

830514

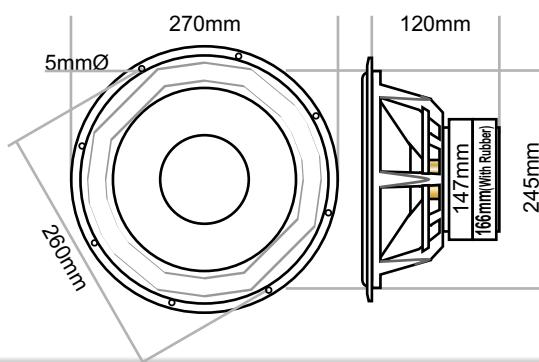
## CAR AUDIO SUBWOOFER 10" XLS 4 ohm

### 269 SWR 51 147 NX 4L ALP 4 ohm XTRA-LONG-STROKE

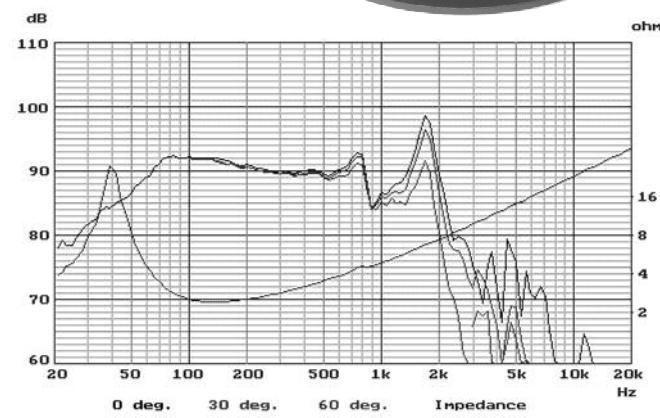
By introducing the new range of Xtra Long Stroke (XLS) subwoofers, Peerless has pushed the performance limits for subwoofers to a new level. The XLS/subwoofer range will fulfil every demand for deep clean bass reproduction in high SPL applications. In the design, the emphasis has been put in achieving extreme deep bass, long time reliability, high power handling, and very low distortion - even under very large sound pressures. The 10" XLS has also been designed to fit smaller cabinet configurations, ideal for car audio applications. This is a new range from Peerless to suit the unlimited demands of bass hungry enthusiasts in automotive audio sound offs. Double magnet. Cast iron frame. Large rubber surround. Gold 4mm binding posts. Rubber boot over the magnet to reduce box turbulence. Dust cover badged. BEWARE! The amplifier driving this speaker must be 2 ohm stable. Do not paralell or BTL without caution.

#### Parameters:

Nominal impedance	Zn	(ohm)	8
Minimum impedance/at freq.	Zmin	(ohm/Hz)	4.9/115
Maximum impedance	Zo	(ohm)	53.3
DC resistance	Re	(ohm)	3.4
Voice coil inductance	Le	(mH)	4.3
Capacitor in series with 8 ohm (for impedance compensation)	Cc	( $\mu$ F)	22
Resonance Frequency	fs	(Hz)	18.9
Mechanical Q factor	Qms		2.63
Electrical Q factor	Qes		0.18
Total Q factor	Qts		0.17
F (Ratio fs/Qts)	F	(Hz)	112
Mechanical resistance	Rms	(Kg/s)	
Moving mass	Mms	(g)	135.3
Suspension compliance	Cms	(mm/N)	0.52
Effective cone diameter	D	(cm)	21.2
Effective piston area	Sd	(cm <sup>2</sup> )	352
Equivalent volume	VAS	(ltrs)	89.7
Force factor	Bl	(N/A)	17.5
Reference voltage sensitivity Re 2.83V 1m at 115 Hz (Measured)		(dB)	88.4
Voice coil diameter	d	(mm)	51
Voice coil length	h	(mm)	33
Voice coil layers	n		4
Flux density in gap	B	(T)	1.04
Total useful flux		(mWb)	2.50
Height of the gap	hg	(mm)	8
Diameter of magnet	dm	(mm)	147
Height of magnet	hm	(mm)	35
Weight of magnet		(kg)	2.42
Code	830452		



	Free air	Common	Baffled
8			
4.9/115			
53.3			
3.4			
4.3			
22			
18.9		18.9	
2.63		2.63	
0.18		0.18	
0.17		0.17	
112			
6.12			
135.3		135.4	
0.52			
21.2			
352			
89.7			
17.5			



# XLS



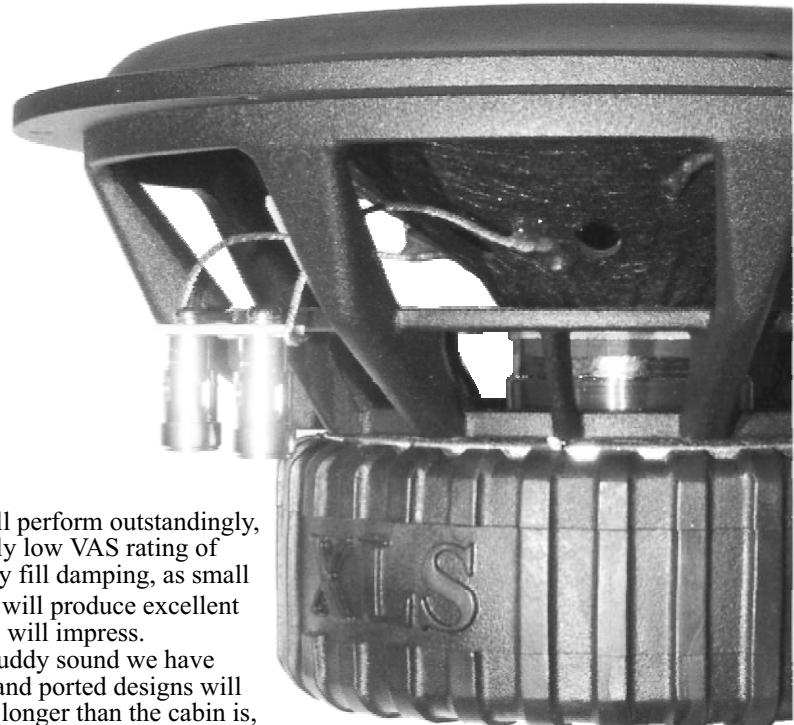
830514

## CAR AUDIO SUBWOOFER 10" XLS 4 ohm

- A. Aluminum Spacer:** The aluminum spacer serves as heat sink for the coil to reduce power compression.
- B. Black Anodized Voice Coil :** The 2-inch 4-layer voice coil is wound on thick black anodized aluminum for improved heat dissipation.
- C. Stacked Magnet System:** The twin stacked magnetic system is optimized by FEA (Finite Element Analysis), to create a symmetric powerful magnetic field in the air gap, and provide space for the 44 mm max excursion of the voice coil.
- D. Distortion Reduced Motor:** A long 4 layer voice coil normally results in high self induction and impedance varying with excursion. Its many ampere turns react on the magnetic field in the air gap. These two main factors causing motor distortion in subwoofers are practically eliminated by the combined impact of the Aluminum Short Circuiting Ring (D) and the Aluminum Spacer (A) on the pole piece. At the same time they both contribute as heat sinks for the voice coil, reducing power compression. The result is unbelievable clean bass reproduction.
- E. Vented Cone:** To eliminate compression under the dust cap the cone is vented by 8 large holes. This way the coil is cooled and there is no need for a bore in the pole piece.
- F. Nomex® Spider:** The spider is made of high tech Nomex® material. This material is chosen for its high rigidity and long term stability. The suspension will stay in shape for a very long time under heavy load.
- G. Rubber Surround:** The surround is made from SBR rubber because of the wide operating temperature, low creep and long term reliability.
- H. Fiber CompositeCone:** The cone is molded from a propriety air dried wood free pulp with a blend of Nomex®, Kevlar® and glass fibers bonded together by deep impregnation with polymers. This creates an ultra stiff and relatively light cone that will stay stable even under very large sound pressures.
- I. Rigid Cast Aluminum Basket:** The rigid cast basket with an aerodynamic profile provides the necessary sturdy base for the magnet structure and suspension and allows for the 44 mm max excursion of the cone. The spider is ventilated to achieve the lowest possible compression and allow air to flow freely to create a cooling effect for the voice coil.



2ft<sup>3</sup> Test box



### CAR AUDIO APPLICATIONS

The 830514 was developed for premium quality audio that will perform outstandingly, no matter how small the enclosure! This is due to the incredibly low VAS rating of only 20L. (*The 830452, 10" 8ohm is 80L!*) A sealed box, with heavy fill damping, as small as  $\frac{1}{2}$ ft<sup>3</sup> including speaker displacement, that's about 10 litres, will produce excellent punchy sound. Ideal for Rock'n'Roll or Electronica type music will impress. Outstanding, clean, rock solid and tight without the boomy, muddy sound we have gotten used to from a previous generation subs. Larger boxes and ported designs will produce lower bass frequencies, however the wavelengths are longer than the cabin is, so you simply wont hear it. Port tuned cabinets can give better performance and more efficiency, however they are more critical to design, and port noise is prenominal unless you taper everything! The best compromise came from a 20L per driver sealed box. You will find the 830514 will give performance you did not think possible from such a small driver in such a small enclosure!

**BEWARE !** The 830514 is rated at 4 ohm, however at resonance the impedance can drop down below 3 ohm. ie. make sure your amp is 2 ohm stable and DO NOT run the 830514s in parallel or BTL (unless you are 1 ohm stable !)

Page 2/2



**Peerless**



Speakers Of  
Cutting Edge Technology