)
 R_e 6.0 ohms
 η_0 3.8 %
 L_e 1.7 nHy

Large Signal Parameters:

S_d 0.073 m² (113 in²)
 x_{max} 6.4 mm (0.25 in)
 V_d 463 cm³ (28.25 in³)

Mounting Information:

Diameter: 389 mm (15 5/16 in)
Bolt Circle: 365 mm (14 3/8 in)
Baffle Cutout: 355.6 mm (14 in)
Depth: 185 mm (7 1/4 in)
Net Weight: 12.3 kg (27 lbs)
Shipping Weight: 13.6 kg (30 lbs)

COAXIAL TRANSDUCERS



CX-1280C

For systems that must be very compact, the CX-1280C is the solution. It is used in wedge monitors and small installation systems. It performs very well in vented cabinets of 1 ft³ or less.



CXL-1580C

For full range systems where extended low frequency response is needed, the CXL-1580C is the choice.

Recommended for cabinets between 2 and 4 ft³, the CXL-1580C will produce response to 40 Hz and below. It has been used with great success in studio monitors as well as sound reinforcement systems.

PASSIVE DIVIDING NETWORKS WITH TOC

Dividing networks separate and deliver the appropriate frequency ranges to the components designed to accommodate those frequencies. How the components are combined through the network will determine the quality and performance of the loudspeaker system.

PAS's engineering incorporates a number of filter types resulting in a seamless transition between components. These complex networks with TOC™ combined with PAS coaxial drivers result in "ideal phase response" where the effects of the phase characteristics of the individual drivers is removed. The resulting phase characteristic is that of the dividing filters. These Passive networks include:

- Linear phase dividing filters.
- Time Offset Correction, allowing all components to propagate energy from an identical acoustical source.
- Amplitude equalization networks.
- Impedance equalization networks.

Currently there are five passive TOC™ Frequency Dividing Network Models. Each has a nominal impedance of 8 ohms and contains TOC along with appropriate equalization. Dimensions are 10.5" x 7.5" x 1.5". Weight is 6 lbs (7 lbs shipping).

- 1J12** Optimized for JBL 8 ohm one inch compression drivers (2426, etc.) and the PAS CX-1280C. Can also be used with the TAD 2001.
- 1J15** Optimized for JBL 8 ohm one inch compression drivers (2426, etc.) and the PAS CX-1580C or CXL-1580C. Can also be used with the TAD 2001.
- 1R12** Optimized for the DE-45 one inch compression driver and the PAS CX-1280C. Can also be used with Renkis-Heinz, Radian and others.
- 1R15** Optimized for the DE-45 one inch compression driver and the PAS CX-1580C or CXL-1580C. Can also be used with Renkis Heinz, Radian and others
- 2B15** Optimized for the DE-750 two inch compression driver and the PAS CXL-2580C.



CX-1580C

For systems where extended low frequency response is not necessary, the CX-1580C is recommended. It is often used in wedge monitors and as a low frequency component in systems which use subwoofers. It has a short voice coil which increases reliability in small cabinets.



CXL-2580C

For applications requiring the greatest clarity and power the CXL-2580C is recommended. It uses a 4 inch diameter voice coil and mounts the majority of large-format two-inch (48mm) exit compression drivers. Since large format drivers typically have 6 dB greater sensitivity and at least twice the power capacity of their one-inch counterparts, the use of the CXL-2580C allows a 6 to 9 dB increase in high frequency headroom. Combining this with the CXL-2580C brings a new level of performance to compact systems: response to 35 Hz in 3.5 ft³.

EXTENDED RANGE TRANSDUCERS



Professional Audio Systems loudspeaker products offer the system designer the expertise gained from over 20 years of transducer development and manufacturing.

The voice coils used in the extended range series are short: Only slightly longer than the height of the magnetic gap. They are 3 inches in diameter and edge wound with copper ribbon wire which is insulated with Kapton. This is chemically bonded to a Kapton former using a patented technique which creates exceptional adhesion between the wire and the former even under the extreme temperatures generated by high power levels.

Light cones contribute to the low moving mass and high sensitivity that characterize the extended range series.

The top and back plates of the magnet assembly are blanchard ground for the most intimate contact between components. The vented center pole is undercut to focus the magnetic field into the voice coil gap. This improves linearity by reducing flux leakage outside of this gap. The result is lower distortion.

Surround and suspension components are chosen for their centering ability and contribute to the long term reliability of these loudspeakers.

The short voice coils used in this series produce controlled linear excursion that is useful in musical instrument applications where low acoustic loading may cause other loudspeakers to be less reliable.

Extended Range Series features:

- 3 inch diameter edge wound copper voice coils for high sensitivity and response to 2.5 kHz.
- Light cones for exceptional transient capability.
- 96 ounce (6 pound) ceramic magnet in an 18 pound magnet assembly.



ER-1580C

The ER-1580C is a 15 inch cone transducer which has found applications both as a low frequency component in sound reinforcement systems and in musical instrument amplification. It's extended high frequency response allows a smooth transition through the crossover region of small reinforcements systems and provides brightness and clarity in musical instrument applications.



ER-1880C

The ER-1880C is an 18 inch cone transducer which is used as the low frequency component in both two-way and three way reinforcement systems. It provides solid low frequency support in small to medium sized cabinets. Due to it's extended range, it also is has been valuable for bass guitar where transient capability is important.

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Professional Audio Systems
2270 Cosmos Court
Carlsbad, California 92009
FAX: (760) 431-9496
TEL: (760) 431-9924

Specifications

ER-1580C

Diameter: 380 mm (15 inches)
Nominal Impedance: 8 ohms
Frequency Range: 50 Hz to 2.5 kHz @ -10 dB
Highest Crossover Frequency: 1.2 kHz
Power Capacity: 400 watts, continuous
Sensitivity: 100 dB (@ 2.83v @ 1 m)
Voice Coil Diameter: 76 mm (3 inches)
Voice Coil Material: edgewound copper
Winding Length: 13 mm (0.51 inches)
Former Material: Kapton
Magnetic Gap Length: 10.5 mm (0.4125 in.)
Magnet Weight: 2.7 kg (5 lb 15 oz)
Magnet Assembly Weight: 8.4 kg (18 lb 7oz)
B1 Product (B*1): 21.8 Tesla Meters
Effective Piston Diameter: 0.317 m (12 1/2 in.)
Total Moving Mass (M_{ms}): 68 grams
Mechanical Compliance (C_{ms}): 440 μM/N

Small Signal Parameters:

F_s 30 Hz
 Q_{ts} 0.15
 Q_{ms} 6.65
 Q_{es} 0.152
 V_{as} 390 L, (13.8 feet³)
 R_e 5.8 ohms
 η₀ 6.0 %
 L_e 0.9 mH

Large Signal Parameters:

S_d .079 meters², (123 in.²)
 x_{max} 2.3 mm (.09 in.)
 V_d 182cm³, (11.0 in.³)

Mounting Information:

Diameter: 389 mm (15 5/16 in.)
 Bolt Circle: 365 mm (14 3/8 in.)
 Baffle Cutout:
 Front mount 355 mm, (14 in.)
 Rear mount 352.4 mm, (13 7/8 in.)
 Overall Depth: 157 mm (6 3/16 in.)
 Net Weight: 10.6 kg (23 lbs. 5.5 oz.)
 Shipping Weight: 11.6 kg (25 lbs. 25 9/16 oz.)

ER-1880C

Diameter: 460 mm (18 inches)
Nominal Impedance: 8 ohms
Frequency Range: 30 Hz to 2.5 kHz @ -10 dB
Highest Crossover Frequency: 500 Hz
Power Capacity: 400 watts, continuous
Sensitivity: 99 dB (@ 2.83v @ 1 m)
Voice Coil Diameter: 76 mm (3 inches)
Voice Coil Material: edgewound copper
Winding Length: 13 mm (0.51 inches)
Former Material: Kapton
Magnetic Gap Length: 10.5 mm (0.4125 in.)
Magnet Weight: 2.7 kg (5 lb 15 oz)
Magnet Assembly Weight: 8.4 kg (18 lb 7oz)
B1 Product (B*1): 20.3 Tesla Meters
Effective Piston Diameter: 0.381 m (15 in.)
Total Moving Mass (M_{ms}): 132 grams
Mechanical Compliance (C_{ms}): 141 μM/N

Small Signal Parameters:

F_s 37 Hz
 Q_{ts} 0.41
 Q_{ms} 10.4
 Q_{es} 0.42
 V_{as} 260 L, (9.2 feet³)
 R_e 5.7 ohms
 η₀ 3.0 %
 L_e 0.9 mH

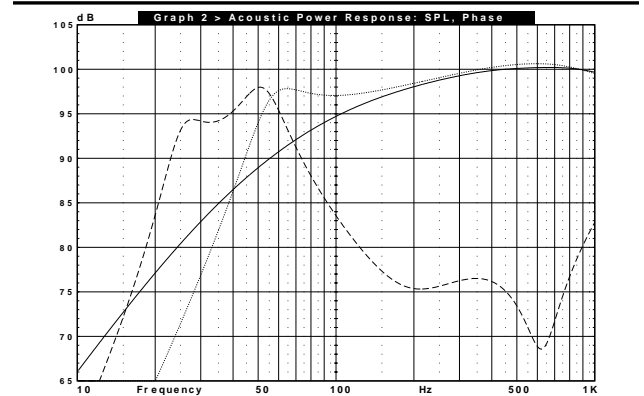
Large Signal Parameters:

S_d 0.114 meters², (176.7 in.²)
 x_{max} 2.5 mm (0.1 in.)
 V_d 285 cm³, (17.7 in.³)

Mounting Information:

Diameter: 470 mm (18 1/2 in.)
 Bolt Circle: 441 mm (17 3/8 in.)
 Baffle Cutout:
 Front mount 425 mm, (16 3/4 in.)
 Rear mount 413 mm, (16 1/4 in.)
 Overall Depth: 222 mm (16 3/4 in.)
 Net Weight: 11.2 kg (24 lbs. 9 oz.)
 Shipping Weight: 14.1 kg (31 lbs. 1 oz.)

— DGL Entry:11, Name:ER-1580C, 2 FT3 SEALED
 --- DGL Entry:12, Name:ER-1580C, 2 FT3 VENTED, 50HZ
 - - - DGL Entry:13, Name:ER-1580C, 6thBP/BES MED 14.6 FT3



ER1580C Loudspeaker Enclosure Analysis Graph

— DGL Entry:18, Name:ER-1880C, 5.6 FT3 SEALED
 --- DGL Entry:19, Name:ER-1880C, 5.4 FT3 VENTED, 32HZ



ER1880C Loudspeaker Enclosure Analysis Graph

**Power testing is done for eight hours using band-limited pink noise at a voltage which corresponds to the rated power of the system into its minimum impedance. Since music and voices have peaks that are much higher than the average level, the noise source used has a crest factor (peak to RMS ratio) of 6 dB.*

LOW FREQUENCY TRANSDUCERS



Professional Audio Systems loudspeaker products offer the system designer the expertise gained from over 20 years of transducer development and manufacturing.

The voice coils used in the Low Frequency series are long: Nearly twice the height of the magnetic gap. They are 4 inches in diameter and edge wound with copper ribbon wire which is insulated with Kapton. This is chemically bonded to a Kapton former using a patented technique which creates exceptional adhesion between the wire and the former even under the extreme temperatures generated by high power levels.

The low frequency series transducers use the same rugged cast aluminum frame as their 3 inch coil counterparts. Since these frames are deeper than most 4 inch coil loudspeakers, they require special, deeper cones. This and Kevlar reinforcement add to the strength of the cone and result in the ability to produce much higher SPL for a given level of distortion.

The top and back plates of the magnet assembly are blanchard ground for the most intimate contact between components. The vented center pole is undercut to focus the magnetic field into the voice coil gap. This improves linearity by reducing flux leakage outside of this gap. The result is lower distortion and higher sensitivity.

Surround and suspension components are chosen for their centering ability and contribute to the long term reliability of these loudspeakers.

Long voice coils are used for high excursion capability and extend low frequency response.

Low Frequency Series Features:

- 4 inch edge wound copper voice coils for high power capability.
- Kevlar reinforced cones form a more rigid piston.
- 96 ounce (6 pound) ceramic magnet in a 20 pound magnet assembly.



HL-2580C

The HL-2580C is a 4 inch voice coil 15 inch transducer intended for use as the low frequency component in high level two and three way reinforcement or playback systems. It is optimized for response to 40 Hz and below in small to medium sized cabinets (2.5 to 6 ft³). It's deep kevlar reinforced cone and medium moving mass combine to produce the high sensitivity required for these applications.



HL-2880C

The HL-2880C is a 4 inch voice coil 18 inch transducer intended for use as the low frequency component in high level three-way reinforcement or playback systems. It is optimized for response to 35 Hz and below in small to medium sized cabinets (3.5 to 7 ft³). It's kevlar reinforced cone has an included angle of 90° making it deeper and more rigid than any competitive 18 inch driver available.

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Professional Audio Systems
2270 Cosmos Court
Carlsbad, California 92009
FAX: (760) 431-9496
TEL: (760) 431-9924

Specifications

HL-2580C

Diameter: 380 mm (15 inches)
Nominal Impedance: 8 ohms
Frequency Range: 30 to 1.5 kHz @ -10 dB
Highest Crossover Frequency: 1.2 kHz
Power Capacity: 500 watts, continuous
Sensitivity: 99 dB (@ 2.83v @ 1 m)
Voice Coil Diameter: 100 mm (4 inches)
Voice Coil Material: edgewound copper
Winding Length: 19.5 mm (0.768 inches)
Former Material: Kapton
Magnetic Gap Length: 10.5 mm (0.4125 in.)
Magnet Weight: 2.7 kg (5 lb 15 oz)
Magnet Assembly Weight: 9.7 kg (21 lb 7oz)
B1 Product (B¹): 24.5 Tesla Meters
Effective Piston Diameter: 0.317 m (12.5 in.)
Total Moving Mass (M_{ms}): 112 grams
Mechanical Compliance (C_{ms}): 185 μM/N

Small Signal Parameters:

F_c 35 Hz
 Q_{ts} 0.24
 Q_{ms} 9.4
 Q_{es} 0.245
 V_{as} 164 L, (5.8 feet³)
 R_e 5.9 ohms
 η_0 2.8 %
 L_e 1.7 mH

Large Signal Parameters:

S_d .079 meters², (123 in.²)
 x_{max} 6.4 mm (.25 in.)
 V_d 500 cm³, (31 in.³)

Mounting Information:

Diameter: 389 mm (15 5/16 in.)
 Bolt Circle: 365 mm (14 3/8 in.)
 Baffle Cutout:
 Front mount 355.6mm, (14 in.)
 Rear mount 352.4 mm, (13 7/8 in.)
 Overall Depth: 165 mm (6 1/2 in.)
 Net Weight: 11.7 kg (25 lbs. 11 oz.)
 Shipping Weight: 13 kg (28 lbs. 11 1/2 oz.)

HL-2880C

Diameter: 460 mm (18 inches)
Nominal Impedance: 8 ohms
Frequency Range: 30 to 1. kHz @ -10 dB
Highest Crossover Frequency: 500 Hz
Power Capacity: 500 watts, continuous
Sensitivity: 99 dB (@ 2.83v @ 1 m)
Voice Coil Diameter: 100 mm (4 inches)
Voice Coil Material: edgewound copper
Winding Length: 19.5 mm (0.768 inches)
Former Material: Kapton
Magnetic Gap Length: 10.5 mm (0.4125 in.)
Magnet Weight: 2.7 kg (5 lb 15 oz)
Magnet Assembly Weight: 9.7 kg (21 lb 7oz)
B1 Product (B¹): 23.8 Tesla Meters
Effective Piston Diameter: 0.374 m (14.75 in.)
Total Moving Mass (M_{ms}): 147 grams
Mechanical Compliance (C_{ms}): 114 μM/N

Small Signal Parameters:

F_c 38 Hz
 Q_{ts} 0.34
 Q_{ms} 12.5
 Q_{es} 0.35
 V_{as} 200 L, (7 feet³)
 R_e 5.5 ohms
 η_0 3.2 %
 L_e 1.7 mH

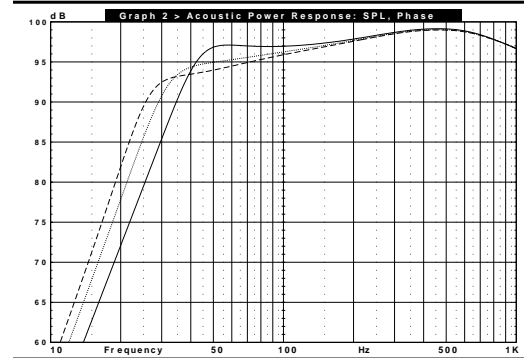
Large Signal Parameters:

S_d 0.110 meters², (170.5 in.²)
 x_{max} 6.4 mm (.252 in.)
 V_d 700 cm³, (43 in.³)

Mounting Information:

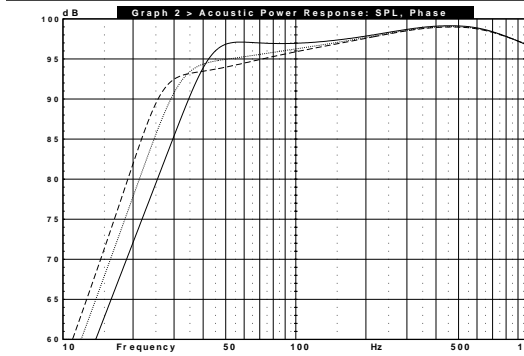
Diameter: 470 mm (18 1/2 in.)
 Bolt Circle: 441 mm (17 3/8 in.)
 Baffle Cutout:
 Front mount 425 mm, (16 3/4 in.)
 Rear mount 413 mm, (16 1/4 in.)
 Overall Depth: 2.3 mm (8 in.)
 Net Weight: 12.5 kg (27 lbs. 8 1/2 oz.)
 Shipping Weight: 15.4 kg (33 lbs. 13 1/2 oz.)

- DGL Entry: 4, Name:HL-2880C, 3.5 FT3 VENTED, 40HZ
 - DGL Entry: 5, Name:HL-2880C, 4.4 FT3 VENTED, 32HZ
 - DGL Entry:10, Name:HL-2880C, 5.5 FT3 VENTED, 28HZ



HL-2580C Loudspeaker Enclosure Analysis Graph

- DGL Entry: 4, Name:HL-2880C, 3.5 FT3 VENTED, 40HZ
 - DGL Entry: 5, Name:HL-2880C, 4.4 FT3 VENTED, 32HZ
 - DGL Entry:10, Name:HL-2880C, 5.5 FT3 VENTED, 28HZ



HL-2880C Loudspeaker Enclosure Analysis Graph

**Power testing is done for eight hours using band-limited pink noise at a voltage which corresponds to the rated power of the system into its minimum impedance. Since music and voices have peaks that are much higher than the average level, the noise source used has a crest factor (peak to RMS ratio) of 6 dB.*

REINFORCEMENT TRANSDUCERS



Professional Audio Systems loudspeaker products offer the system designer the expertise gained from over 20 years of transducer development and manufacturing.

The voice coils used are 3 inches in diameter and edge wound with copper ribbon wire which is insulated with Kapton. This is chemically bonded to a Kapton former using a patented technique which creates exceptional adhesion between the wire and the former even under the extreme temperatures generated by high power levels.

Medium weight cones contribute to the durability of these transducers while keeping their sensitivity high.

The top and back plates of the magnet assembly are blanchard ground for the most intimate contact between components. The vented center pole is undercut to focus the magnetic field into the voice coil gap. This improves linearity by reducing flux leakage outside of this gap. The result is lower distortion.

Surround and suspension components are chosen for their centering ability and contribute to the long term reliability of these loudspeakers.

Short voice coils used in the MB-1080C and MB-1280C produce the controlled linear excursion that is needed in horn loaded mid base systems.

The HL-1580C uses a long voice coil for high excursion capability and extended low frequency response.

Reinforcement Series Features:

- 3 inch diameter edge wound copper voice coils for high sensitivity.
- Medium weight cones for durability without sacrificing transient capability.
- 96 ounce (6 pound) ceramic magnet in a 18 pound magnet assembly.



MB-1080C

The MB-1080C is a 10 inch driver designed as a mid-bass component. It is an excellent choice for horn-loaded or direct radiator use in three-way systems. It combines an extremely tight suspension with a short voice coil for a responsive high-powered mid-range driver.



MB-1280C

The MB-1280C is a 12 inch driver with a wide range of uses. It's extended range makes it useful as a mid-bass component in either horn-loaded or direct radiator systems. It's performance as a bass component in small two-way systems is excellent.



HL-1580C

The HL-1580C is a 15 inch low frequency component. It's long voice coil and large displacement volume are excellent for use as a low frequency component in two and three-way systems. It is optimized for response to 40 Hz and below in cabinets of 2.5 to 4 cubic feet.

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Professional Audio Systems
2270 Cosmos Court
Carlsbad, California 92009
FAX: (760) 431-9496
TEL: (760) 431-9924

Specifications

MB-1080C

Diameter: 254 mm (10 inches)
Nominal Impedance: 8 ohms
Frequency Range: 80 Hz to 4 kHz @ -10 dB
Highest Crossover Frequency: 1.2 kHz
Power Capacity: 400 watts, continuous
Sensitivity: 98 dB (@ 2.83v @ 1 m)
Voice Coil Diameter: 76 mm (3 inches)
Voice Coil Material: edgewound copper
Winding Length: 13 mm (0.51 inches)
Former Material: Kapton
Magnetic Gap Length: 10.5 mm (0.4125 in.)
Magnet Weight: 2.7 kg (5 lb 15 oz)
Magnet Assembly Weight: 8.4 kg (18 lb 7oz)
B1 Product (B*1): 20.5 Tesla Meters
Effective Piston Diameter: 0.214 m (8.4 inches)
Total Moving Mass (M_{ms}): 37.8 grams
Mechanical Compliance (C_{ms}): 280 μM/N

Small Signal Parameters:

F_s 49 Hz
 Q_{ts} 0.16
 Q_{ms} 6.3
 Q_{es} 0.163
 V_{as} 51 L, (1.8 feet³)
 R_e 5.9 ohms
 n₀ 3.6 %
 L_e 0.9 mH

Large Signal Parameters:

S_d .036 meters², (55.8 in.²)
 X_{max} 2.3 mm (.09 in.)
 V_d 82.8 cm³, (5.0 in.³)

Mounting Information:

Diameter: 267 mm (10 1/2 in.)
 Bolt Circle: 246 mm (9 11/16 in.)
 Baffle Cutout:
 Front mount 229 mm, (9 in.)
 Rear mount 229 mm, (9 in.)
 Overall Depth: 110 mm (4 3/8 in.)
 Net Weight: 9.3 kg (20 lbs. 8 oz.)
 Shipping Weight: 10.4 kg (22 lbs. 12 1/2 oz.)

**Power testing is done for eight hours using band-limited pink noise at a voltage which corresponds to the rated power of the system into its minimum impedance. Since music and voices have peaks that are much higher than the average level, the noise source used has a crest factor (peak to RMS ratio) of 6 dB.*

MB-1280C

Diameter: 300 mm (12 inches)
Nominal Impedance: 8 ohms
Frequency Range: 80 Hz to 3 kHz @ -10 dB
Highest Crossover Frequency: 1500 Hz
Power Capacity: 400 watts, continuous
Sensitivity: 99 dB (@ 2.83v @ 1 m)
Voice Coil Diameter: 76 mm (3 inches)
Voice Coil Material: edgewound copper
Winding Length: 13 mm (0.51 inches)
Former Material: Kapton
Magnetic Gap Length: 10.5 mm (0.4125 in.)
Magnet Weight: 2.7 kg (5 lb 15 oz)
Magnet Assembly Weight: 8.4 kg (18 lb. 7oz)
B1 Product (B*1): 20 Tesla Meters
Effective Piston Diameter: 0.26 m (10.2 in.)
Total Moving Mass (M_{ms}): 46 grams
Mechanical Compliance (C_{ms}): 280 μM/N

Small Signal Parameters:

F_s 53 Hz
 Q_{ts} 0.21
 Q_{ms} 7.5
 Q_{es} 0.22
 V_{as} 81 L, (2.9 feet³)
 R_e 5.7 ohms
 n₀ 5.2 %
 L_e 0.9 mH

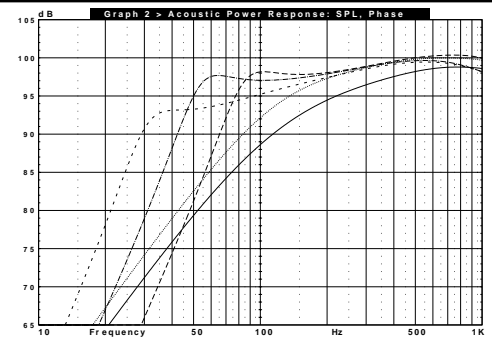
Large Signal Parameters:

S_d .053 meters², (82.2 in.²)
 X_{max} 2.3 mm (.09 in.)
 V_d 122 cm³, (7.39 in.³)

Mounting Information:

Diameter: 311 mm (12 1/4 in.)
 Bolt Circle: 292 mm (11 1/2 in.)
 Baffle Cutout:
 Front mount 279 mm, (11 in.)
 Rear mount 276 mm, (10 7/8 in.)
 Overall Depth: 127 mm (5 in.)
 Net Weight: 9.9 kg (21 lbs. 11oz.)
 Shipping Weight: 10.7 kg (23 lbs. 9 1/2 oz.)

DGL Entry: 1, Name: MB-1080C, 0.2 FT3, SEALED
 DGL Entry: 3, Name: MB-1280C, .42 FT3 SEALED
 DGL Entry: 5, Name: MB-1280C, .6 FT3 VENTED, 75HZ
 DGL Entry: 15, Name: HL-1580C, 2 FT3 VENTED, 48HZ
 DGL Entry: 16, Name: HL-1580C, 3.5 FT3 VENTED 30HZ



Loudspeaker Enclosure Analysis Graph

HL-1580C

Diameter: 380 mm (15 inches)
Nominal Impedance: 8 ohms
Frequency Range: 30 Hz to 2.5 kHz @ -10 dB
Highest Crossover Frequency: 1200 Hz
Power Capacity: 400 watts, continuous
Sensitivity: 99 dB (@ 2.83v @ 1 m)
Voice Coil Diameter: 76 mm (3 inches)
Voice Coil Material: edgewound copper
Winding Length: 19.5 mm (0.768 inches)
Former Material: Kapton
Magnetic Gap Length: 10.5 mm (0.4125 in.)
Magnet Weight: 2.7 kg (5 lb 15 oz)
Magnet Assembly Weight: 8.4 kg (18 lb 7oz)
B1 Product (B*1): 20.4 Tesla Meters
Effective Piston Diameter: 0.317 m (12 1/2 in.)
Total Moving Mass (M_{ms}): 84 grams
Mechanical Compliance (C_{ms}): 352 μM/N

Small Signal Parameters:

F_s 30 Hz
 Q_{ts} 0.20
 Q_{ms} 10.4
 Q_{es} 0.21
 V_{as} 312 L, (11 feet³)
 R_e 5.4 ohms
 n₀ 3.7 %
 L_e 1.0 mH

Large Signal Parameters:

S_d .079 meters², (122.5 in.²)
 X_{max} 6.35 mm (.25 in.)
 V_d 500 cm³, (30.1 in.³)

Mounting Information:

Diameter: 389 mm (15 5/16 in.)
 Bolt Circle: 365 mm (14 3/8 in.)
 Baffle Cutout:
 Front mount 355.6mm, (14 in.)
 Rear mount 352.4 mm, (13 7/8 in.)
 Overall Depth: 157 mm (6 3/16 in.)
 Net Weight: 10.6 kg (23 lbs. 5.5oz.)
 Shipping Weight: 10.4 kg (25 lbs. 9 1/2 oz.)

CX-2280 COAXIAL TRANSDUCER



The CX-2280C is the newest member of the PAS family of coaxial transducers. Originally developed for the LT-2 long throw system, the CX-2280C is now available with the same constant coverage horn used in the CXL-2580C.

The coaxial or concentric design radiates both high and low frequencies through the same acoustic "window". When used with dividing networks with Time Offset Correction™ (TOC™), the result is smooth, phase coherent response with transient accuracy. TOC™ causes all frequencies to appear to radiate from the same plane, IE: the same acoustic source point.

As a mid-high component in compact systems the CX-2280C requires less than 1 cubic foot (including the volume of the drivers) for response to 80 Hz.

As a full range component the CX-2280C is usable to 500 Hz in 1.5 cubic feet (including the volume of the drivers).

The CX-2280C has a four inch diameter voice coil and will mount any large format compression driver with a two-inch (48mm) exit. Since large format drivers typically have 6 dB greater sensitivity and at least twice the power capacity of their one inch counterparts, the use of the CX-2280C allows a 6 to 9 dB increase in high frequency headroom.

The TOC™ dividing network recommended for the CX-2280C is the 2B15. This network is optimized for DE-750 compression driver.

Applications:

- Mid-high component for Ultra compact systems.
- Stage monitors, and compact full-range systems.

Features:

- Constant coverage 30° x 60° horn.
- 4" voice coil, kevlar reinforced cone.
- High power capacity and high sensitivity.



Specifications:

Diameter: 300 mm (12 inches)
Nominal Impedance: 8 ohms
Frequency Range: 80 Hz to 2 kHz
HF Coverage angles: (-6 dB points, nom.) 60° H x 30° V
HF Directivity: 11 dB, 1.2 kHz -16 kHz (± 3 dB)
Recommended Crossover Frequency: 1.2 kHz (TOC™ 2B15)
Power Capacity: (LF) 500 watts
Sensitivity: (LF) 99 dB (@ 2.83v@ 1 m)
Voice Coil Diameter: 100 mm (4 inches)
Voice Coil Material: edgewound copper
Winding Length: 13 mm (0.51 inches)
Former Material: Kapton
Magnetic Gap Length: 10.5 mm (0.413 inches)
Magnet Weight: 2.7 kg (5 lb 15 oz)
Magnet Assembly Weight: 9.7 kg (21 lb 7 oz)
BL Product: 22.3 Tesla Meters
Effective Piston Diameter: 0.26 m (10.2 inches)
Total Moving Mass (M_{ms}): 49 grams
Mechanical Compliance (C_{ms}): 159 μ M/N

Small Signal Parameters:

F_s 57 Hz
Q_{ts} 0.192
Q_{ms} 8.22
Q_{es} 0.197
V_{as} 50 L (1.8 ft³)
R_e 5.6 ohms
n_o 4.6 %
L_e 1.7 mHy

Large Signal Parameters:

S_d 0.047 m² (73 in²)
x_{max} 1.8 mm (0.07 in)
V_d 84 cm³ (5.2 in³)

Mounting Information:

Diameter: 311 mm (12.25 in)
Bolt Circle: 292 mm (11.5 in)
Baffle Cutout: 279.6 mm (14 in)
Depth: 143 mm (5.375 in)
Net Weight: 11.4 kg (25 lbs)
Shipping Weight: 12.7 kg (38 lbs)

Professional Audio Systems

2270 Cosmos Court
Carlsbad, California 92009
FAX: (760) 431-9496
TEL: (760) 431-9924



LX - 2800

The LX-2800 is the first in the series of professional transducers being developed by PAS.

Using a new frame and magnet assembly the LX-2800 brings a 6 dB reduction in harmonic distortion over competitive systems. In the appropriate cabinet, it's acoustic output is 2 to 3 dB higher in the frequency range from 30 Hz to 80 Hz than competitive systems.

The LX-2800 uses a heavy ribbed cone with a EPDM half-roll edge suspension. This assures an equal spring coefficient in both positive and negative directions. This is important to low distortion. A 7 7/8 inch diameter spider enables a large linear excursion. A 4 inch diameter edge wound aluminum voice coil with a 1 inch winding length improves the sensitivity and reduces power compression.

Five to six cubic feet are recommended per driver. The optimum tuning frequency for this volume is 31 Hz.

Specifications:

Diameter: 470 mm (18.5 inches)

Nominal Impedance: 8 ohms

Frequency Range: 30 Hz to 1 kHz

Highest Recommended Crossover Frequency: 500 Hz

Power Capacity: 600 watts

Sensitivity: 98 dB (@ 2.83v @ 1m)

Voice Coil Diameter: 99.3 mm (4 inches)

Voice Coil Material: edgewound aluminum

Winding Length: 27 mm (1.063 inches)

Former Material: Kaptan

Magnetic Gap Length: 8 mm (0.315 inches)

Magnet Weight: 2.85 kg (6 lb 4 oz)

Magnet Assembly Weight: 9.06 kg (19 lb 15 oz)

BL Product: 22.6 Tesla Meters

Effective Piston Diameter: 0.39 m (15.35 inches)

Maximum excursion before damage: ± 19 mm (± 0.75 inches)

Applications:

- High powered extended low frequency systems

Features:

- Heavy ribbed cone
- Highly damped EPDM half-roll edge suspension
- High power capacity and excursion



Small Signal Parameters:

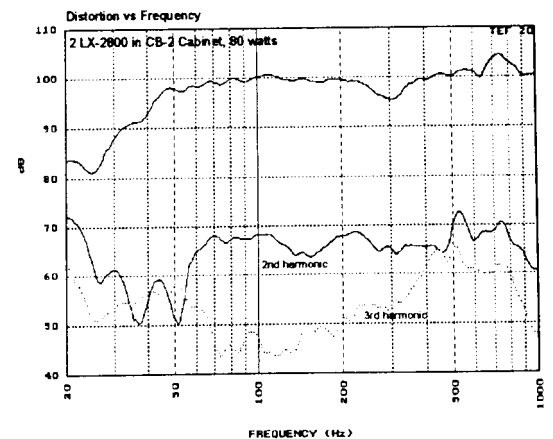
F_s 28 Hz
 R_e 4.6 ohms
 Q_{ts} 0.226
 Q_{ms} 2.28
 Q_{es} 0.251
 V_{as} 425 L (15 ft³)
 C_{ms} 210 μ M/N
 M_{ms} 160 grams
 M_{md} 138 grams
 n_o 3.38 %
 L_e 1.6 mH

Large Signal Parameters:

S_d 0.1195 m² (185 in²)
 x_{max} ± 12.7 mm (±0.50 in)
 V_d 1520 cm³ (93 in³)

Mounting Information:

Diameter: 470 mm (18.5 in)
Bolt Circle: 438 mm (17.24 in)
Baffle Cutout: 422 mm (16.6 in)
Depth: 206 mm (8.12 in)
Net Weight: 12 kg (26 lbs 5 oz)
Shipping Weight: 13.5kg (29 lbs)



Professional Audio Systems
 2270 Cosmos Court
 Carlsbad, California 92009
 FAX: (760) 431-9496
 TEL: (760) 431-9924