



ACOUSTIC & ELECTRO-ACOUSTIC CONSULTANTS

Rayleigh House
21 Queen Anne's Place, Bush Hill Park
North London EN1 2QB
Tel: 020 8360 5988 Fax: 020 8360 2640
E-mail: amsac@btinternet.com
Web-site: www.amsacoustics.co.uk

Partners:
P. W. Barnett MICOA, MASA, F.Inst. SCE, MAES
J. L. Goddard (administration)
Associates:
H.M. Goddard AMIOA, M.Inst. SCE, MAES
P.N. Huffer B.Sc, AMIOA

Loudspeaker Test Report

Make: Next Two Ltd.

Type: Ceiling

Model: S20T

For: Next Two Ltd., Uckfield, Sussex.

Report No. 1125/LS/S20T

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

August 2000

©AMS Acoustics, London, August 2000.

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 S20T 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) S20T.
- (ii) Transformer Power Tapping of 20W.

- 3.03 The loudspeaker under test is a Ceiling type with Two drive units.

4.00 Method

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

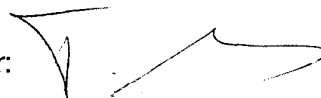
Sensitivity

- 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.

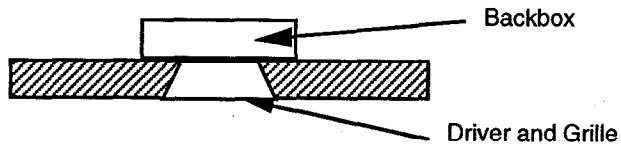
Originator:



Countersigned:

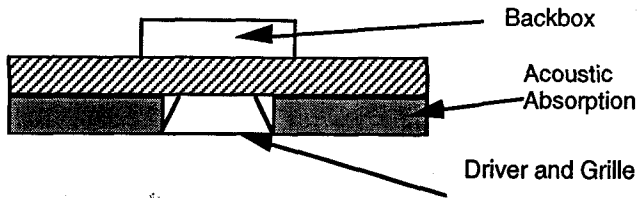


Loudspeaker Mountings



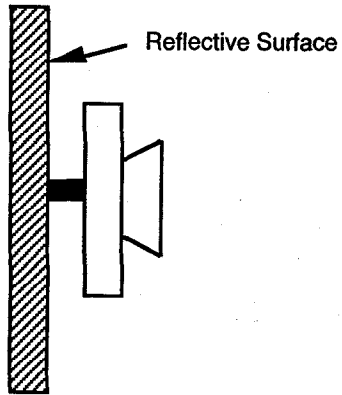
Mounting Method A

Loudspeaker mounted in a reflective baffle.



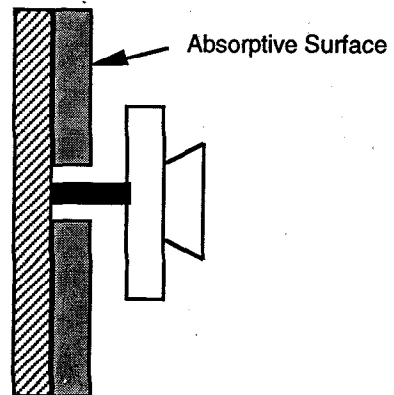
Mounting Method B

Loudspeaker mounted in an 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



R. 1125/LS/S20T

Louspeaker Information

Name: S20T
Code: S20T
Manufacturer: Next Two Ltd.
Colour: White

External Detail

Case: Metal
Mounting: Half Space
Grille: Metal
Breadth: 9cm
Length: 26cm
Weight: 2.85kg
Labels: 2x Next Two Labels



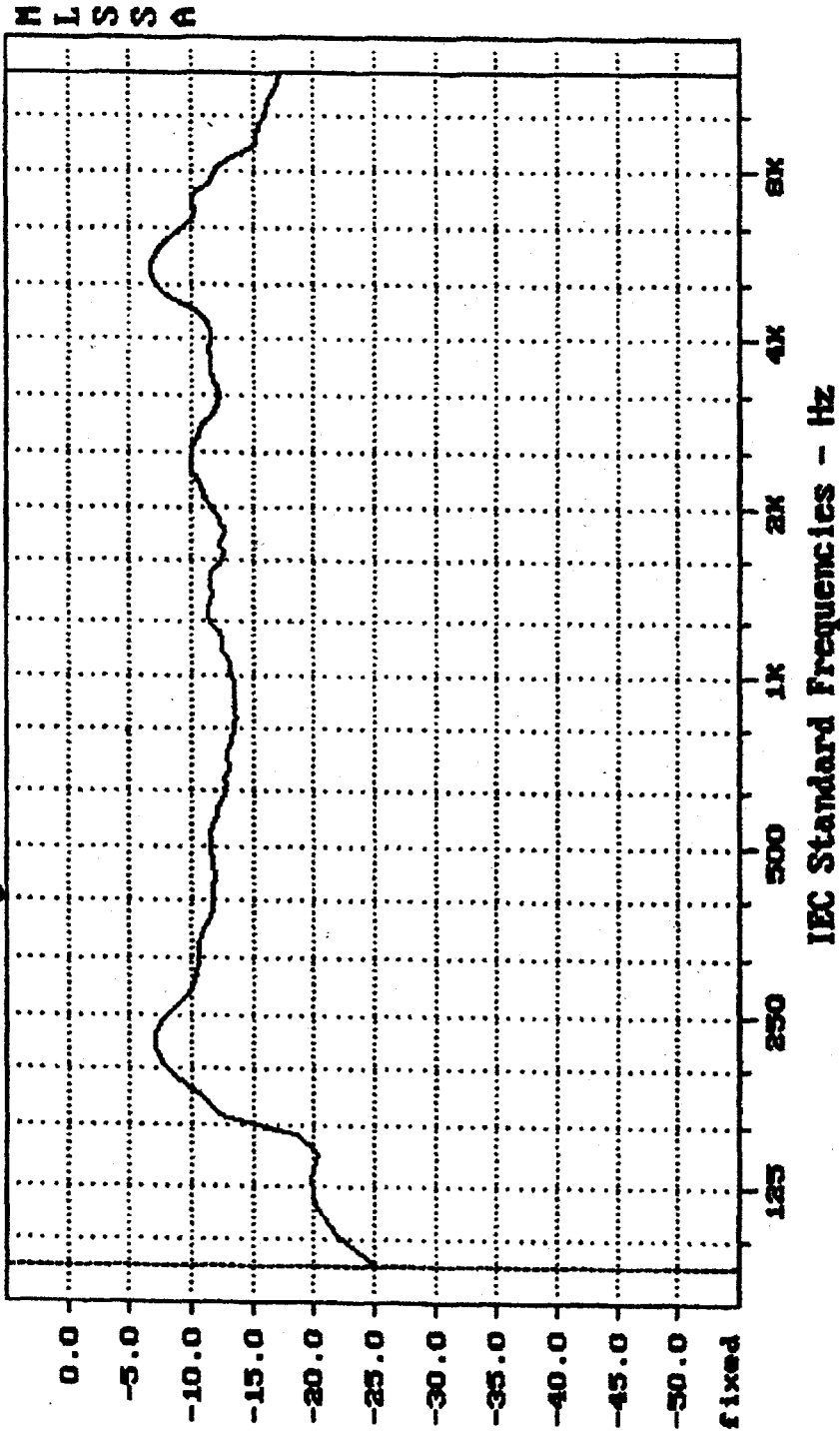
R. 1125/LS/S20T

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
Tappings:	20W/8ohm

File: A:\FREQ.FRQ 8-29-100 11:50 AM
Transfer Function Mag - dB volts/volts (0.33 oct)



mean: -11.73, res: -11.26, std: 2.54, max: -6.71, min: -25.25

S201 @ 20W Tapping

8-30-100 5:26 PM

MLSSA: Frequency Domain

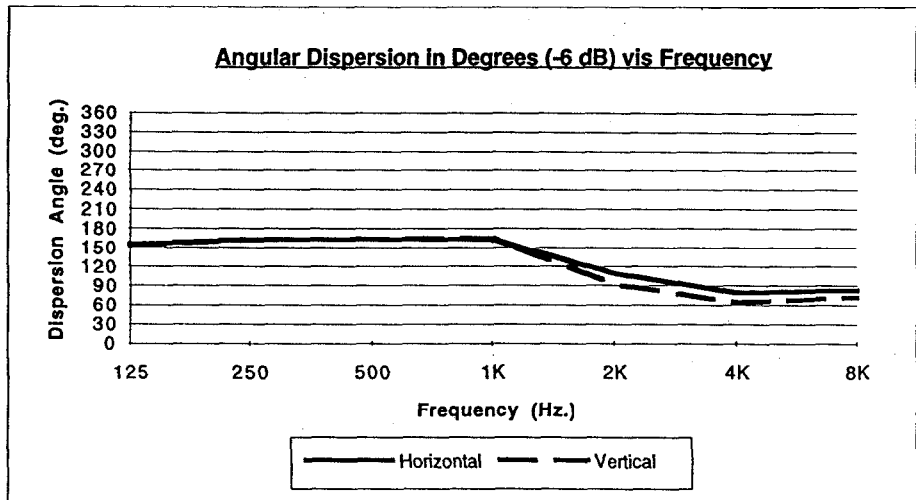
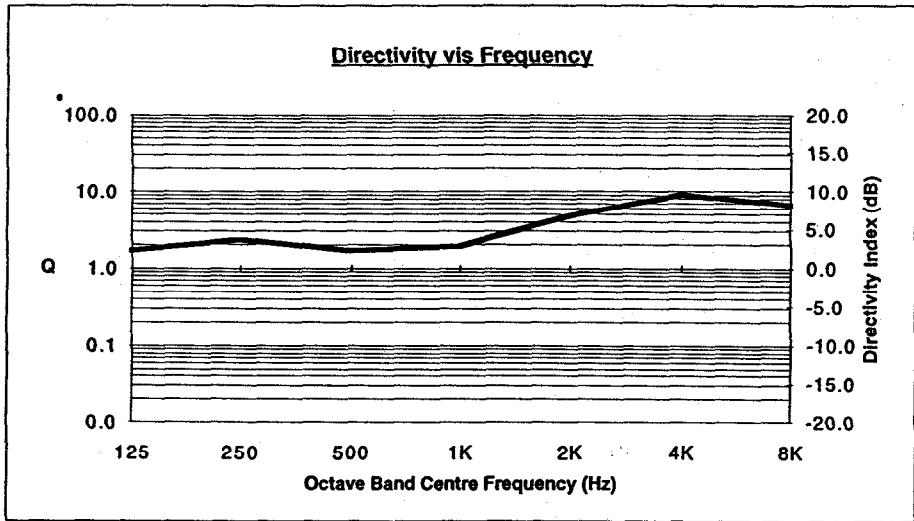
AMS

Acoustics

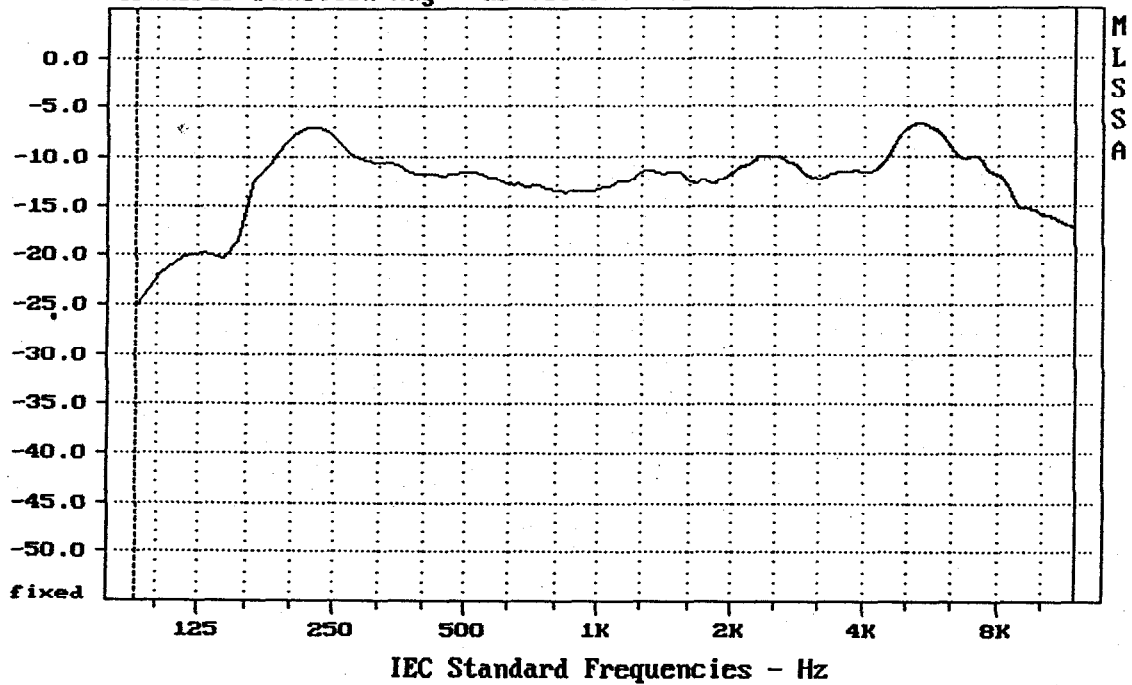
Loudspeaker Name: S20T
 Transformer Tapping: 20W
 Mounting: Half Space
 Backbox & Grille: As Supplied

Principal Axis Located at: 0 degrees

Parameter	Frequency (Hz)							dB	dBA
	125	250	500	1K	2K	4K	8K		
Axial Q	1.6	2.3	1.7	1.9	4.7	8.9	6.5		
Di (dB)	2.2	3.6	2.2	2.8	6.7	9.5	8.2		
Angle of direction of maximum SPL	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx		
Horizontal Angular Dispersion (deg.)	154	162	162	162	108	79	83		
Vertical Angular Dispersion (deg.)	152	162	164	164	92	64	71		
Impedance (Ohms)	552	556	485	560	819	872	709		
Sensitivity (dB@1W,1m) 125Hz - 8kHz Apportioned Power	81	90	87	87	90	92	89	89	88
Sensitivity (dB@1W,1m) 250Hz - 4kHz								89	88
Sensitivity (dB@1W,1m)Speech Shaped								88	84



File: A:\FREQ.FRQ 8-29-100 11:50 AM
Transfer Function Mag - dB volts/volts (0.33 oct)



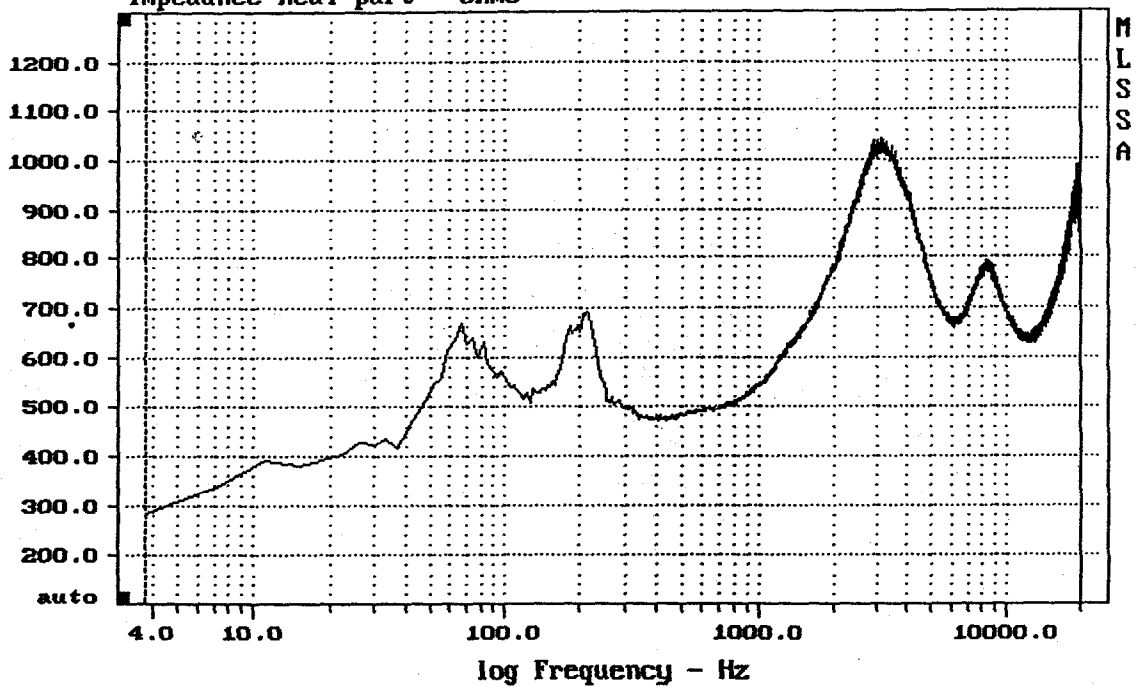
mean: -11.73, rms: -11.26, std: 2.54, max: -6.71, min: -25.25

S20T @ 20W Tapping

8-30-100 5:26 PM

MLSSA: Frequency Domain

File: A:\IMP.FRQ 8-29-100 11:45 AM (equalized)
Impedance Real part - ohms



mean: 746.6, rms: 756.3, std: 120.6, max: 1041, min: 283.1

S20T @ 20W Tapping

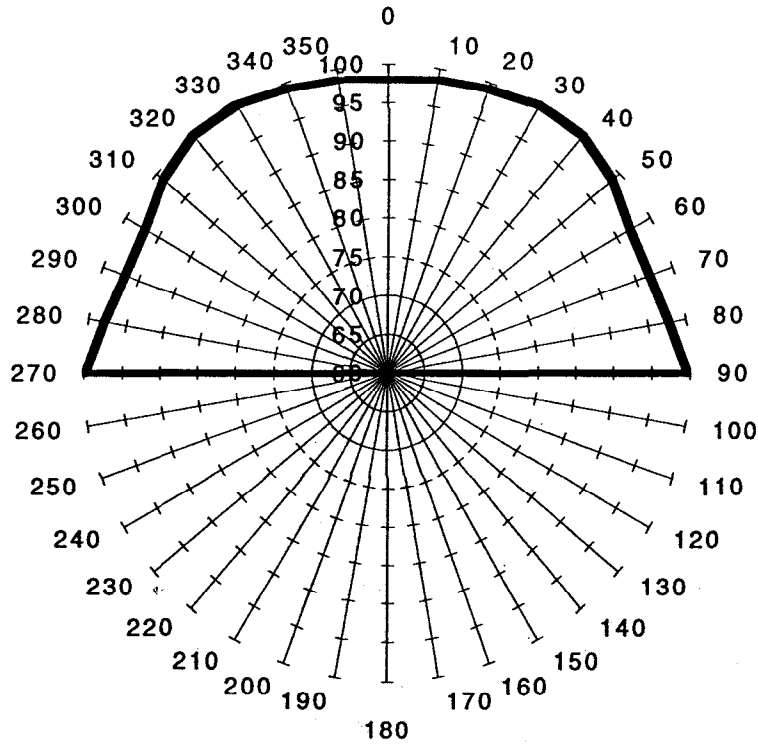
8-30-100 5:39 PM

MLSSA: Frequency Domain

Speaker: S20T
Mounting: Half Space

Tapping: 20W
Backbox/Grille: As Supplied

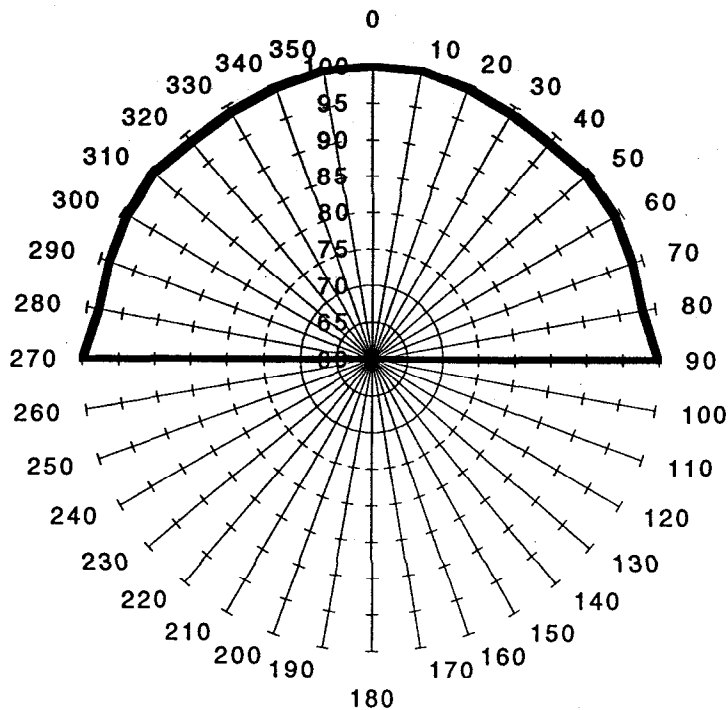
Horizontal ; 125 Hz.



Speaker: S20T
Mounting: Half Space

Tapping: 20W
Backbox/Grille: As Supplied

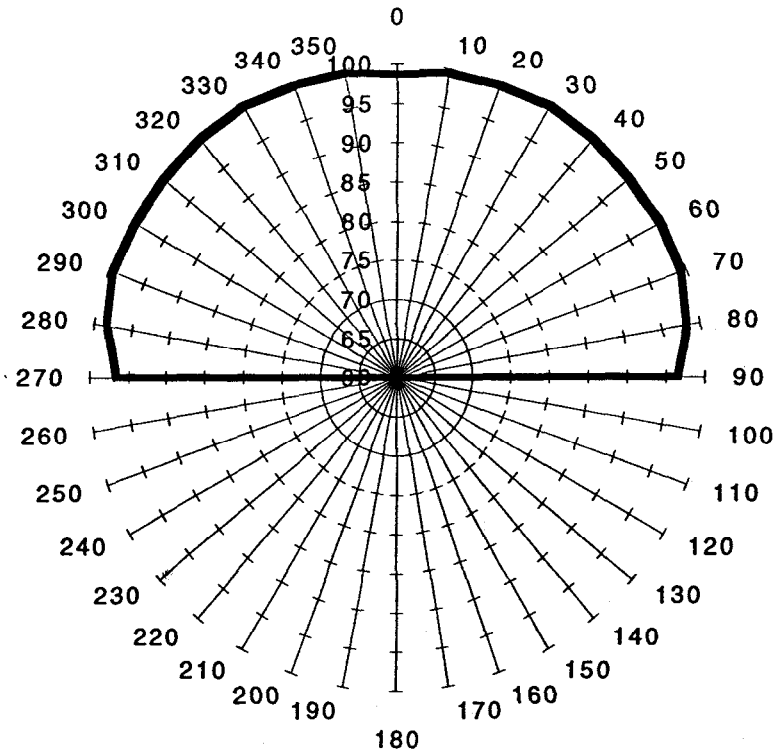
Horizontal ; 250 Hz.



Speaker: **S20T**
Mounting: **Half Space**

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

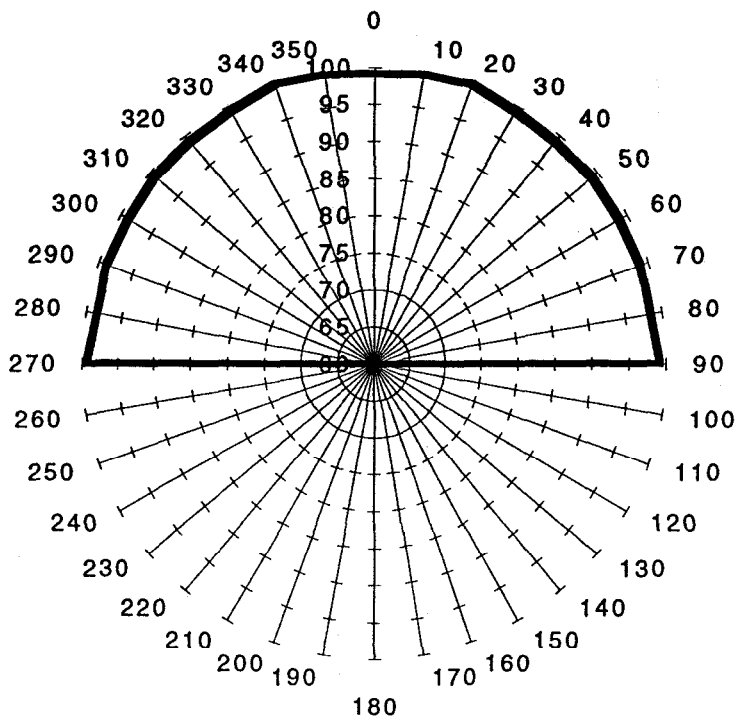
Horizontal ; 500 Hz.



Speaker: **S20T**
Mounting: **Half Space**

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

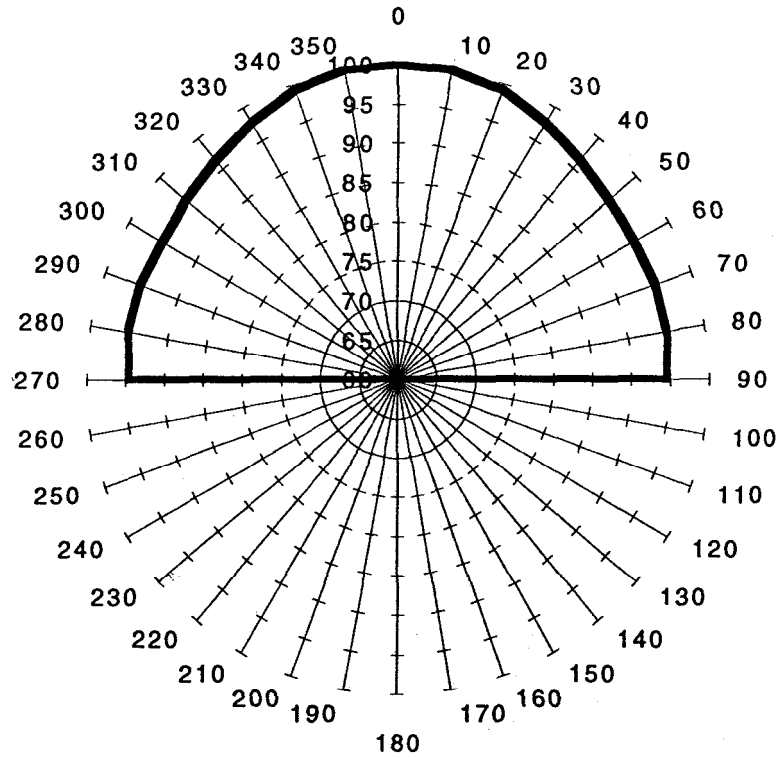
Horizontal ; 1KHz.



Speaker: **S20T**
Mounting: **Half Space**

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

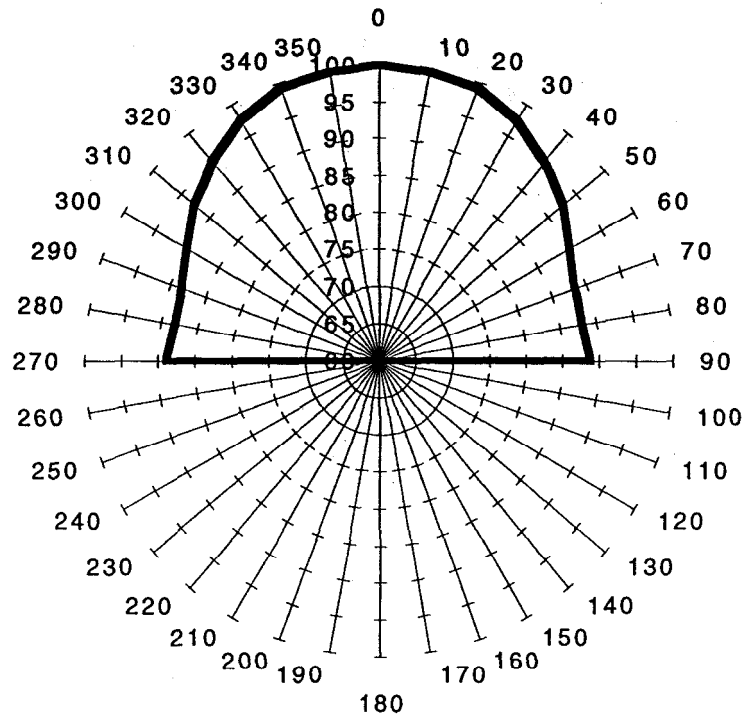
Horizontal ; 2KHz.



Speaker: **S20T**
Mounting: **Half Space**

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

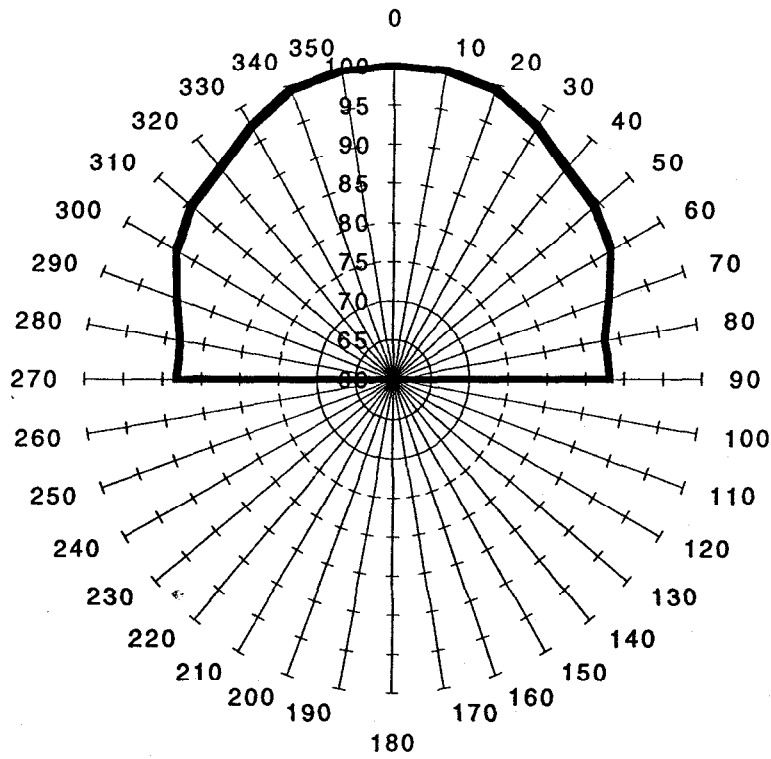
Horizontal ; 4KHz.



Speaker: **S20T**
Mounting: **Half Space**

Tapping: **20W**
Backbox/Grille: **As Supplied**
Horizontal ; 8KHz.

Tapping:
Backbox/Grille:

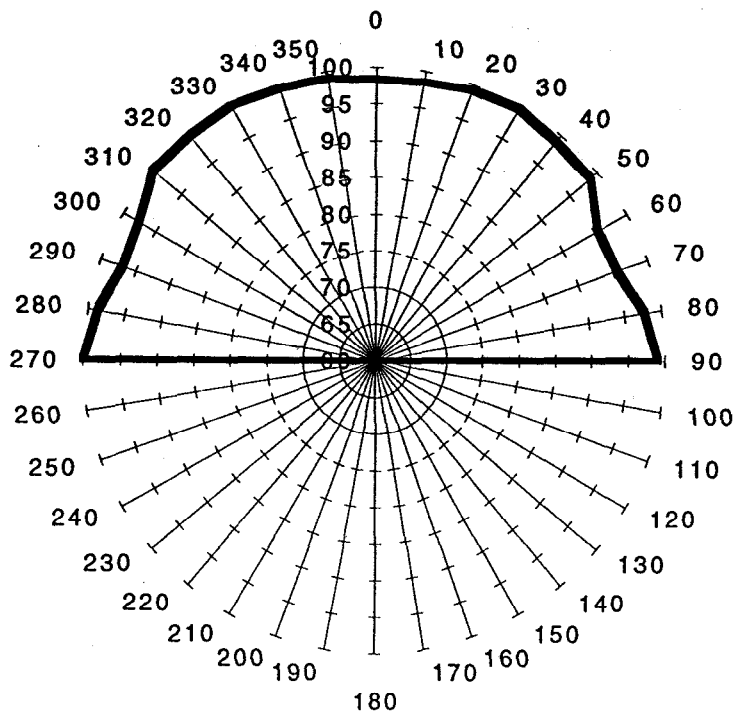


Speaker: **S20T**
Mounting: **Half Space**

Tapping: **20W**
Backbox/Grille: **As Supplied**
Vertical ; 125 Hz.

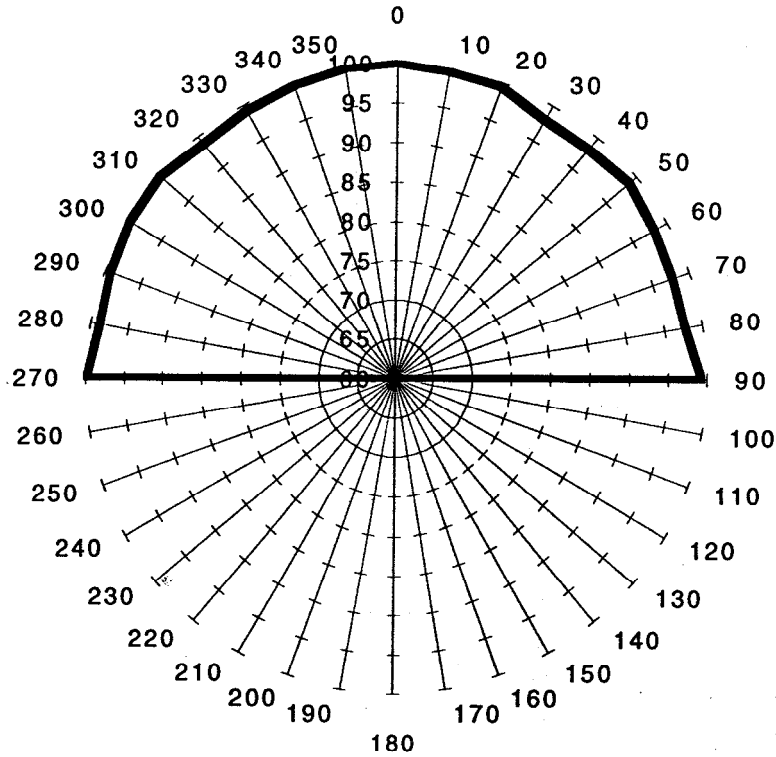
Tapping:

Backbox/Grille:



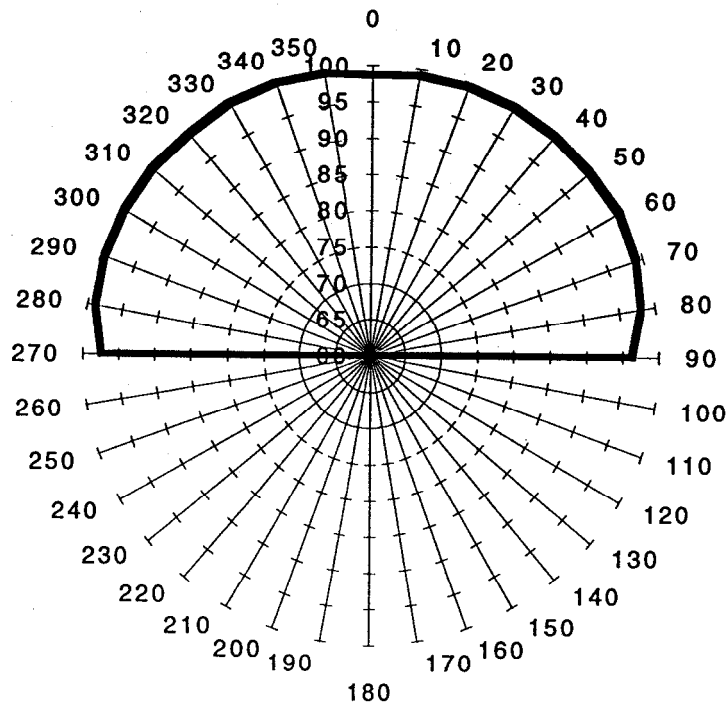
Speaker: **S20T**
Mounting: **Half Space**

Tapping: **20W**
Backbox/Grille: **As Supplied** Backbox/Grille:
Vertical ; 250 Hz.



Speaker: **S20T**
Mounting: **Half Space**

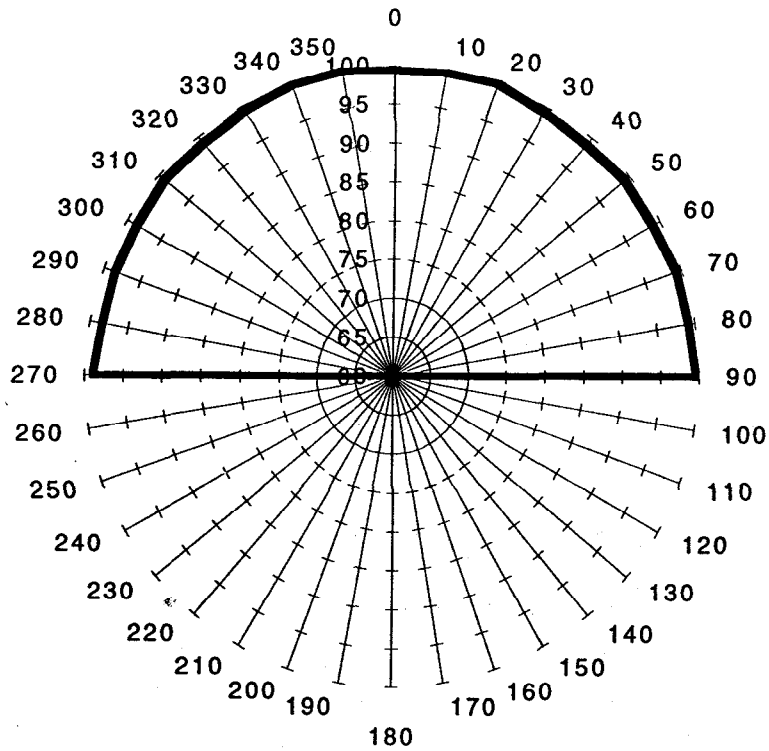
Tapping: **20W**
Backbox/Grille: **As Supplied** Backbox/Grille:
Vertical ; 500 Hz.



Speaker: **S20T**
Mounting: **Half Space**

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

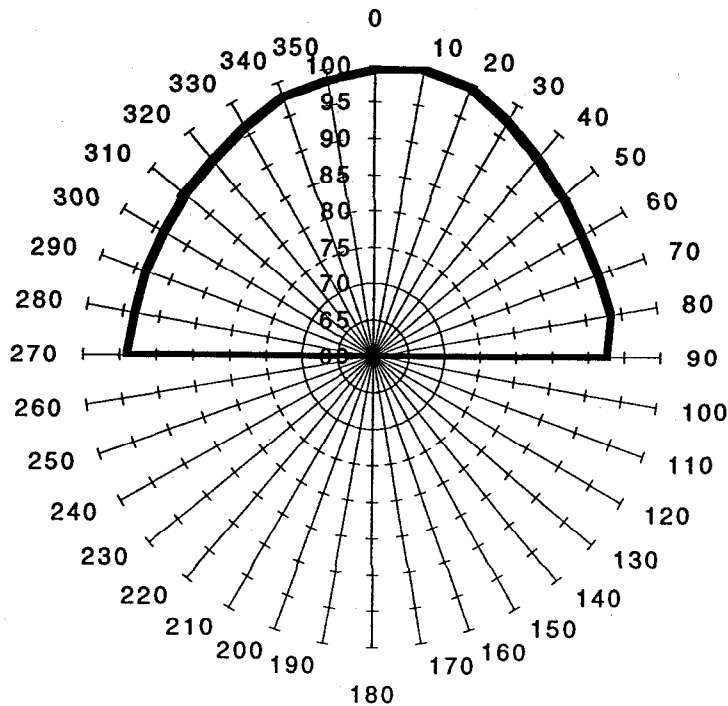
Vertical ; 1KHz.



Speaker: **S20T**
Mounting: **Half Space**

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

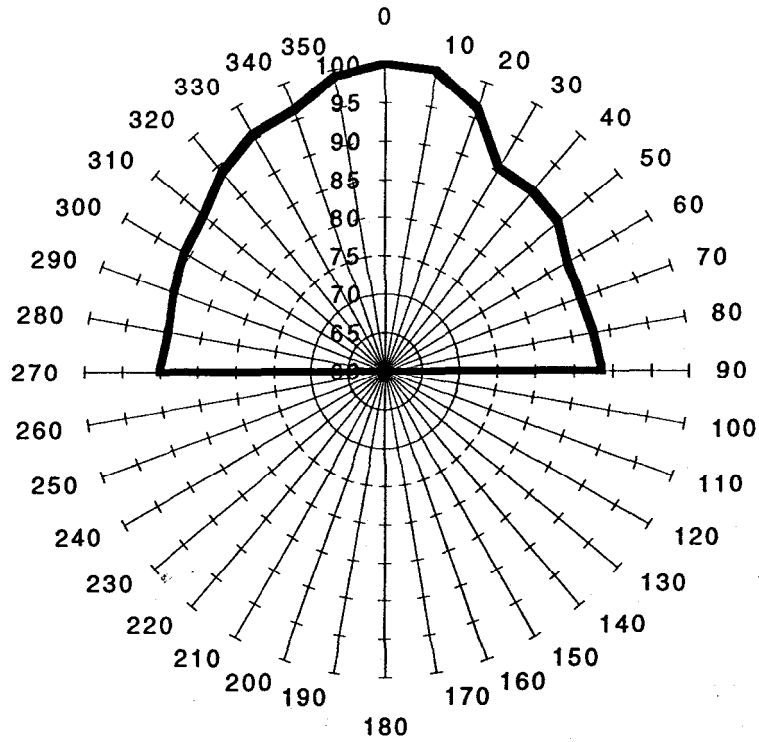
Vertical ; 2KHz.



Speaker: **S20T**
Mounting: **Half Space**

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

Vertical ; 4KHz.



Speaker: **S20T**
Mounting: **Half Space**

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

Vertical ; 8KHz.

