LAB12 Small Sealed Automotive Subwoofer Cabinet
By McJerry, Eminence Speaker LLC
Limit to 300 Watts. Typical cabin gain will give effective F3 below 30 Hz.

Box Properties

--Description--
Name: LAB12
Type: Closed Box
Shape: Prism, square

--Box Parameters--
Vb = 0.653 cu.ft
V(total) = 0.806 cu.ft
Qtc = 0.787
QL = 20
F3 = 52.89 Hz
Fill = heavy

Driver Properties

--Description--
Name: LAB 12
Type: Standard one-way driver
Company: Eminence Speaker LLC
Comment: Revised NOV 2005
Piston: Kevlar-reinforced cone.
Suspension: Foam surround.
Dust Cap: Dual inverted dust caps
Frame: Diecast aluminum basket.
Voice Coil: 2.5 inch (63.5 mm) copper
Magnet: Double-stacked 80 oz ferrite

--Configuration--
No. of Drivers = 1

--Driver Parameters--
Fs = 22 Hz
Qms = 13.32
Vas = 125.2 liters
Xmax = 13 mm
Sd = 506.7 sq.cm
Qes = 0.39
Re = 4.29 ohms
Le = 1.48 mH
Z = 6 ohms
Pe = 400 watts

Normalized Amplitude Response (dB-SPL/Hz)

Custom Amplitude Response (dB-SPL/Hz at 1 m) with 300 watts

Maximum Acoustic Power (dB-SPL/Hz at 1 m)
Cone Displacement (mm/Hz) with 300 watts

System Impedance (ohms/Hz)
LAB12 Larger Vented Subwoofer Cabinet
By McJerry, Eminence Speaker LLC
Displacement Limited to 200 Watts; F3 of 25 Hz. Must use a steep high pass filter set to 20 Hz to protect woofer from overexcursion.

Box Properties
--Description--
Name: 
Type: Vented Box
Shape: Prism, square
--Box Parameters--
Vb = 3.2 cu.ft
V(total) = 3.509 cu.ft
Fb = 25 Hz
QL = 7
F3 = 25.24 Hz
Fill = minimal
--Vents--
No. of Vents = 2
Vent shape = round
Vent ends = one flush
Dv = 3 in
Lv = 16.25 in

Driver Properties
--Description--
Name: LAB 12
Type: Standard one-way driver
Company: Eminence Speaker LLC
Comment: Revised NOV 2005
Piston: Kevlar-reinforced cone.
Suspension: Foam surround.
Dust Cap: Dual inverted dust caps
Frame: Diecast aluminum basket.
Voice Coil: 2.5 inch (63.5 mm) copper
Magnet: Double-stacked 80 oz ferrite
--Configuration--
No. of Drivers = 1
--Driver Parameters--
Fs = 22 Hz
Qms = 13.32
Vas = 125.2 liters
Xmax = 13 mm
Sd = 506.7 sq.cm
Qes = 0.39
Re = 4.29 ohms
Le = 1.48 mH
Z = 6 ohms
Pe = 400 watts
Cone Displacement (mm/Hz) with 200 watts

Vent Air Velocity (m/sec/Hz) with 200 watts

System Impedance (ohms/Hz)
LAB12 Med Vented Subwoofer Cabinet
By McJerry, Eminence Speaker LLC
Thermally Limited to 400 Watts; F3 of 33Hz. Use a steep high pass filter set to 30 Hz to protect woofer from overexcursion.

Box Properties
--Description--
Name: LAB12 Med Vented Subwoofer Cabinet
Type: Vented Box
Shape: Cube

--Box Parameters--
Vb = 2.25 cu.ft
V(total) = 2.529 cu.ft
Fb = 38 Hz
QL = 7
F3 = 33.02 Hz
Fill = minimal

--Vents--
No. of Vents = 2
Vent shape = round
Vent ends = one flush
Dv = 3.5 in
Lv = 12.44 in

Driver Properties
--Description--
Name: LAB 12
Type: Standard one-way driver
Company: Eminence Speaker LLC
Comment: Revised NOV 2005
Piston: Kevlar-reinforced cone.
Suspension: Foam surround.
Dust Cap: Dual inverted dust caps
Frame: Diecast aluminum basket.
Voice Coil: 2.5 inch (63.5 mm) copper coil.
Magnet: Double-stacked 80 oz ferrite

--Configuration--
No. of Drivers = 1

--Driver Parameters--
Fs = 22 Hz
Qms = 13.32
Vas = 125.2 liters
Xmax = 13 mm
Sd = 506.7 sq.cm
Qes = 0.39
Re = 4.29 ohms
Le = 1.48 mH
Z = 6 ohms
Pe = 400 watts
Cone Displacement (mm/Hz) with 400 watts

Vent Air Velocity (m/sec/Hz) with 400 watts

System Impedance (ohms/Hz)
LAB12 Small Sub or Bass Guitar Extreme Bottom End
By McJerry, Eminence Speaker LLC
Thermally Limited to 400 Watts; F3 of 40 Hz. Use a steep high pass filter set to 30 Hz to protect woofer from overexcursion.

Box Properties
--Description--
Name:
Type: Vented Box
Shape: Prism, square

--Box Parameters--
Vb = 1.4 cu.ft
V(total) = 1.66 cu.ft
Fb = 44 Hz
QL = 7
F3 = 39.32 Hz
Fill = minimal

--Vents--
No. of Vents = 2
Vent shape = round
Vent ends = one flush
Dv = 3 in
Lv = 11.05 in

Driver Properties
--Description--
Name: LAB 12
Type: Standard one-way driver
Company: Eminence Speaker LLC
Comment: Revised NOV 2005
Piston: Kevlar-reinforced cone.
Suspension: Foam surround.
Dust Cap: Dual inverted dust caps
Frame: Diecast aluminum basket.
Voice Coil: 2.5 inch (63.5 mm) copper
Magnet: Double-stacked 80 oz ferrite

--Configuration--
No. of Drivers = 1

--Driver Parameters--
Fs = 22 Hz
Qms = 13.32
Vas = 125.2 liters
Xmax = 13 mm
Sd = 506.7 sq.cm
Qes = 0.39
Re = 4.29 ohms
Le = 1.48 mH
Z = 6 ohms
Pe = 400 watts

---Graphs---
Normalized Amplitude Response (dB-SPL/Hz)
Custom Amplitude Response (dB-SPL/Hz at 1 m) with 400 watts
Maximum Acoustic Power (dB-SPL/Hz at 1 m)
The LABHorn design has five points that you must consider when using them:

1. You can’t hear the driver distort when you push them too hard. Therefore, most people don’t know when to turn them down. They push them until they break. It takes a while to get used to the extra clean sound of this cabinet and learn how hard you can push it.

2. They were designed to be used in groups of 4 to 6 cabinets to get the desired SPL at very low frequencies (below 45Hz). Many people are running them as singles and trying to EQ the bottom end to get more low bass output. This pushes the drivers past their safe operating range very quickly. If you need a lot of very low bass, use more cabinets.

3. When one driver quits working, the other driver will fail too because they both fire into a common high pressure cavity. The user needs to look upon the drivers as a single (more expensive) driver. You always need to use two, so buy two.

4. Air leaks will kill the driver. The driver has a VERY loose suspension and requires that the small chamber behind it be absolutely air tight.

5. You must use a high pass filter set to 35 Hz and that has a slope of at least 24dB per octave to realize the real potential of the design. Many people are using huge power on these cabinets everyday, but they are the ones who run steep high pass filters on them.