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Loudspeaker Test Report

Manufacturer: Penton (UK) Ltd

Type: Projector

Model: CELL20T

For: Penton (UK) Ltd

Report No.: 1823/LS/CELL20T

Prepared By: T. Gully B.A., AMIOA(D)

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1.00 Object

- 1.01 The object of this Report is to present measurements of the acoustic performance of the CELL20T 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 E.
- 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 at geometric centre of enclosure.

Reference plane located parallel to driver and includes reference point.

Loudspeaker Information

Manufacturer : Penton (UK) Ltd
Model Code : CELL20T
Type : Projector
Colour : White
Serial No. : None
Batch No. : None
Other Markings : Penton label
Backbox : As Supplied
Grille : As Supplied
Weight (grams) : 2200
Depth (mm) : 198 mm
Width (mm) : 138 mm
Height (mm) : 138 mm
Special Features : -

Internal Details

Driver Types/Sizes : 1 x 133mm driver
Driver Serial No.(s) : NM
Driver Markings : NM
Damping Material : NM
Available Tappings : 20W, 10W, 5W, 2.5W (100V)

Electrical Details

Resonant Frequency(s) : See Impedance Plot
Cross-Over Frequency(s) : N/A
Nominal Impedance (ohms) : 8
Inductance : NM
Capacitance : NM

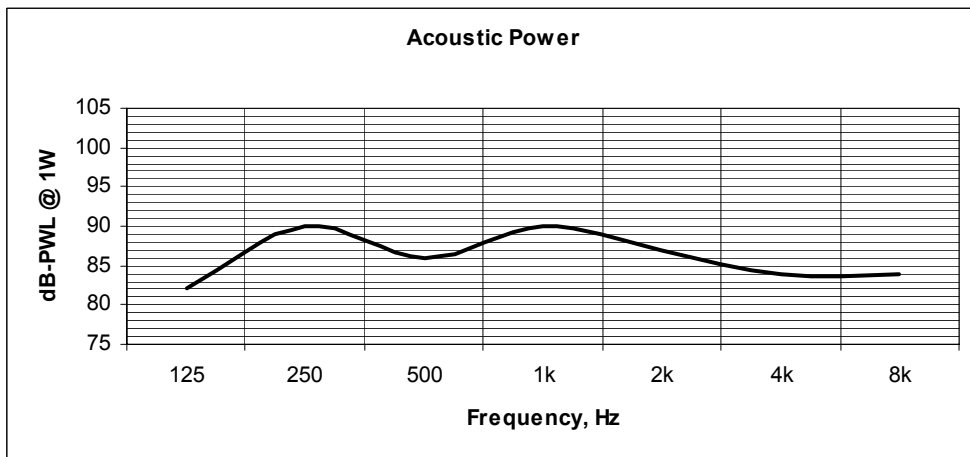
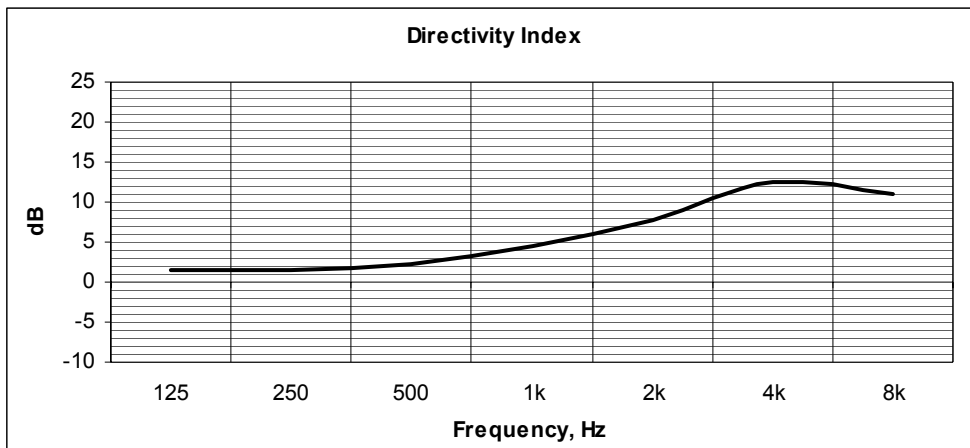
NM = Not Measured, NA = Not Applicable

Manufacturer : Penton (UK) Ltd
 Model Code : CELL20T
 Mounting : FullSphere
 Transformer Tapping : 20W
 Effective Impedance : 549
 Measurement Distance : 2m

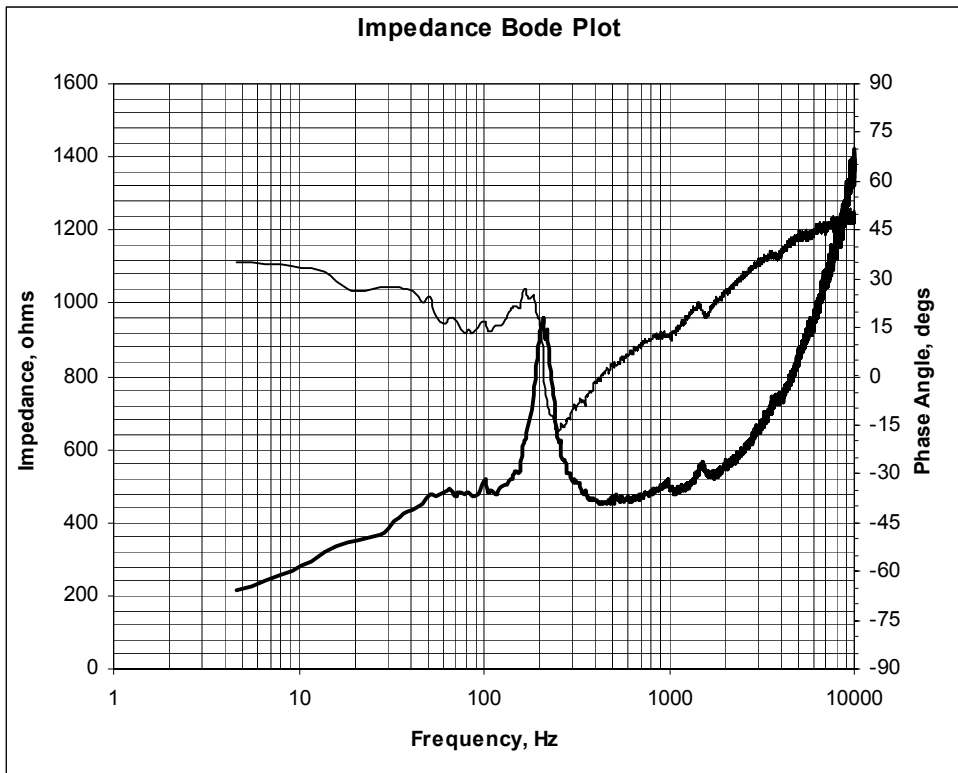
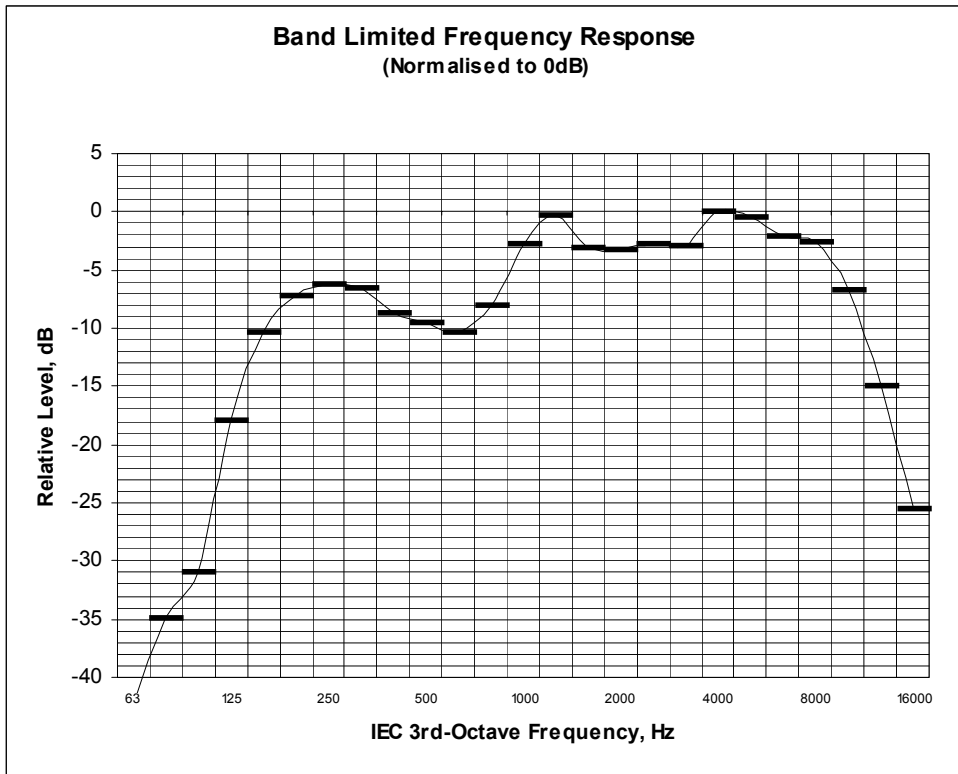
Reference Axis Located at : 0 degrees

Parameter	Frequency (Hz)								dB	dBA
	125	250	500	1k	2k	4k	8k			
Axial Q	1.4	1.4	1.7	2.9	5.9	18.4	12.2			
Directivity Index (dB on Axis)	1.5	1.5	2.3	4.6	7.7	12.6	10.9			
Sensitivity (dB @ 1m, 1W/Oct)	81	89	85	92	92	94	93	91	91	
Sensitivity(dB @ 1m, 1W)250Hz-4kHz									92	92
Sensitivity(dB @ 1m, 1W)Speech Shape									88	85
Acoustic Power (dB-PWL @ 1W)	82	90	86	90	87	84	84			
Apportioned Power (%)	14	12	16	16	15	14	11			
Effective Impedance (Ohms)	500	616	462	478	504	584	778			
Expected maximum SPL (dB @ 1m)	85	93	90	97	97	99	97	104	104	

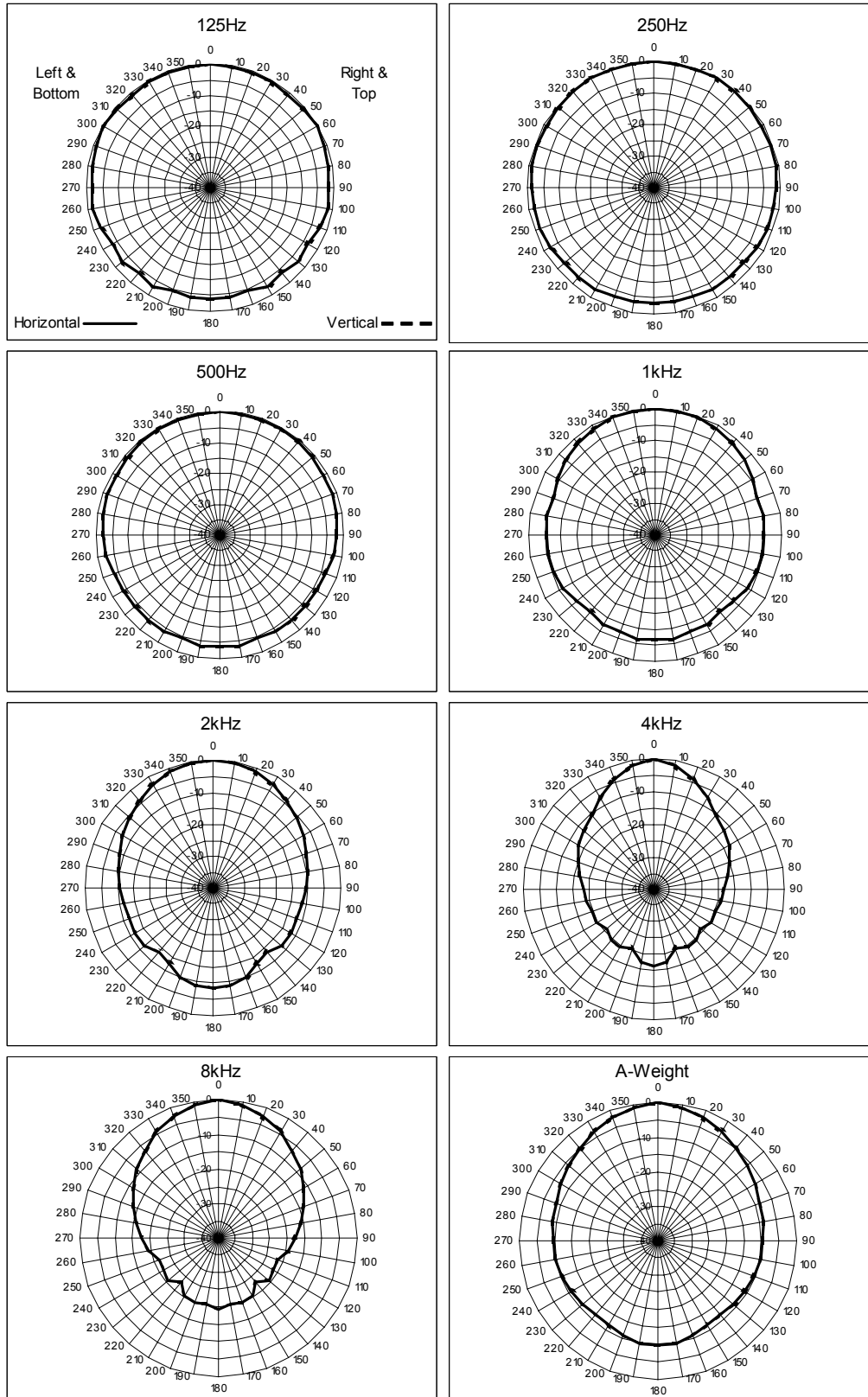
Test Signal: Pink Noise(100Hz-10kHz, 3rd octave bands)



CELL20T

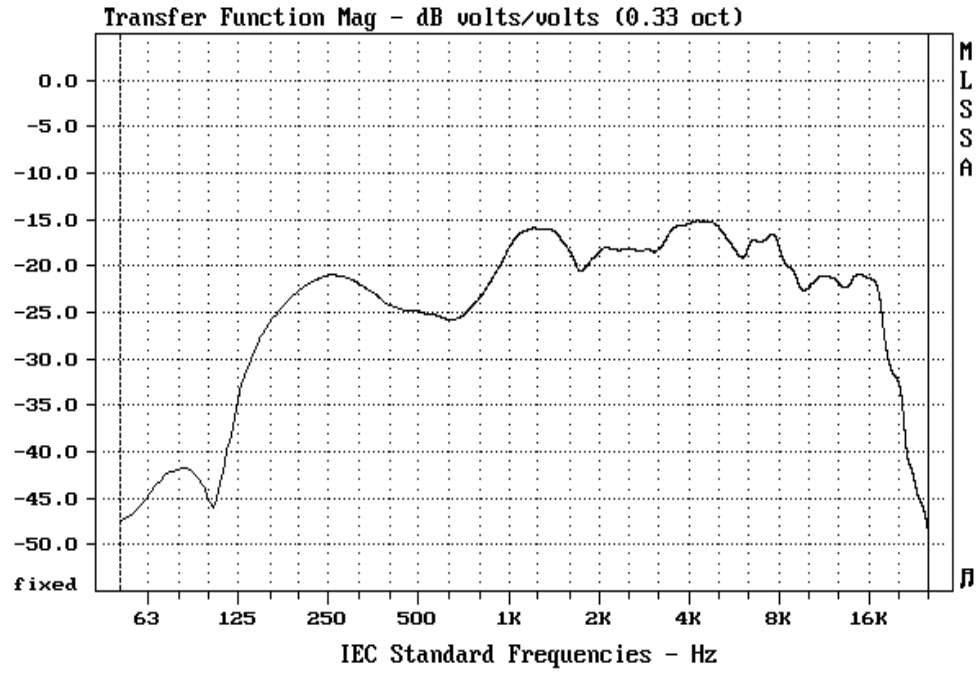


CELL20T



CELL20T

Wide Band Frequency Response

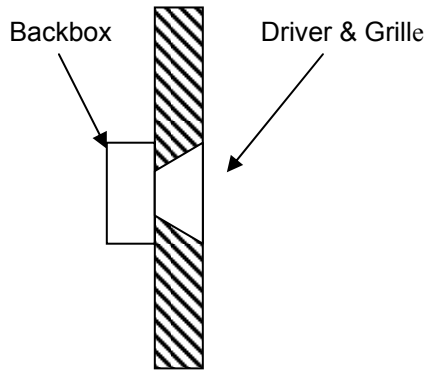


Note: The wide band frequency response is derived using MLS methods and does not necessarily relate to the sensitivity values given in the summary table.

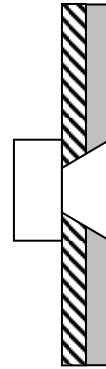
Signed:

Countersigned:

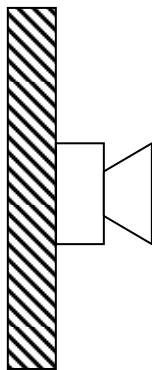
Loudspeaker Mounting Methods



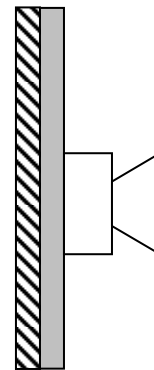
Mounting Method A
Loudspeaker Mounted
in a Reflective Baffle



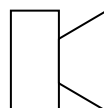
Mounting Method B
Loudspeaker Mounted
in an Absorbent Baffle



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