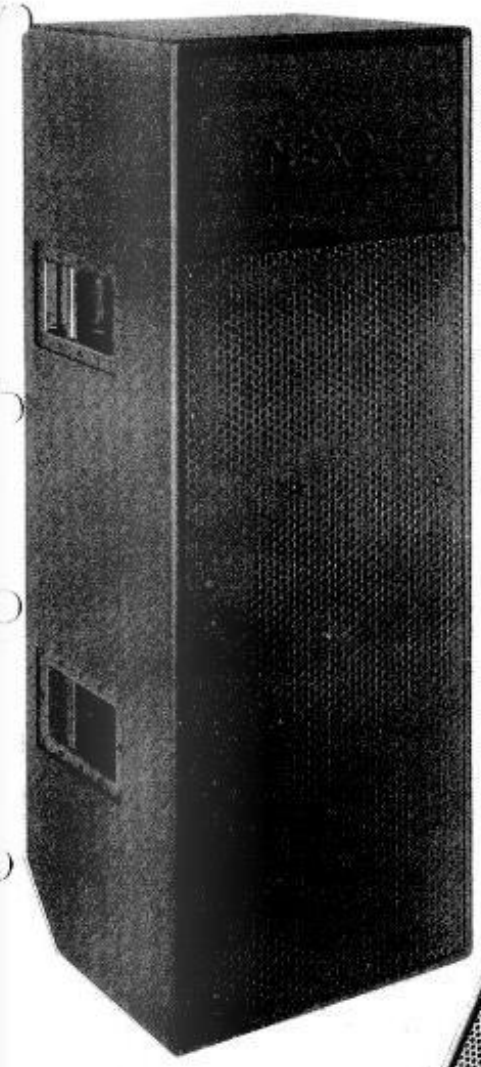
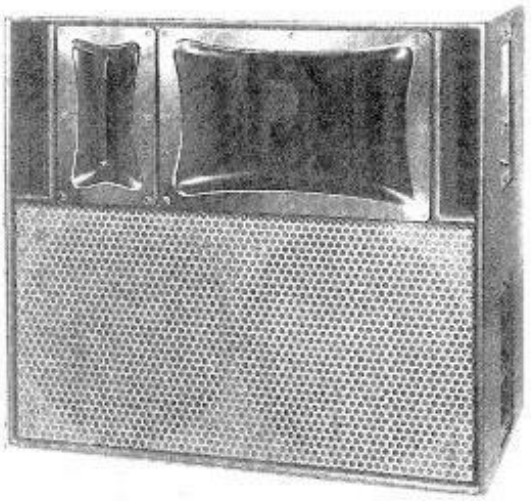
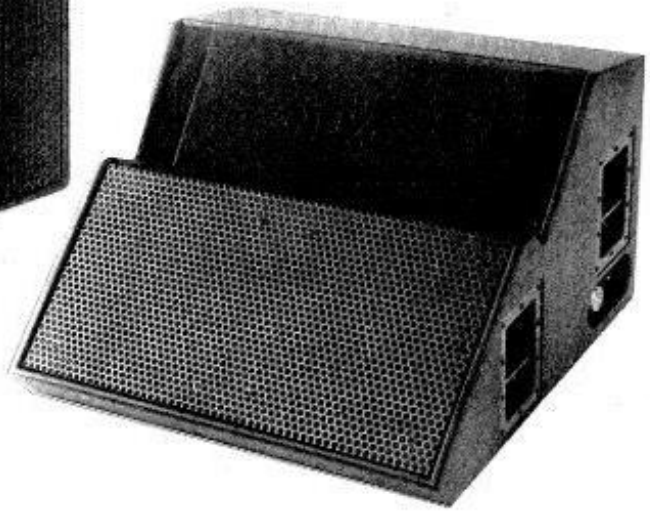
MINI INTEGRATED SYSTEM





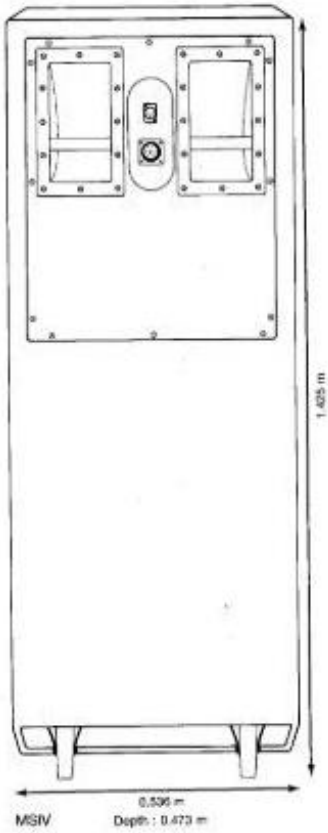


NEXO

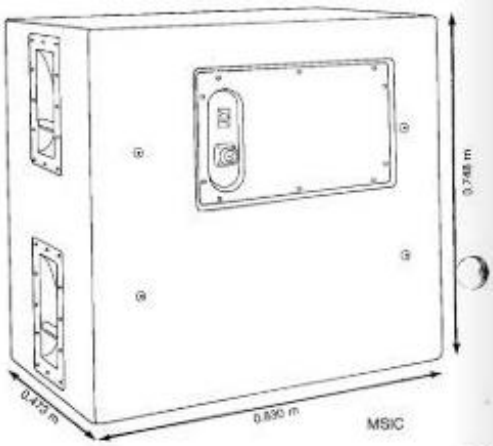
NEXO has specialised in the design of high performance electro-acoustic systems since 1979. Field research with professional users and advanced computer techniques are combined at all stages of design, development and manufacture :

- Mathematical research models integrate the parameters of drivers, electronics, passive networks, acoustic loads and environment.
- Automated digital measurements are used in development and quality control.

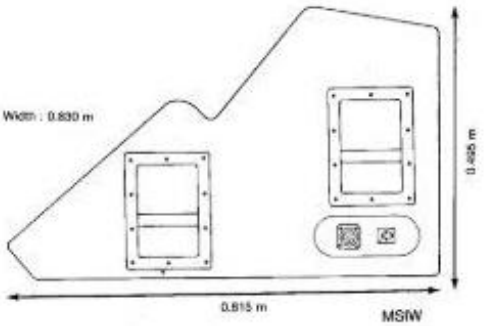
Optimised synthesis of Integrated Systems results from this approach. To satisfy NEXO's theoretical and practical requirements, most drivers, horns & electronics are either original designs or customised items. (*)



MSIV Depth : 0.473 m



MSIC



MSIW

In professional sound systems, application and situation often dictate the shape of an enclosure. The MINI INTEGRATED SYSTEM has been designed so that it can be offered in a range of three basic formats with closely related performance.

Compact MSIC features minimum overall dimensions ; MSIV is a shallow-width, free-standing column ; MSIW is a wedge shaped enclosure which can be used either as a high-power floor monitor, or as a wall / ceiling low-profile cabinet where space is at a premium.

MINI INTEGRATED SYSTEMS do not require multiple amplifier channels or numerous interconnections. The pre-aligned components guarantee identical performance from each installation as well as compatability between all three formats.

The MIS concept gives the user flexibility of choice and simple installation whilst ensuring technical standardisation.

(*) Additional documentation :

- Nexo Systems Application Notes for : Theatre / Cinema, Concert Sound, Stage Monitoring, Public-Address, Discotheque ...
- Design philosophy : Audio Engineering Society, 75th Convention, Preprint No 2085, E. VINCENOT & Ph. ROBINEAU, NEXO "Computer Aided Design of dedicated high-power modular loudspeaker cabinets for concert sound reinforcement".

Electronically enhanced single amplifier channel operation through Crest Factor Reduction (CFR).



The CFR technique allows high maximum Sound-Pressure Level and extended Low Frequency response for the system's size as well as the ability to operate from a single amplifier channel. This unique combination of electronic processor, passive filters and maximised efficiency components is the result of extensive computer modelling . Mid-range & high-frequency compression drivers operate at full sensitivity without power being wasted in passive attenuators.

The MSIP electronic processor ensures nominally flat response whilst increasing amplifier headroom. Maximum sound pressure level & low frequency extension are thus equivalent to those from more conventional (and larger) multi-way active enclosures.



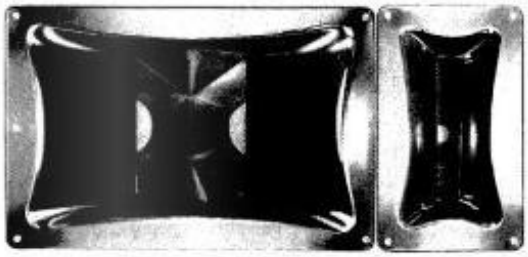
The sound quality of the MINI INTEGRATED SYSTEM fares well in comparison with standard high-power studio monitors. Fidelity & sound- - reinforcement pressure levels are achieved using proven technology developed by NEXO.

Most program information and energy are concentrated in the mid-range frequencies where the ear is most discriminating. Poor directivity control, distorsion from diaphragms & air non-linearity, and crossover defects plague designs where high SPL mid-frequencies are reproduced by wideband drivers. The MIS is a three way design featuring specialised high performance mid-range units.

The two patented NEXO compression drivers (also used in the INTEGRATED SYSTEM) ensure high efficiency and low distorsion from 230 Hz to 3 kHz. These are unachievable from narrow throat compression drivers or direct radiating units.

The treble driver has been selected for its high frequency extension so as to avoid the need for a tweeter (a source of interference problems and subsequent losses in fidelity).

Clean linear low-frequency performance is obtained at high power levels through the use of two custom designed 15" diameter drivers.



The mid and top frequency horns have been designed for the NEXO INTEGRATED & MINI INTEGRATED range. 90° Horizontal X 45° Vertical constant directivity coverage provides even distribution throughout the audience while minimising the influence of room reverberation. Optimised computer design enables both overall shallow depth and low cutoff frequency for the midrange horn.

With MSIP Processor, Single Amplifier Channel Operation

SYSTEM SPECIFICATIONS

Frequency Response ± 3 dB [a]	MSIC : 45 Hz - 17 kHz	MSIV : 42 Hz - 17 kHz	MSIW : 49 Hz - 17 kHz
Frequency Range [a]	MSIC : 41 Hz - 19 kHz	MSIV : 39 Hz - 19 kHz	MSIW : 44 Hz - 19 kHz
Nominal sensitivity [b]	103 dB SPL/ 1W/1m on program material		
Nominal Peak SPL [b]	136 dB SPL Peak at 1m on program material		
Dispersion Angles [c]	Horizontal Dispersion : 90° nominal Vertical Dispersion : 45° nominal		
Nominal Impedance	4 Ohms		
Recommended Amplifier	600 to 900 Watts in 4 Ohms load		

SYSTEM OPERATION

Amplifier	Current requirements of loudspeaker systems for correct reproduction of transients are considerably higher than suggested by nominal impedance only. The selected amplifier should be capable of delivering its nominal power in a 2 Ohms resistive load [d]		
MSIP Processor	Operation of NEXO MINI INTEGRATED SYSTEM without MSIP Processor will result in poor sound quality and can damage the components.		
Speaker Cables	1 to 5 m : 1.5 mm²	5 to 10 m : 2.5 mm²	10 to 20 m : 4 mm²
Two Way Active Operation	Provision is made via the internal filter and multipin connector for two-way active operation but no attempt should be made to use a standard crossover. A specific two way processor is required, check with your NEXO distributor.		

TECHNICAL SPECIFICATIONS

Wideband Sensitivity [b] Voice decade Sensitivity [b]	101 dB SPL 1W-1m (20 Hz - 20 kHz pink noise through MSIP for 2 Volts RMS on cabinet) 105 dB SPL 1W-1m (300 Hz - 3 kHz pink noise through MSIP for 2 Volts RMS on cabinet)		
Wideband Peak SPL [b] Voice decade Peak SPL [b]	134 dB SPL at 1m (20 Hz - 20 kHz pink noise through MSIP and 900W/4 Ohm Amplifier) 137 dB SPL at 1m (300 Hz - 3 kHz pink noise through MSIP and 900W/4 Ohm Amplifier)		
Directivity : (Q) (DI) [c]	Q : 10 nominal	DI : 10 dB nominal	Refer to diagrams
Distorsion		Refer to diagrams	
Group Delay		Refer to diagrams	

FEATURES

Crossover frequencies		LF to MF : 400 Hz	MF to HF : 2 kHz
Dimensions	MSIC	MSIV	MSIW
Height Widpth Depth	0.748 m 0.830 m 0.473 m	1.425 m 0.536 m 0.473 m	0.495 m 0.830 m 0.815 m
Volume/ Weight	0.294 m³/ 75 kgs	0.361 m³/ 82 kgs	0.220 m³/ 75 kgs
Connectors	1 x XLR 3-F and 1 x 7 poles locking multipin, gold contacts.		
Fittings Metal Bar Handles : Castor plates :	MSIC 4 optional	MSIV 6 included	MSIW 4

CONSTRUCTION

Enclosure	Birch-Ply 18 mm, weather resistant. Black textured finish.
Horns	High performance composites.
Filters	Air cored inductors. Paper capacitors. Wirewound resistors. Epoxy PCB.
Protection	Recessed and damped Metal grille. Acoustic foam dust cover.

[a] All response curves and data : anechoic far-field measurements above 100 Hz. Half-space far-field under 100 Hz.

[b] Due to the CFR technique Sensitivity and Peak SPL will depend on Crest Factor and Spectral Distribution of Programme Material. Wideband and Voice decade data have been included to allow evaluation under repeatable conditions.

[c] All directivity and coverage curves and data : 1/3 Octave Anechoic measurements (Warbled Sine).

[d] ref. : Input Current Requirements of High Quality Loudspeaker Systems. AES Preprint No 1987 (Martikainen,Otala).

MSIP SPECIFICATIONS

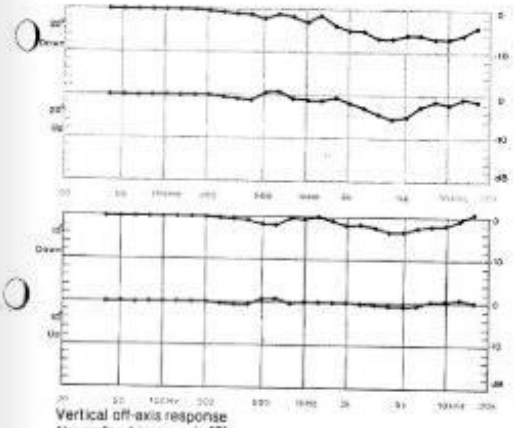
Channels	Two independent
Inputs	20 kOhms electronically balanced Subsonic and ultrasonic filters.
Outputs	75 Ohms unbalanced Transformer balancing retrofit option.
Output level	+ 20 dBm max, + 18 dBm on 600 Ohms
Gain	– 2 dB nominal
Noise	Less than – 85 dBm (20 Hz - 20 kHz Unweighted)
Distorsion	0.005% THD Typical, 0.03% THD Max. (Input + 8 dBm, 20 Hz - 20 kHz)

MSIP OPERATION

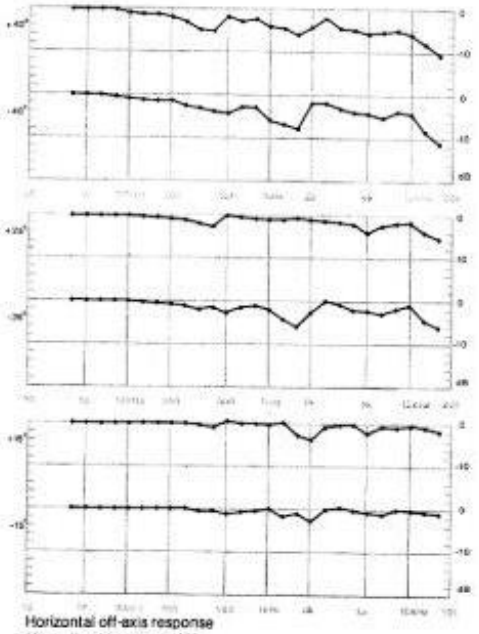
Adjustment	Preadjusted. No user controls accessible.
Servicing	Fast access card. Socket mounted IC's throughout.
Power supply	110/220 Volts, 50/60 Hz. Self contained power cord.

MSIP FEATURES

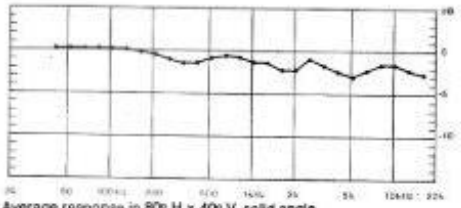
Input Connectors	2 x XLR3-F
Output Connectors	2 x XLR3-M
Indicators	LED : Power-On, Mute
Switches	Mute. Earth-Lift. 110/220 V
Dimensions	H : 1U Rack L : 19" Rack P : 180 mm W/O transformer, option.
Weight	3 kgs



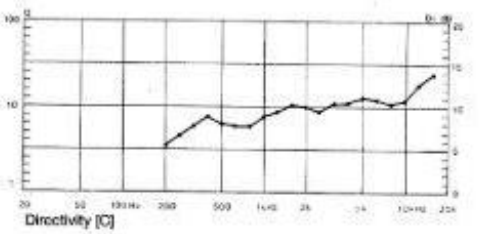
Vertical off-axis response
Normalised to on axis [C]



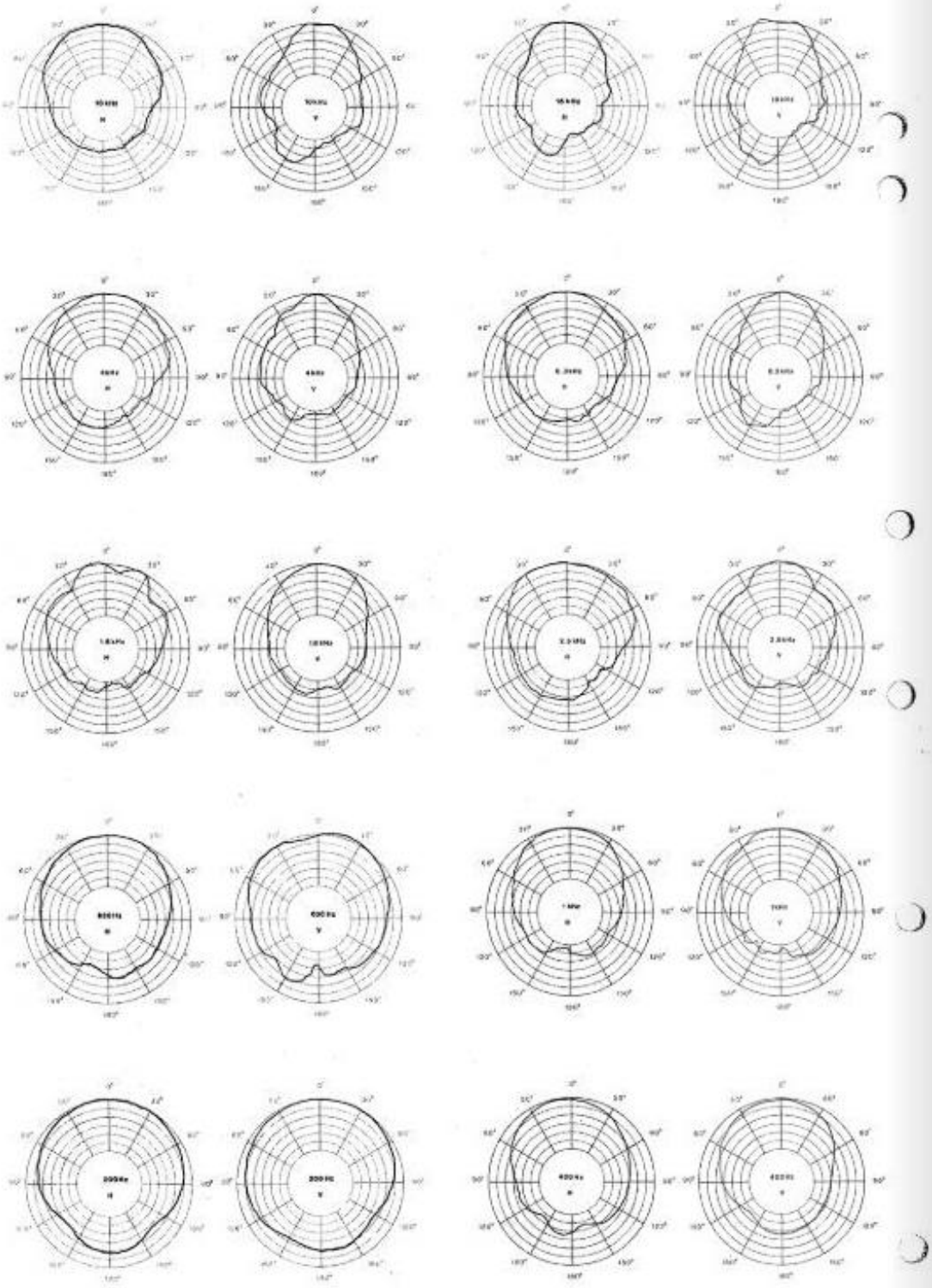
Horizontal off-axis response
Normalised to on-axis [C]



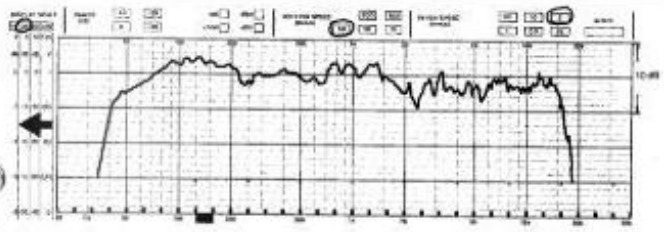
Average response in 80° H x 40° V solid angle
Normalised to on axis [C]



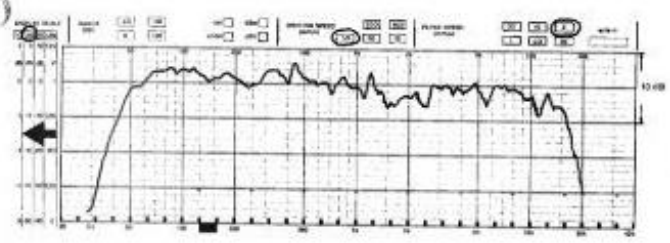
Directivity [C]



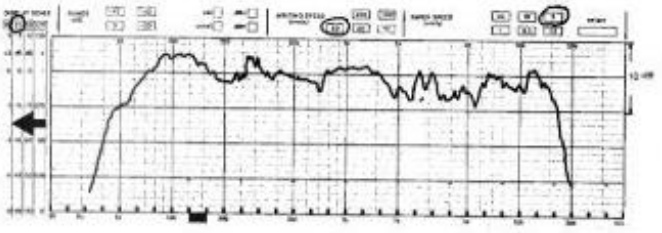
Horizontal and Vertical Polar Response (c)
Scale : 5 db per line



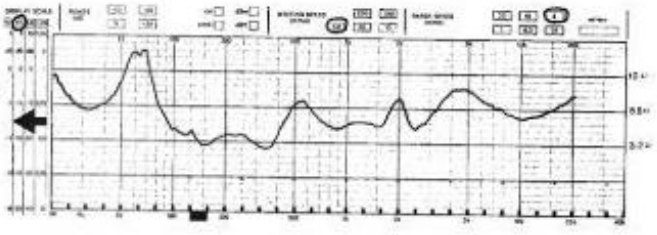
On axis response MSIC [a]



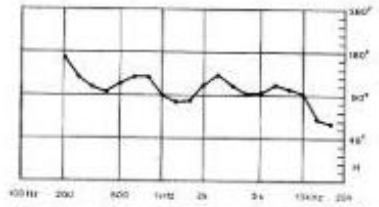
On axis response MSIV [a]

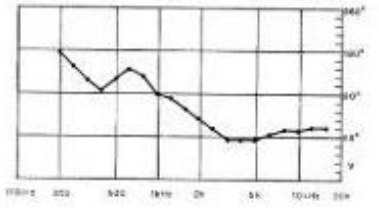


On axis response MSIW [a]

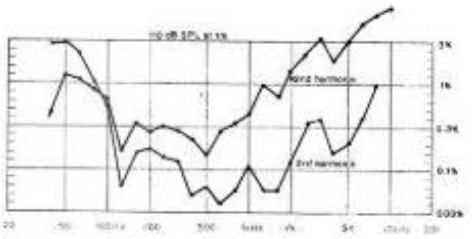


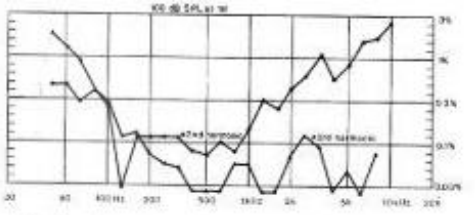
Impedance (Log Z/Log f)



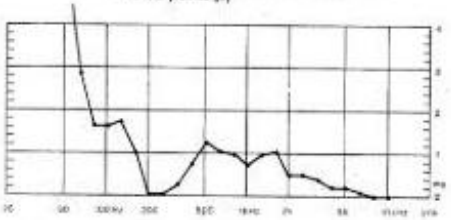


Horizontal and Vertical Coverage Angles – 6 dB points [c]



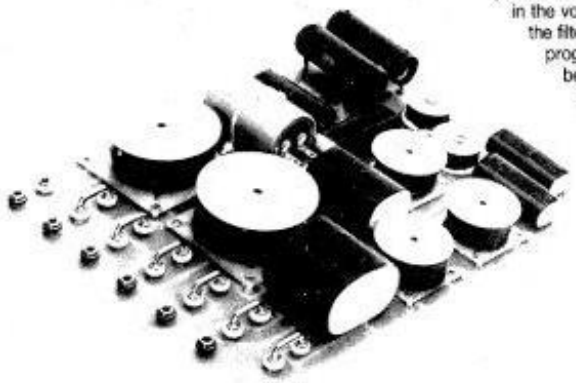


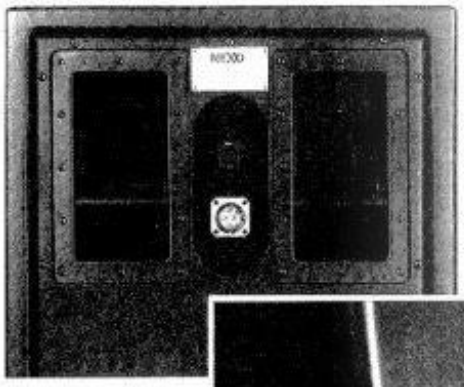
Distorsion for 100 and 110 dB SPL nominal at 1m

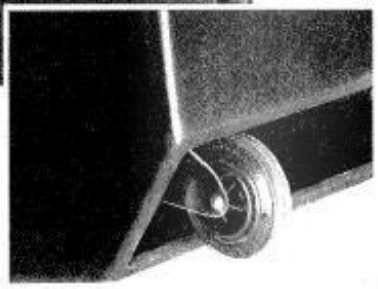


Group Delay

Integrated design philosophy is exemplified by features of the passive crossover and the MSIP processor. Diaphragm displacement & thermal rise in the voice coils can be kept within tight limits at the filter's design stage from the results of the simulation program. Instant access to data such as interference between drivers, lobing at crossover points, acoustic phase, group delay & complex impedance permits a high degree of control over the final performance of the filtered system.







MIS units feature all the fittings and details expected from a well finished work-tool :

Locking connectors.

Metal bar handles and castors, standard or optional. (An MSIV column can be moved on a stage by one person).

Metal and acoustic foam grilles.

Fast access for servicing.

High resistance materials, construction and finish.

Recessed components and fittings.

A gold contact multipin connector makes provision for two-way active processor operation in special applications.

(N.B. : standard active crossovers are unsuitable. Please refer to technical specifications within).

ACCESSORIES AND OPTIONS FOR MINI INTEGRATED SYSTEM.

- Castor plates, with or without brakes, for MSIC.
- Flight-cases and protective covers.
- Suspension fittings.
- Transformer balancing unit for MSIP.
- Connection cables.

NEXO

NEXO Distribution
154 allée des Erables
ZAC de PARIS Nord II
B.P. 50107
F-95950 ROISSY Charles de Gaulle CEDEX
FRANCE
Tél. : (1) 48.63.23.01
Tlx : 232 531 NEXO F

DISTRIBUTED BY :

As part of a policy of continual improvement, NEXO reserves the right to alter specifications without notice.

Déc 85. Réalisation 27x29,7