

Lavoce



SUGGESTED DESIGN

SISTEMA F153.10N

1 X 15" FULL RANGE CABINET



WAF153.00
500 W AES



DN10.17T
80 W AES



HD1004
90° X 60°

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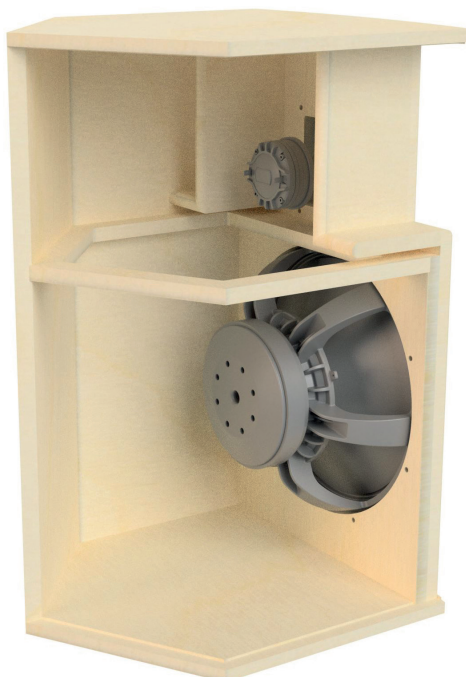


Lavoce Italiana
support@lavocespeakers.com

CABINET CONSTRUCTION

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OVERVIEW



- NET CABINET VOLUME l (ft³): 84 (2.97)
- SUGGESTED TYPE OF WOOD: BALTIC BIRCH PLYWOOD (18mm thickness)
- OTHER CONSTRUCTION DETAILS (CONNECTORS, HANDLING, WHEELS,...) ARE USER'S CHOICE



rev_B.a

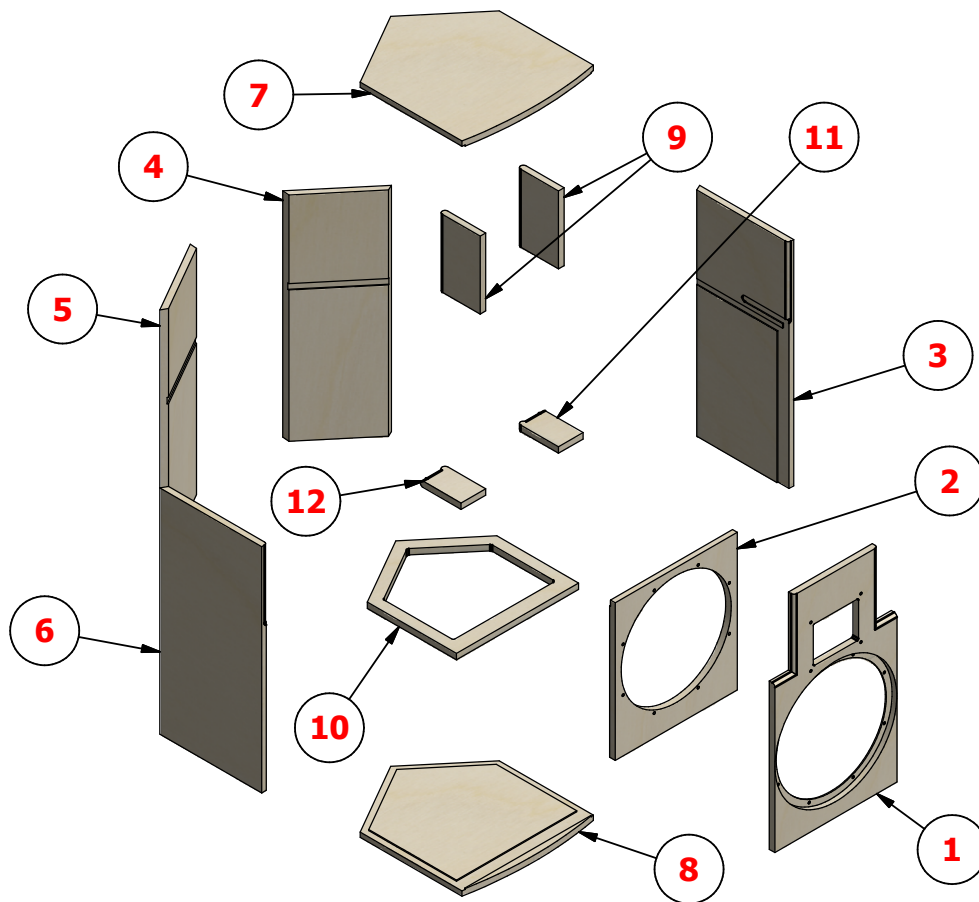
SUGGESTED DESIGN

SISTEMA F153.10N

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CABINET CONSTRUCTION

EXPLODED VIEW



NOTE: the project has been conceived to maximize the performance of the cabinet, therefore the coupling of the panels is made by milling. If a different coupling method is used, the size of the internal panels must be recalculated

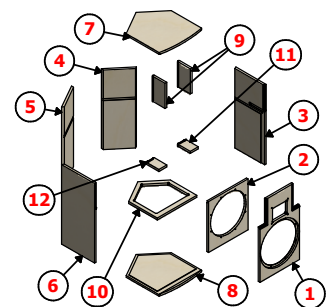
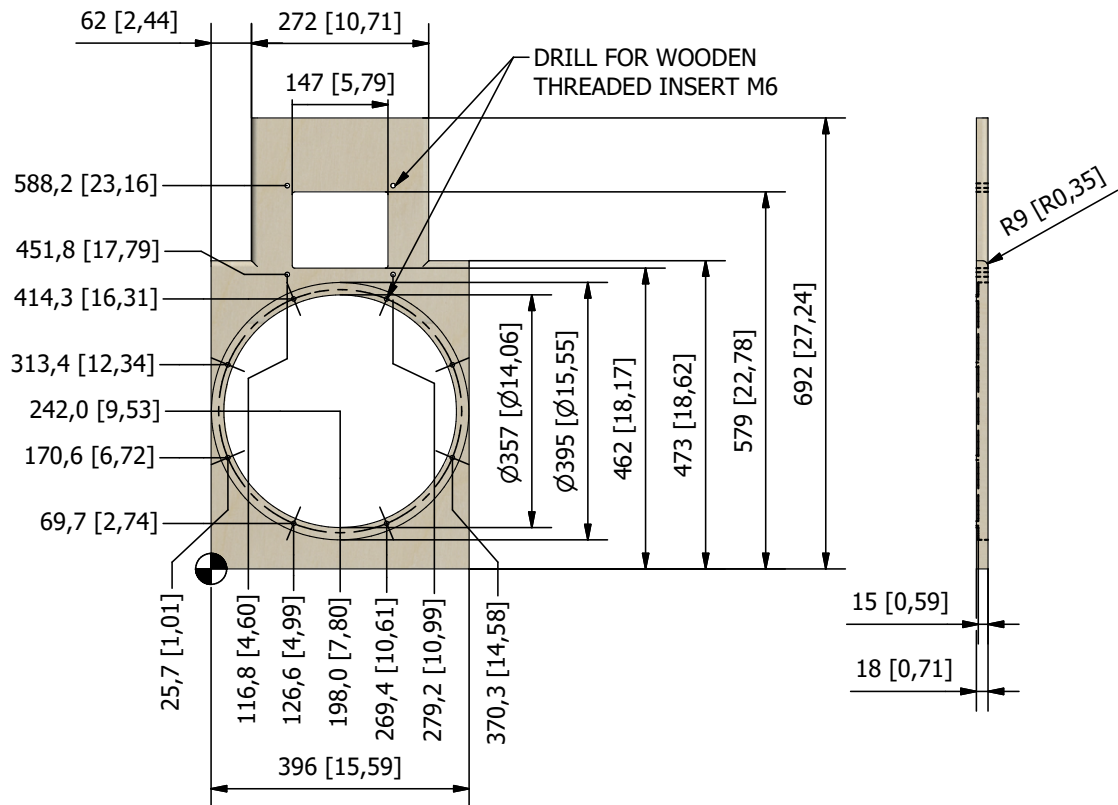
ITEM N°	QTY	DESCRIPTION	PAGE
1	1	FRONT BAFFLE	3
2	1	FRONT STIFFENER	4
3	1	SIDE PANEL - RIGHT	5
4	1	BACK PANEL A	6
5	1	BACK PANEL B	7
6	1	SIDE PANEL - LEFT	8
7	1	TOP PANEL	9
8	1	BOTTOM PANEL	10
9	2	VERTICAL DUCT	11
10	1	BRACKET	12
11	1	HORIZONTAL DUCT A	13
12	1	HORIZONTAL DUCT B	14



CABINET CONSTRUCTION

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ITEM 1 - FRONT Baffle



rev_B.a



SUGGESTED DESIGN

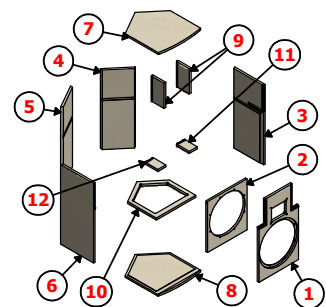
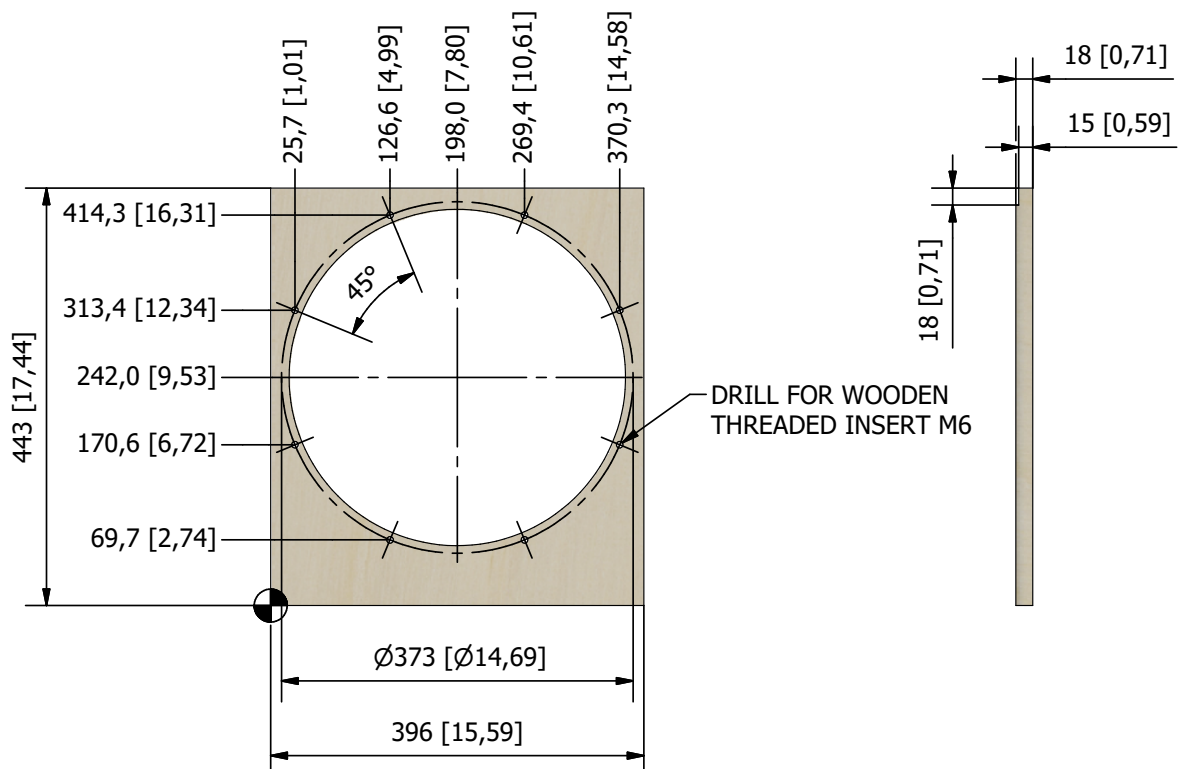
SISTEMA F153.10N

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CABINET CONSTRUCTION

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ITEM 2 - FRONT STIFFENER



rev_B.a



SUGGESTED DESIGN

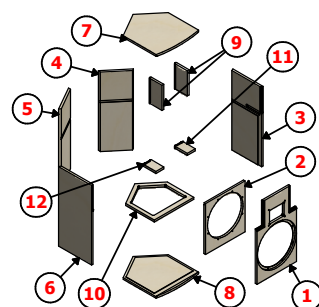
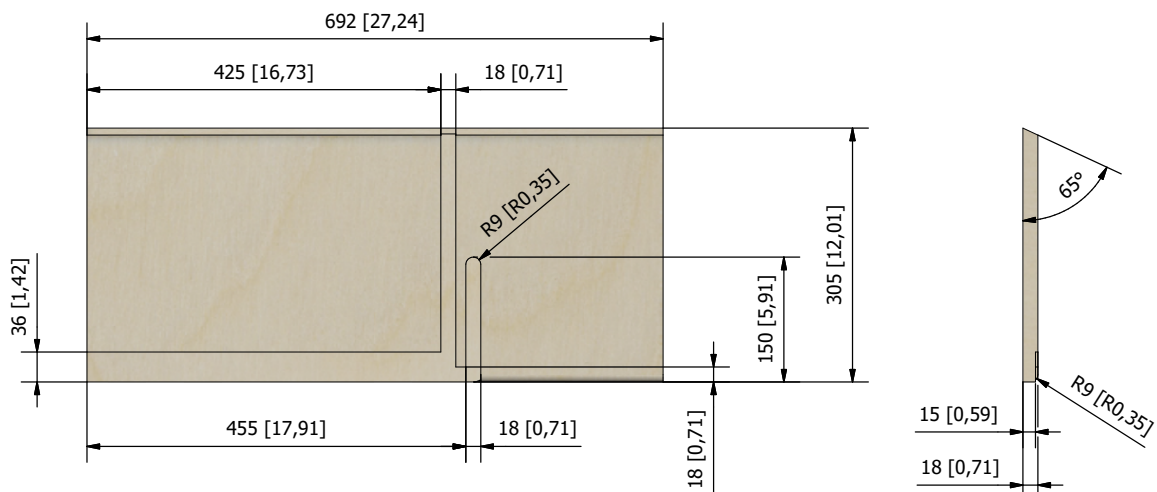
SISTEMA F153.10N

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CABINET CONSTRUCTION

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ITEM 3 - SIDE PANEL - RIGHT



rev_B.a



SUGGESTED DESIGN

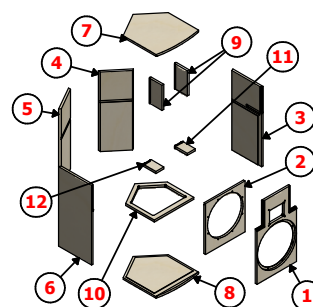
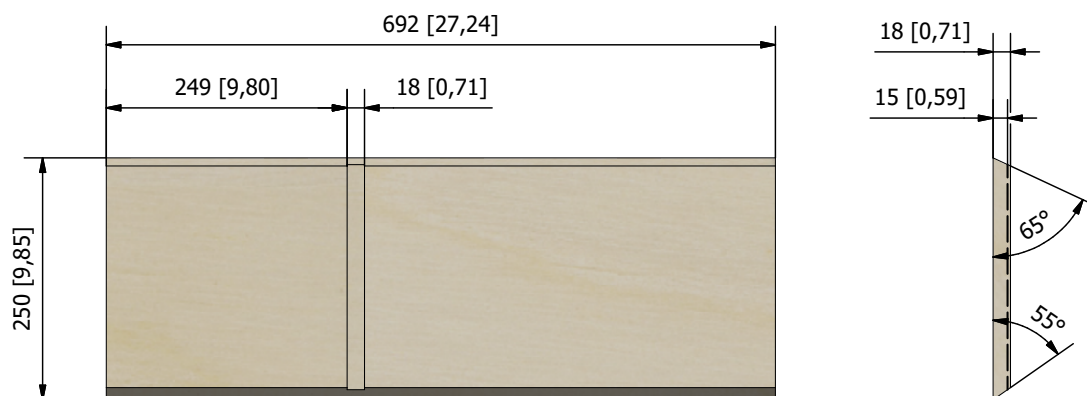
SISTEMA F153.10N

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CABINET CONSTRUCTION

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ITEM 4 - BACK PANEL A



rev_B.a



SUGGESTED DESIGN

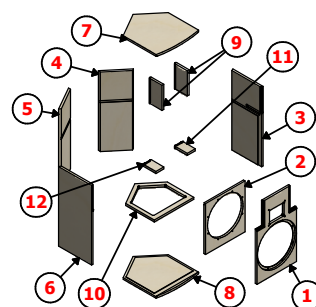
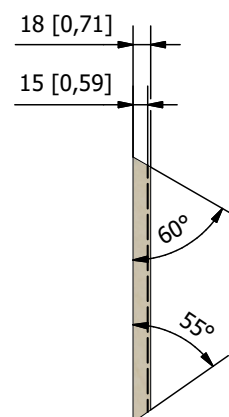
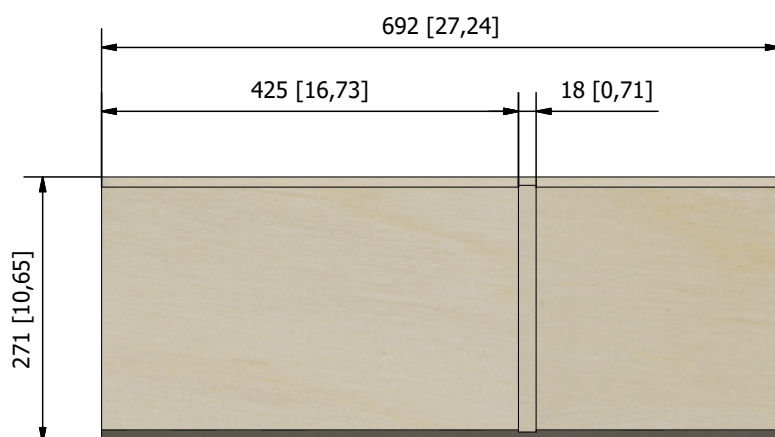
SISTEMA F153.10N

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CABINET CONSTRUCTION

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ITEM 5 - BACK PANEL B



rev_B.a



SUGGESTED DESIGN

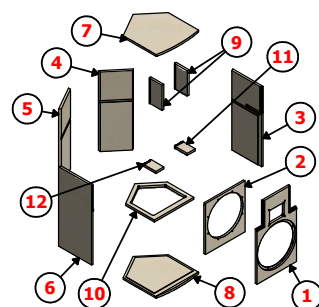
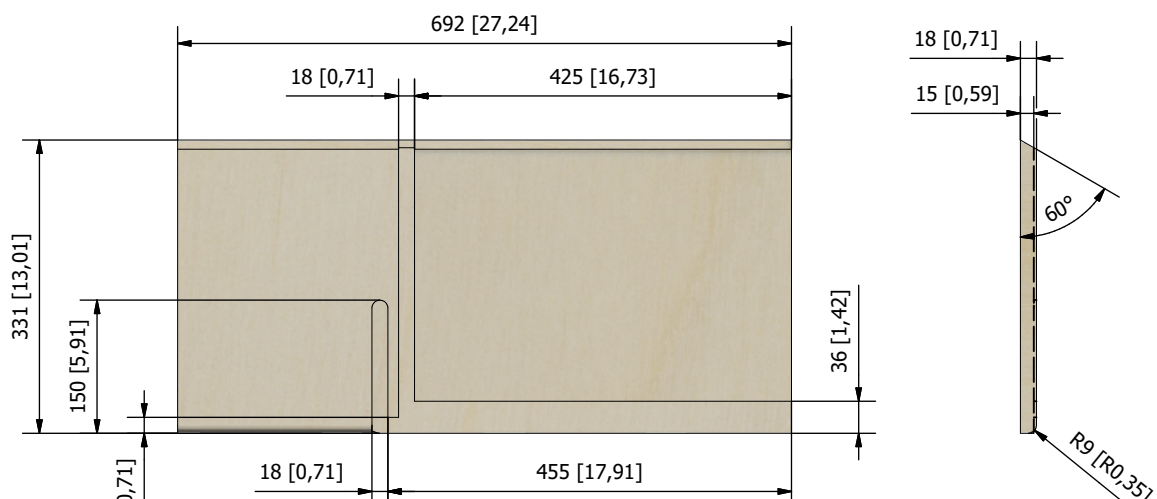
SISTEMA F153.10N

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CABINET CONSTRUCTION

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ITEM 6 - SIDE PANEL - LEFT



rev_B.a



SUGGESTED DESIGN

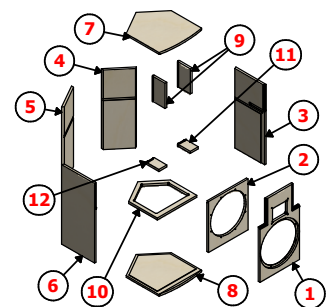
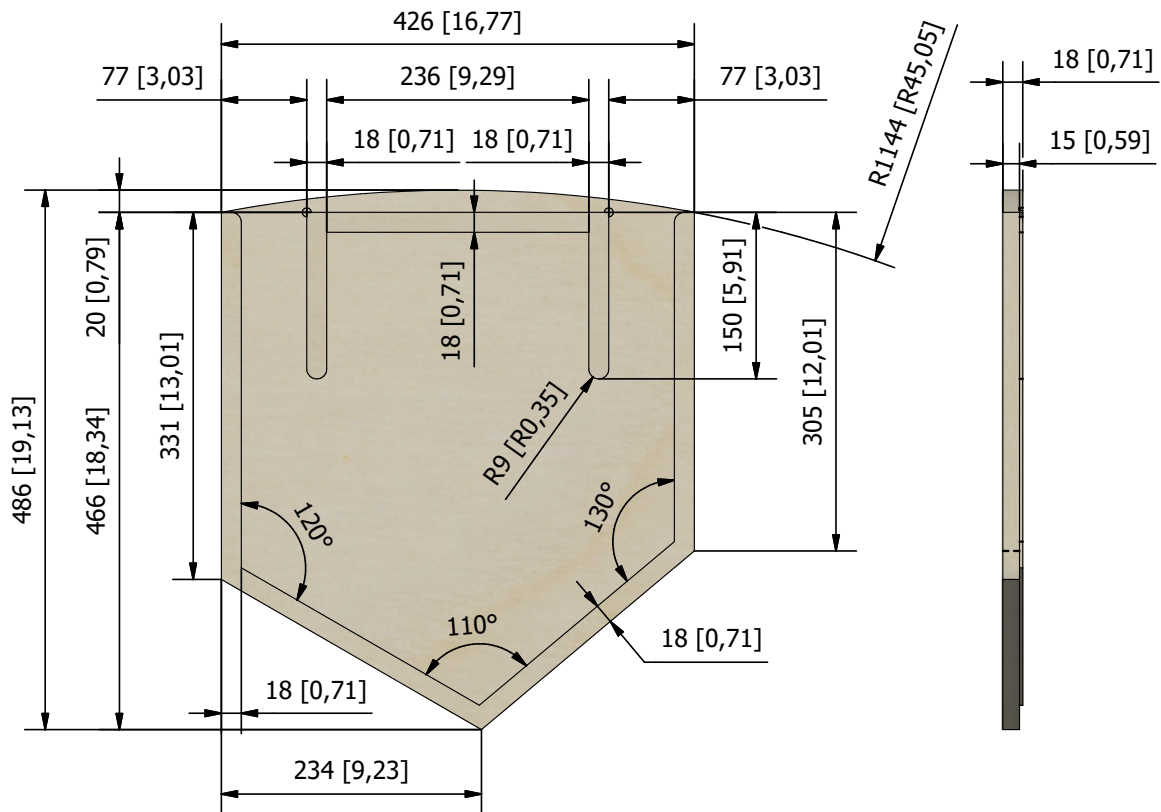
SISTEMA F153.10N

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CABINET CONSTRUCTION

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ITEM 7 - TOP PANEL



rev_B.a



SUGGESTED DESIGN

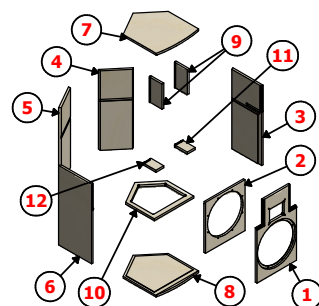
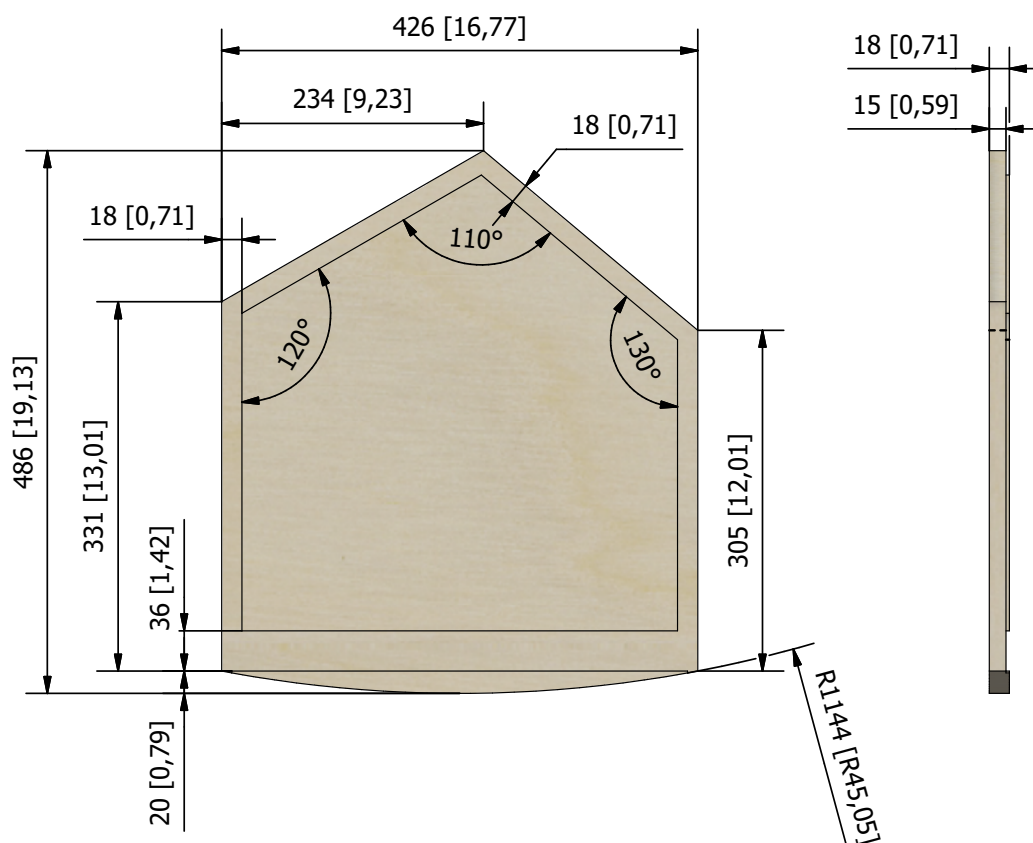
SYSTEMA F153.10N

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CABINET CONSTRUCTION

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ITEM 8 - BOTTOM PANEL



rev_B.a



SUGGESTED DESIGN

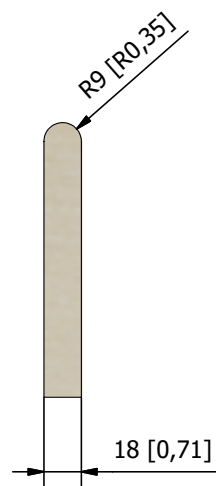
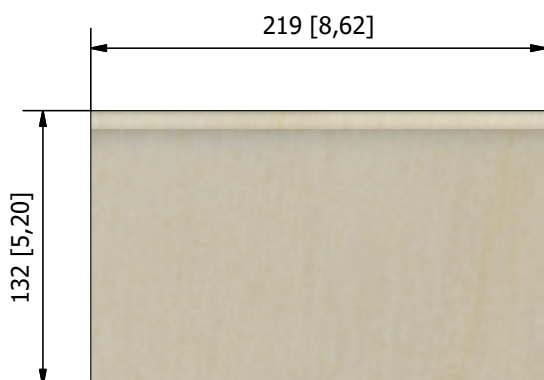
SISTEMA F153.10N

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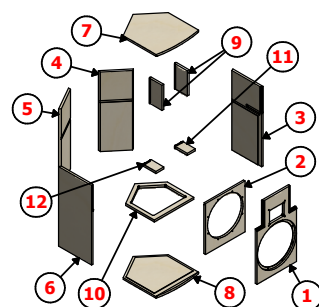
CABINET CONSTRUCTION

Lavoce

ITEM 9 - VERTICAL DUCT



QTY: 2 OFF



rev_B.a



SUGGESTED DESIGN

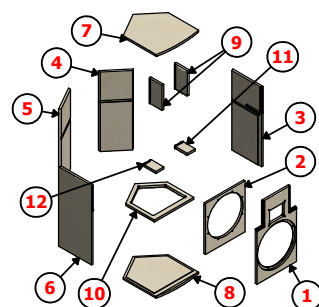
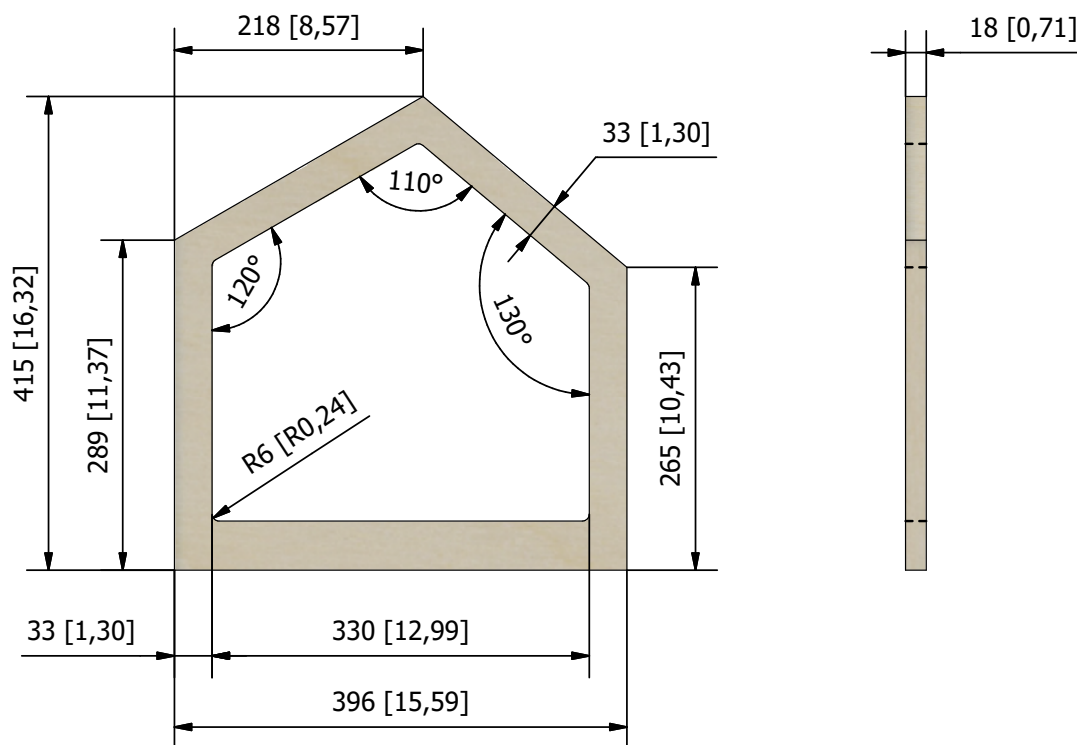
SISTEMA F153.10N

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CABINET CONSTRUCTION

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ITEM 10 - BRACKET



rev_B.a



SUGGESTED DESIGN

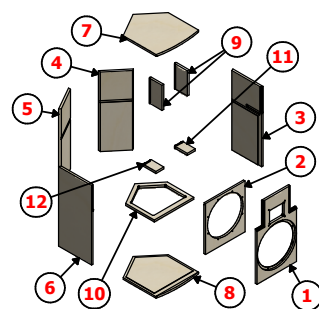
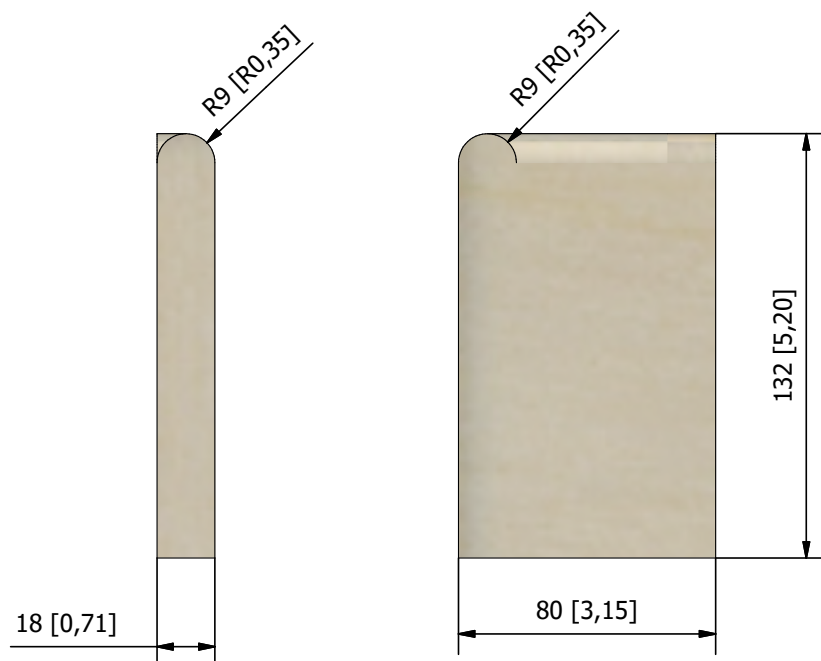
SISTEMA F153.10N

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CABINET CONSTRUCTION

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ITEM 11 - HORIZONTAL DUCT A



rev_B.a



SUGGESTED DESIGN

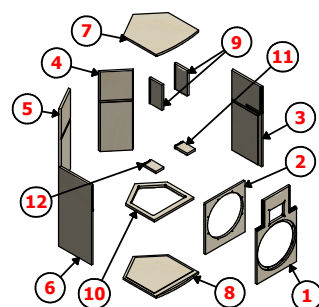
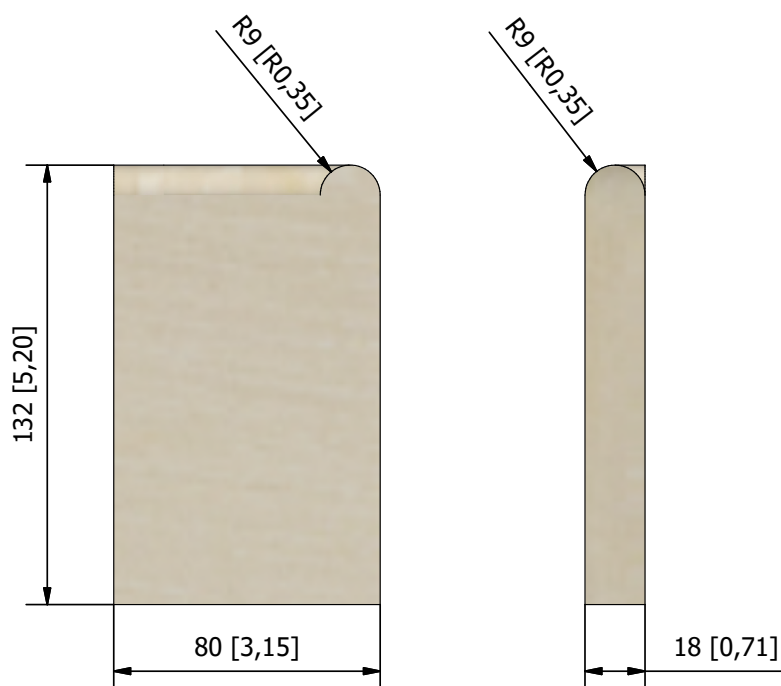
SISTEMA F153.10N

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CABINET CONSTRUCTION

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ITEM 12 - HORIZONTAL DUCT B



rev_B.a



SUGGESTED DESIGN

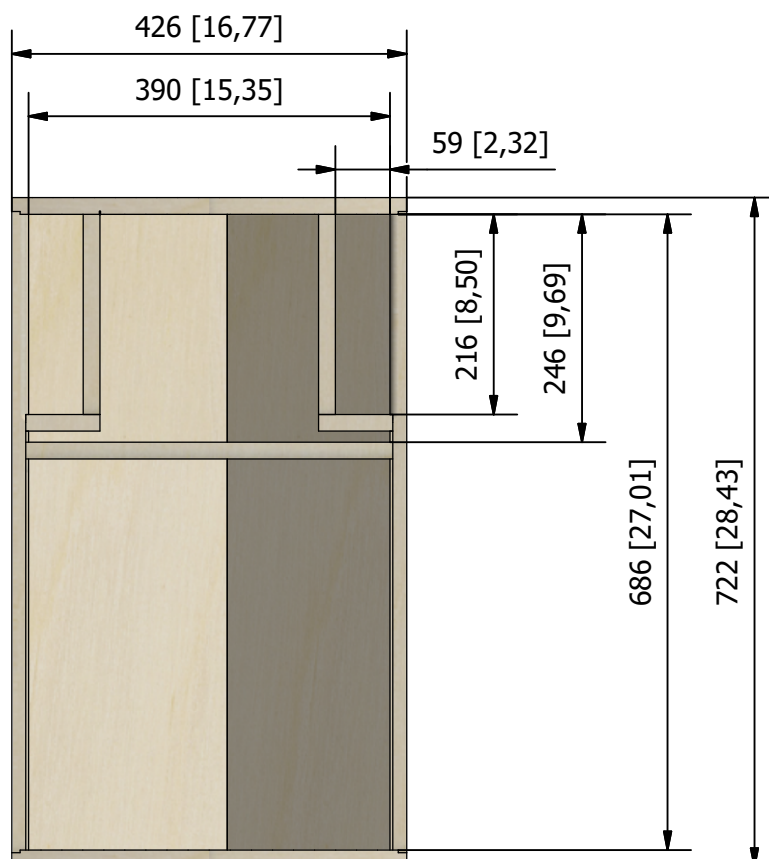
SISTEMA F153.10N

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CABINET CONSTRUCTION

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FRONT VIEW



rev_B.a



SUGGESTED DESIGN

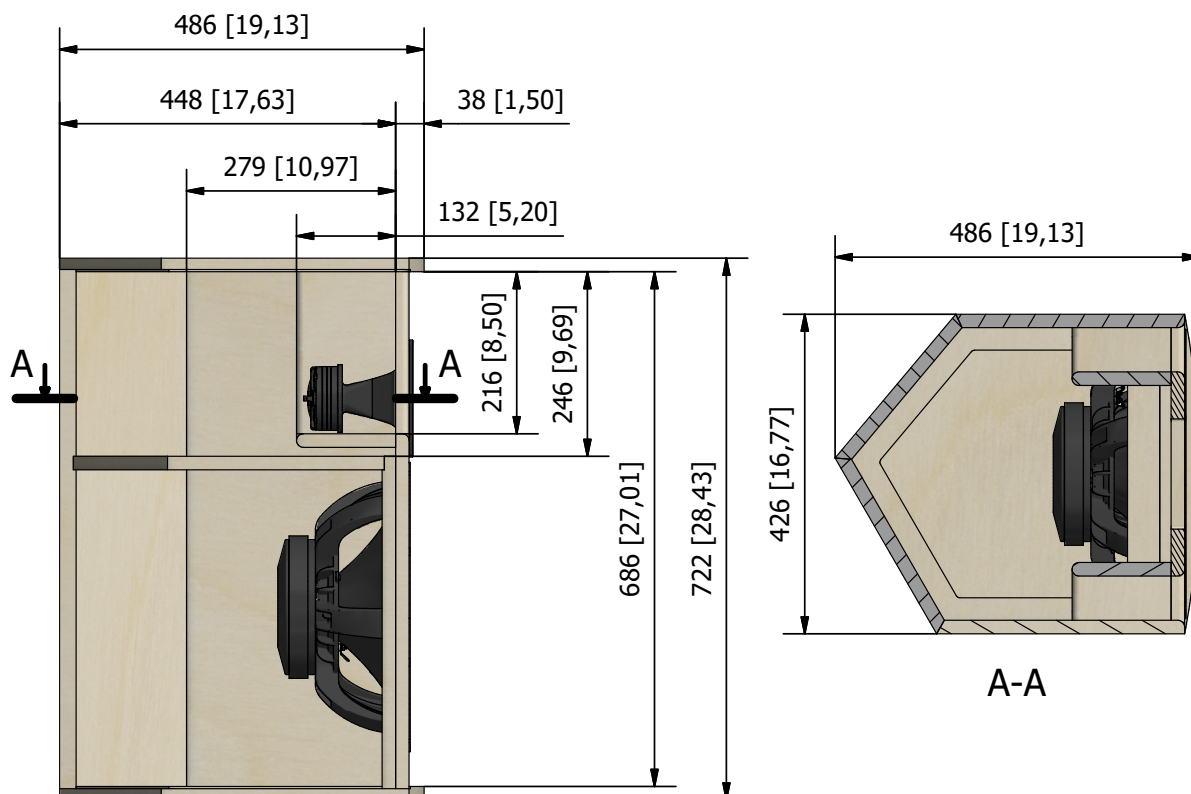
SISTEMA F153.10N

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CABINET CONSTRUCTION

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SIDE & TOP SECTION VIEW



rev_B.a



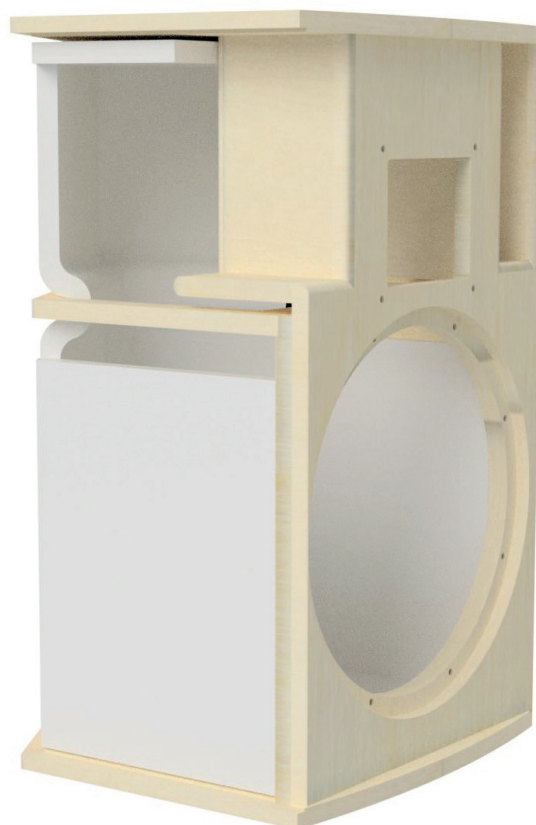
SUGGESTED DESIGN

SISTEMA F153.10N

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CABINET CONSTRUCTION

DAMPING MATERIAL



NOTE: Damping material needs to be fixed to the cabinet, in a way that it always keeps enough distance from the X-over PCB and the magnet systems of the speakers. Distance from the magnets has to be at least 20mm to avoid over-heating of the motors and reduce risk of fire. The X-over PCB should be mounted into an open steel housing to always keep the safety distance from the damping material.

DAMPING MATERIAL SPECIFICATIONS

SYMBOL	WIDTH	HEIGHT	THICKNESS	NOTE
P1	900 mm	240 mm	25 mm	Polyester wool 500 g/m ²
P2	900 mm	750 mm	25 mm	Polyester wool 500 g/m ²
P3	900 mm	750 mm	25 mm	Polyester wool 500 g/m ²

rev_B.a



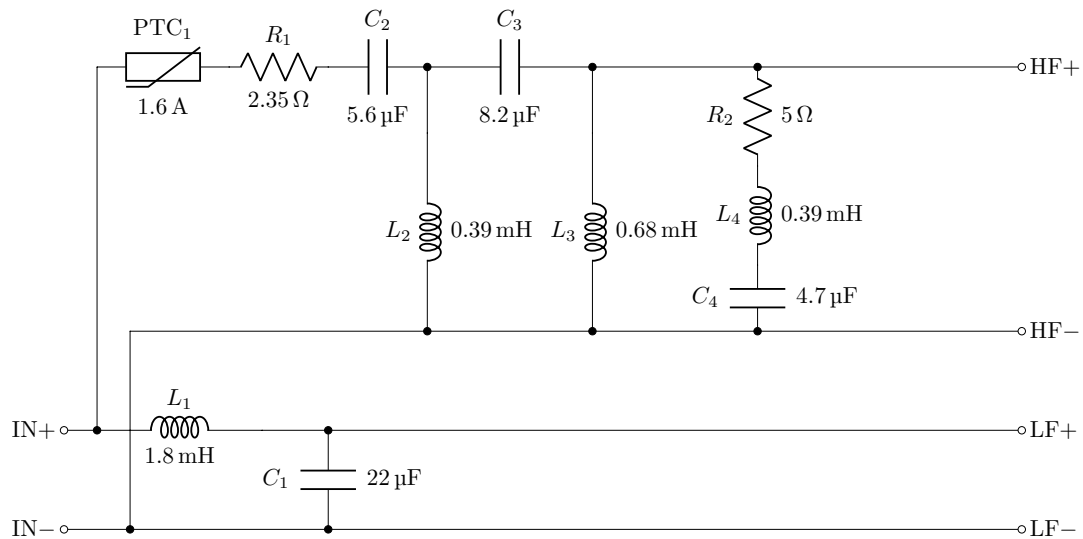
SUGGESTED DESIGN

SISTEMA F153.10N

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CROSSOVER FILTER CONSTRUCTION

SCHEMATIC



BILL OF MATERIALS

RESISTORS						
SYMBOL	VALUE	POWER	TOLERANCE	NOTE		
R1	2.35 Ohm	60 W	5%	Resistance can be split over parallel resistor to get the desired power rating		
R2	5 Ohm	50 W	5%	Resistance can be split over parallel resistor to get the desired power rating		
CAPACITORS						
SYMBOL	VALUE	VOLTAGE	TYPE	TOLERANCE	NOTE	
C1	22 uF	400 V	MKP	5%	Metallized Plastic Polypropylene Capacitor. High current/low loss	
C2	5.6 uF	250 V	MKT	5%	Metallized Plastic Polyester Capacitor	
C3	8.2 uF	250 V	MKT	5%	Metallized Plastic Polyester Capacitor	
C4	4.7 uF	250 V	MKT	5%	Metallized Plastic Polyester Capacitor	
INDUCTORS						
SYMBOL	VALUE	WIRE DIAMETER	TYPE	TOLERANCE	MAX RESISTANCE	NOTE
L1	1.8 mH	1.4 mm	IRON CORE	5%	0.3 Ohm	High temperature coil body with core required
L2	0.39 mH	1 mm	AIR CORE	3%	0.35 Ohm	-
L3	0.68 mH	1 mm	AIR CORE	3%	0.5 Ohm	-
L4	0.39 mH	1 mm	AIR CORE	3%	0.35 Ohm	-
POSITIVE TEMPERATURE COEFFICIENT THERMISTOR						
SYMBOL	HOLD CURRENT	MAXIMUM VOLTAGE	NOTE			
PTC1	1.6 A	60 V	Protection for compression driver DN10.17T			



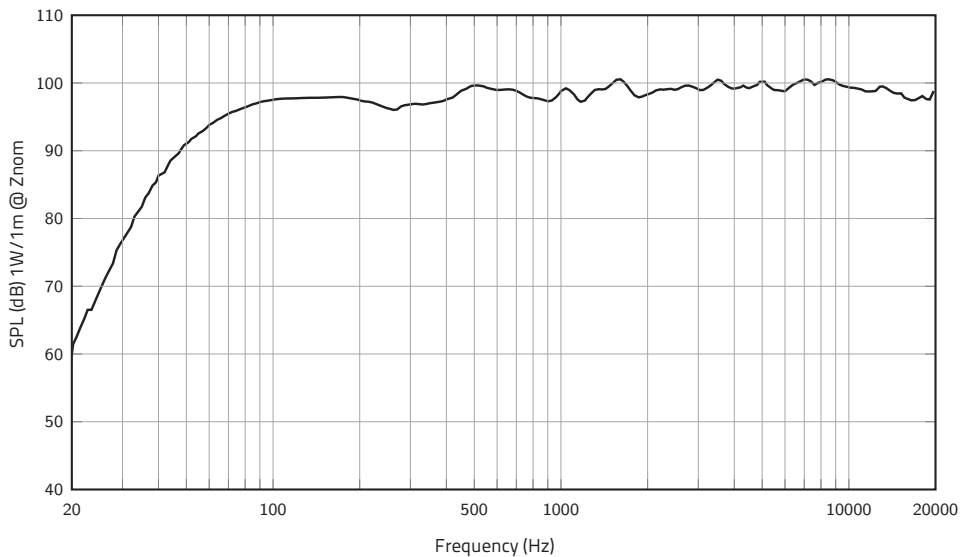
rev_B.a

PERFORMANCE



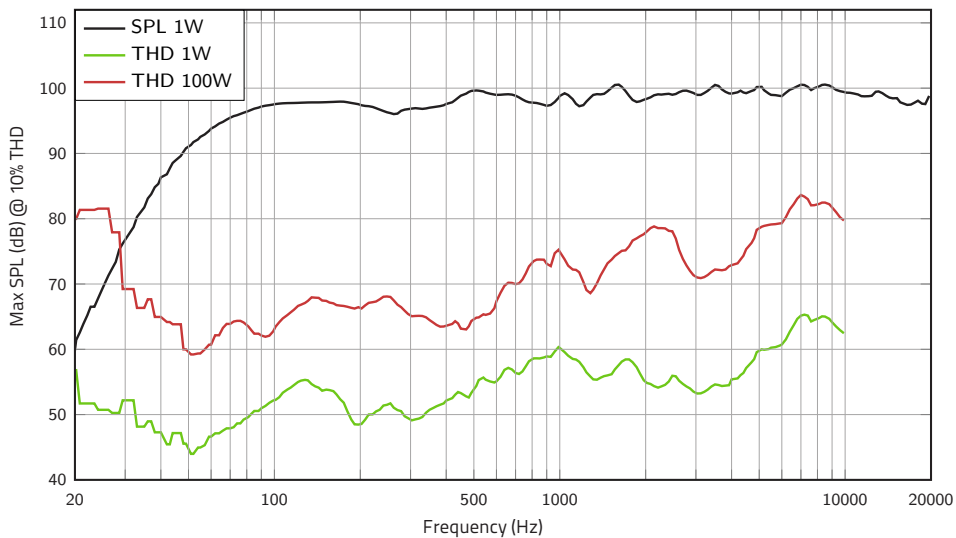
HF **HORN**
DN10.17T HD1004
LF
WAF153.00

FREQUENCY RESPONSE



Measurement hardware: Four Audio ROBO3 with WinMF software.
Smoothing 1/6 oct.

TOTAL HARMONIC DISTORTION



Measurement hardware: Four Audio ROBO3 with WinMF software.
Crown IT12000 amplifier.



rev_B.a

SUGGESTED DESIGN

SISTEMA F153.10N

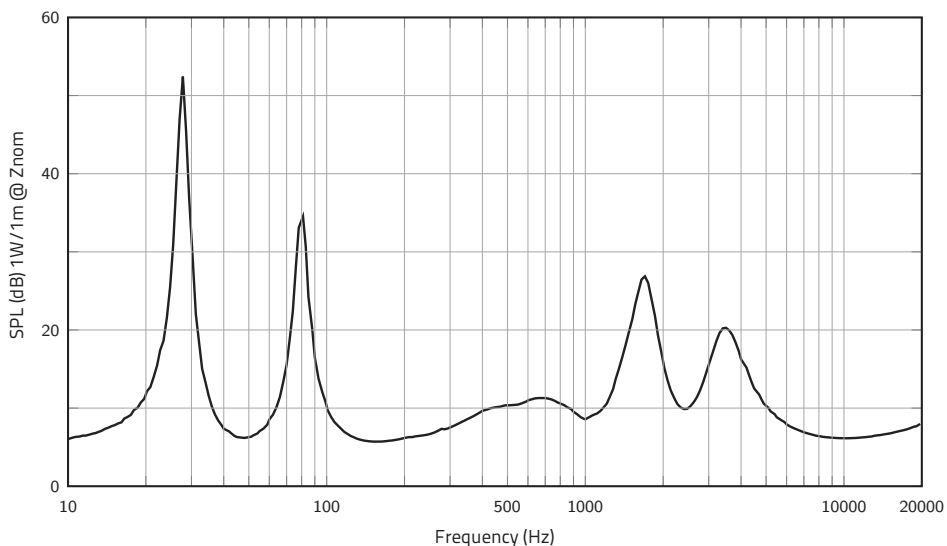
All measurements in class 1 semi-anechoic chamber using ground plane technique, with microphone placed on-axis at 4m distance; measurements are then normalized to 1w/1m in free-field condition.

PERFORMANCE



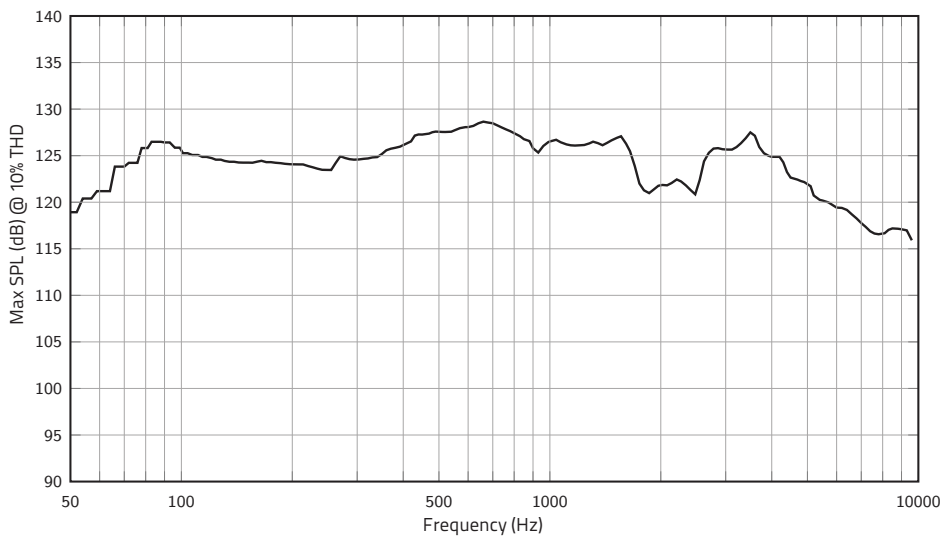
HF **HORN**
DN10.17T HD1004
LF
WAF153.00

IMPEDANCE



Measurement hardware: Four Audio ROBO3 with WinMF software.
Smoothing 1/6 oct.

MAX SPL



Measurement hardware: Four Audio ROBO3 with WinMF software.
Crown IT12000 amplifier



rev_B.a

SUGGESTED DESIGN

SISTEMA F153.10N

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All measurements in class 1 semi-anechoic chamber using ground plane technique, with microphone placed on-axis at 4m distance.

PERFORMANCE

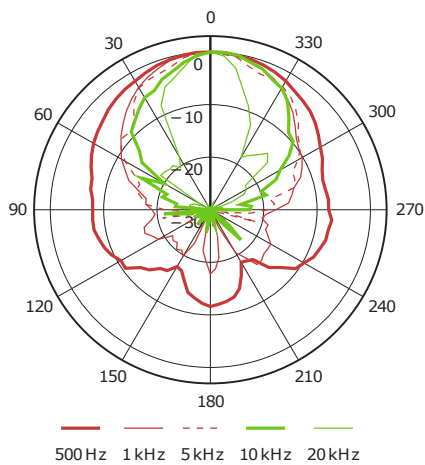
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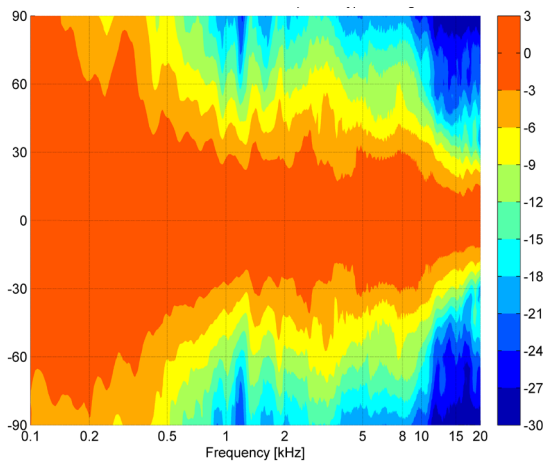
HF **HORN**
 DN10.17T HD1004
LF
 WAF153.00

HORIZONTAL PLANE

POLAR PLOT



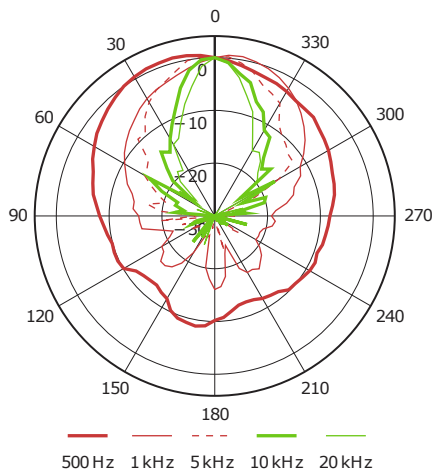
DIRECTIVITY CONTOUR PLOT



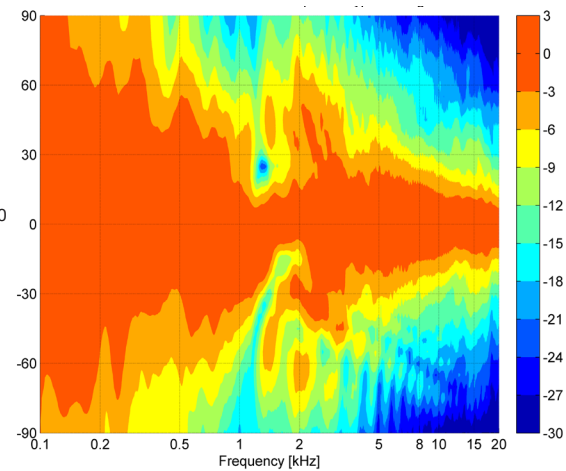
Measurement hardware: Four Audio ROBO3 with WinMF software.

VERTICAL PLANE

POLAR PLOT



DIRECTIVITY CONTOUR PLOT



Measurement hardware: Four Audio ROBO3 with WinMF software.



rev_B.a

SUGGESTED DESIGN

SISTEMA F153.10N

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All measurements in class 1 semi-anechoic chamber; measurements are then normalized with respect to on axis values. Smoothing 1/12 oct.

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INNOVATORS
BY TRADITION



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