

DTS-640

Duplex[®] Loudspeaker System

- High output capability
- Excellent directivity control
- Enclosure allows refinishing
- Three-way all-horn-loaded system
- Full triamp or biamp with internal passive crossover

Description

The Altec Lansing DTS-640 is a three-way, all-horn-loaded, factory-assembled system with a coaxial mid/high section. The system can be configured as a triamp system or as a biamp system using the internal mid/high passive crossover.⁶ This compact system features high sensitivity, high output capability and point-source alignment, together with excellent directivity control down to 800 Hz. The coverage at 1,000 Hz is 80° horizontal by 75° vertical, and the system's nominal coverage is 60° horizontal by 40° vertical. The horn-loaded bass section extends the low-frequency response to below 60 Hz, or lower if multiple units are used. The DTS-640 consists of two 381-mm (15-inch) high-power, low-frequency drivers with a coaxial mid-/high-frequency section consisting of a high-efficiency 254-mm (10-inch) midrange driver together with a 25.4 mm (1-in.) neodymium compression driver. Both drivers utilize 60° x 40° constant-directivity horns. Electrical connection to each driver is made by large screw terminals able to accept up to 10-gauge wire, or two parallel, 8-pin female Neutrik Speakon[®] connectors. The system should be used with the Altec Lansing 2400A digital loudspeaker processor. The recommended crossover frequencies are 210 Hz and 1.6 kHz. The enclosure is constructed

from 19-mm (0.75-in.) thick thoroughly braced 14-ply birch plywood lined with sound-absorbent glass wool. A complete four-point hanging system is provided for safe suspension of the DTS-640. The system may then be hung as a single unit or as part of a cluster. The finish of the enclosure is textured black paint which can be painted to complement any interior. The grille is constructed from 16-gauge black, powder-coated steel and is backed with a weather-resistant foam.

The DTS-640 can be used individually or in arrays to create compact, high-output and directivity-controlled systems for use in churches, auditoriums, hotels and civic centers.

Architects' And Engineers' Specifications

The loudspeaker system shall be of the three-way, all-horn-loaded type consisting of one 381-mm (15-in.) high-power woofer together with a 254-mm (10-in.) Duplex[®] loudspeaker with a coaxially mounted 25.4-mm (1-in.) neodymium compression driver loaded with a 60° x 40° constant-directivity horn. The system shall be capable of being biamped, (using the internal passive crossover), or triamped⁶. The loudspeaker system shall meet the following performance criteria. Power handling shall be 400 watts of pink noise with 6-dB crest factor, bandlimited from

60 Hz to 210 Hz, and 350 watts bandlimited from 210 Hz to 20 kHz. Frequency response shall be smooth and uniformly usable from 60 Hz to 20 kHz. Pressure sensitivity shall be 103 dB SPL when measured at one meter on axis with one wall of bandlimited pink noise from 60 Hz to 20 kHz. The enclosure shall be constructed of 19-mm (0.75-in.), 14-ply birch plywood and shall be heavily braced and lined with sound-absorbent glass wool. The enclosure shall be finished in a textured black paint and a removable black metal grille shall be provided. The dimensions of the enclosure shall be 838 mm (32.8-in.) high by 498 mm (19.6-in.) wide by 498 mm (19.6-in.) deep. The loudspeaker system shall weigh 41.8 kg (92.0 lb).

The loudspeaker system shall be the Altec Lansing DTS-640.

Uniform Limited Warranty Statement

Altec Lansing products are guaranteed against malfunction due to defects in materials or workmanship for a specified period, as noted in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual, beginning with the date of original purchase. If such malfunction occurs during the specified period, the product will be repaired or replaced (at our option) without charge. The product will be returned to the customer prepaid. **Exclusions and**

Altec Lansing DTS-640 Duplex Loudspeaker System

Altec Lansing DTS-640 Duplex Loudspeaker System

Limitations: The Limited Warranty does not apply to: (a) exterior finish or appearance; (b) certain specific items described in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual; (c) malfunction resulting from use or operation of the product other than as specified in the product data sheet or owner's manual; (d) malfunction resulting from misuse or abuse of the product; or (e) malfunction occurring at any time after repairs have been made to the product by anyone other than Mark IV Audio Service or any of its authorized service representatives. **Obtaining Warranty Service:** To obtain warranty service, a customer must deliver the product, prepaid, to Mark IV Audio Service or any of its authorized service representatives together with proof of purchase of the product in the form of a bill of sale or receipted invoice. A list of authorized service representatives is available from Mark IV Audio Service at 10500 W. Reno Avenue,

Oklahoma, OK 73127 (800/845-8727 or FAX 405/577-3274). **Incidental and Consequential Damages Excluded:** Product repair or replacement and return to the customer are the only remedies provided to the customer. Altec Lansing shall not be liable for any incidental or consequential damages including, without limitation, injury to persons or property or loss of use. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **Other Rights:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Altec Lansing Speakers and Speaker Systems are guaranteed against malfunction due to defects in materials or workmanship for a period of five (5) years from the date of original purchase. The Limited Warranty does not apply to burned voice coils or malfunctions such as cone and/or coil damage resulting

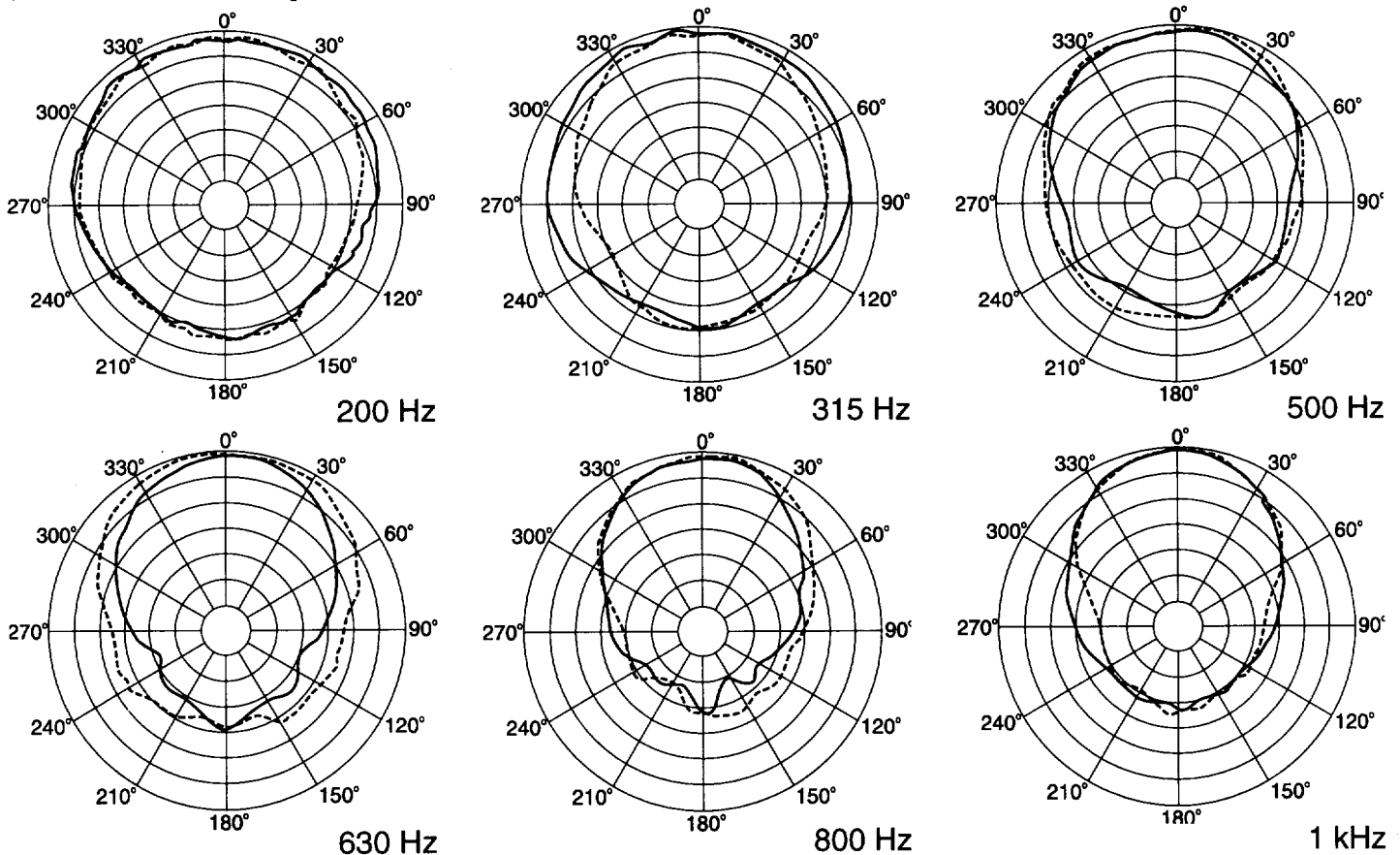
from improperly designed enclosures. Altec Lansing active electronics associated with the speaker systems are guaranteed for three (3) years from the date of original purchase. Additional details are included in the Uniform Limited Warranty statement.

Altec Lansing Accessories are guaranteed against malfunction due to defects in materials or workmanship for a period of one (1) year from the date of original purchase. Additional details are included in the Uniform Limited Warranty statement.

For technical assistance, contact Technical Support at 800/234-6831 or 616/695-6831, M-F, 8:00 a.m. to 5:00 p.m. eastern standard time.

Specifications subject to change without notice.

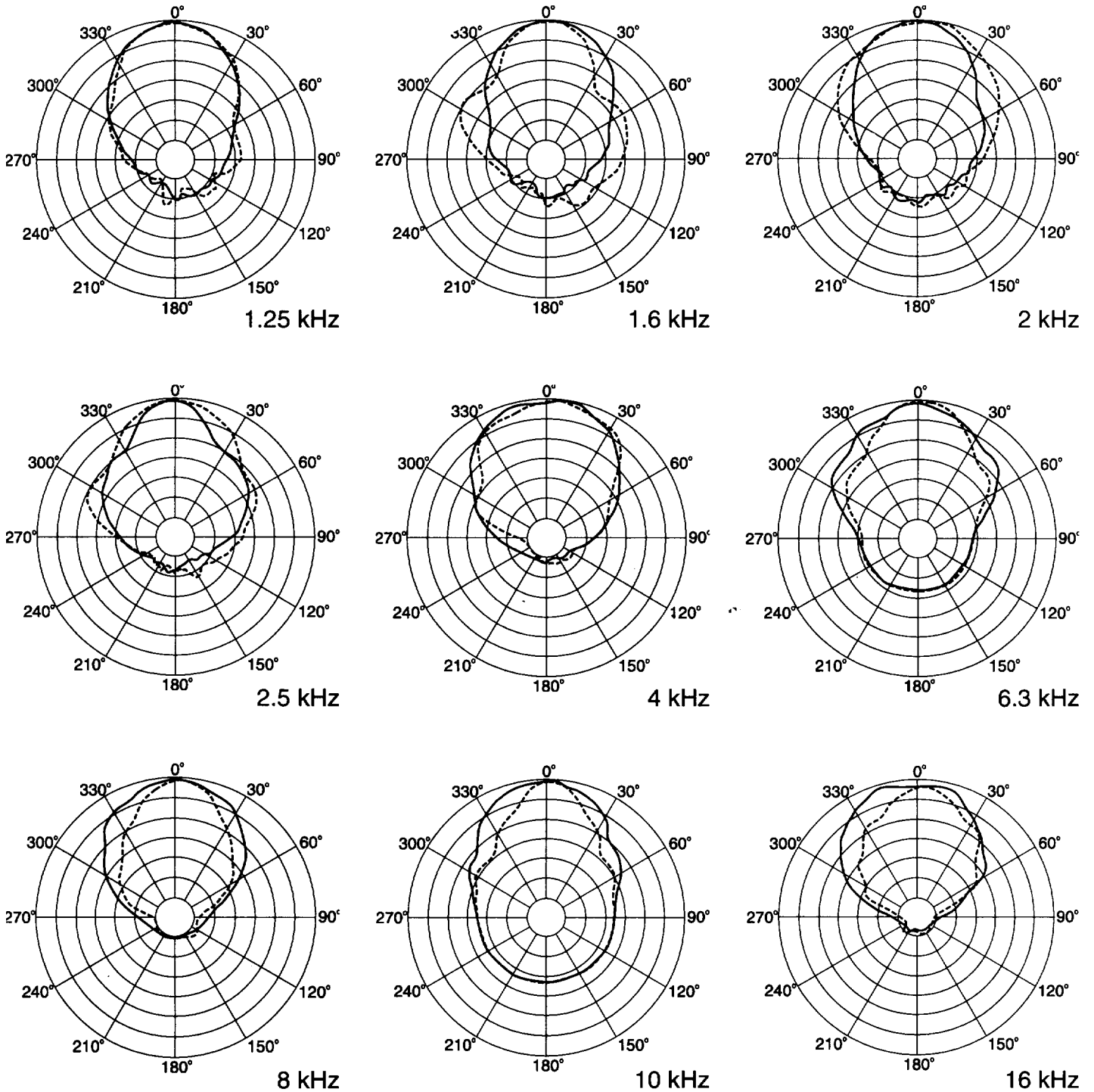
Figure 1—DTS-640 Polar Response
(one-third-octave bands of pink noise)



* Long enclosure axis vertical.

Altec Lansing DTS-640 Duplex™ Loudspeaker System

Figure 1—DTS-640 Polar Response
(one-third-octave bands of pink noise)¹



— Horizontal*
- - - Vertical*

* Long enclosure axis vertical.

Altec Lansing DTS-640 Duplex Loudspeaker System

Figure 2—DTS-640 Frequency Response
(on axis, 1 watt/1 meter, anechoic environment)

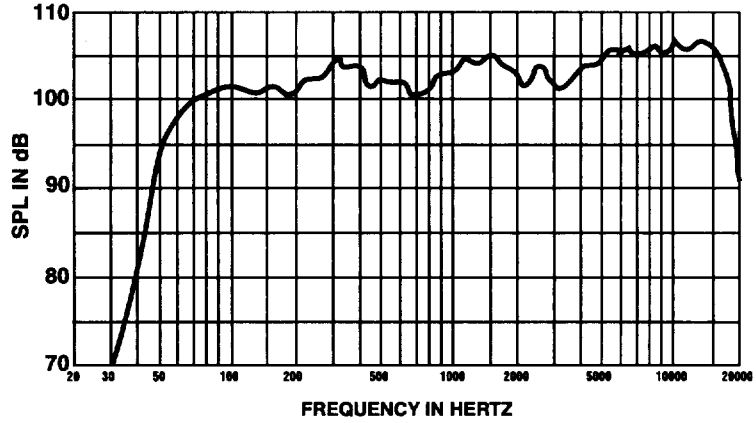


Figure 3—DTS-640 Impedance Mid-High with Passive Crossover

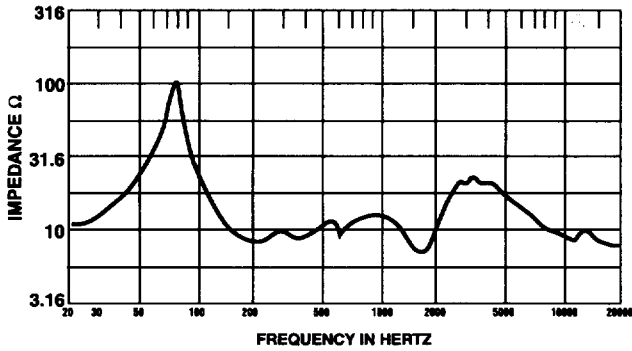


Figure 4—DTS-640 Impedance Curve

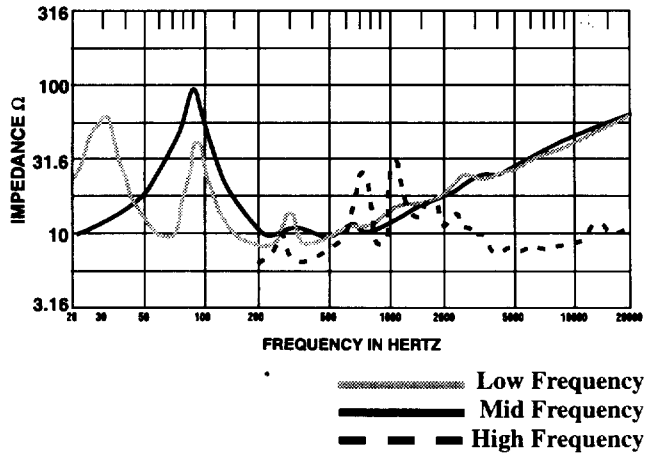


Figure 5—DTS-640 Harmonic Distortion
(1% rated input power (4 W))¹

--- 3rd Harmonic
— 2nd Harmonic

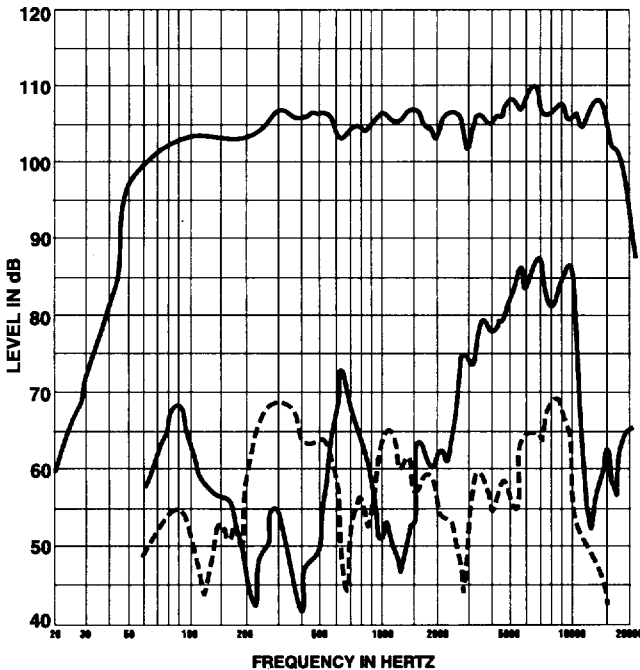
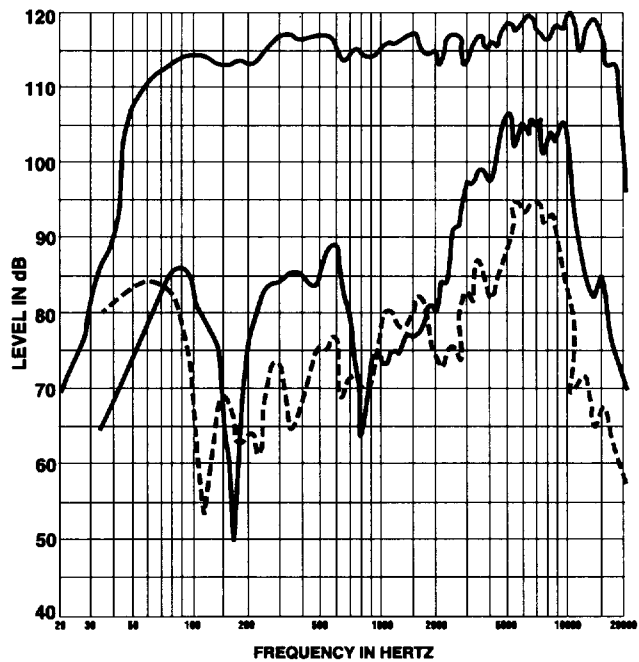


Figure 6—DTS-640 Harmonic Distortion
(10% rated input power (40 W))¹



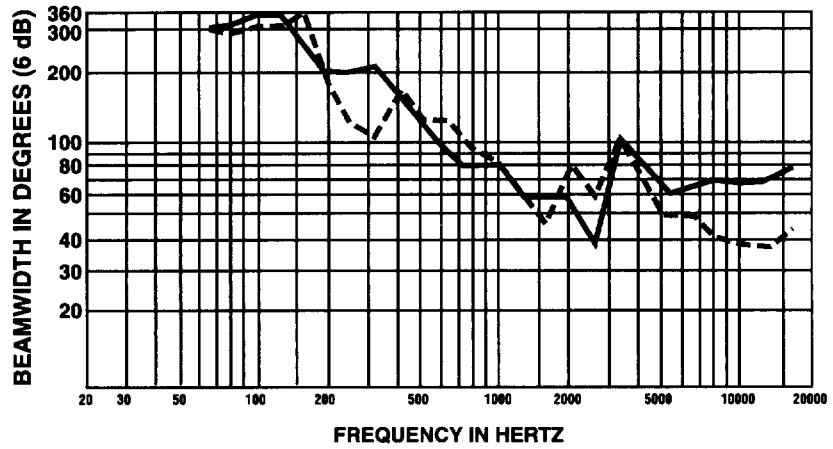
Altec Lansing DTS-640 Duplex Loudspeaker System

Altec Lansing DTS-640 Duplex^(1c) Loudspeaker System

Altec Lansing DTS-640 Duplex[®] Loudspeaker System

Figure 7—DTS-640 Beamwidth

—— Horizontal*
 - - - Vertical*



* Long enclosure axis vertical.

Figure 8—DTS-640 R_{θ} (Q) and Directivity Index, D_i

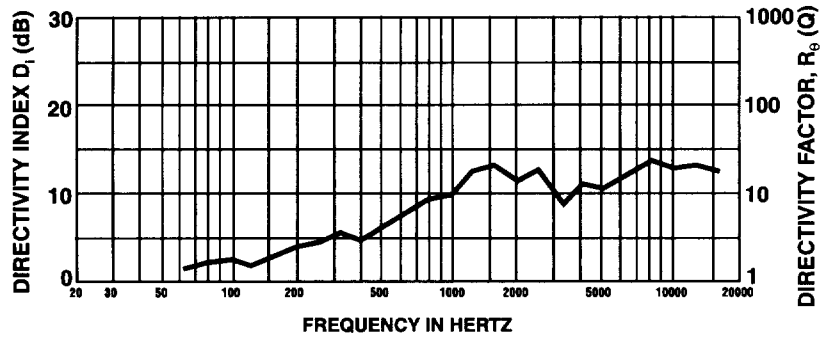
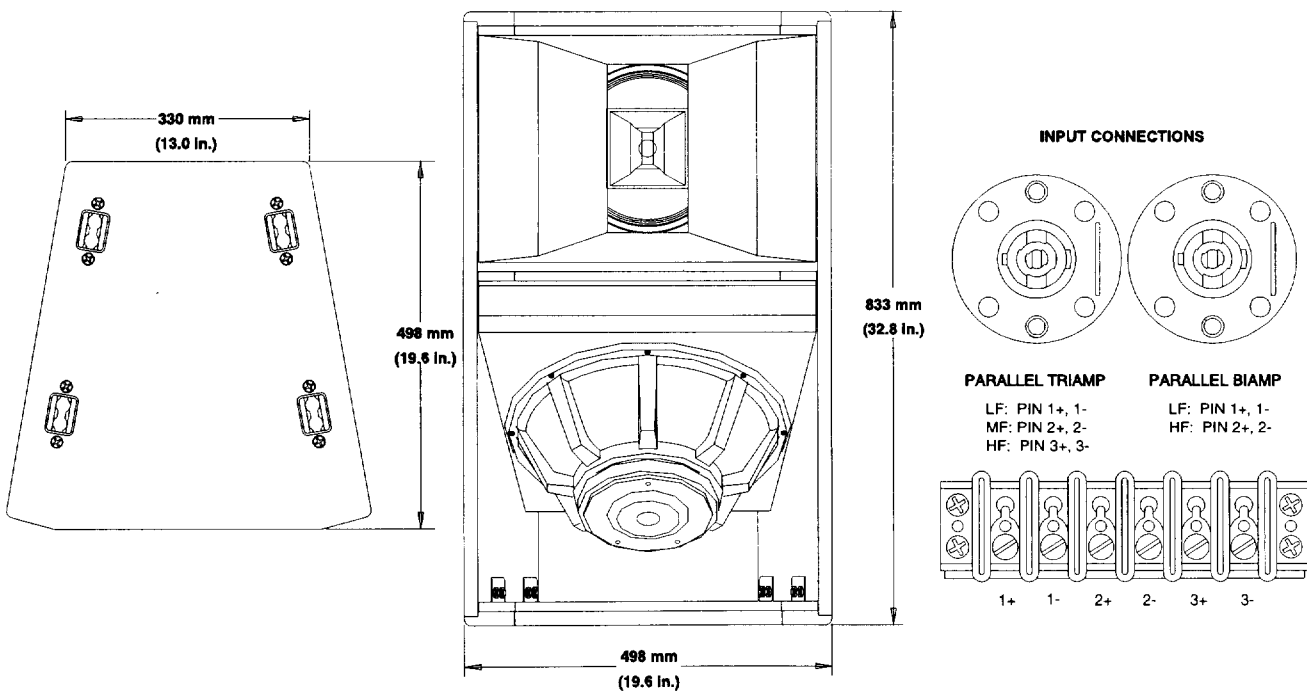


Figure 9—DTS-640 Dimensions



Altec Lansing DTS-640 Duplex[®] Loudspeaker System

Specifications

System Type:

Three-way, all-horn-loaded, full-range loudspeaker system; triamp or biamp using internal passive crossover⁶

Pressure Sensitivity,

HF (1.6-20 kHz):

113 dB SPL²

MF (210-1,600 Hz):

104 dB SPL²

LF (60-210 Hz):

102 dB SPL²

Frequency Response (see Figure 2):

60-20,000 Hz³

Beamwidth,

Horizontal, 800-16,000 Hz:

60° (+42°, -22°)

Vertical, 400-16,000 Hz:

40° (+62°, -2°)

Directivity Factor, R_0 (Q), 800-16,000 Hz:

16.6 (+8.5, -8.7)

Directivity Index, D_p , 800-16,000 Hz:

12.2 dB (+1.8 dB, -3.2 dB)

Power Handling, Long Term:

HF (1.6-20 kHz):

60 watts⁴

MF (210-1,600 Hz):

300 watts⁴

LF (60-210 Hz):

400 watts⁴

Maximum Long-Term Output,

HF (1.6-20 kHz, 60 watts input):

130 dB SPL⁵

MF (210-1,600 Hz, 300 watts input):

128.5 dB SPL⁵

LF (60-210 Hz, 400 watts input):

128 dB SPL⁵

Impedance,

HF:

6.8 ohms minimum

8.0 ohms nominal

MF:

8.5 ohms minimum

8.0 ohms nominal

LF:

8.1 ohms minimum

8.0 ohms nominal

Components:

HF:

Neodymium driver with 25.4-mm (1-in.)

exit

MF:

High-efficiency 254-mm (10-in.) cone

driver

LF:

High-efficiency 381-mm (15-in.)

woofer

Input Terminals:

Large screw terminals with parallel 8-

pin Neutrik Speakon[®] connectors

Replacement LF:

815-1317

Replacement MF:

810-2779

Replacement HF:

835-2810

Replacement Grille:

83965

Enclosure:

Horn-loaded LF and MF, built of 19-mm (0.75-in.), 14-ply birch plywood with appropriate bracing, lined with glass wool; four point hanging system included

Dimensions:

838 mm (32.8 in.) high

498 mm (19.6 in.) wide

498 mm (19.6 in.) deep

Net Weight:

41.8 kg (92.0 lb)

Shipping Weight:

47.3 kg (104.0 lb)

Finish:

Black textured paint with black 16-gauge powder-coated grille

Accessories:

Four Ancra 42546-10 single-stud tie-down cargo suspension fittings provided with system

NOTES ON MEASUREMENT CONDITIONS

1. Distortion components invalid above 10 kHz. The distortion at any given frequency may be found by graphically taking the difference between the fundamental and harmonic, and adding the number of decibels which the harmonic has been raised on the graph and applying the formula:

$$\text{percent distortion} = 100 \times 10^{(\text{difference in dB}/20)}$$

2. Pink-noise signal, one watt calculated using E^2/Z_{\min} , 3.16-meter measurement distance referred to one meter.

3. On axis, one watt calculated using E^2/Z_{\min} , 3.16-meter measurement distance referred to one meter, low frequencies corrected for anechoic-chamber error.

4. This system rating patterned after the ANSI/EIA RS-426-A 1980 method where the test signal is pink noise with a 6-dB crest factor over the bandwidth of the system, with power calculated using $E^2/R_E \times 1.15$, for 8 hours (where E is the RMS test voltage and R_E is the dc resistance of the woofer voice coil).

5. This measurement made under the same conditions as pressure sensitivity, but at rated power, and takes into account any power-compression effects due to nonlinearities in the system.

6. For switching from bi-amp to tri-amp mode (or from tri-amp to bi-amp mode), the high/mid back panel must be removed with the directions for switching modes being located on the back of this removed panel.



600 Cecil Street, Buchanan, MI 49107

800/234-6831, 616/695-6831, Fax 616/695-1304