



## PSE-144

Point Source Elliptical horn

PSE-144 is a state of the art high end reference loudspeaker that features accomplishments not normally found in any one loudspeaker.

It features the startling dynamics of a horn loudspeaker without coloration audiophiles have come to expect from horns.

It matches the imaging of a single driver design and the transparency of a high end reference tower speaker with vastly superior dispersion and virtually unlimited output in a domestic listening room.

PSE-144 is the ultimate reference loudspeaker. If you believe every speaker has a weakness, you need to hear this one.



When serious about  
**dynamics**



## There aren't many alternatives

When it comes to reproducing the dynamics of a live event, most speakers fall short. Dynamics are a major part of the life and energy of music. Without good dynamic performance, music becomes lifeless and dull.

PSE-144 has the micro-dynamics of an electrostatic loudspeaker but it does not stop there. When the music becomes loud, an effortlessly dynamic performance continues.

Many audiophiles don't think much about dynamics because they have never experienced it in a hifi system. There are few truly dynamic speakers because it's a hard thing to achieve without serious compromise.

In our pursuit of exceptional dynamics, we weren't prepared to compromise other areas of performance. The answer starts with a point source.





it starts  
with a **point source**

It presents no challenge  
to make a big speaker  
that **sounds big**

A greater achievement is  
to make a big speaker  
that can also **sound small.**

All sound above 250 Hz emerges from a single point source. The result of this inherently simple design is unmatched coherence combined with a spatially correct and sharp image.

The size of the horn belies its ability to reproduce small sound sources. It simply disappears and each sound is represented as its true size.

Each sound is precisely placed within a wide and deep sound stage.

Conventional multi-way speakers launch multiple disjointed sound sources into a room. These sound sources can combine acceptably on axis, but most of the sound of a loudspeaker radiates off axis. This is where conventional design falls down.

PSE-144 combines multiple drivers into a single horn, where a point source behind the throat is optimally couples to a horn that effectively controls dispersion across the entire bandwidth.



# drivers

The high level of coherence in this design demands a special relationship between the individual parts. The compression driver must seamlessly integrate with the horn profile. The horn profile starts inside the compression driver and the entire horn can be seen as a unified and seamless extension of the compression driver. The midrange horn driver also has unique characteristics that allow it to couple its output to the horn, extending both horn loading and point source radiation down to 250 Hz.

## Tweeter: CD-144-08K

The high frequency compression driver matches a 44mm diaphragm to a 25mm exit. The kapton diaphragm achieves an ideal combination of damping and high frequency extension.

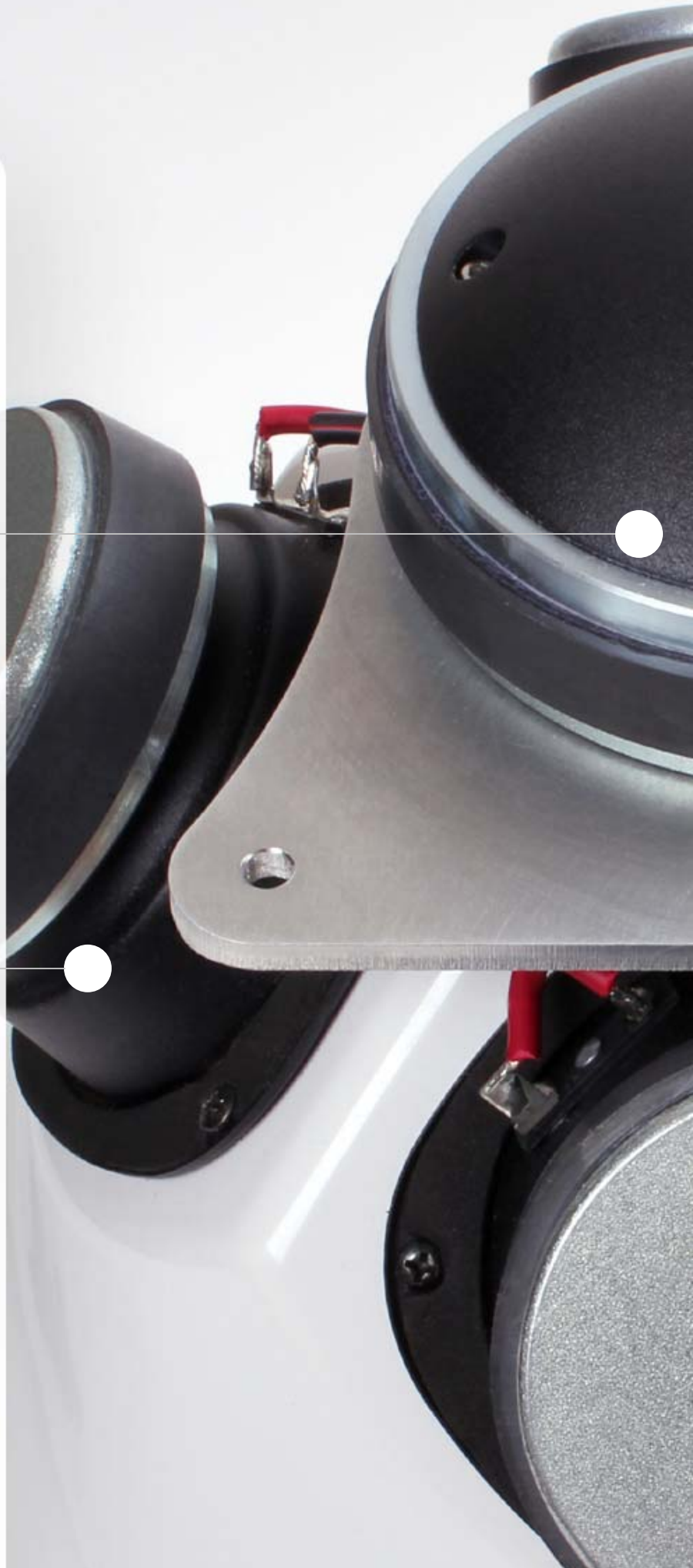
The vast majority of compression drivers fail to meet out standards and requirements. Setting aside specific requirements to match our horn, many of them cause listener fatigue and lack treble extension and detail. This speaker is designed to perform well with good quality solid state or valve amplification. There is no requirement to tame the sound with a mellow sounding amplifier.

## Midrange: M425-08P

The unique method of coupling our dedicated midrange drivers to the horn allows us to use four drivers in a vibration canceling arrangement. Each driver is coupled to the horn through small apertures. All outputs physically combine at this point but the acoustic filtering chamber behind the ports offsets the acoustic centre back towards the point of origin. The use of four drivers also allows diaphragms with a small piston area and exceptional breakup characteristics. This arrangement allows us reduce any effects of diaphragm breakup to well below audibility.

A further benefit of the acoustic chamber is a distortion reducing mechanism that lowers distortion by a minimum of 35 dB.

The distortion is lower than many amplifiers that may be chosen to drive this speaker.





When serious about

# dispersion control

## Think big

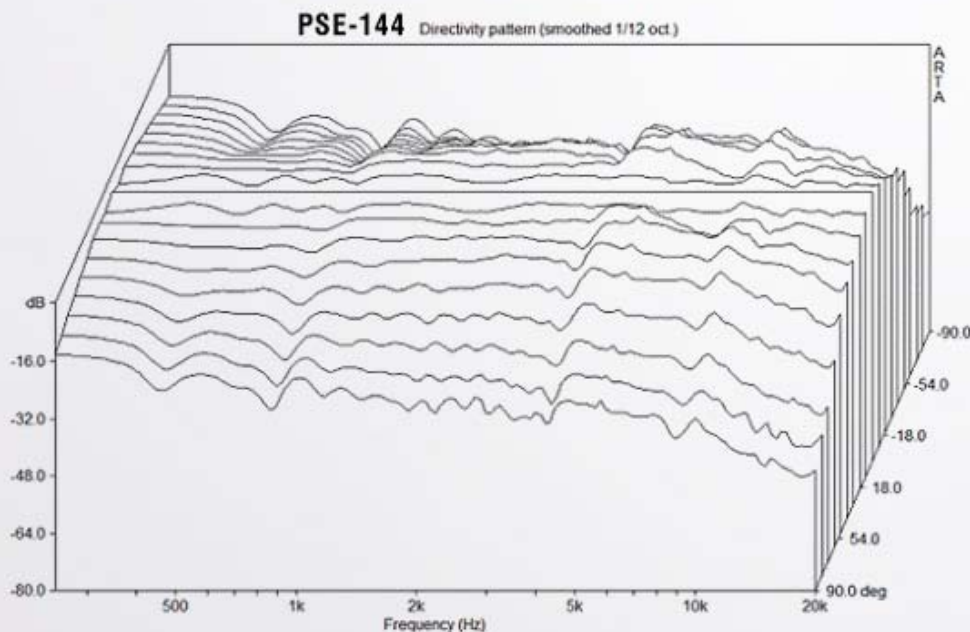


The modern aesthetic-driven trend towards small speakers has created speakers with omni directional midrange and beaming highs.

The real-world performance of a loudspeaker in a room is closely tied to the total sound that it radiates. Much of what is heard is the power response mixed with absorptive and diffusive characteristics of the room. This is why dispersion control is one of the most important aspects of a loudspeaker.

PSE-144 delivers the ultimate in dispersion control all the way down to 250 Hz with a beamwidth of 80 degrees horizontal and 60 degrees vertical.

The waterfall plot below shows the horizontal directivity pattern.



The point source aspect allows the exceptional dispersion to be maintained in the vertical plane. In conventional multi-way designs, the vertical off axis response is very poor since the vertically offset drivers interfere with each other.

### Benefits

- Excellent on and off axis response
- Superior performance in untreated and difficult rooms
- A larger sweet spot with a stable centre image
- Exceptional clarity with reduced room interference

### Left: Directivity Pattern waterfall plot

The waterfall plot below represents the dispersion of PSE-144. The Z axis to the right side shows the angle of the listener position. This plot can be seen as a series of frequency response plots shown for various angles.



When serious about  
**high  
end**



## Think **DIY**

PSE-144 is available as an assemble-it-yourself kit. It includes all the parts you need.

Just add:

- **Bass module** suitable to work with a 250 Hz crossover
- **Active crossover**

The kit is available in both an active and passive version.

The level of performance that is being offered here is only available at this price in kit form. Our aim is to make high-end performance accessible at an attractive price.

### **Fully active version**

The fully active version contains no passive components. We supply filter details that you can enter into your active crossover unit. Most customers choose either MiniDSP or DEQX, depending on budget.

### **Passive version**

The passive version contains a pre-assembled passive crossover. We still recommend using an active crossover to bi-amp the horn, since most will not be using a bass module with high enough sensitivity to match the horn.

### **Bass module options**

1. Supply your own
2. Purchase a standard kit
3. Request a custom bass module kit
4. Finished bass module



# specifications

Dimensions	600 mm H x 900 mm W x 482 mm D
Base	300 mm W x 450 mm D
Horn material	Fibreglass
Stand material	Aluminium
Horn dispersion	60 degrees vertical 80 degrees horizontal
Horn throat	1"
Frequency response	220 Hz - 19 kHz
Tweeter	CD144-08K 1" exit compression driver with 44mm voice coil
Midrange	M425-08P 4 x 4" paper cone with 25mm voice coil
Crossover	1.2 kHz (tweeter/mid) 250 Hz (mid/bass)
Active version	High pass and low pass details provided Parametric EQ and shelving filters required Active crossover unit not included
Passive version	Assembled passive crossover included
Impedance	8 ohms (6.3 ohms min on midrange passband)
Sensitivity	103 dB (midrange) 110 dB (tweeter nominal) (varies with frequency with high frequency roll-off)
Kit version price (RRP)	AUD \$9495
Direct price	AUD \$4995 (passive version) AUD \$4495 (active version) Price is for a pair Any number can be ordered at the same unit price
Colour options	Black / white included as standard Other colours available (+ \$200 per horn unit)
Shipping	Refer shipping chart overleaf
Kit inclusions	Refer list overleaf



# Shipping & inclusions

1 pair of PSE-144      15kg per container      2 cartons

Location	Amount	Including Paypal fee of 3.5%
London, UK	810	838.35
NYC, USA	810	838.35
Oslo, Norway	1130	1169.55
Frankfurt, Germany	1060	1097.1
Tokyo, Japan	810	838.35
Milan, Italy	1060	1097.1
Toronto, Canada	810	838.35
Auckland, New Zealand	500	517.5
Brussels, Belgium	1060	1097.1
Singapore	600	621

+ 50% for an extra PSE-144

No online freight quote for Russia

## FAQ

1. PSE-144 is packed in a custom made double layer cardboard carton
2. All deliveries are tracked and must be signed for
3. Sent via courier air freight unless notified otherwise
4. Typical air freight time is 5 working days
5. Street address (only) in accordance with your Paypal address
6. Insurance is available to most countries but please ask in advance if required
7. Red Spade Audio take no responsibility for any customs or import duties or taxes
8. Postal service is not available due to size limitations

## Kit inclusions

Filter details (active version)

2 x Assembled passive crossovers (passive version)

2 x 1" compression driver (CD144-08K)

8 x 4" dedicated midrange drivers (M425-08P)

2 x fibreglass elliptical horn

2 x custom machined aluminium CD mounting plate

2 x custom machined aluminium stands

2 x 4 pole speakon chassis terminals

Speaker cable for wiring (raw cable provided)

Foam gasket tape to seal midranges

All screws and fixings for assembly