12SW12A DVC

The Matador MAX line offers 12” and 15” subwoofers specially developed to reproduce the lowest frequencies on the sound spectrum, i.e, the sub-bass frequencies range and to resist 1600W RMS power with large cone linear displacement. It has dual voice coil with 2+2 Ohms that can be configured to 4 Ohms impendance (serie), 1 Ohm impendance (parallel) or two four 2 Ohms independent channels allowing a better usage on the amplifier.

In order to achieve a high performance level and liability, each component of the speakers has been designed based on the latest speaker technologies, presenting the following features:

– Magnet assembly optimized by the infinite elements, using a bumped back plate to allow large cone displacement at low frequencies and a extended T-yoke to minimaze the harmonic distortion and improve the heat dissipation.

– Long voice coil with TIL Bobine, using cooper wire covered by a special vernish to support high temperatures.

– The non-pressed paper cone is impregnated with special resines offering higher rigidity to the high mechanical effords and allowing higher allignment to the frequency response. Additionaly to it, also has a shinning superficial black treatment providing an excellent finishing.

– The surround is made of nytrilic rubber and it is attached to the cone with double line stiching, guaranteeing its attachment.

– The gasket is made of rubber envolves the basked, providing a better sealing to the product in the accustic box.

– The magnet assembly cover is made of polypropylene giving high strengh to the product

SPECIFICATIONS

Nominal diameter	305 (12)	mm (in)
Nominal impedance	2+2	Ω
Minimum impedance @ 99 Hz	5.21	Ω
Power handling		
Peak	3,200	W
Continous Music[1]	1,600	W
NBR[2]	800	W
AES[3]	800	W
Sensitivity (2.83V@1m) averaged from 55 to 200 Hz	89	dB SPL
Power compression @ 0 dB (nom. power)	5.43	dB
Power compression @ -3 dB (nom. power)/2	4.42	dB
Power compression @ -10 dB (nom. power)/10	1.63	dB
Frequency response @ -10 dB	42 to 2,000	Hz

[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] NBR Standard (10,303 Brasilian Standard).
[3] AES Standard (60 - 600 Hz).

THIELE-SMALL PARAMETERS

Fs	43.1	Hz
Vas	46.22(1.63)	l (ft^3)
Qts	0.64	
Qes	0.70	
Qms	7.03	
ηo (half space)	0.51	%
Sd	0.0530 (82.15)	m^2 (in^2)
Vd (Sd x Xmax)	304.7 (18.58)	cm^3 (in^3)
Xmax (max. excursion (peak) with 10% distortion)	5.75 (0.22)	mm (in)
Xlim (max.excursion (peak) before physical damage)	18 (0.71)	mm (in)

Atmospheric conditions at TS parameter measurements:

Temperature	24 (75.2)	°C (°F)
Atmospheric pressure	1022	mb
Humidity	45	%

Thiele-Small parameters are measured after a 2-hour power test using half AES power . A variation of ± 15% is allowed.

ADDITIONAL PARAMETERS

βL	13.63	Tm
Flux density	0.57	T
Voice coil diameter	75 (3)	mm (in)
Voice coil winding length	30.6 (100.4)	m (ft)
Wire temperature coefficient of resistance (α25)	0.00372	1/°C
Maximum voice coil operation temperature	290 (554)	°C (°F)
θvc (max.voice coil operation temp./max.power)	0.36 (0.69)	°C/W(°F/W)
Hvc (voice coil winding depth)	21.0 (0.82)	mm (in)
Hag (air gap height)	9.5 (0.37)	mm (in)
Re	4.09	Ω
Mms	117.4 (0.26)	g (lb)
Cms	120.0	μm/N
Rms	4.52	kg/s

NON-LINEAR PARAMETERS

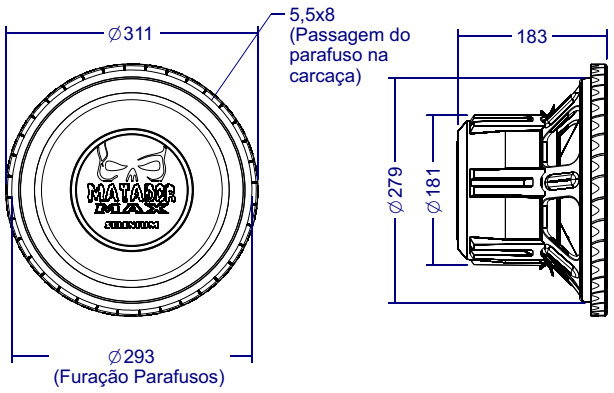
Le @ Fs (voice coil inductance @ Fs)	5.745	mH
Le @ 1 kHz (voice coil inductance @ 1 kHz)	2.877	mH
Le @ 20 kHz (voice coil inductance @ 20 kHz)	1.488	mH
Red @ Fs	0.523	Ω
Red @ 1 kHz	8.06	Ω
Red @ 20 kHz	109.24	Ω
Krm	4	mΩ
Kxm	19.7	mH
Erm	0.87	
Exm	0.78	

ADDITIONAL INFORMATION

Magnet material	Barium ferrite	
Magnet weight	1,600 (56.4)	g (oz)
Magnet diameter x depth	169 x 19 (6.65 x 0.75)	mm (in)
Magnetic assembly weight	5,000 (11)	g (lb)
Frame material	Steel	
Frame finish	Black epoxy	
Voice coil material	Aluminum	
Voice coil former material	Fiberglass	
Cone material	Long fiber pulp	
Volume displaced by woofer	4.9 (0.17)	l (ft^3)
Net weight	5,920 (13.05)	g (lb)
Gross weight	6,620 (14.59)	g (lb)
Carton dimensions (W x D x H)	34.5x33.5x20 (13.5x13.2x7.9)	cm (in)

MOUNTING INFORMATION

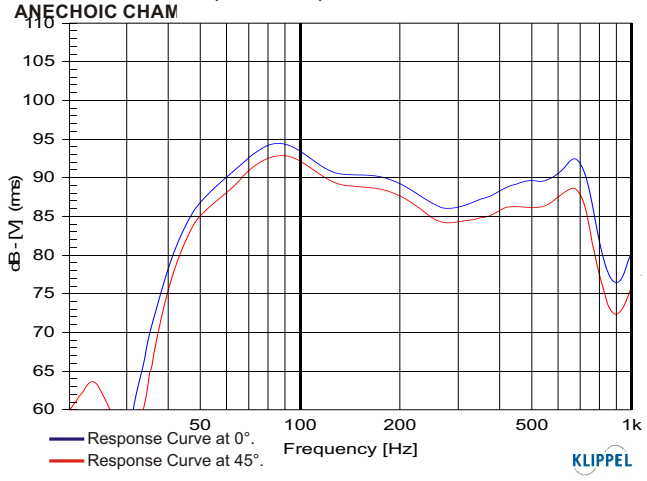
Number of bolt-holes	8	
Bolt-hole diameter	5.5 x 8 (0.21 x 0,31)	mm (in)
Bolt-circle diameter	293 (11.53)	mm (in)
Baffle cutout diameter (front mount)	281 (11)	mm (in)
Baffle cutout diameter (rear mount)	275 (10.83)	mm (in)
Connectors	Silver-plated push terminals	
Polarity	Positive voltage applied to the positive terminal (red) gives forward cone motion	
Minimum clearance between the back of the magnetic assembly and the enclosure wall	75 (3)	mm (in)



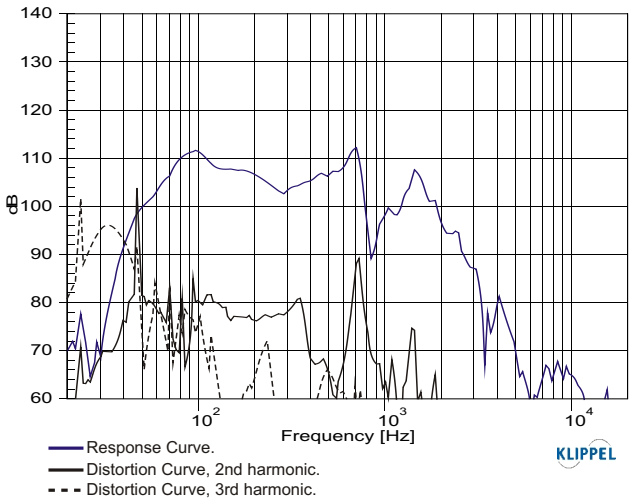
Dimensions in mm.

12SW12A DVC

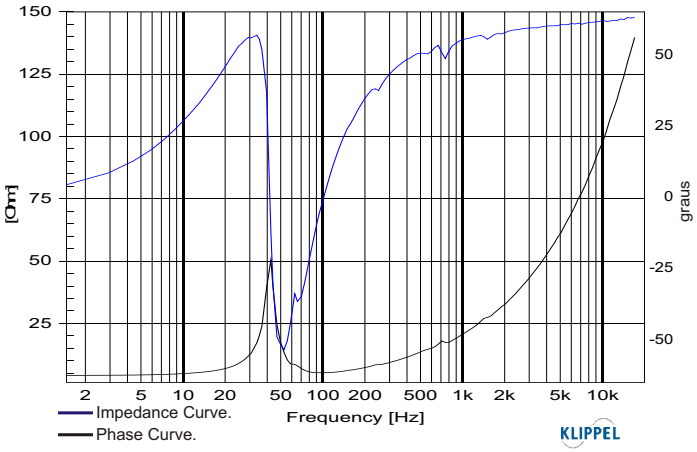
RESPONSE CURVES (0° AND 45°) IN A TEST ENCLOSURE INSIDE AN ANECHOIC CHAM



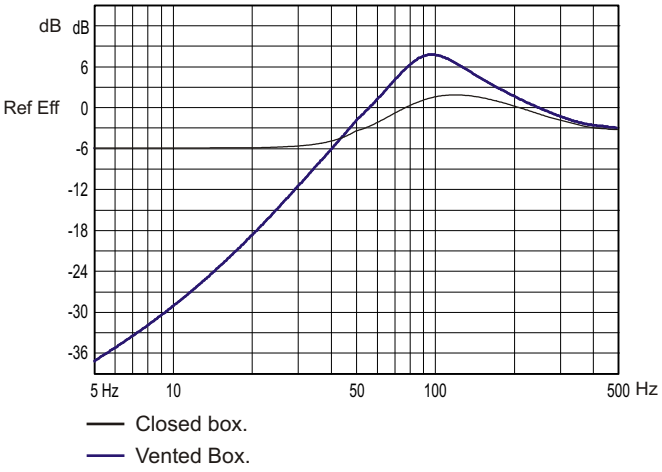
HARMONIC DISTORTION CURVES MEASURED AT 10% AES INPUT POWER, 1 m



IMPEDANCE AND PHASE CURVES MEASURED IN FREE-AIR



SOFTWARE SIMULATED RESPONSE CURVE



SUGGESTED ENCLOSURES

MODELS	CLOSED BOX	VENTED BOX		
	Internal Volume (liters)	Internal Volume (liters)	Duct (s)	
			Qty	Diam. x Lenght (cm)
12SW12A DVC	35	40	1	10 x 22
15SW12A DVC	50	55	2	10 x 25

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).

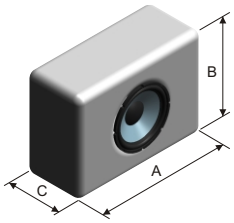
Box volumes considering the bass lift inside the car with closed apertures.

ENCLOSURES INTERNAL VOLUME CALCULATION INSTRUCTIONS

RECTANGULAR BOX

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

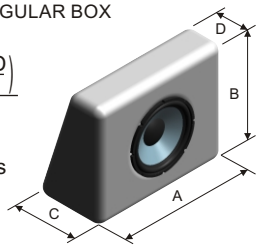
A, B and C are internal dimensions (in cm). The internal volume result is given in liters.



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.



TEST ENCLOSURE

64-Liter volume with a 2 ducts ø 4” by 0.8” length.

www.selenium.com.br

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