



The CSS EL70 can be used in a large number of different cabinets which employ different acoustic loading. This document covers some sample ported or bass reflex configurations in several different size cabinets. The PE pre-finished cabinets are used for some because they are readily available. The volume and ports can be applied to any design.

The modelling was done by Mike Paulton, a Shack Administrator on Home Theater Shack (www.hometheatershack.com), using WinISD (www.linearteam.dk). Two basic configurations were simulated; 1) For typical home theatre use an assumption of a 4th order (24dB per octave) 80 Hz was applied as this increases power handling with a subwoofer handling the frequencies from 80 Hz and lower. 2) A standard full range configuration such as in stereo music listening which presents a wider range at the bottom frequencies at the expense of certain levels of bass depth and SPL.

For the 2 driver models the following were considerations. 1) Running 2 4 ohm drivers in series presents an 8 ohm load to the driving amplifier and some users will prefer this. 2) The larger cabinet size illustrates the good bass response available from a pair.

In all cases rear porting would be an option but with the pre-finished cabinets all the cutting would be on one surface. CSS has a series of kits which include drivers, wire, connectors, binding posts and ports.

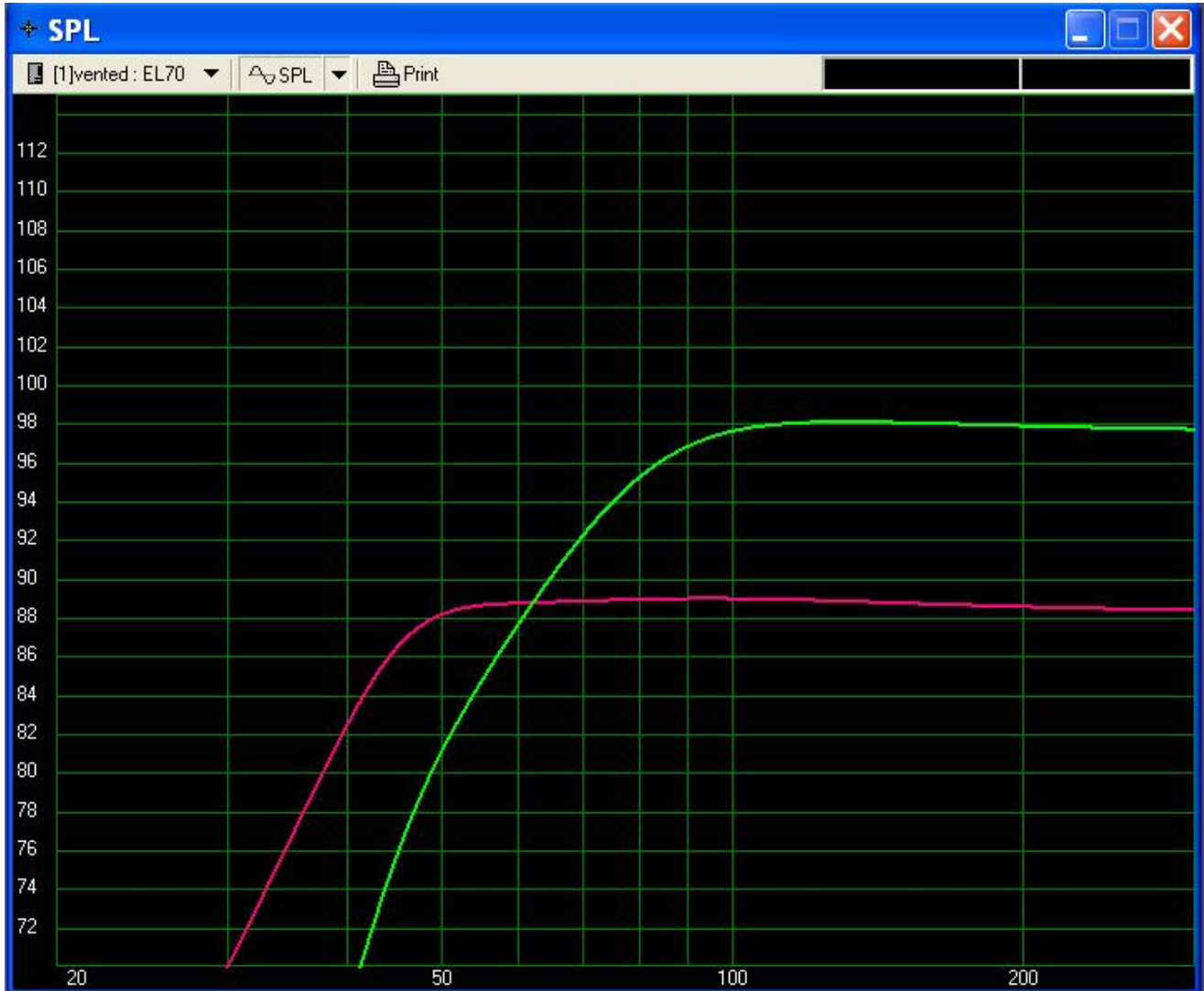
For a tight fit here is an example of a cut out for the EL70 for flush mounting which is recommended.



Single EL70 in .494 cu ft (14 litres) e.g. PE Cabinets

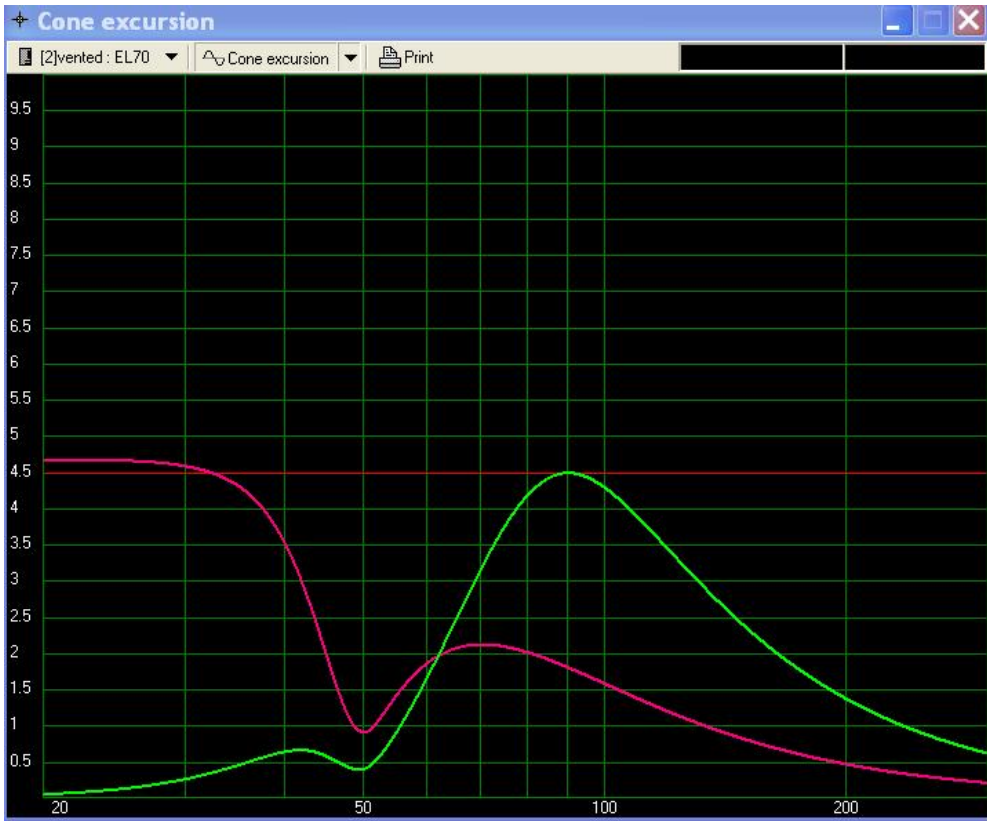
Pink - 1.75 watts input power, x_{max} slightly above 30 Hz, maximum air speed 8.7 m/s at 45 Hz, one 1.75" diameter port 4" long, tuned to 50 Hz.

Green - 15 watts input power, 4th order 80 Hz crossover applied, x_{max} reached at 90 Hz, maximum air speed is 4.5 m/s at 70 Hz, one 1.75" diameter port 4" long, tuned to 50 Hz.

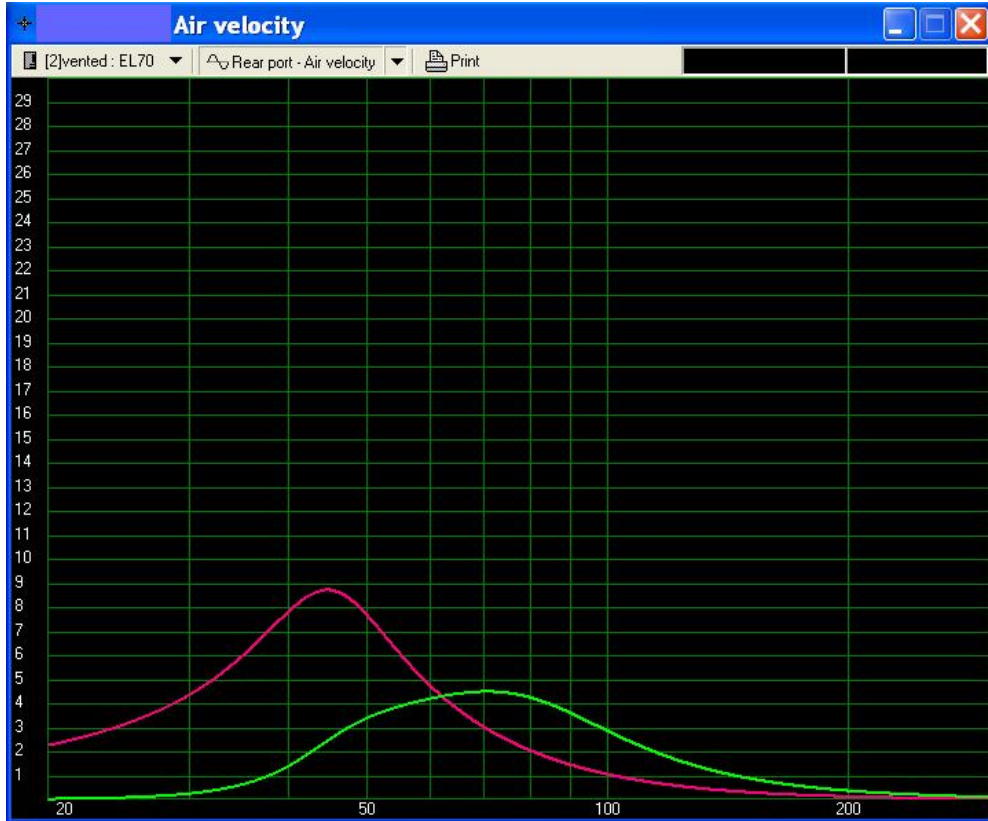


Simulated response in .494 cu ft for 1 EL70

You can order part number EL70KITP1 from CSS which includes 2 EL70 drivers with gaskets and mounting screws, 2 1.75" ports, 2 sets of binding posts, 16 ga. hook up wire and connectors.



Cone excursion in .494 cu ft for 1 EL70

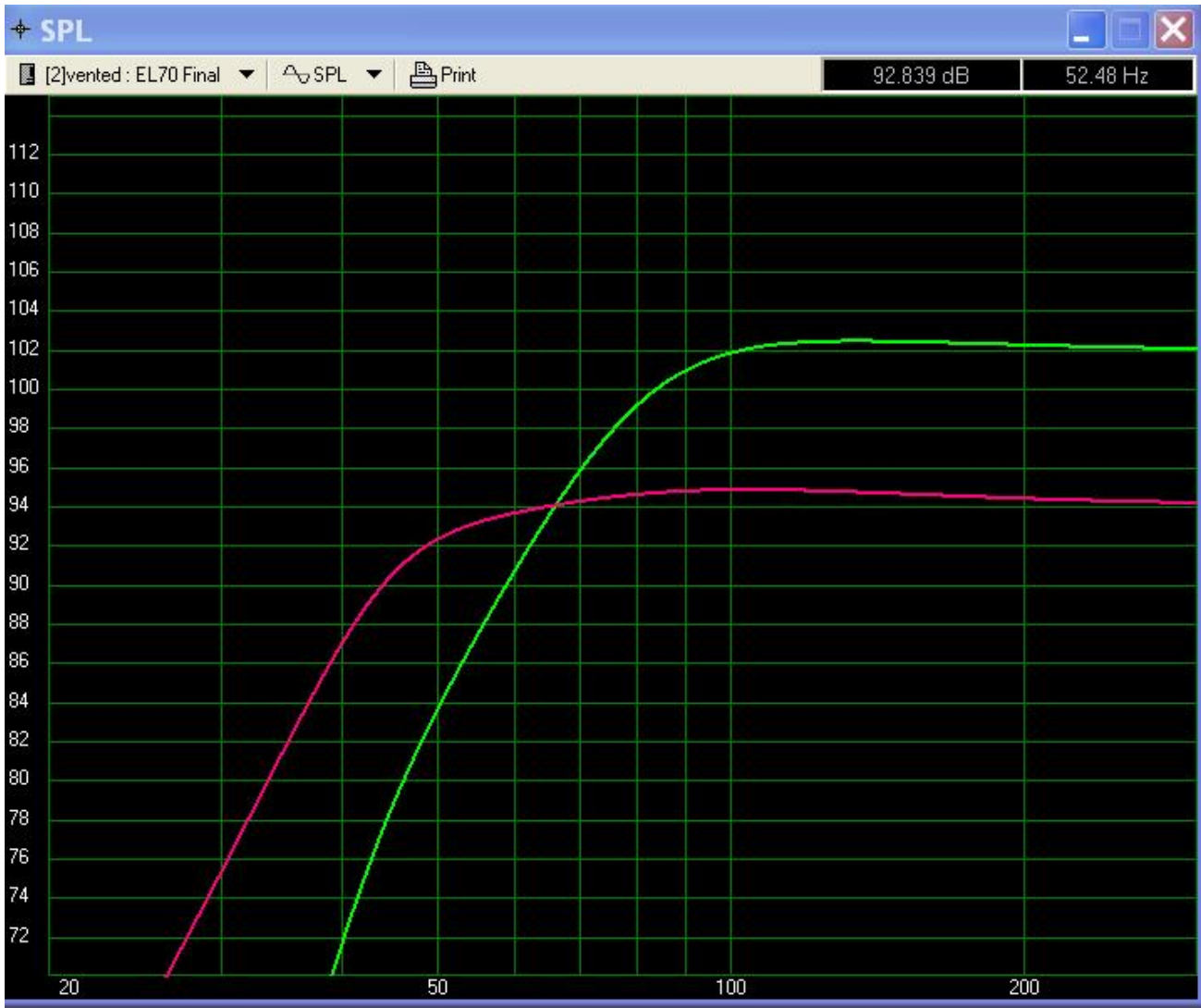


Port Air speed 1 EL70 in .494 cu ft

Dual EL70 in .75 cu ft (21 litres) e.g. PE Cabinets

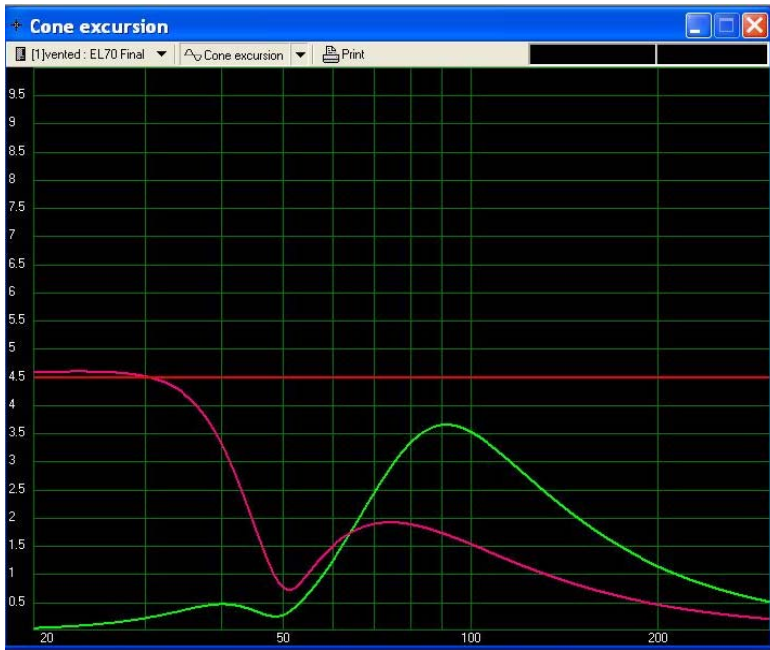
Pink - 2x EL70's wired for 8 ohms, modeled in .763 cu ft, 6.5 watts input power, xmax reached at 30 Hz, maximum air speed is 14.5 m/s at 44 Hz, one 1.75" diameter port 2" long, tuning is 51 Hz.

Green - 2x EL70's wired for 8 ohms, modeled in .763 cu ft, 80 Hz 4th order crossover applied, 40 watts input power, xmax not reached, maximum air speed is 6.6 m/s at 75 Hz, one 1.75" diameter port 2.25" long, tuning is 49 Hz.

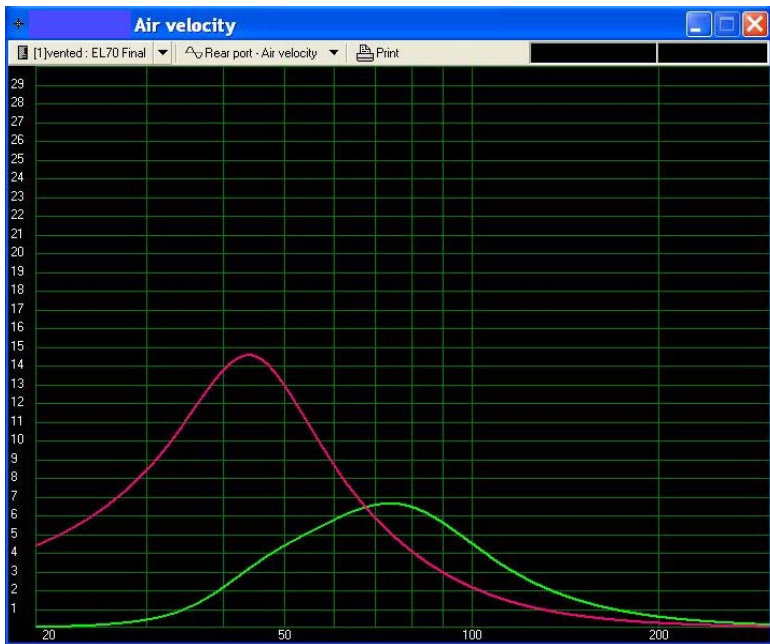


Simulated response in .763 cu ft for 2 EL70

You can order part number EL70KITP2 from CSS which includes 4 EL70 drivers with gaskets and mounting screws, 2 1.75" ports, 2 sets of binding posts, 16 ga. hook up wire and connectors.



Cone excursion in .763 cu ft for 2 EL70



Port Air speed in .763 cu ft for 2 EL70

If you are planning on running a pair of EL70s full range there is a slight increase in bottom output if you go to a 1 cu ft (28 litre) cabinet. The port would be tuned a little differently and should be shortened to 1.5”.