

\*\*The LAB12 was specifically designed for use in a horn loaded enclosure engineered by participants of the Live Audio Board at <http://www.prosoundweb.com/lsp/>. There are five points (listed on the last page) you must consider when using these drivers, exclusively in the Live Audio Board design. The woofer is also suitable for more conventional applications, such as the designs on these pages, where extended Xmax is desired.

# 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:

Type: Closed Box

Shape: Prism, square

--Box Parameters--

Vb = 0.653 cu.ft

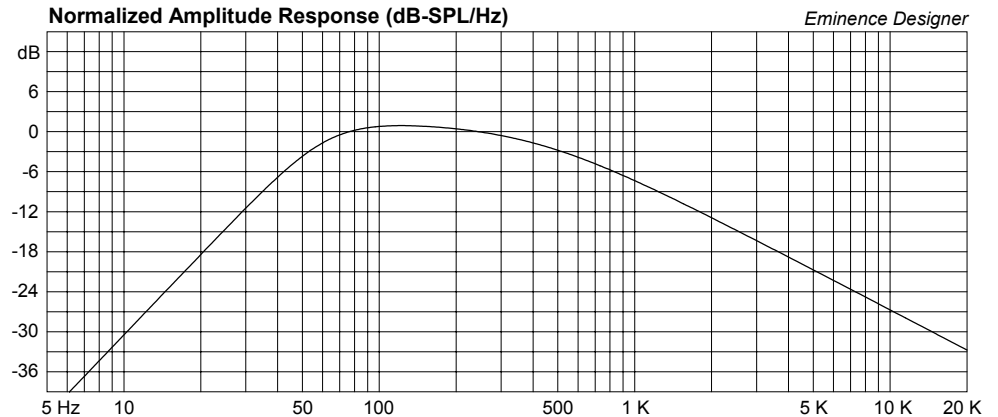
V(total) = 0.806 cu.ft

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

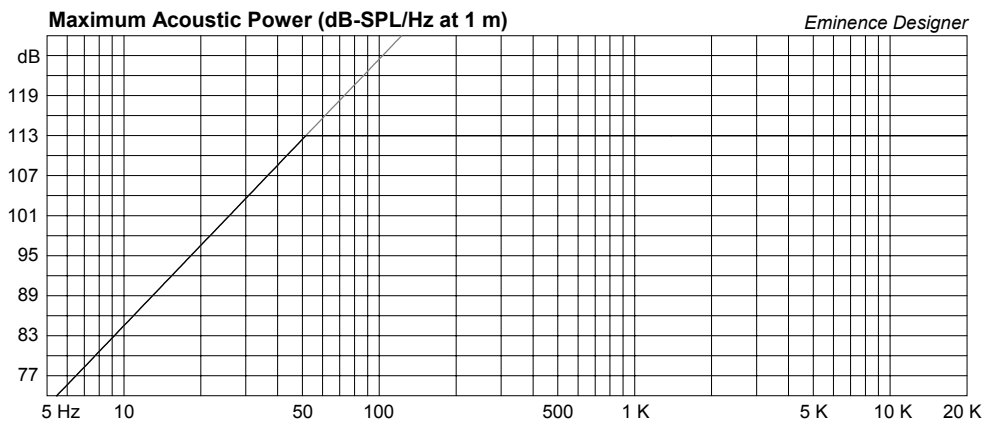
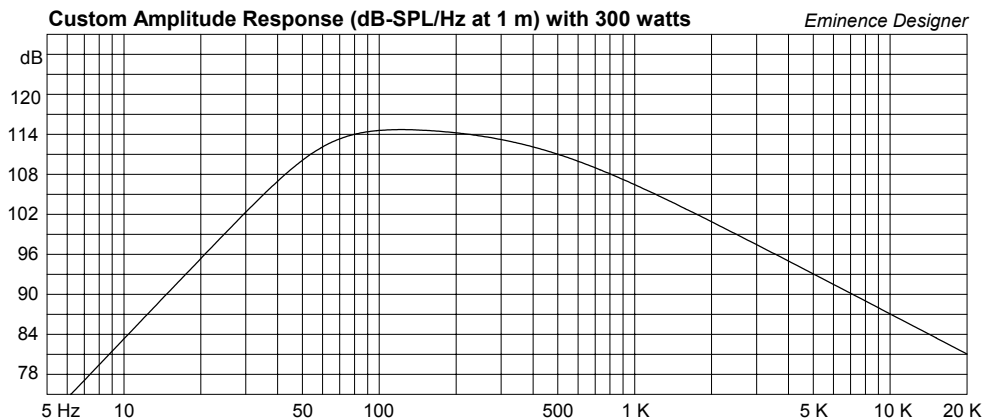
Qes = 0.39

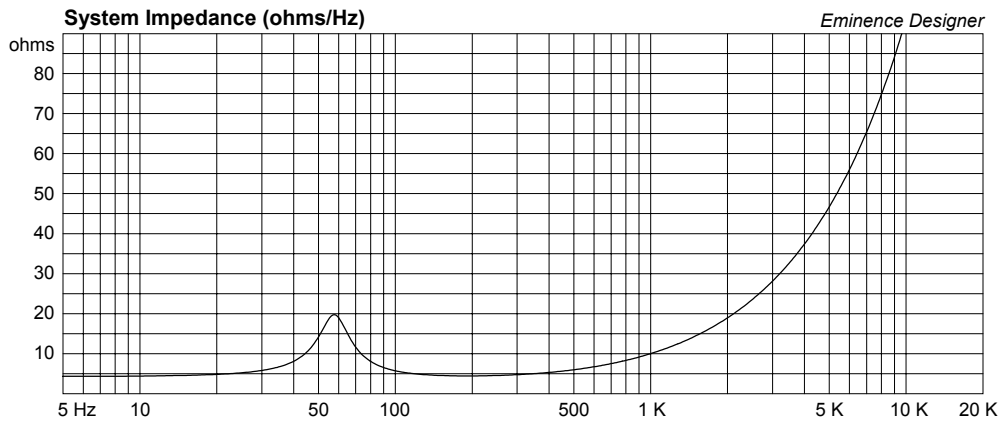
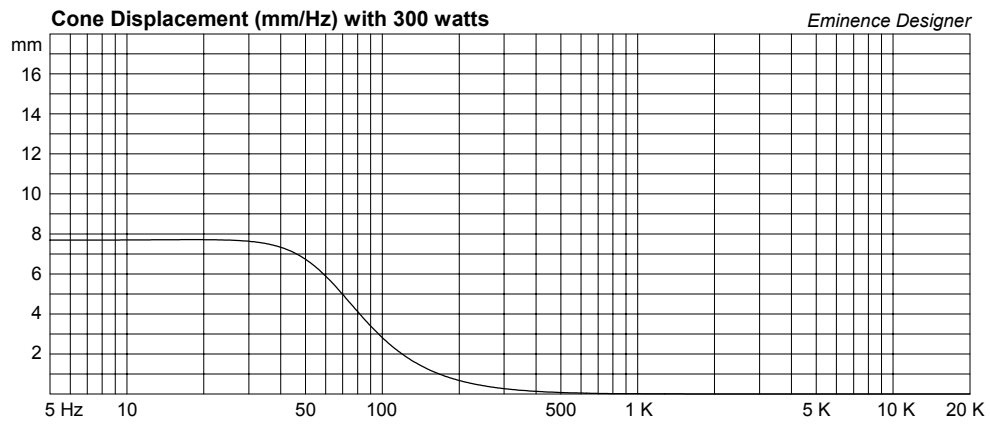
Re = 4.29 ohms

Le = 1.48 mH

Z = 6 ohms

Pe = 400 watts





# 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

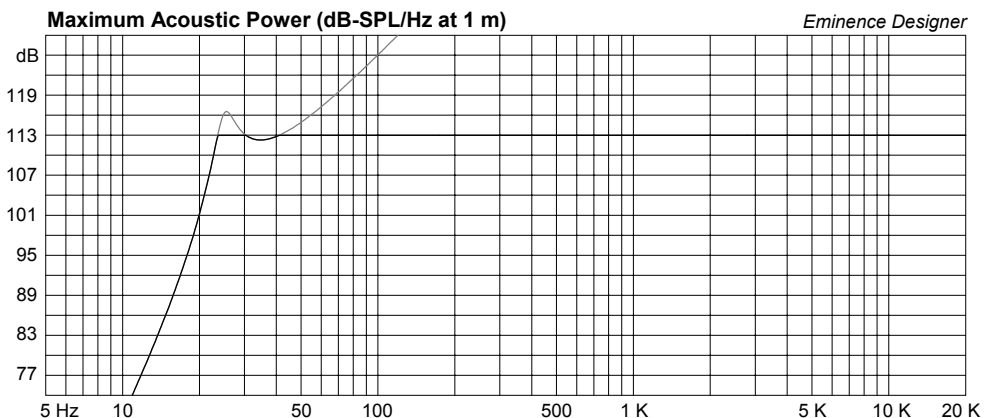
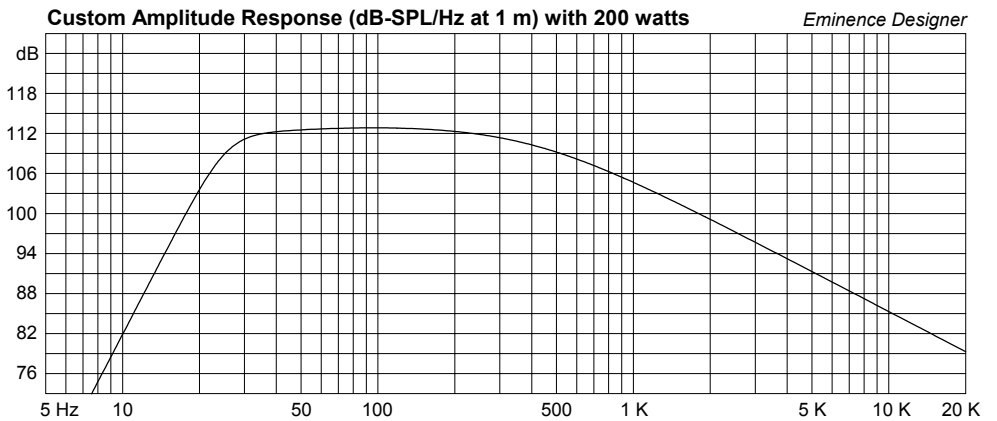
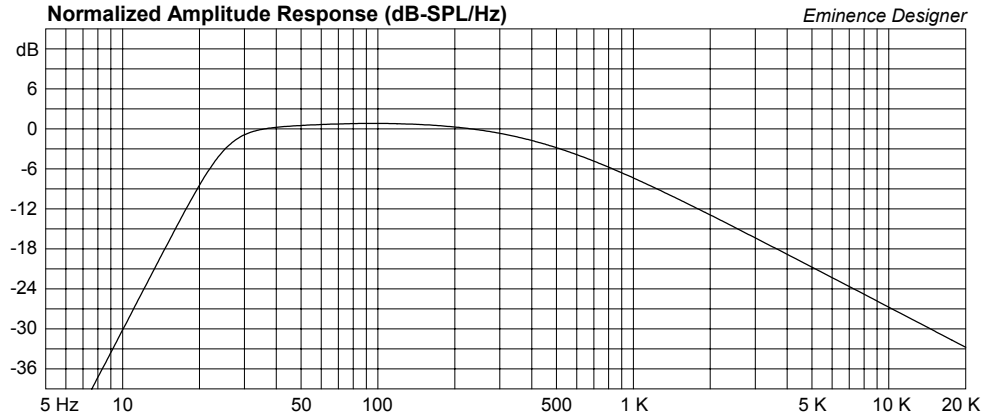
Qes = 0.39

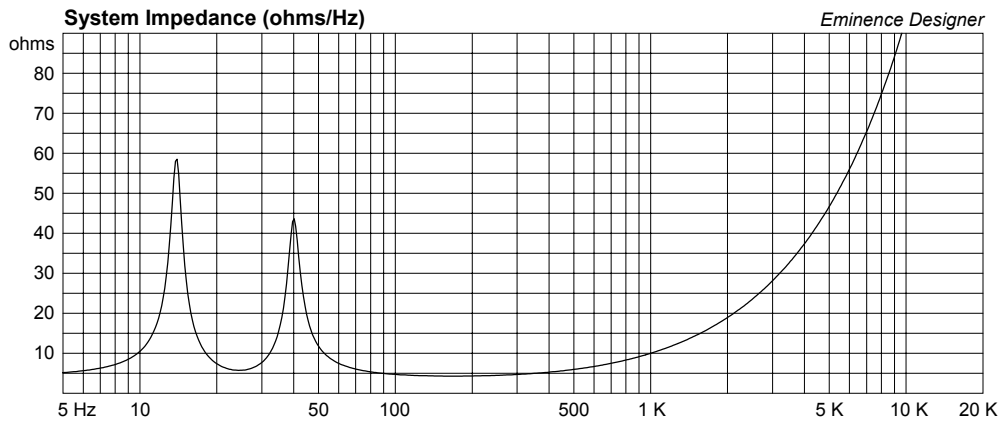
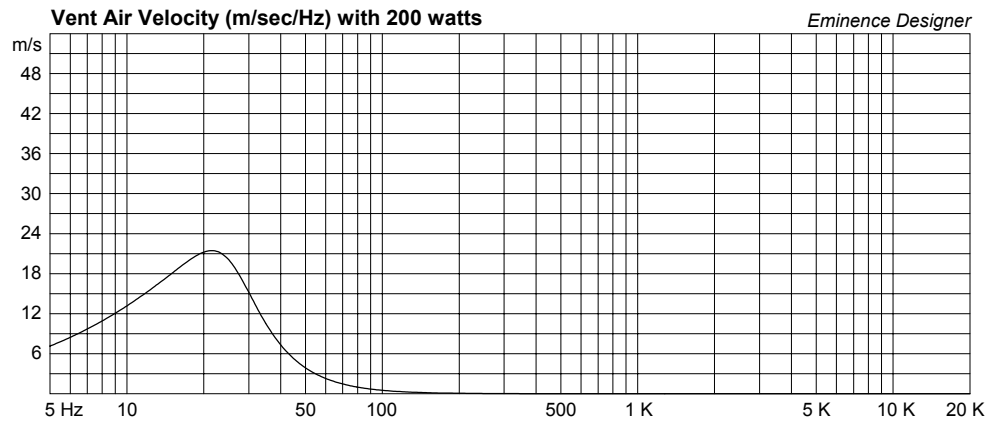
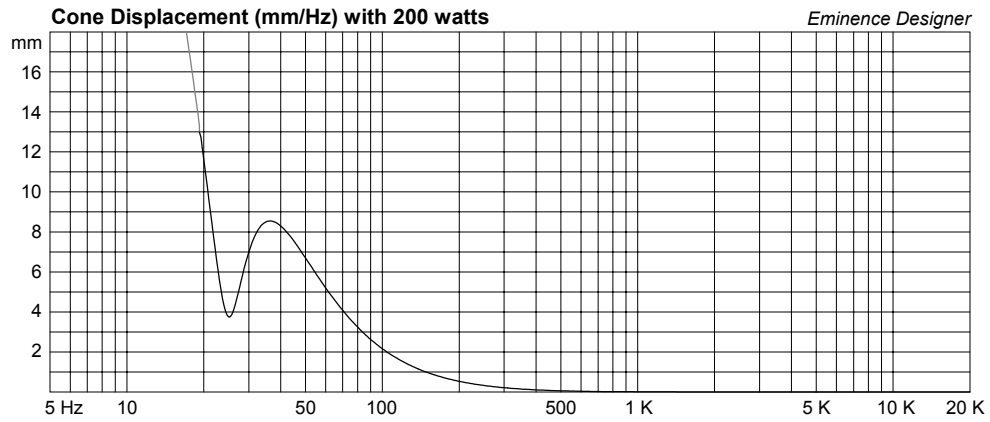
Re = 4.29 ohms

Le = 1.48 mH

Z = 6 ohms

Pe = 400 watts





# 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:

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

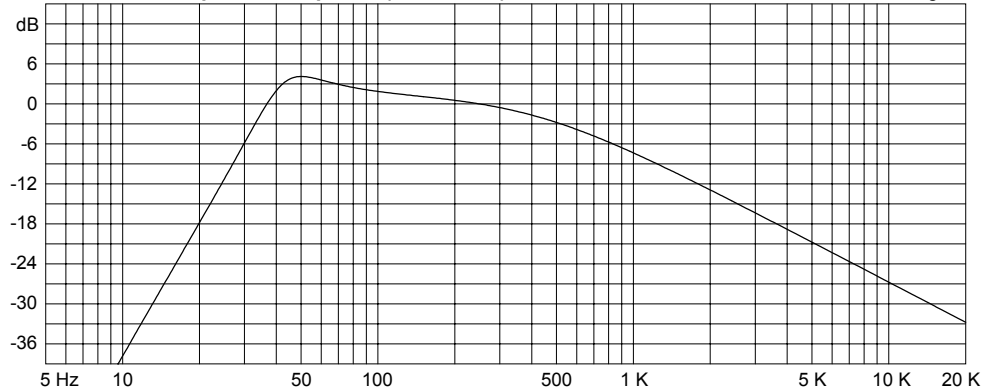
Le = 1.48 mH

Z = 6 ohms

Pe = 400 watts

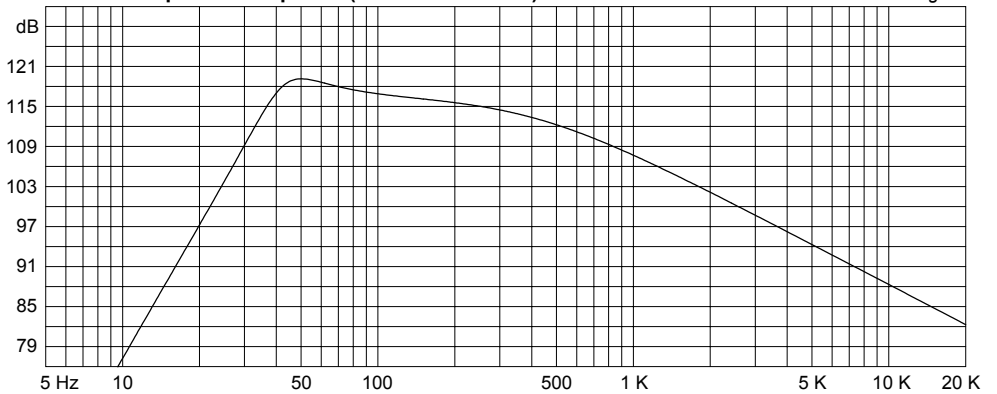
Normalized Amplitude Response (dB-SPL/Hz)

Eminence Designer



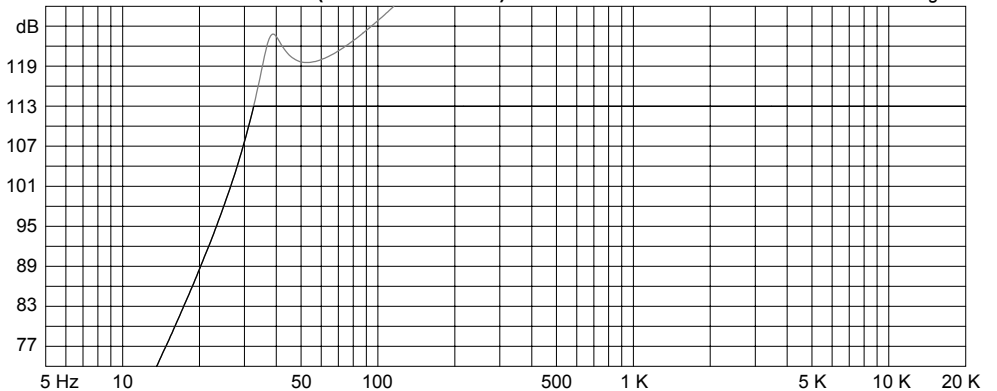
Custom Amplitude Response (dB-SPL/Hz at 1 m) with 400 watts

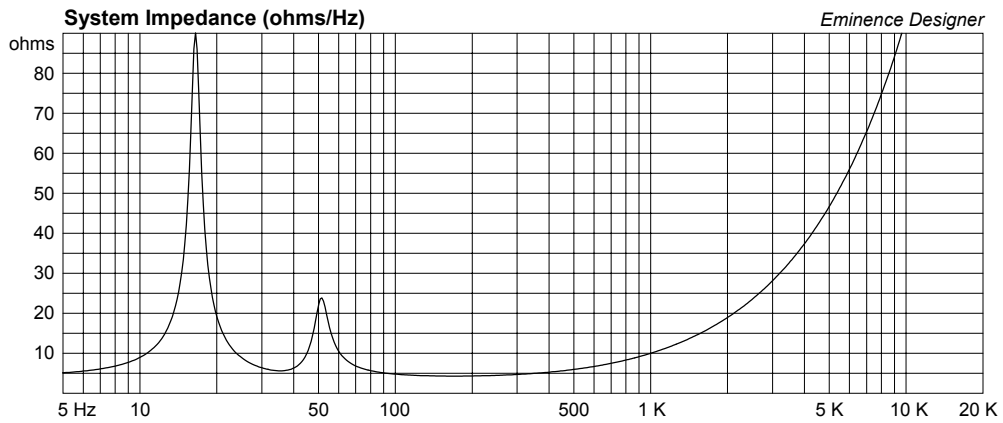
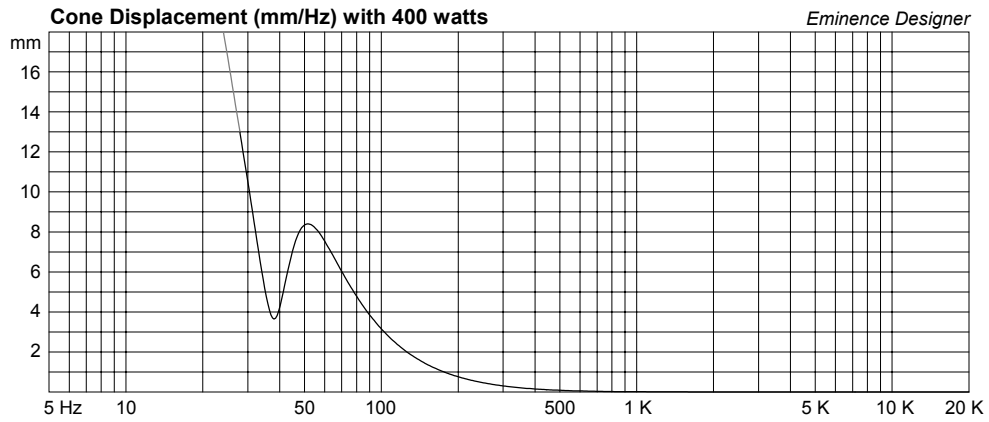
Eminence Designer



Maximum Acoustic Power (dB-SPL/Hz at 1 m)

Eminence Designer





# 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

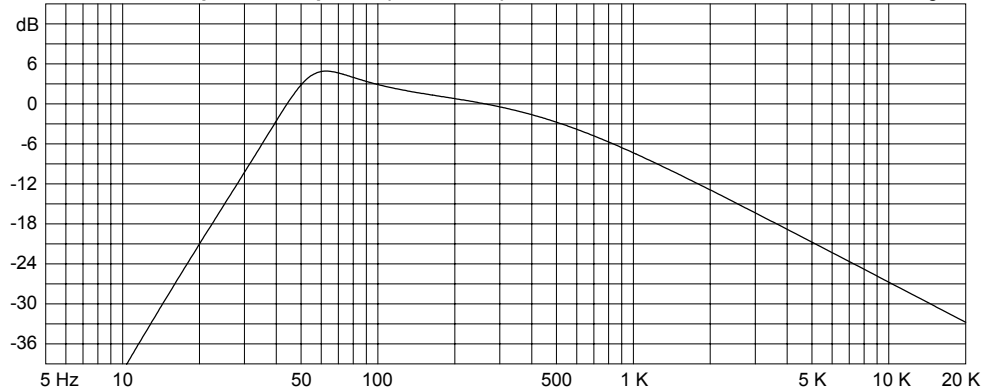
Le = 1.48 mH

Z = 6 ohms

Pe = 400 watts

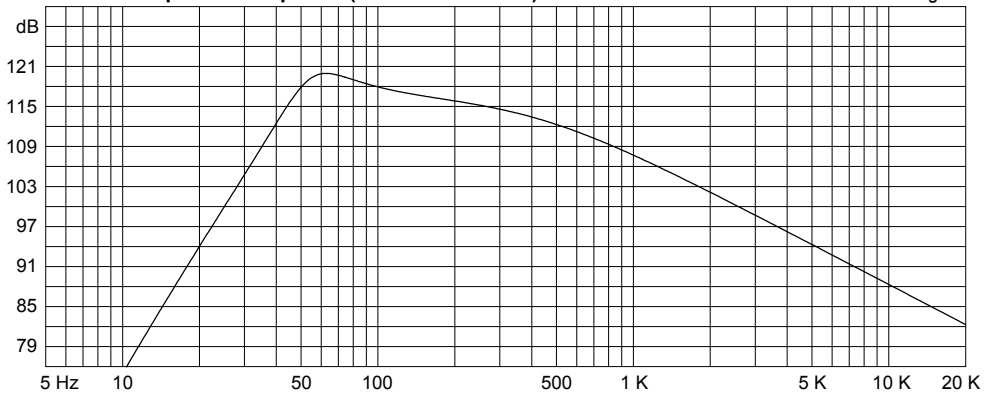
Normalized Amplitude Response (dB-SPL/Hz)

Eminence Designer



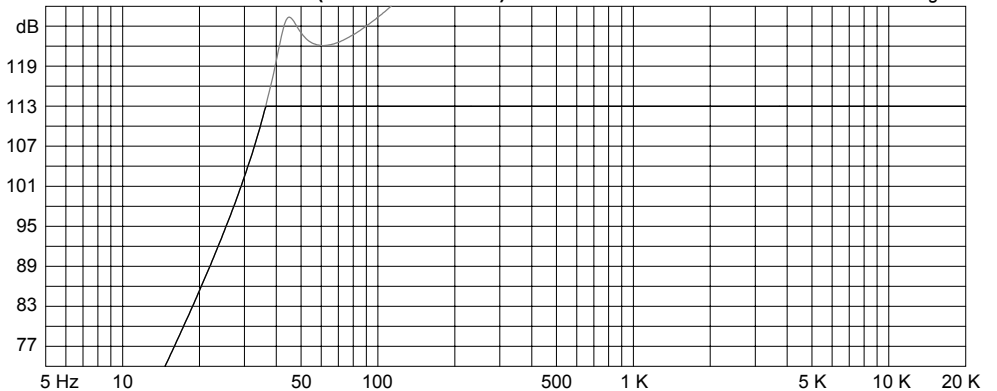
Custom Amplitude Response (dB-SPL/Hz at 1 m) with 400 watts

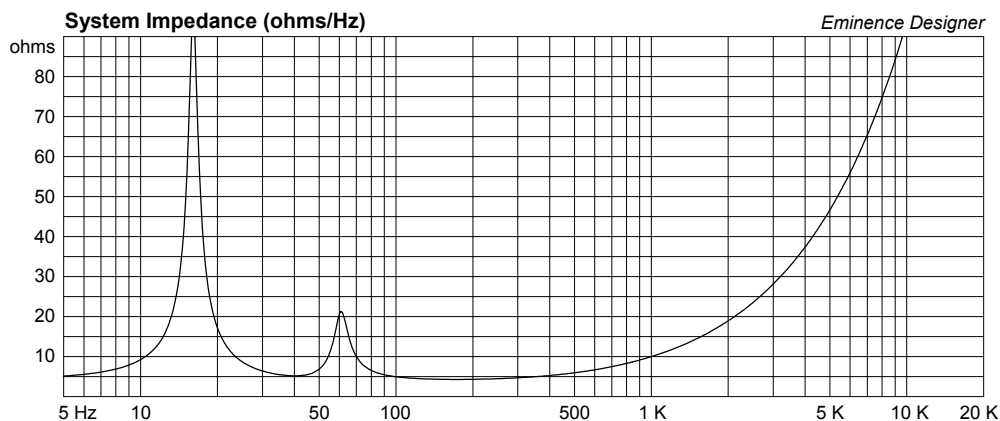
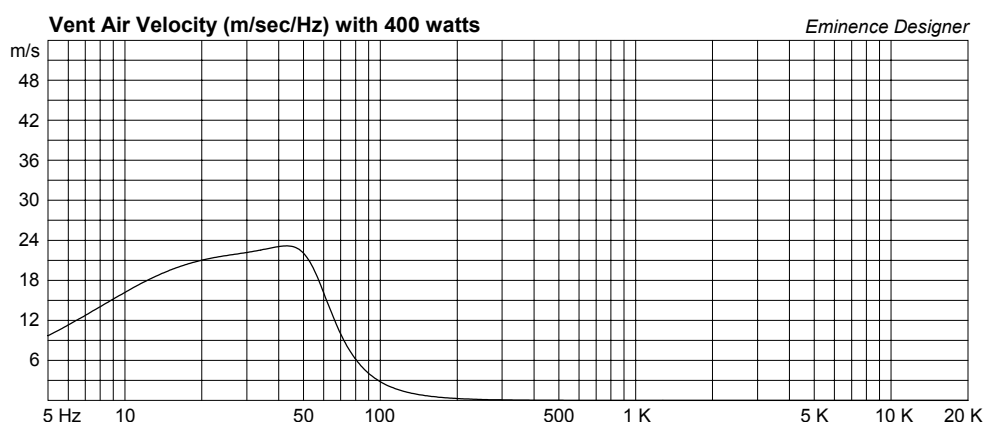
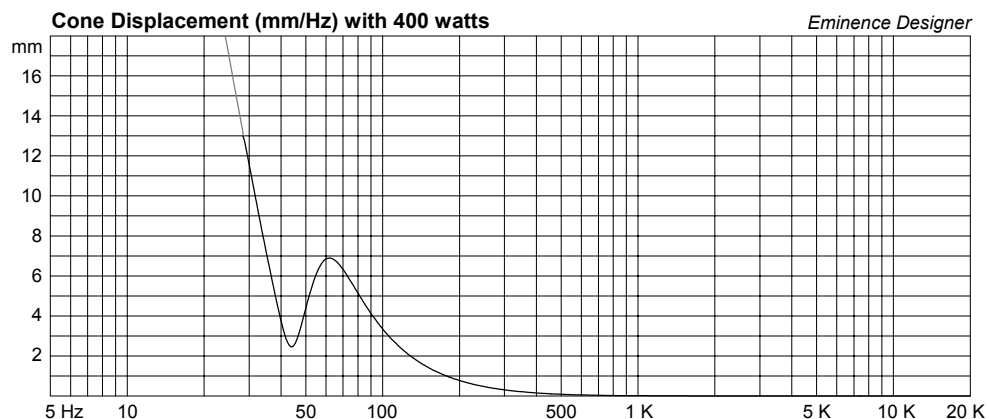
Eminence Designer



Maximum Acoustic Power (dB-SPL/Hz at 1 m)

Eminence Designer





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.