ALPINE®

TYPE-G SUBWOOFER
HAUT-PARLEUR D'EXTREMES GRAVES TYPE-G
APPLICATION GUIDE
GUIDE D'APPLICATION

SWG-1244

12 Inch High Performance Subwoofer (4Ω)
Haut-parleur 30 cm d'extrêmes graves haute performance (4Ω)

SWG-1044

10 Inch High Performance Subwoofer (4Ω)
Haut-parleur 25 cm d'extrêmes graves haute performance (4Ω)

SWG-844

8 Inch High Performance Subwoofer (4Ω)
Haut-parleur 20 cm d'extrêmes graves haute performance (4Ω)

Subwoofer Features and Specifications		Type-G		
		SWG-844	**SWG-1044**	**SWG-1244**
Features				
Size		8"	10"	12"
Power Handling (RMS/peak)		120W/400W	150W/500W	250W/800W
Power Range (RMS)		50W-120W	50W-150W	50W-250W
Frequency Response		34Hz-1.5kHz	33Hz-1kHz	28Hz-1kHz
Diaphragm	Material	Drenched Long-Fibre Pulp, Polypropylene Reinforced		
	Design	2 Piece Parabolic		
Surround	Material	Butyl Rubber		
	Design	High Excursion, Half Roll		
Spider	Material	Carbonized Nomex®		
	Design	Single High Linear, Back Vented		
Voice Coil	Material	High Temp Copper Wire, ASV Former		
	Design	Dual Layer		
Motor Structure	Pole Geometry	Optimized Conventional		
	Configuration	Extended Pole with Laminar Flow Vent		
	Magnet	Double Stack Y-30 HQ-Strontium		
Frame	Material	Heavy Gauge Steel, Titanium Powder Coated		
	Design	Deep Diver® with Wind Tunnels		
Terminals	Layout	One Side		
	Design	Gun-Metal Finish 5-Way Binding Posts with Lock-Nuts		
Tinsel Leads	Design	Woven Ultrafine Liz Wire, Black Silicone Insulated		
Gasket	Design	Injection Moulded Rubber, Hidden Screw Design, Front / Rear Sealing		
Enclosure Information				
Mounting Depth		111 mm (4.4")	139 mm (5.5")	169 mm (6.7")
Mounting Diameter - Front Mount		183 mm (7.2")	235 mm (9.3")	282 mm (11.1")
Added Volume - Reverse Mount**		0.7 L (0.02 ft³)	1.1 L (0.039 ft³)	1.6 L (0.056 ft³)
Displacement - Front Mounted**		1.1 L (0.04")	1.9 L (0.067 ft³)	2.8 L (0.099 ft³)
Displacement - Rear Mounted**		1.5 L (0.05")	2.4 L (0.085 ft³)	3.5 L (0.124 ft³)
Recommended Box Types (S)Sealed/(V)Vented/(BP)Bandpass		S/V/BP		
Sealed Box Volume Range		10 - 19 L (0.35 - 0.67 ft³)	20 - 27 L (0.71 - 0.95 ft³)	28 - 40 L (0.99 - 1.41 ft³)
Optimum Sealed Box Volume		15 L (0.53 ft³)	24 L (0.85 ft³)	35 L (1.24 ft³)
Vented Box Volume Range		15 - 30 L (0.53 - 1.06 ft³)	25 - 35 L (0.88 - 1.24 ft³)	32 - 58 L (1.13 - 2.05 ft³)
Optimum Vented Box Volume		22 L (0.78 ft³)	28 L (0.99 ft³)	39 L (1.38 ft³)
Vent Diameter/Length		7 / 29 cm (3" / 11.4")	7 / 27 cm (2.8 / 10.6")	7 / 23 cm (2.8 / 9.1")
Usable Q-Logic Box Types		TBA		
Optimum Q-Logic Box Type		TBA		
Electro-Mechanical Parameters #				
Nominal Impedance		4 Ω	4 Ω	4 Ω
Frequency Response		34 Hz - 1.5 kHz	33 - 1 KHz	28 - 1 KHz
Sensitivity (SPL@1W/1m)*		87 dB	88.4 dB	89.8 dB
D.C Coil Resistance (Re)		3.6 Ω	3.6 Ω	3.6 Ω
Inductance (Le) 1kHz/20kHz		1.17 / 0.30 mH	1.17 / 0.30 mH	1.02 mH / 0.24 mH
Free Air Resonance (Fs)		34 Hz	33 Hz	28 Hz
Equivalent Stiffness (Vas)		33.4 L	65 L (2.30 ft³)	75 L (2.65 ft³)
Mechanical Q (Qms)		5,1	4.06	3.27
Electrical Q (Qes)		0,46	0.37	0.43
Total Q (Qts)		0,42	0.34	0.38
Linear Excursion [(Hvc-Hag)/2)], One-Way (Xmax)		8 mm	8 mm	10 mm
Magnetic Linear Excursion, One-Way (Xmag)		19 mm	19 mm	23 mm
Mechanical Excursion, Peak-to-Peak		38 mm	42 mm	50 mm
Gap Height (Hag)		8 mm	8 mm	10 mm
Coil Height (Hvc)		22 mm	22 mm	30 mm
Cone Area (Sd)		216 cm²	346 cm²	502 cm²
Voice Coil Diameter		38 mm (1.5")	38 mm (1.5")	50 mm (2")
Magnet Weight		57 oz (1.62 kg)	57 oz (1.62 kg)	104 oz (2.95 Kg)

Note: All specifications are subject to change without notice

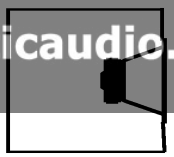
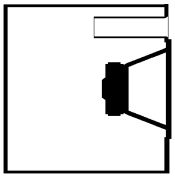
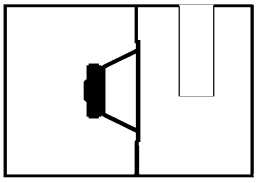
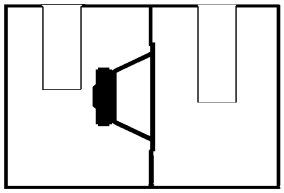
All T/S parameters measured/calculated after break-in.

* This commonly misunderstood specification should not be used as a reference for subwoofer output capability.

** Based upon 3/4" (19mm) baffle thickness, with opening cut approximately to gasket inner diameter

ALPINE SWG-1244 30 cm Subwoofer

ENCLOSURE RECOMMENDATIONS

box type		woofer-displacement: / optimisation for:	loud	normal	low / definition
			2,8 Liter		
sealed		net box volume [Liter] *	-	25	34
		free field SPL at 90 Hz [dB/Wm]	-	89,5	89,2
		mech. power handling [Watt RMS]	-	200	200
		low cut frequency (free flield) Flow [Hz]	-	40	36
vented		net box volume [Liter] *+**	32	32	55
		port diameter x length [cm]	***10 x 26***	***7 x 21***	***10 x 34***
		free field SPL at 90 Hz [dB/Wm]	92	90,3	89,5
		mech. power handling [Watt RMS]	200	200	230
		high cut frequency for subsonic filter[Hz]	28	25	24
		power handling with subsonic filter [W]	300	300	300
		low cut frequency (free flield) Flow [Hz]	42	35	27
single vented band pass	 V 1 V 2	net box volume [Liter] * V1	-	19	30
		net box volume [Liter] ** V2	-	19	18
		port diameter x length [cm] in V2	-	***2 pc. 10 x 34***	***3 pc. 7 x 39***
		free field SPL at 90 Hz [dB/Wm]	-	91	88
		mech. power handling [Watt RMS]	-	250	250
		low cut frequency (free flield) Flow [Hz]	-	36	27
double vented band pass	 V 1 V 2	net box volume [Liter] * + ** V1	25	37	45
		port diameter x length [cm] in V1	***7 x 32***	***7 x 25***	***7 x 36***
		net box volume [Liter] ** V2	24	23	23
		port diameter x length [cm] in V2	***2 pc. 10 x 20***	***2 pc. 10 x 27***	***2 pc. 10 x 36***
		free field SPL at 90 Hz [dB/Wm]	93,3	91,6	90
		mech. power handling [Watt RMS]	250	250	275
		high cut frequency for subsonic filter[Hz]	22	22	15
		power handling with subsonic filter [W]	300	300	300
		low cut frequency (free flield) Flow [Hz]	43	34	26

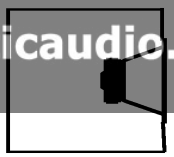
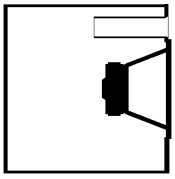
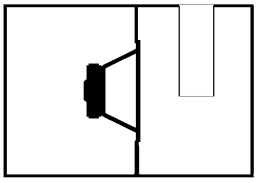
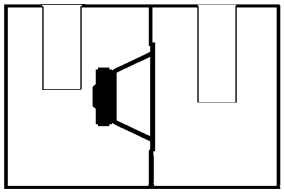
*): add additional 2,8 L for woofer!
**): calculate and add volume displacement of port(s)
formula: outer diameter [dm] square times 3,14 devided by 4, times length [dm]
ports should be rounded (aeroports)! In cases where round tubes don't fit,
channels with same cross-section (rounded at both ends) may be built.
damping: sealed encl. Fill loosely with poly-padding, vented encl.: 2 walls covered by acoustic foam.
enclosure wall thickness: MDF/Multilayer: 19 to 22 mm. Woofer screwed by metric thread knock-in nuts.
Subsonic-Filter: high pass filter of 3rd order or higher

mounting size:

mounting hole diameter:	282 mm	
mounting depth:	169 mm	
magnet diameter:	156 mm	
recomm. freeplay behind magnet:	> 20 mm	
if flange gets lowered into baffle:	without -	with rubber gasket
grinding diameter:	306 mm	312 mm
grinding depth:	14 mm	16 mm

ALPINE SWG-1044 25 cm Subwoofer

ENCLOSURE RECOMMENDATIONS

box type		woofer-displacement: / optimisation for:	loud	normal	low / definition
			1,9 Liter		
sealed		net box volume [Liter] *	-	15	23
		free field SPL at 90 Hz [dB/Wm]	-	88	88
		mech. power handling [Watt RMS]	-	125	100
		low cut frequency (free flield) Flow [Hz]	-	43	38
vented		net box volume [Liter] *+**	20	25	38
		port diameter x length [cm]	***7 x 25***	***7 x 24***	***7 x 25***
		free field SPL at 90 Hz [dB/Wm]	90	89	87,5
		mech. power handling [Watt RMS]	100	100	125
		high cut frequency for subsonic filter[Hz]	28	26	22
		power handling with subsonic filter [W]	150	150	150
		low cut frequency (free flield) Flow [Hz]	40	35	27
single vented band pass	 V 1 V 2	net box volume [Liter] * V1	-	16	20
		net box volume [Liter] ** V2	-	15	14
		port diameter x length [cm] in V2	-	***10 x 27***	***10 x 35***
		free field SPL at 90 Hz [dB/Wm]	-	89	87,5
		mech. power handling [Watt RMS]	-	150	150
		low cut frequency (free flield) Flow [Hz]	-	36	30
double vented band pass	 V 1 V 2	net box volume [Liter] * + ** V1	25	25	34
		port diameter x length [cm] in V1	***5 x 19***	***5 x 35***	***5 x 29***
		net box volume [Liter] ** V2	20	15	14
		port diameter x length [cm] in V2	***10 x 17***	***10 x 25***	***10 x 34***
		free field SPL at 90 Hz [dB/Wm]	91	88,7	87,2
		mech. power handling [Watt RMS]	125	150	150
		high cut frequency for subsonic filter[Hz]	24	15	15
		power handling with subsonic filter [W]	150	150	150
		low cut frequency (free flield) Flow [Hz]	35	30	24

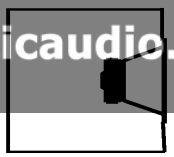
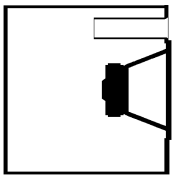
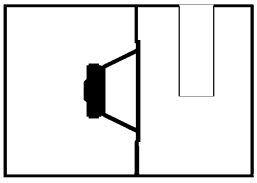
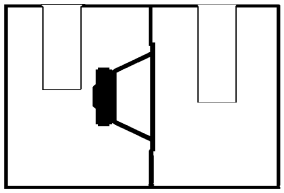
*): add additional 1,9 L for woofer!
**): calculate and add volume displacement of port(s)
formula: outer diameter [dm] square times 3,14 devided by 4, times length [dm]
ports should be rounded (aeroports)! In cases where round tubes don't fit,
channels with same cross-section (rounded at both ends) may be built.
damping: sealed encl. Fill loosely with poly-padding, vented encl.: 2 walls covered by acoustic foam.
enclosure wall thickness: MDF/Multilayer: 19 to 22 mm. Woofer screwed by metric thread knock-in nuts.
Subsonic-Filter: high pass filter of 3rd order or higher

mounting size:

mounting hole diameter:	235 mm	
mounting depth:	139 mm	
magnet diameter:	134 mm	
recomm. freeplay behind magnet:	> 20 mm	
if flange gets lowered into baffle:	without -	with rubber gasket
grinding diameter:	256 mm	262 mm
grinding depth:	14 mm	16 mm

ALPINE SWG-844 20 cm Subwoofer

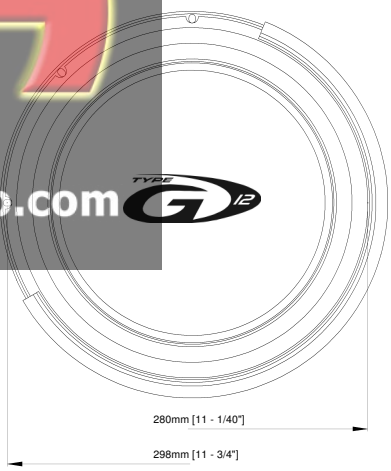
ENCLOSURE RECOMMENDATIONS

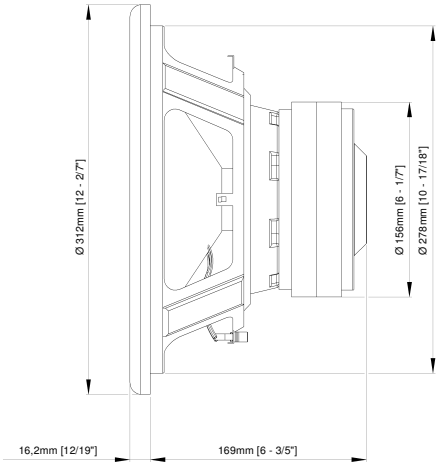
box type		woofer-displacement: / optimisation for:	loud	normal	low / definition
			0,9 Liter		
sealed		net box volume [Liter] *	-	10	15
		free field SPL at 90 Hz [dB/Wm]	-	87	86,5
		mech. power handling [Watt RMS]	-	100	130
		low cut frequency (free flield) Flow [Hz]	-	45	38
vented		net box volume [Liter] *+**	15	20	25
		port diameter x length [cm]	***5 x 17***	***6 x 23***	***6 x 22***
		free field SPL at 90 Hz [dB/Wm]	89	88	87
		mech. power handling [Watt RMS]	100	100	100
		high cut frequency for subsonic filter[Hz]	30	28	27
		power handling with subsonic filter [W]	130	130	130
		low cut frequency (free flield) Flow [Hz]	40	34	30
single vented band pass	 V 1 V 2	net box volume [Liter] * V1	-	9	13
		net box volume [Liter] ** V2	-	9	10
		port diameter x length [cm] in V2	-	***8,5 x 25***	***8,5 x 29***
		free field SPL at 90 Hz [dB/Wm]	-	88,5	87
		mech. power handling [Watt RMS]	-	130	130
		low cut frequency (free flield) Flow [Hz]	-	38	33
double vented band pass	 V 1 V 2	net box volume [Liter] * + ** V1	13	15	20
		port diameter x length [cm] in V1	***5 x 23***	***5 x 27***	***5 x 23***
		net box volume [Liter] ** V2	11	11	11
		port diameter x length [cm] in V2	***10 x 20***	***8,5 x 16***	***10 x 29***
		free field SPL at 90 Hz [dB/Wm]	91,5	90	89
		mech. power handling [Watt RMS]	100	100	100
		high cut frequency for subsonic filter[Hz]	29	27	25
		power handling with subsonic filter [W]	130	130	130
		low cut frequency (free flield) Flow [Hz]	45	40	34

*): add additional 1,9 L for woofer!
**): calculate and add volume displacement of port(s)
formula: outer diameter [dm] square times 3,14 devided by 4, times length [dm]
ports should be rounded (aeroports)! In cases where round tubes don't fit,
channels with same cross-section (rounded at both ends) may be built.
damping: sealed encl. Fill loosely with poly-padding, vented encl.: 2 walls covered by acoustic foam.
enclosure wall thickness: MDF/Multilayer: 19 to 22 mm. Woofer screwed by metric thread knock-in nuts.
Subsonic-Filter: high pass filter of 3rd order or higher

mounting size:

mounting hole diameter:	183 mm	
mounting depth:	111 mm	
magnet diameter:	134 mm	
recomm. freeplay behind magnet:	> 20 mm	
if flange gets lowered into baffle:	without -	with rubber gasket
grinding diameter:	206 mm	212 mm
grinding depth:	14 mm	16 mm





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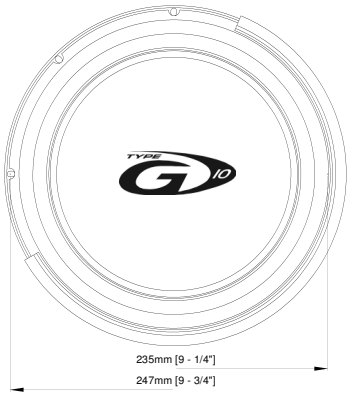

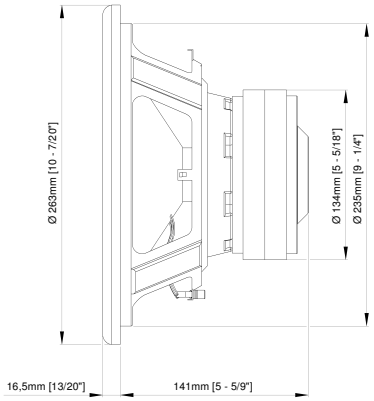

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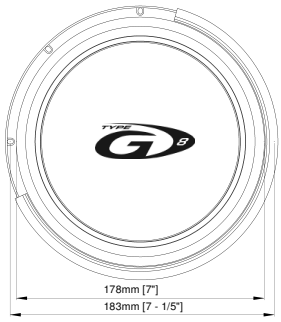

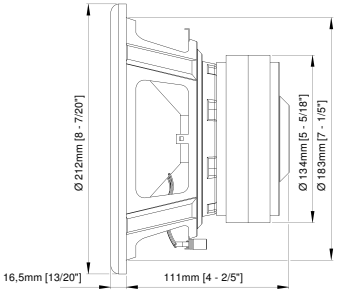

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RECOMMENDED AMPLIFIERS / AMPLIFICATEURS RECOMMANDES	SWG-1244		SWG-1044		SWG-844	
	x1	x2	x1	x2	x1	x2
PDX-M12 (1200W RMS @4Ω / 1200W RMS @2Ω)	●	●	●	●	●	●
PDX-M6 (600W RMS @4Ω / 600W RMS @2Ω)	●	●●●	●	●	●	●
MRX-M200 (1500W RMS @4Ω / 2000W RMS @2Ω)	●	●	●	●	●	●
MRX-M100 (600W RMS @4Ω / 1000W RMS @2Ω)	●	●	●	●	●	●
MRX-M50 (300W RMS @4Ω / 500W RMS @2Ω)	●●●●	●●●●	●●●	●●	●●●	●●
PMX-T320 (1x150W RMS @4Ω bridged / en pont)	●●	-	●●●●	-	●●●●	-

Ideal / Idéal ●●●●
Recommended / Recommandé ●●●
Suitable / Convenable ●●
Feasible / Peu recommandé ●