

# Impero 18A Small Vented Design

By Jerry McNutt, Eminence Speaker LLC

850 Watt Design; F3 at 49 Hz. Use a steep high pass filter at 35 Hz.

Super Compact Subwoofer. Will not go very low, but gets very Loud !



## Box Properties

--Description--

Name:

Type: Vented Box

Shape: Prism, square

--Box Parameters--

Vb = 4.5 cu.ft

V(total) = 5.067 cu.ft

Fb = 50 Hz

QL = 7

F3 = 49.18 Hz

Fill = minimal

--Vents--

No. of Vents = 2

Vent shape = round

Vent ends = one flush

Dv = 6 in

Lv = 6.954 in

## Driver Properties

--Description--

Name: Impero 18A

Type: Standard one-way driver

Company: Eminence Speaker LLC

Comment: 18" Pro Sound Woofer, 8 ohm

--Configuration--

**No. of Drivers = 1**

--Mechanical Parameters--

Fs = 33.17 Hz

Qms = 14.02

Vas = 317 liters

Cms = 0.17 mm/N

Mms = 139.5 g

Rms = 2.07 kg/s

Xmax = 8 mm

Xmech = 20.17 mm

P-Dia = 382 mm

Sd = 1159 sq.cm

P-Vd = 0.917 liters

--Electrical Parameters--

Qes = 0.44

Re = 5.41 ohms

Le = 1.47 mH

Z = 8 ohms

BL = 18.9 Tm

Pe = 1200 watts

--Electromech. Parameters--

Qts = 0.43

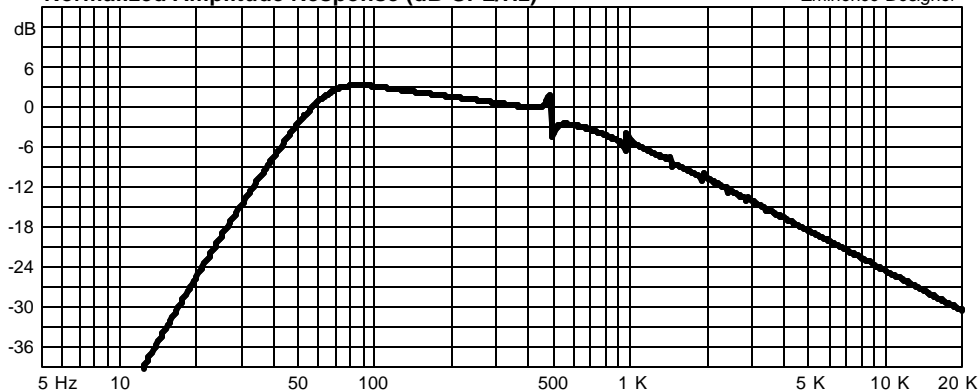
no = 2.535 %

1-W SPL = 96.19 dB

2.83-V SPL = 97.89 dB

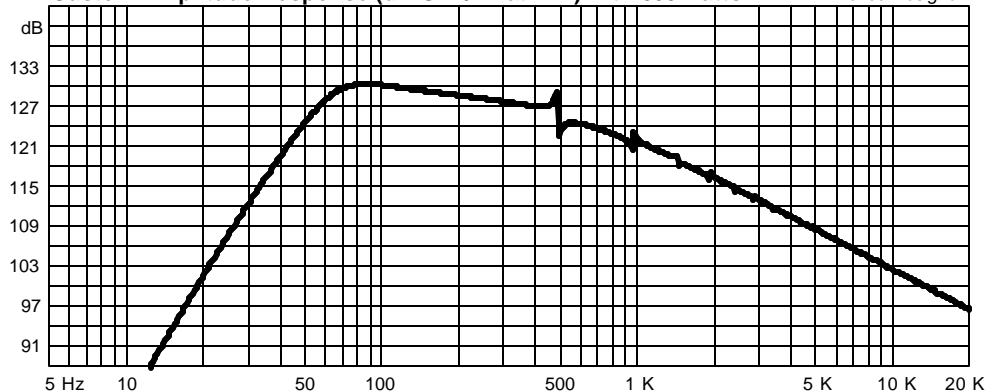
Normalized Amplitude Response (dB-SPL/Hz)

Eminence Designer



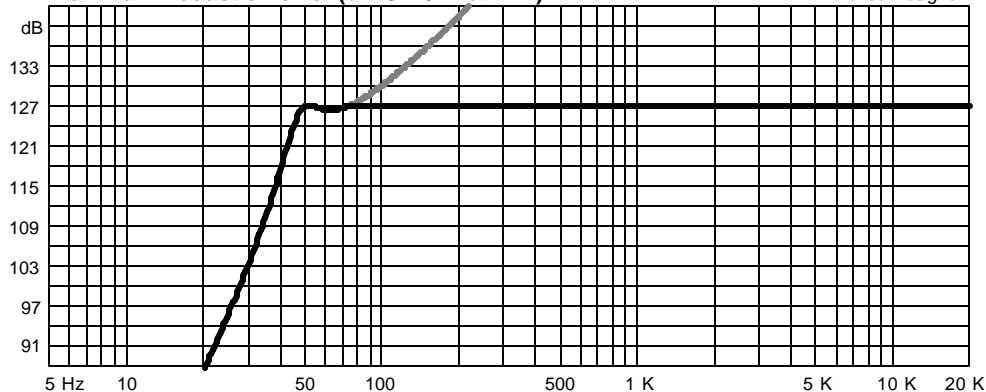
Custom Amplitude Response (dB-SPL/Hz at 1 m) with 850 watts

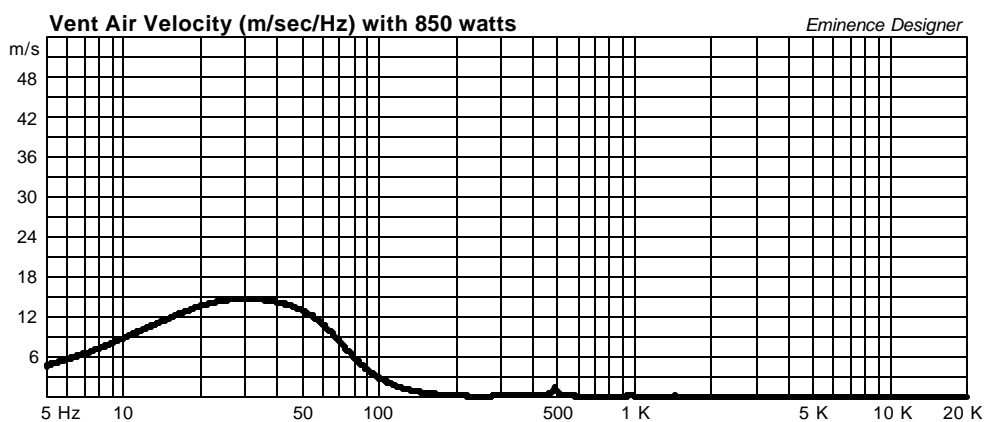
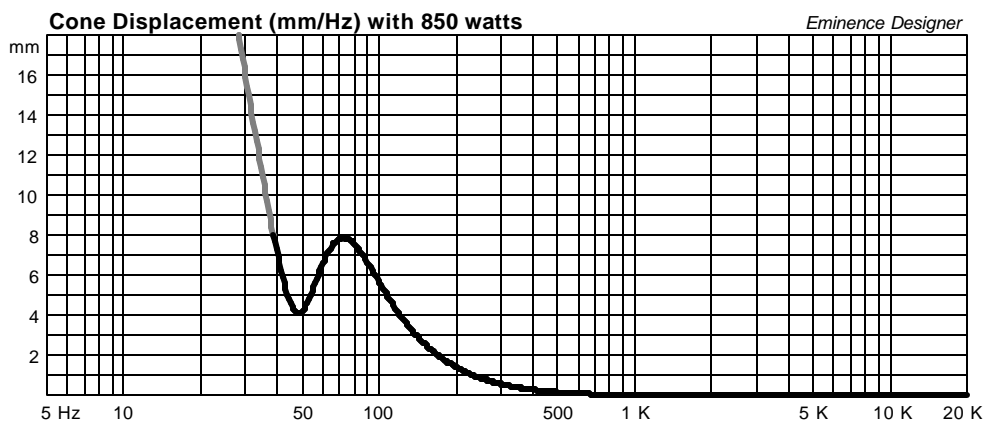
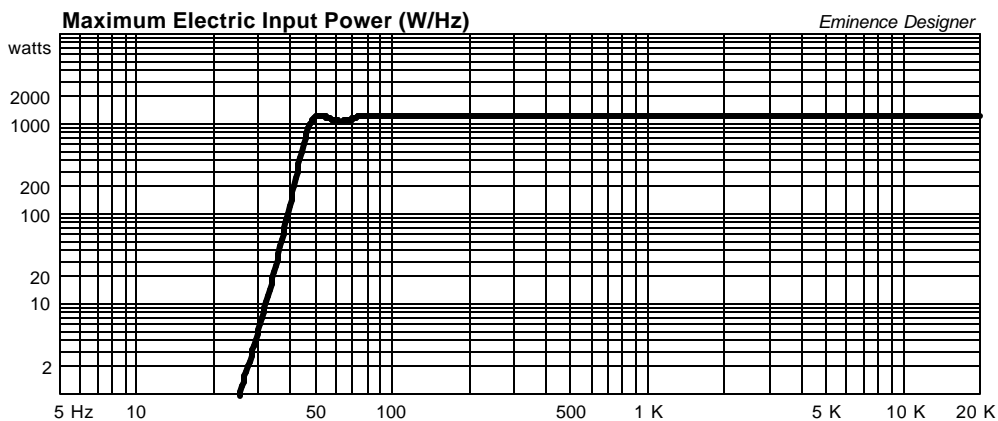
Eminence Designer

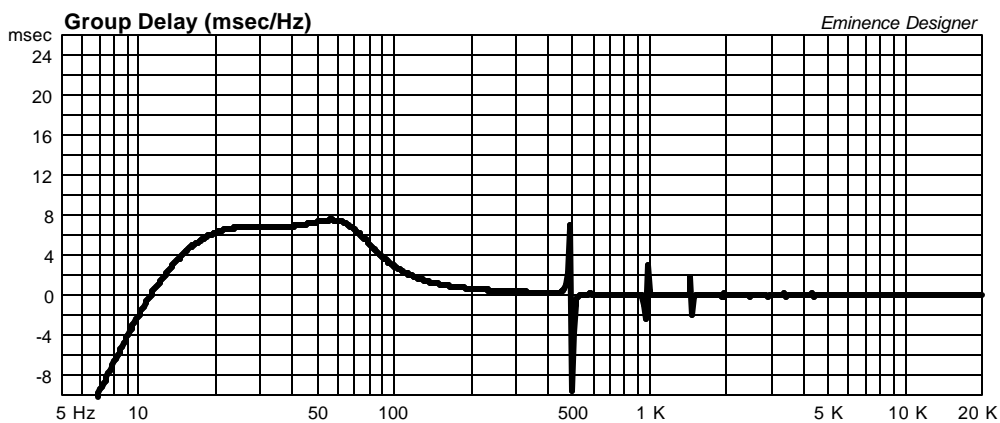
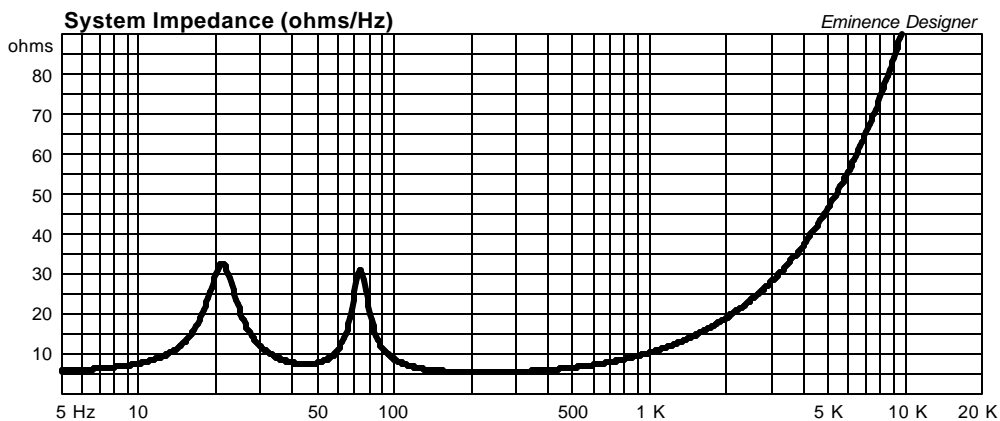


Maximum Acoustic Power (dB-SPL/Hz at 1 m)

Eminence Designer







# Impero 18A Medium Vented Design

By Jerry McNutt, Eminence Speaker LLC  
700 Watt Design; F3 at 45 Hz. Use steep high pass at 35 Hz.  
Compact Subwoofer design.



## Box Properties

--Description--

Name:

Type: Vented Box

Shape: Cube

--Box Parameters--

Vb = 5.75 cu.ft

V(total) = 6.282 cu.ft

Fb = 45 Hz

QL = 7

F3 = 45.6 Hz

Fill = minimal

--Vents--

No. of Vents = 4

Vent shape = round

Vent ends = one flush

Dv = 4 in

Lv = 6.444 in

## Driver Properties

--Description--

Name: Impero 18A

Type: Standard one-way driver

Company: Eminence Speaker LLC

Comment: 18" Pro Sound Woofer, 8 ohm

--Configuration--

**No. of Drivers = 1**

--Mechanical Parameters--

Fs = 33.17 Hz

Qms = 14.02

Vas = 317 liters

Cms = 0.17 mm/N

Mms = 139.5 g

Rms = 2.07 kg/s

Xmax = 8 mm

Xmech = 20.17 mm

P-Dia = 382 mm

Sd = 1159 sq.cm

P-Vd = 0.917 liters

--Electrical Parameters--

Qes = 0.44

Re = 5.41 ohms

Le = 1.47 mH

Z = 8 ohms

BL = 18.9 Tm

Pe = 1200 watts

--Electromech. Parameters--

Qts = 0.43

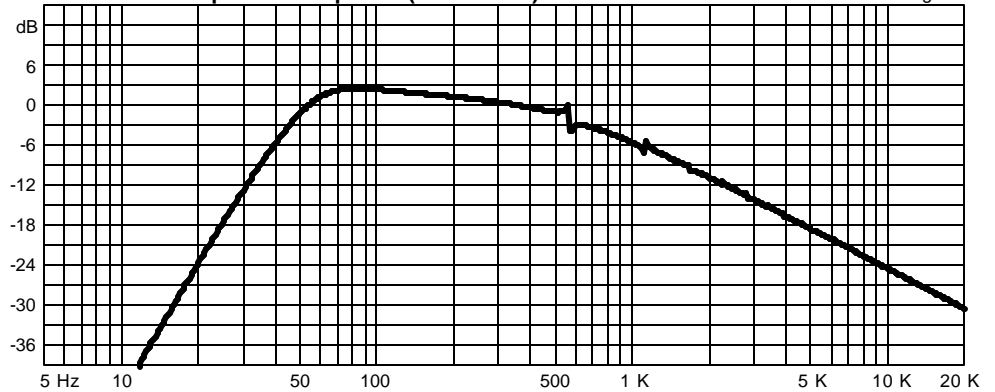
no = 2.535 %

1-W SPL = 96.19 dB

2.83-V SPL = 97.89 dB

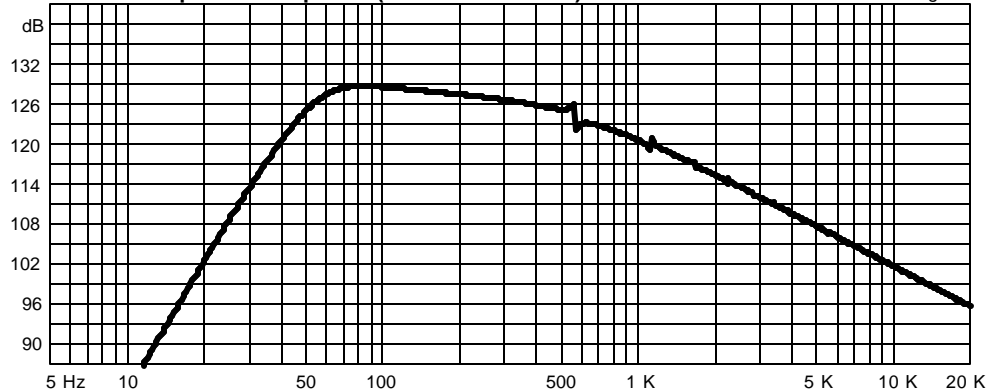
Normalized Amplitude Response (dB-SPL/Hz)

Eminence Designer



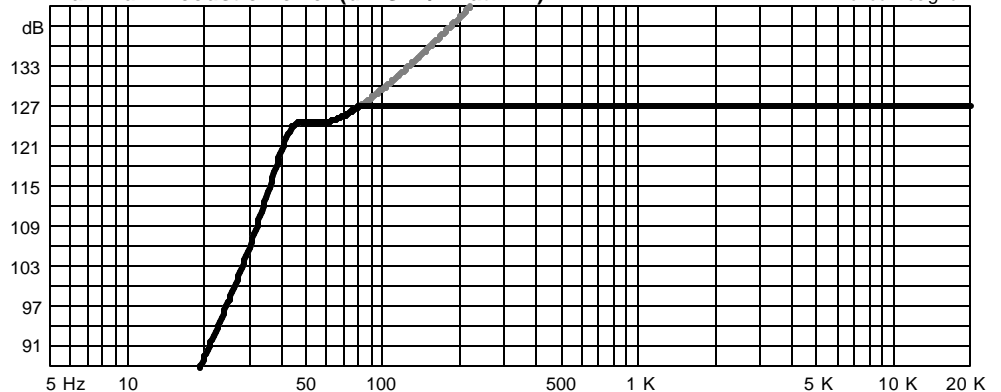
Custom Amplitude Response (dB-SPL/Hz at 1 m) with 700 watts

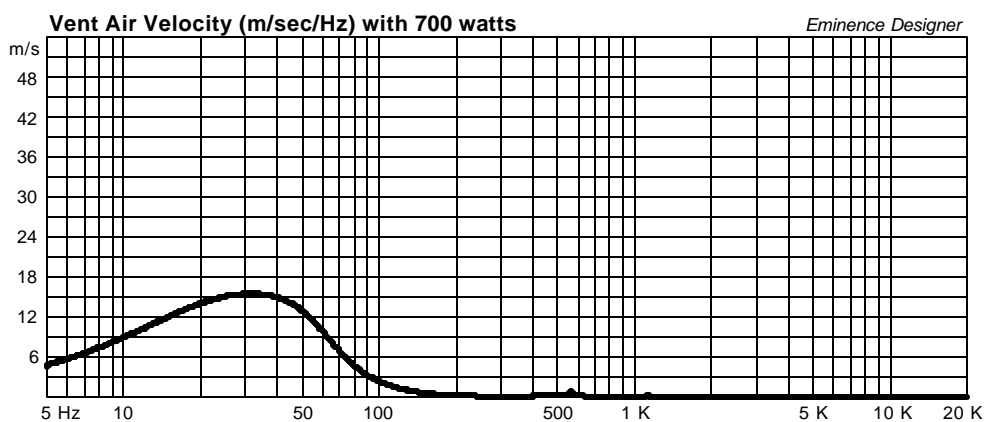
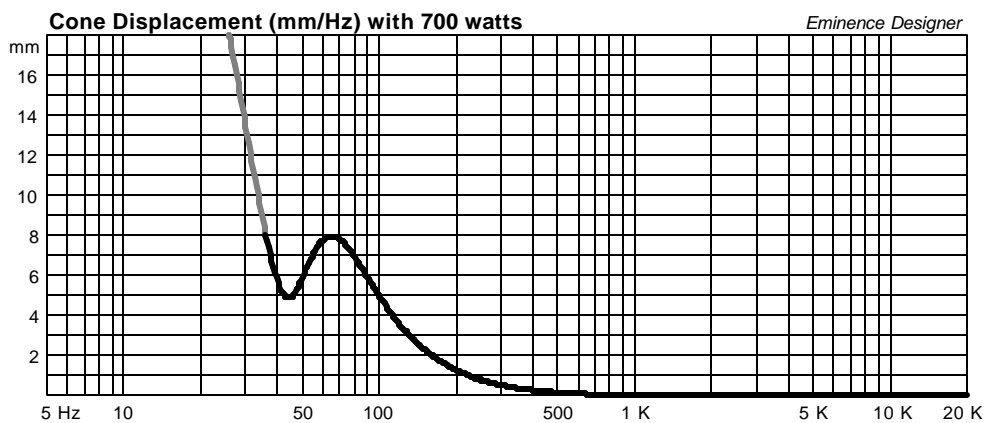
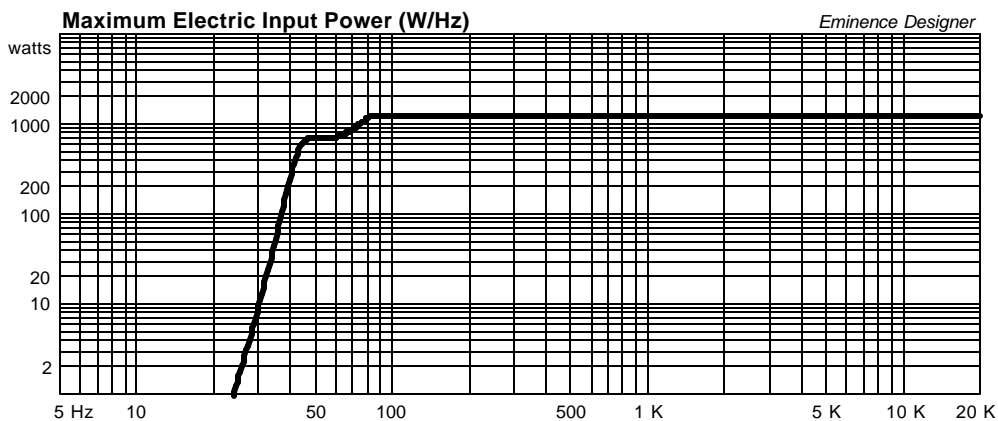
Eminence Designer

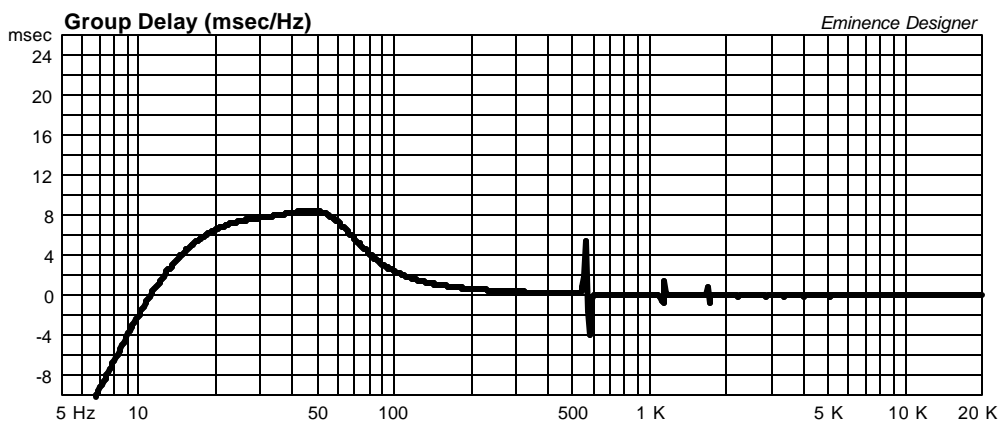
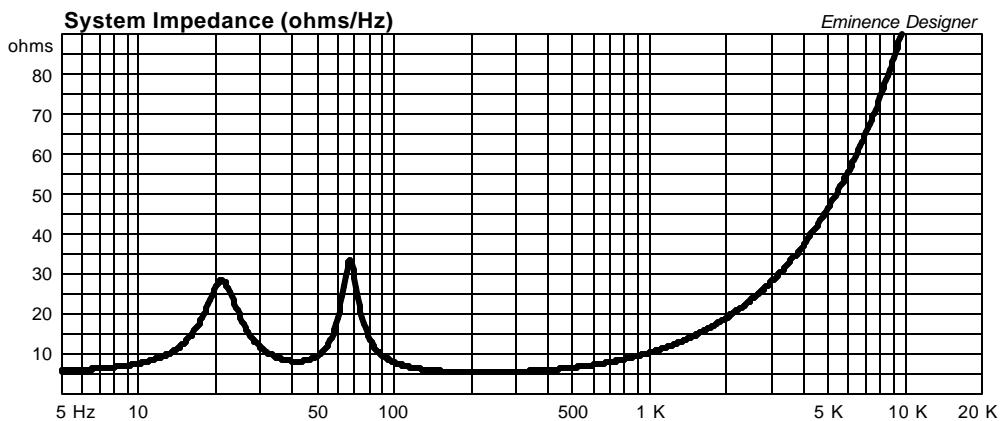


Maximum Acoustic Power (dB-SPL/Hz at 1 m)

Eminence Designer







# Impero 18A Large Vented Sub Design

By Jerry McNutt, Eminence Speaker LLC  
400 Watt Design; F3 at 41 Hz. Use steep high pass at 30 Hz.



## Box Properties

--Description--

Name:

Type: Vented Box

Shape: Cube

--Box Parameters--

Vb = 8 cu.ft

V(total) = 8.496 cu.ft

Fb = 40 Hz

QL = 7

F3 = 41.35 Hz

Fill = minimal

--Vents--

No. of Vents = 4

Vent shape = round

Vent ends = one flush

Dv = 4 in

Lv = 5.351 in

## Driver Properties

--Description--

Name: Impero 18A

Type: Standard one-way driver

Company: Eminence Speaker LLC

Comment: 18" Pro Sound Woofer, 8 ohm

--Configuration--

**No. of Drivers = 1**

--Mechanical Parameters--

Fs = 33.17 Hz

Qms = 14.02

Vas = 317 liters

Cms = 0.17 mm/N

Mms = 139.5 g

Rms = 2.07 kg/s

Xmax = 8 mm

Xmech = 20.17 mm

P-Dia = 382 mm

Sd = 1159 sq.cm

P-Vd = 0.917 liters

--Electrical Parameters--

Qes = 0.44

Re = 5.41 ohms

Le = 1.47 mH

Z = 8 ohms

BL = 18.9 Tm

Pe = 1200 watts

--Electromech. Parameters--

Qts = 0.43

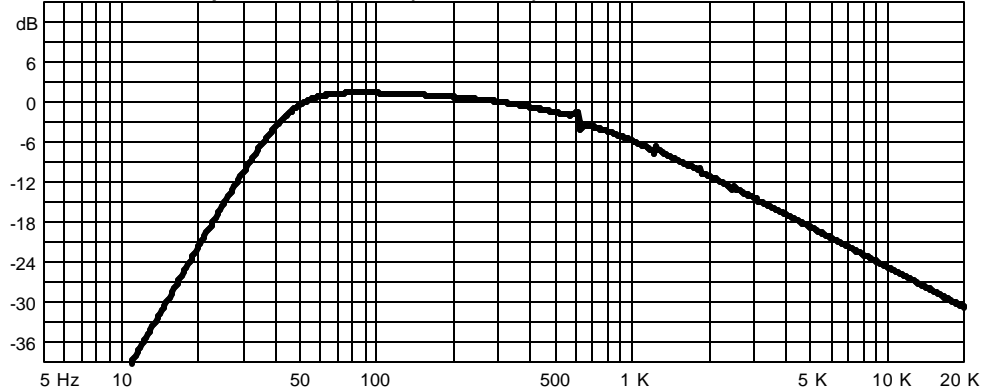
no = 2.535 %

1-W SPL = 96.19 dB

2.83-V SPL = 97.89 dB

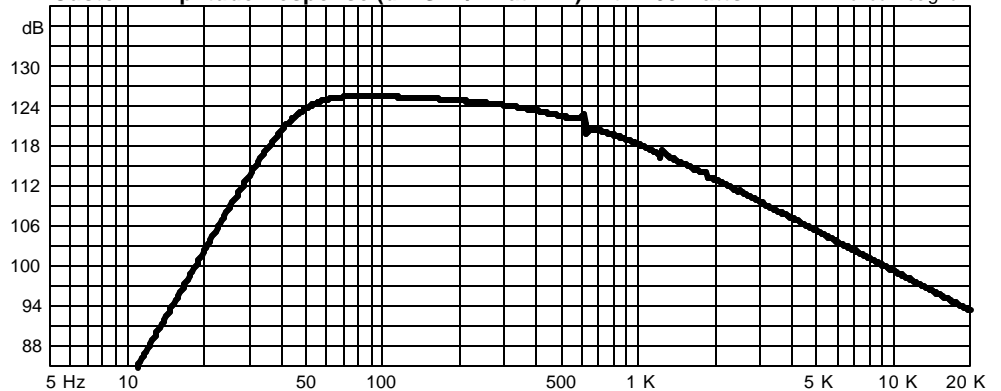
Normalized Amplitude Response (dB-SPL/Hz)

Eminence Designer



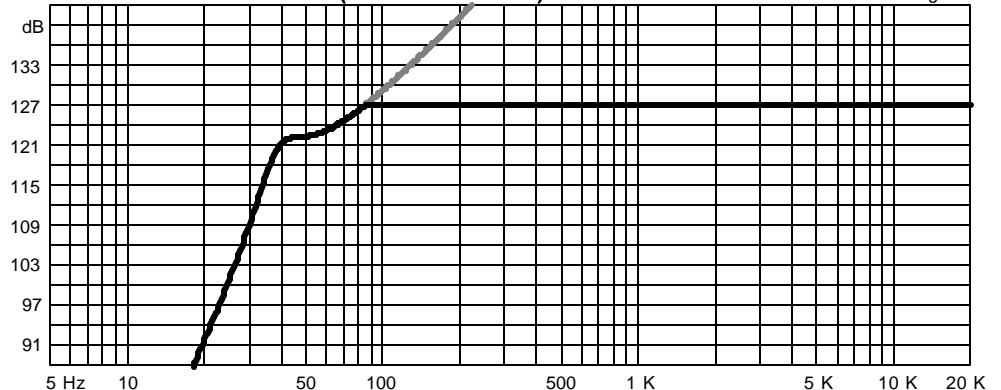
Custom Amplitude Response (dB-SPL/Hz at 1 m) with 400 watts

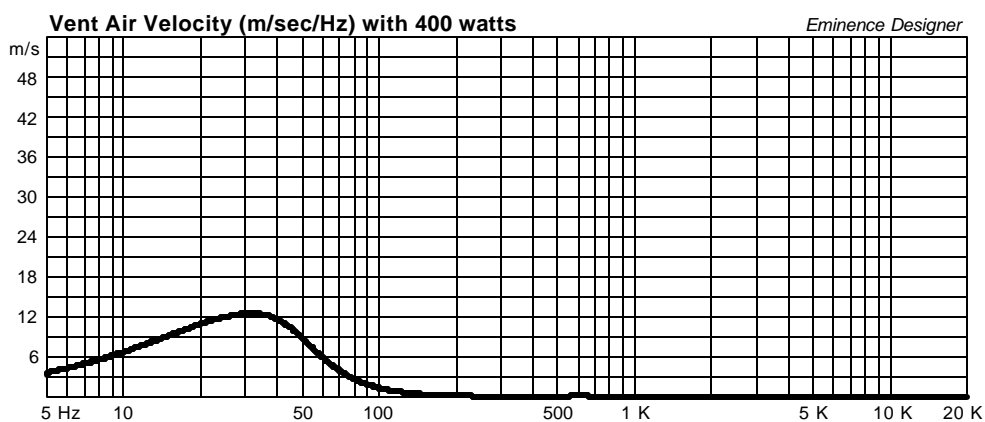
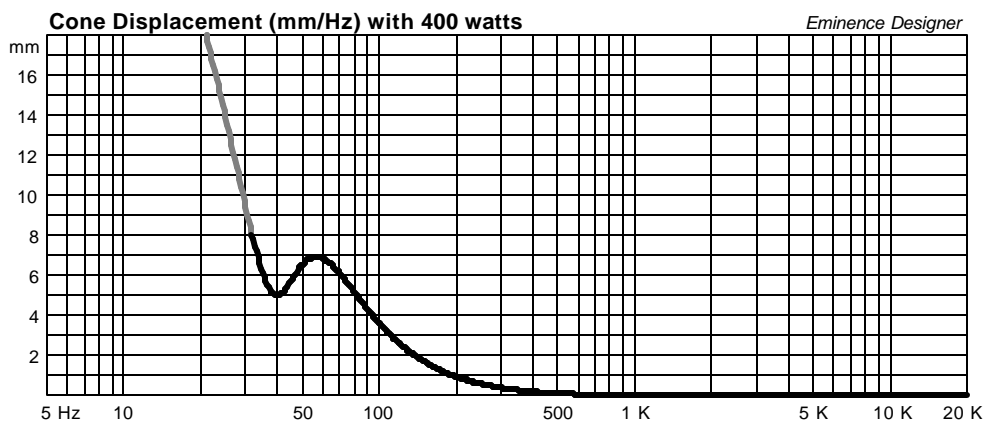
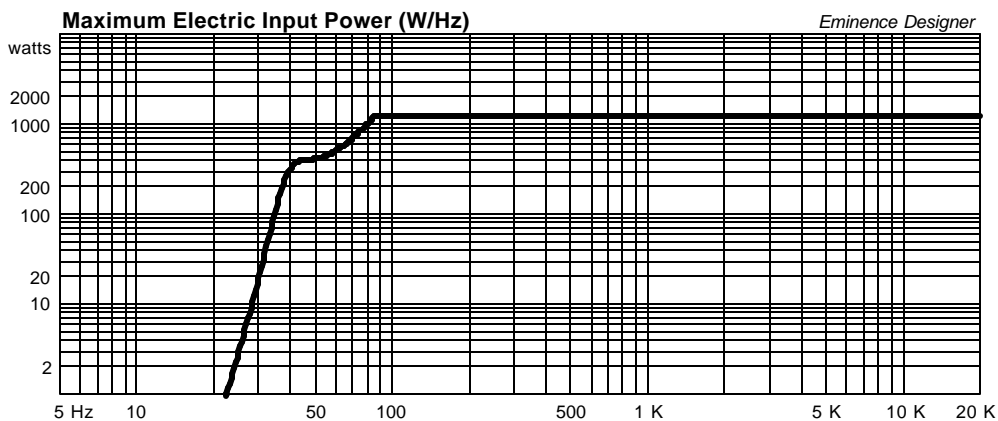
Eminence Designer



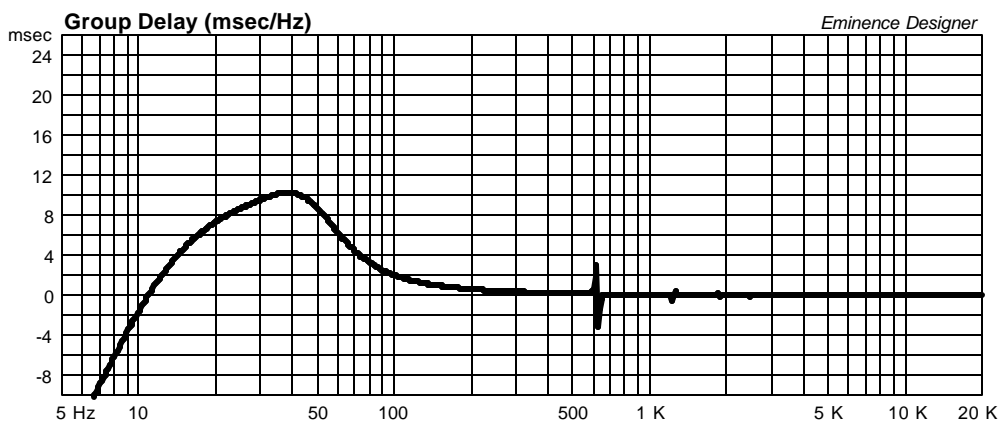
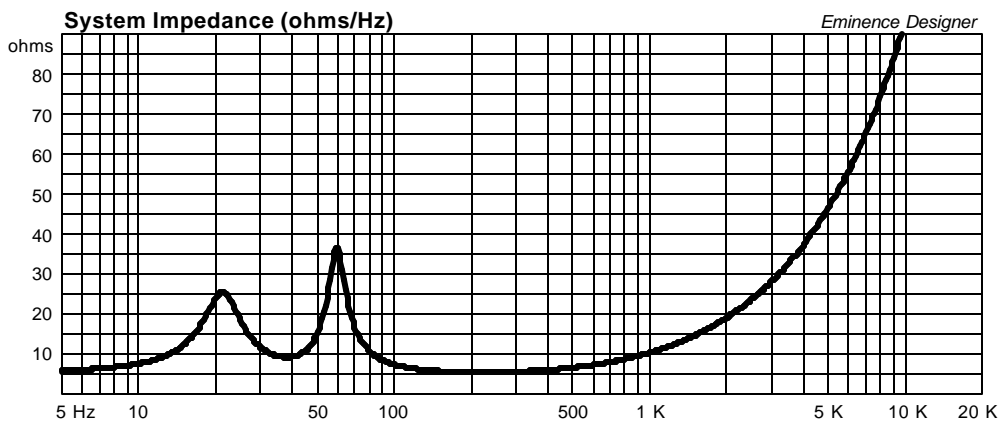
Maximum Acoustic Power (dB-SPL/Hz at 1 m)

Eminence Designer









# Impero 18A Two By 18 Large Vented Subwoofer

By Jerry McNutt, Eminence Speaker LLC

1000 Watt Design; F3 at 41 Hz. Use steep high pass at 30 Hz.

Best if built divided and keep ports symmetrically placed. Two by 18" Woofer.



## Box Properties

--Description--

Name:

Type: Vented Box

Shape: Prism, square (optimum)

--Box Parameters--

Vb = 16 cu.ft

V(total) = 16.96 cu.ft

Fb = 39 Hz

QL = 7

F3 = 40.51 Hz

Fill = minimal

--Vents--

No. of Vents = 4

Vent shape = round

Vent ends = one flush

Dv = 6 in

Lv = 4.541 in

## Driver Properties

--Description--

Name: Impero 18A

Type: Standard one-way driver

Company: Eminence Speaker LLC

Comment: 18" Pro Sound Woofer, 8 ohm

--Configuration--

**No. of Drivers = 2**

Mounting = Standard

Wiring = Parallel

Drivers sum coherently = Yes

--Mechanical Parameters--

Fs = 33.17 Hz

Qms = 14.02

Vas = 317 liters [634]

Cms = 0.17 mm/N [0.085]

Mms = 139.5 g [279]

Rms = 2.07 kg/s [4.14]

Xmax = 8 mm

Xmech = 20.17 mm

P-Dia = 382 mm [540.2]

Sd = 1159 sq.cm [2318]

P-Vd = 0.917 liters [1.834]

--Electrical Parameters--

Qes = 0.44

Re = 5.41 ohms [2.705]

Le = 1.47 mH [0.735]

Z = 8 ohms [4]

BL = 18.9 Tm [18.91]

Pe = 1200 watts [2400]

--Electromech. Parameters--

Qts = 0.43

no = 2.535 % [5.07]

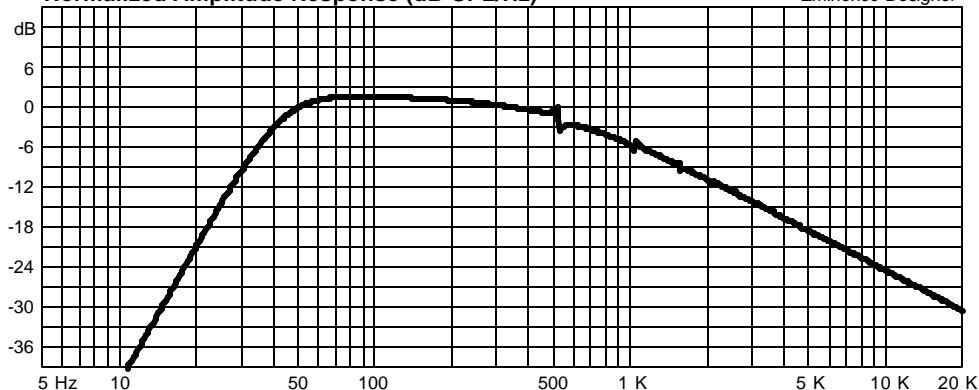
1-W SPL = 96.19 dB [99.2]

2.83-V SPL = 97.89 dB [103.9]

File: Impero18ATwoBy18LargeVented1000Watts.bb6

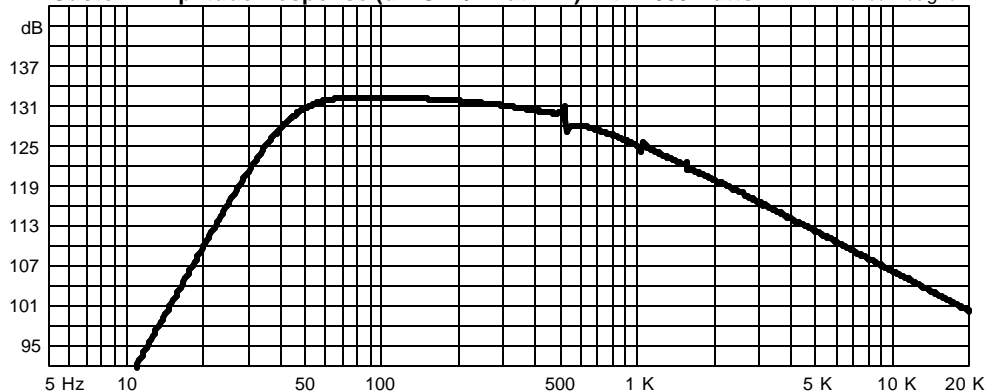
Normalized Amplitude Response (dB-SPL/Hz)

Eminence Designer



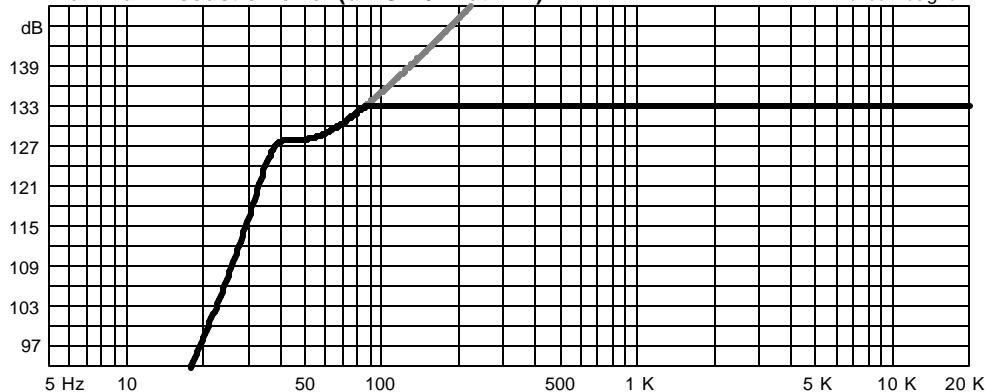
Custom Amplitude Response (dB-SPL/Hz at 1 m) with 1000 watts

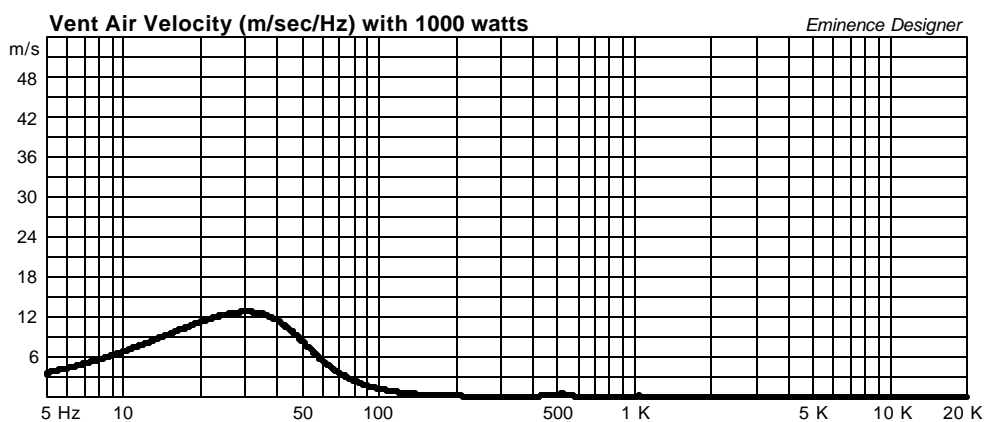
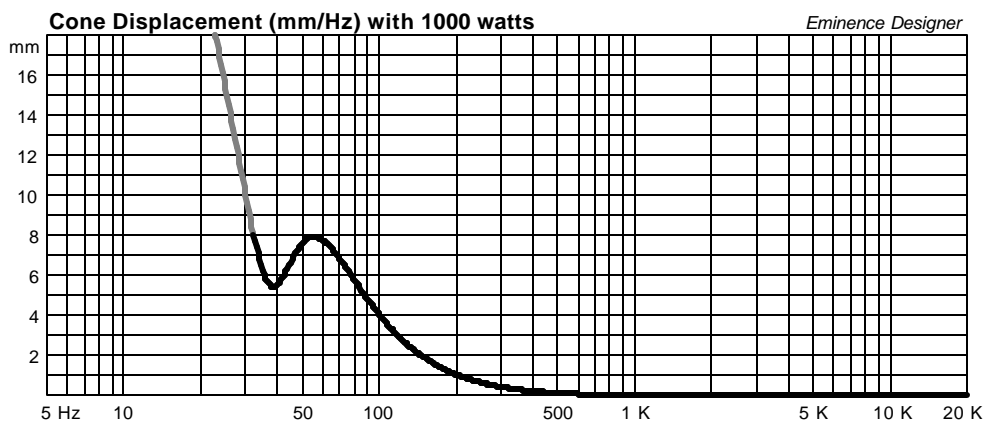
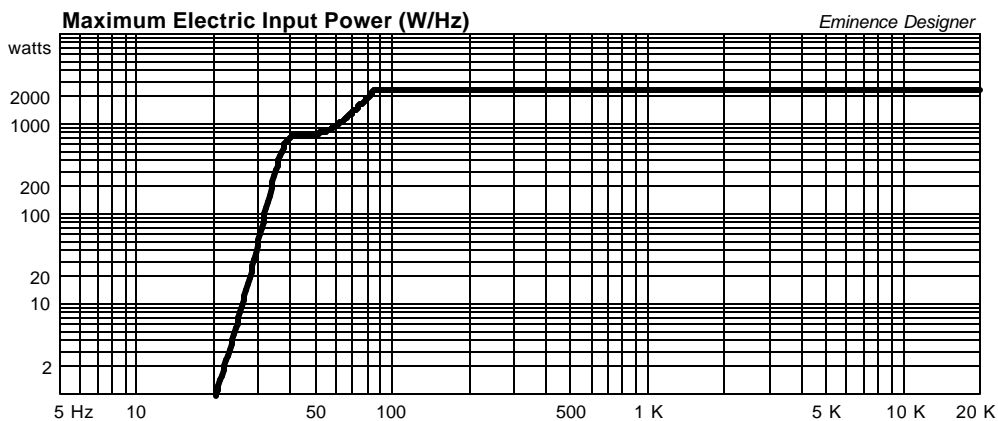
Eminence Designer

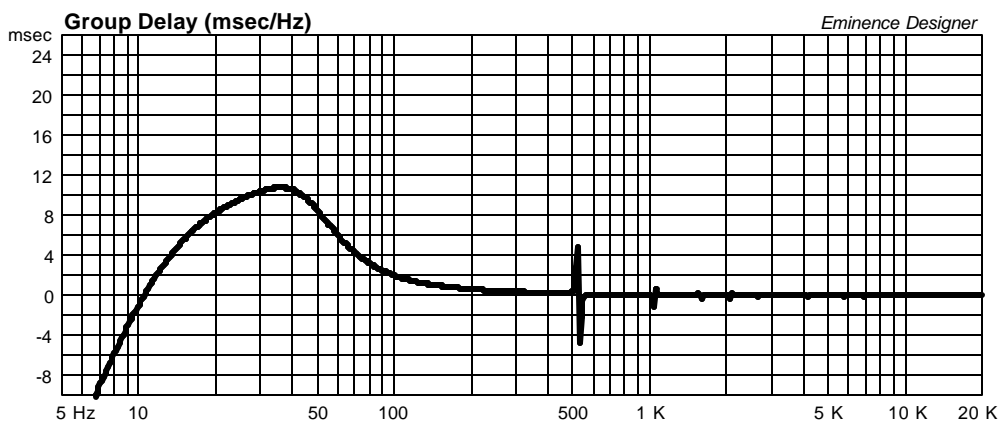
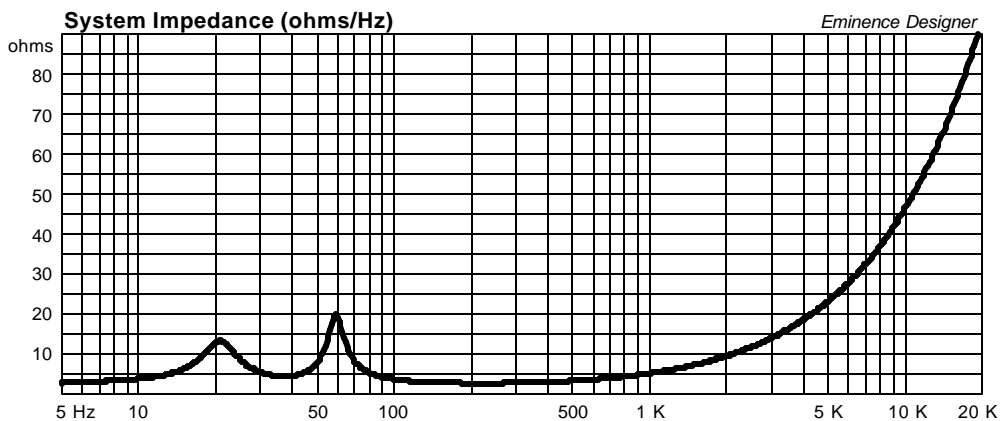


Maximum Acoustic Power (dB-SPL/Hz at 1 m)

Eminence Designer







# Impero 18 A, 2x18 Medium Vented Sub Design

By Jerry McNutt, Eminence Speaker LLC

1200 Watt Design; F3 at 44 Hz. Use steep high pass at 35 Hz.

Best if built divided and keep ports symmetrically placed. Two by 18 Sub.



## Box Properties

--Description--

Name:

Type: Vented Box

Shape: Prism, square (optimum)

--Box Parameters--

Vb = 12 cu.ft

V(total) = 13.1 cu.ft

Fb = 42 Hz

QL = 7

F3 = 43.77 Hz

Fill = minimal

--Vents--

No. of Vents = 4

Vent shape = round

Vent ends = one flush

Dv = 6 in

Lv = 6.491 in

## Driver Properties

--Description--

Name: Impero 18A

Type: Standard one-way driver

Company: Eminence Speaker LLC

Comment: 18" Pro Sound Woofer, 8 ohm

--Configuration--

**No. of Drivers = 2**

Mounting = Standard

Wiring = Parallel

Drivers sum coherently = Yes

--Mechanical Parameters--

Fs = 33.17 Hz

Qms = 14.02

Vas = 317 liters [634]

Cms = 0.17 mm/N [0.085]

Mms = 139.5 g [279]

Rms = 2.07 kg/s [4.14]

Xmax = 8 mm

Xmech = 20.17 mm

P-Dia = 382 mm [540.2]

Sd = 1159 sq.cm [2318]

P-Vd = 0.917 liters [1.834]

--Electrical Parameters--

Qes = 0.44

Re = 5.41 ohms [2.705]

Le = 1.47 mH [0.735]

Z = 8 ohms [4]

BL = 18.9 Tm [18.91]

Pe = 1200 watts [2400]

--Electromech. Parameters--

Qts = 0.43

no = 2.535 % [5.07]

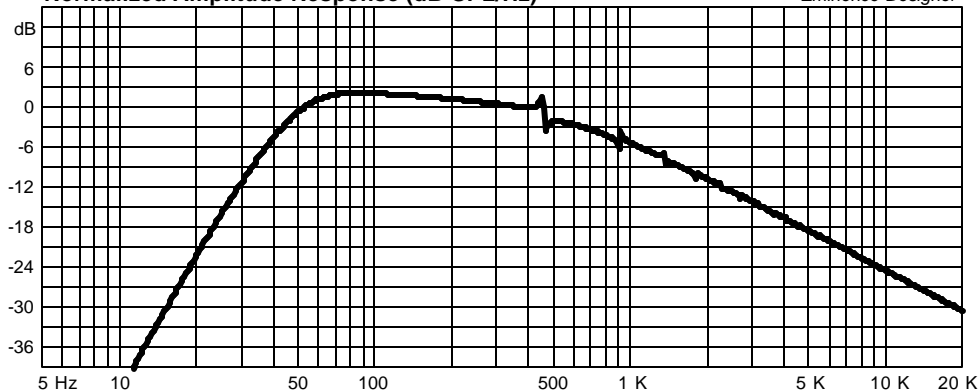
1-W SPL = 96.19 dB [99.2]

2.83-V SPL = 97.89 dB [103.9]

File: Impero18ATwoBy18MedVented1200Watts.bb6

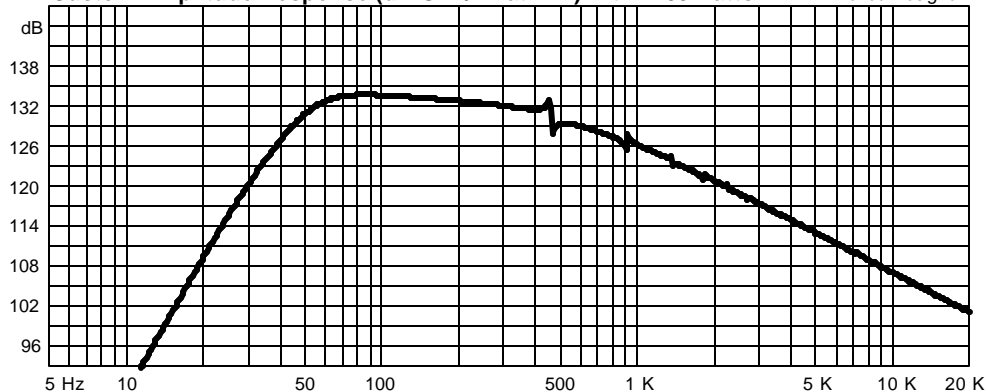
Normalized Amplitude Response (dB-SPL/Hz)

Eminence Designer



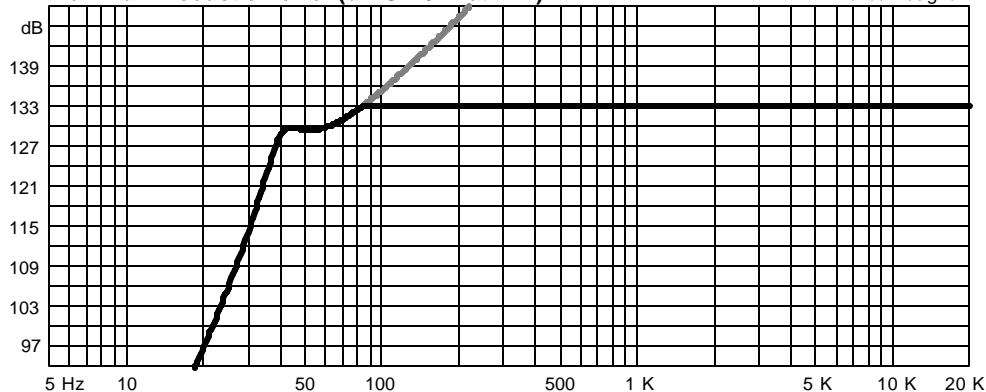
Custom Amplitude Response (dB-SPL/Hz at 1 m) with 1200 watts

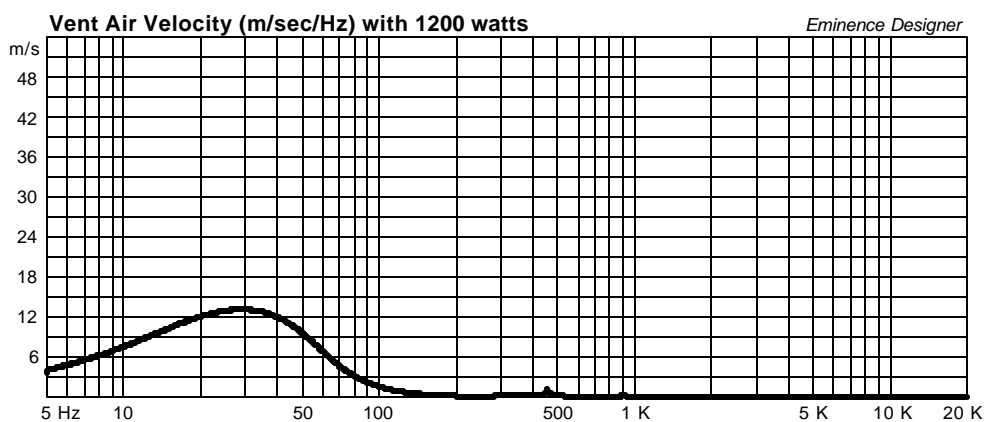
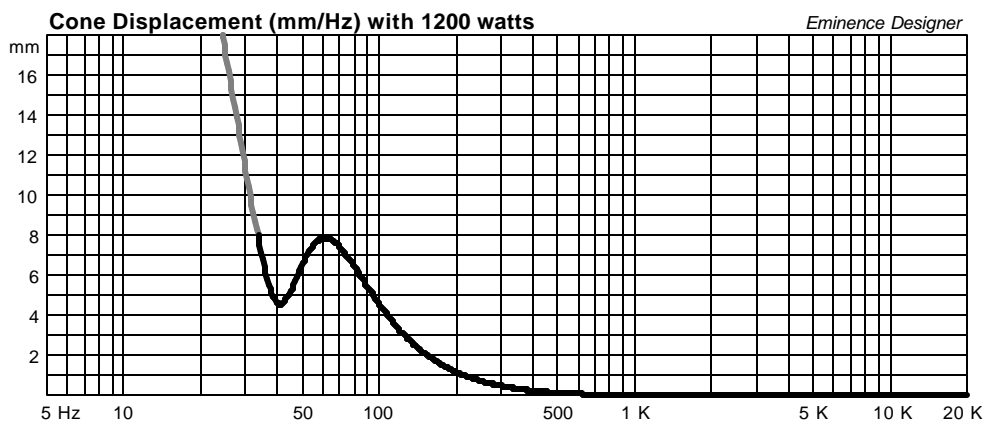
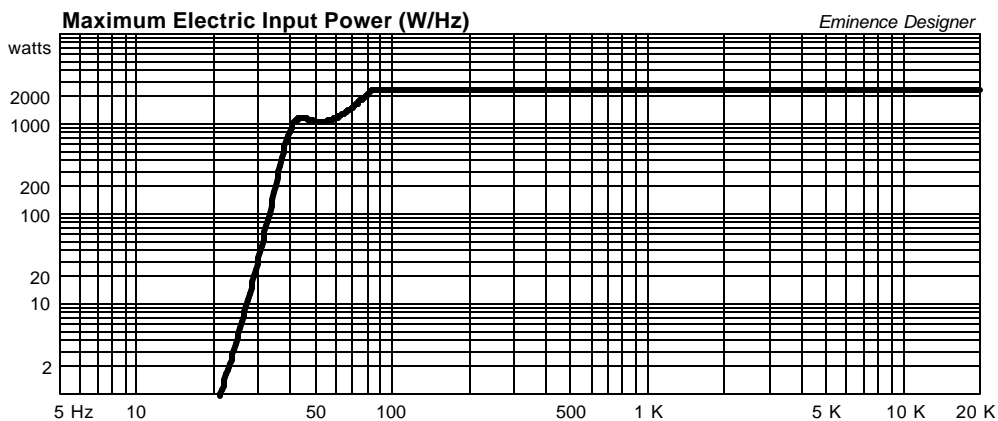
Eminence Designer

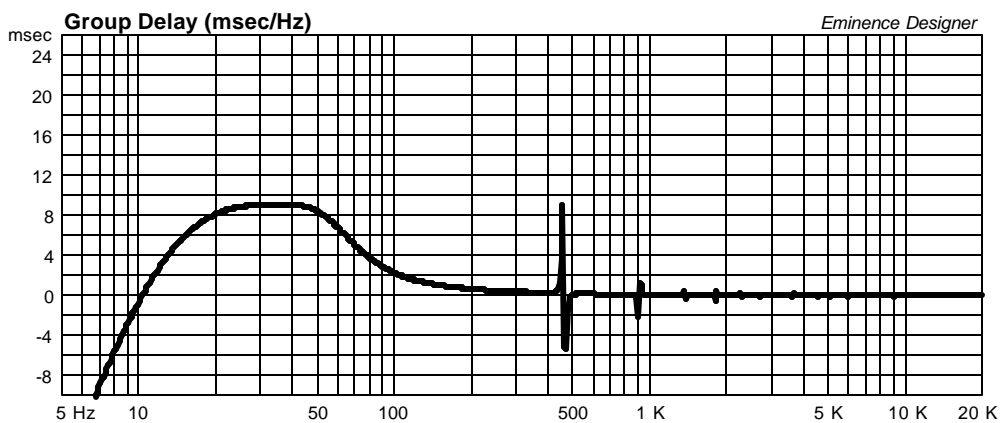
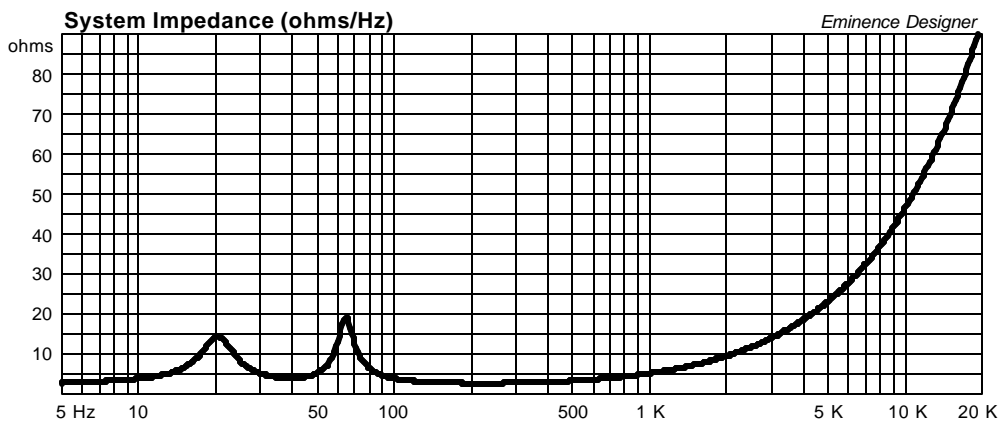


Maximum Acoustic Power (dB-SPL/Hz at 1 m)

Eminence Designer







# Impero 18A Two By 18 Small Vented Woofer Design

By Jerry McNutt, Eminence Speaker LLC

1700 Watt Design; F3 at 50 Hz. Use steep high pass at 40 Hz.

Best if built divided and keep ports symmetrically placed. Two by 18" Woofer.



## Box Properties

--Description--

Name:

Type: Vented Box

Shape: Prism, square (optimum)

--Box Parameters--

Vb = 8 cu.ft

V(total) = 9.164 cu.ft

Fb = 50 Hz

QL = 7

F3 = 50.4 Hz

Fill = minimal

--Vents--

No. of Vents = 4

Vent shape = round

Vent ends = one flush

Dv = 6 in

Lv = 7.365 in

## Driver Properties

--Description--

Name: Impero 18A

Type: Standard one-way driver

Company: Eminence Speaker LLC

Comment: 18" Pro Sound Woofer, 8 ohm

--Configuration--

**No. of Drivers = 2**

Mounting = Standard

Wiring = Parallel

Drivers sum coherently = Yes

--Mechanical Parameters--

Fs = 33.17 Hz

Qms = 14.02

Vas = 317 liters [634]

Cms = 0.17 mm/N [0.085]

Mms = 139.5 g [279]

Rms = 2.07 kg/s [4.14]

Xmax = 8 mm

Xmech = 20.17 mm

P-Dia = 382 mm [540.2]

Sd = 1159 sq.cm [2318]

P-Vd = 0.917 liters [1.834]

--Electrical Parameters--

Qes = 0.44

Re = 5.41 ohms [2.705]

Le = 1.47 mH [0.735]

Z = 8 ohms [4]

BL = 18.9 Tm [18.91]

Pe = 1200 watts [2400]

--Electromech. Parameters--

Qts = 0.43

no = 2.535 % [5.07]

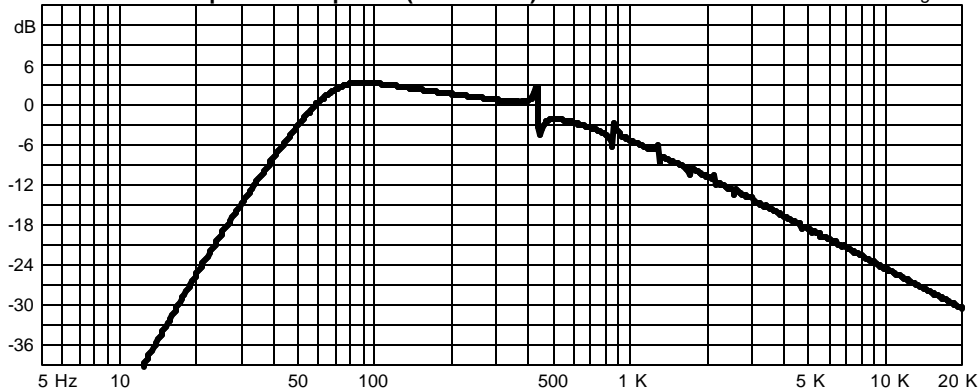
1-W SPL = 96.19 dB [99.2]

2.83-V SPL = 97.89 dB [103.9]

File: Impero18ATwoBy18SmallVented1700Watts.bb6

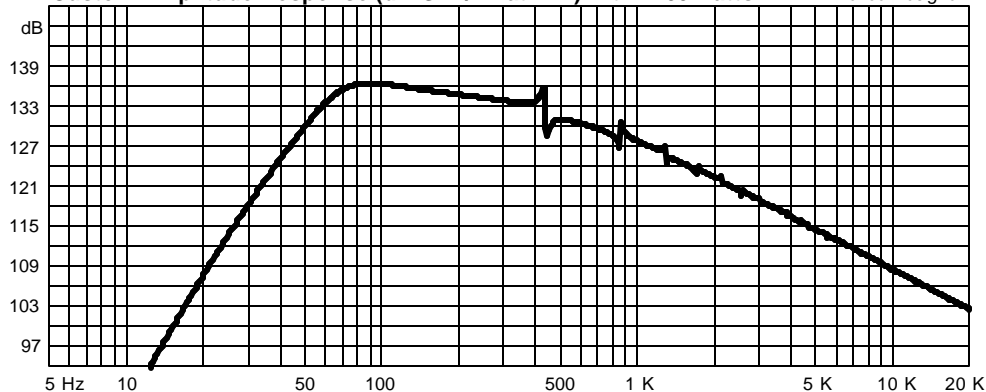
Normalized Amplitude Response (dB-SPL/Hz)

Eminence Designer



Custom Amplitude Response (dB-SPL/Hz at 1 m) with 1700 watts

Eminence Designer



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

Eminence Designer

