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## TOA SPEAKER SYSTEM

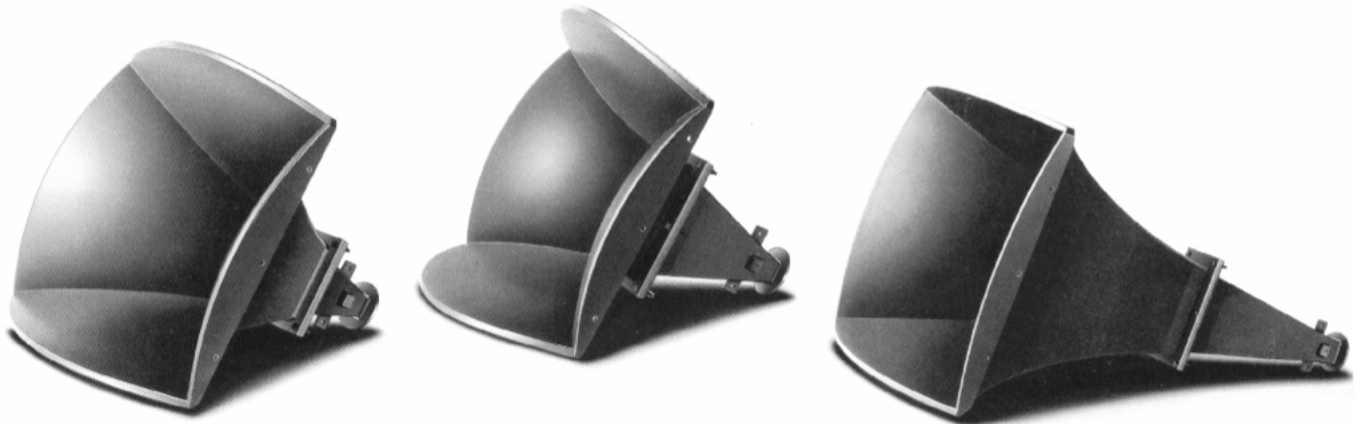
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# UNIFORM DIRECTIVITY HORNS

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## LE-940/LE-640/LE-420

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### DESCRIPTION

The LE Series uniform directivity horns employ original TOA technology to meet the most stringent professional standards in precision directivity control, high efficiency and quality audio output. LE Series uniform directivity horns are ideal for applications such as theaters, concert halls, auditoriums and churches.

The designs of horizontal and vertical side walls in the LE Series employ different equations, and the side walls are arranged so the mouth of the speaker is an equiphase surface, permitting each sound wave to leave the horn's open end at the same instant. These design features combine to create an ideal geometry for maintaining uniform sound dispersion, as well as for ensuring high efficiency across the low frequency band.

Each horn in the LE Series is intended for systems with a crossover point at 500Hz or higher, and each is rated at a uniform frequency range of 630Hz to 16kHz at any point within the rated coverage angle. Controlled coverage patterns for the horns (horizontal by vertical) are LE-940: 90° x 40°; LE-640: 60° x 40°; LE-420: 40° x 20°.

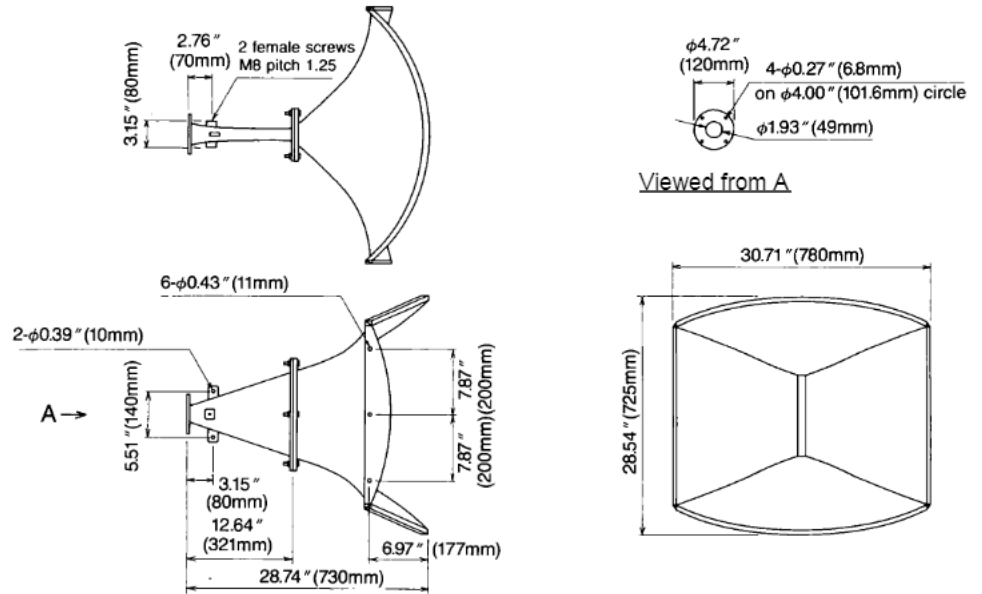
Each horn comes with a cast aluminum 2-inch (49mm) diameter throat, for mating with the TOA HFD-651-8 or HFD-651-16 driver through the optional YS-651 throat adaptor. The horn mouth is constructed of fiberglass reinforced plastic, and has sufficient thickness to suppress unnecessary resonance. The mouth and throat are both provided with mounting holes.

### FEATURES

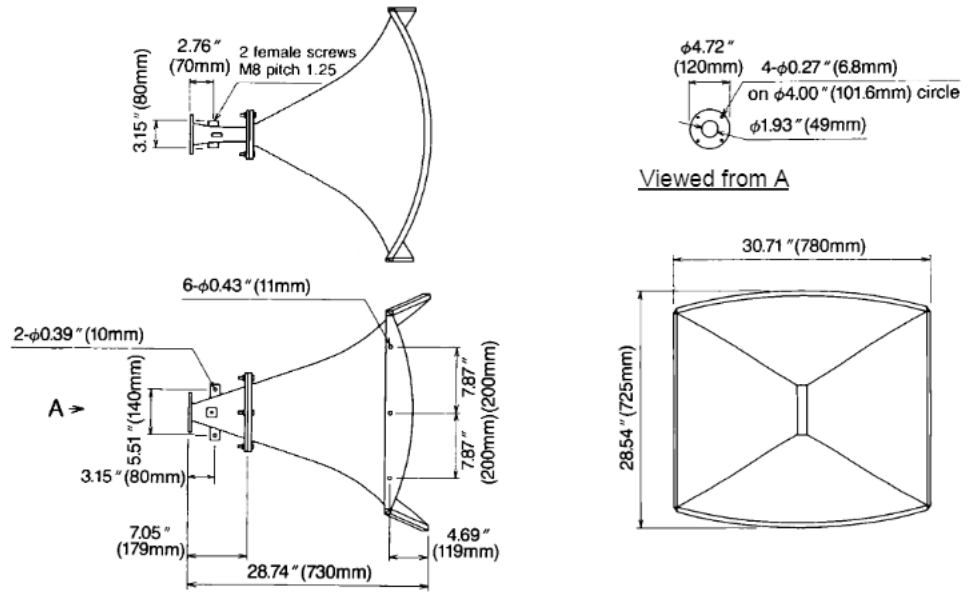
1. Original TOA design ensures precise directivity control and high quality sound.
2. Precisely controlled horizontal and vertical sound dispersion pattern across a frequency range of 630 to 16,000Hz.
3. High efficiency over the low frequency band.
4. Smooth frequency response.
5. 2-inch (49mm) diameter cast-aluminum throat.
6. Resonance-free, rigid construction.
7. Mouth/throat mounting holes.

APPEARANCE AND DIMENSIONAL DIAGRAM

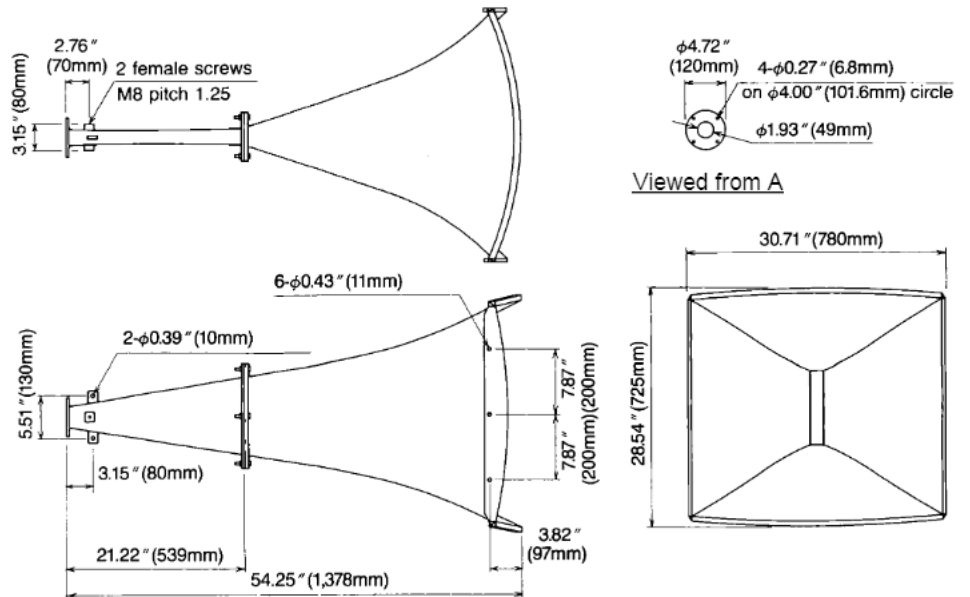
LE-940



LE-640

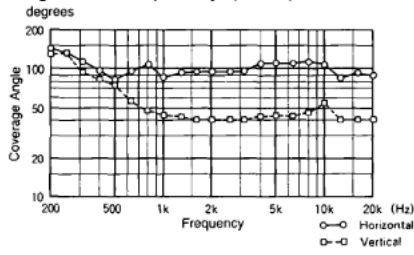


LE-420

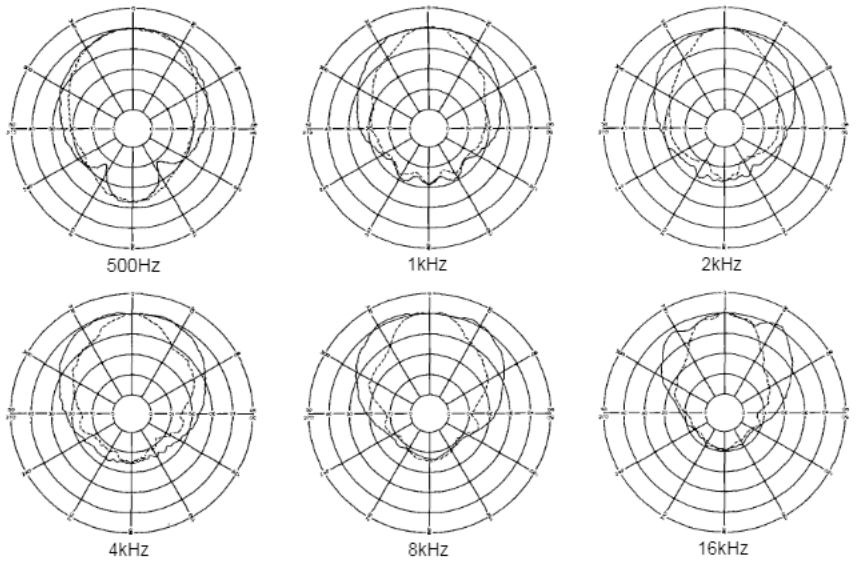


# CHARACTERISTIC DIAGRAMS

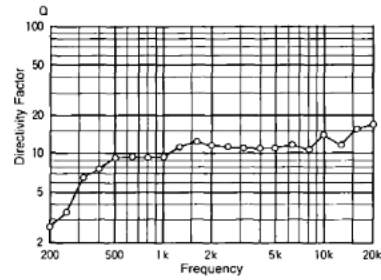
• Coverage Angle vs Frequency (-6dB)



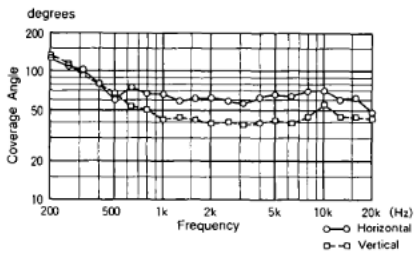
• Polar Response (1/3 Octave Pink Noise) — Horizontal ---- Vertical



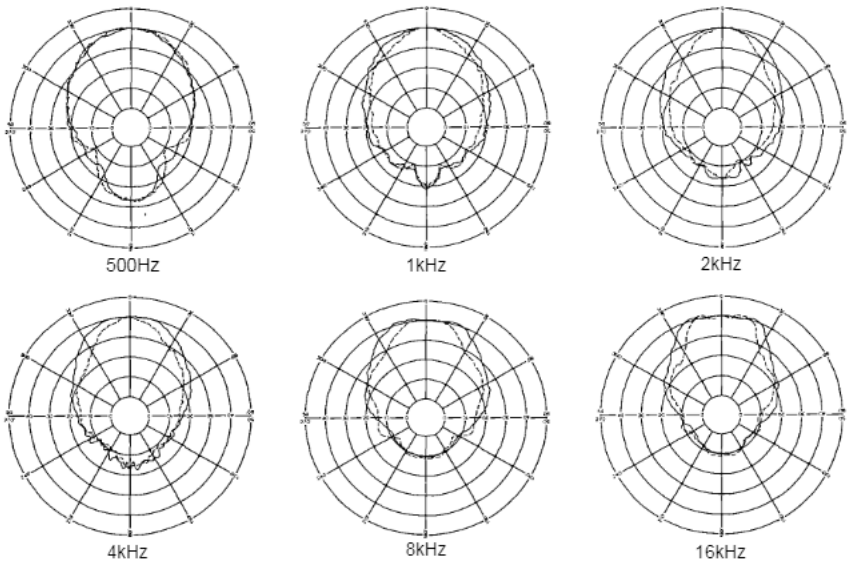
• Directivity Factor vs Frequency (Q)



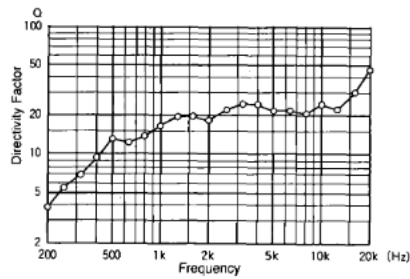
• Coverage Angle vs Frequency (-6dB)



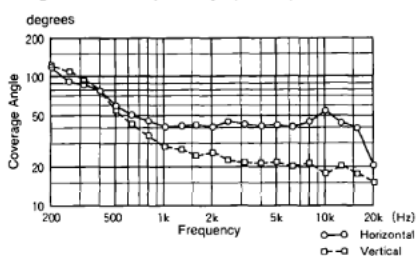
• Polar Response (1/3 Octave Pink Noise) — Horizontal ---- Vertical



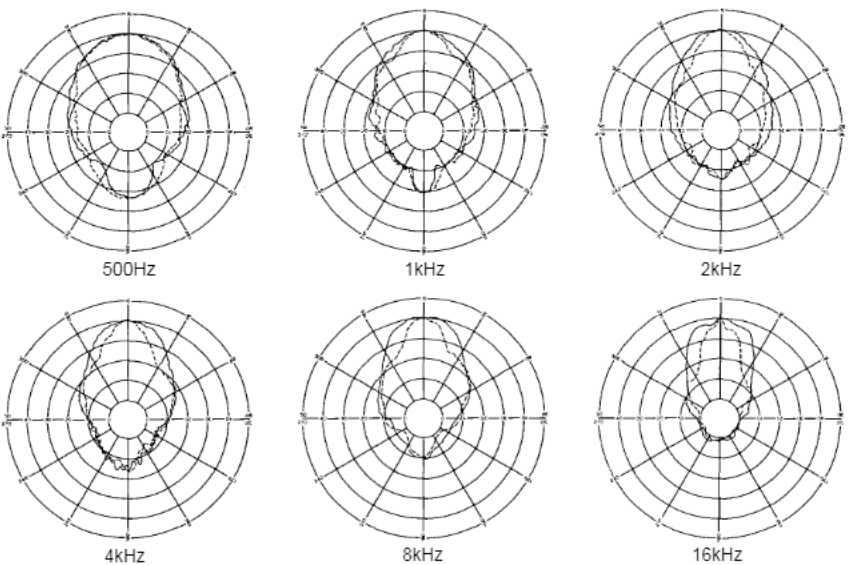
• Directivity Factor vs Frequency (Q)



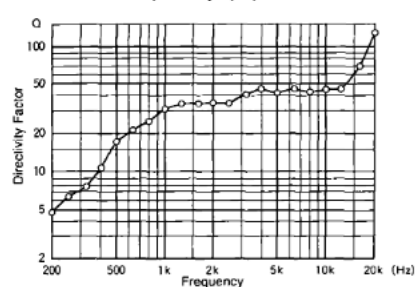
• Coverage Angle vs Frequency (-6dB)



• Polar Response (1/3 Octave Pink Noise) — Horizontal ---- Vertical



• Directivity Factor vs Frequency (Q)



## SPECIFICATIONS

Model		LE-940
Coverage Angle	Horizontal	90° (+ 22°, -6°) (630Hz to 20kHz)
	Vertical	40° (+15°, -0°) (630Hz to 20kHz)
Crossover Frequency		500Hz or more
Throat Diameter		2" (49mm)
Applicable Driver		HFD-651-8/16 (using throat adaptor)
Construction	Horn Bell	Fiberglassreinforcedplastic
	Horn Throat	Aluminum, sand cast
Dimensions	Mouth Height	28.5" (725mm)
	Mouth Width	30.7" (780mm)
	Length	28.7" (730mm)
Weight		28.6 lbs (13kg)

Model		LE-640
Coverage Angle	Horizontal	60° (+ 15° -4°) (630Hz to 16kHz)
	Vertical	40° (+16° -2°)(630Hz to 20kHz)
Crossover Frequency		500Hz or more
Throat Diameter		2" (49mm)
Applicable Driver		HFD-651-8/16 (using throat adaptor)
Construction	Horn Bell	Fiberglassreinforcedplastic
	Horn Throat	Aluminum, sand cast
Dimensions	Mouth Height	28.5" (725mm)
	Mouth Width	30.7" (780mm)
	Length	28.7" (730mm)
Weight		26.4 lbs (12kg)

Model		LE-420
Coverage Angle	Horizontal	40° (+ 13° -1°) (630Hz to 16kHz)
	Vertical	20° (+ 8° -3°) (1kHz to 16kHz)
Crossover Frequency		500Hz or more
Throat Diameter		2" (49mm)
Applicable Driver		HFD-651-8/16 (using throat adaptor)
Construction	Horn Bell	Fiberglassreinforcedplastic
	Horn Throat	Aluminum, sand cast
Dimensions	Mouth Height	28.5" (725mm)
	Mouth Width	30.7" (780mm)
	Length	54.3" (1,378mm)
Weight		37.4 lbs (17kg)

\*Specifications are subject to change without notice.

## OPTIONAL ACCESSORY YS-651 Throat Adaptor for TOA HFD-651-8 and HFD-651-16 Drivers

