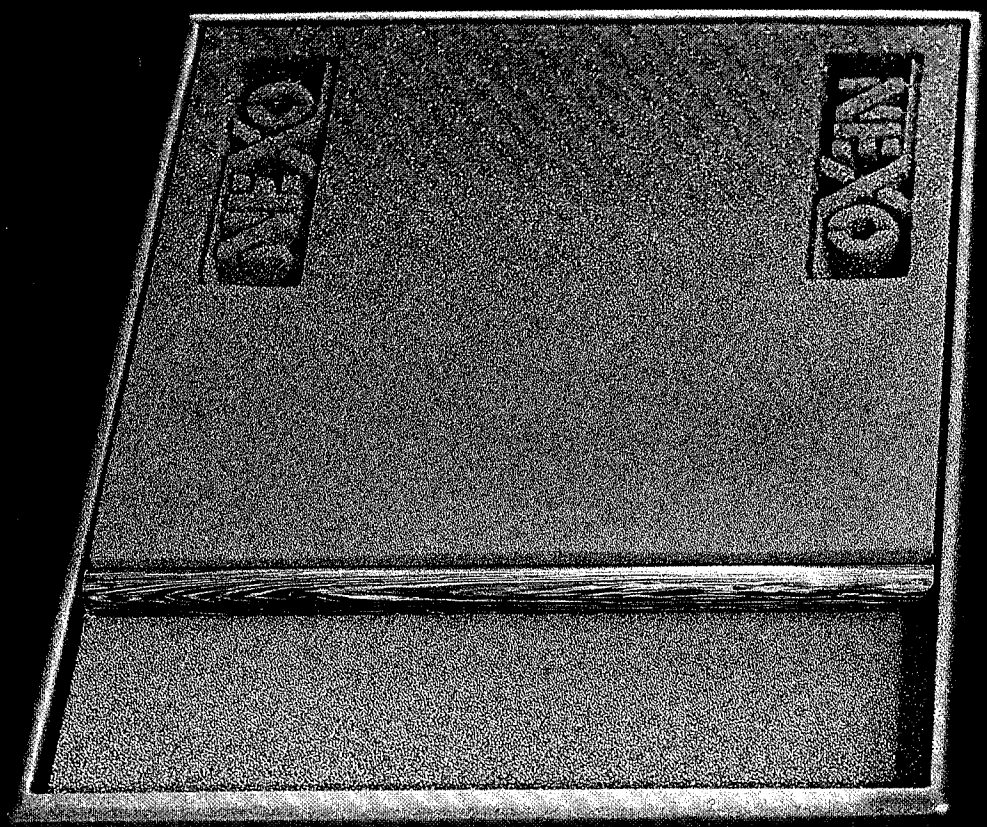
NEXO

PS LINE



NEXO

PC LINE

Until the introduction of PCLine NEXO had always resisted users' demand for smaller sound reinforcement loudspeakers. Compromises such as reduced bandwidth & efficiency, loss of directivity control and use of cheap components are incompatible with NEXO market position.

To have an edge over competition in the field of small enclosures where physical & acoustical constraints usually result in similar deficiencies, technical innovation and new concepts are needed:

- Innovation shows in the PC front-loading principle with its matched PCPro electronic processor. This space saving technique allows for a 3 way high-power wideband design with good directivity control.
- The new concept is the PCLine family itself – a range of 5 complementary loudspeaker enclosures stressing ease of use and compatibility.

APPLICATIONS

LIVE PERFORMANCE
- theatre
- clubs
- classical concerts

STAGE SOUND
- stage monitoring
- keyboards

BROADCAST & FILM
- live studios
- post production
- movie theaters

LEISURE INDUSTRY
- discotheques
- fairgrounds
- theme parks

PUBLIC ADDRESS
- conferences
- churches
- promotional shows

PCLine

1 SYSTEM

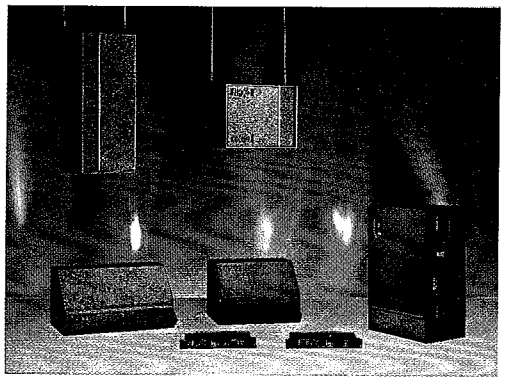
7 BUILDING BLOCKS **PC212** **PC115**

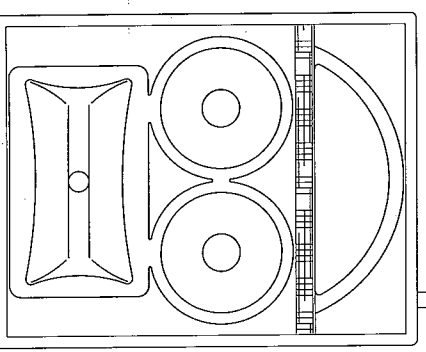
▶

PCSub

PC212W **PC115W**

PCPro **PCProW**



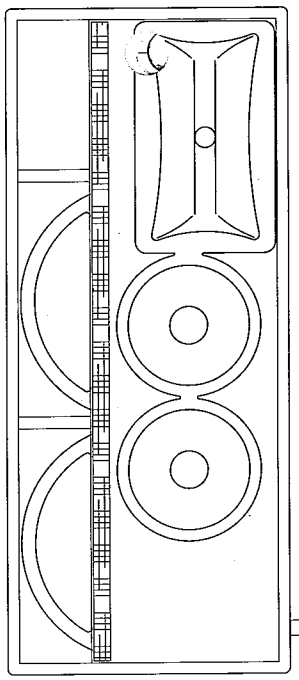


400 Watts / 8 Ω Amplifier

3 Way High-power Wide-band:
- 1 x 15" Bass + PCLoad
- 1 x 7" Mid
- 1 x 1" Driver + Constant Directivity Horn

Compact format:
- 0.442 m H x 0.558 m W x 0.372 m D
- 35 kg

Peak SPL: 129 dB @ 1 m



700 Watts / 4 Ω Amplifier

3 Way High-power Wide-band:
- 2 x 12" Bass + PCLoad
- 2 x 7" Mid
- 1 x 1" Driver + Constant Directivity Horn

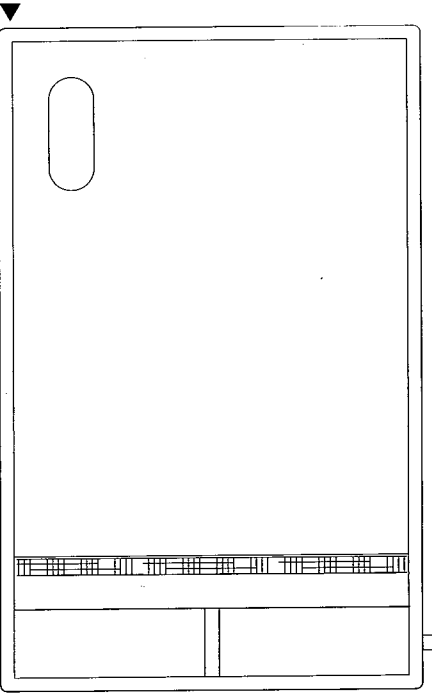
Compact column format:
- 0.884 m H x 0.372 m W x 0.372 m D
- 50 kg

Peak SPL: 132 dB @ 1 m

Optional 4 way with PCSub:
- 700 Watts / 4 Ω Amplifier
- 1 x 18" High Power woofer PCLoad
- 0.884 m H x 0.558 m W x 0.372 m D
- 45 kg

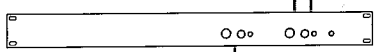
Peak SPL: 130 dB @ 1 m

One PCSub matches 2 x PC115 or 1 x PC212

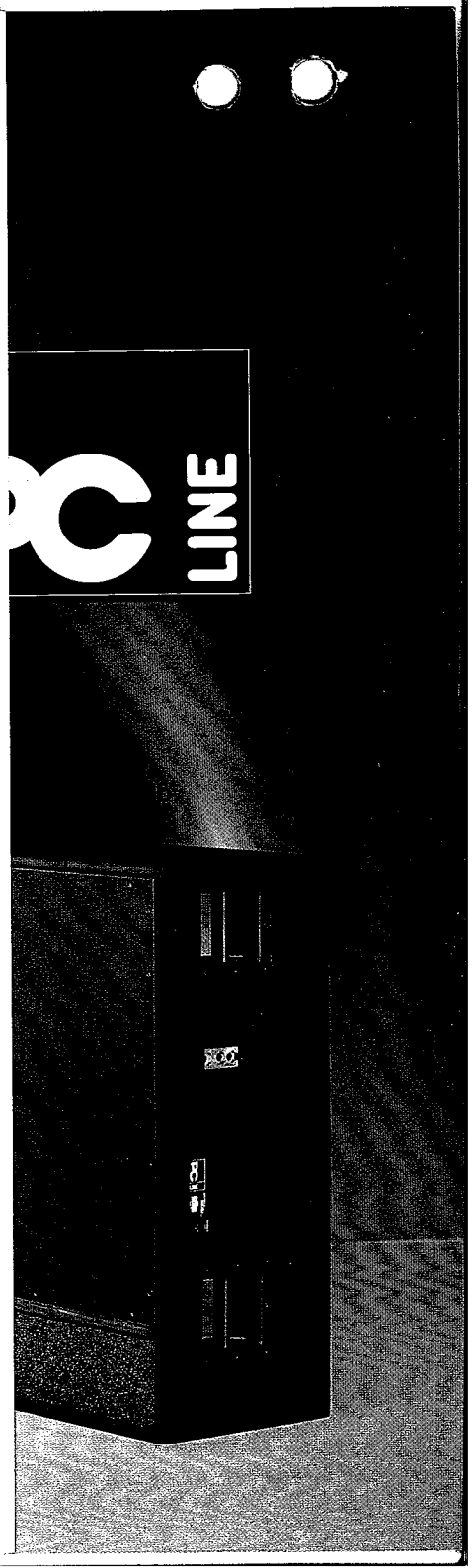


Similar response curves and impedance matched to power handling allow interchange of PC115 and PC212 in the installation, using the same speaker lines and electronics.

Minimal number of amplifier channels and cabling through extensive use of high performance passive crossovers in PC115/PC212. The same type of amplifiers used throughout the installation.



Any combination/number of PC115/PC212 and optional PCSub can be driven from a single PCPro Stereo electronic processor. Instant reconfiguration with or without PCSub via front panel switch.



NEXO

PC LINE

FLYING & INSTALLATION

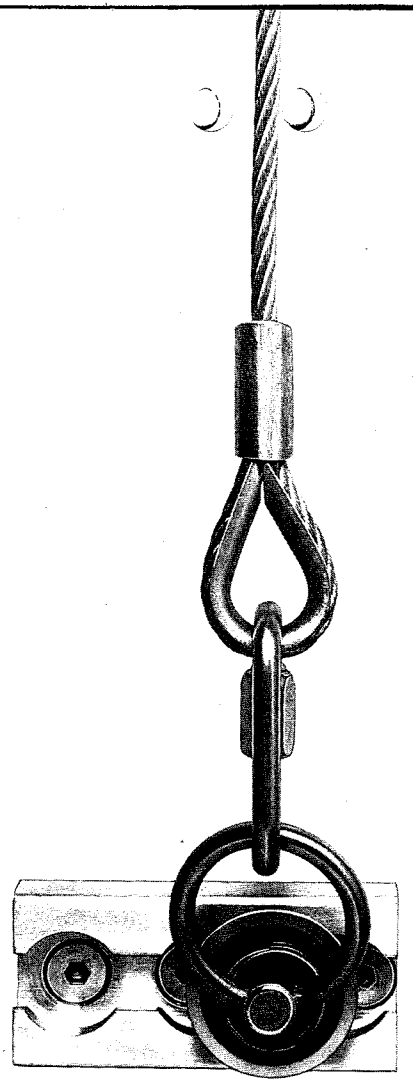
The number of amplifier channels, connections & user controls is kept to the absolute minimum. This, combined with compatibility between PCLine building blocks, fulfils the demand of users & contractors for a complete small systems solution.

PCLine offers all the fittings and details expected from a well finished work-tool:

Quick locking, aircraft approved, flying hardware. Side location of the main anchor points and use of fully rotating rings mean that only three points per cabinet are necessary. The rigging method places no additional strain on the enclosures or flying hardware when more loudspeakers are chained. Orientation of individual units remains possible in a fully configured array. Every PC including PCSub and PCWedges includes these three flying points.

The locking XLR type connectors, metal and acoustic foam grilles, handles, recessed fittings and high resistance materials are features normally associated with larger and more expensive NEXO systems.

Complementary dimensions throughout the range make for easy setup design and smaller transport overheads.

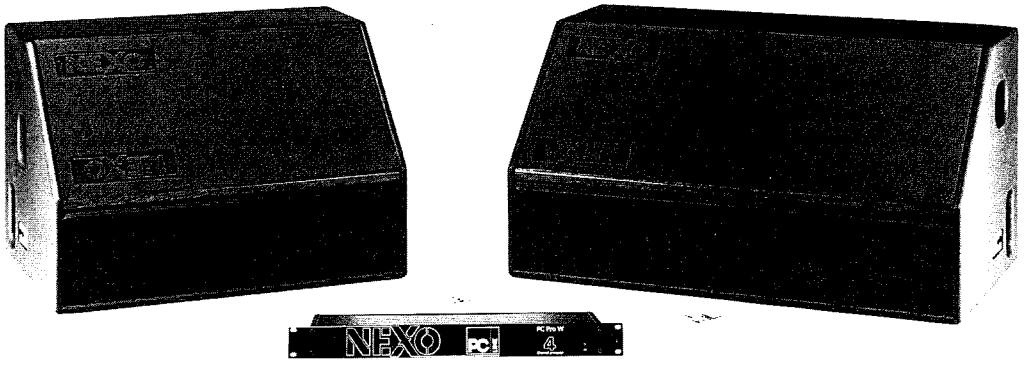


PCWedges

The common belief that floor monitors need to have a "special sound" to improve feedback resistance and intelligibility is often a poor justification for the use of cheap in-house designs. The best way to avoid feedback is to use a flatter system able to reflect elaborate stage mixes.

PCWedge monitors offer the same high SPL and flat, extended response as PC115/PC212. They not only provide better sound for the performers (who may be judging the sound company on the stage sound alone), but – when flown – PC115W & PC212W can also be exploited for all PC sound reinforcement applications.

Acoustic load variation and response abberations due to the stage floor are corrected in the PCProW electronic processor. Its 4-channel format economically matches standard monitor mixer configurations.



PC115W and PC212W flying points can be used to place them in a 45° downward radiating position which is useful when a clear stage is required (live video, broadcast,...). This possibility makes them an effective complement to the PC range in space-critical PA installations (low ceiling discotheques, under balcony speakers).

How to feature:

- One 15" bass driver
- Two 7" midrange loudspeakers
- One 1" compression driver
- A constant directivity horn

All being high quality/heavy duty units as used in NEXO's largest systems.

When:

- Total area of the drivers is 0.25 m^2 but front panel area is only 0.21 m^2.
- High efficiency and 50 Hz Low Frequency extension are required in an operating volume of only 47 litres.

Use a different type of front loading for the 15" driver which at the same time reduces its radiating area (leaving front panel space for the other components), reduces maximum excursion and increases sensitivity and low frequency extension in a small volume.

Create a mathematical model for the new **PCLoad,** program it in a fast computer to simulate displacements, sensitivities, temperatures,...

Carefully optimise all parameters and there is the basis of the **PC115.**

How to develop:

- A family of 5 models around **PCLoad** concepts.
- Matching H/W/D dimensions across the range.
- Operation from identical processors and amplifiers.

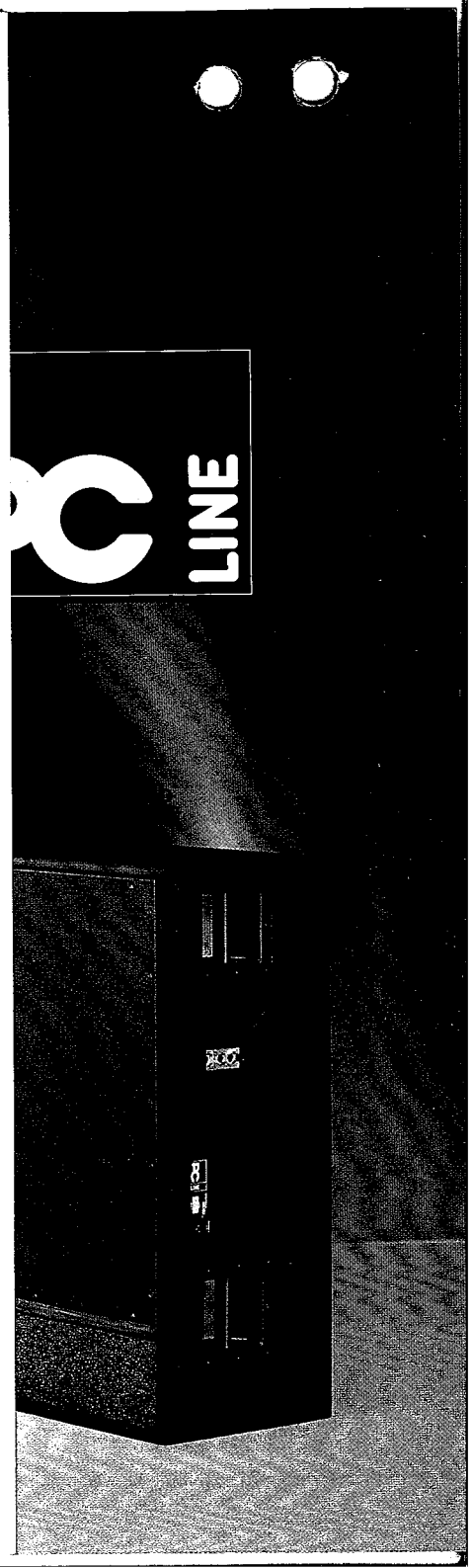
When:

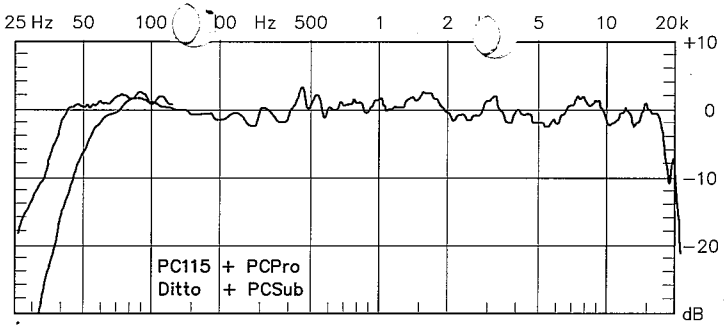
- Engineering difficulties already arose whilst designing the PC115.
- Consistent and compatible performance is required from different architectures.

Design all models simultaneously and share all modifications between them.
Never allow a performance improvement on one unit which cannot be passed on to the others.

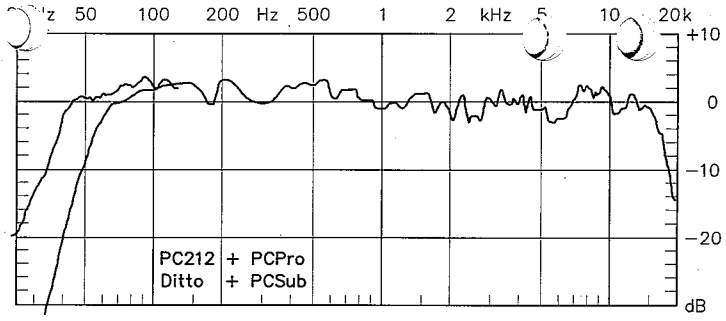
Adjust impedance to power handling rather than recommend a different amplifier.

Use a CAD program to engineer all parts, redesigning standard accessories such as handles and flying points for proper integration.

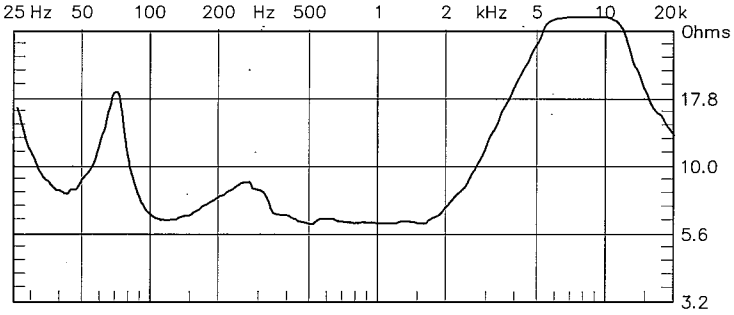




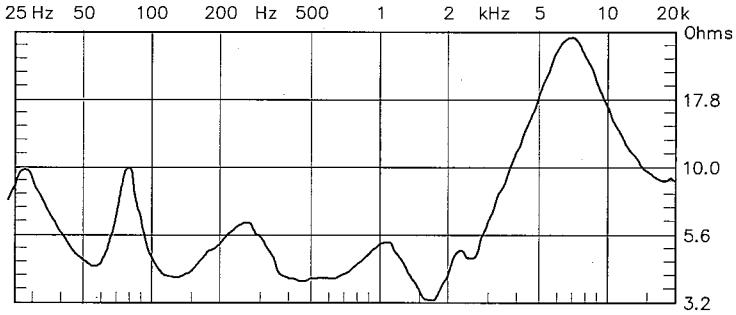
On Axis Response PC115 + PCPro [a].



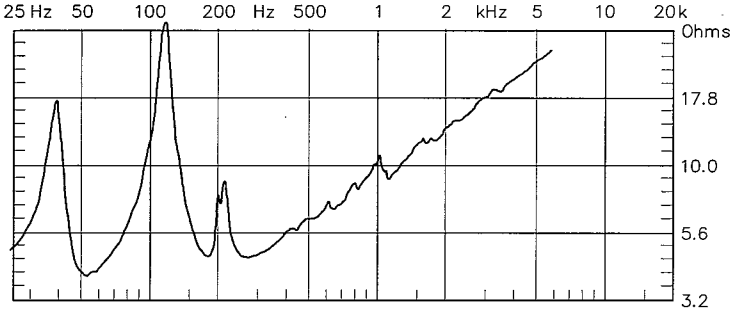
On Axis Response PC212 + PCPro [a].



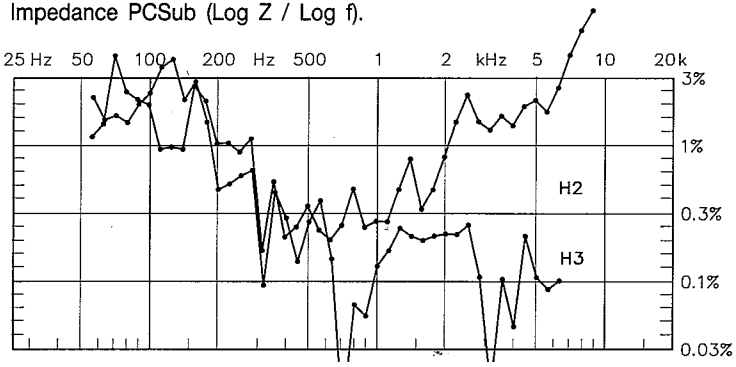
Impedance PC115 (Log Z / Log f).



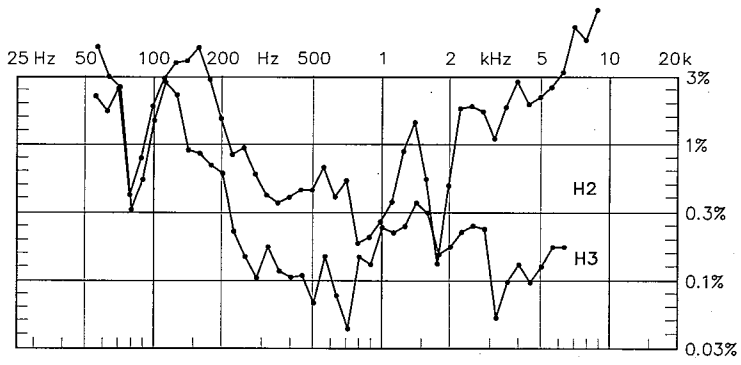
Impedance PC212 (Log Z / Log f).



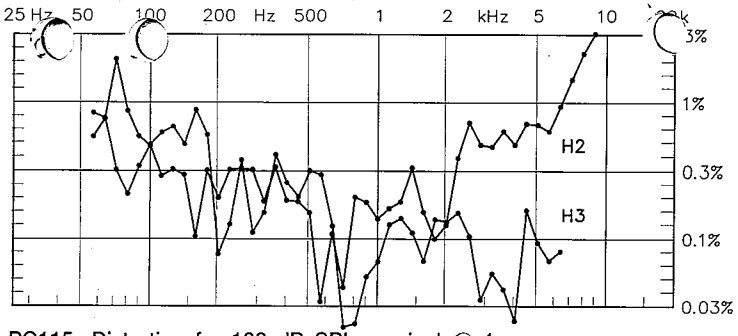
Impedance PCSub (Log Z / Log f).



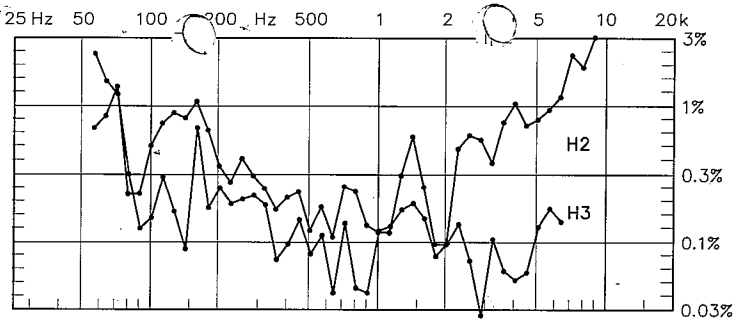
PC115: Distortion for 110 dB SPL nominal @ 1 m.



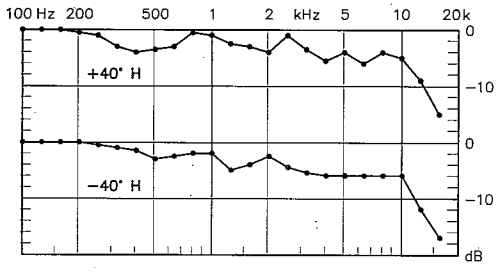
PC212: Distortion for 110 dB SPL nominal @ 1 m.

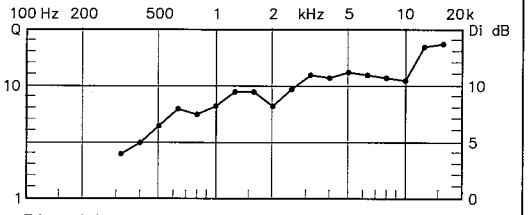


PC115: Distortion for 100 dB SPL nominal @ 1 m.

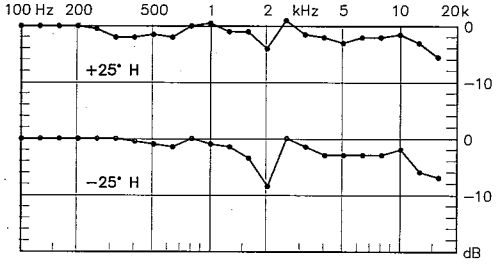


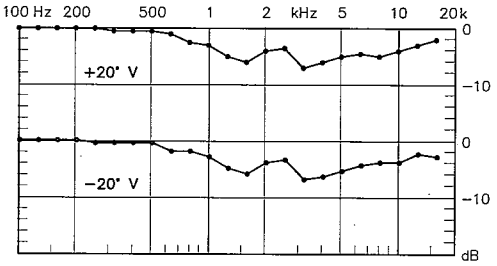
PC212: Distortion for 100 dB SPL nominal @ 1 m.

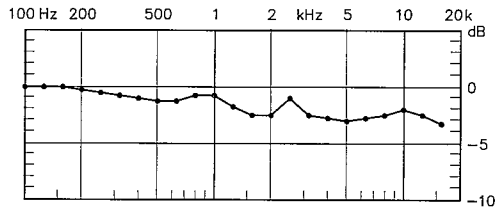




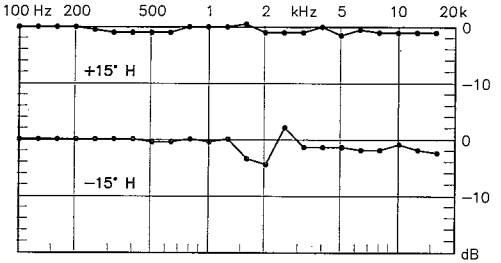
Directivity [c].



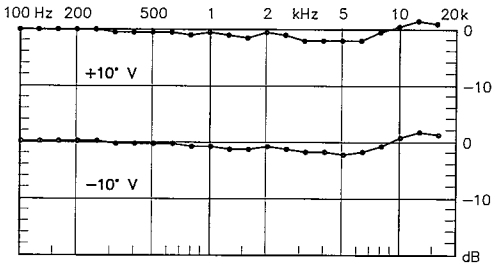




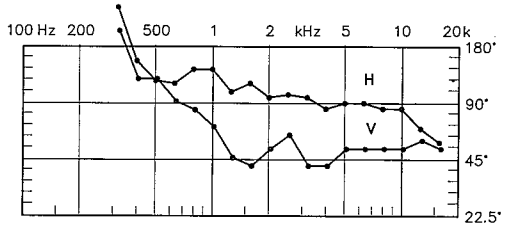
Average Response in 80° H x 40° V solid angle.
Normalised to on axis [c].



Off-Axis Response. Horizontal plane.
Normalised to on axis [c].

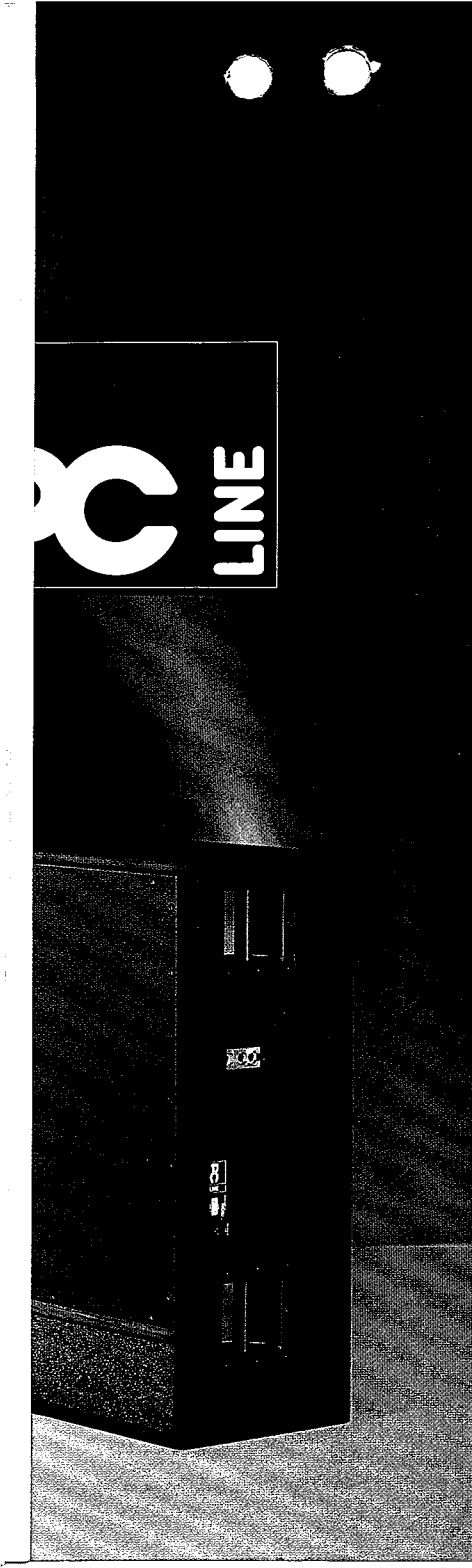


Off-Axis Response. Vertical plane.
Normalised to on axis [c].



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

PC115: Spatial Characteristics.



SYSTEM SPECIFICATIONS

	PC115	PC115W	PC212	PC212W	PCSub
Frequency Response ± 3 dB [a]	55 Hz - 18 kHz	55 Hz - 18 kHz	55 Hz - 17 kHz	55 Hz - 17 kHz	40 Hz - 100 Hz
Frequency Range @ – 6 dB [a]	50 Hz - 19 kHz	50 Hz - 19 kHz	50 Hz - 18 kHz	50 Hz - 18 kHz	37 Hz - 120 Hz
Nominal Sensitivity [b] [e]	100 dB SPL / 1W @ 1 m	100 dB SPL / 1W @ 1 m	100 dB SPL / 1W @ 1 m	101 dB SPL / 1W @ 1 m	98 dB SPL / 1W @ 1 m
Nominal Peak SPL [b] [e]	129 dB SPL @ 1 m	130 dB SPL @ 1 m	132 dB SPL @ 1 m	133 dB SPL @ 1 m	130 dB SPL @ 1 m
Dispersion Angles H° x V° [c]	90° x 45°	90° x 45°	90° x 45°	90° x 45°	–
Nominal Impedance [d]	8 Ω	8 Ω	4 Ω	4 Ω	4 Ω
Recommended Amplifier [d]	250 to 500 W into 8 Ω	250 to 500 W into 8 Ω	500 to 800 W into 4 Ω	500 to 800 W into 4 Ω	500 to 800 W into 4 Ω

SYSTEM OPERATION

Processor	PCPro transfer functions are precisely matched to the PCLine cabinets, particularly with the PCLoaded bass sections. Operation of PCLine enclosures without PCPro will result in poor sound quality and can damage the components.	
Subbass Operation	PC115 and PC212 cabinets can be used with or without PCSub optional subbass. PCPro electronic processor comprises all circuits necessary for two way active operation with PCSub. One PCSub matches 2 x PC115 or 1 x PC212, additional PCSubs may be employed for enhanced effect.	
Amplifier(s) [d]	Input currents required by loudspeaker systems for correct reproduction of program transients are considerably higher than suggested by nominal impedance. The selected amplifier should be capable of reasonable performance when tested on a 2 Ω resistive load.	
Speaker Cables	8 Ω loads imply → 1 to 10 m: 2 x 1.5 mm² XLR-XLR 10 to 20 m: 2 x 2.5 mm² XLR-XLR 20 to 40 m: 2 x 4 mm² XLR-XLR	4 Ω loads imply → 1 to 5 m: 2 x 1.5 mm² XLR-XLR 5 to 10 m: 2 x 2.5 mm² XLR-XLR 10 to 20 m: 2 x 4 mm² XLR-XLR

TECHNICAL SPECIFICATIONS

Wideband Sensitivity [b] Voice Decade Sensitivity [b]	97 dB SPL / 1W @ 1 m 101 dB SPL / 1W @ 1 m	98 dB SPL / 1W @ 1 m 101 dB SPL / 1W @ 1 m	98 dB SPL / 1W @ 1 m 101 dB SPL / 1W @ 1 m	99 dB SPL / 1W @ 1 m 101 dB SPL / 1W @ 1 m	98 dB SPL / 1W @ 1 m –
Wideband Peak SPL [b] Voice Decade Peak SPL [b]	127 dB SPL @ 1 m 131 dB SPL @ 1 m	129 dB SPL @ 1 m 131 dB SPL @ 1 m	130 dB SPL @ 1 m 134 dB SPL @ 1 m	131 dB SPL @ 1 m 134 dB SPL @ 1 m	130 dB SPL @ 1 m –
Directivity: Q & DI [c]	Q: 10 Nominal	DI: 10 dB Nominal	Refer to curves		–
Distortion	Refer to curves				–

FEATURES

Components	LF MF HF	1 x 15" (38 cm) PCLoaded 2 x 7" (17 cm) + Ferrofluid 1 x 1" throat driver + Constant Directivity horn		2 x 12" (30 cm) PCLoaded 2 x 7" (17 cm) + Ferrofluid 1 x 1" throat driver + Constant Directivity horn	1x18" (46 cm) PCLoaded – –
Crossover Frequencies		400 Hz and 2 kHz Passive		400 Hz and 2 kHz Passive	80 Hz Active
Dimensions	Height Width Depth	0.442 m (17.40") 0.558 m (21.97") 0.372 m (14.65")	0.422 m (16.61") 0.612 m (24.09") 0.450 m (17.72")	0.884 m (34.80") 0.372 m (14.65") 0.372 m (14.65")	0.422 m (16.61") 0.786 m (30.94") 0.450 m (17.72")	0.884 m (34.80") 0.558 m (21.97") 0.372 m (14.65")
Volume	Net Shipping	0.092 m³ (3.24 cu.ft) 0.156 m³ (5.51 cu.ft)	0.100 m³ (3.53 cu.ft) 0.186 m³ (6.57 cu.ft)	0.122 m³ (4.32 cu.ft) 0.205 m³ (7.24 cu.ft)	0.129 m³ (4.55 cu.ft) 0.231 m³ (8.16 cu.ft)	0.183 m³ (6.48 cu.ft) 0.285 m³ (10.06 cu.ft)
Weight	Net Shipping	35 kgs (77.2 lbs) 38 kgs (83.8 lbs)	38 kgs (83.8 lbs) 41 kgs (90.4 lbs)	50 kgs (110 lbs) 54 kgs (119 lbs)	50 kgs (110 lbs) 54 kgs (119 lbs)	45 kgs (99 lbs) 49 kgs (108 lbs)
Connectors		1 x XLR3-F + 1 x XLR3-M		1 x XLR3-F		1 x XLR3-F
Fittings	Handles Rigging points Stands & brackets	2 2 x Side points + 1 x Back angling point Optional		4 2 x Side points + 1 x Back angling point Optional		4 2 x S. pts. + 1 x B. pt. –

[a] All Response curves and data: Anechoic Room Far-Field measurements for PC115 & PC212. Anechoic Half-Space in normal operating position for PCWedges & PCSub. PCPro or PCProW always included.

[b] Due to the CFR technique, Sensitivity and Peak SPL will depend on Crest Factor and Spectral Distribution of Program Material.
Wideband and Voice decade data are included to allow evaluation under repeatable conditions:
– Nominal Sensitivity and Nominal Peak SPL are for Cabinet + Recommended Amplifier + Processor setups on program material.
– Wideband & Voice decade Sensitivities and Peak SPLs are for Cabinet + Recommended Amplifier + Processor setups with Wideband & 300 Hz - 3 kHz Pink Noise through Processor.
– Sensitivities are for 2.83 Volts RMS (8 Ω models) or 2 Volts RMS (4 Ω models) on cabinet terminals. Peak SPLs are at onset of clipping of recommended amplifier.

[c] Polar Plots & Off Axis curves are 1/3 Octave Anechoic measurements (Warbled Sine). Q, DI & Average Solid Angle Response are by Computer treatment of Polar Plots.

CONSTRUCTION

	PC115	PC115W	PC212	PC212W	PCSub
Enclosure	Birch-Ply, 18 & 15 mm, weather resistant. Black textured finish. Recessed accessories. Acoustically transparent foam dust covers and metal protection grilles.				
Horns	High performance laminated composites.				
Passive filters	Air cored inductors. Polypropylene/Metallised paper & computer grade electrolytic capacitors. Wirewound resistors. Epoxy PCBoard.				

OPTIONAL ACCESSORIES

Flying Hardware	To fly a PCLine cabinet three Short Rail Kits (Ref.: FLYRAIL3) are required, these are to be mounted on the externally accessible anchor plates. Three Single Stud quick locking Rings (Ref.: FLYANSP) will mate with the FLYRAIL3'S.
Stands & Brackets	Please consult your distributor.

SPECIFICATIONS

	PCPro	PCProW
Inputs	Two independent channels. 20 kΩ electronically balanced. Subsonic and Ultrasonic filters.	Four independent channels. 20 kΩ electronically balanced. Subsonic and Ultrasonic filters.
Outputs	Two independent PC115/PC212 outputs. One PCSub output derived from summation of the two input sighals. 75 Ω Unbalanced. Transformer balancing retrofit option.	Four independent PC115W/PC212W outputs. 75 Ω Unbalanced. Transformer balancing retrofit option.
Output Level	Variable + 20 dBm max. + 18 dBm max. on 600 Ω.	+ 20 dBm max + 18 dBm max. on 600 Ω.
Gain	Variable, 0 dB nominal.	0 dB nominal.
Noise	< – 85 dBm (20 Hz - 20 kHz Unweighted).	< – 85 dBm (20 Hz - 20 kHz Unweighted).
Distortion	0.005% THD Typical. 0.03% THD Max. (+ 8 dBm, 20 Hz - 20 kHz, on Input).	0.005% THD Typical. 0.03% THD Max. (+ 8 dBm, 20 Hz - 20 kHz, on Input).

OPERATION

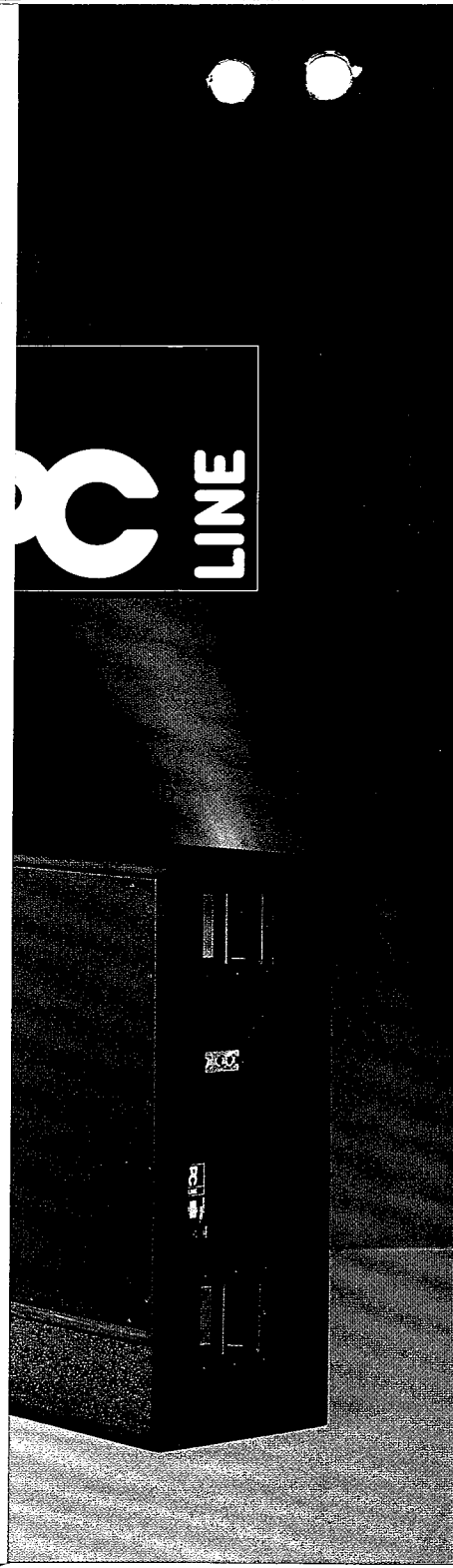
User Controls	Detented variable PCSub output level control (± 6 dB, in 1 dB steps). Detented variable gain control (± 6 dB in 1 dB steps) operating on all 3 outputs.	No user controls accessible.
Indicators	LED: Power On; Mute; PCSub on.	LED: Power On.
Switches	Mute; PCSub on/off (front). Earth lift (back). 110/220 V (internal).	Earth lift (back). 110/220 V (internal).
Recommendations	Essential to the operation of PC115/PC212/PCSub.	Essential to the operation of PC115W/PC212W
	Apart from the N° of channels, PCSub outlet and front panel controls, the major difference between PCPro and PCProW is correction for $2\pi/4\pi$ loading. This means that PCWedges would benefit from being operated with a PCPro when flown far from reflecting surfaces. Conversely in the unlikely event of PC115/PC212 used with the longest side of the PCLoad bass outlet adjacent to a reflecting surface, they would benefit from being operated from a PCProW.	

FEATURES

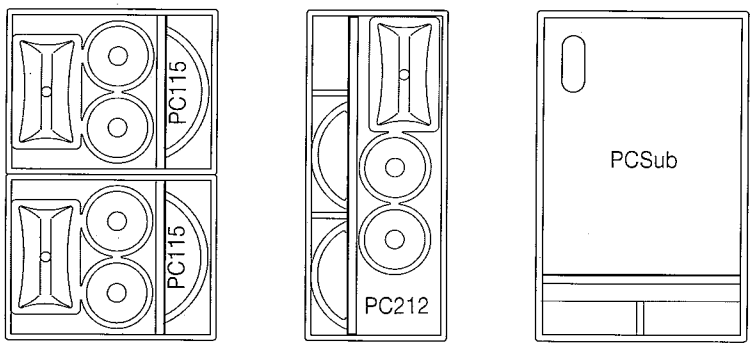
Input connectors	2 x XLR-3F. Pin 3 Hot.	4 x XLR-3F. Pin 3 Hot.
Output connectors	3 x XLR-3M. Pin 3 Hot.	4 x XLR-3M. Pin 3 Hot.
Power supply	Self contained PSU and power cord. 110/220 Volts. 50/60 Hz.	Self contained PSU and power cord. 110/220 Volts. 50/60 Hz.
Dimensions Height Width Depth	1U Rack (44 mm). 19" Rack (483 mm). 7.28" (185 mm) without Transformer balancing option.	1U Rack (44 mm). 19" Rack (483 mm). 7.28" (185 mm) without Transformer balancing option.
Shipping volume	0.011 m³ (0.37 cu.ft).	0.011 m³ (0.37 cu.ft.)
Weight	Net: 3 kg (6.6 lbs). Shipping: 3.7 kg (8.2 lbs).	Net: 3 kg (6.6 lbs). Shipping: 3.7 kg (8.2 lbs).

[d] Ref.: "Input Current Requirements of High Quality Loudspeaker Systems" A.E.S. Preprint N° 1987 (Martikainen, Otala).
[e] Refer to NEXO Mini Integrated System catalog for information on CFR technique.
* Additional documentation on NEXO Design Philosophy: "Computer Aided Design of dedicated high-power cabinets for sound reinforcement". A.E.S. Preprint N° 2085 (E. Vincenot & P. Robineau, NEXO).

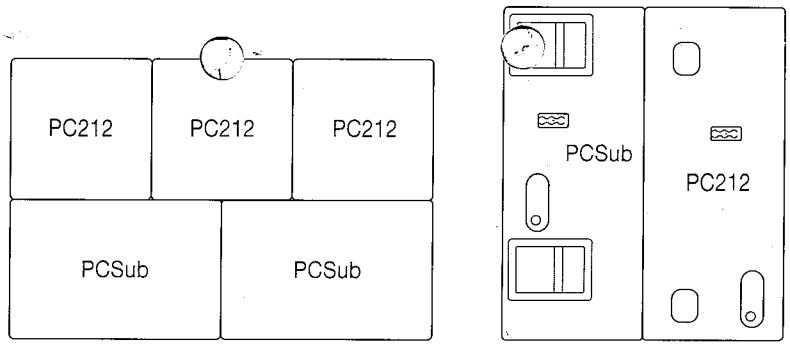
As part of a policy of continual improvement, NEXO reserves the right to change specifications without notice.



IDENTICAL DEPTH: 372 mm



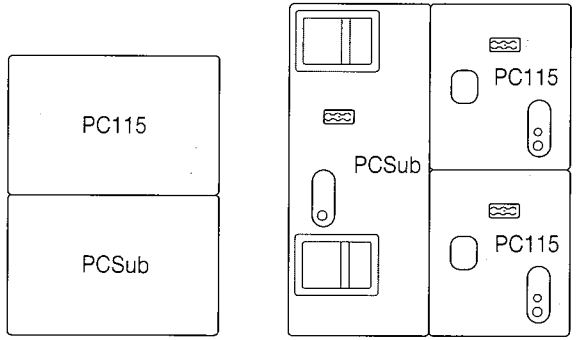
IDENTICAL HEIGHT: 884 mm



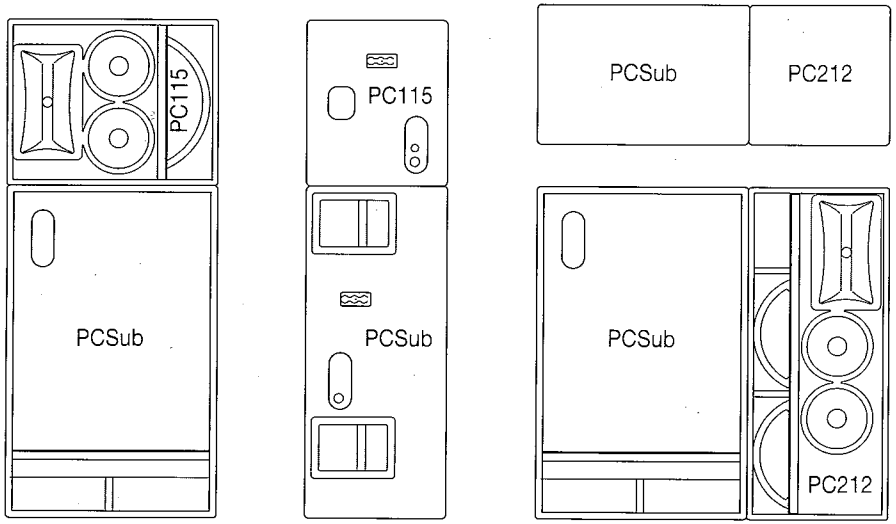
1.11 m x 0.74 m x 0.88 m (0.73 m³) for:
3 x PC212 + 2 x PCSub / 6 x PC212 / 8 x PC115
3 Identical volume configurations
4 to 5 kW Amplifier Power

EFFICIENT CARGO SPACE AND FLIGHT-CASE DESIGN

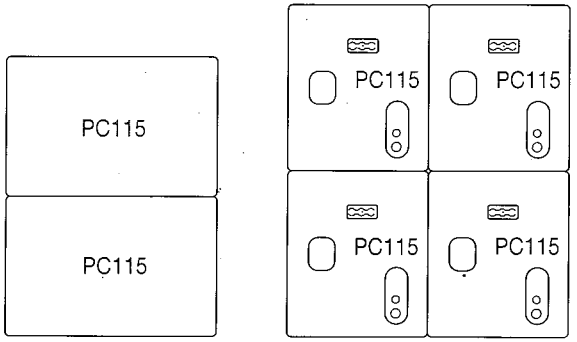
Identical Volume and Dimensions for:
2 x PC115 + PCSub
2 x PCSub
4 x PC115

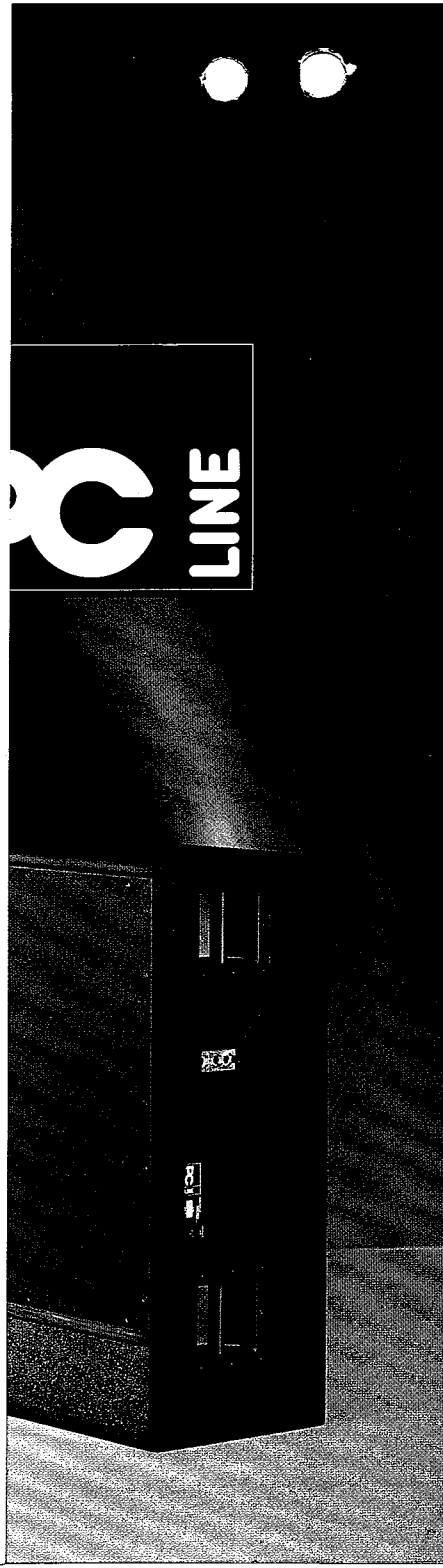


A volume of 0.367 m³; for 1.6 kW



ERGONOMIC ASSEMBLY WITH PCSub





NEXO

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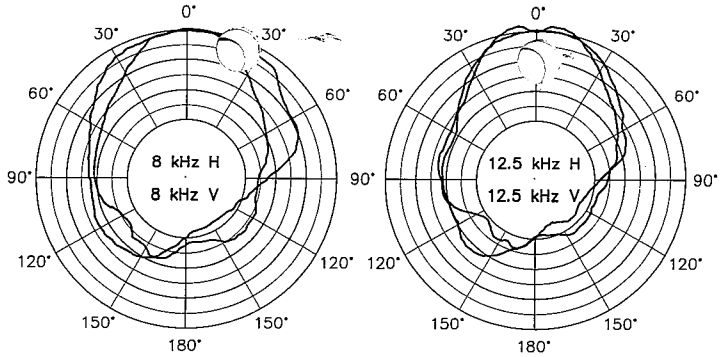
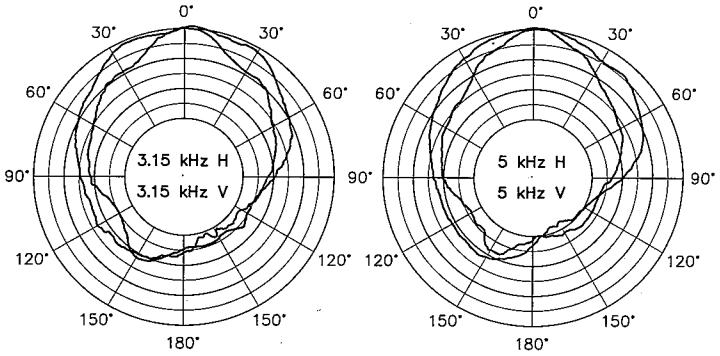
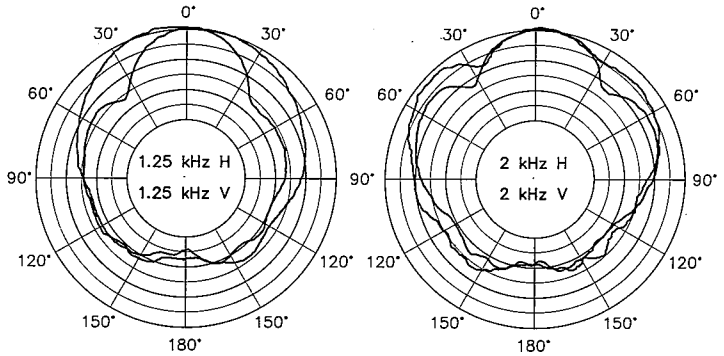
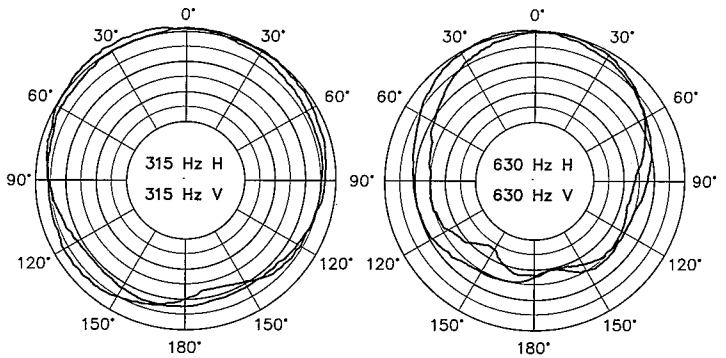
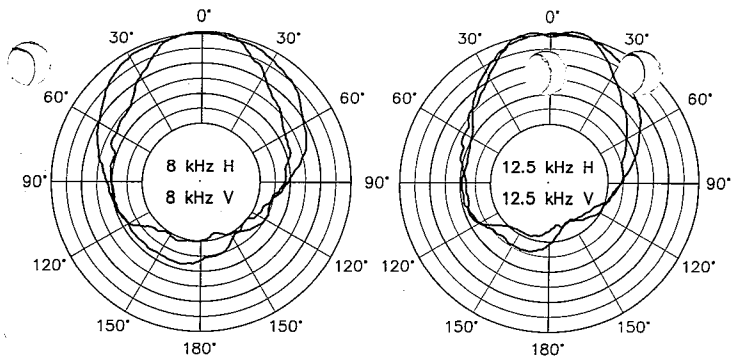
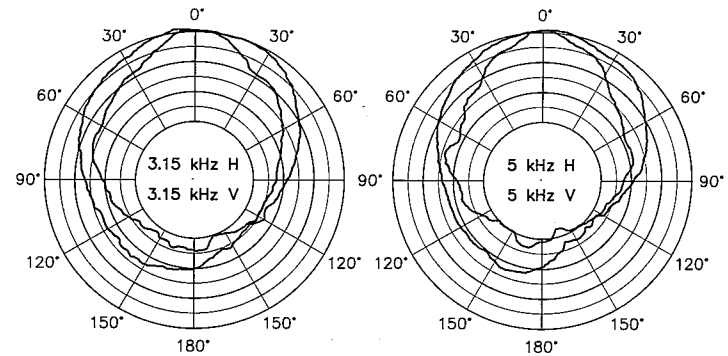


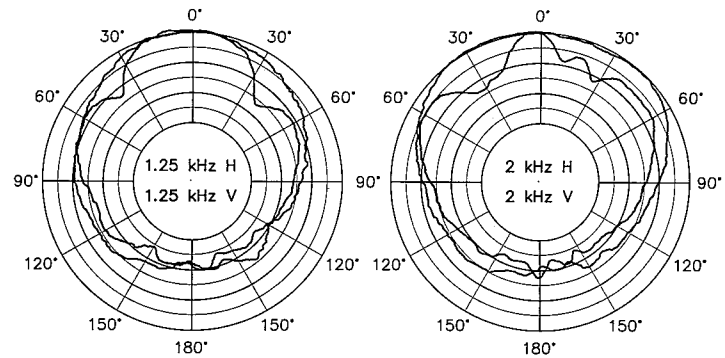


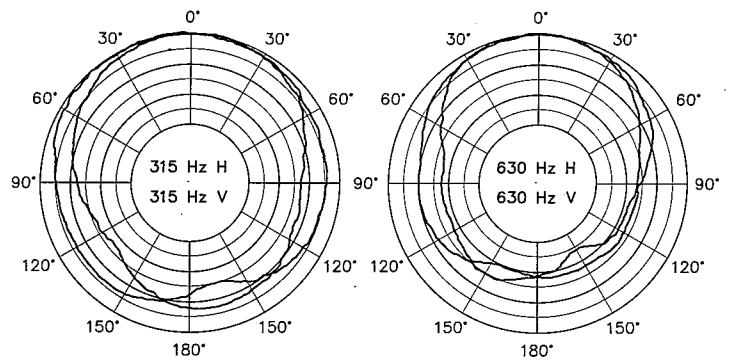










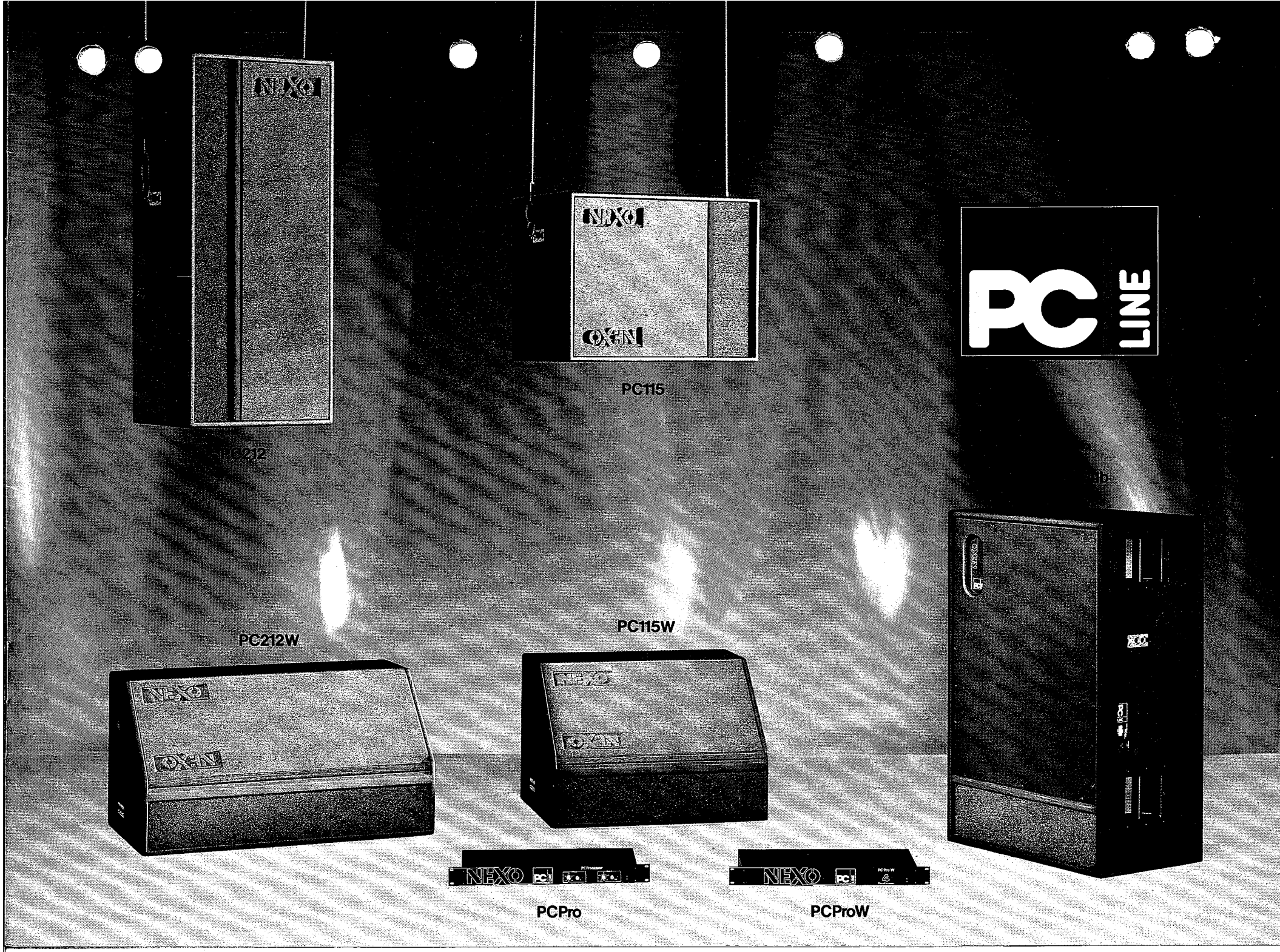


PC115

Polar Diagrams.

Scale: 5 dB per line [c].

PC212


PC LINE
PC212
PC115
PC212W
PC115W
PCPro
PCProW