



7010 8 Ω
7090 8 Ω

B46

PROFESSIONAL SERIES

18" Bass Extended Drivers High Efficiency High Sounding Quality

APPLICATIONS

The "Seventy-Ten" is one of our best sellers. It was designed for Sound Reinforcement applications in 1995, and fully exploits the capacity of our powerful 4" magnet system, which results in a successful design.

The 7010 is a true 18" (Sd=0.128 sq.meter) while most of its competitors are 17", which offers extra sensitivity that can reach 1.8 dB at the same displacement figure.

This, combined with the AES Power handling of 1kW, results in a tremendous dynamic capacity to transduce low and very low sound frequencies at particularly low harmonic distortion levels in small volume enclosures.

Recommended Reflex sub-cabinet is 150L to 200L tuned from 36Hz to 38Hz, and highest recommended X-over frequency is 400Hz.

The SP7090 takes up the characteristics of the SP7010. Its cone is treated on both sides thanks to a coating process designed and developed in our R&D Department which enables it to withstand extremely severe outdoor conditions. Another advantage of such a treatment is the decreasing of distortion by almost 6 dB.

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	1000W AES
Reference efficiency (1W @ 1m)	98 dB SPL
SPL max (continuous)	124 dB SPL
Usable frequency range	30-800 Hz
Environmental withstanding	7010 / Outdoor 7090 / Outdoor+

ARCHITECTURAL SPECIFICATIONS

NOMINAL DIAMETER : 460 mm.

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

MAGNET SYSTEM : 4" 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 : 10.90 kg

7010 - 7090

18" Bass Extended Drivers

7010 7090

TYPICAL CHARACTERISTICS

Rated impedance	Z	8	8	Ω
Reference efficiency (1 W@1 m)	-	98	98	dB SPL
Usable frequency range ¹	-	30-800	30-800	Hz
Power handling capacity ² (AES)	-	1000	1000	W
Max Sound Pressure Level ³	SPL _{max}	124	124	dB SPL
Min. impedance modulus	Z _{min}	6.8 @ 200Hz	6.8 @ 200Hz	Ω
Voice-coil inductance ⁴ @ 1 kHz	L _{e1k}	1.80	1.80	mH
@ 10 kHz	L _{e10k}	0.87	0.87	mH
Bl product	Bl	26.6	26.6	N/A
Moving mass	M _{ms}	0.180	0.191	Kg

THIELE-SMALL PARAMETERS : TYPICAL (QC LIMITS)

Resonance frequency ⁵	F _s	35 (±5)	34 (±5)	Hz
DC resistance ⁶	R _e	5.6 (±0.5)	5.6 (±0.5)	Ω
Mechanical quality factor	Q _{ms}	4.0	4.1	1
Electrical quality factor	Q _{es}	0.31	0.32	1
Total quality factor	Q _{ts}	0.29	0.30	1
Mechanical suspension compliance	C _{ms}	115	115	10 ⁻⁴ m/N
Effective piston area	S _d	0.128	0.128	m ²
Equivalent C _{as} air load	V _{as}	0.260	0.260	m ³
Max. linear excursion	X _{max}	8.0	8.0	mm
Linear displacement volume	V _d	1.024	1.024	10 ⁻³ m ³
Half-space efficiency		3.5	3.1	%
Unity load volume	V _{as} Q _{ts} ²	22.3	23.6	10 ⁻³ m ³

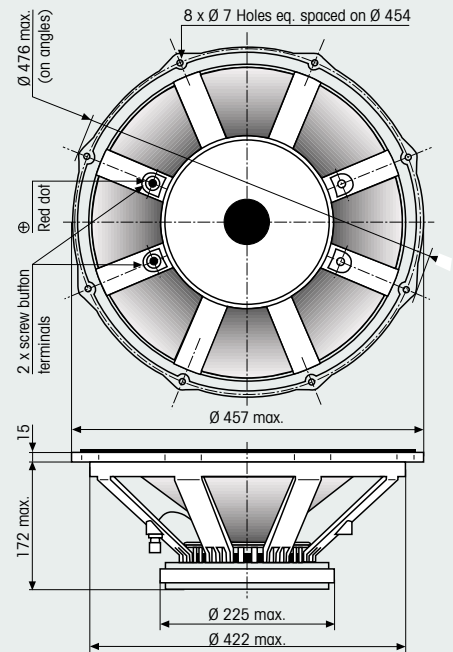
ABSOLUTE MAXIMUM RATINGS

Short term max. input voltage ⁷	V _{max}	180	180	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	Outdoor+	

APPLICATION INFORMATION

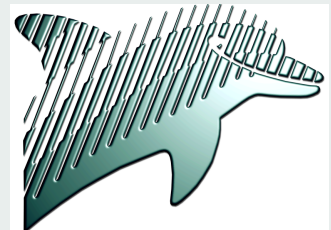
Air volume occupied by the driver ¹⁰		6.9	6.9	10 ⁻³ m ³
Speaker net mass		10.9	10.9	Kg
Recommended reflex box	V _b /F _b	150 / 38		L / Hz
Electrical polarity		A positive voltage applied on the red terminal produces forward cone motion.		

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.



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