Pioneer sound.vision.soul

TAD **TL-1602**

Low-Frequency Loudspeaker

Because of its low frequency response of 21Hz, the TL-1602 low-frequency loudspeaker is especially suitable for a system with emphasis on rich lows. Featuring a well-designed cone diaphragm, the unit may be used for studio monitoring as is, or loaded with a horn in a sound reinforcement system.
VOICE COIL The voice coil is relatively short so that it remains within the magnetic gap even during peak excursions. But its long travel distance results in reduced distortion at high input levels. The coil we use is ribbon wire, wound edgewise on a bobbin with heat-resistant adhesive. Making more effective use of the flux, it assures increased acoustic conversion efficiency and safe operation even when faced with 300 watts max. input.
MAGNETIC CIRCUIT A heavy (3 lbs. 10 oz./1.65kg) alnico ring magnet of carefully selected materials and pole configuration produce an extremely high flux density of 11,800G. Lightweight moving parts and the long-travel voice coil together result in a sensitivity of 97dB/W (1m), and excellent specification for a unit of this size.
DIAPHRAGM A wide piston motion range is assured thanks to a cone made of highly rigid carbon fiber. The diaphragm is covered with a special TAD-developed damping agent to reduce cone breakup and distortion. The polyurethane surround is structurally symmetrical and highly compliant to further reduce distortion. The frequency response is 21Hz for accurate reproduction of ultra-low frequencies.
HOUSING A rugged, low-resonance frame of diecast aluminum alloy capably supports the heavy magnetic structure and the moving parts. It does its part in keeping coloration to a minimum.
CROSSOVER We recommend a crossover at 900Hz (12dB/oct. or 18dB/oct. roll-off) when using the unit in multi-speaker systems.

General	**TL-1602**
Nominal Impedance	8 Ohm
Lowest Resonance Frequency (Fo)	21 Hz
Frequency Range	21-2000 Hz
Rated Input Power	150 Watt
Maximum Input Power	300 Watt
Sound Pressure Level	97 dB/W (1m)
Total Magnetic Flux	260.000 Mx
Magnetic Flux Density	11.800 G
Highest Recommended Crossover	1.200 Hz
Recommended Enclosure	57 - 519 liter
Effective Piston Diameter	335,0 mm
Baffle Opening	352,0 mm
Mounting Dimensions	370,0 mm
Weight	11 kg
Dimensions (diameter x depth)	400 x 167 mm
Thiele-Small Parameters	**TL-1602**
sd - Piston Area	0,0881 Sq M
Revc - DV Voice Coil Resistance	6 Ohm
Levc - Voice Coil Inductance 1kHz (mH)	0.9
BL - Flux Density (TM)	21,0

Vas - Equivalent Acoustic Volume (Liter)	519 liter
Cms - Mechanical Suspension Compliance (x 10-4 m/N)	4708
Mms - Mechanical Mass of Cone and Free Air Load	122 g
Mmd	92 g
Fs - Free Air Resonance Frequency	21 Hz
Qms - Mechanical Q Factor	2,78
Qes - Electrical Q Factor	0,23
Qts - Total Q factor	0,21
Xmax - Max Linear Peak Excursion (O-P)	5,5 mm
Pmax - RMS Thermal power Limit	300 Watt
no - Relative Efficiency	2,06 %
Vd (cm^2)	485
Max. Excursion Before Damage (P-P)	36,0 mm