



WPU1509 4Ω / WPU1809 4Ω / 18SW2P 4Ω

Professionals 15" and 18" Woofers and 18" Subwoofer with 4 ohms of impedance, developed to assist the sound reinforcement needs in situations where smaller impedance provides larger transfer of potency from amplifier to loudspeaker, in the low and medium frequencies range.

They're indicated for use in sound truck, mobile speaker system, besides conventional applications in night clubs and auditoriums. To reach a high acting degree and reliability, each component of the speaker was projected using advanced technology, and they have characteristics below:

- Double spider make possible the perfect concentricity of the moving system, providing, great linear excursion even when great displacements are demanded.
- A reinforced aluminum frame is highly effective in withstanding mechanical shocks and vibration. It also acts as a heat-sink for the motor, without removing energy from the loudspeakers intended magnetic gap. The aluminum frame includes six vents that allow air exchange between the spider and the top-plate. This helps to reduce top-plate temperature, in turn cooling the voice-coil. The magnetic-circuit also employs a multi-cooling system (patent pending)
- Metallic connectors, of easy handling and high pressure, guarantee a mechanical and electric high contact reliability.
- The long-fiber-pulp cone has the necessary mass and stiffness to withstand the tremendous accelerating forces required, and is precisely centered by two counter-balancing, distortion canceling, polyester-cotton-fiber spiders.
- An impregnated cloth surround.

WPU1509 and WPU1809

- Voice coil with 100 mm (4") of diameter, mold in TIL and uses copper thread covered with special varnish to support at high temperatures.
- The magnet assembly has an extended center polar piece to allow long excursion and low distortion in the bass frequency range.
- The woofer has a cooling system MCS (Multi Cooling System) that allows a great dissipation of heat from the voice coil, guaranteeing the maximum of efficiency.

18SW2P

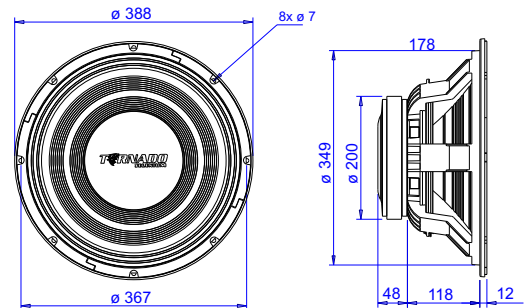
- The 18SW2P / 18SW2P-SLF employs a 4" (100mm) diameter 4-layer copper voice-coil using over 80 grams of copper. This is wound on a fiberglass-composite former, twice the thickness of typical formers, to drive the moving assembly with great rigidity.
- A bumped and undercut T-yoke assures a minimum of magnetic rectification (off-centering) and a compatible maximum displacement (Xmax). The magnet circuit was optimized by finite element software. Special attention was given to the driver's behavior under mechanical overload conditions, meaning that all but the most severe abuse will be tolerated - without failure.
- The cooler consisting of a large diameter center hole, surrounded by six smaller holes that forces cool air across the voice-coil. These features insure an extremely efficient heat transfer from voice-coil to surroundings, resulting in very high thermal power handling.



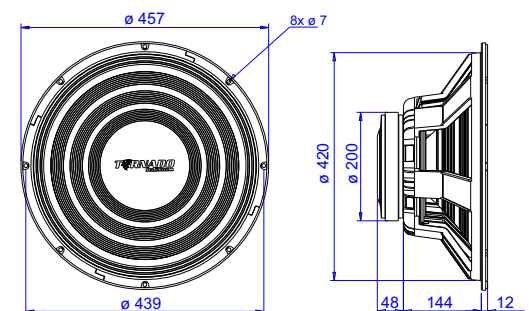
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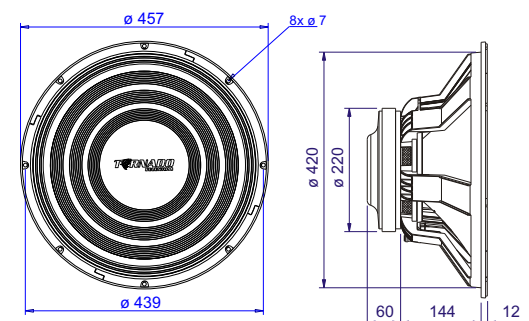
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WPU1809 4Ω



18SW2P 4Ω



TECHNICAL SPECIFICATIONS	WPU1509	WPU1809	18SW2P
Nominal diameter mm (in)	381 (15)	457 (18)	457 (18")
Nominal impedance Ω	4	4	4
Power handling			
MAX ¹ W	900	900	1200
RMS ² W	450	450	600
Sensitivity (1W@1m) dB SPL	96	97	96
Frequency response @ -10 dB Hz	50 to 3,500	50 to 3,500	40 a 3,000
Volume displaced by woofer. . . . l (ft ³)	6.0(0.21)	8(0.28)	8.6(0.30)
Magnet weight g (oz)	2,640(93.12)	2,640(93.12)	3,440(121.34)
Voice coil diameter. mm (in)	100(4)	100(4)	100(4)
Net weight g (lb)	8,480(18.69)	8,820(19.44)	10.500(23.14)

¹ Power handling specifications refer to normal speech and/or music program material, reproduced by an amplifier producing no more than 5% distortion. Power is calculated as true RMS voltage squared divided by the nominal impedance of the loudspeaker.

² Brazilian Standard NBR 10.303, with pink noise during 2 hours uninterrupted.

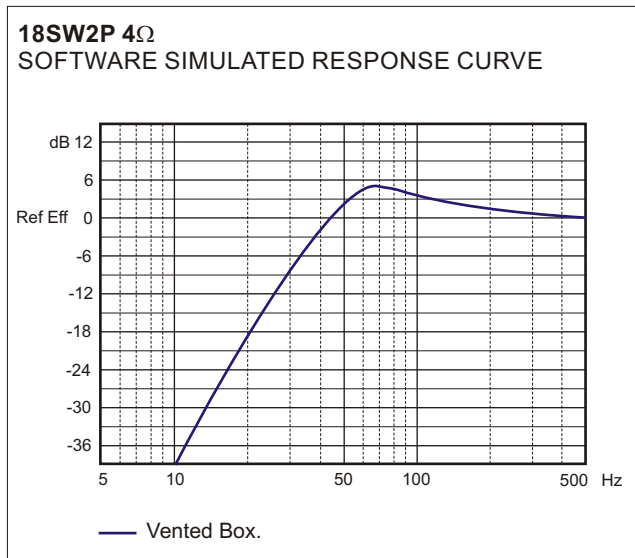
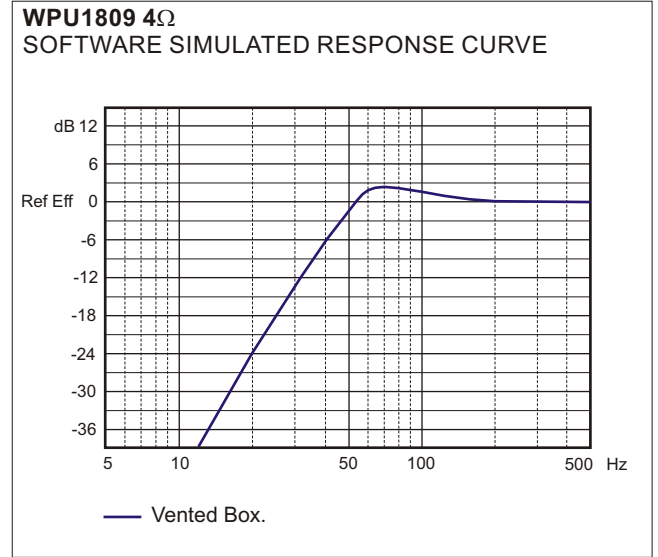
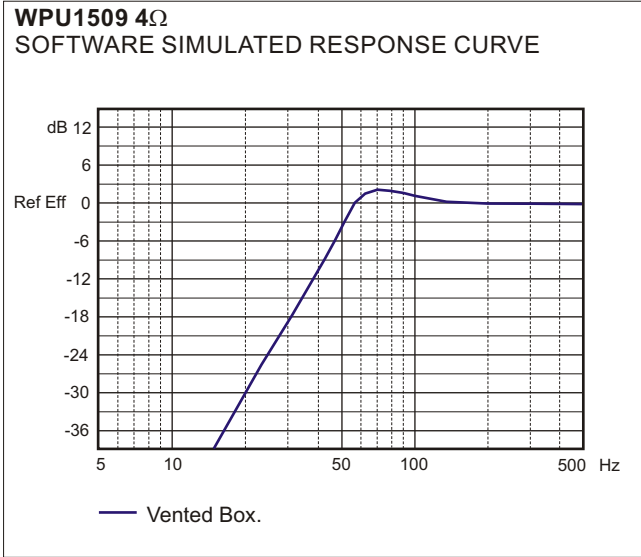
THIELE-SMALL PARAMETERS	WPU1509	WPU1809	18SW2P
Fs Hz	34	33	34
Re Ω	3.2	3.2	3,2
Qms	15.7	18.1	14,7
Qes	0.33	0.41	0,57
Qts	0.32	0.40	0,55
Vas l (ft ³)	166(5.86)	310(10.94)	203(7.16)
Ref Eff %	2.0	2.6	2.0
Sd m ² (in ²)	0.0814(126.17)	0.1194(185.07)	0,1194(185.07)
Vd cm ³ (in ³)	350(21.35)	448(27.34)	776,1(47,36)
Xmax mm (in)	4.0(0.16)	4.0(0.16)	6,5(0,25)
βl T.m	15.8	15.8	15,9

A variation of ± 15% is allowed.

Dimensions in mm.



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SUGGESTED ENCLOSURES

MODELS	CLOSED BOX		VENTED BOX		
	Internal Volume (liters)	Internal Volume (liters)	Duct (s)		
			Qty	Diam. x Lenght (cm)	
WPU1509	XX	90	2	10 x 8	
WPU1809	XX	154	3	10 x 12	
18SW2P	XX	130	3	10 x 18	

The suggested enclosure volumes are related to only one speaker, including woofer and duct(s) displaced volume.
For enclosure with more than one speaker, it is necessary to multiply the suggested volume and duct(s) by the quantity of speakers and build them with separated chambers (internal division).
Box volumes considering the bass lift inside the car with closed apertures.

ENCLOSURES INTERNAL VOLUME CALCULATION INSTRUCTIONS

RECTANGULAR BOX

$$\text{Internal Volume} = \frac{A \times B \times C}{1000}$$

A, B and C are internal dimensions (in cm). The internal volume result is given in liters.

TRAPEZOID RECTANGULAR BOX

$$\text{Internal Volume} = \frac{A \times B \times \left(\frac{C+D}{2}\right)}{1000}$$

A, B, C and D are internal dimensions (in cm). The internal volume result is given in liters.