



ACOUSTIC & ELECTRO-ACOUSTIC CONSULTANTS

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Loudspeaker Test Report

Make: Next Two Ltd.

Type: Sphere

Model: SPH20T

For: Next Two Ltd., Uckfield, Sussex.

Report No. 1125/LS/SPH20T

Prepared By: A. N. Stacey B.Sc.

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Electro-Acoustics:
Sound System Design
Conference Systems
Reverberation Enhancement
Emergency Evacuation System Design

Environmental Acoustics:
Noise Nuisance
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 SPH20T 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) SPH20T.
- (ii) Transformer Power Tapping of 20W.

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

4.00 Method

- 4.01 The devices were mounted in free space as shown in fig. 1-Mounting Method E.
- 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 NotesAngular 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.

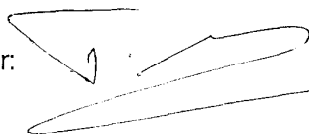
Sensitivity

- 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.

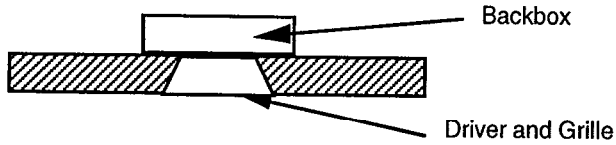
Originator:



Countersigned:

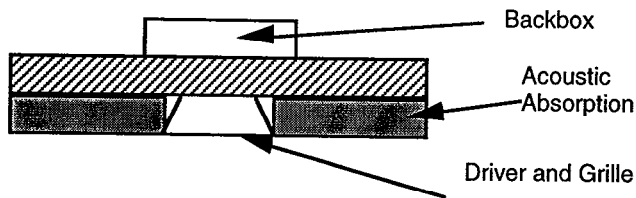


Loudspeaker Mountings



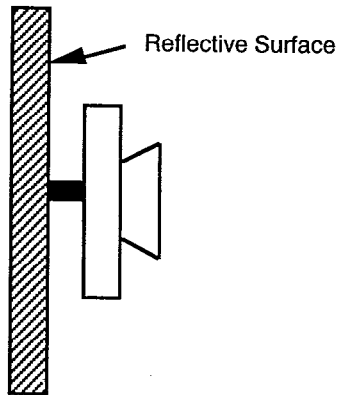
Mounting Method A

Loudspeaker mounted in a reflective baffle.



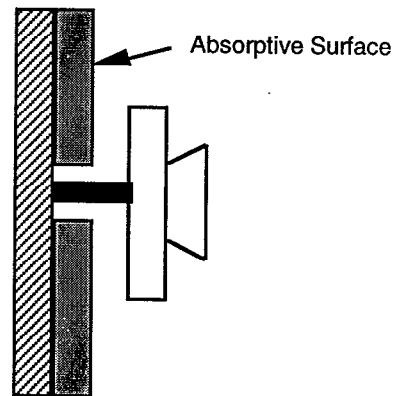
Mounting Method B

Loudspeaker mounted in an absorptive 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



R.1125/LS/SPH20T

Louspeaker Information

Name: SPH20
Code: SPH20
Type: Next Two
Colour: Black

External Detail

Case: Plastic
Mounting: Free Space
Grille: Plastic
Length: 28cm
Breadth: 23cm
Weight: 2.20
Labels: None
Badges: None



R.1125/LS/SPH20T

Internal Details

Drivers

Numbers:	1
Type:	Cone
Serial No.:	Not Known
Other Markings:	None
Driver Connections:	Not Known
Transformer:	20W
Special Features:	None
Damping Material:	Not Known
Tapping:	20W, 10, 5, 2.5, 80ohm.

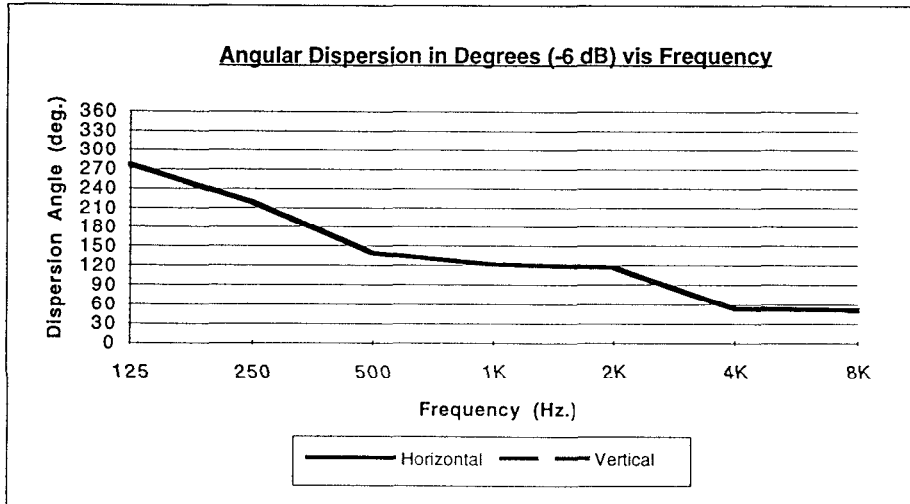
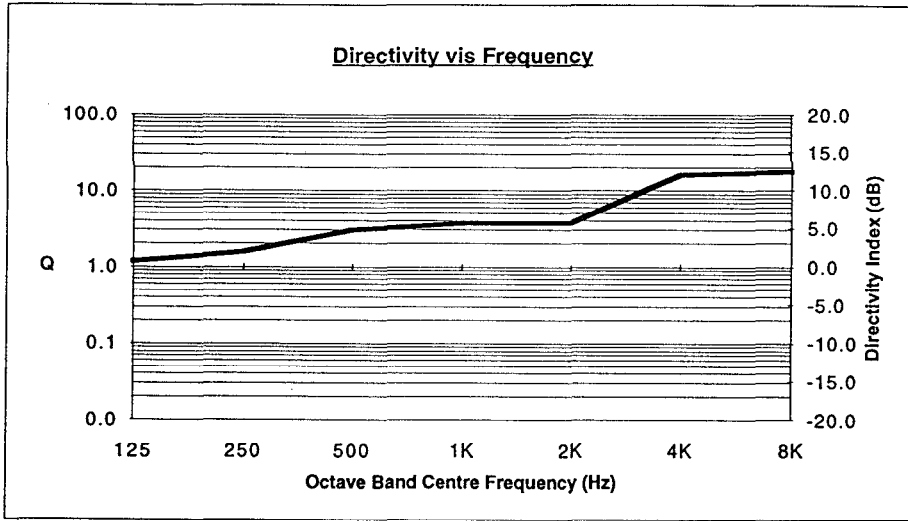
AMS

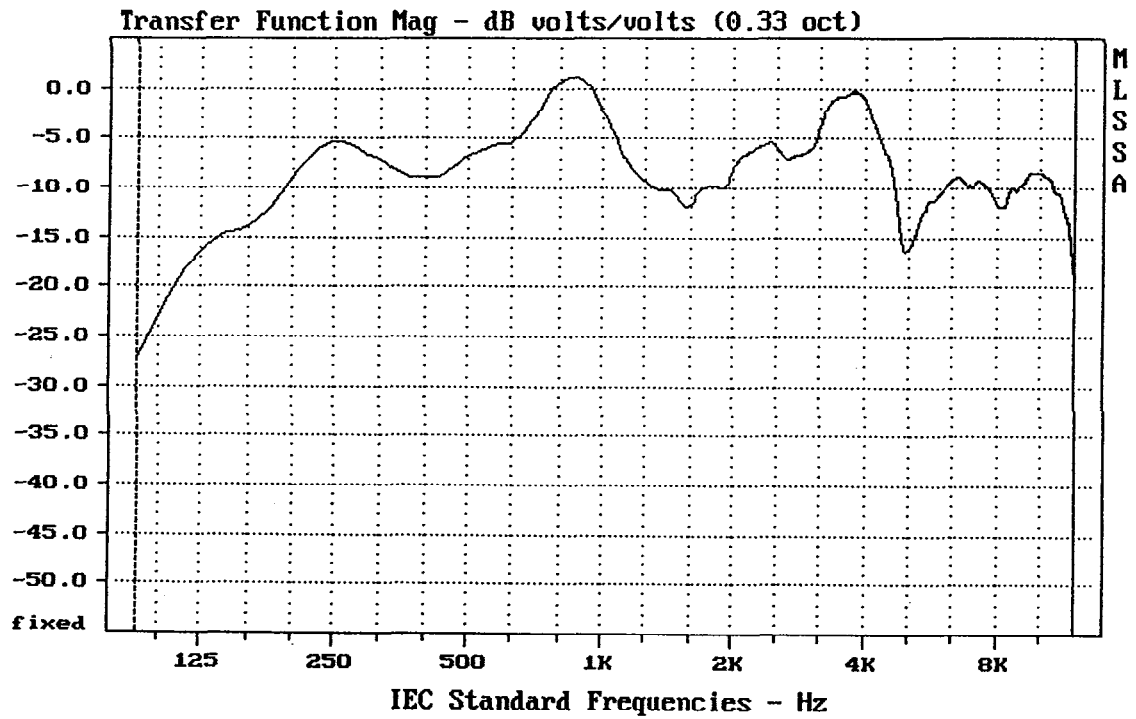
Acoustics

Loudspeaker Name: SPH20
 Transformer Tapping: 20W
 Mounting: Free Space
 Backbox & Grille: As Supplied

Principal Axis Located at: 0 degrees

Parameter	Frequency (Hz)							dB	dBA
	125	250	500	1K	2K	4K	8K		
Axial Q	1.1	1.5	3.0	3.6	3.7	15.9	17.5		
Di (dB)	0.6	1.9	4.7	5.6	5.6	12.0	12.4		
Angle of direction of maximum SPL	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx		
Horizontal Angular Dispersion (deg.)	276	218	138	121	116	53	50		
Vertical Angular Dispersion (deg.)	276	218	138	121	116	53	50		
Impedance (Ohms)	436	573	441	462	501	580	814		
Sensitivity (dB@1W,1m) 125Hz - 8kHz Apportioned Power	85	94	93	98	92	97	93	94	94
Sensitivity (dB@1W,1m) 250Hz - 4kHz								95	95
Sensitivity (dB@1W,1m) Speech Shaped								94	91





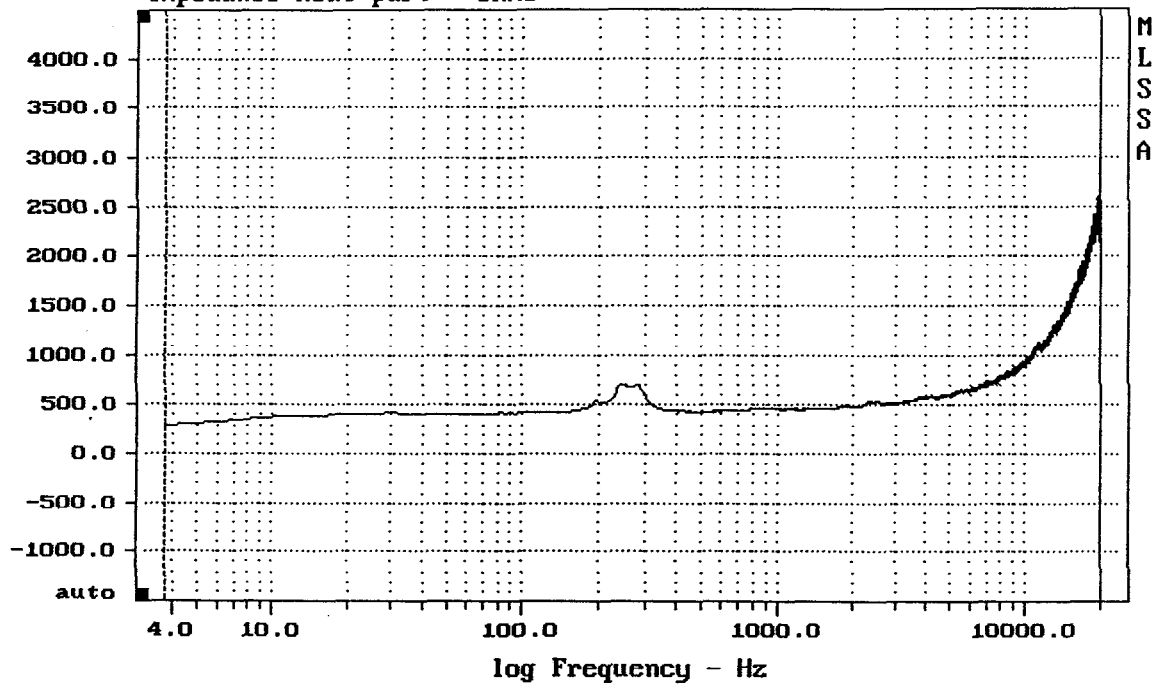
mean: -7.97, rms: -6.97, std: 3.58, max: 1.08, min: -27.37

SPH-20T @ 20W Tapping

8-30-100 5:16 PM

MLSSA: Frequency Domain

File: A:\IMP.FRQ 8-29-100 4:07 PM (equalized)
Impedance Real part - ohms



mean: 1106, rms: 1251, std: 584.4, max: 2834, min: 293.2

SPH-20T @ 20W Tapping

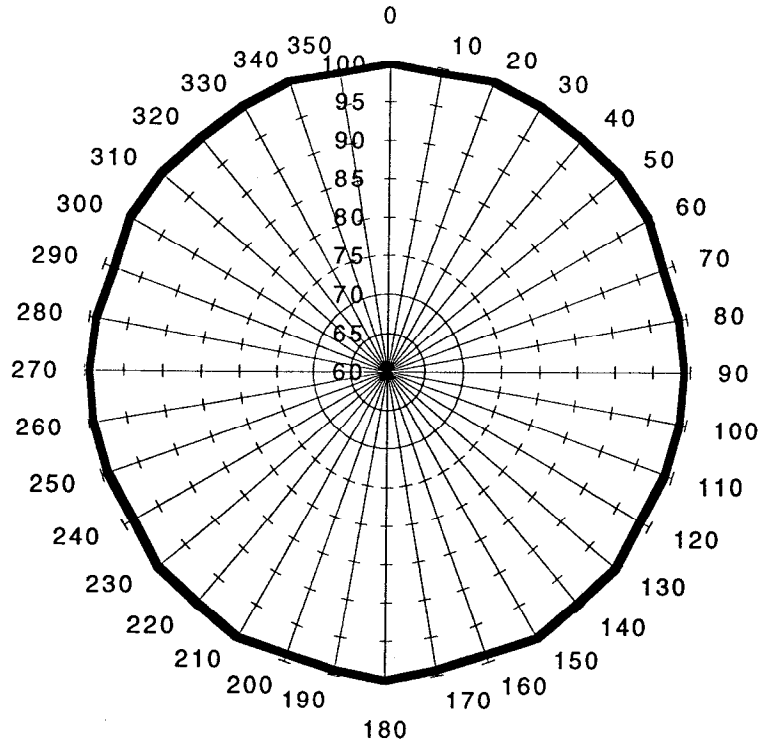
8-30-100 5:30 PM

MLSSA: Frequency Domain

Speaker: **SPH20**
Mounting: **Free Space**

Tapping: **20W**
Backbox/Grille: **As Supplied**

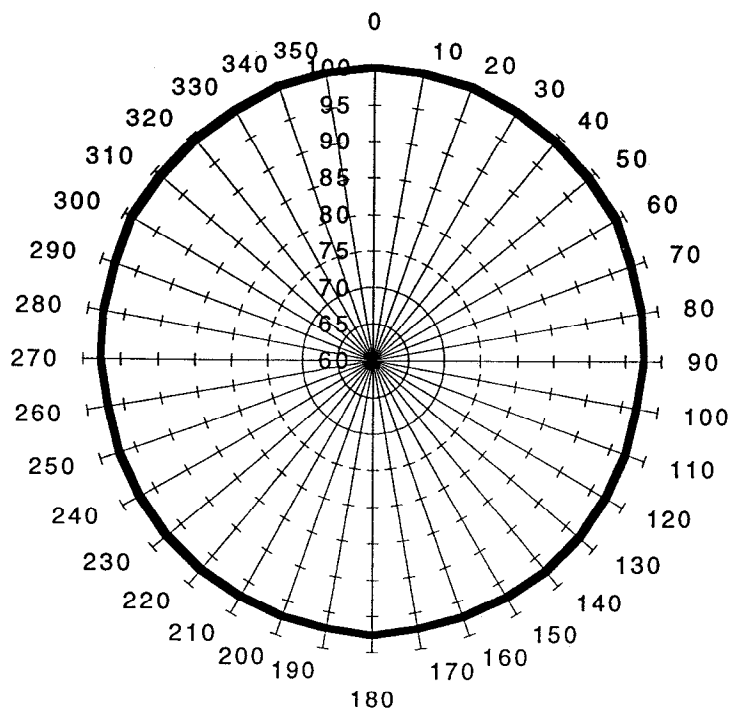
Horizontal ; 125 Hz.



Speaker: **SPH20**
Mounting: **Free Space**

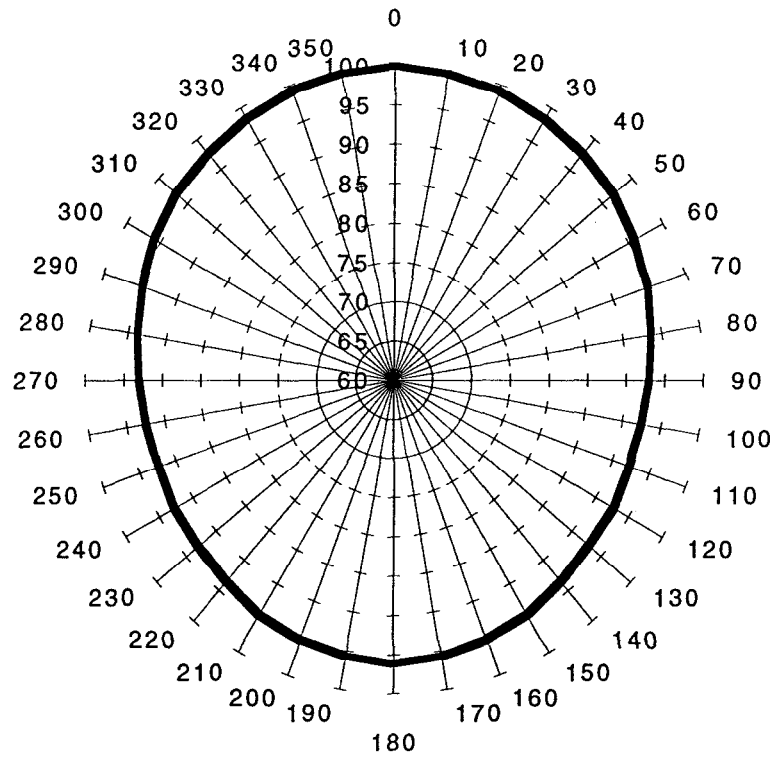
Tapping: **20W**
Backbox/Grille: **As Supplied**

Horizontal ; 250 Hz.



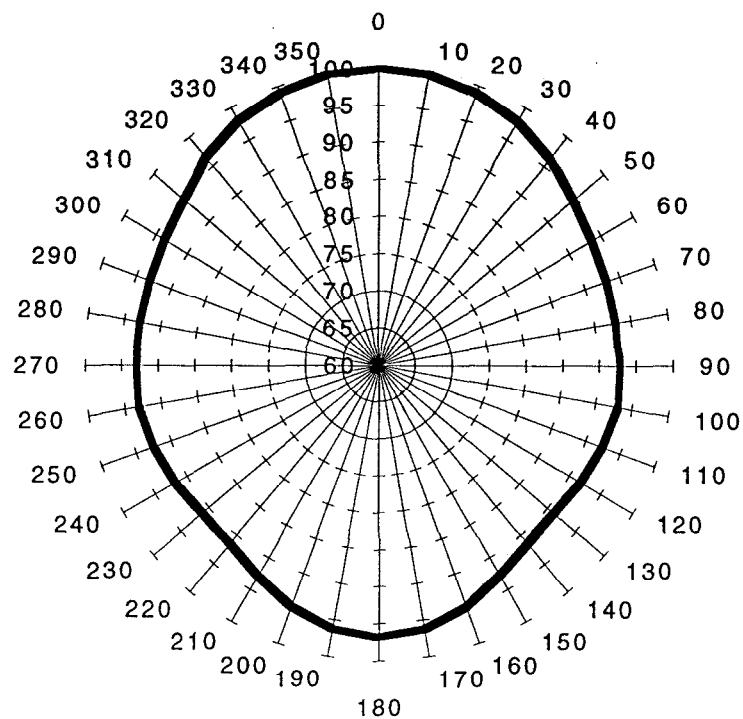
Speaker: **SPH20**
Mounting: **Free Space**

Tapping: **20W**
Backbox/Grille: **As Supplied**
Horizontal ; 500 Hz.



Speaker: **SPH20**
Mounting: **Free Space**

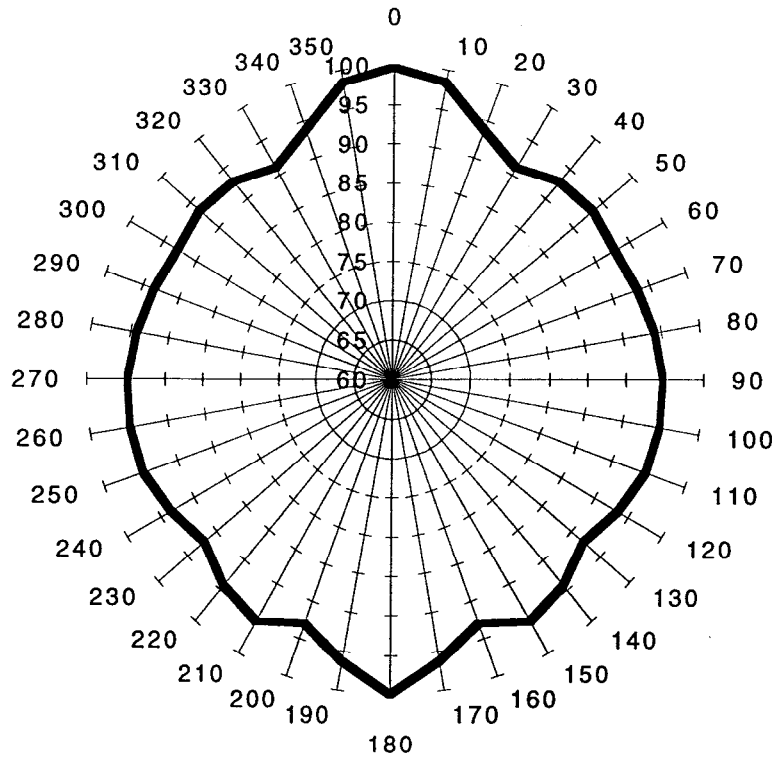
Tapping: **20W**
Backbox/Grille: **As Supplied**
Horizontal ; 1KHz.



Speaker: **SPH20**
Mounting: **Free Space**

Tapping: **20W**
Backbox/Grille: **As Supplied**

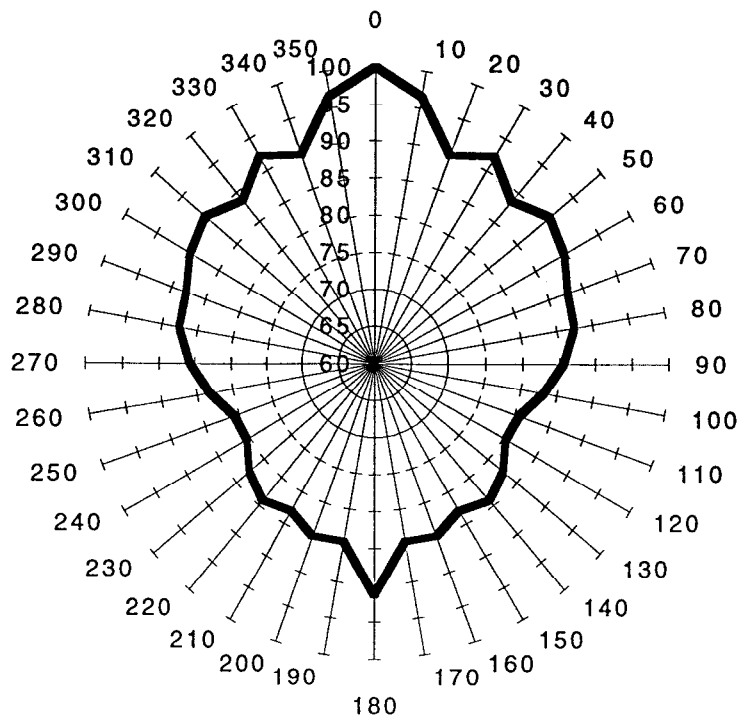
Horizontal ; 2KHz.



Speaker: **SPH20**
Mounting: **Free Space**

Tapping: **20W**
Backbox/Grille: **As Supplied**

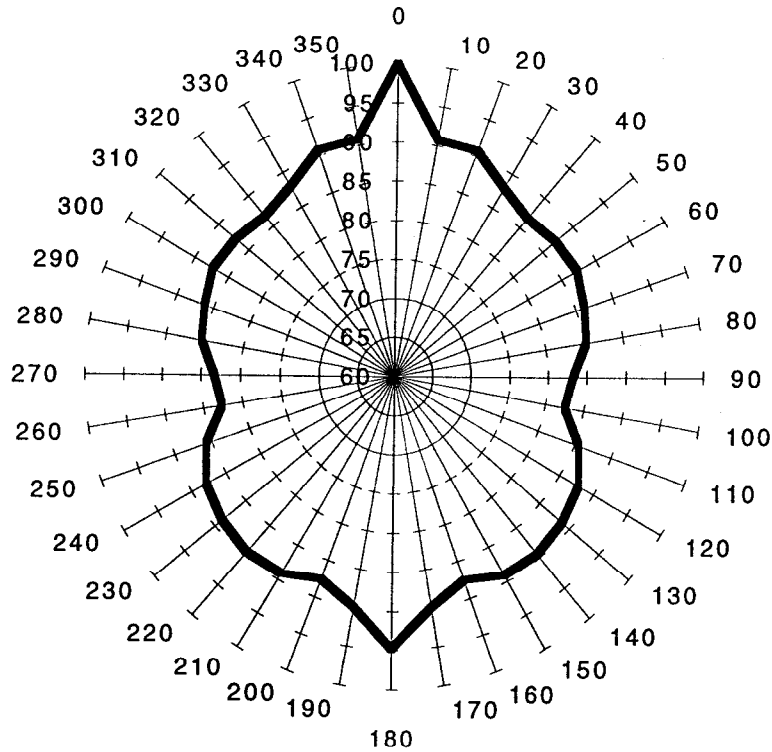
Horizontal ; 4KHz.



Speaker: **SPH20**
Mounting: **Free Space**

Tapping: **20W** Tapping:
Backbox/Grille: **As Supplied** Backbox/Grille:

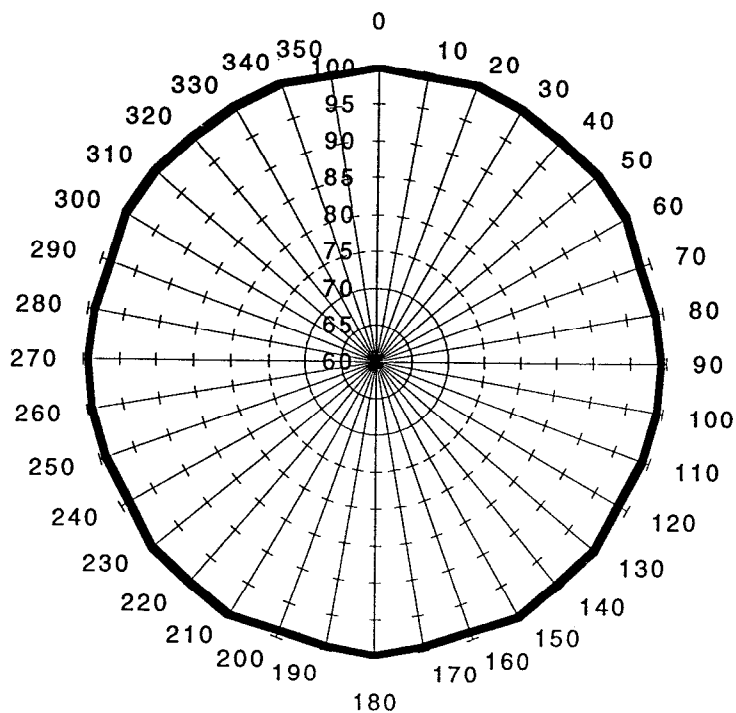
Horizontal ; 8KHz.



Speaker: **SPH20**
Mounting: **Free Space**

Tapping: **20W** Tapping:
Backbox/Grille: **As Supplied** Backbox/Grille:

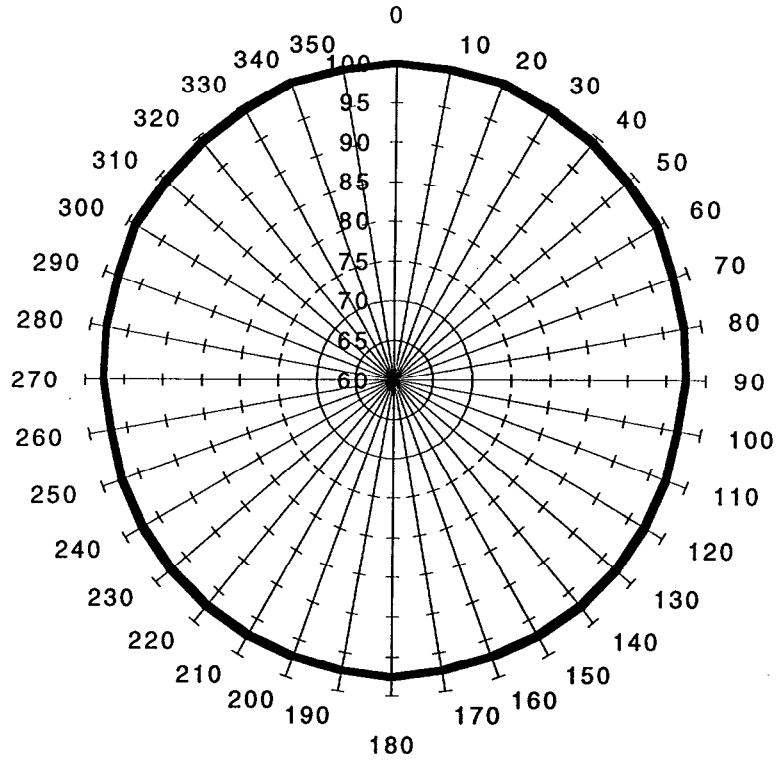
Vertical ; 125 Hz.



Speaker: **SPH20**
Mounting: **Free Space**

Tapping: **20W** Tapping:
Backbox/Grille: **As Supplied** Backbox/Grille:

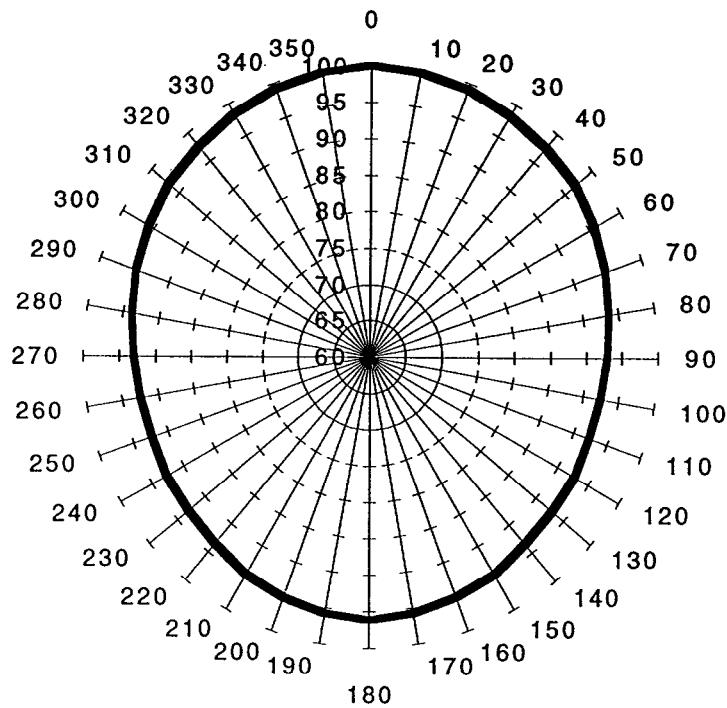
Vertical ; 250 Hz.



Speaker: **SPH20**
Mounting: **Free Space**

Tapping: **20W** Tapping:
Backbox/Grille: **As Supplied** Backbox/Grille:

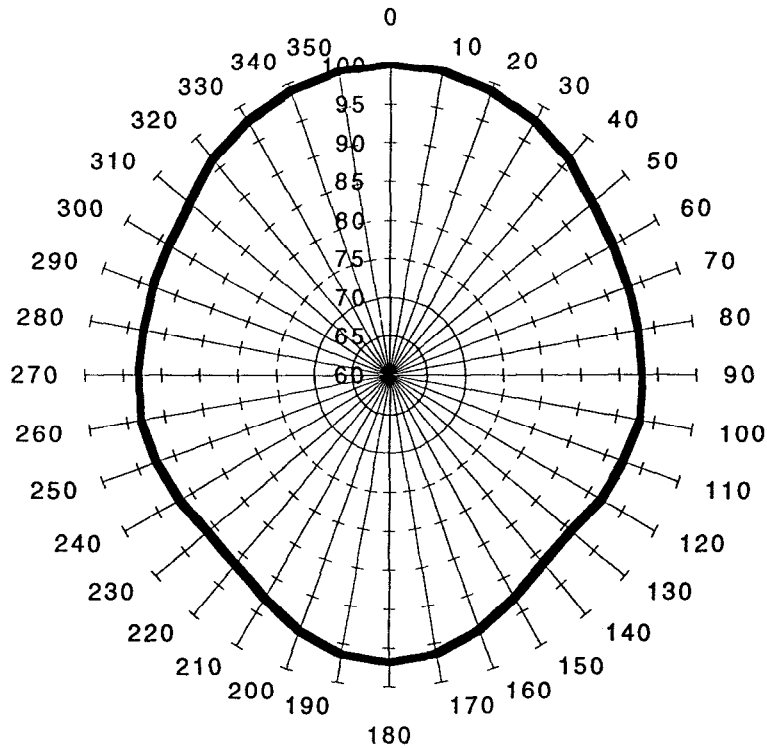
Vertical ; 500 Hz.



Speaker: **SPH20**
Mounting: **Free Space**

Tapping: **20W**
Backbox/Grille: **As Supplied** Tapping:
Backbox/Grille:

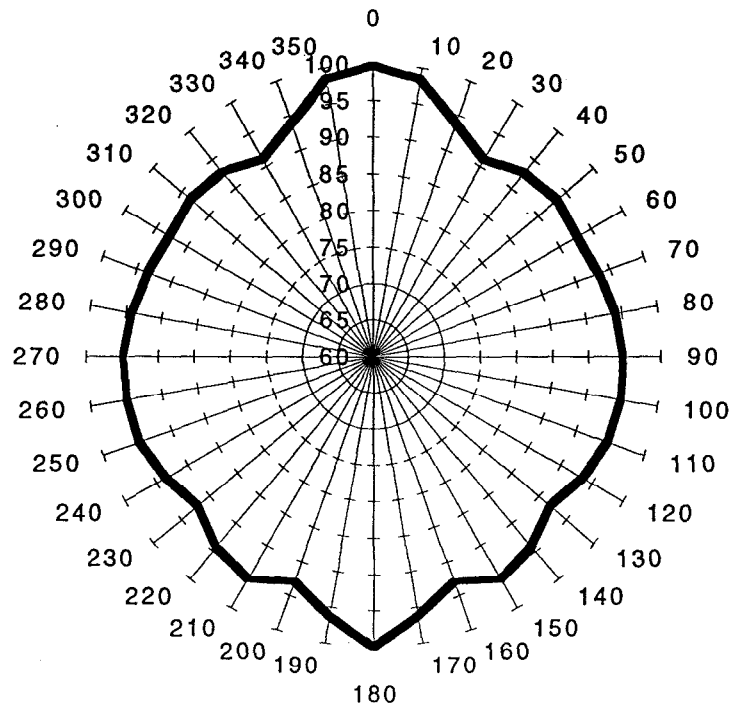
Vertical ; 1KHz.



Speaker: **SPH20**
Mounting: **Free Space**

Tapping: **20W**
Backbox/Grille: **As Supplied** Tapping:
Backbox/Grille:

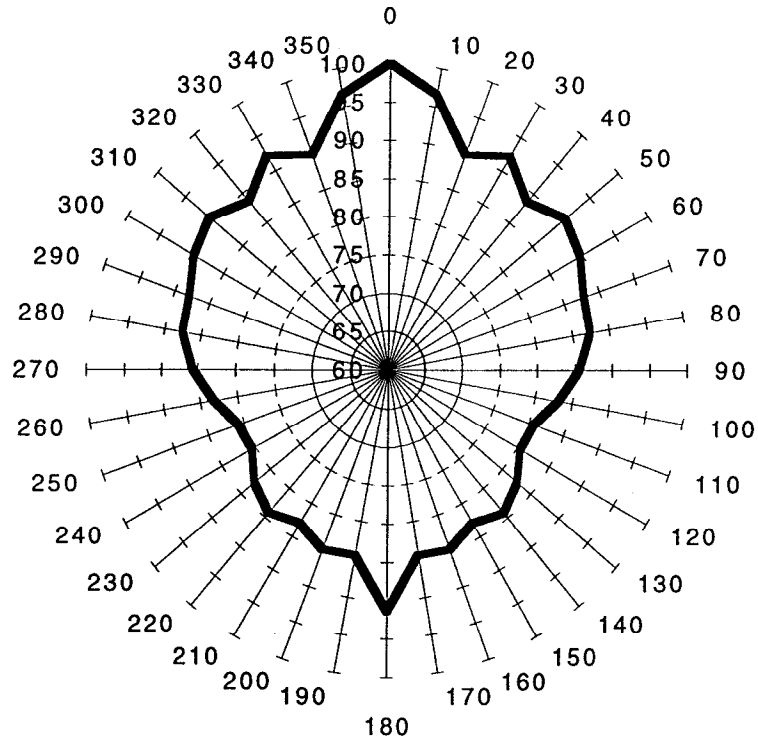
Vertical ; 2KHz.



Speaker: **SPH20**
Mounting: **Free Space**

Tapping: **20W**
Backbox/Grille: **As Supplied**

Vertical ; 4KHz.



Speaker: **SPH20**
Mounting: **Free Space**

Tapping: **20W**
Backbox/Grille: **As Supplied**

Vertical ; 8KHz.

