

**850490**

**8" HDS CAST ALLOY BASKET**

**HDS 205 - 205 WR 33 102 SD 4L AL 8 ohm**

A High End woofer with rigid aerodynamic cast aluminium basket profile and ventilated spider. The basket provides the necessary sturdy base for the magnet structure and suspension and allows for long excursion of the cone. The spider is ventilated to achieve the lowest possible compression and to allow air to flow freely to create a cooling effect for the voice coil. The design of the basket front allows for very slim box designs and the edges are cambered to re-duce the necessary amount of counter sinking. The three or five layer sandwich cone improves accuracy and consistency of sound reproduction over the entire frequency range, creating a more "musical" driver. Other features are powerful bass response, high sensitivity, gold plated terminals and very low harmonic and difference tone distortion. This woofer is applicable on a wide range of applications, and has large flexibility in terms of chassis colour and cone material.

*Peerless Recommend:* "F(ratio) for this driver is 102, and the driver is very suitable for vented boxes.

35 ltr box. 1 port. Diameter 70 mm. Length 75 mm. Tuning freq 50 Hz. Response, - 3 dB app. at 50 Hz.

55 ltr box. 1 port. Diameter 70 mm. Length 50 mm. Tuning freq 45 Hz. Response, - 3 dB app. at 45 Hz.

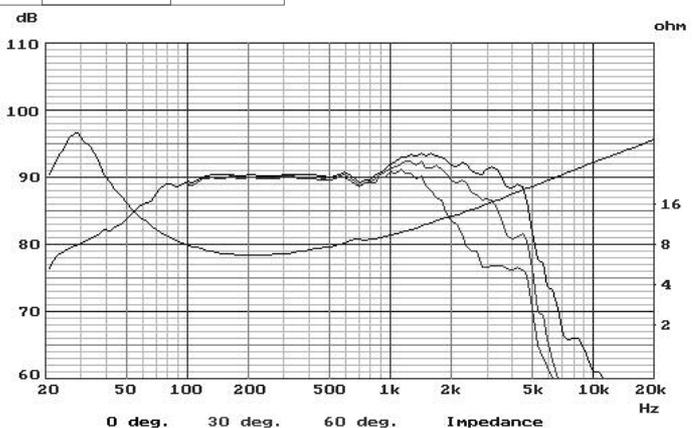
70 ltr box. 1 port. Diameter 70 mm. Length 50 mm. Tuning freq 40 Hz. Response, - 3 dB app. at 40 Hz.

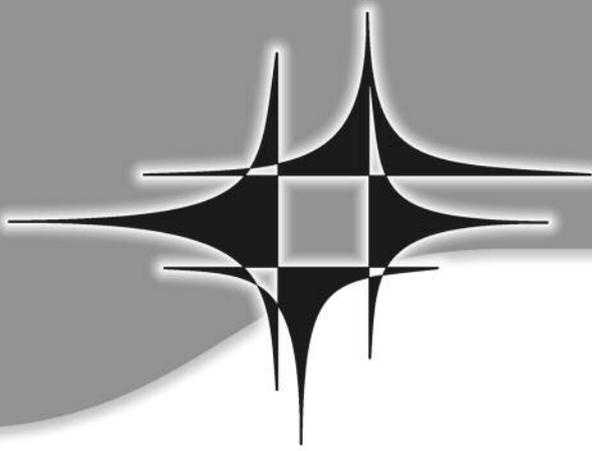
Cross-over freq from 1500-3000 Hz is recommendable for this model."

**Thiele Small parameters:**

Nominal impedance	Zn	(ohm)	
Minimum impedance/at freq.	Zmin	(ohm/Hz)	
Maximum impedance	Zo	(ohm)	
DC resistance	Re	(ohm)	
Voice coil inductance	Le	(mH)	
Capacitor in series with 8 ohm (for impedance compensation)	Cc	(µF)	
Resonance Frequency	fs	(Hz)	30.1
Mechanical Q factor	Qms		3.02
Electrical Q factor	Qes		0.30
Total Q factor	Qts		0.28
F (Ratio fs/Qts)	F	(Hz)	
Mechanical resistance	Rms	(Kg/s)	1.74
Moving mass	Mms	(g)	27.8
Suspension compliance	Cms	(mm/N)	1.01
Effective cone diameter	D	(cm)	17.3
Effective piston area	Sd	(cm <sup>2</sup> )	235
Equivalent volume	VAS	(ltrs)	76.7
Force factor	Bl	(N/A)	9.9
Reference voltage sensitivity	Re 2.83V 1m at 224 Hz (Measured)	(dB)	91.2
Voice coil diameter	d	(mm)	33
Voice coil length	h	(mm)	17
Voice coil layers	n		2
Flux density in gap	B	(T)	1.01
Total useful flux		(mWb)	0.99
Height of the gap	hg	(mm)	6
Diameter of magnet	dm	(mm)	102
Height of magnet	hm	(mm)	20
Weight of magnet		(kg)	0.68
Code			850490

	Free air	Common	Baffled
Nominal impedance		8	
Minimum impedance/at freq.		6.5/224	
Maximum impedance		62.2	
DC resistance		5.7	
Voice coil inductance		1.8	
Capacitor in series with 8 ohm (for impedance compensation)		12	
Resonance Frequency	30.1		29.1
Mechanical Q factor	3.02		3.13
Electrical Q factor	0.30		0.31
Total Q factor	0.28		0.29
F (Ratio fs/Qts)			102
Mechanical resistance		1.74	
Moving mass	27.8		29.8
Suspension compliance		1.01	
Effective cone diameter		17.3	
Effective piston area		235	
Equivalent volume		76.7	
Force factor		9.9	





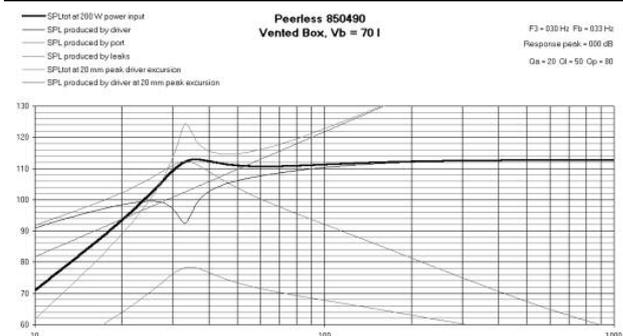
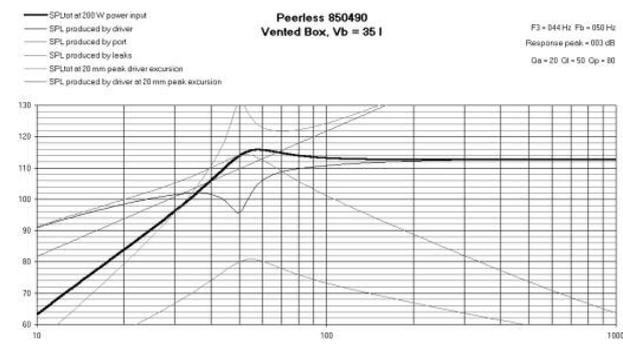
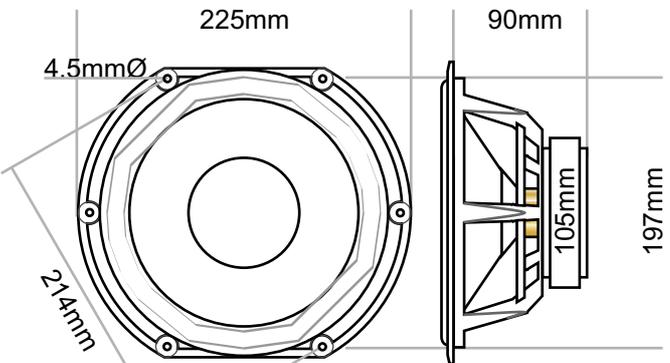
# 850490 8" HDS-205 CAST ALLOY BASKET

By introducing the High Definition Sound (HDS) class, Peerless have pushed the performance limits of midbass drive units to a new level. The main applications for the HDS range are demanding two and three way box systems where the visual and sonic performance must be second to none. The design emphasis has been to achieve long time reliability and very low distortion combined with soft clipping and astounding bass performance for the size.

The 1.25-inch voice coil is long in a narrow gap to ensure sustained BL over long excursions. The 20mm Magnet System is at least 5mm higher than the normal magnets used in conventional speakers to accommodate the long, 4 layer voice coil. The progressive suspension is designed to achieve soft clipping and low distortion even under extreme load. The surround is made from SBR rubber because of the wide operating temperature, low creep and long term reliability. The cone is constructed from a propriety cone material using a laminate of different polypropylene films and adhesives. This creates a stiff but still dampened cone that will remain stable even under very large sound pressures. The attractive rigid cast basket with an aerodynamic profile provides the necessary sturdy base for the magnet structure and suspension and allows for the long excursion of the cone. The spider is ventilated to achieve the lowest possible compression and allowing air to flow freely to create a cooling effect for the voice coil. The design of the basket front allows for very slim box designs and the edges are chamfered to reduce the necessary amount of countersinking.

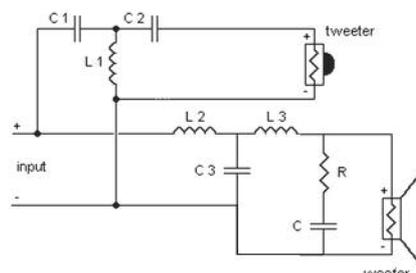
Below are some theoretical projections of how well this driver will perform in a ported box design. Useable bass of below 30Hz is quite achievable and as low as 25 to 20Hz with a bit of port tuning. Peerless have suggested box volumes of between 35 and 70 liters for this model, the larger the box, the deeper the bass.

The tweeter crossover should be kept between 1500 and 3000Hz. If designing a three way system then the crossover depends on the midrange driver. A power rating is not given for this driver because you will exceed the drivers maximum physical parameters before its electrical. The graphs show 200W as this is the maximum excursion for this driver to produce this SPL in this fictitious box. If the driver "bottoms out" prematurely (voice coil hitting the magnet), try changing the tuning port length or even the box size (and therefore the box tuning frequency).



Below are some theoretical calculations for crossover design. Peerless always recommend 12 dB per octave crossovers for all there drivers because it affords excellent protection for each driver with minimal phase problems. The design below also accommodates Bi-wiring/Amping. However they stress that this by no means is the best solution for all circumstances. So please use this as a suggestion only. 3 way designs with the 821615 midrange are also worthy of your consideration. Multiple driver designs will produce more bass and SPL.

2500Hz - 3rd order Butterworth calculated with rated impedance (used 811827 tweeter) including conjugate. Values can be rounded +/- 10%. Use of multiple capacitors to achieve these odd values is fine.



- C1 = 8.11uF
- C2 = 24.35uF
- C3 = 14.36uF
- L1 = 0.25mH
- L2 = 0.56mH
- L3 = 0.19mH
- R = 7.4ohm
- C = 47.8uF