

Loudspeaker Test Report

Manufacturer: Penton (UK) Ltd

Type: Recessed cabinet

Model: Sentry6TBBC

For: Penton (UK) Ltd

Report No.: 1749/LS/Sentry6TBBC

Prepared By: A. N. Stacey B.Sc., AMIOA(E), MInstSCE

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1.00 Object

1.01 The object of this Report is to present measurements of the acoustic performance of the Sentry6TBBC device.

2.00 Scope

2.01 The following characteristics were measured

- On-axis (reference axis) frequency response
- Polar response
- Impedance
- Applied voltage
- On-axis 3rd octave band sound pressure level

from which the following are calculated:

- (i) Directivity Index [dB], tabulated and graphical
- (ii) Directivity factor, Q
- (iii) Effective octave and wide band (100Hz to 10kHz) impedance
- (iv) Octave band Sensitivity [dB @ 1m, 1W/oct]
- (v) Wide band Sensitivity: dBA @ 1m, 1W
 dBlin @ 1m, 1W
 250Hz-4kHz @ 1m, 1W
 Speech shape @ 1m, 1W
- (vi) Acoustic Power [dB-PWL @ 1W], tabulated and graphical
- (vii) Octave band Power Apportionment [%]
- (viii) Impedance bode plot
- (ix) Expected maximum Sound pressure level [dB @ 1m]
(assuming no compression)
- (x) Frequency response chart
- (xi) Polar response charts.

3.00 Method

- 3.01 The device was mounted in Free Space as shown in figure 1 - Mounting Method A.
- 3.02 The measurements were made in an anechoic chamber.
- 3.03 Measurements were made as detailed in AMS Test Method document No. IR/1a/LS/Meth.
- 3.04 All measurements were made in general accordance with BS EN 60268: Part 5: 2003.

4.00 Results

- 4.01 The On-axis 3rd octave frequency response of the device is shown graphically.
- 4.02 The Impedance bode plot of the device is shown graphically.
- 4.03 Polar plots of the device are shown graphically.
- 4.04 Tabulated values of Directivity index, Directivity factor, Sensitivity, Acoustic Power, Power Apportionment, Impedance and Maximum SPL are shown in the Summary data sheet.
- 4.05 The Directivity Index has been calculated using Gerzon' equal angle, weighted area method.

5.00 Notes

5.01 Sensitivity

The octave band sensitivity is produced in its useful form for calculations. It should be noted that the octave band sensitivity is given as dB @ 1m, 1W/Oct. To determine the output when only the overall power is known, then only the overall dBA or dBlin values should be used. For more detailed information, refer to AMS Acoustics Data Sheet 'Loudspeaker Sensitivity – Interpretation of Results'.

5.02 Polar Plots

For convenience, each polar plot has been normalized to 0dB. For this reason, caution is advised when comparison of levels between octave bands are made. The reference axis frequency response should be used for comparison purposes.



6.00 Engineers Notes & Observations

Reference point located concentric to driver and at grille.

Reference axis located normal to grille and includes the reference point.

Measured as a recessed mounted loudspeaker (open to infinite volume).



Loudspeaker Information

Manufacturer : Penton (UK) Ltd
Model Code : Sentry6TBBC
Type : Recessed cabinet
Colour : White
Serial No. : None
Batch No. : None
Other Markings : -
Backbox : As supplied
Grille : As supplied
Weight (grammes) : 1440
Depth (mm) : 71 mm
Width (mm) : 184 mm
Height (mm) : 184 mm
Special Features : Special back box

Internal Details

Driver Types/Sizes : 1 x cone driver
Driver Serial No.(s) : 56443
Driver Markings : Penton tapping label
Damping Material : None
Available Tappings : 6W, 3W, 1.5W, 0.75W, 0.25W (100V)

Electrical Details

Resonant Frequency(s) : See impedance plot
Cross-Over Frequency(s) : NA
Nominal Impedance (ohms): 8
Inductance : NM
Capacitance : NM

NM = Not Measured, NA = Not Applicable

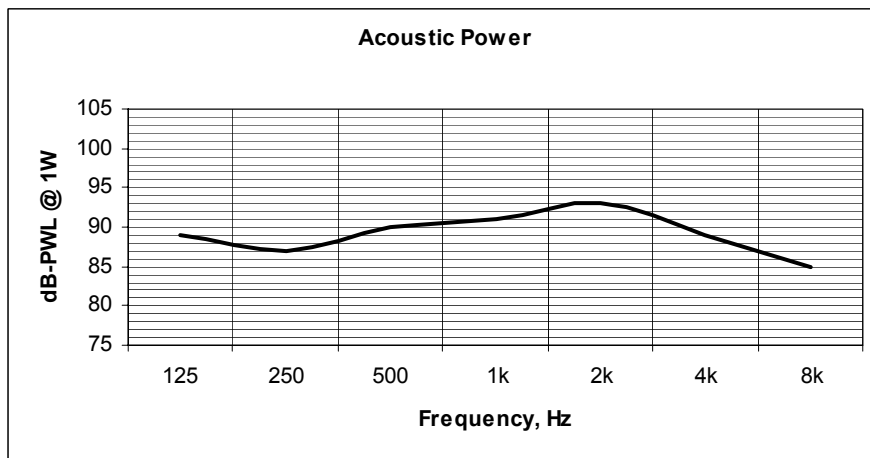
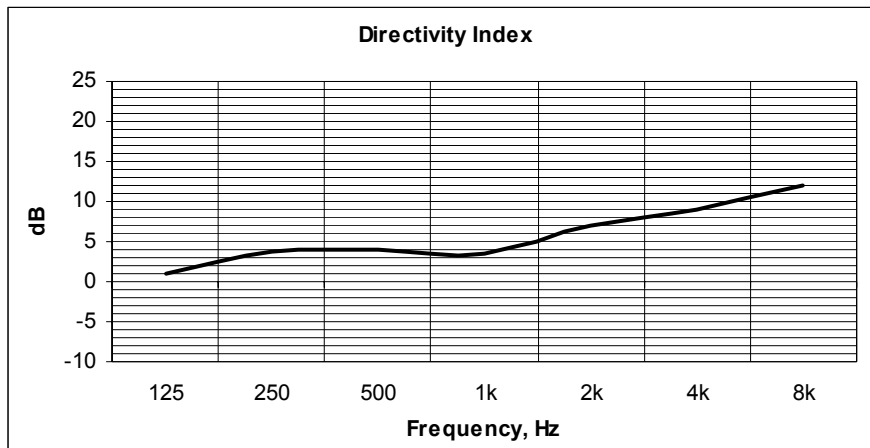


Manufacturer : Penton (UK) Ltd
 Model Code : Sentry6TBBC
 Mounting : HalfSphere
 Transformer Tapping : 6W
 Effective Impedance : 1723 ohms
 Measurement Distance : 1.2m

Reference Axis Located at : 0 degrees

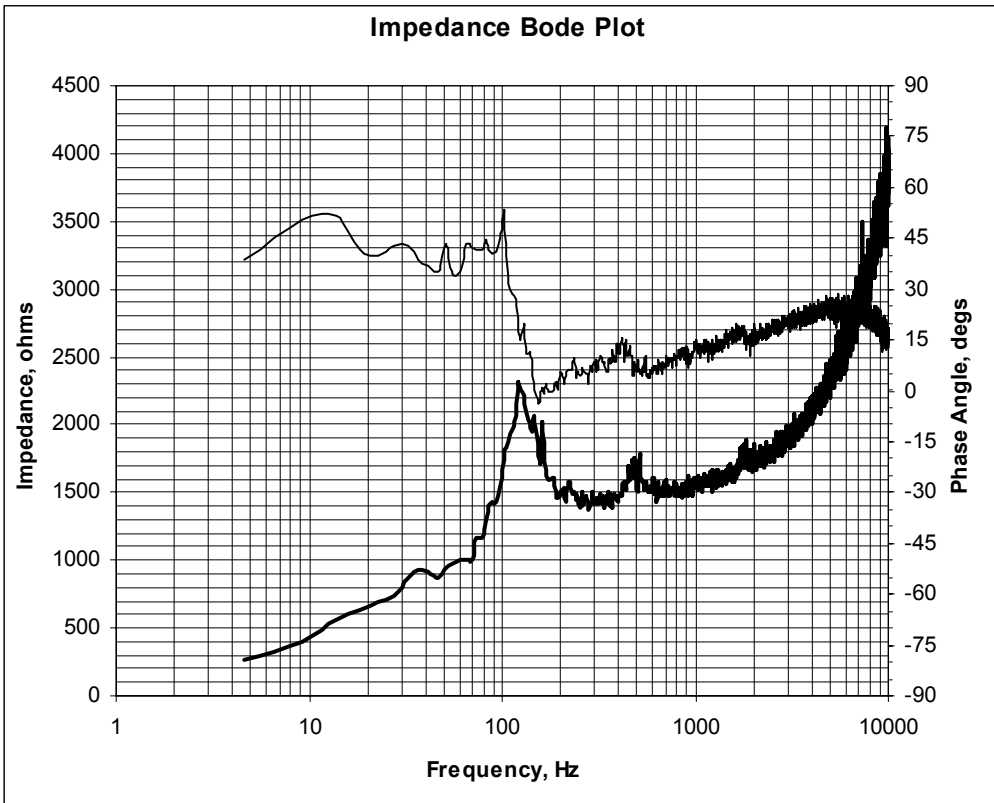
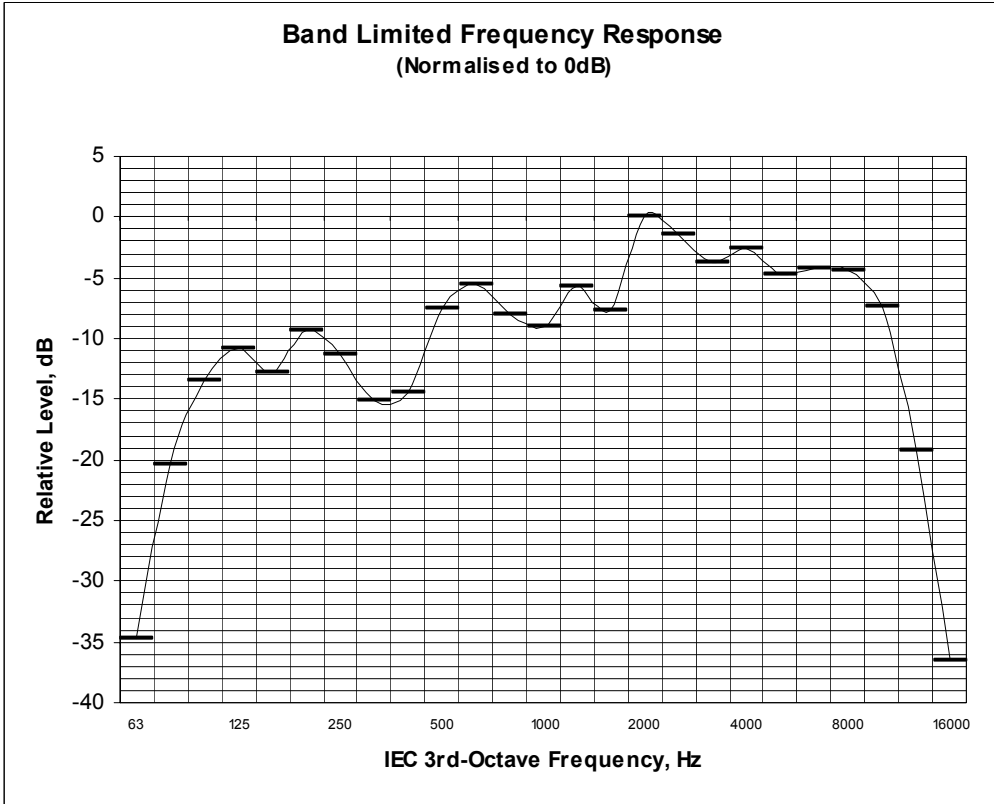
| Parameter | Frequency (Hz) | | | | | | | dB | dBA |
|--------------------------------------|----------------|------|------|------|------|------|------|-----|-----|
| | 125 | 250 | 500 | 1k | 2k | 4k | 8k | | |
| Axial Q | 1.3 | 2.4 | 2.5 | 2.3 | 4.9 | 7.7 | 16.1 | | |
| Directivity Index (dB on Axis) | 1.1 | 3.8 | 4.0 | 3.6 | 6.9 | 8.9 | 12.1 | | |
| Sensitivity (dB @ 1m, 1W/Oct) | 87 | 88 | 91 | 92 | 97 | 96 | 96 | 94 | 94 |
| Sensitivity(dB @ 1m, 1W)250Hz-4kHz | | | | | | | | 94 | 95 |
| Sensitivity(dB @ 1m, 1W)Speech Shape | | | | | | | | 90 | 87 |
| Acoustic Power (dB-PWL @ 1W) | 89 | 87 | 90 | 91 | 93 | 89 | 85 | | |
| Apportioned Power (%) | 14 | 15 | 15 | 16 | 14 | 13 | 9 | | |
| Effective Impedance (Ohms) | 1614 | 1471 | 1516 | 1521 | 1663 | 1957 | 2878 | | |
| Expected maximum SPL (dB @ 1m) | 87 | 87 | 91 | 91 | 97 | 95 | 94 | 101 | 102 |

Test Signal: Pink noise(100Hz-10kHz, 3rd octave bands)

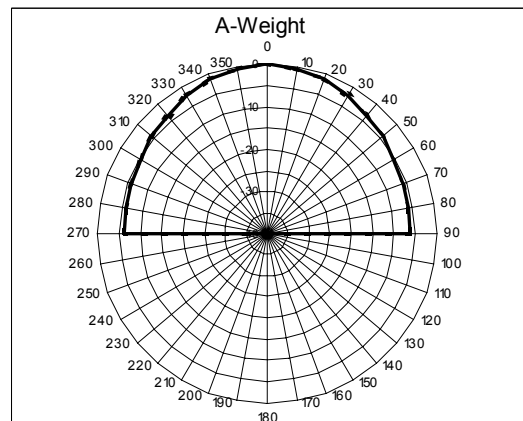
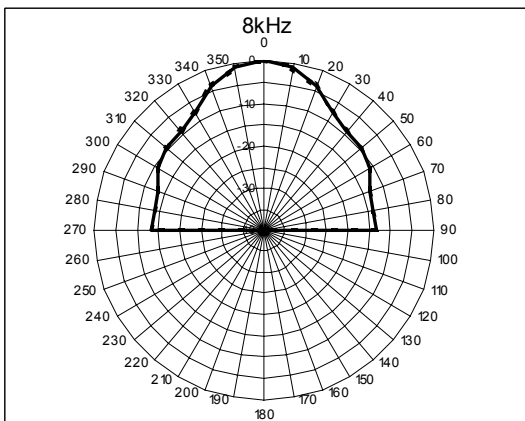
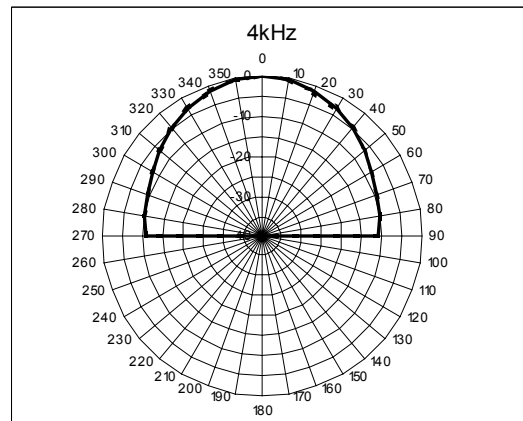
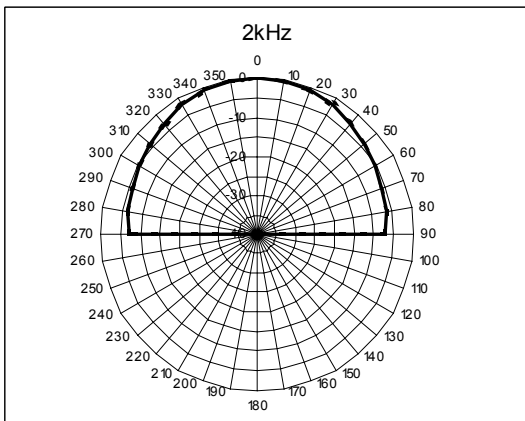
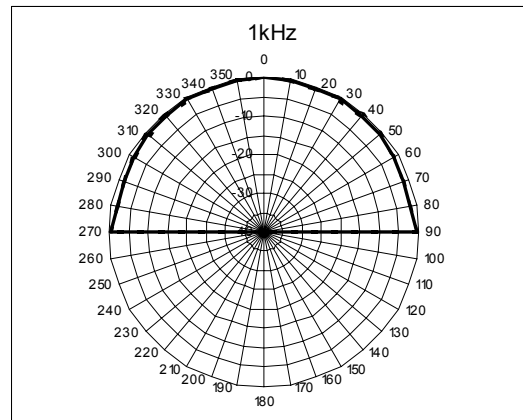
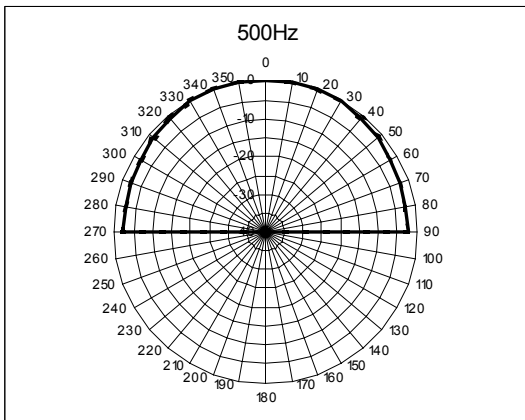
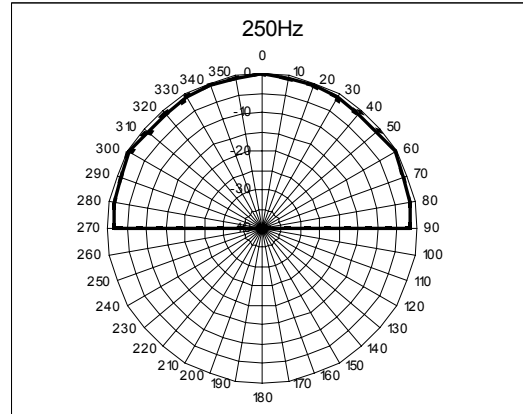
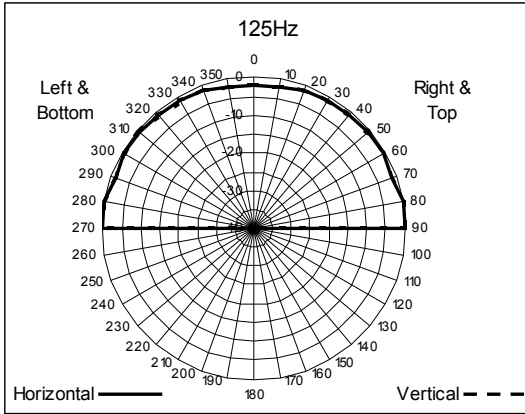




Sentry6TBBC

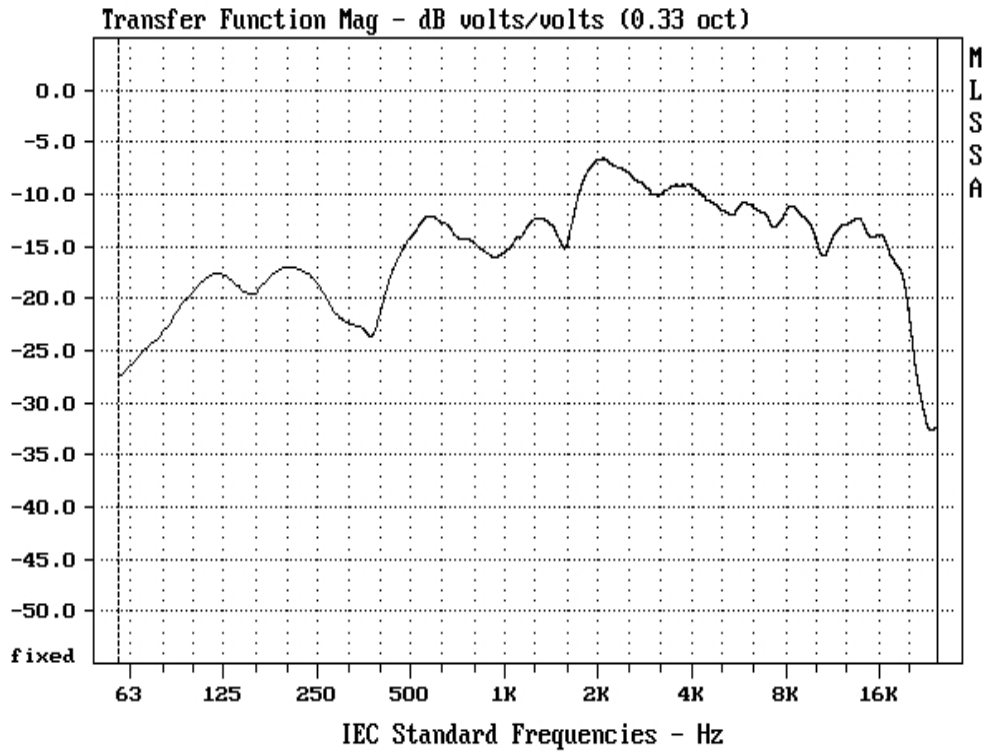


Sentry6TBBC

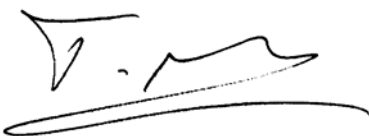


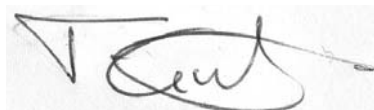
Sentry6TBBC

Wide Band Frequency Response

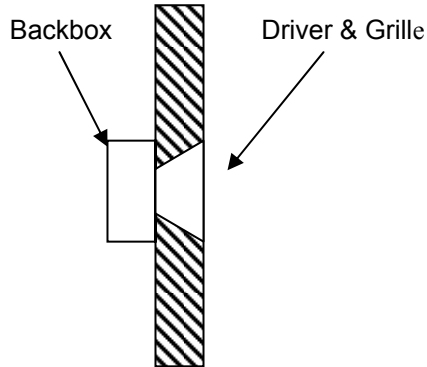


Note: The wide band frequency response is derived using MLS methods and does not necessarily relate to the sensitivity values given in the summary table.

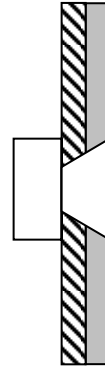
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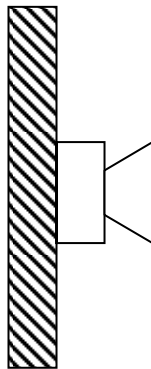
Loudspeaker Mounting Methods



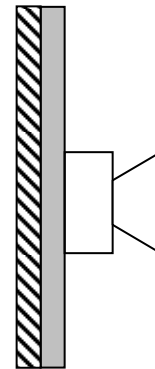
Mounting Method A
Loudspeaker Mounted
in a Reflective Baffle



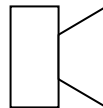
Mounting Method B
Loudspeaker Mounted
in an Absorbent Baffle



Mounting Method C
Loudspeaker Mounted
on a Reflective Baffle



Mounting Method B
Loudspeaker Mounted
on an Absorbent Baffle



Mounting Method E
Loudspeaker not Attached to any
Surface and Radiation Unaffected
by nearby Reflecting Surfaces