

## Recommended Cabinets for selected CDT Audio drivers in the home environment

Selected Models covered:

ES-400

ES-500

ES-600

ES-04

ES-07

HD-4

HD-5

HD-6

### Definitions:

V<sub>b</sub> = Box volume exclusive of vent (if any) and driver volumes

F<sub>b</sub> = box tuning frequency

D<sub>v</sub> = vent internal diameter

L<sub>v</sub> = vent length

F<sub>3</sub> = frequency where response is 3 db down

F<sub>6</sub> = frequency where response is 6 db down

### Modification of port diameters:

Port diameters given are close to the smallest recommended value.

If a port diameter were to be increased from 3 to 4 the port length would be increased by the square of the diameter ratio.

Correcting port diameters to convenient values:

$$L_{v\text{new}} = L_v / ((D_v / D_{v\text{new}}) * (D_v / D_{v\text{new}}))$$

If the port was 15 units long then:

$$\text{New vent length } (L_{v\text{new}}) \text{ is } 15 / ((3/4) * (3/4)) = 26.66 \text{ units}$$

CDT ES-400

Smaller Vented Box:

$V_b = 4.3L$   
 $F_b = 72.7 \text{ Hz}$   
 $D_v = 0.035m$   
 $L_v = 0.099m$   
 $F_3 = 70 \text{ Hz}$   
 $F_6 = 61 \text{ Hz}$

Larger Vented Box:

$V_b = 7.6L$   
 $F_b = 49.3 \text{ Hz}$   
 $D_v = 0.035m$   
 $L_v = 0.128m$   
 $F_3 = 97.5 \text{ Hz}$   
 $F_6 = 44.5 \text{ Hz}$

Sealed Box:

$V_b = 2.0 L$   
 $Q_{tc} = 0.71$   
 $F_3 = 127 \text{ Hz}$   
 $F_6 = 97.5 \text{ Hz}$

CDT ES-500

Smaller Vented Box:

$V_b = 4L$   
 $F_b = 77.2 \text{ Hz}$   
 $D_v = 0.035m$   
 $L_v = 0.093m$   
 $F_3 = 86 \text{ Hz}$   
 $F_6 = 73.4 \text{ Hz}$

Larger Vented Box:

$V_b = 9.6L$   
 $F_b = 55.3 \text{ Hz}$   
 $D_v = 0.035m$   
 $L_v = 0.071m$   
 $F_3 = 64.3 \text{ Hz}$   
 $F_6 = 51 \text{ Hz}$

Sealed Box:

$V_b = 2.3L$   
 $Q_{tc} = 0.71$   
 $F_3 = 134 \text{ Hz}$   
 $F_6 = 102 \text{ Hz}$

CDT ES-600

Smaller Vented Box:

$V_b = 23L$   
 $F_b = 56.6 \text{ Hz}$   
 $D_v = 0.082m$   
 $L_v = 0.127m$   
 $F_3 = 52 \text{ Hz}$   
 $F_6 = 47 \text{ Hz}$

Larger Vented Box:

$V_b = 30L$   
 $F_b = 45 \text{ Hz}$   
 $D_v = 0.082m$   
 $L_v = 0.196m$   
 $F_3 = 50 \text{ Hz}$   
 $F_6 = 39 \text{ Hz}$

Sealed Box:

$V_b = 10.9L$   
 $Q_{tc} = 0.71$   
 $F_3 = 100 \text{ Hz}$   
 $F_6 = 77 \text{ Hz}$

CDT ES-04

Smaller Vented Box:

$V_b = 2.0L$   
 $F_b = 81.9 \text{ Hz}$   
 $D_v = 0.035m$   
 $L_v = 0.186m$   
 $F_3 = 96.7 \text{ Hz}$   
 $F_6 = 81.8 \text{ Hz}$

Larger Vented Box:

$V_b = 5.5L$   
 $F_b = 60.5 \text{ Hz}$   
 $D_v = 0.035m$   
 $L_v = 0.115m$   
 $F_3 = 64 \text{ Hz}$   
 $F_6 = 55.5 \text{ Hz}$

Sealed Box:

$V_b = 1.3L$   
 $Q_{tc} = 0.71$   
 $F_3 = 142 \text{ Hz}$   
 $F_6 = 108 \text{ Hz}$

CDT ES-07

Smaller Vented Box:

$V_b = 10.2L$   
 $F_b = 62.2 \text{ Hz}$   
 $D_v = 0.050m$   
 $L_v = 0.110m$   
 $F_3 = 65.5 \text{ Hz}$   
 $F_6 = 56.7 \text{ Hz}$

Larger Vented Box:

$V_b = 24.3L$   
 $F_b = 45.3 \text{ Hz}$   
 $D_v = 0.050m$   
 $L_v = 0.079m$   
 $F_3 = 46.3 \text{ Hz}$   
 $F_6 = 40.3 \text{ Hz}$

Sealed Box:

$V_b = 5.4L$   
 $Q_{tc} = 0.71$   
 $F_3 = 108.7 \text{ Hz}$   
 $F_6 = 82.5 \text{ Hz}$

CDT HD -4

Vented Box:

$V_b = 3.1L$   
 $F_b = 88.3 \text{ Hz}$   
 $D_v = 0.03m$   
 $L_v = 0.064m$   
 $F_3 = 86 \text{ Hz}$   
 $F_6 = 76 \text{ Hz}$

Larger Vented Box:

$V_b = 7.1L$   
 $F_b = 64.4 \text{ Hz}$   
 $D_v = 0.035m$   
 $L_v = 0.0755m$   
 $F_3 = 61.4 \text{ Hz}$   
 $F_6 = 55.5 \text{ Hz}$

Sealed Box:

$V_b = 1.5$   
 $Q_{tc} = 0.71$   
 $F_3 = 150 \text{ Hz}$   
 $F_6 = 120 \text{ Hz}$

CDT HD -5

Vented Box:

$V_b = 3.4L$   
 $F_b = 91.4 \text{ Hz}$   
 $D_v = 0.035m$   
 $L_v = 0.074m$   
 $F_3 = 93.5 \text{ Hz}$   
 $F_6 = 81.2 \text{ Hz}$

Larger Vented Box:

$V_b = 6.4L$   
 $F_b = 70 \text{ Hz}$   
 $D_v = 0.050m$   
 $L_v = 0.1476m$   
 $F_3 = 72.3 \text{ Hz}$   
 $F_6 = 62.2 \text{ Hz}$

Sealed Box:

$V_b = 1.7$   
 $Q_{tc} = 0.71$   
 $F_3 = 159.5 \text{ Hz}$   
 $F_6 = 122.2 \text{ Hz}$

CDT HD-6

Smaller Vented Box:

$V_b = 18.2L$   
 $F_b = 68.6 \text{ Hz}$   
 $D_v = 0.068m$   
 $L_v = 0.075m$   
 $F_3 = 62 \text{ Hz}$   
 $F_6 = 57 \text{ Hz}$

Larger Vented Box:

$V_b = 28.9L$   
 $F_b = 49 \text{ Hz}$   
 $D_v = 0.068m$   
 $L_v = 0.102m$   
 $F_3 = 82 \text{ Hz}$   
 $F_6 = 43 \text{ Hz}$

Sealed Box:

$V_b = 8.7 L$   
 $Q_{tc} = 0.71$   
 $F_3 = 120 \text{ Hz}$   
 $F_6 = 91 \text{ Hz}$