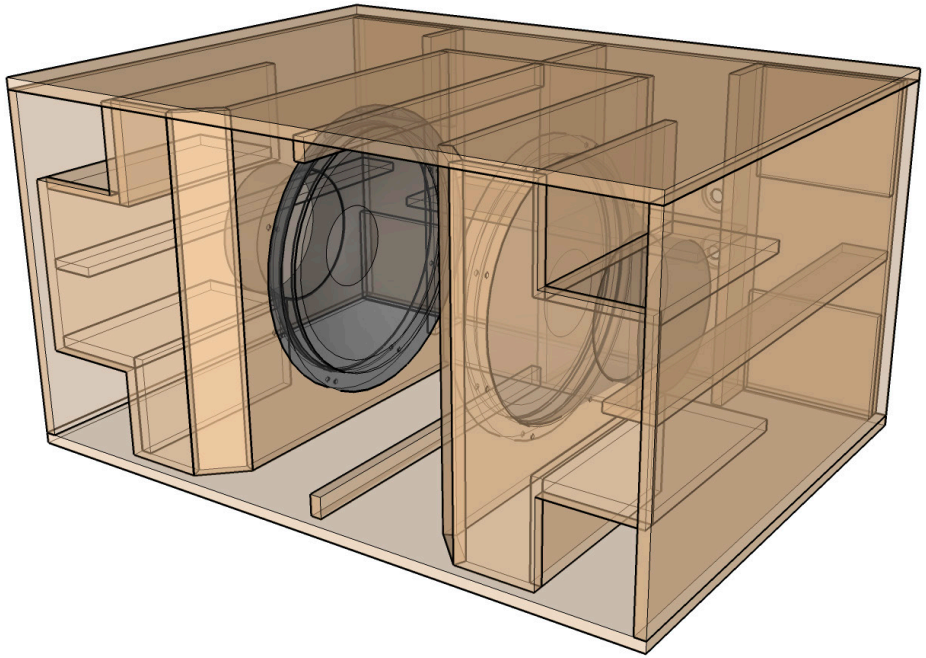
EIGHTEEN SOUND

PROFESSIONAL LOUDSPEAKERS

APPLICATION NOTE



MANIFOLDED, DOUBLE 18″ BAND-PASS SUBWOOFER KIT

KEY FEATURES

> High performance 2 x 18" subwoofer system

> Equipped with 18NLW9601, for lightweight box and extremely high power handling

18NLW9601

KEY FEATURES

Neodymium magnet
5.3" interleaved sanwitch voice coil (ISV)
Double Silicon Spider (DSS) for improved excursion control
Aluminum demodulating ring (SDR) for lower distortion
3600 W program power handling

GENERAL SPECIFICATIONS

NOMINAL DIAMETER	462 MM (18 in)
RATED IMPEDANCE	8 Ohm
AES POWER	1800W
PROGRAM POWER	3600W
PEAK POWER	10000W
SENSITIVITY	96 dB
FREQUENCY RANGE	30 ÷ 2300 Hz
POWER COMPRESSION @-10dB	0.7 dB
POWER COMPRESSION @-3dB	1.3 dB
POWER COMPRESSION @0dB	2.2 dB
MAX RECOMM. FREQUENCY	300 Hz
RECOMM. ENCLOSURE VOLUME	110 ÷ 350 lt (3.88÷12.36cuft)
MINIMUM IMPEDANCE	6.1 Ohm at 25°C
MAX PEAK TO PEAK EXCURSION	70 mm (2.75 in)
VOICE COIL DIAMETER	135 mm (5.32 in)
VOICE COIL WINDING MATERIAL	Aluminum
SUSPENSION	Triple roll, heavy Polycotton
CONE	Straight ribbed carbon fiber loaded cellulose

THIELE SMALL PARAMETERS

Fs	39 Hz
Re	4.7 Ohm
Sd	0.1134 sq mt. (189.9q.in.)
Qms	5.7
Qes	0.3
Qts	0.28
Vas	120 lt. (5,79 cuft)
Mms	255 gr. (0,6 lb)
BL	31 Tm
Linear mathematical Xmax	± 14 mm (0.55 in)
Le (1kHz)	2.19 mH
Ref. Efficiency 1W@1m (half space)	95.6 dB

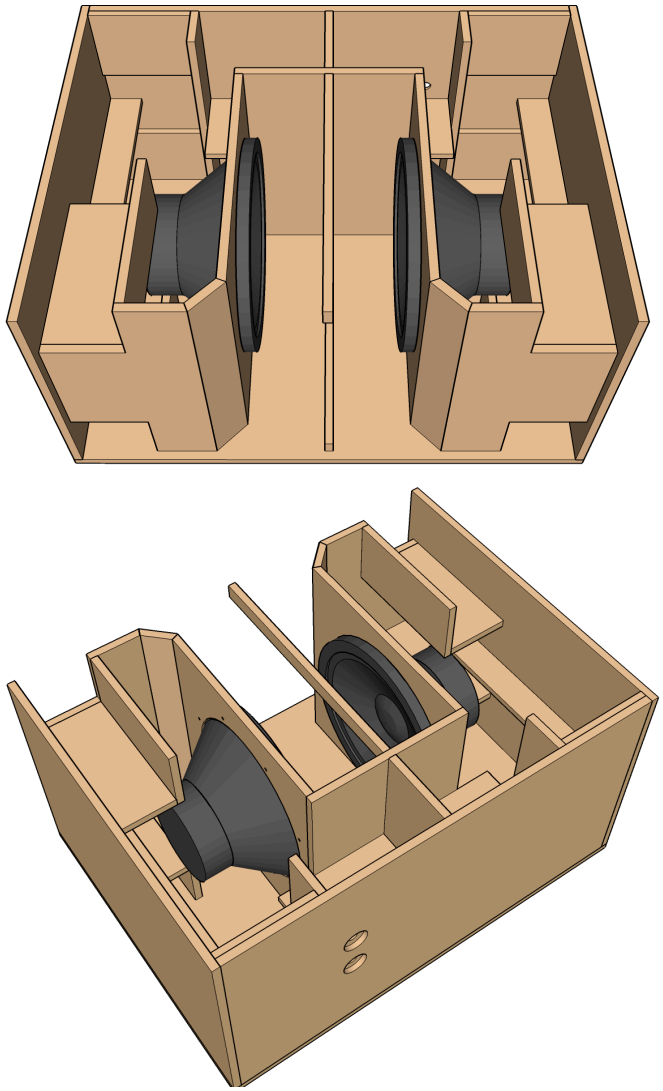
KEY FEATURES

> The enclosure should be made of baltic birch plywood (18mm thickness)

> Bolts are M6x35mm

> M6 T-Nuts are recommended

> Handling, rigging and connectors are user's choice



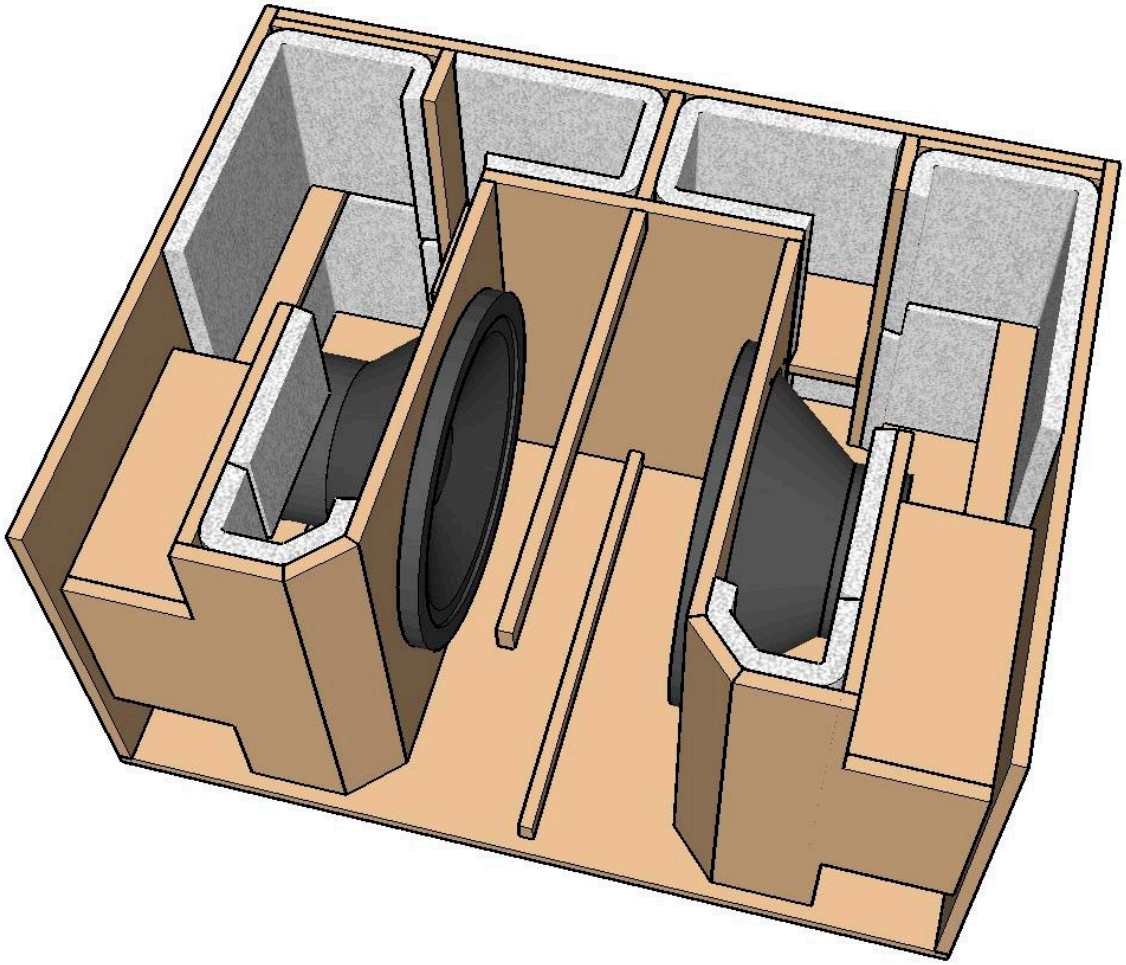
INTERNAL VIEW

KEY FEATURES

> It's recommended to well damping the cabinet interior but not extremely heavily and without

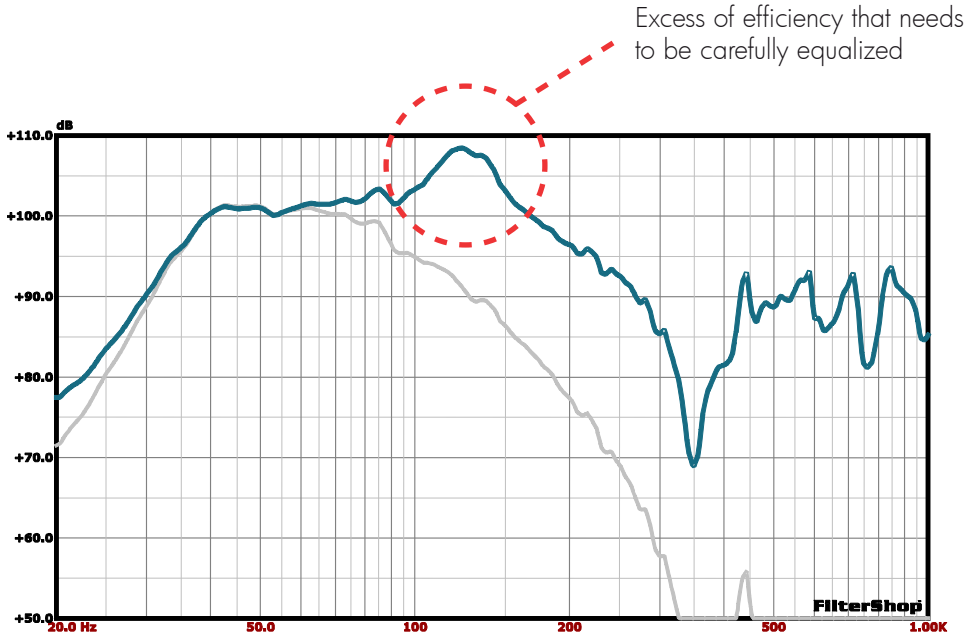
> You should see an example of the required dampening on the image on the next page

> An high density dampening material, such as Dacron or other synthetic fibers, is required for better performance

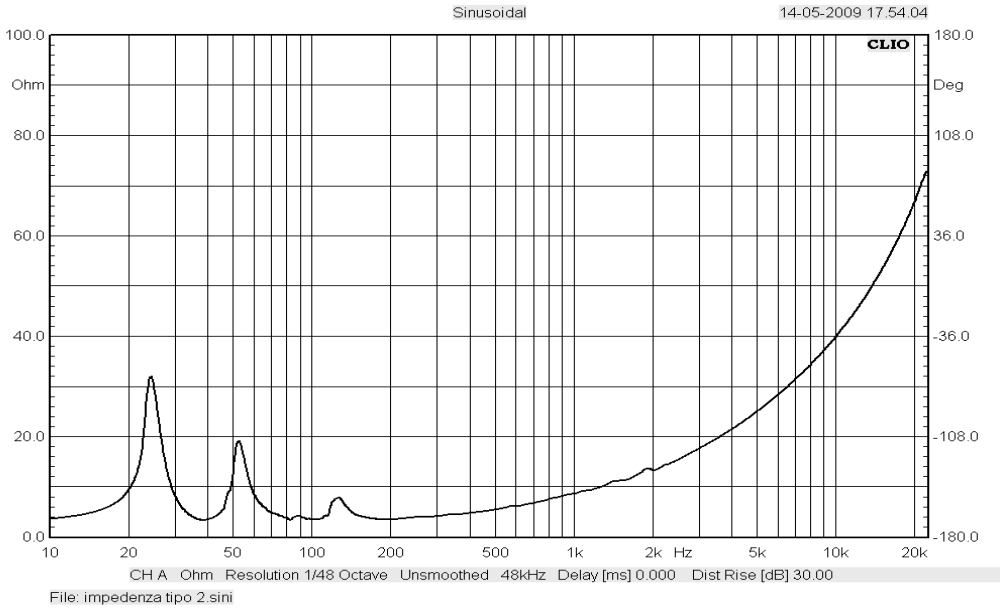


INTERNAL VIEW AND DUMPING

MEASUREMENTS: UNFILTERED FREQUENCY RESPONSE, 2.83V/1M AND RELATIVE INPUT IMPEDANCE CURVE WITH 18NLW9600 LOUDSPEAKER

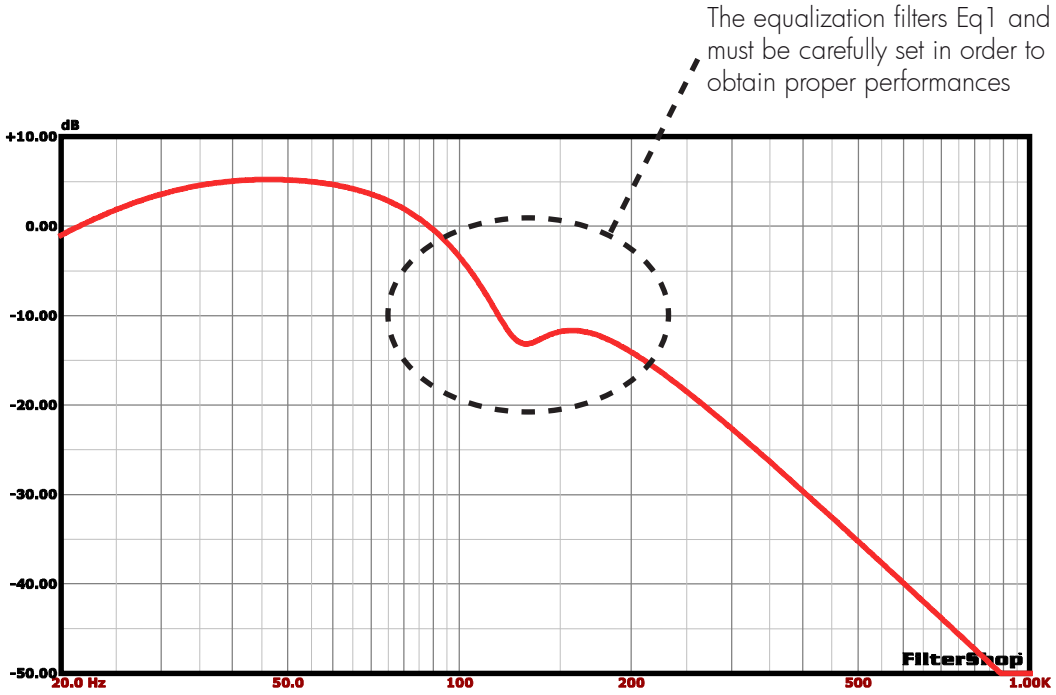


FREQUENCY RESPONSE



IMPEDANCE CURVE

PROCESSING GUIDELINES AND PROCESSOR RESPONSE



PROCESSOR SETTING RESPONSE

NECESSARY PROCESSOR SETTINGS WITH 18NLW9600 LOUDSPEAKER

> High pass: Butterworth 2nd order, 12dB/Oct @ 30 Hz

> Parametric EQ Eq1: F= 116 Hz - Gain= -5 dB - Q= 1.5
Eq2: F= 127 Hz - Gain= -8 dB - Q= 4.5

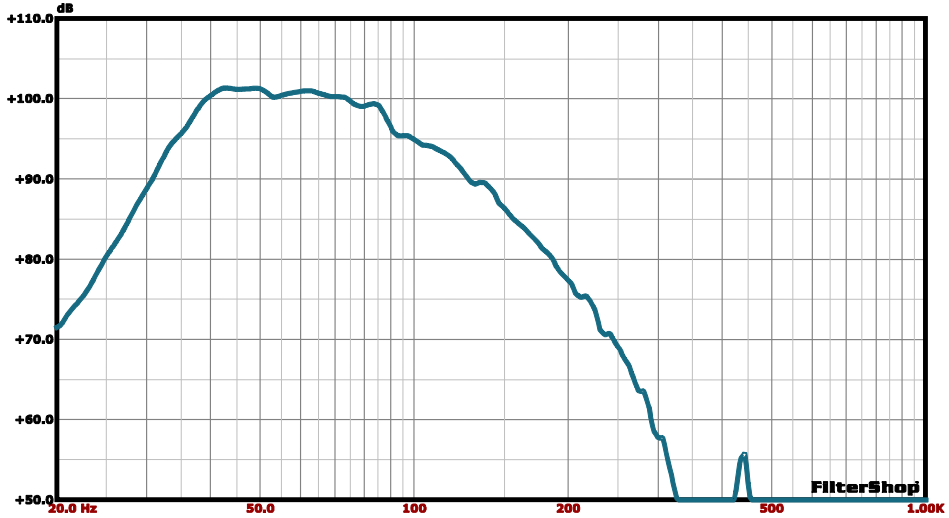
> Low pass: Butterworth 3th order, 18dB/Oct @ 100 Hz
> Polarity: Positive (+)
> Limiter: @ +12dBu, 100ms Atk. Time, X4 Release Time
> Output Gain: + 7dB

Processing Parameters Referred to XTA DP224/DP226/DP448 Processors

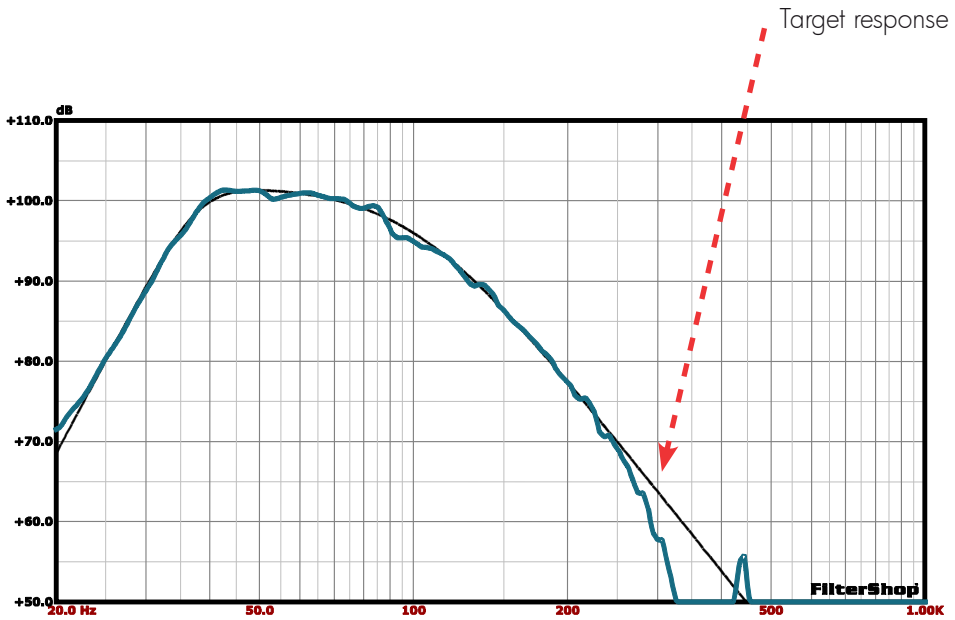
Required Amplifier for proper driving, approx.: 2000W @ 8 Ohm, 4000W @ 4 Ohm with Gain 32dB

Gain and Limiter Values need to be properly adjusted if different gain amplifier is being used

PROCESSED FREQUENCY RESPONSE



PROCESSED SUBWOOFER RESPONSE



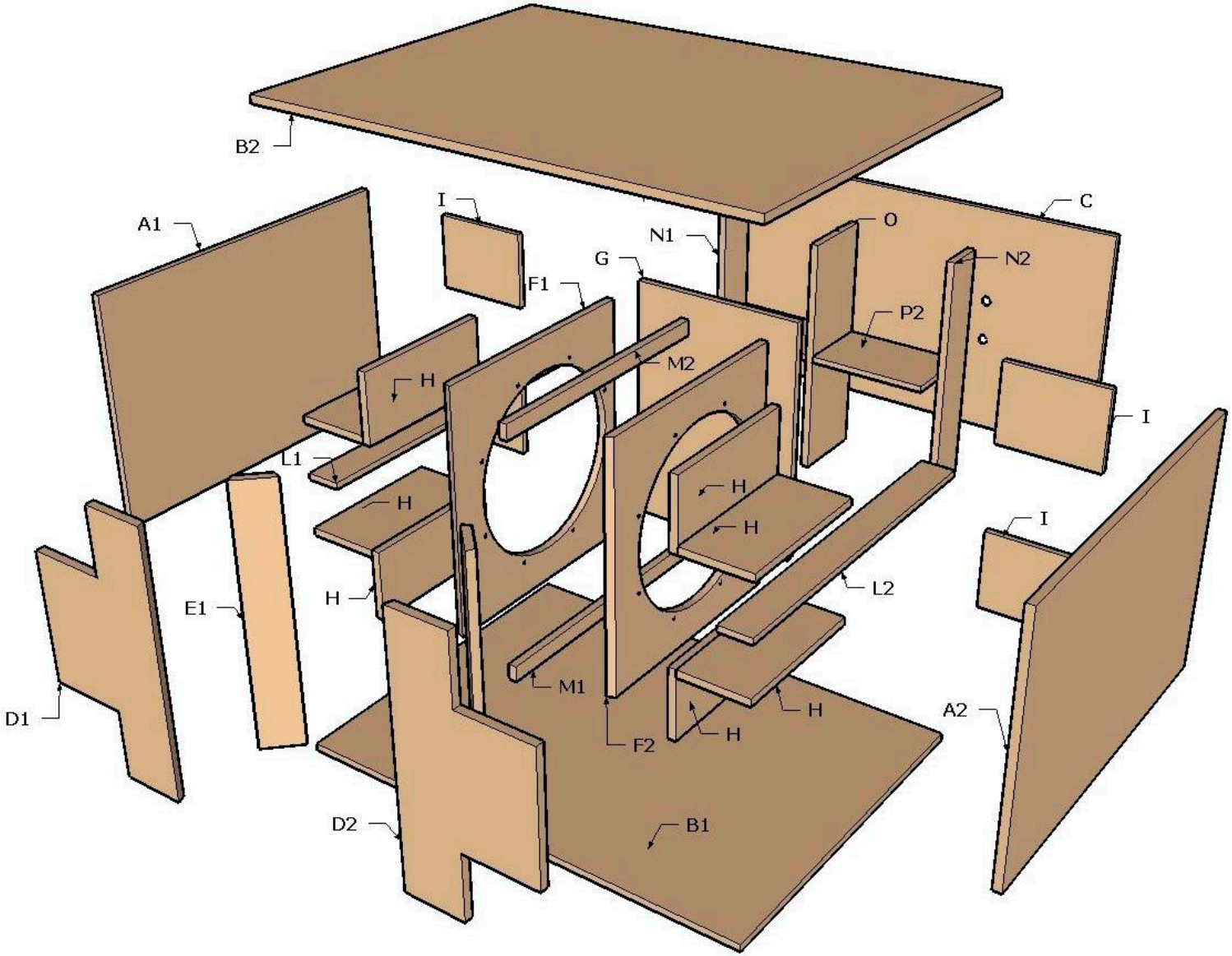
PROCESSED SUBWOOFER RESPONSE WITH TARGET RESPONSE MATCHING

The Reference Target Response is an Acoustical Band-Pass Response of a total 10th order.

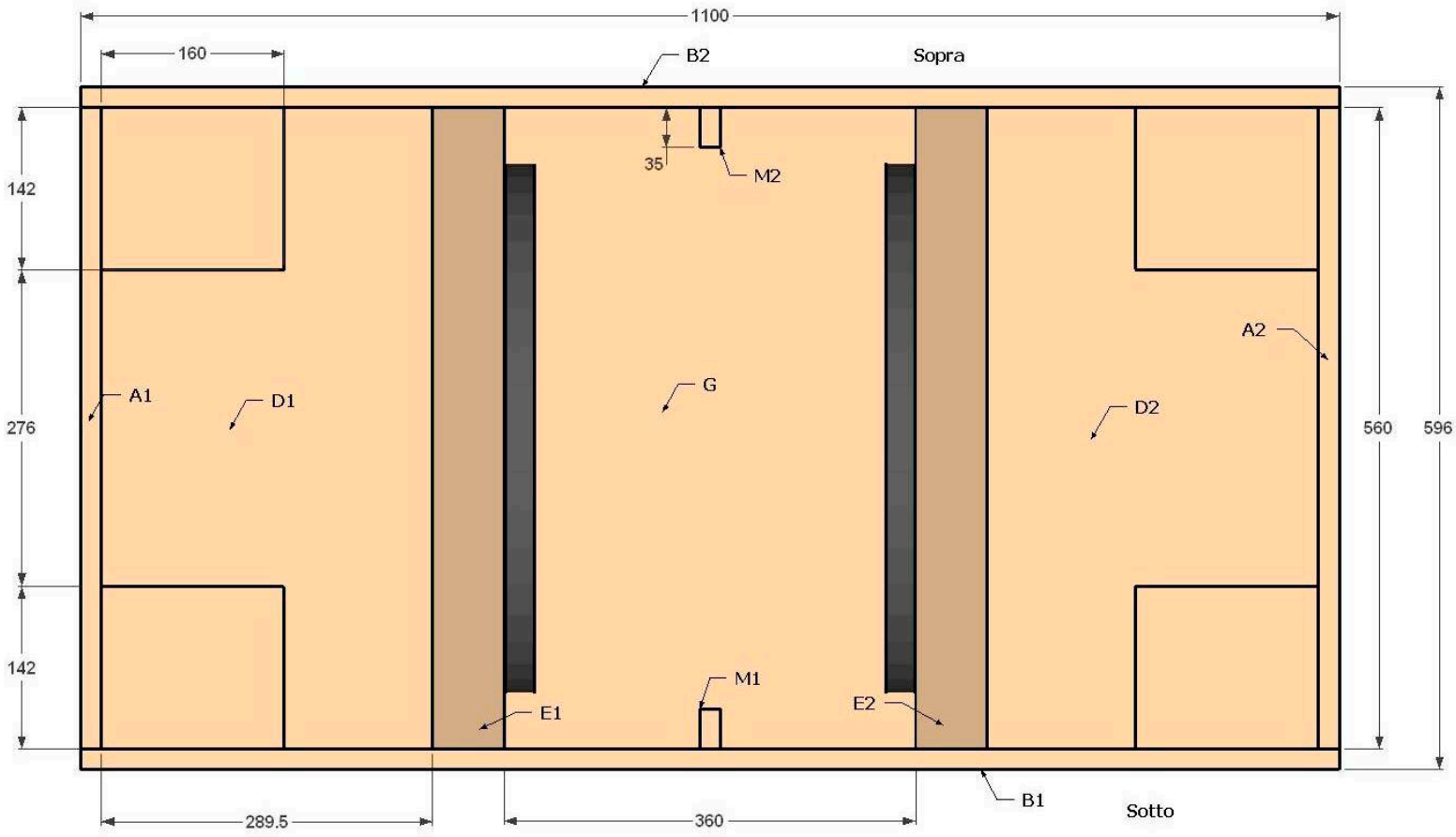
> High Pass=Butterworth 6th Order @ 38Hz

> Low-Pass=Linkwitz-Riley 4th Order @ 100Hz

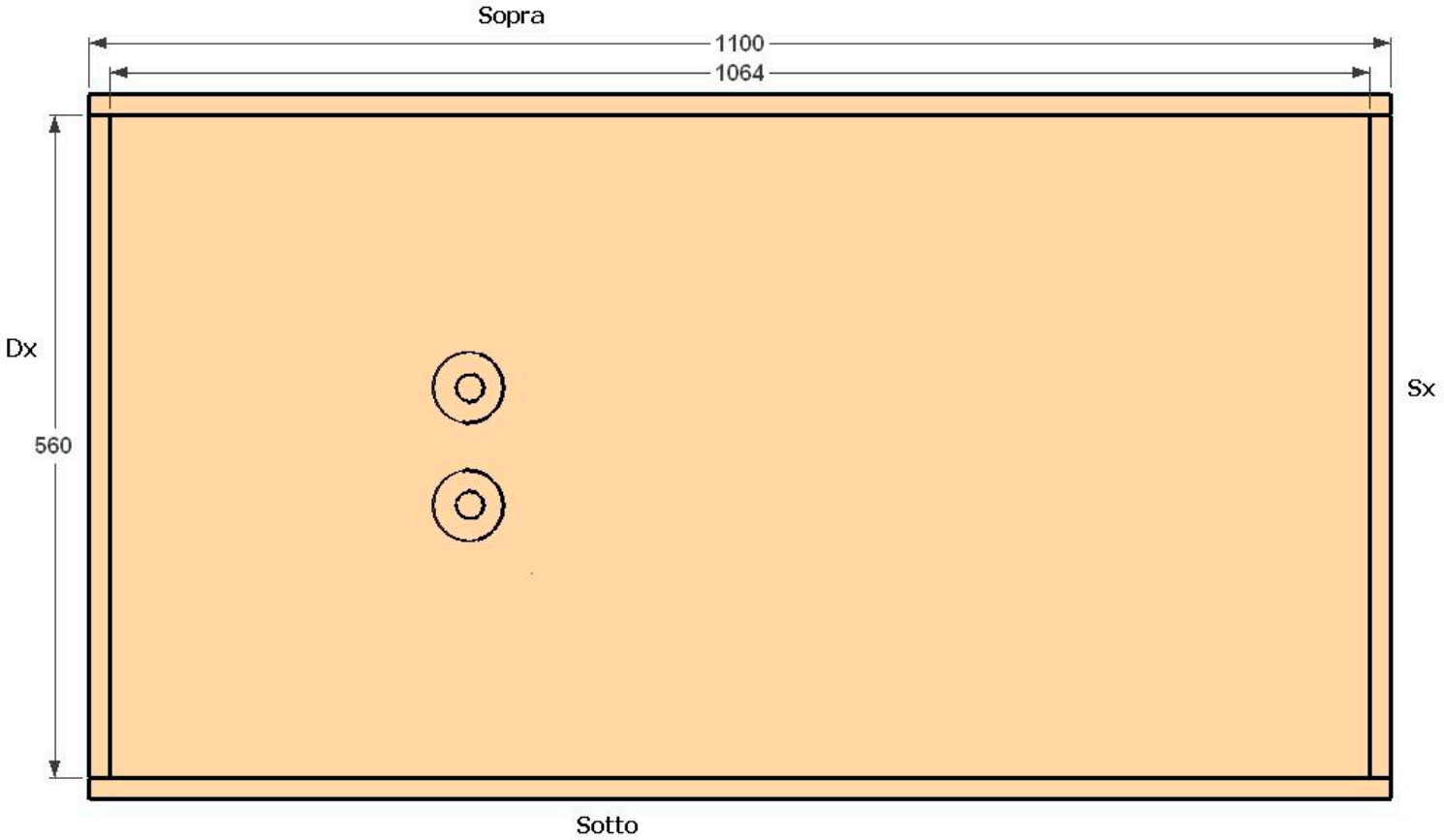
EXPLODED VIEW



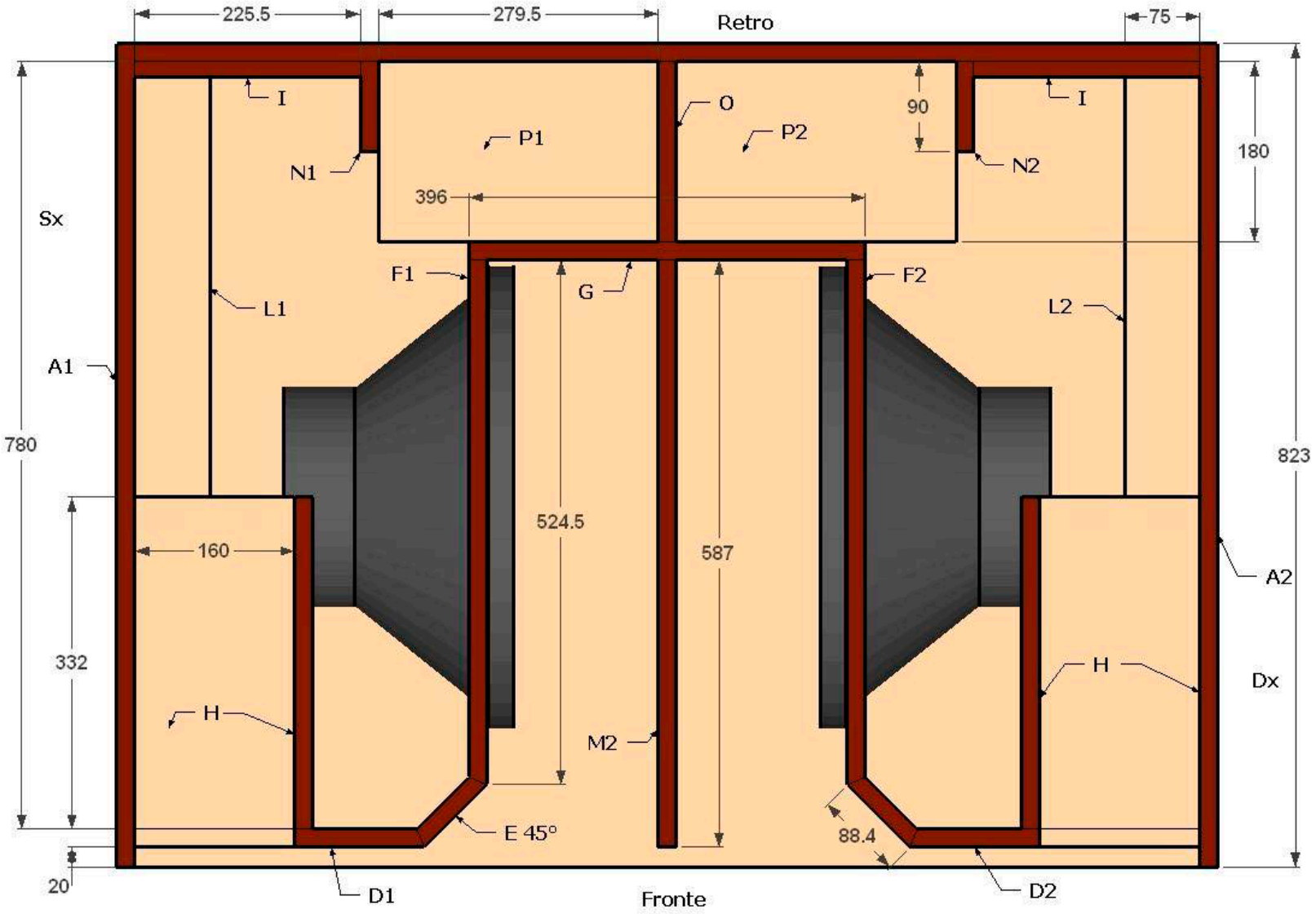
FRONT VIEW



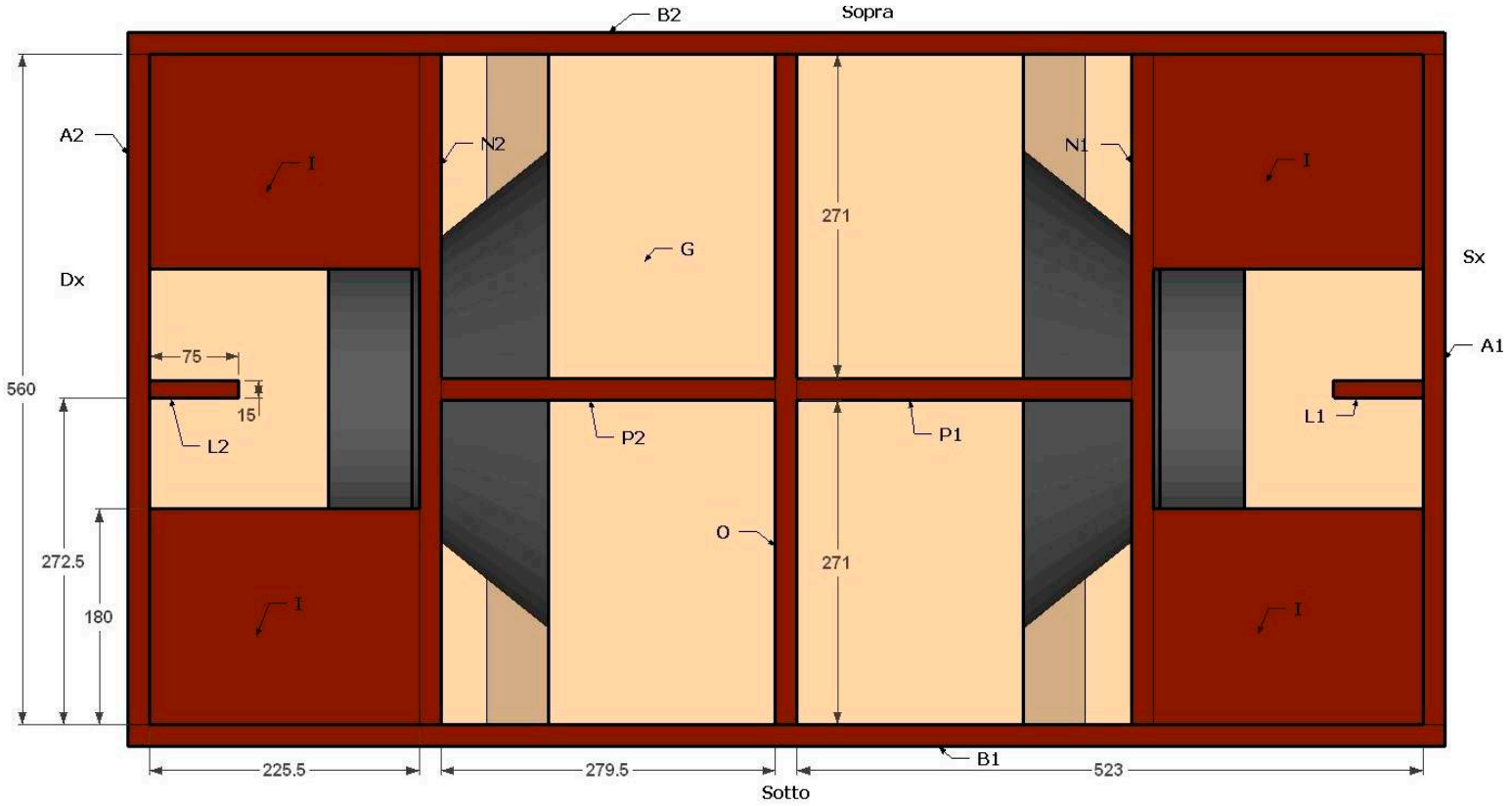
REAR VIEW



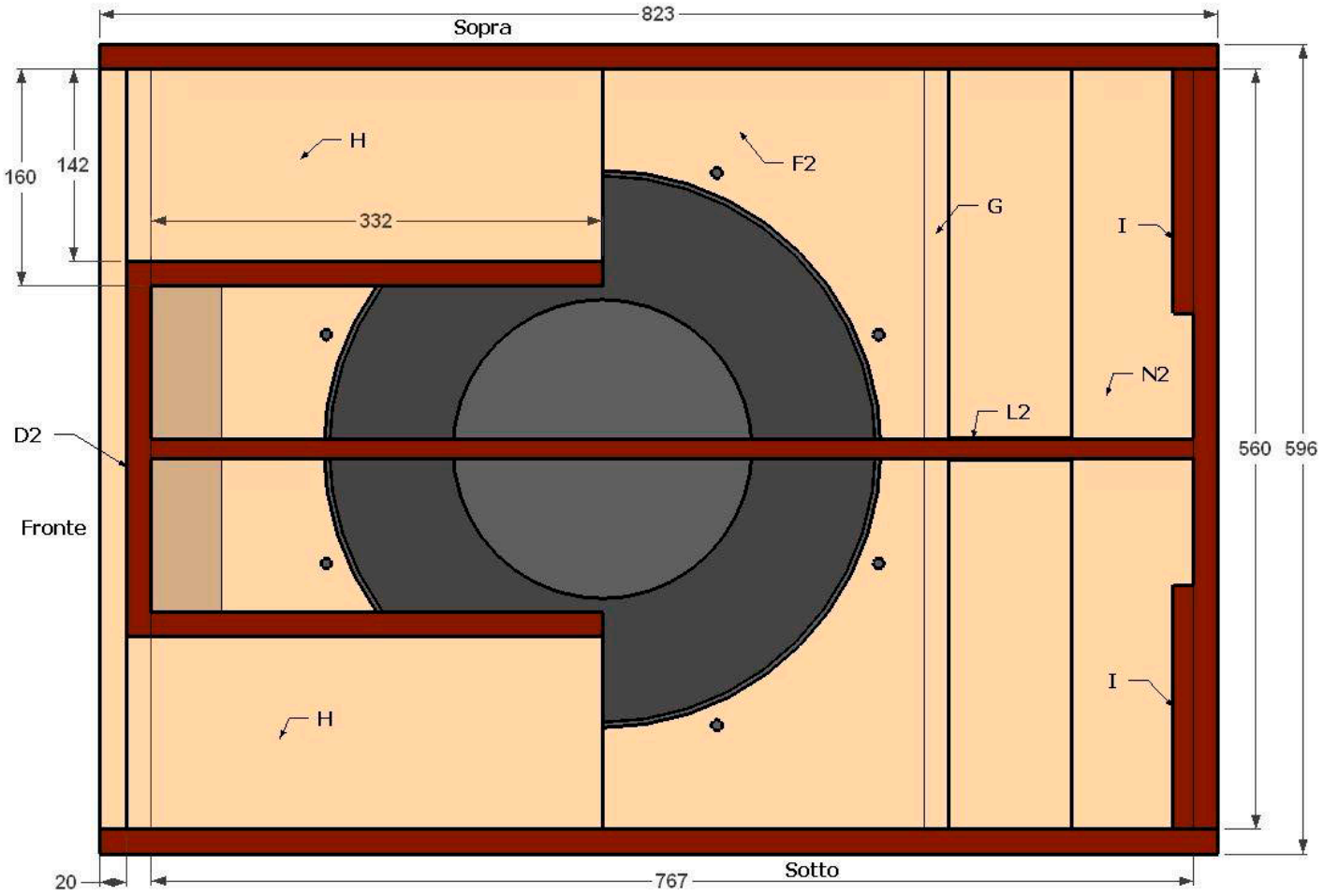
TOP SECTION



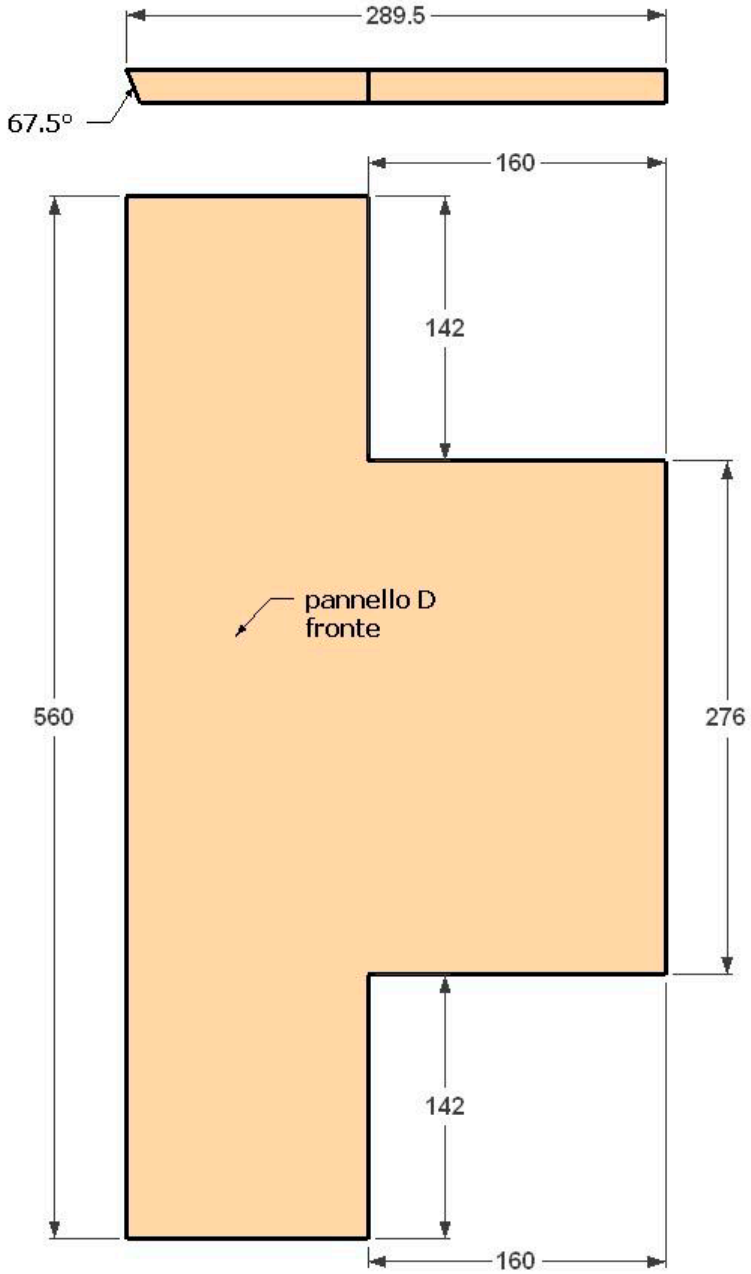
REAR SECTION

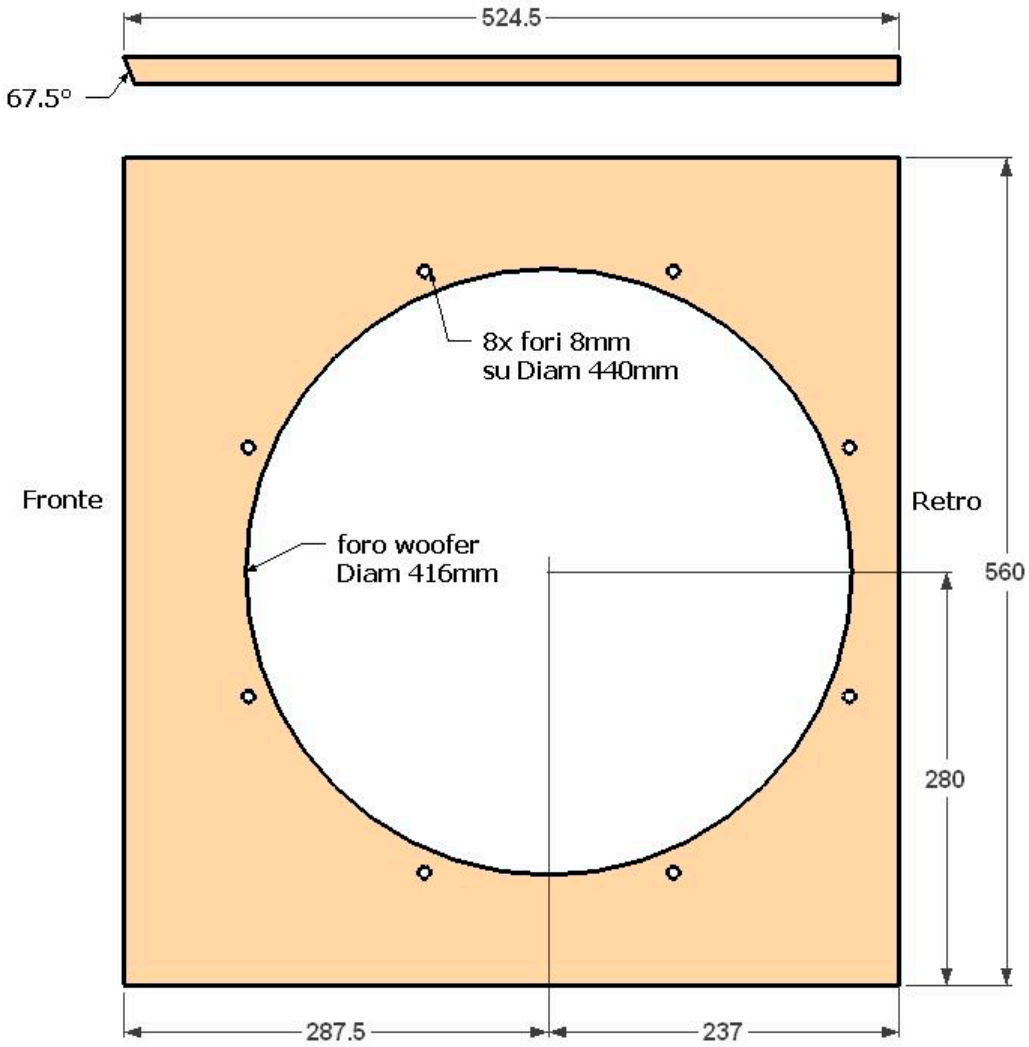


SIDE SECTION



DETAILS: PART D AND F





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