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Loudspeaker Test Report

Make: Next Two Ltd.

Type: Ceiling/ Wall Speaker

Model: SAFE V6T

For: Next Two Ltd.

Report No. 1077/LS/SAFEV6T/rev.1

Prepared By: A. N. Stacey B.S.c

April 2000

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Electro-Acoustics:
Sound System Design
Conference Systems
Reverberation Enhancement
Emergency Evacuation System Design
Environmental Acoustics:
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Traffic Survey
HSE - Hearing Risk
Expert Witness

Speech Intelligibility:
Prediction Models
RASTI Measurements
Word Score Measurements

Architectural & Building Services:
Acoustics:
Building Services Noise
Room Acoustics
Reverberation Control
Noise Control



1.00 Object

- 1.01 The object of this Report is to present measurements of the acoustic performance of the SAFE V6T loudspeaker.

2.00 Scope

- 2.01 The following characteristics were measured

- (i) ON-axis frequency response
- (ii) Polar response
- (iii) Impedance
- (iv) Applied voltage
- (v) ON-axis octave band sound pressure level.

from which the following are calculated

- (a) Directivity Q
- (b) Directivity Index (DI)
- (c) -6dB Dispersion angle
- (d) Octave band sensitivity dB @ 1W @ 1m
- (e) Overall sensitivity:
 - dBA @ 1W @ 1m
 - dBLin @ 1W @ 1m
- (f) Octave band power apportionment
- (g) Polar response charts.

3.00 Loudspeaker Information

- 3.01 The loudspeaker manufacturer is Next Two Ltd.

- 3.02 The following loudspeaker and transformer combination was measured:

- (i) SAFE V6T
- (ii) Transformer Power Tapping of 6W



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- 3.03 The loudspeaker under test is a ceiling type with one drive unit.

4.00 Method

- 4.01 The loudspeaker was mounted in free space as shown in fig. 1-Mounting Method C.
- 4.02 The measurements were made in a anechoic chamber.
- 4.03 Measurements were made as detailed in AMS Test Method document No. TP/1/97.
- 4.04 All measurements were in general accordance with BS 6840: Part 5: 1995.

5.00 Results

- 5.01 The ON-axis frequency response of the loudspeaker is shown graphically in Appendix A.
- 5.02 The Impedance of the loudspeaker is shown graphically in Appendix B.
- 5.03 Polar plots of the loudspeaker are shown in Appendix C.
- 5.04 The Q values have been calculated using subtended area weighting method.
- 5.05 Tabulated values of Sensitivity, Directivity Q, Directivity Index DI, Impedance, Angular Dispersion and Apportionment of Power are shown in the Summary Data Sheet.

6.00 Notes

Angular Dispersion

- 6.01 The angular dispersion is calculated from the directivity data as the -6dB points. It should be understood that BS 6840: Part 5: 1995 requires -10dB points. The -10dB points may be deduced by inspection from the polar plots.

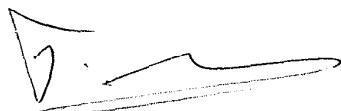
Sensitivity

- 6.02 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 @ 1W @ 1m. To determine the output when only the overall power is known then only the overall Lin value should be used.
- 6.03 For more detailed information refer to AMS Acoustics Data Sheet 'Loudspeaker Sensitivity - Interpretation of Results'.

Polar Plots

- 6.04 For convenience each polar plot has been normalised to 100dB (generally ON-axis). For this reason caution is advised when comparison of levels between octave bands is made. The ON-axis frequency response should be used for comparison purposes.

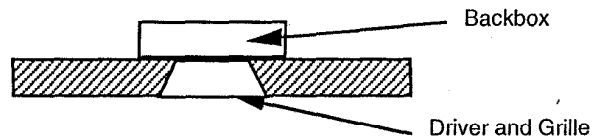
Originator:



Countersigned:

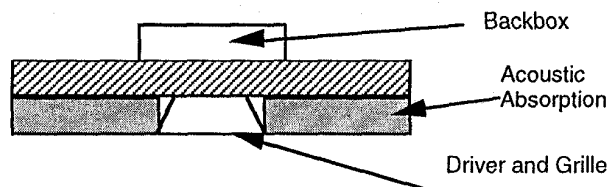


Loudspeaker Mountings



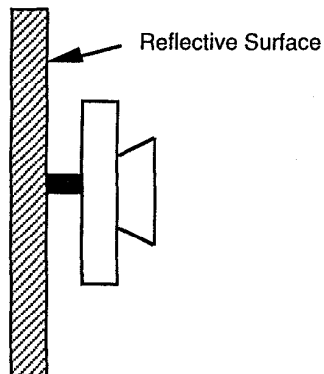
Mounting Method A

Loudspeaker mounted in a reflective baffle.



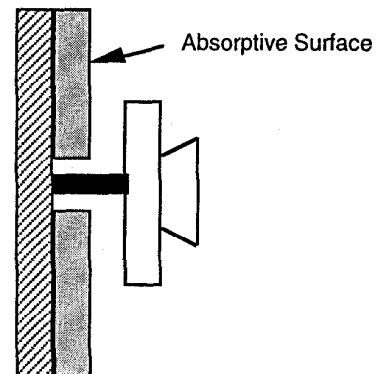
Mounting Method B

Loudspeaker mounted in an absorbent baffle.



Mounting Method C

Loudspeaker mounted on a reflective surface.



Mounting Method D

Loudspeaker mounted on an absorptive surface.



Mounting Method E

Loudspeaker not attached to any surface and radiation unaffected by nearby reflecting surfaces.

Fig.1

Loudspeaker Information

Name: Next Two Ltd.

Code: SAFE V6T

Colour: White

External Detail

Case: Metal

Mounting: Surface

Grille: Metal

Length: 19cm

Width: 19cm

Depth: 8.5cm

Weight: 2kg

Power Tappings 6W, 3W, 1.5W & 0.75W

Internal Detail

Drivers

Numbers: 1

Type: Cone

Other markings: F156C8 - 02A

Damping Materials: Mineral Fibre

AMS

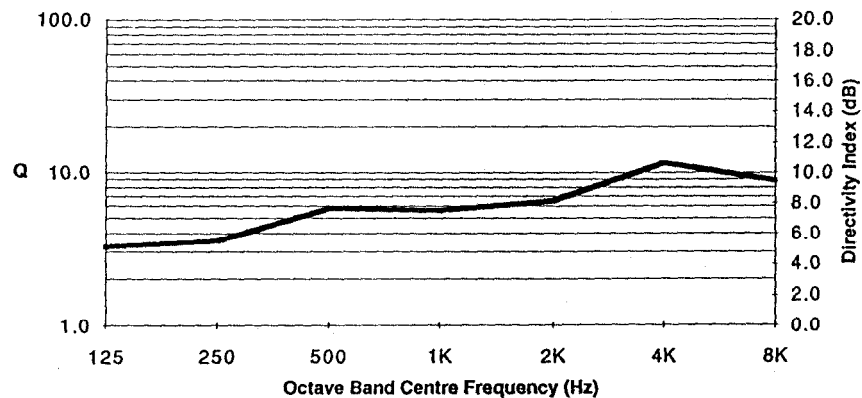
Acoustics

Loudspeaker Name: SAFE V6T
Transformer Tapping: 6W
Mounting: Half Space
Backbox & Grille: As supplied

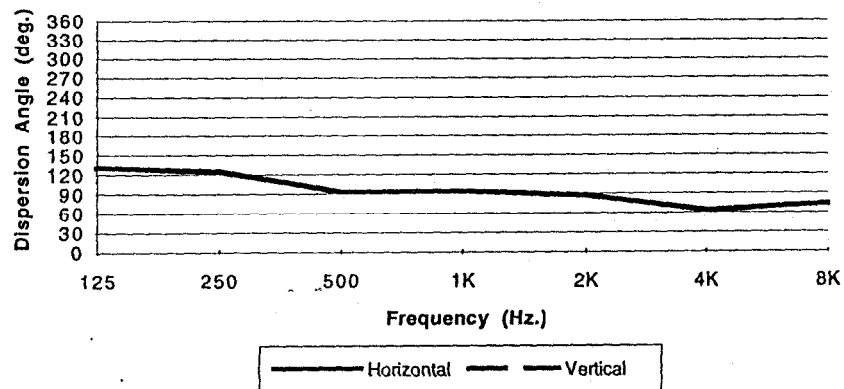
Principal Axis Located at: 0 degrees

Parameter	Frequency (Hz)							dB	dBA
	125	250	500	1K	2K	4K	8K		
Q	3.2	3.5	5.7	5.6	6.5	11.3	8.8		
Di (dB)	5.1	5.5	7.6	7.5	8.1	10.5	9.4		
Angle of direction of maximum SPL	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx		
Horizontal Angular Dispersion (deg.)	131	124	92	94	86	63	73		
Vertical Angular Dispersion (deg.)	131	124	92	94	86	63	73		
Impedance (Ohms)	1391	1430	1434	1429	1509	1679	2280		
Sensitivity (dB@1W,1m) 125Hz - 8kHz	77	83	82	90	92	90	86	88	89
Apportioned Power	12%	16%	16%	17%	16%	14%	10%		
Sensitivity (dB@1W,1m) 250Hz - 4kHz								89	89
Sensitivity (dB@1W,1m)Speech Shaped								85	84

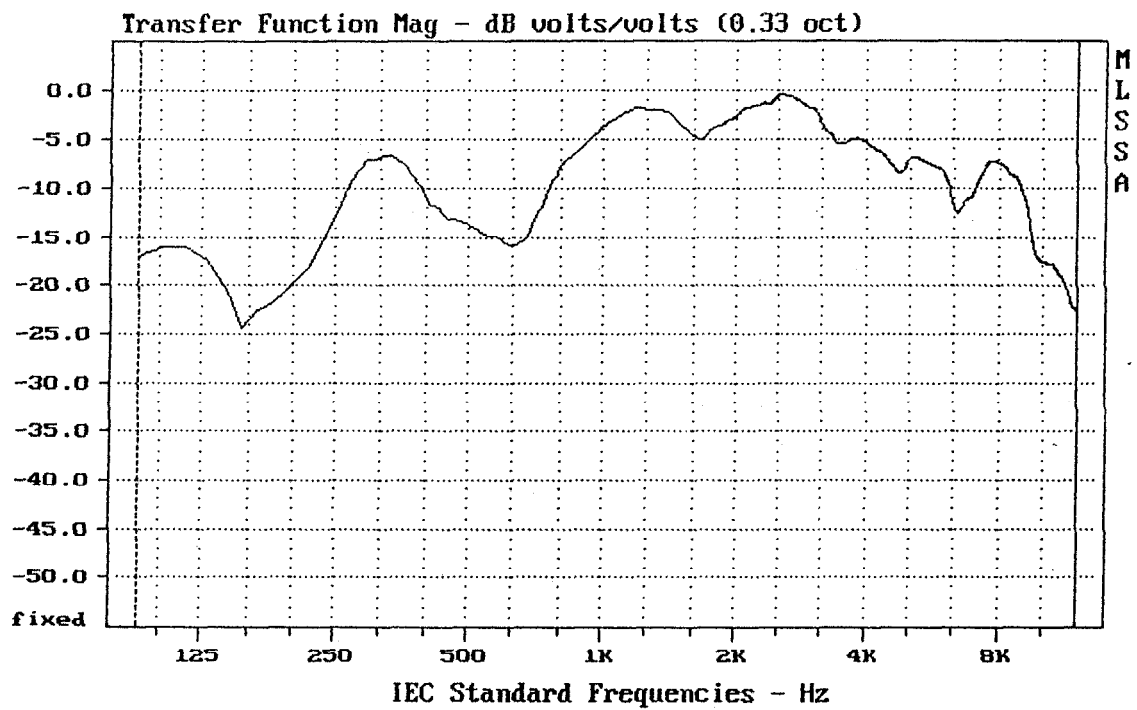
Directivity vis Frequency



Angular Dispersion in Degrees (-6 dB) vis Frequency



APPENDIX A



mean: -7.96, rms: -6.71, std: 3.95, max: -0.44, min: -24.38

SAFE U6T @ 6W Tapping.

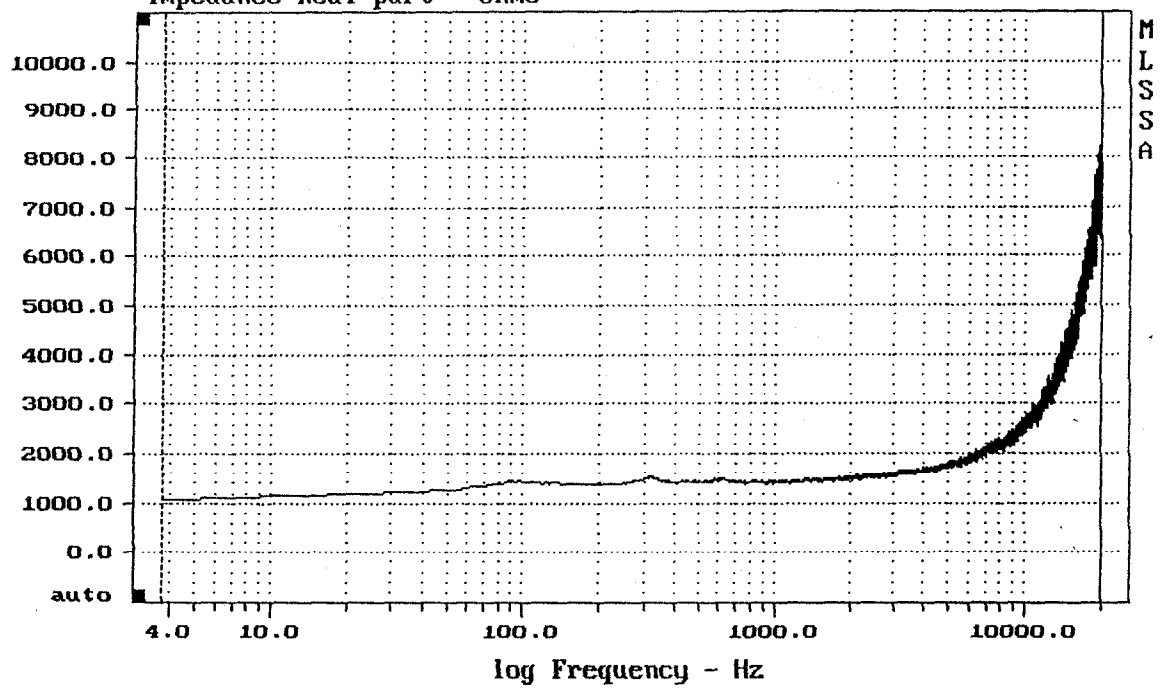
4-5-100 10:40 AM

MLSSA: Frequency Domain

APPENDIX B

File: A:\IMP6W.FRQ 4-4-100 3:03 PM (equalized)

Impedance Real part - ohms

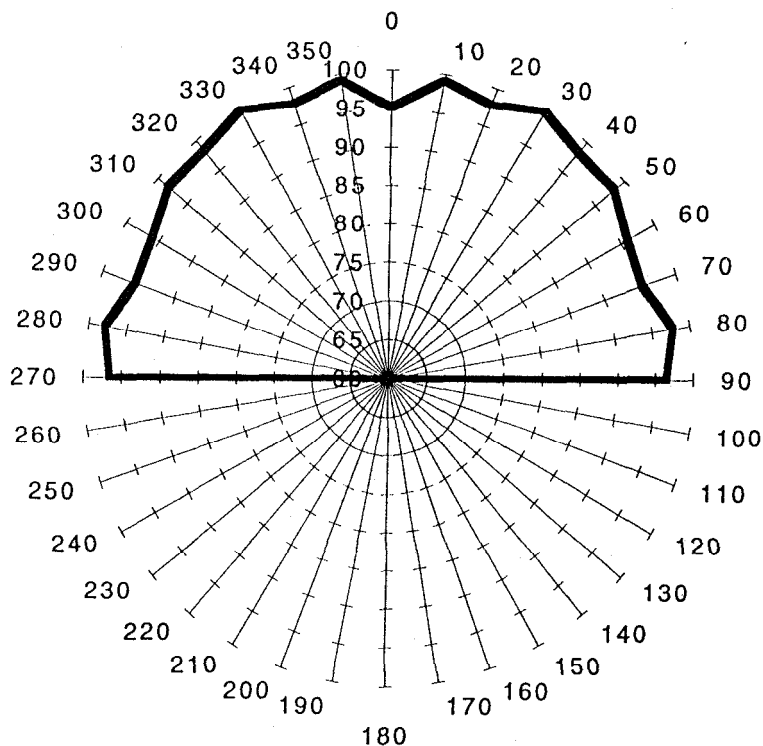


mean: 3167, rms: 3601, std: 1714, max: 8926, min: 1051

SAFE U6T @ 6W Tapping.

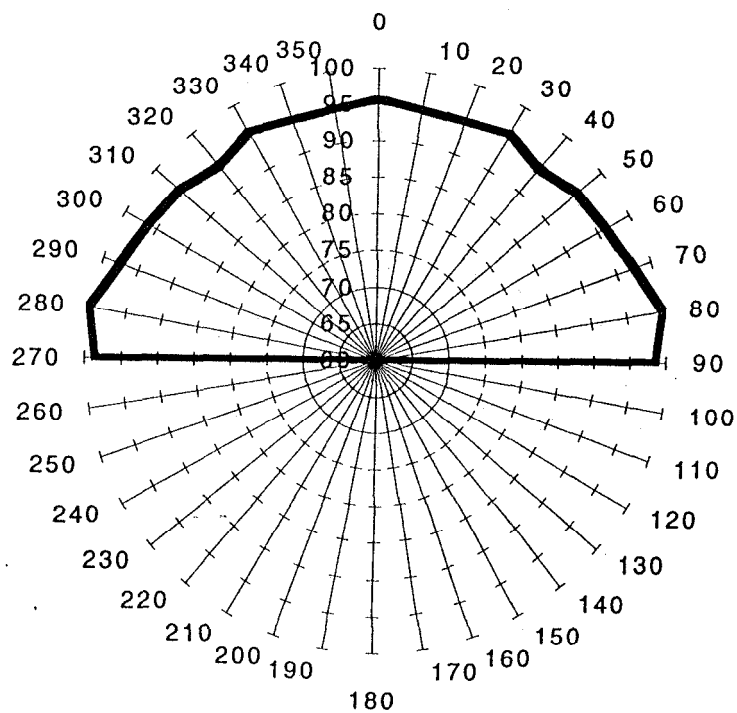
Speaker: **SAFE V6T**
Mounting: **Half Space**

Tapping: **6W**
Backbox/Grille: **As supplied**
Horizontal ; 125 Hz.



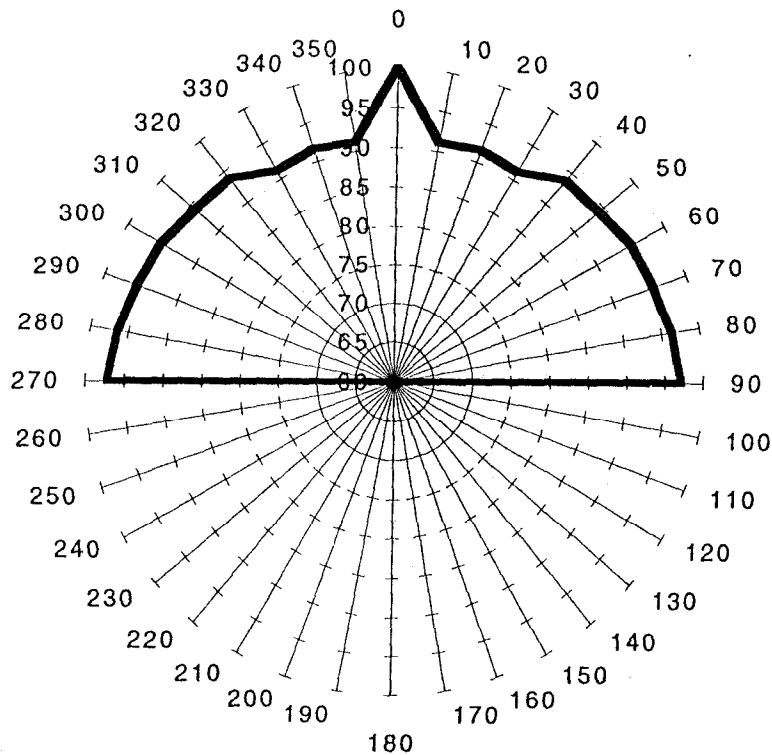
Speaker: **SAFE V6T**
Mounting: **Half Space**

Tapping: **6W**
Backbox/Grille: **As supplied**
Horizontal ; 250 Hz.



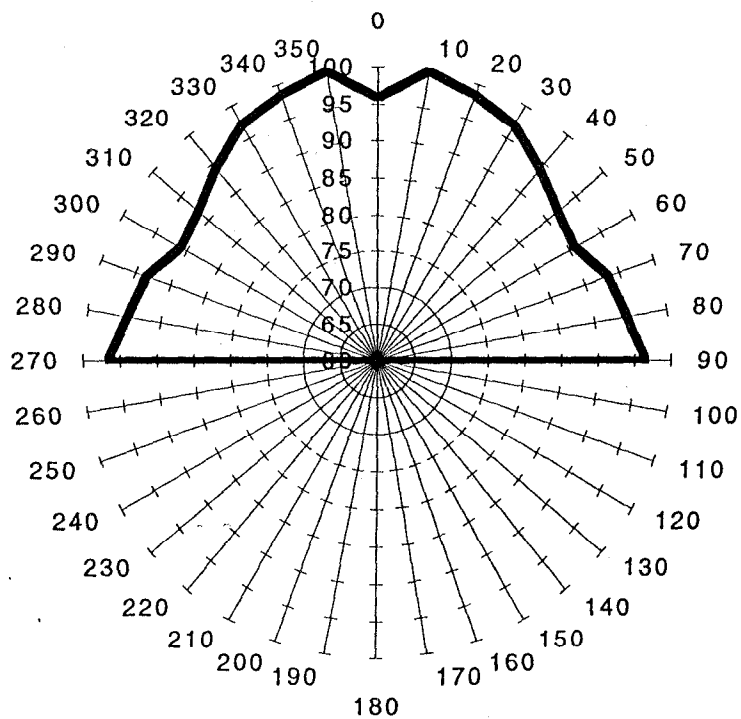
Speaker: **SAFE V6T**
Mounting: **Half Space**

Tapping: **6W**
Backbox/Grille: **As supplied**
Horizontal ; 500 Hz.



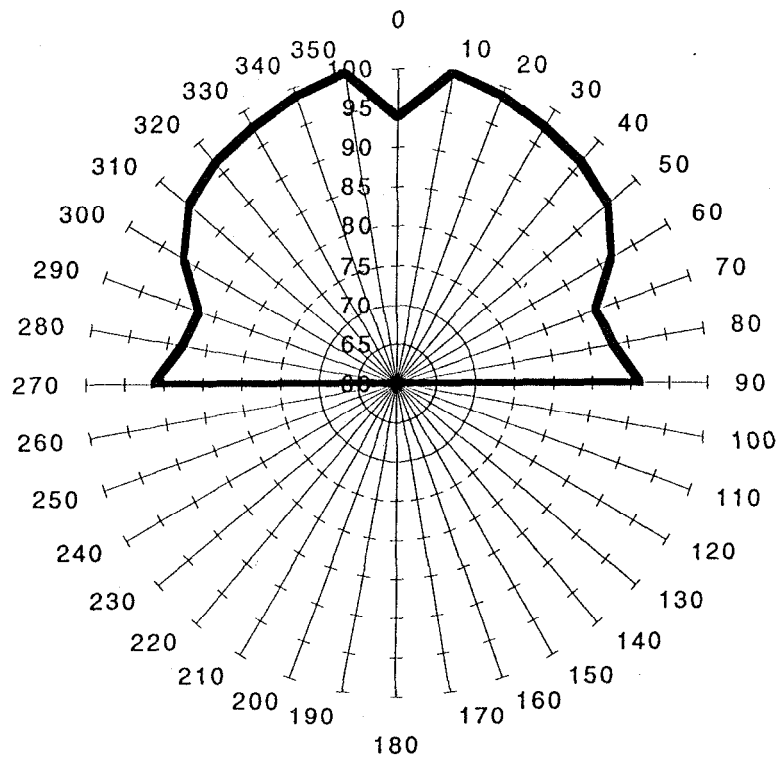
Speaker: **SAFE V6T**
Mounting: **Half Space**

Tapping: **6W**
Backbox/Grille: **As supplied**
Horizontal ; 1KHz.



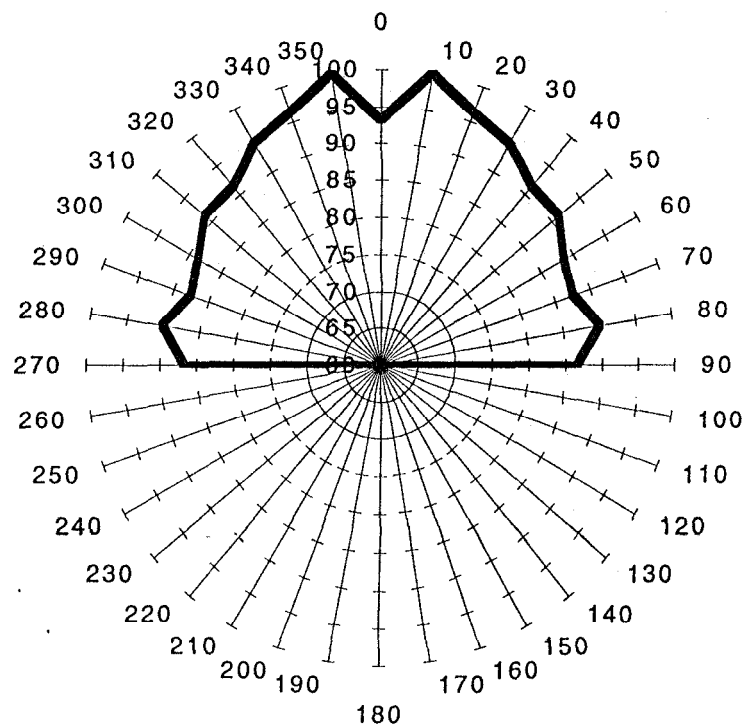
Speaker: **SAFE V6T**
Mounting: **Half Space**

Tapping: **6W**
Backbox/Grille: **As supplied**
Horizontal ; 2KHz.



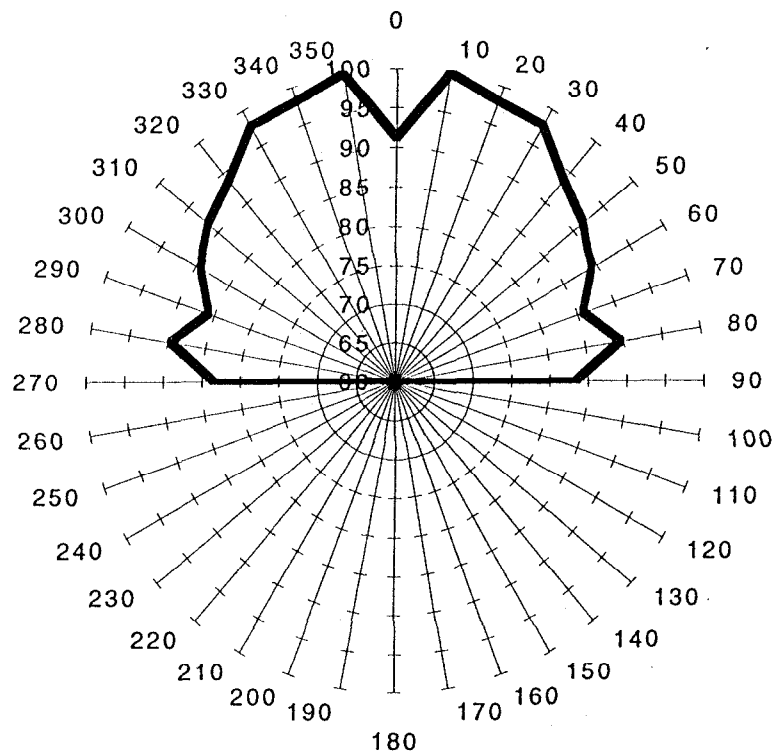
Speaker: **SAFE V6T**
Mounting: **Half Space**

Tapping: **6W**
Backbox/Grille: **As supplied**
Horizontal ; 4KHz.



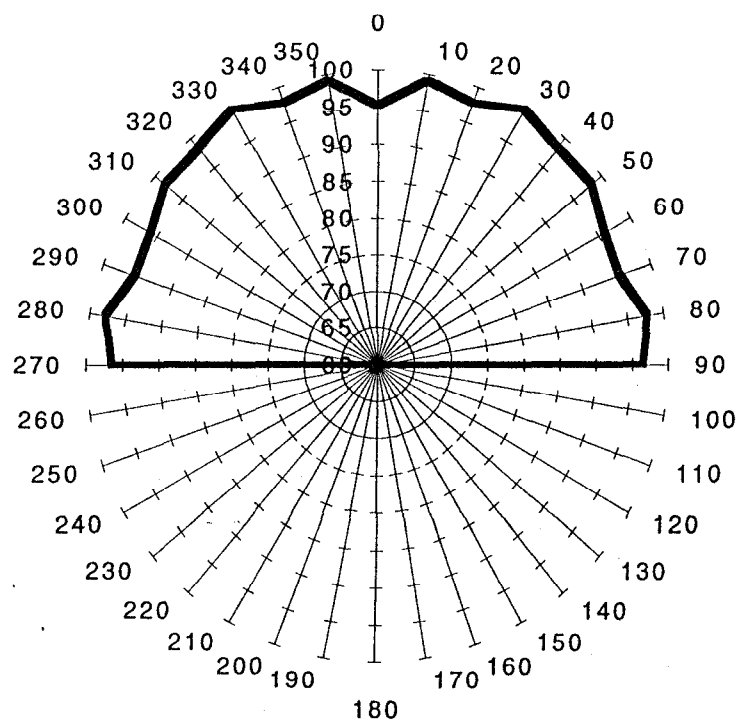
Speaker: **SAFE V6T**
Mounting: **Half Space**

Tapping: **6W**
Backbox/Grille: **As supplied** Tapping:
Backbox/Grille:
Horizontal ; 8KHz.



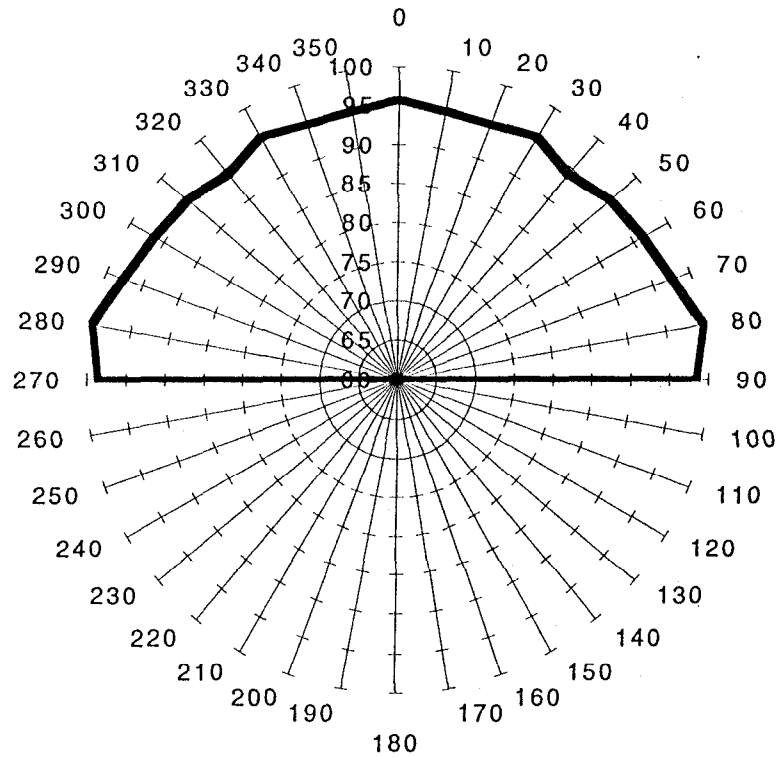
Speaker: **SAFE V6T**
Mounting: **Half Space**

Tapping: **6W**
Backbox/Grille: **As supplied** Tapping:
Backbox/Grille:
Vertical ; 125 Hz.



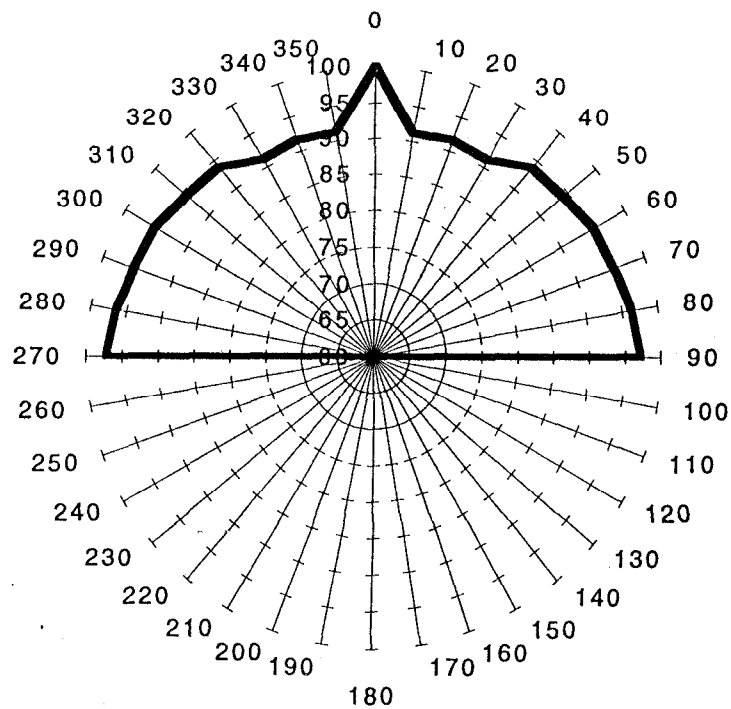
Speaker: **SAFE V6T**
Mounting: **Half Space**

Tapping: **6W**
Backbox/Grille: **As supplied** Backbox/Grille:
Vertical ; 250 Hz.



Speaker: **SAFE V6T**
Mounting: **Half Space**

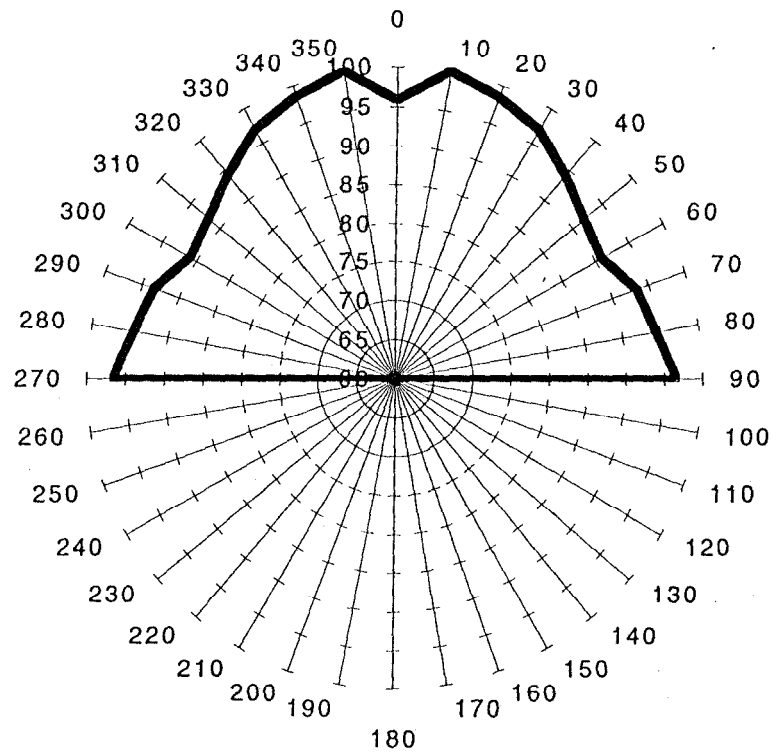
Tapping: **6W**
Backbox/Grille: **As supplied** Backbox/Grille:
Vertical ; 500 Hz.



Speaker: **SAFE V6T**
Mounting: **Half Space**

Tapping: **6W**
Backbox/Grille: **As supplied** Backbox/Grille:

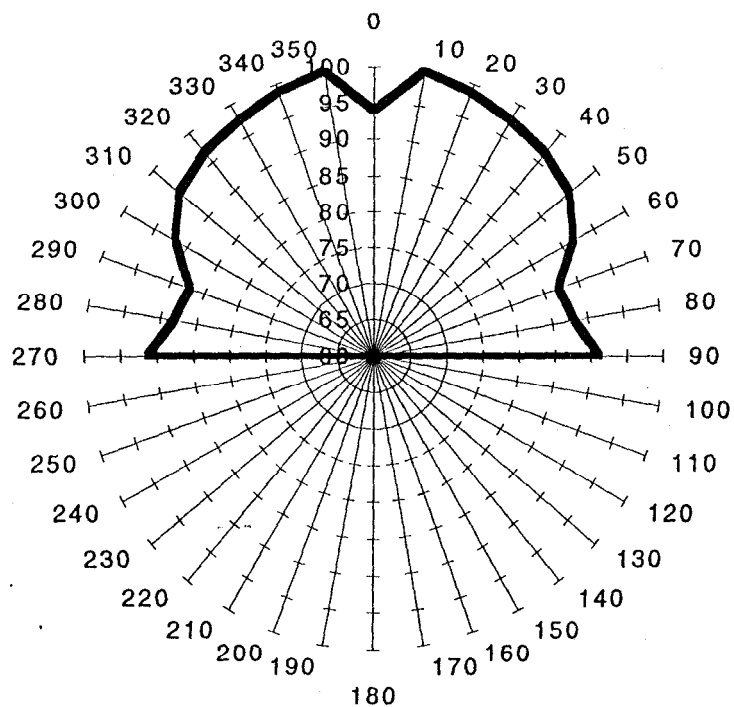
Vertical ; 1KHz.



Speaker: **SAFE V6T**
Mounting: **Half Space**

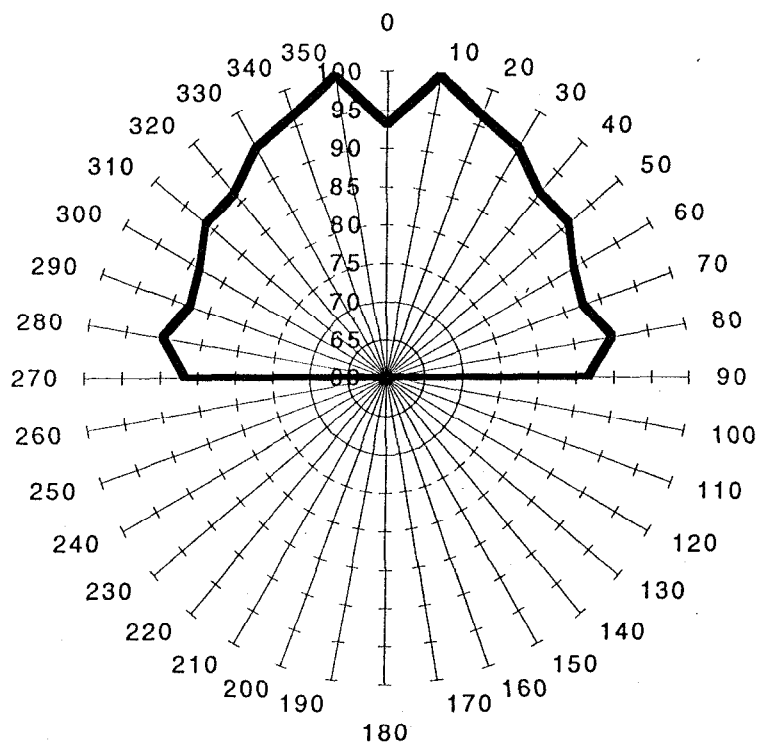
Tapping: **6W**
Backbox/Grille: **As supplied** Backbox/Grille:

Vertical ; 2KHz.



Speaker: **SAFE V6T**
Mounting: **Half Space**

Tapping: 6W
Backbox/Grille: **As supplied**
Vertical ; 4KHz.



Speaker: **SAFE V6T**
Mounting: **Half Space**

Tapping: 6W
Backbox/Grille: **As supplied**
Vertical ; 8KHz.

