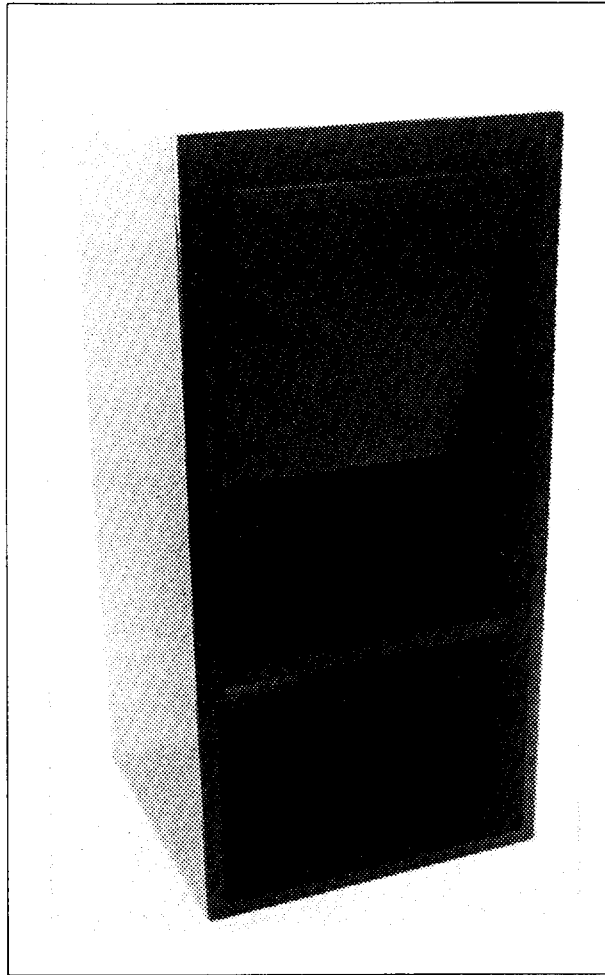


**Forsythe  
Series  
BH500L  
Bent Bass  
Horn  
Reproducer**

The BH500L is EAW's lowest cost Forsythe bent bass horn. It is intended to bring the advantages of low frequency true horn loading to smaller high output applications where the price of EAW's larger bent bass horns are prohibitive. The dramatic improvements of a true bass horn are all available in the BH500L including high efficiency, wide dynamic range, improved directivity and unsurpassed transient response. True horn loaded bass also requires less excursion from the drivers, thus lowers distortion considerably. The BH500 brings these benefits to applications which have typically used



Quasi-horns or vented boxes because the size and expense of a true horn was prohibitive.

**Description**

The BH500L is a mathematically correct, bent exponential bass horn, making use of EAW's proprietary construction techniques to offer ideal sonic performance. The BH500 also features a very low flare rate of 40 Hz which permits the horn to offer flat response down to 68 Hz with usable response down to 55 Hz as a single unit. When additional units are stacked together (up to 4 units) response can be extended flat down to 45 Hz.

The RCF L15/554 driver in the BH500L is specifically optimized for horn loaded use. It features a 100 mm (4 in) voice coil and massive magnet structure for unmatched equivalent bandwidth ratio.

**Architect's &  
Engineer's  
Specifications**

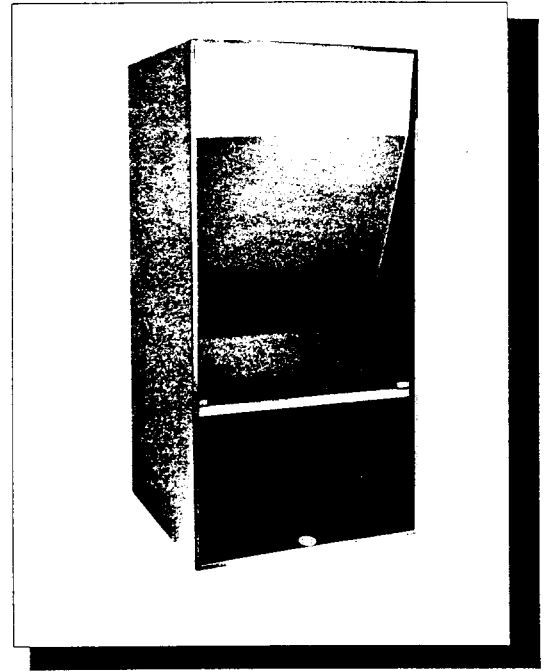
The low frequency loudspeaker system shall be of bent horn type, and shall meet the following performance criteria: Sensitivity of 107 dB SPL 1w @ 1m. Power response 55 to 600 Hz +/- 3 dB. Power handling of 500 watts in accordance with the AES standard. The loudspeaker system shall incorporate a 380mm (15-inch) driver with an reference efficiency of 5.6% and a Qes of 0.21.

The horn cabinet shall be constructed of void-free birch plywood reinforced with high damping polyurethane foam. The horn shall have a flare rate of 40 Hz. The cabinet shall have all exposed corners and edges rounded for damage resistance and the cabinet shall be finished with a black catalized polyurethane chemical coating.

The low frequency loudspeaker system shall be the EAW model BH500L.

**Forsythe  
Series  
BH800L  
Bent Bass  
Horn  
Reproducer**

The BH800L low frequency horn is designed to provide high level sound of greater than 130 dB SPL, covering the frequency range from the deepest bass up to the 250 to 400 Hz region where it will be crossed over to a proper mid bass reproducer, e.g. the MR102L. Ideal applications include live concert sound reinforcement, motion picture and performing arts theaters and dance club installations. The BH800L is also ideal for many special effect applications where extremely high output in the 45 to 250 Hz band are required. The BH800L offers a combination of high output and smooth extended response that no other commercially available reproducer can match at any where near its size. The BH800's superior performance led the Japanese Audio Consulting Society to select the BH800 based Unicus system as the finest high level sound system in the world.



**Description**

The BH800L is a bent bass horn with a very low flare rate of 44 Hz and exceptionally large mouth (effectively the entire frontal area of the cabinet) for excellent deep bass response. The horn is constructed of 18 plies-to-the-inch cross-grain-laminated birch hardwood with the highest stiffness-to-weight ratio of any wood product available, and is reinforced with EAW's unique polyurethane high damping foam. The resulting product provides the established standard for smooth, deep bass response at high sound pressure levels. The BH800L will out perform direct radiating, scoop-type and vented boxes in the 45 to 250 Hz range and exhibits higher conversion efficiency and lower effective frequency response.

**Architect's &  
Engineer's  
Specifications**

The new RCF LAB L18/851 440 mm (18-inch) loudspeaker used in the BH800L sets a new standard for durability, power handling and low distortion. Its 1000 watt AES maximum input specification enables the BH800L to offer over 138 dB SPL at 1 meter maximum output.

The low frequency loudspeaker system shall be of bent horn type, and shall meet the following performance criteria: Sensitivity of 109 dB SPL 1w @ 1m. Power response 45 to 400 Hz +- 3 dB. Power handling of 1000 watts in accordance with the AES standard. The loudspeaker system shall incorporate a 440mm (18-inch) driver with a reference efficiency of 3.3% and a Qes of 0.38.

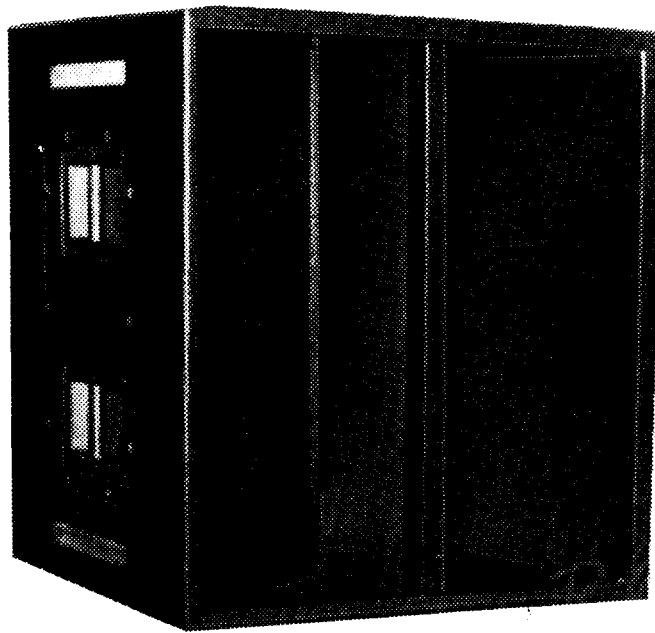
The horn cabinet shall be constructed of void-free birch plywood reinforced with high damping polyurethane foam. The horn shall have a flare rate of 40 Hz. The cabinet shall have all exposed corners and edges rounded for damage resistance and the cabinet shall be finished with a black catalyzed polyurethane chemical coating.

The low frequency loudspeaker system shall be the EAW model BH800L.

**Forsythe  
Series  
BH550L  
Bent Bass  
Horn  
Reproducer**

**Application**

The BH550L was developed as part of EAW's KF550 third generation "One Box" loudspeaker system. It provides the lowest horn flare rate in as small an enclosure as possible. As a result, the BH550 occupies a space only 32.5 x 30 x 29.75



inches and produces over 138 dB SPL at 1 meter maximum output. Designed for use in multiples where mouth area is coupled, the BH550 will provide smooth response flat down to 42 Hz. For portable high output applications, no other commercially available low frequency system can match the BH550L's combination of output, bandwidth and size.

**Description**

The BH550L is a bent bass horn designed for use in arrays of two units or more where size and output are the prime goals. The horn's low flare rate of 40 Hz permits arrays of four or more units to provide full horn loading down to 42 Hz. The polyurethane reinforced multi-ply birch hardwood construction enables the BH550L to offer unmatched reliability under even the most demanding road use.

EAW supplies two RCF LAB L15/554 380 mm (15-inch) bass drivers in the BH550L. These drivers offer 500 watts each or 1000 watts total power handling in accordance with the AES standards. The high technology European cone and suspension of the L15/554 have been optimized for bass horn use, for maximum efficiency without sacrificing distortion. The driver utilizes a 100 mm (4 in) voice coil and a massive magnetic structure.

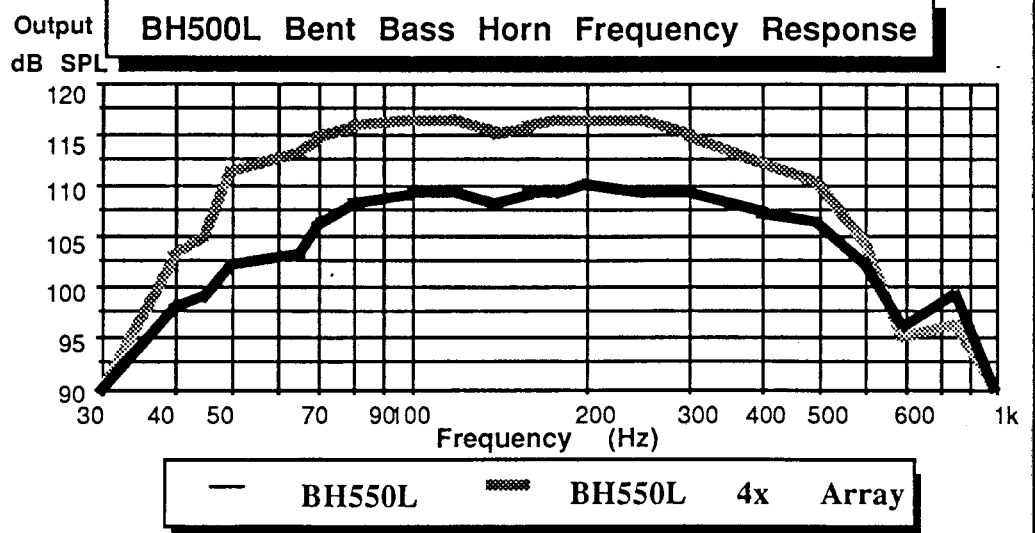
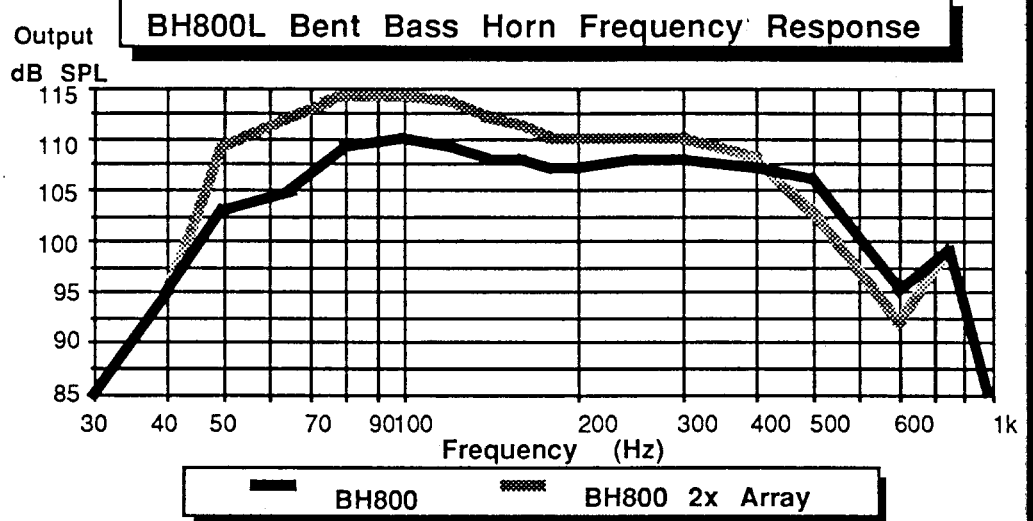
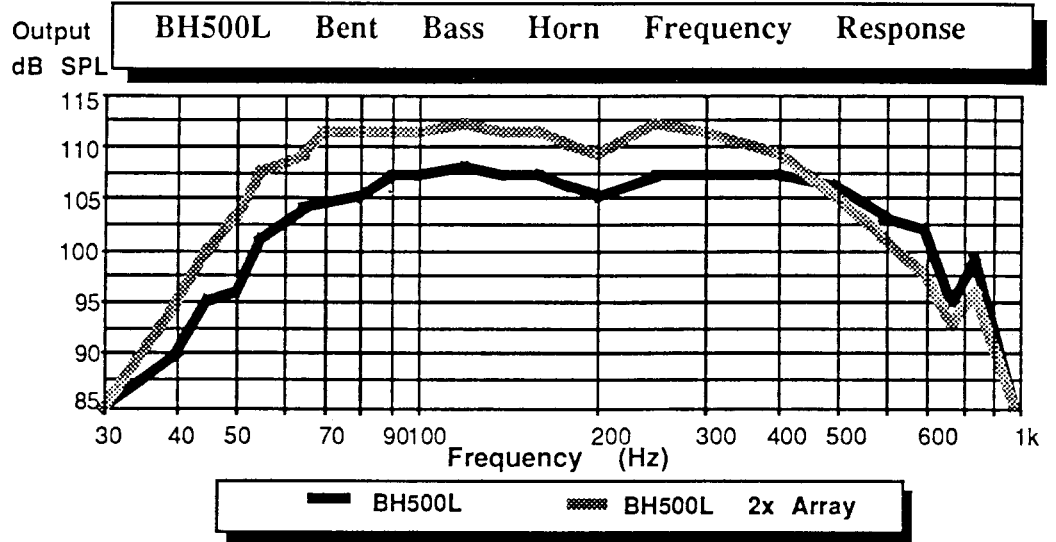
**Architect's &  
Engineer's  
Specifications**

The low frequency loudspeaker system shall be of bent horn type, and shall meet the following performance criteria: Sensitivity of 109 dB SPL 1w @ 1m. Power response 45 to 600 Hz +/- 3 dB. Power handling of 1000 watts in accordance with the AES standard. The loudspeaker system shall incorporate two 380mm (15-inch) drivers with a reference efficiency of 5.6% and a Qes of 0.21.

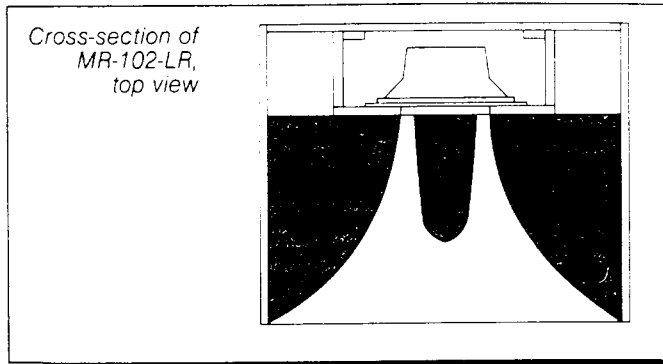
The horn cabinet shall be constructed of void-free birch plywood reinforced with high damping polyurethane foam. The horn shall have a flare rate of 40 Hz. The cabinet shall have all exposed corners and edges rounded for damage resistance and the cabinet shall be finished with a black catalyzed polyurethane chemical coating.

The low frequency loudspeaker system shall be the EAW model BH550L.

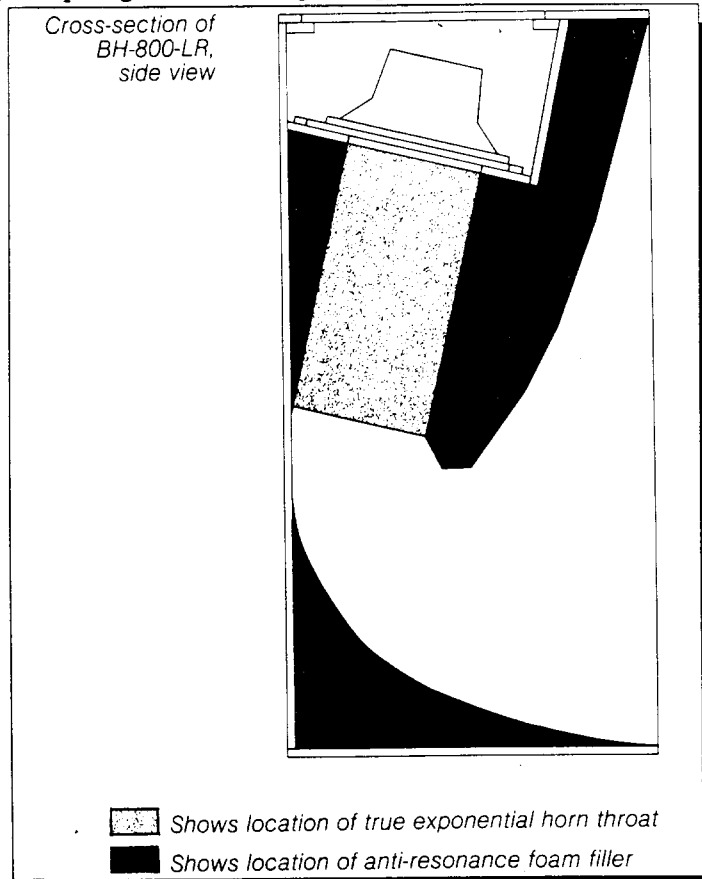
Forsythe  
 Series  
 Sound  
 Reinforcement  
 Bass Horns  
 Frequency  
 Response  
 Data



# Forsythe Series Design Principles

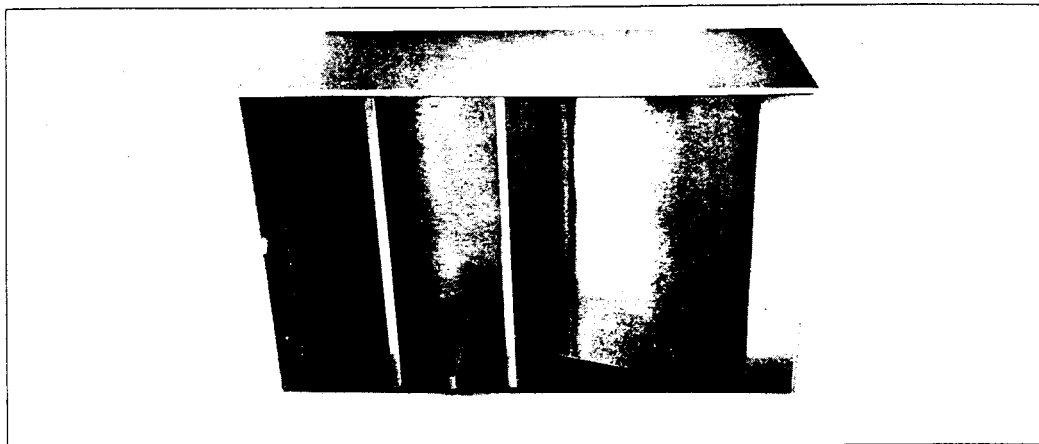


All EAW Forsythe Series mid bass reproducers utilize EAW's exclusive center displacement plug design to improve coverage and power response linearity. Kenton Forsythe developed the technique of adapting the phase plug used in high quality compression drivers for use with cone loudspeaker mid range horns in 1976. The design stabilized in 1978 with the introduction of the MR102. The cast high density polyurethane plug enables the horn to have both a smaller throat area for improved power bandwidth and a large diaphragm area for high output and low distortion.



The bent bass horn combines the best features of a front loaded exponential horn with that of a folded horn. EAW's exclusive polyurethane reinforced birch ply-wood construction technique and the assembly of the throat sections as three dimensional throat sections enable our bent bass horn to maintain more accurate exponential expansion than even the best front loaded horns. This accuracy of flare expansion, particularly in the throat region, enables EAW bent bass horns to offer smoother response and higher output than conventional bass horns. The bending of the horn path enables EAW to put a longer (lower) flare into a smaller box like a folded horn does. Only the bent horn remains true to exponential expansion, while all folded horns must compromise true expansion. As a result, folded horns only work properly over a very limited bandwidth like an organ pipe.

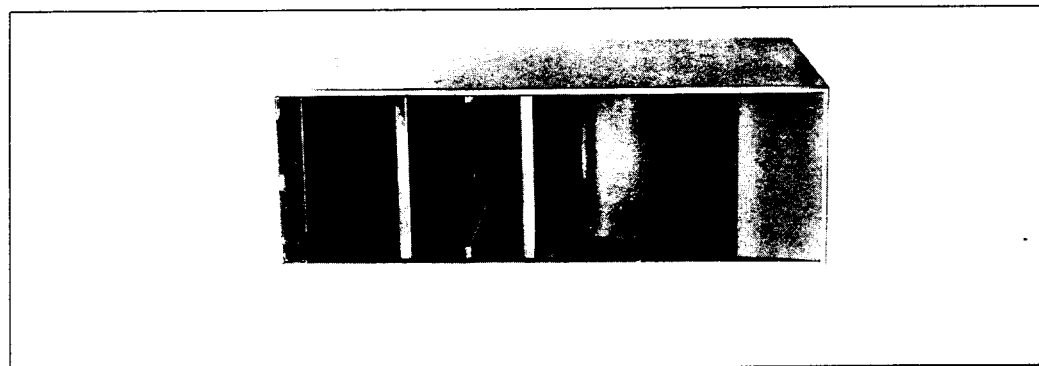
**Forsythe  
Series  
Sub-Woofer  
Bass Horn  
Reproducers**



**BH880L  
Dual 18-in  
Sub-Woofer  
Bass Horn**

The BH880L is a special purpose horn loaded sub-woofer system intended for large system applications where maximum output down to the lowest fundamentals in recorded music is required. Designed for optimum performance in arrays of four units where response is flat down to 32 Hz. In smaller applications a single unit will provide usable response down to 38 Hz. With its two RCF L18/851 drivers, the BH880L will handle 2000 watts in accordance with the AES standard. Additionally, the system boasts 111 dB SPL for 1 watt input at 1 meter, enabling maximum output of greater than 140 dB SPL at 1 meter. No other system can match the BH880L's high output and extended bass response. The BH880L is constructed for permanent installation from high density core pine with polyurethane foam reinforcing.

Primary applications for the BH880L include world class dance clubs and large installed music reinforcement systems. The BH880L is also ideal for special effect applications including sub-woofers for large motion picture theaters, theme parks and simulations. From Cape Kennedy to Studio 54, BH880's have proven themselves in the most demanding applications the world over.



**BH440L  
Single 18-in  
Sub-Woofer  
Bass Horn**

The BH440L is half a BH880L and is designed for applications where the size of the BH880L is prohibitive. It uses a single RCF LAB L18/851 440 mm (18-inch) driver with 1000 watts power handling in accordance with the AES standard. For best results, a minimum of two BH440's per array is recommended. The shape and size of the BH440L make it ideal for construction into the front of the stage.

Both the BH880L and BH440L have been optimized for maximum output at the sacrifice of high frequency response resulting in a high frequency limit of 150 Hz. The EAW MR142L mid bass reproducer has been specially designed for use with these sub-woofer bass horns.

**Forsythe  
Series  
Bent Bass  
Horns  
Specifications**

| Model:                         | BH500L   | BH800L                        | BH550L                      | BH880L  | BH440L                              |
|--------------------------------|--|-------------------------------|-----------------------------|---|-------------------------------------|
| System Type:                   | Single 15-inch Bent Bass Horn  | Single 18-inch Bent Bass Horn | Dual 15-inch Bent Bass Horn | Dual 18-inch Sub Woofer Bass Horn   | Single 18-inch Sub Woofer Bass Horn |
| Frequency Response<br>- 10 dB: | 50 to 800 Hz   | 45 to 500 Hz                  | 45 to 800 Hz                | 40 to 150 Hz  | 42 to 150 Hz                        |
| Single Array<br>+3 dB:         | 55 to 700 Hz   | 50 to 400 Hz                  | 55 to 800 Hz                | 45 to 150 Hz  | 48 to 150 Hz                        |
| Quad Array<br>+3 dB:           | 45 to 300 Hz   | 42 to 250 Hz                  | 40 to 300 Hz                | 38 to 150 Hz  | 40 to 150 Hz                        |
| Sensitivity<br>(1w@1m):        | 107 dB SPL   | 109 dB SPL                    | 109 dB SPL                  | 111 dB SPL  | 109.5 dB SPL                        |
| Maximum SPL<br>(at 1meter):    | 133 dB SPL   | 139 dB SPL                    | 139 dB SPL                  | 142 dB SPL  | 140 dB SPL                          |
| Nominal Impedance:             | 8Ω   | 4Ω                            | 4Ω                          | 4Ω  | 4Ω                                  |
| Flare Rate:                    | 40 Hz  | 44 Hz                         | 40 Hz                       | 38 Hz   | 38 Hz                               |
| Power Handling:                |  |                               |                             |   |                                     |
| AES:                           | 500 Watts  | 1000 Watts                    | 1000 Watts                  | 2000 Watts  | 1000 Watts                          |
| Sine Wave:                     | 200 Watts  | 350 Watts                     | 400 Watts                   | 700 Watts   | 350 Watts                           |
| Coverage Angles                |  |                               |                             |   |                                     |
| Horizontal:                    | 120 degrees  | 120 degrees                   | 120 degrees                 | 180 degrees   | 180 degrees                         |
| Vertical:                      | 80 degrees   | 60 degrees                    | 70 degrees                  | 180 degrees   | 180 degrees                         |
| Driver Data                    |  |                               |                             |   |                                     |
| Model:                         | L15/554  | L18/851                       | L15/554                     | L18/851   | L18/851                             |
| Quantity:                      | One  | One                           | Two                         | Two   | One                                 |
| Type:                          | 380mm (15 in)  | 440mm (18 in)                 | 380mm (15 in)               | 440mm (18 in)   | 440mm (18 in)                       |
| Connectors                     |  |                               |                             |   |                                     |
| Standard:                      | Dual 1/4-inch phone jacks & banana plugs   |                               |                             | Heavy duty Jones type barrier   |                                     |
| Optional:                      | Heavy duty Jones type barrier strips, or blank panel to accept user's terminals  |                               |                             | Strips or blank panel to accept user's terminals                                  |                                     |
| Cabinet Material:              | 18 plies per inch, cross-grain-laminated, void-free birch. All horn surface area voids filled with high damping factor polyurethane foam |                               |                             | High density core pine. All horn surface area voids filled with polyurethane foam |                                     |
| Cabinet Finish:                | Catalyzed black polyurethane chemical coating  |                               |                             | Black Catalyzed Polyurethane  |                                     |
| Cabinet Hardware:              | Recessed carrying handles, teenuts to mount castors  |                               |                             | None  |                                     |
| Dimensions                     | 50.25"<br>24.63"<br>24.63"   | 60.5"<br>29.75"<br>29.75"     | 32.5"<br>30"<br>29.75"      | 72"<br>42"<br>36"   | 72"<br>24"<br>36"                   |
| Weight:                        | 70.4 kg<br>155 lbs   | 118.2 kg<br>260 lbs           | 95.45 kg<br>210 lbs         | 190.9 kg<br>420 lbs   | 92.2 kg<br>205 lbs                  |