

6" Woofer with excellent performance in the mid frequency range. This new design is capable of handling up to 400 Watts Continuous Music.

For sound reinforcement in nightclubs, dancing halls and auditoriums. The great efficiency in sound reproduction is due to the excellent combination of the different components:

Flat aluminum voice coil with fiber glass former.

Impregnated fabric surround.

Long fiber non pressed paper cone.

Magnet assembly with high magnet flux and shorting ring.

Aluminum basket with epoxy finishing.



### SPECIFICATIONS

Nominal diameter	152 (6)	mm (in)
Nominal impedance	16	
Minimum impedance @ 325 Hz	13.59	
Power handling		
Peak	800	W
Continuous Music <sup>1</sup>	400	W
NBR <sup>2</sup>	200	W
AES <sup>3</sup>	200	W
Sensitivity (1 W@1m) averaged from 125 to 4,000 Hz	90	dB SPL
Power compression @ 0 dB (nom. power)	4.01	dB
Power compression @ -3 dB (nom. power)/2	2.5	dB
Power compression @ -10 dB (nom. power)/10	0.51	dB
Frequency response @ -10 dB	90 to 9,000	Hz
Minimum recommended crossover (12 dB/oct)	70	Hz

<sup>1</sup> 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.

<sup>2</sup> NBR Standard (10,303 Brazilian Standard).

<sup>3</sup> AES Standard 2 - 1984 (Rev. 2003).

### THIELE-SMALL PARAMETERS

Fs	120.0	Hz
Vas	3.0 (0.11)	l (ft <sup>3</sup> )
Qts	1.1	
Qes	1.28	
Qms	12.99	
o (half space)	0.43	%
Sd	0.0143 (22.16)	m <sup>2</sup> (in <sup>2</sup> )
Vd (Sd x Xmax)	32.3 (1.97)	cm <sup>3</sup> (in <sup>3</sup> )
Xmax (max. excursion (peak) with 10% distortion)	2.7 (0.10)	mm (in)
Xlim (max. excursion (peak) before physical damage)	11.75 (0.46)	mm (in)

Atmospheric conditions at TS parameter measurements:

Temperature	25 (77)	°C (°F)
Atmospheric pressure	1,047	mb
Humidity	51	%

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

### ADDITIONAL PARAMETERS

L	10.53	Tm
Flux density	0.91	T
Voice coil diameter	51.15 (2.01)	mm (in)
Voice coil winding length	16.8 (55.11)	m (ft)
Wire temperature coefficient of resistance (α)	0.00336	1/°C
Maximum voice coil operation temperature	297 (568)	°C (°F)
vc (max. voice coil operation temp./max. power)	1 (1.92)	°C/W (°F/W)
Hvc (voice coil winding depth)	11.75 (0.46)	mm (in)
Hag (air gap height)	6.35 (0.25)	mm (in)
Re	12.29	
Mms	15.43 (0.033)	g (lb)
Cms	0.12	m/N
Rms	0.89	kg/s

### NON-LINEAR PARAMETERS

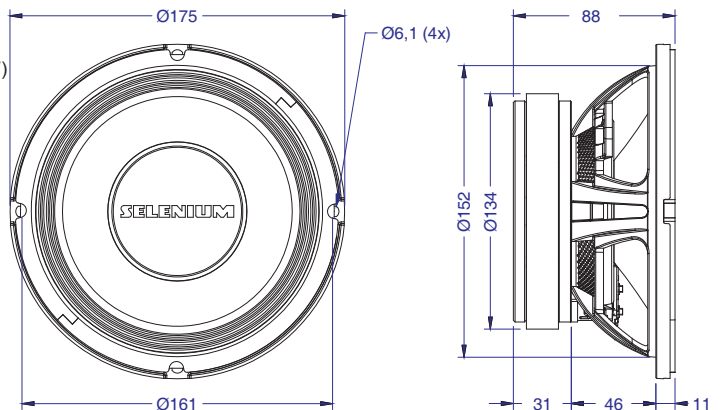
Le @ Fs (voice coil inductance @ Fs)	1.517	mH
Le @ 1 kHz (voice coil inductance @ 1 kHz)	0.784	mH
Le @ 20 kHz (voice coil inductance @ 20 kHz)	0.310	mH
Red @ Fs	0.48	
Red @ 1 kHz	2.60	
Red @ 20 kHz	27.74	
Krm	2.60	m
Kxm	11.80	mH
Erm	0.790	
Exm	0.690	

### ADDITIONAL INFORMATION

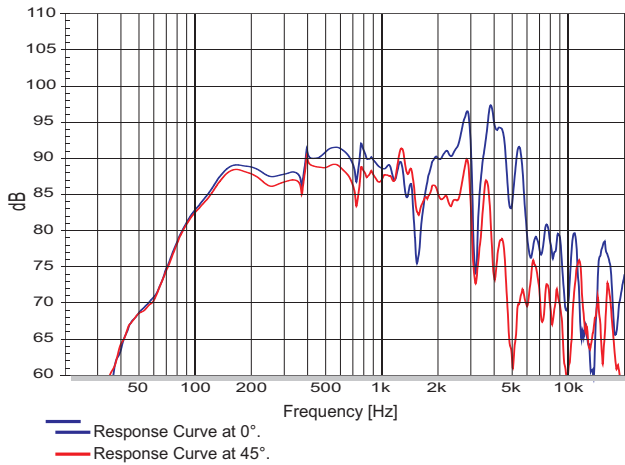
Magnet material	Barium ferrite
Magnet weight	895 (31.6) g (oz)
Magnet diameter x depth	134 x 18 (5.27 x 0.71) mm (in)
Magnetic assembly weight	2,280 (5.03) g (lb)
Frame material	Aluminum
Frame finish	Black epoxy
Voice coil material	Aluminum flat wire
Voice coil former material	Fiber Glass
Cone material	Long fiber pulp
Volume displaced by woofer	1.5 (0.05) l (ft <sup>3</sup> )
Net weight	2,520 (5.55) g (lb)
Gross weight	2,720 (5.99) g (lb)
Carton dimensions (W x D x H)	18 x 18 x 10 (7.1 x 7.1 x 0.4) cm (in)

### MOUNTING INFORMATION

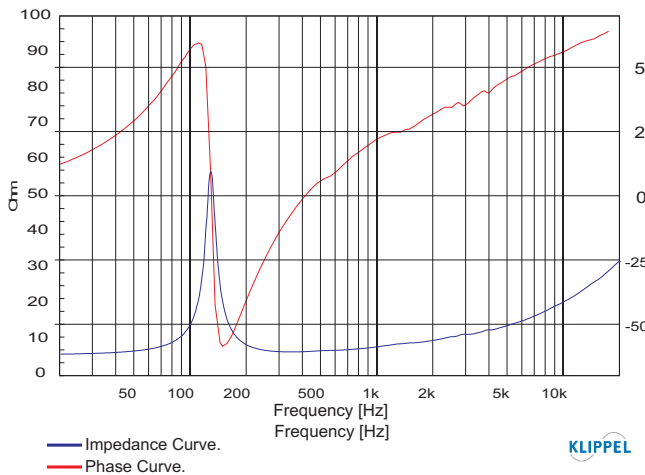
Number of bolt-holes	4
Bolt-hole diameter	6.1 (0.24) mm (in)
Bolt-circle diameter	161 (6.33) mm (in)
Baffle cutout diameter (front mount)	152 (5.98) mm (in)
Baffle cutout diameter (rear mount)	150 (5.95) mm (in)
Connectors	Push on terminals
Polarity	Positive voltage applied to the positive terminal (red) gives forward cone motion
Minimum clearance between the back of the magnetic assembly and the enclosure wall	75 (3) mm (in)



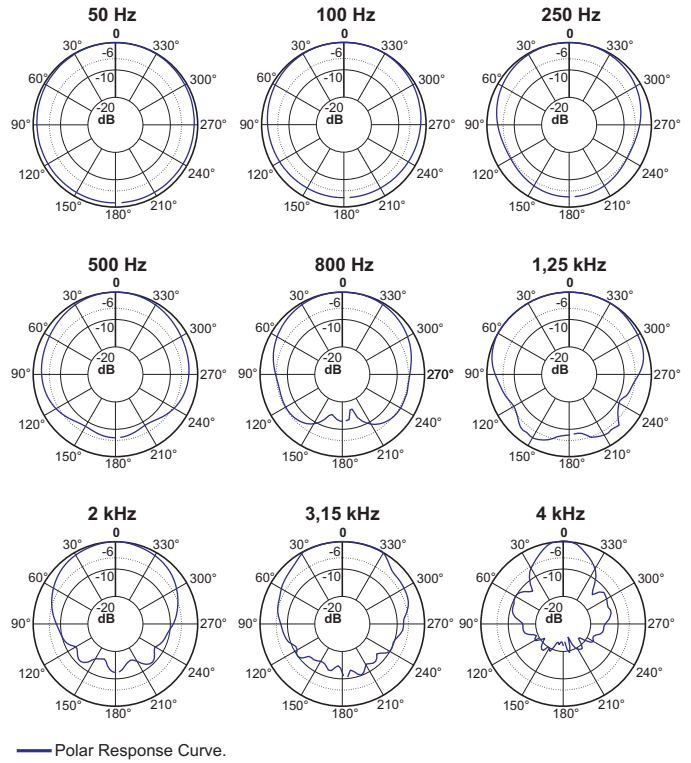
### RESPONSE CURVES (0° AND 45°) IN A TEST ENCLOSURE INSIDE AN ANECHOIC CHAMBER, 1 W / 1 m



### IMPEDANCE AND PHASE CURVES MEASURED IN FREE-AIR



### POLAR RESPONSE CURVES



### HOW TO CHOOSE THE RIGHT AMPLIFIER

The power amplifier must be able to supply twice the RMS driver power. This 3 dB headroom is necessary to handle the peaks that are common to musical programs. When the amplifier clips those peaks, high distortion arises and this may damage the transducer due to excessive heat. The use of compressors is a good practice to reduce music dynamics to safe levels.

### FINDING VOICE COIL TEMPERATURE

It is very important to avoid maximum voice coil temperature. Since moving coil resistance ( $R_e$ ) varies with temperature according to a well known law, we can calculate the temperature inside the voice coil by measuring the voice coil DC resistance:

$$T_B = T_A \frac{R_B}{R_A} - 1 \quad T_A = 25 \quad \frac{1}{25}$$

$T_A, T_B$  = voice coil temperatures in °C.

$R_A, R_B$  = voice coil resistances at temperatures  $T_A$  and  $T_B$ , respectively.  
= voice coil wire temperature coefficient at 25 °C.

### POWER COMPRESSION

Voice coil resistance rises with temperature, which leads to efficiency reduction. Therefore, if after doubling the applied electric power to the driver we get a 2 dB rise in SPL instead of the expected 3 dB, we can say that power compression equals 1 dB. An efficient cooling system to dissipate voice coil heat is very important to reduce power compression.

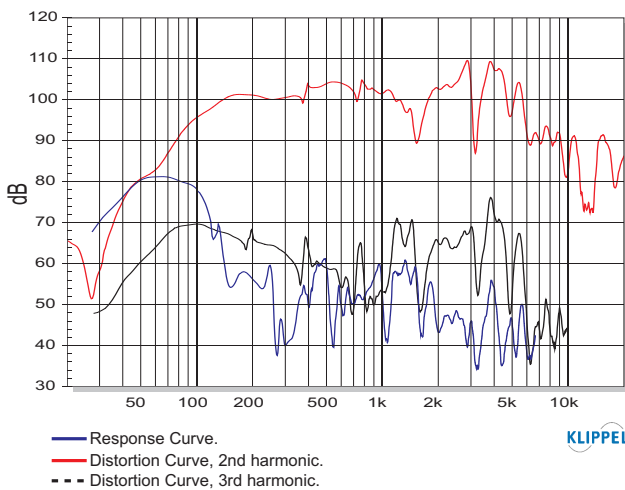
### NON-LINEAR VOICE COIL PARAMETERS

Due to its close coupling with the magnetic assembly, the voice coil in electrodynamic loudspeakers is a very non-linear circuit. Using the non-linear modeling parameters  $K_{rm}$ ,  $K_{xm}$ ,  $E_{rm}$  and  $E_{xm}$  from an empirical model, we can calculate voice coil impedance with good accuracy.

### SUGGESTED PROJECTS

For additional project suggestions, please access our website.

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



### TEST ENCLOSURE Closed box, with volume of 25 liters.

Specifications subject to change without prior notice.

www.seleniumloudspeakers.com

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