

2x10 Vented Box Design

By Anthony Lucas, Eminence Speaker
350W, F3@62Hz, use full-range for bass guitar, high pass filter @ 55Hz for PA
flat response 2x10



Box Properties

--Description--

Name:

Type: Vented Box

Shape: Prism, square

--Box Parameters--

Vb = 3 cu.ft

V(total) = 3.162 cu.ft

Fb = 62 Hz

QL = 6.978

F3 = 62.4 Hz

Fill = minimal

--Vents--

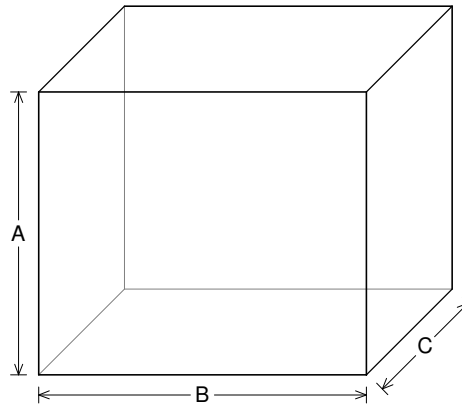
No. of Vents = 4

Vent shape = round

Vent ends = one flush

Dv = 3 in

Lv = 2.63 in



--External Dimensions--

A = 22.03 in

B = 25.5 in

C = 12.59 in

--Internal Dimensions--

A = 20.53 in

B = 24 in

C = 11.09 in

--Wall Thickness--

Front = 0.75 in

Side = 0.75 in

Driver Properties

--Description--

Name:

Type: Standard one-way driver

--Configuration--

No. of Drivers = 2

Mounting = Standard

Wiring = Parallel

Drivers sum coherently = Yes

--Mechanical Parameters--

Fs = 48 Hz

Qms = 3.27

Vas = 71.47 liters [142.9]

Cms = 0.42 mm/N [0.21]

Mms = 27 g [54]

Rms = 2.414 kg/s [4.828]

Xmax = 4.72 mm

Xmech = 7.08 mm

P-Dia = 209.9 mm [296.8]

Sd = 350.1 sq.cm [700.2]

P-Vd = 0.163 liters [0.326]

--Electrical Parameters--

Qes = 0.28

Re = 5.53 ohms [2.765]

Le = 0.11 mH [0.055]

Z = 8 ohms [4]

BL = 12.54 Tm [12.68]

Pe = 250 watts [500]

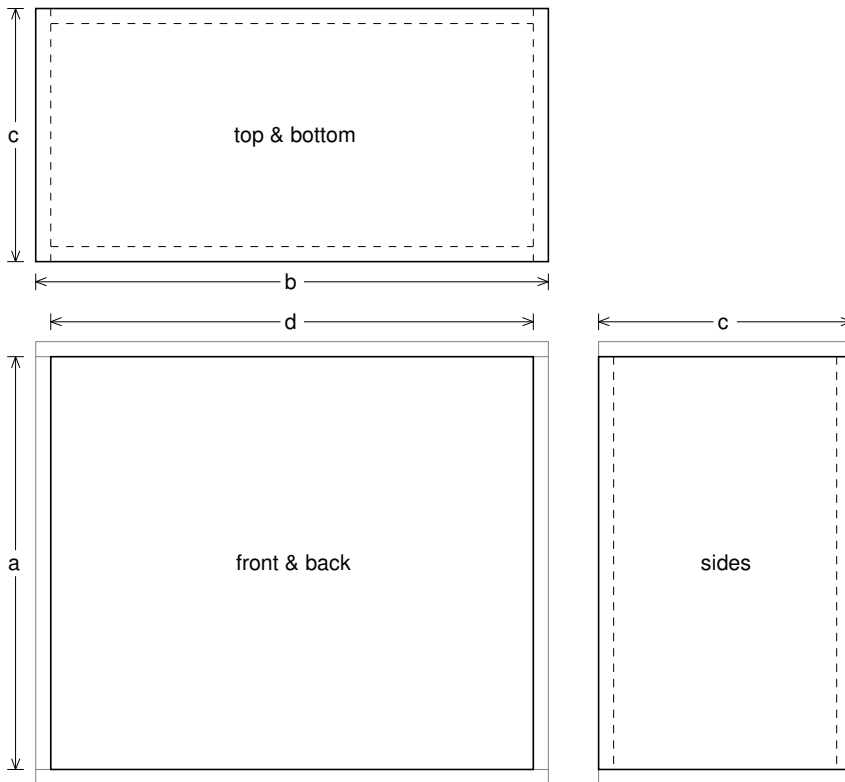
--Electromech. Parameters--

Qts = 0.26

no = 2.722 % [5.444]

1-W SPL = 96.5 dB [99.51]

2.83-V SPL = 98.1 dB [104.1]



Box Parts

Box Shape: Square Prism

1 Top, 1 Bottom: depth (c) = 12.59 in
width (b) = 25.5, thickness = 0.75 in

1 Front, 1 Back: height (a) = 20.53 in
width (d) = 24, thickness = 0.75 in

2 Sides: height (a) = 20.53 in
depth (c) = 12.59, thickness = 0.75 in

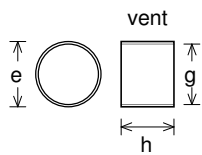
--Vent Parts--

4 Ducts: outside diameter (e) = 3.25 in
inside diameter (g) = 3 in
length (h) = 2.63 in

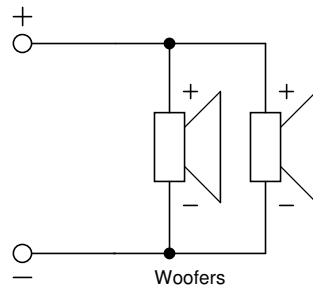
--Driver Mounting--

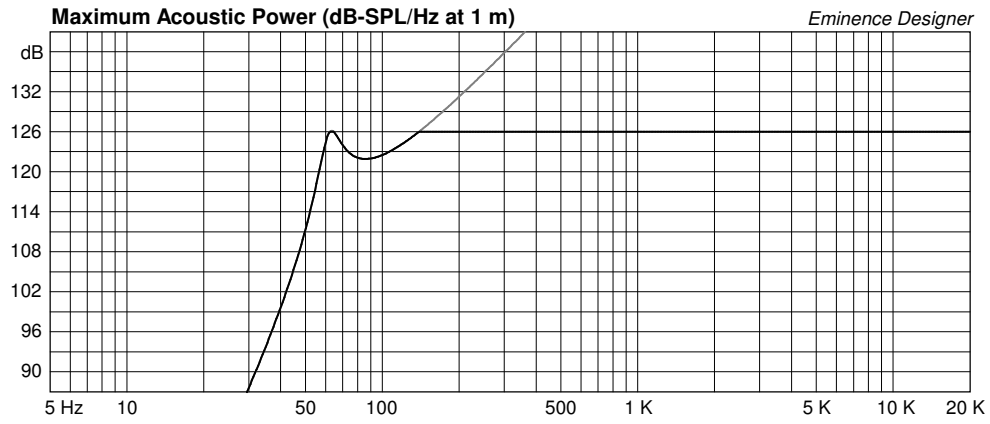
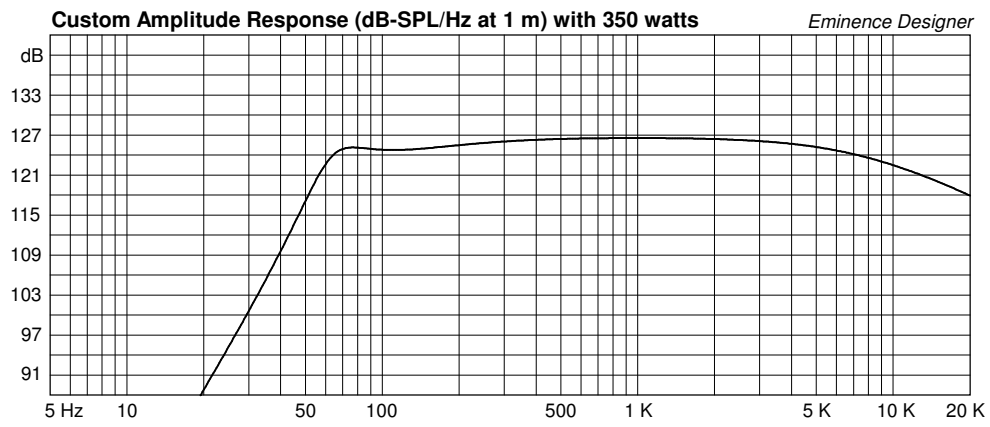
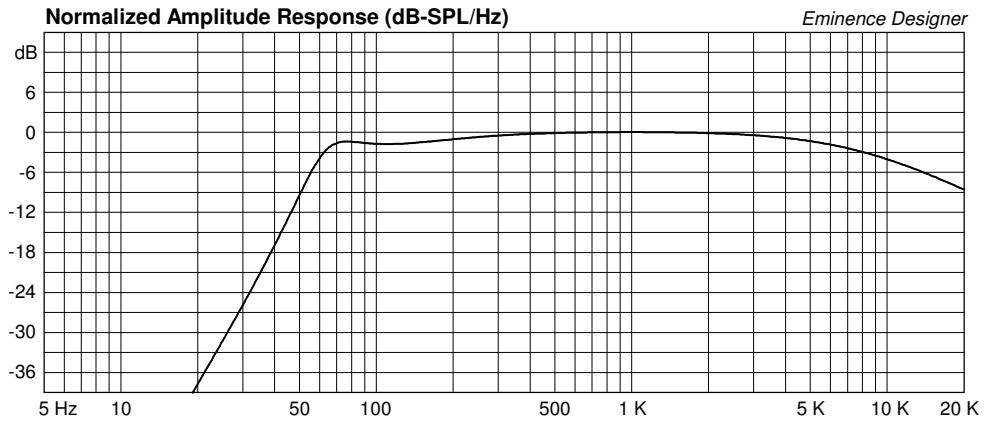
Mounting: Flush

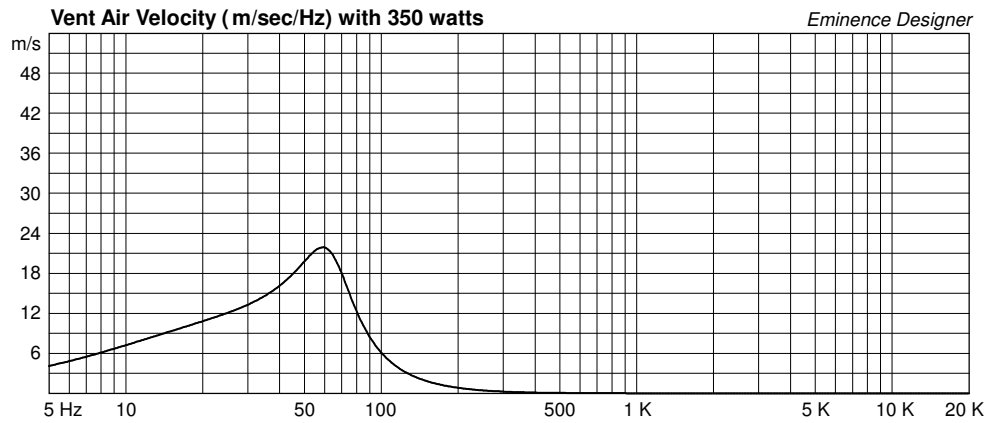
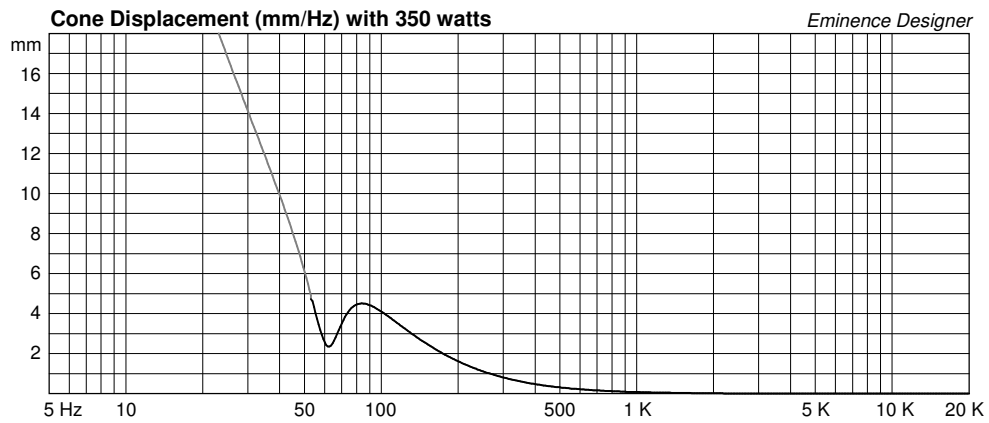
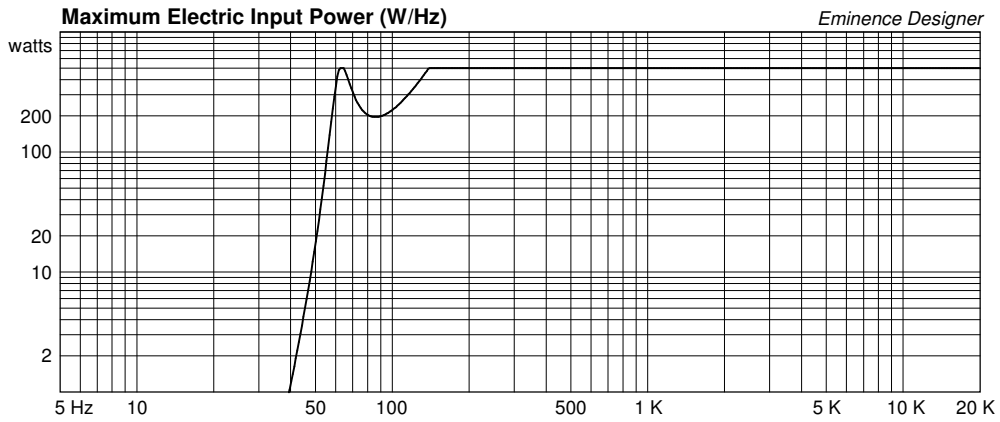
Aim: All drivers face same direction

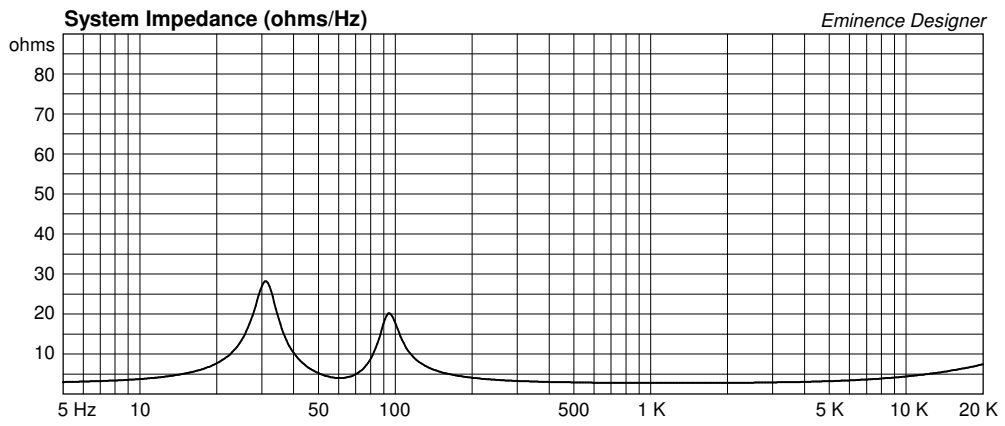


Wiring Diagram









4x10 Vented Box Design

By Anthony Lucas, Eminence Speaker
750W, F3@63Hz, use full-range for bass guitar, high pass filter @ 55Hz for PA
Punchy and dynamic 4x10



Box Properties

--Description--

Name:

Type: Vented Box

Shape: Prism, square

--Box Parameters--

Vb = 6 cu.ft

V(total) = 6.251 cu.ft

Fb = 65 Hz

QL = 6.978

F3 = 63.43 Hz

Fill = minimal

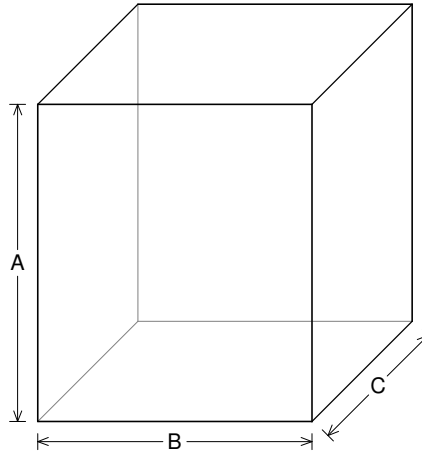
--Vents--

No. of Vents = 4

Vent shape = round

Vent ends = one flush

Dv = 4 in



--External Dimensions--

A = 29.5 in

B = 25.5 in

C = 17.57 in

--Internal Dimensions--

A = 28 in

B = 24 in

C = 16.07 in

--Wall Thickness--

Front = 0.75 in

Side = 0.75 in

Driver Properties

--Description--

Name:

Type: Standard one-way driver

--Configuration--

No. of Drivers = 4

Mounting = Standard

Wiring = Parallel

Drivers sum coherently = Yes

--Mechanical Parameters--

Fs = 48 Hz

Qms = 3.27

Vas = 71.47 liters [285.9]

Cms = 0.42 mm/N [0.105]

Mms = 27 g [108]

Rms = 2.414 kg/s [9.656]

Xmax = 4.72 mm

Xmech = 7.08 mm

P-Dia = 209.9 mm [419.8]

Sd = 350.1 sq.cm [1400]

P-Vd = 0.163 liters [0.652]

--Electrical Parameters--

Qes = 0.28

Re = 5.53 ohms [1.383]

Le = 0.11 mH [0.0275]

Z = 8 ohms [2]

BL = 12.54 Tm [12.68]

Pe = 250 watts [1000]

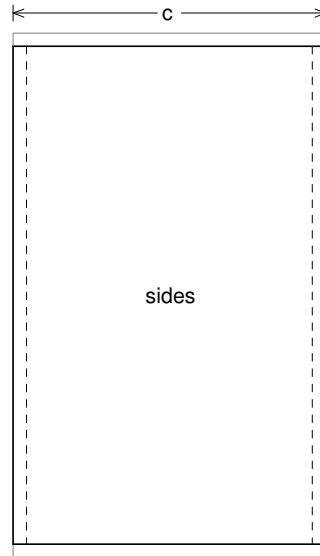
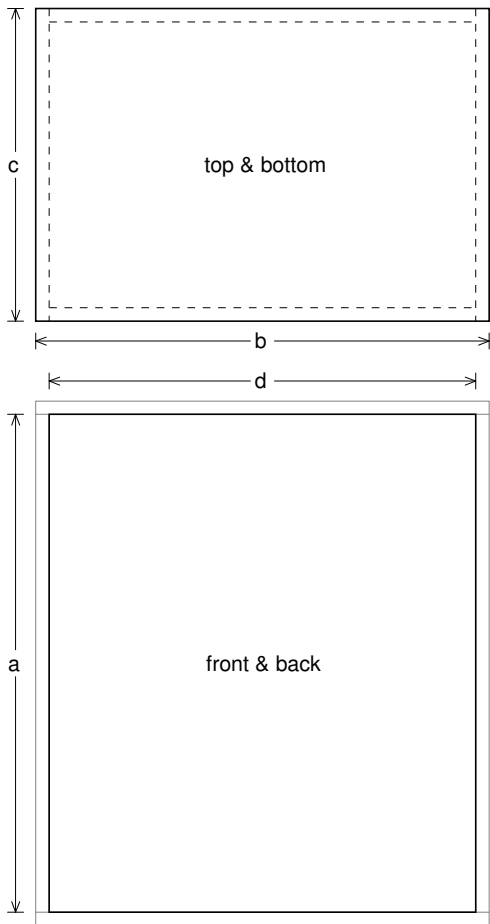
--Electromech. Parameters--

Qts = 0.26

no = 2.722 % [10.89]

1-W SPL = 96.5 dB [102.5]

2.83-V SPL = 98.1 dB [110.1]



Box Parts

Box Shape: Square Prism

1 Top, 1 Bottom: depth (c) = 17.57 in
width (b) = 25.5, thickness = 0.75 in

1 Front, 1 Back: height (a) = 28 in
width (d) = 24, thickness = 0.75 in

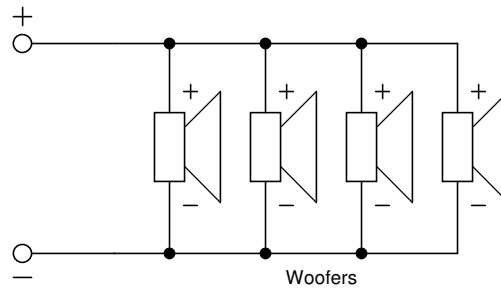
2 Sides: height (a) = 28 in
depth (c) = 17.57, thickness = 0.75 in

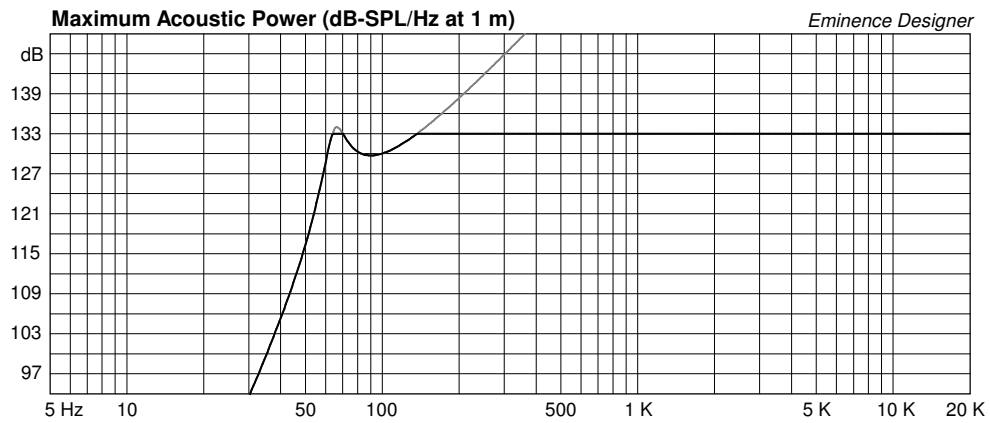
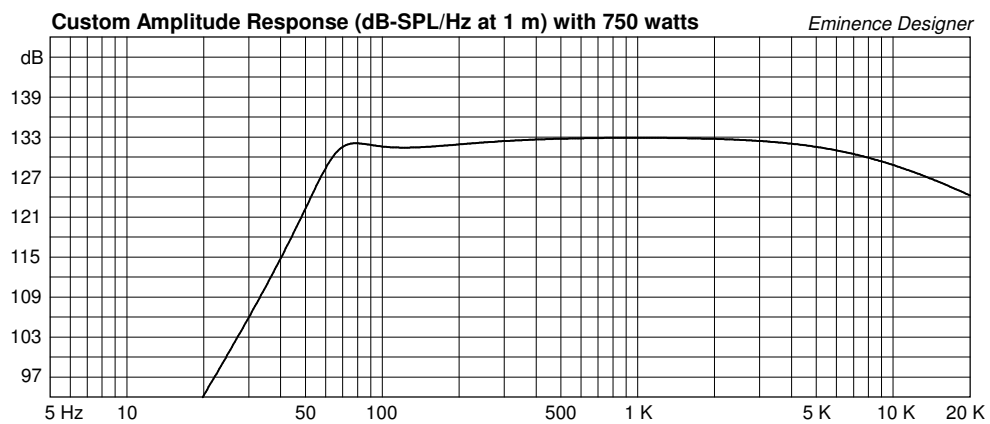
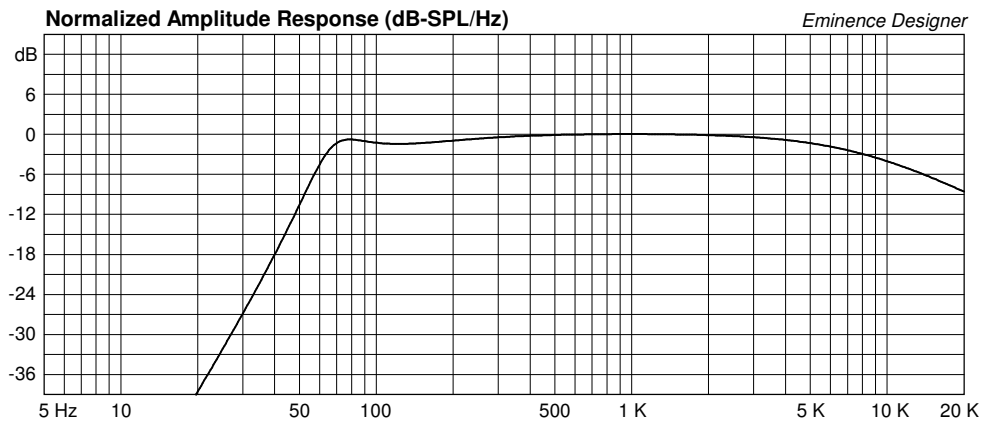
--Driver Mounting--

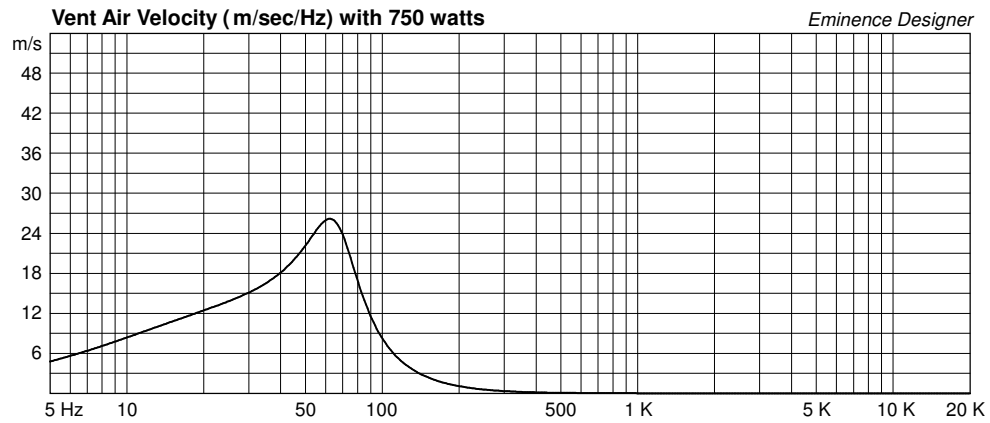
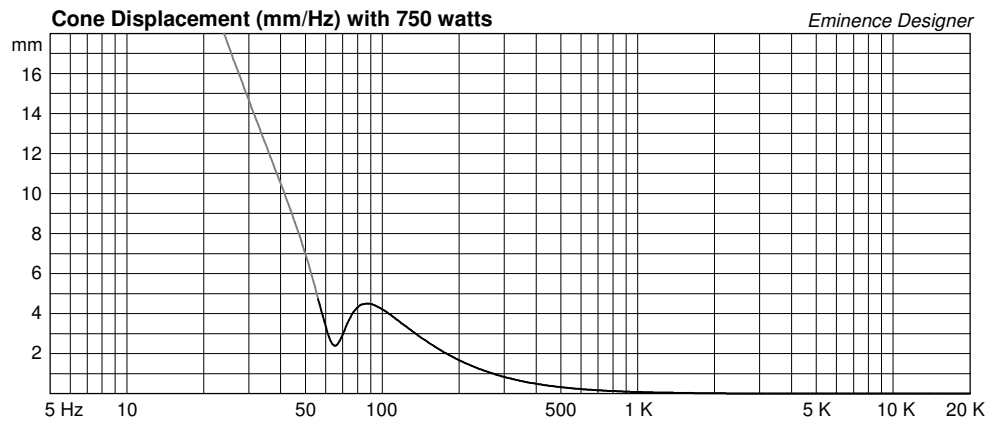
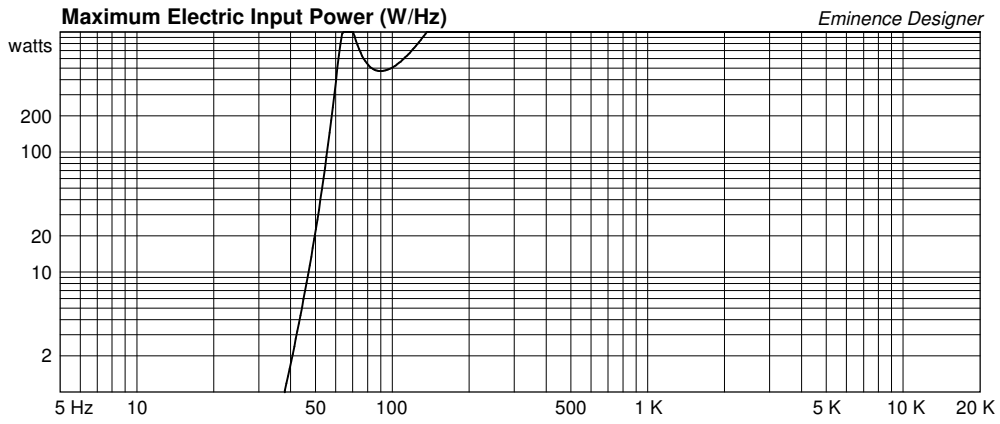
Mounting: Flush

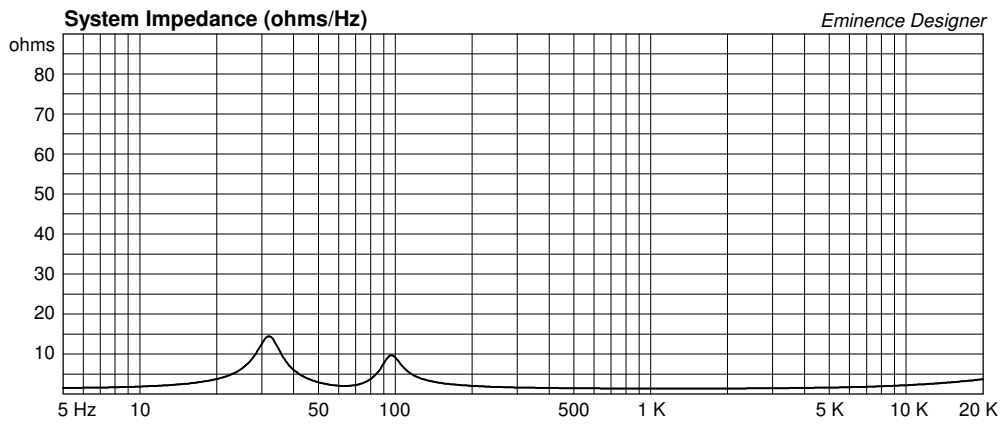
Aim: All drivers face same direction

Wiring Diagram









Small Vented Box Design

By Anthony Lucas, Eminence Speaker
200W, F3@90Hz, use full-range for bass guitar, high pass filter @ 55Hz for PA
Max power, max output



Box Properties

--Description--

Name:

Type: Vented Box

Shape: Prism, square (optimum)

--Box Parameters--

Vb = 0.6 cu.ft

V(total) = 0.686 cu.ft

Fb = 70 Hz

F3 = 90.2 Hz

Fill = minimal

--Vents--

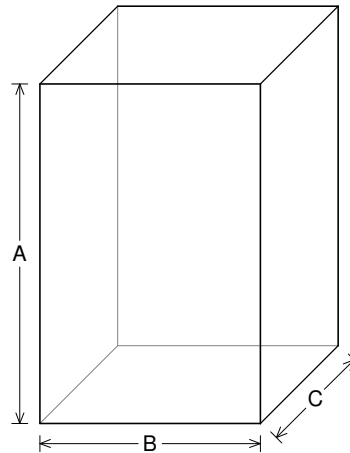
No. of Vents = 2

Vent shape = round

Vent ends = one flush

Dv = 2.25 in

Lv = 4.906 in



--External Dimensions--

A = 18.63 in

B = 12.09 in

C = 8.042 in

--Internal Dimensions--

A = 17.13 in

B = 10.59 in

C = 6.542 in

--Wall Thickness--

Front = 0.75 in

Side = 0.75 in

Driver Properties

--Description--

Name:

Type: Standard one-way driver

--Configuration--

No. of Drivers = 1

--Mechanical Parameters--

Fs = 48 Hz

Qms = 3.27

Vas = 71.47 liters

Cms = 0.42 mm/N

Mms = 27 g

Rms = 2.414 kg/s

Xmax = 4.72 mm

Xmech = 7.08 mm

P-Dia = 209.9 mm

Sd = 350.1 sq.cm

P-Vd = 0.163 liters

--Electrical Parameters--

Qes = 0.28

Re = 5.53 ohms

Le = 0.11 mH

Z = 8 ohms

BL = 12.54 Tm

Pe = 250 watts

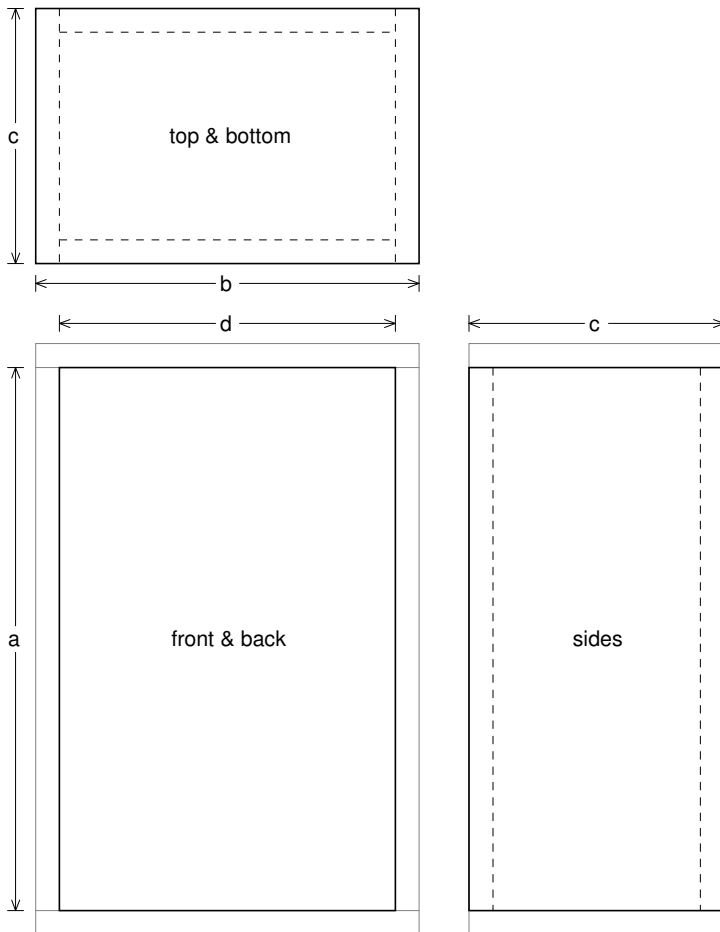
--Electromech. Parameters--

Qts = 0.26

no = 2.722 %

1-W SPL = 96.5 dB

2.83-V SPL = 98.1 dB



Box Parts

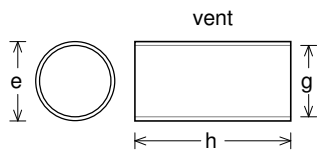
Box Shape: Optimum Square Prism
1 Top, 1 Bottom: depth (c) = 8.042 in
width (b) = 12.09, thickness = 0.75 in
1 Front, 1 Back: height (a) = 17.13 in
width (d) = 10.59, thickness = 0.75 in
2 Sides: height (a) = 17.13 in
depth (c) = 8.042, thickness = 0.75 in

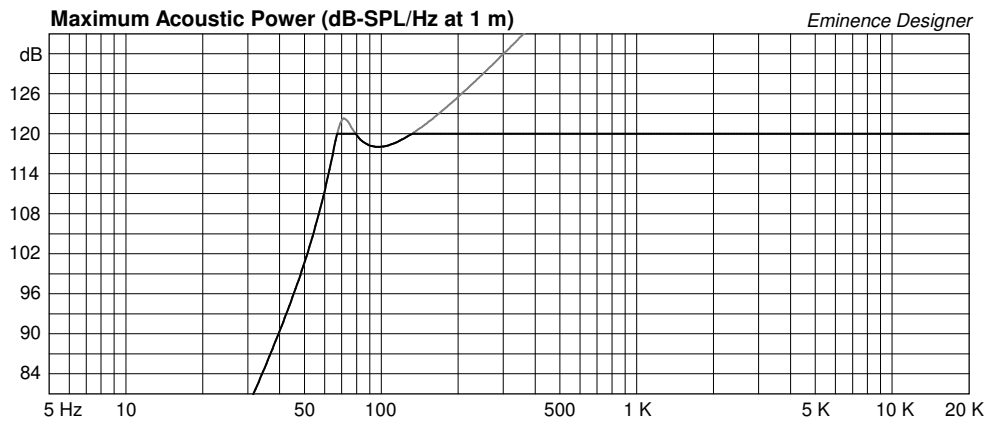
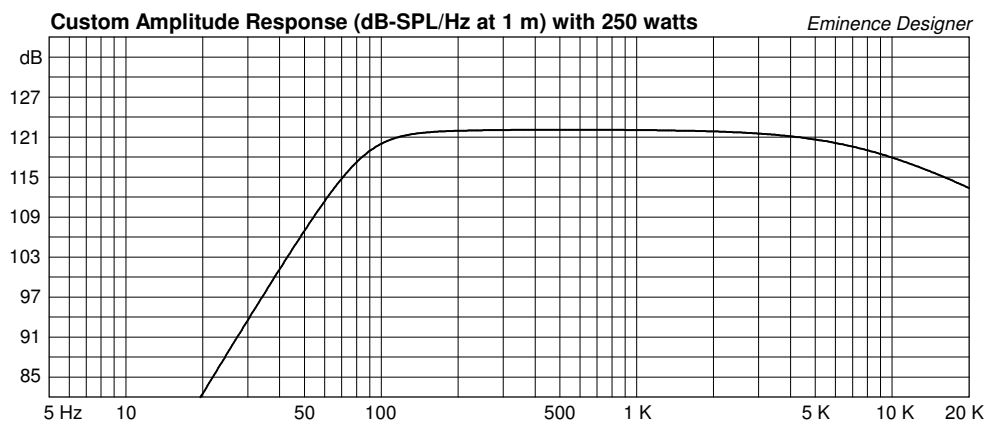
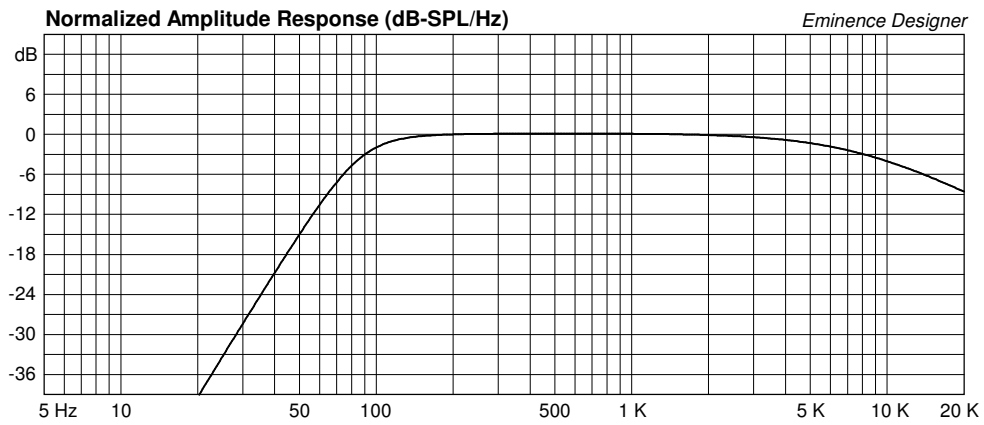
--Vent Parts--

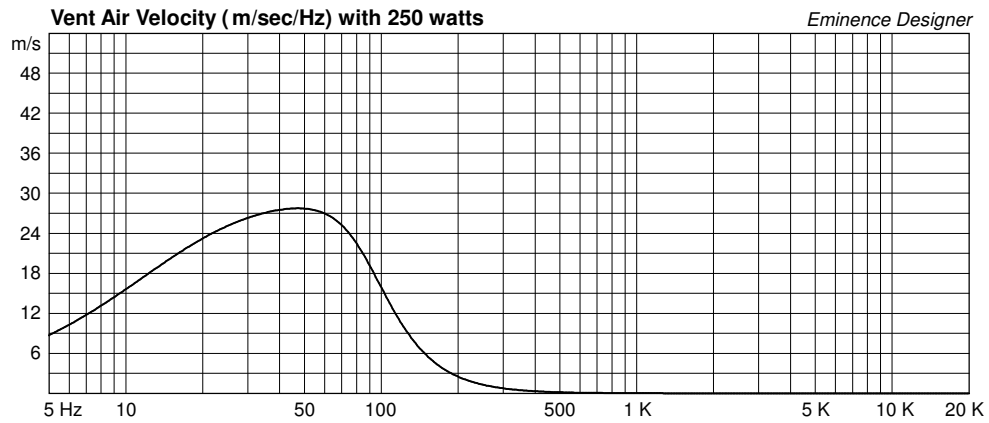
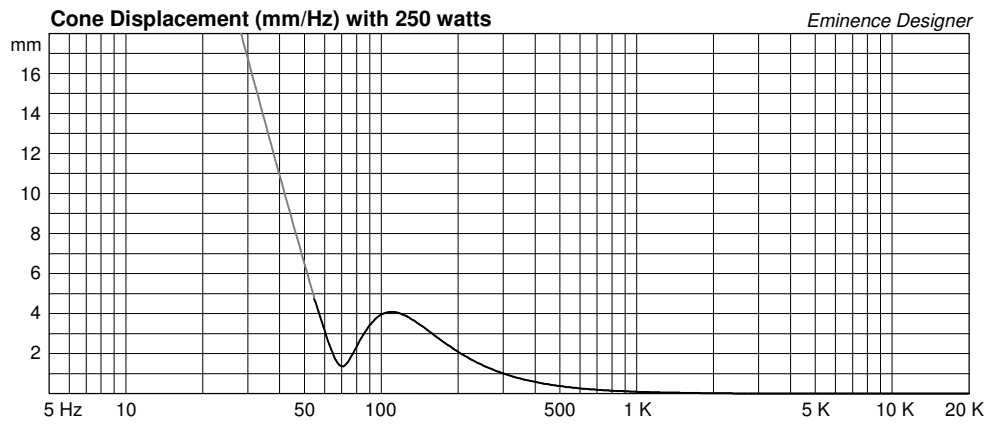
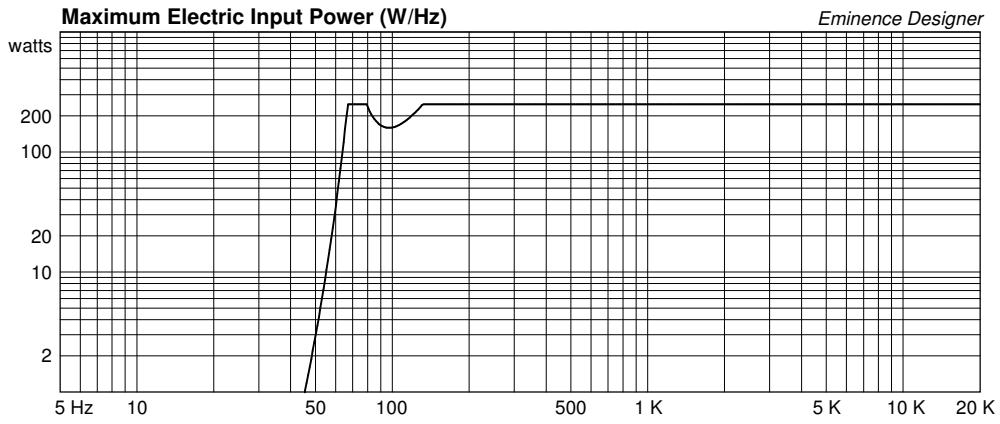
2 Ducts: outside diameter (e) = 2.5 in
inside diameter (g) = 2.25 in
length (h) = 4.906 in

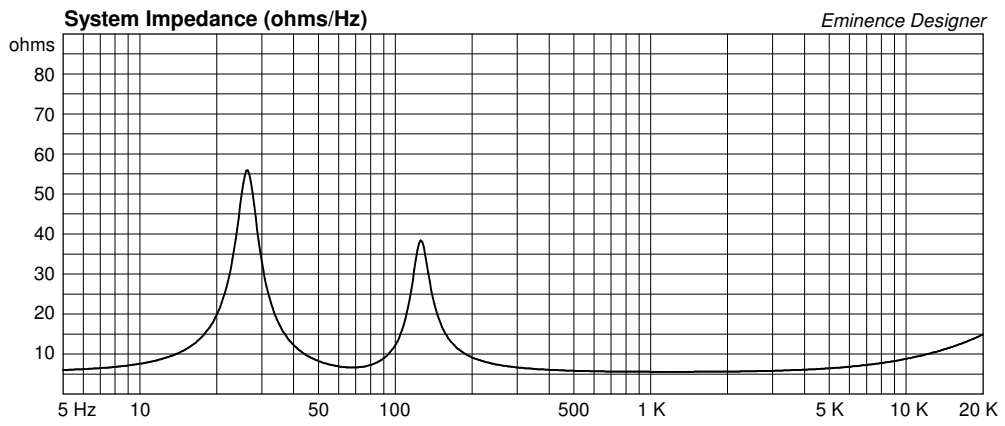
--Driver Mounting--

Mounting: Flush









Medium Vented Box Design

By Anthony Lucas, Eminence Speaker
200W, F3@63Hz, use full-range for bass guitar, high pass filter @ 55Hz for PA
good power handling and punchy



Box Properties

--Description--

Name:

Type: Vented Box

Shape: Prism, square (optimum)

--Box Parameters--

Vb = 1.5 cu.ft

V(total) = 1.683 cu.ft

Fb = 65 Hz

F3 = 63.34 Hz

Fill = minimal

--Vents--

No. of Vents = 2

Vent shape = round

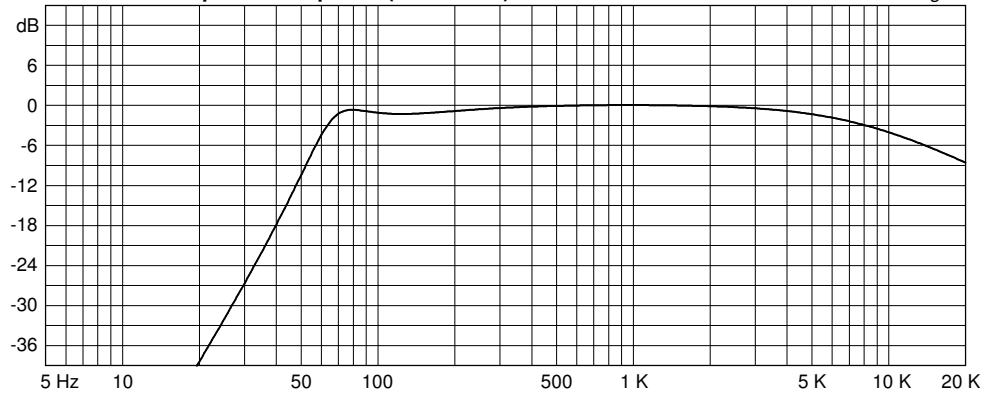
Vent ends = one flush

Dv = 4 in

Lv = 6.359 in

Normalized Amplitude Response (dB-SPL/Hz)

Eminence Designer



Driver Properties

--Description--

Name:

Type: Standard one-way driver

--Configuration--

No. of Drivers = 1

--Mechanical Parameters--

Fs = 48 Hz

Qms = 3.27

Vas = 71.47 liters

Cms = 0.42 mm/N

Mms = 27 g

Rms = 2.414 kg/s

Xmax = 4.72 mm

Xmech = 7.08 mm

P-Dia = 209.9 mm

Sd = 350.1 sq.cm

P-Vd = 0.163 liters

--Electrical Parameters--

Qes = 0.28

Re = 5.53 ohms

Le = 0.11 mH

Z = 8 ohms

BL = 12.54 Tm

Pe = 250 watts

--Electromech. Parameters--

Qts = 0.26

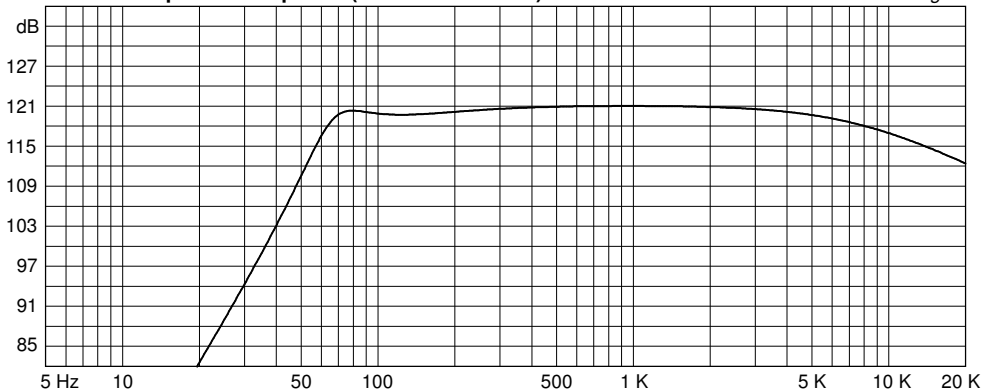
no = 2.722 %

1-W SPL = 96.5 dB

2.83-V SPL = 98.1 dB

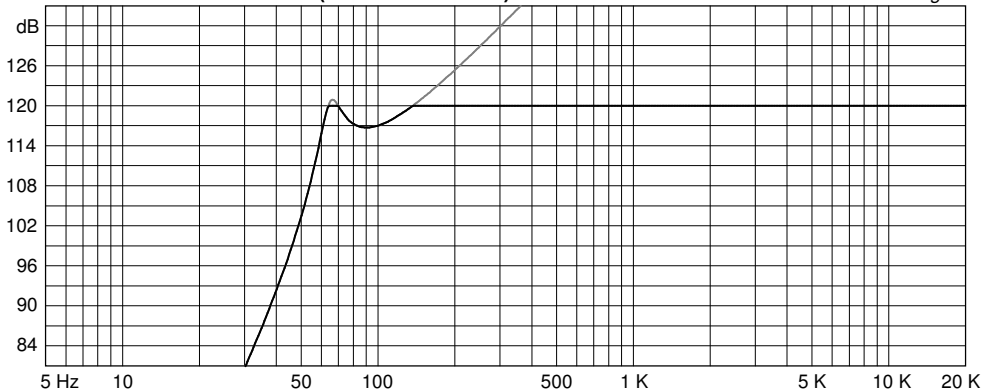
Custom Amplitude Response (dB-SPL/Hz at 1 m) with 200 watts

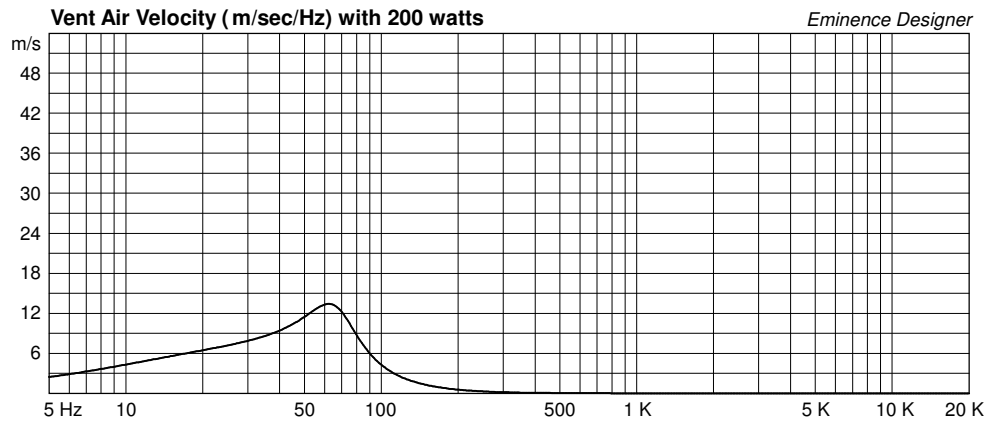
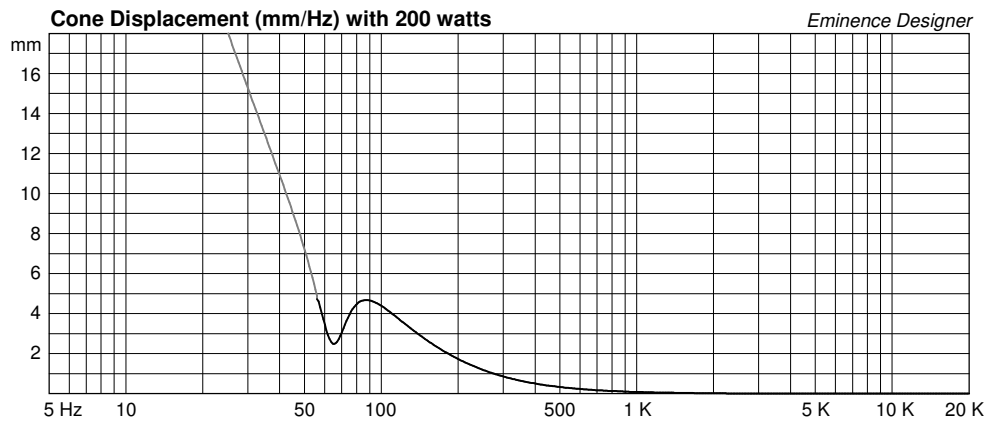
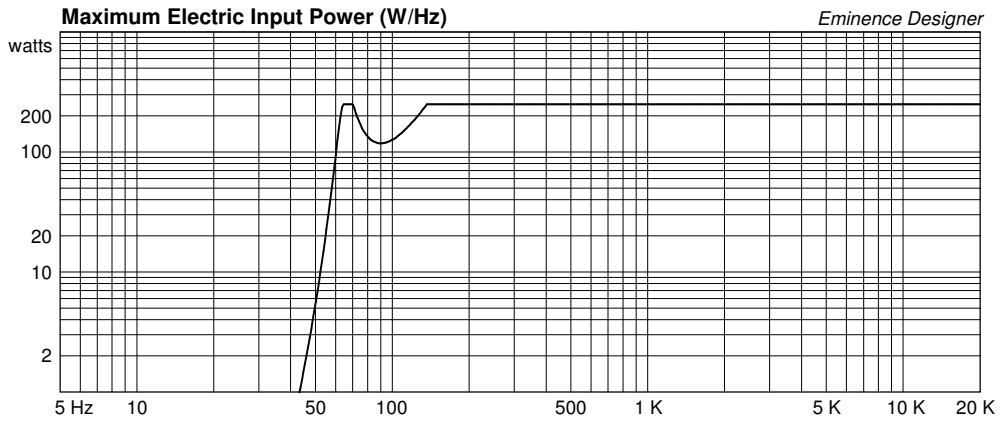
Eminence Designer

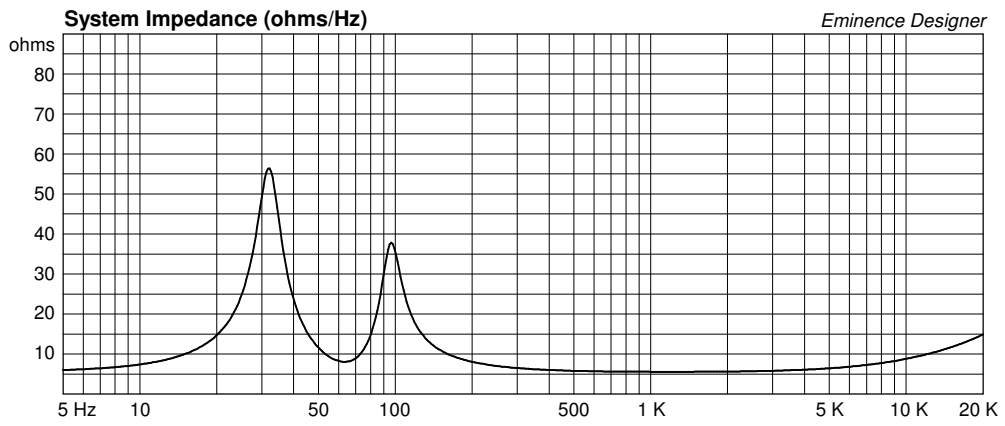


Maximum Acoustic Power (dB-SPL/Hz at 1 m)

Eminence Designer







Larger Vented Box Design

By Anthony Lucas, Eminence Speaker

150W, F3@55Hz, use full-range for bass guitar, high pass filter @ 55Hz for PA

Flatter response, extended low frequency range



Box Properties

--Description--

Name:

Type: Vented Box

Shape: Prism, square (optimum)

--Box Parameters--

Vb = 2.7 cu.ft

V(total) = 2.819 cu.ft

Fb = 60 Hz

F3 = 55.24 Hz

Fill = minimal

--Vents--

No. of Vents = 2

Vent shape = round

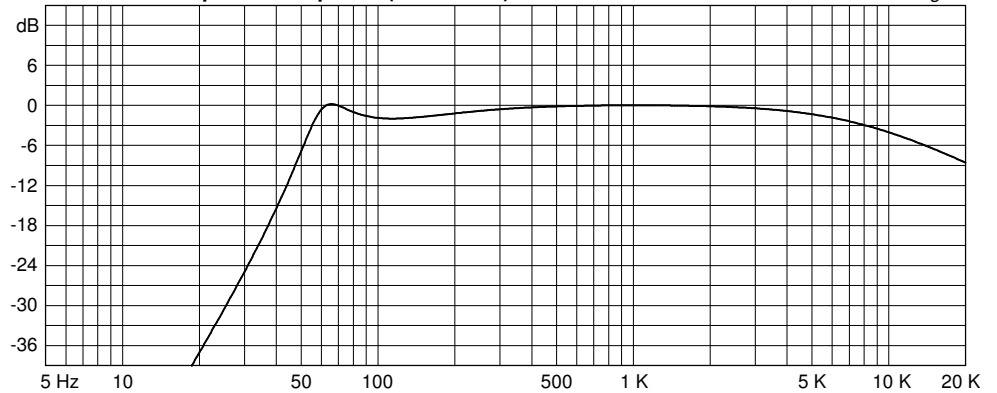
Vent ends = one flush

Dv = 4 in

Lv = 2.491 in

Normalized Amplitude Response (dB-SPL/Hz)

Eminence Designer



Driver Properties

--Description--

Name:

Type: Standard one-way driver

--Configuration--

No. of Drivers = 1

--Mechanical Parameters--

Fs = 48 Hz

Qms = 3.27

Vas = 71.47 liters

Cms = 0.42 mm/N

Mms = 27 g

Rms = 2.414 kg/s

Xmax = 4.72 mm

Xmech = 7.08 mm

P-Dia = 209.9 mm

Sd = 350.1 sq.cm

P-Vd = 0.163 liters

--Electrical Parameters--

Qes = 0.28

Re = 5.53 ohms

Le = 0.11 mH

Z = 8 ohms

BL = 12.54 Tm

Pe = 250 watts

--Electromech. Parameters--

Qts = 0.26

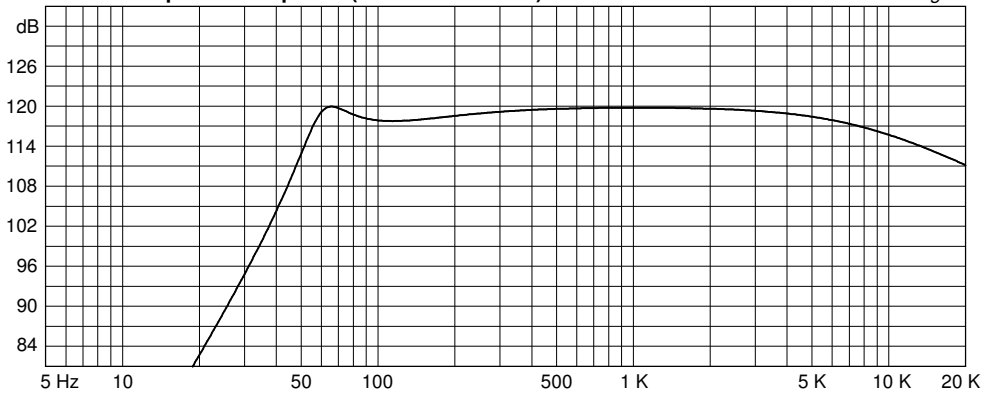
no = 2.722 %

1-W SPL = 96.5 dB

2.83-V SPL = 98.1 dB

Custom Amplitude Response (dB-SPL/Hz at 1 m) with 150 watts

Eminence Designer



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

Eminence Designer

