PHL AUDIO

7510 8 Ω
7560 4 Ω

B46

PROFESSIONAL SERIES

18" Bass Extended Drivers
High Efficiency
High Sounding Quality

APPLICATIONS

Dedicated to Sub-Bass applications when high power handling is not specified, these drivers are able to cover a wide frequency band, ranging from 30Hz to 500Hz with remarkable sonic properties (even considering directivity pattern) that allow them to be used in a three-way Sound Reinforcement system as well as in a specific Sub system of medium input power.

The recommended enclosure is a Reflex type with volume ranging from 200L to 250L tuned from 38Hz to 40 Hz.

DESIGN CONCEPT

DEFLECTION CONTROLLED DIAPHRAGM optimized for dynamic damping. DEFLECTION CONTROLLED DIAPHRAGM technology consists in optimizing the shape and material of the diaphragm so that it works as a mechanical transmission line, to avoid breaking modes as well as mechanical threshold which destroy sound quality.

This leading edge technology offers substantial sonic advantages. Among them: sound coherency, fast transients, stable sound imaging, high sensitivity, wide frequency range and reduced directivity pattern.

VENTED COMPACT MAGNET SYSTEM. It has been carefully optimized to obtain maximum transducing efficiency while avoiding unlinear behavior such as coil inductance variation with position, flux modulation, harmonic distortion, rest position offset, air compression and off-axis voice-coil pushing.

Its design incorporates a T-shaped and vented pole piece, and a flux stabilization ring. It also takes into consideration demagnetization at cold temperatures.

INTERCOOLER SYSTEM (patented). Entirely integrated into the loudspeaker itself, the INTERCOOLER SYSTEM extracts the heat produced by Joule effect in the voice-coil by the means of an air flow directed through the heatsink rims of the basket by the motion of the dust-cap and the spider.

The gain brought about by this technology is over 20 % of extra power, so for example, a 3"coil according to this design has the same power handling capacity as a classical 4"one.

FEATURES

Power handling capacity	**500 W AES**
Reference efficiency (1W @ 1m)	**98 dB SPL**
SPL max (continuous)	**121dB SPL**
Usable frequency range	**30-1200 Hz**
Environmental withstanding	**Outdoor**

ARCHITECTURAL SPECIFICATIONS

NOMINAL DIAMETER : 460 mm.

FRAME : Aluminum alloy pressure die-cast basket with patented INTERCOOLER SYSTEM.

MAGNET SYSTEM : 3"highly energized, heat extracting design with vented pole piece and flux stabilizing ring.

VOICE COIL : High-temperature stabilized copper ribbon wound on high-strength glass polyimide former.

CONE ASSEMBLY : High-strength cellulose fiber cone impregnated and front-coated with damped resins, fitted with central carbon-fiber dome and double roll, treated and damped fabric surround.

SPEAKER MASS : 9.10 kg.

7510 ▪ 7560

18” Bass Extended Drivers

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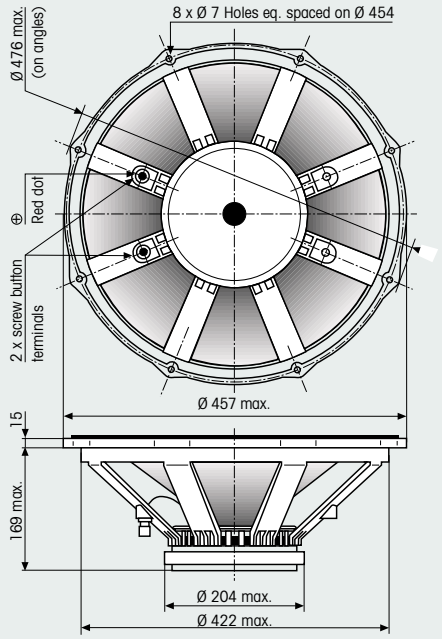
TYPICAL CHARACTERISTICS				
Rated impedance	Z	8	4	Ω
Reference efficiency (1 W@1 m)	-	98	98	dB SPL
Usable frequency range [1]	-	30-1200	30–1200	Hz
Power handling capacity[2] (AES)	-	500	500	W
Max Sound Pressure Level [3]	SPL_{max}	121	121	dB SPL
Min. impedance modulus	Z_{min}	6.2 @ 220Hz	3.2 @ 230Hz	Ω
Voice-coil inductance [4] @ 1 kHz	L_{e1k}	1.47	0.73	mH
@ 10 kHz	L_{e10k}	0.62	0.31	mH
Bl product	Bl	23.4	16.4	N/A
Moving mass	M_{ms}	0.157	0.157	Kg
THIELE-SMALL PARAMETERS : TYPICAL (QC LIMITS)				
Resonance frequency [5]	F_s	36 (±6)	36 (±5)	Hz
DC resistance [6]	R_e	5.6 (±0.5)	3.0 (±0.4)	Ω
Mechanical quality factor	Q_{ms}	3.6	3.6	1
Electrical quality factor	Q_{es}	0.36	0.40	1
Total quality factor	Q_{ts}	0.33	0.37	1
Mechanical suspension compliance	C_{ms}	124	124	10^{-6} m/N
Effective piston area	S_d	0.128	0.128	m^2
Equivalent C_{as} air load	V_{as}	0.286	0.286	m^3
Max. linear excursion	X_{max}	7.0	7.0	mm
Linear displacement volume	V_d	0.896	0.896	10^{-3} m^3
Half-space efficiency		3.6	3.3	%
Unity load volume	V_{as} Q_{ts}^2	31.1	39.4	10^{-3} m^3
ABSOLUTE MAXIMUM RATINGS				
Short term max. input voltage [7]	V_{max}	125	90	V
Max. excursion before damage	X_{dam}	16	16	mm
Ambient operating temperature		–10 to +50		°C
Storage temperature [8]		–20 to +70		°C
Environmental conditions [9]		Outdoor		
APPLICATION INFORMATION				
Air volume occupied by the driver [10]		6.2	6.2	10^{-3} m^3
Speaker net mass		9.1	9.1	Kg
Recommended reflex box	V_b/F_b	200 / 40	250 / 38	L / Hz
Electrical polarity	A positive voltage applied on the red terminal produces forward cone motion.			

PHYSICAL CHARACTERISTICS



SPECIFICATION NOTES

Note 1 : Allowing for energy response, excursion capability, Power spectrum, and -3dB low freq. roll-off for standard reflex tuning.

Note 2 : Established at 20°C ambient temp, according to AES2-1984 standard using IEC268-1 simulated programme signal and a 150 liter Bass-Reflex test enclosure tuned at 40Hz.

Note 3 : Established at 1m on axis of the loudspeaker mounted in test enclosure, when driven at full AES Power Handling Capacity, including 4dB of thermal compression loss.

Note 4 : Measured at 20 mA in free air.

Note 5 : Measured at 20 mA and 20°C ambient temp. in free air conditions, after full run and rest.

Note 6 : Measured at 20°C ambient temp. QC limits are ±10%

Note 7 : Stated in RMS voltage according to IEC 268-5.

Note 8 : Includes shipping conditions. The lower limit prevents from demagnetization.

Note 9: Our products are classified in three categories : Indoor, Outdoor, and Outdoor✚ for permanent outdoor use or severe conditions.

Note 10 : Calculated for front mounting on to a 18 mm thick board.

PHL AUDIO

461, rue des chênes ▪ Z.A
77590 CHARTRETTES
FRANCE
Tél : 33 01 64 81 29 80
Fax : 33 01 60 69 10 28
e-mail : phlaudio@phlaudio.com
http: //www.phlaudio.com