

Loudspeaker Test Report

Manufacturer: MEDC

Type: Ceiling Speaker

Model: MC8FT

For: MEDC Ltd

Report No.: 1559/LS/MC8FT

Prepared By: A. N. Stacey B.SC., AMIOA, MInstSCE

November 2004

© AMS Acoustics, London

1.00 Object

1.01 The object of this Report is to present measurements of the acoustic performance of the MC8FT device.

2.00 Scope

2.01 The following characteristics were measured

- On-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 band impedance
- (iv) Octave band Sensitivity (dB @ 1m, 1W/oct)
- (v) Overall 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)
- (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 in the appendix.
- 4.02 The Impedance bode plot of the device is shown graphically in the appendix.
- 4.03 Polar plots of the device are shown graphically in the appendix.
- 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 given in the appendix.
- 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 the centre of and line with the grille.

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



Loudspeaker Information

Manufacturer : MEDC
Model Code : MC8FT
Type : Ceiling Speaker
Colour : White
Serial No. : None
Batch No. : None
Other Markings : None
Backbox : As Supplied
Grille : As Supplied
Weight (grammes) : 270
Depth (mm) : 121 mm
Width (mm) : 280 mm
Height (mm) : 280 mm
Special Features : None

Internal Details

Driver Types/Sizes : 1 x 220mm Cone driver
Driver Serial No.(s) : None
Driver Markings : None
Damping Material : None
Available Tappings : 10W, 6W, 3W, 1.5W, 0.75W (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

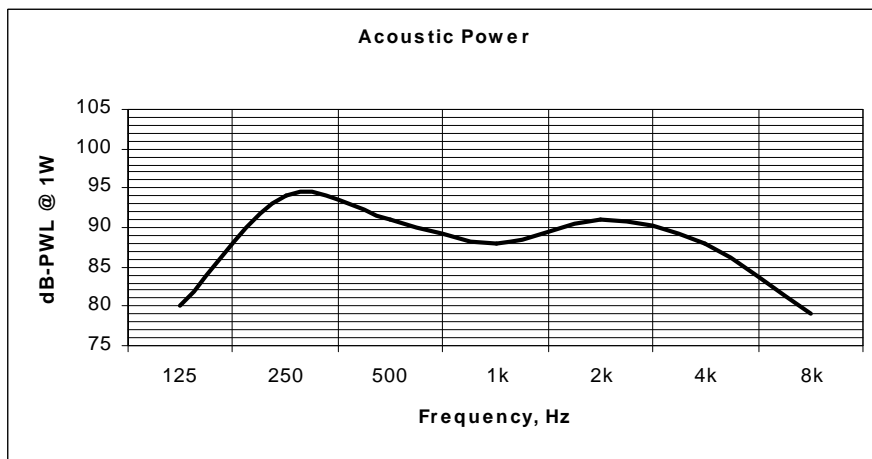
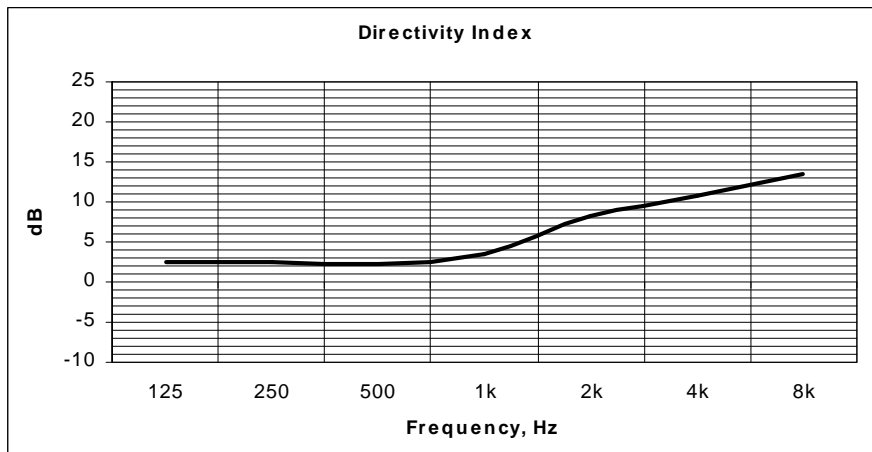


Manufacturer : MEDC
 Model Code : MC8FT
 Mounting : Half-Space, Free Field
 Transformer Tapping : 10W

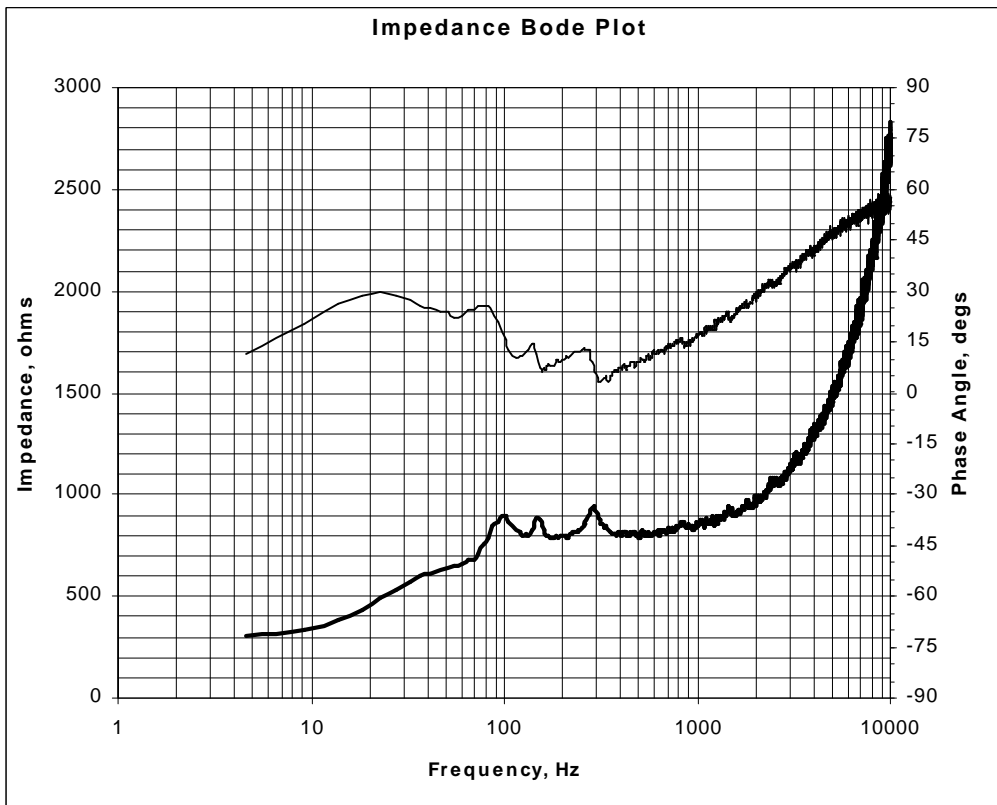
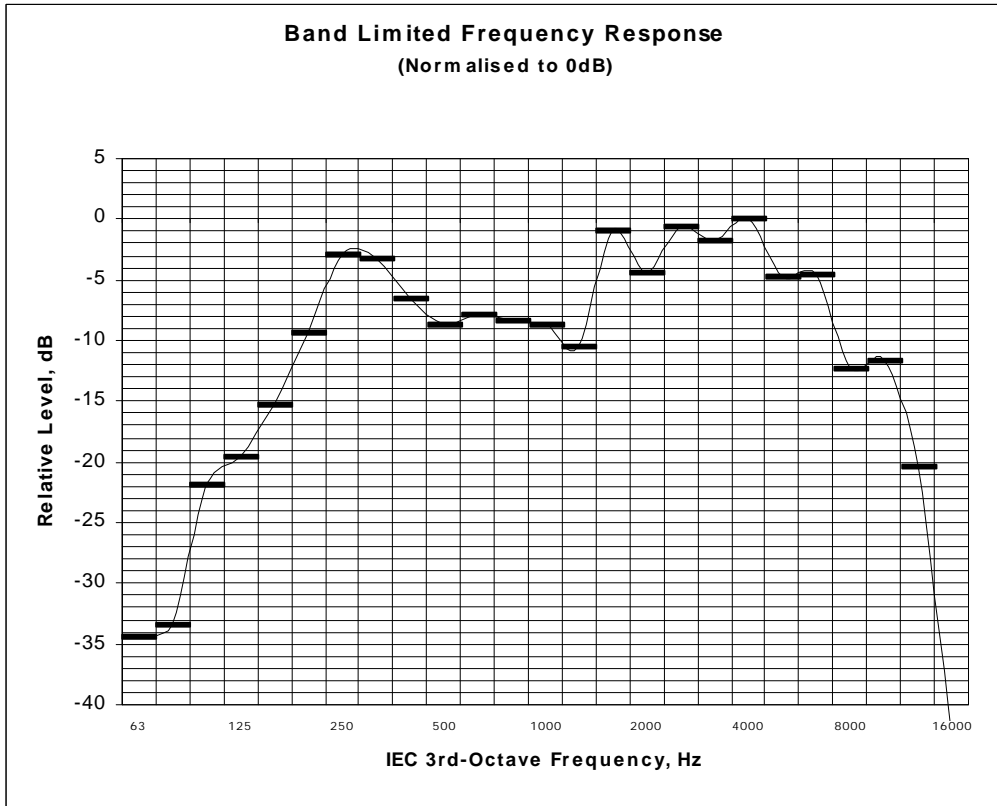
Reference Axis Located at : 0 degrees

Parameter	Frequency (Hz)							dB	dBA
	125	250	500	1k	2k	4k	8k		
Axial Q	1.8	1.8	1.7	2.3	6.7	12.1	22.4		
Directivity Index (dB on Axis)	2.6	2.6	2.3	3.6	8.3	10.8	13.5		
Sensitivity (dB @ 1m, 1W/Oct)	80	93	90	89	96	97	91	93	93
Sensitivity(dB @ 1m, 1W)250Hz-4kHz								94	94
Sensitivity(dB @ 1m, 1W)Speech Shape								91	87
Acoustic Power (dB-PWL @ 1W)	80	94	91	88	91	88	79		
Apportioned Power (%)	14	16	15	15	14	13	10		
Effective Impedance (Ohms)	815	823	799	816	857	961	1255		
Expected maximum SPL (dB @ 1m)	82	95	92	91	98	98	92	103	103

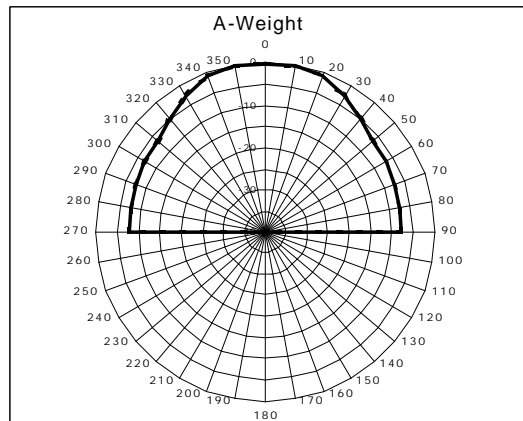
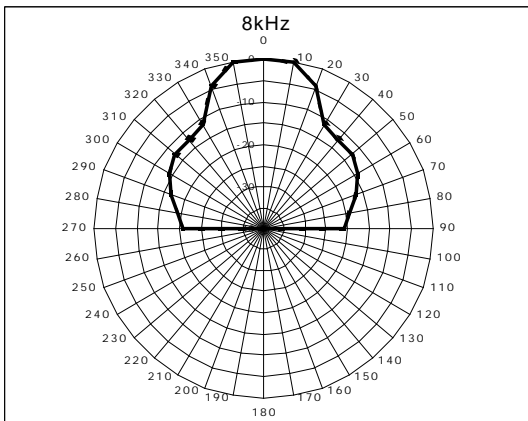
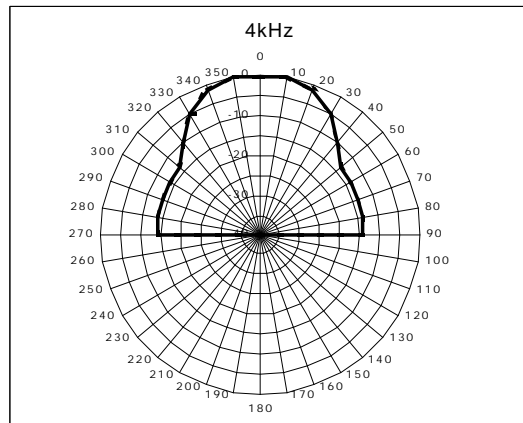
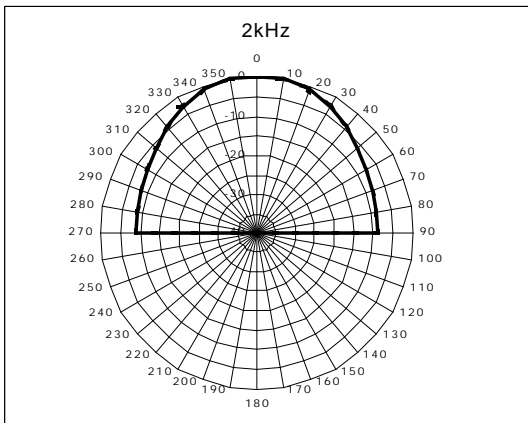
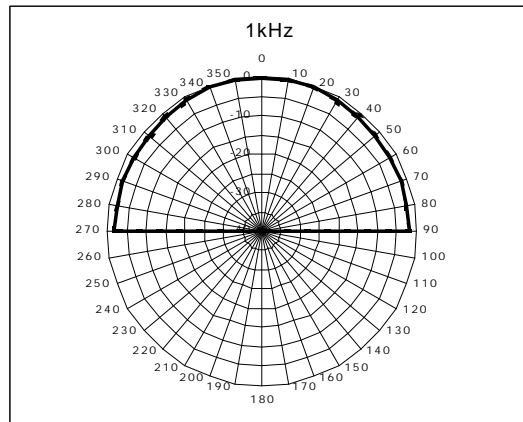
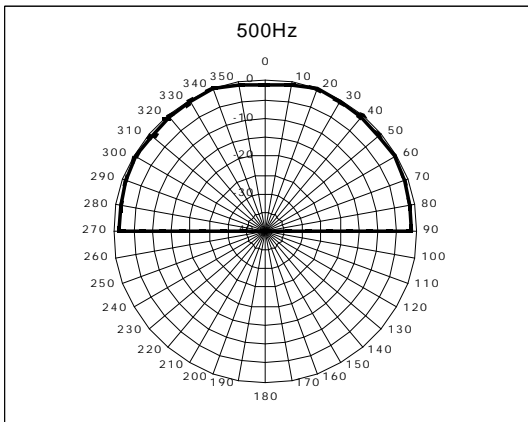
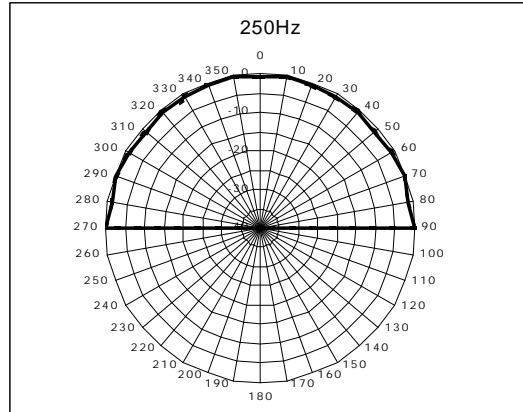
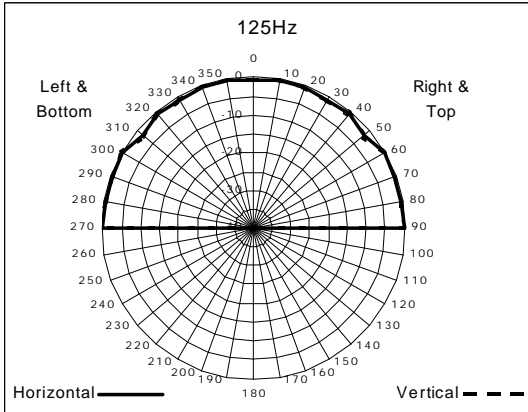
Test Signal: Pink Noise(100Hz-10kHz, 3rd octave bands)



MC8FT

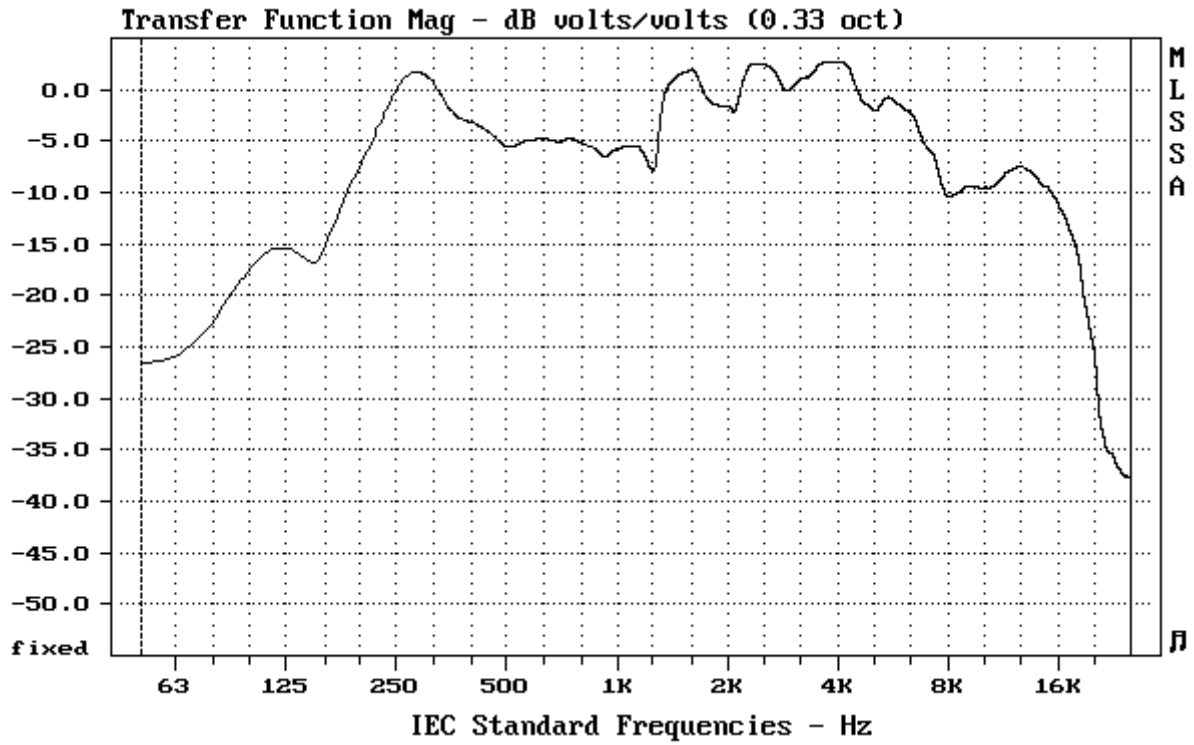


MC8FT



MC8FT

Wide Band Frequency Response
 (Valid from 63Hz to 20kHz)

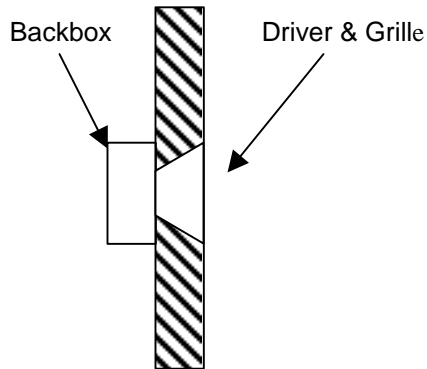


Note: The wide band frequency response is derived using MLS methods and does not necessarily relate to the sensitivity values given in the summary table.

Signed:

Countersigned:

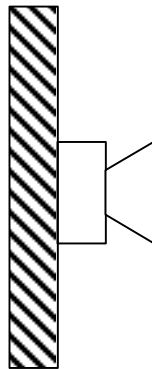
Loudspeaker Mounting Methods



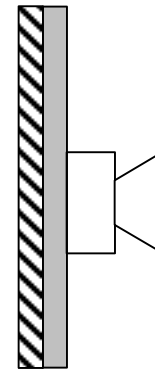
Mounting Method A
Loudspeaker Mounted
in a Reflective Baffle



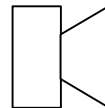
Mounting Method B
Loudspeaker Mounted
in an Absorbent Baffle



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