
TOA SPEAKER COMPONENT

LOW-FREQUENCY LOUDSPEAKER

HLS30S2-8/16



DESCRIPTION

The HLS30S2 is a 300mm (12 in.) low-frequency loudspeaker designed for professional applications in high level sound reinforcement environments such as studios, theaters, concert halls, auditoriums, discos and live sound reinforcement applications, where high efficiency, low-frequency response, and faithful reproduction are required. The HLS30S2 offers high power handling capacity and a uniform frequency response from 50Hz to 4,000Hz. A crossover frequency of 2,000Hz or lower is recommended to obtain smoothest overall system response. Nominal impedance is 8 ohms for the HLS30S2-8, and 16 ohms for the HLS30S2-16. The loudspeaker employs a low-mass 72mm (2.8 in.) diameter voice coil of edgewound copper-clad aluminum ribbon on an aluminum coil form, which operates in a flux density of 16,200 gauss. The voice coil is driven by a powerful ferrite magnet, which is supported by a rugged diecast aluminum frame. The cone suspension is made of exceptionally high-compliance, damped-cloth surround.

FEATURES

1. Smooth, extended low-frequency response.
2. High power handling capacity: 300 watts continuous pink noise (AES Standard).
3. High efficiency and linearity.
4. Low distortion.
5. Voice coil of edgewound copper ribbon, with an aluminum coil form.
6. Powerful ferrite magnet structure.
7. Rigid diecast aluminum construction.

SPECIFICATIONS

Nominal Diameter	300mm (12 in.)
Nominal Impedance	HLS30S2-8: 8 ohms HLS30S2-16: 16 ohms
Minimum Impedance above Fs	HLS30S2-8: 8.0 ohms +10% (25°C) HLS30S2-16: 16.0 ohms +10% (25°C)
Power Handling Capacity*1	300 watts continuous pink noise (AES standard)
Sensitivity*2	98dB SPL (1W/1m)
Frequency Range	50Hz to 4,000Hz
Highest Recommended Crossover Frequency	2,000Hz
Effective Piston Diameter	272mm (10.7 in.)
Displacement Limit (p-p)	20mm (0.79 in.)
Voice Coil Diameter	72mm (2.8 in.)
Voice Coil Material	Edgewound copper-clad aluminum ribbon
Voice Coil Insulation	Aluminum
Voice Coil Winding Depth	15mm (0.59 in.)
Top-Plate Thickness	10mm (0.39 in.)
BI Factor	HLS30S2-8: 19.5 N/A HLS30S2-16: 26.5 N/A
Effective Moving Mass	0.055kg
Flux Density	16,200 gauss
Polarity	Positive voltage on plus (RED) terminal gives forward diaphragm motion.

THIELE-SMALL PARAMETERS

fs	52Hz
Re	HLS30S2-8: 6.2 ohms HLS30S2-16: 12.3 ohms
Qts	0.27
Qms	2.9
Qes	0.30
Vas	80 lit. (2.83 ft ³)
Sd	0.058m ² (89.9 in ²)
Xmax	4.7mm (0.19 in.)
Vd	273cm ³ (16.7 in ³)
ηo (half space)	3.7%
Pe (Max)	300 watts continuous pink noise

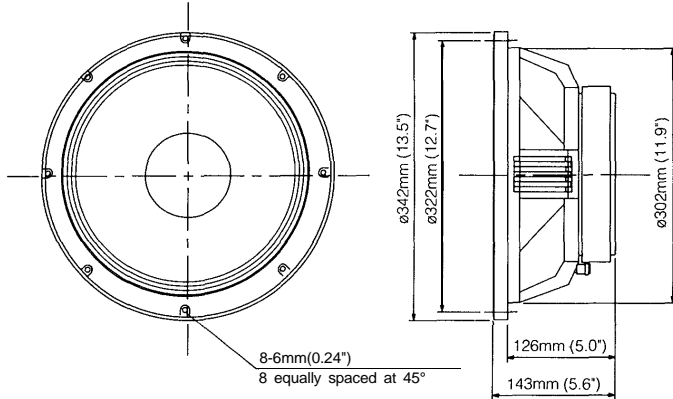
MOUNTING DATA

Overall Diameter	342mm (13.5 in.)
Bolt Pattern Diameter	322mm (12.7 in.)
Baffle Cutout Diameter	Front Mount: 304mm (12.0 in.) Rear Mount: 290mm (11.4 in.)
Depth	143mm (5.63 in.)
Loudspeaker Volume	4 lit. (0.14 ft ³)
Weight	11 kg (24.3 lbs.)
Standard Accessories	Mounting screws, washers and nuts: each 8

Notes

- *AES Standard is 60Hz to 600Hz continuous pink noise, at -12dB/Octave cut-off, and with a 6dB crest factor, measured for 2 hours, with the unit suspended in free air.
- **Sensitivity is based on a band-limited (100 to 800Hz) pink noise signal
- Specifications are subject to change without notice.

APPEARANCE AND DIMENSIONAL DIAGRAM

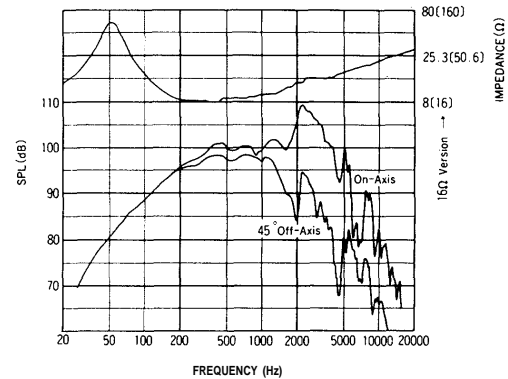


ARCHITECTS AND ENGINEERS SPECIFICATIONS

The low-frequency loudspeaker shall be TOA Model HLS30S2-8/16 or approved equivalents. The loudspeaker shall have 300mm (12 in.) nominal diameter, with a bolt pattern diameter of 322mm (12.7 in.), a weight of 11 kg (24.3 lbs.), and a depth of 143mm (5.63 in.). The loudspeaker shall have a rigid diecast aluminum frame that shall permit front or rear mounting. The loudspeaker shall have a 300W AES Standard power-handling capacity and a uniform frequency response from 50Hz to 4,000Hz, with a recommended crossover frequency of 2,000Hz or lower to obtain smoothest overall system response. Band-limited (100 to 800Hz) pink noise sensitivity shall be 98dB (1W/1m). Nominal impedance shall be 8/16 ohms. The loudspeaker shall employ a low-mass 72mm (2.8 in.) diameter voice coil of edgewound copper-clad aluminum ribbon of 15mm (0.59 in.) winding depth, on an aluminum coil form, operating in a flux density of 16,200 gauss. The voice coil shall be driven by a powerful ferrite magnet. Effective moving mass shall be 0.055kg. The cone suspension shall be made of exceptionally high-compliance, damped-cloth surround.

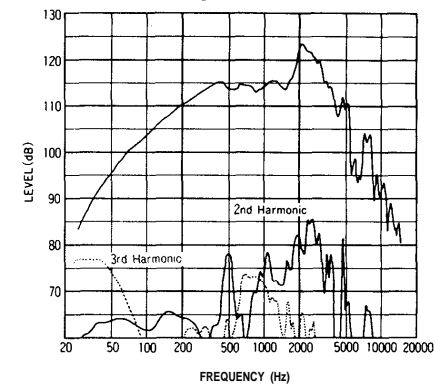
CHARACTERISTIC DIAGRAMS

*Frequency Response and Impedance Curve



Frequency response is measured in a spherical free-field environment, under 1 watt & 1 meter conditions, with a swept sine wave signal, while the speaker unit is mounted in an 80-liter sealed box. The impedance magnitude curve is measured while the speaker is suspended in free air, with its cone in the vertical plane.

*Distortion Response



Distortion response is measured with a swept sine wave signal, at 30 watts (-10dB power) & 1 meter, and while the speaker unit is mounted in an 80-liter sealed box.