

# outline®

## MODEL **INTEGRA** LOUDSPEAKER SYSTEM

### FEATURING

Controller assisted, short throw, full range, high power two ways, two loudspeakers factory assembled loudspeaker system (Type A) or with passive crossover (Type P).

#### Ultra compact dimensions

55 cm. H, 40 cm. W, 35.5 cm. D

#### Average half space (LF) and AES (1W/Zmin/4 $\pi$ ) sensitivity

LF Section: 103 dBSPL, AES 100 dBSPL

HF Section: 108.4 dBSPL AES

#### Power rating

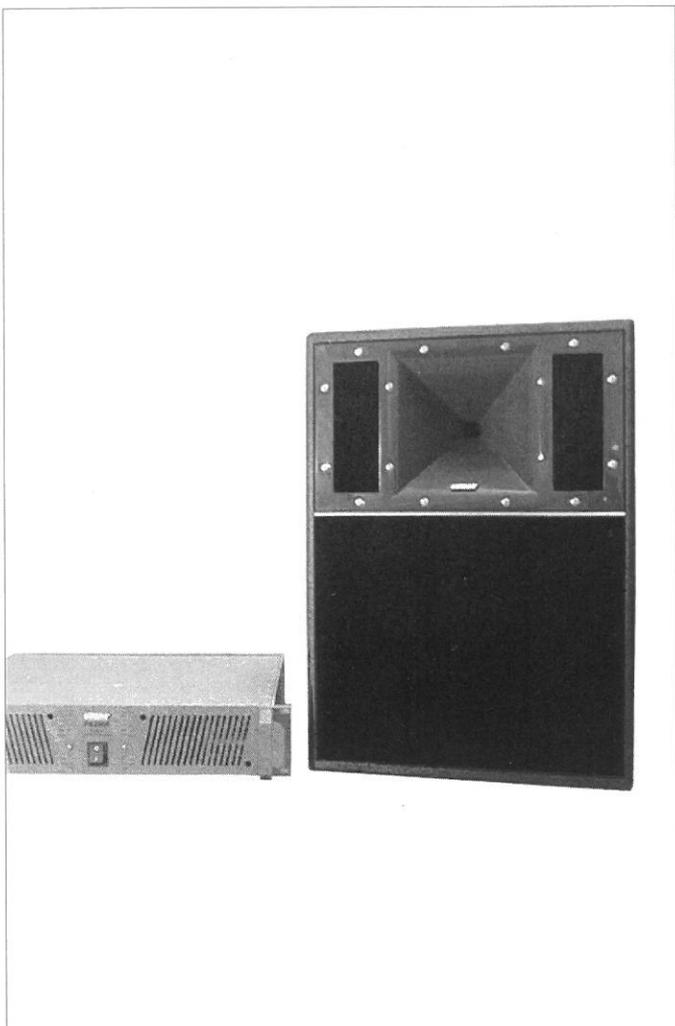
LF Section: 350 WAES

HF Section: 50WAES

#### Half space (LF) and AES maximum delivered SPL

LF Section: 128.5 dB SPL cont. 2 $\pi$ , 125.5 dB AES 4 $\pi$

HF Section: 125.5 dB SPL cont. AES 4 $\pi$



### DESCRIPTION

Designed with the aid of the most advanced CAD techniques available today the Outline Integra is a controller assisted, short throw, full range, high power, two ways, two loudspeakers, factory assembled loudspeaker system (Type A) available also with passive crossover (Type P), both with very similar characteristics.

The LF Section has one direct radiating, bass reflex loaded 12" woofer/mid, very powerful one but with 76 mm aluminium wire voice coil for better mid frequencies. The LF Section is rated at 100 dBSPL (AES) of sensitivity and 350WAES of power and can deliver 125.5 dB (AES) of maximum continuous SPL free field conditions.

The HF Section has a horn loaded 1" throat Outline OUT2 compression driver with an original dome shaped and integral suspension aluminium diaphragm. The horn is designed to have an axis symmetrical dispersion to allow that Integra can also be rotated on its main axis of 90°, without appreciable changing in its pattern distribution. This feature allows to use Integra in all the conditions where the space is an impossible optional, i.e. installed under low ceiling, with the best performances available to day from a loudspeaker of its size. The HF Section despite

its non variant frequency dispersion over a wide angle, is rated 108.4 dBSPL (AES) of sensitivity, 50WAES of power and can deliver 125.5 dB (AES) of maximum continuous SPL.

The Outline Integra loudspeaker system is a full range system and has a frequency response from 50 a 17500 Hz. Nominal\* pattern distribution is 82° horizontal and 75° vertical. The Integra loudspeaker system has a trapezoidal shaped cabinetry with carrying handles, fast hanging hardware and floor stand recessed socket.

A simple device allocated on the top of the cabinet allows to center and rotate a second loudspeaker horn to horn on the acoustic emission vertical axis.

Dimensions are 55 cm. height, 40 cm. width, 35.5

\*Nominal average dispersion is valid only for high frequencies (above 5000 Hz); for speech reinforcement purpose see at mid frequencies average dispersion (500- 4000 Hz).

## SPECIFICATIONS (Standard AES)

Product name:

Outline Integra

Product type:

Controller assisted, short throw, full range, high power, two ways, two loudspeakers factory assembled loudspeaker system (Type A) or with passive crossover (Type P).

Loudspeakers:

1 direct radiating, bass reflex loaded 12" woofer

1 horn loaded 1" throat compression driver

Average sensitivity Standard AES:

LF Section: 100 dB SPL/1W-1m/4 $\pi$  Zmin

HF Section: 108.4 dB SPL/1W-1m/4 $\pi$  Zmin

Frequency response:

50 - 17'500 +2.6/-4 dB

Power rating:

LF Section: 350WAES, 1400W peak

HF Section: 50WAES, 200W peak

Maximum delivered SPL on 4 $\pi$  (AES):

LF Section: 125.5 dB SPL cont., 131.5 dB SPL peak

HF Section: 125.5 dB SPL cont., 131.5 dB SPL peak

Maximum SPL at 20 m.:

100 dB full space, + 3 dB half space, + 3dB with two units

Nominal pattern distribution above 5000 Hz:

82° horizontal, 75° vertical (-6 dB)

Average polar pattern 500 - 4000 Hz:

102,5° horizontal, 81° vertical

Average Directivity Factor Q 500 - 4000 Hz:

4.6 horizontal, 6 vertical

Average Directivity Index DI 500 - 4000 Hz:

6.6 horizontal, 7.7 vertical

Average polar pattern 8000 - 16000 Hz:

78° horizontal, 72.5° vertical

Average Directivity Factor Q 8000 - 16000 Hz:

6 horizontal, 6.5 vertical

Average Directivity Index DI 8000 - 16000 Hz:

7.7 horizontal, 8 vertical.

Crossover frequency:

1600 Hz.

Impedance:

LF Section: Nom 8  $\Omega$ , Min 6.8  $\Omega$  at 221 Hz

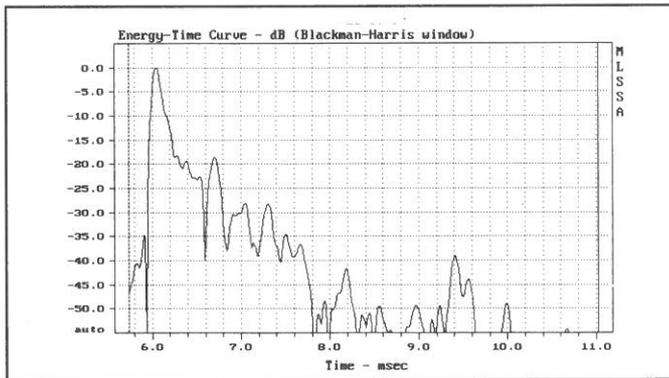
Maximum inductive phase shift: +48° at 27.5 Hz

Maximum capacitive phase shift: -48° at 133.5 Hz

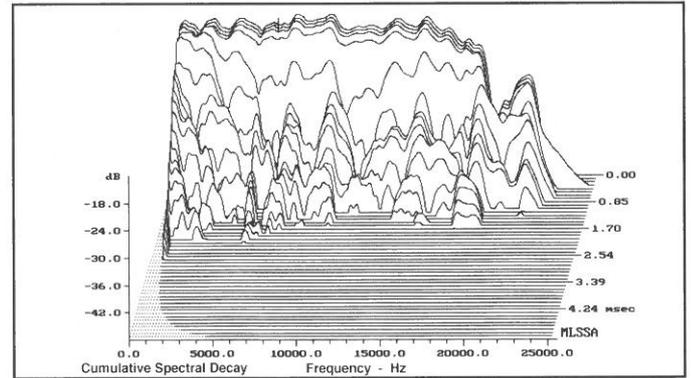
HF Section: Nom 16  $\Omega$ , Min 11  $\Omega$  at 5122 Hz

Maximum inductive phase shift: +13.56° at 17388 Hz

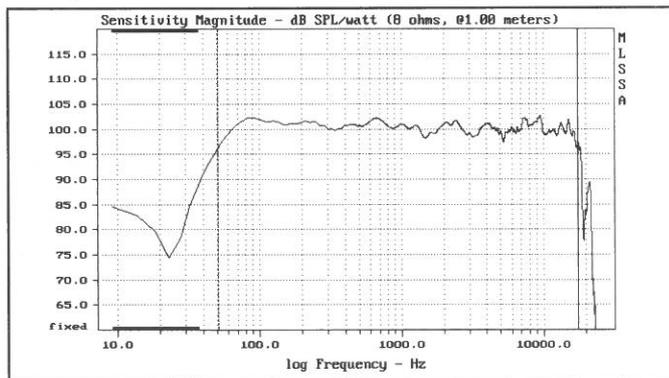
Maximum capacitive phase shift: -35° at 2123 Hz



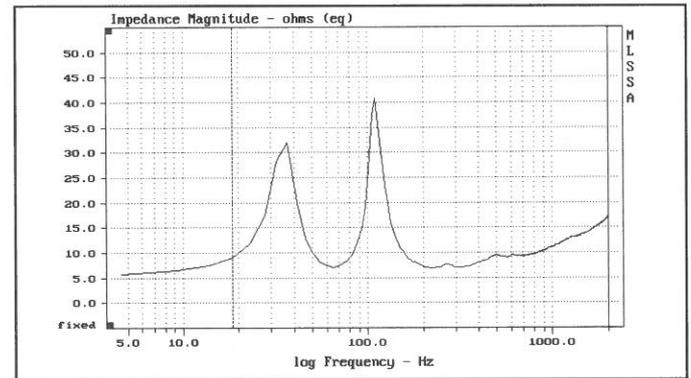
Graph 1: Energy Time Curve



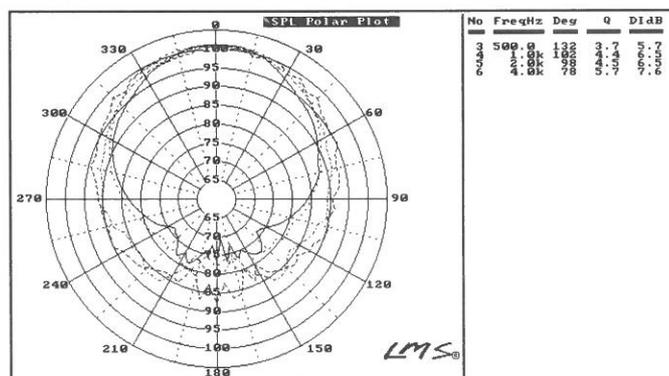
Graph 2: Cumulative spectral decay



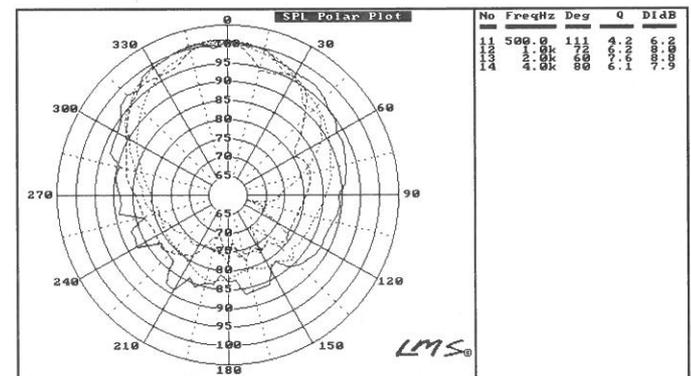
Graph 3: Frequency response



Graph 4: Impedance modulus LF Section



Graph 5: Horizontal pattern distribution



Graph 6: Vertical pattern distribution

#### Connectors:

2 x Neutrik Speakon NL4MP wired in parallel

Pin 1 + pos, Pin 1 - neg LF Section

Pin 2 + pos, Pin 2 - neg HF Section

#### Protection:

LF Section, 6.3A fast blow fuse

HF Section, 2A fast blow fuse and 40  $\mu$ F cap.

#### Dimensions and net weight:

55 cm height, 40 cm width, 35.5 cm depth, 24 Kg net.

#### Dimensions Volume and gross weight:

61.5 cm height, 49.5 cm width, 47 cm depth, 0.14 m<sup>3</sup> volume, 29 Kg gross.

#### Enclosure:

Trapezoidal shaped enclosure built with 15 mm, cross coupled layers, plywood birch, with rounded edges and handles, with fast hanging system and floor stand recessed socket.

#### Finish:

Water resistant, textured scratchproof military green colour painting.

#### Supplied accessoires:

Fast suspension hanging points and Neutrik Speakon NL4FC Connector. Stacked and splayed device built on the top of the cabinet positioned on the acoustic center axis. (This simple device allows to achieve wide coverage with long throw projection using two loudspeakers with the tops matched horn to horn).

#### Optional accessories:

Outline NC1 active control unit

Outline BP40 pneumatic floor stand

#### Minimum suggested set up\*:

N° 2 Outline IntegraA, N° 2 Outline NC1

N° 1 Outline PA2006 (LF Section), N° 1 Outline SP400 (HF Section).

N° 2 Outline IntegraP, N° 1 Outline PA2006.

## **APPLICATIONS**

The Outline Integra loudspeaker system has been designed to offer the highest performances in very small size dimensions and weights.

The Integra system is recommended for all those applications that needed in vocal or musical program material, with wide audio spectrum and high dynamic range, played live or reproduced from any kind of media, in the largest open or closed environments, and where is expected a very wide audience.

The Integra loudspeaker system can be used to design concentrated or distributed sound systems. It is well suited for musical shows in big music halls, discos, theatres, and can be used to built very high power front of house loudspeaker system arrays.

It can be used also in small environments if the listening distance is not less than 2 m. A pair of Integra loudspeaker systems will provide an enough high sound pressure level (about 90 dB SPL) up to 100 m. away from it if the listeners or the audience will be inside of its sound pattern distribution. The whole sound system built with two stacks will provide enough SPL to cover about 500 people with a wide frequency response.

For the most demanding application is recommended to use the Outline Bass Series or Sub Series as bass extension units of the system.

## **DRIVING REQUIREMENTS**

The Outline Integra (Type A) is a processor controlled two ways two loudspeakers system and has been designed to work with each loudspeaker directly wired to the power amplifiers, as requested by the technology called poly-amplification.

To do this, the active controller Outline NC1 has been designed to optimize any parameter requested from the loudspeaker system. The active controller performs a lot of needed functions, including dynamic invariant bandpass filtering, acoustic centres time correction and signal limiting to achieve the best performances of all the loudspeakers in the system.

Two independent driving amplifier channels are required, and each of them must deliver on the minimum impedance value of each Section a value of power at least equal to what is specified for each Section.

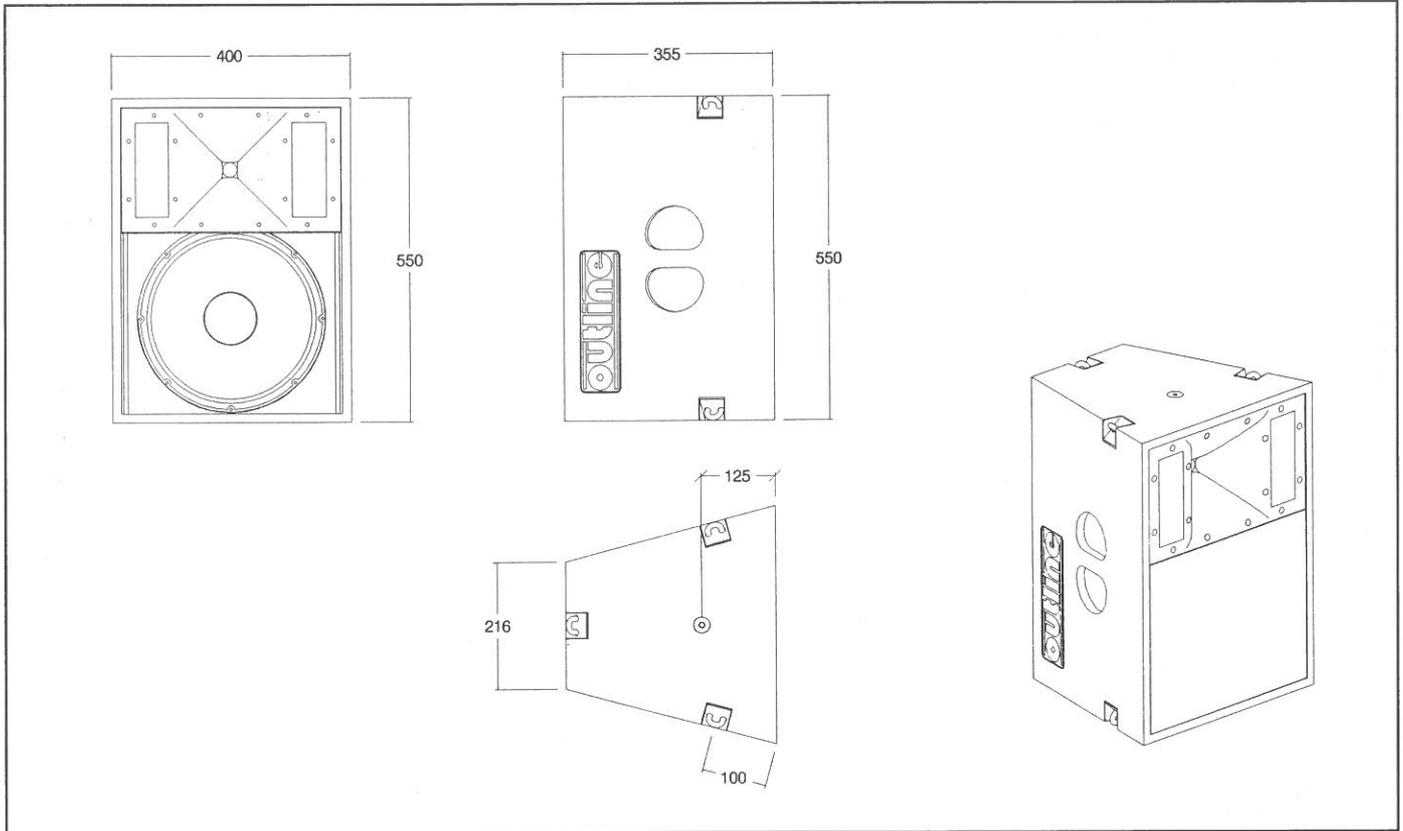
The Outline Integra (Type P) has a passive crossover inside and doesn't need any active control units to perform at its best.

If bass extension is needed, that can be achieved with the aid of the Outline Bass Series or Sub Series units, the Outline CX4 active crossover must be used, as NC1 controller for A version.

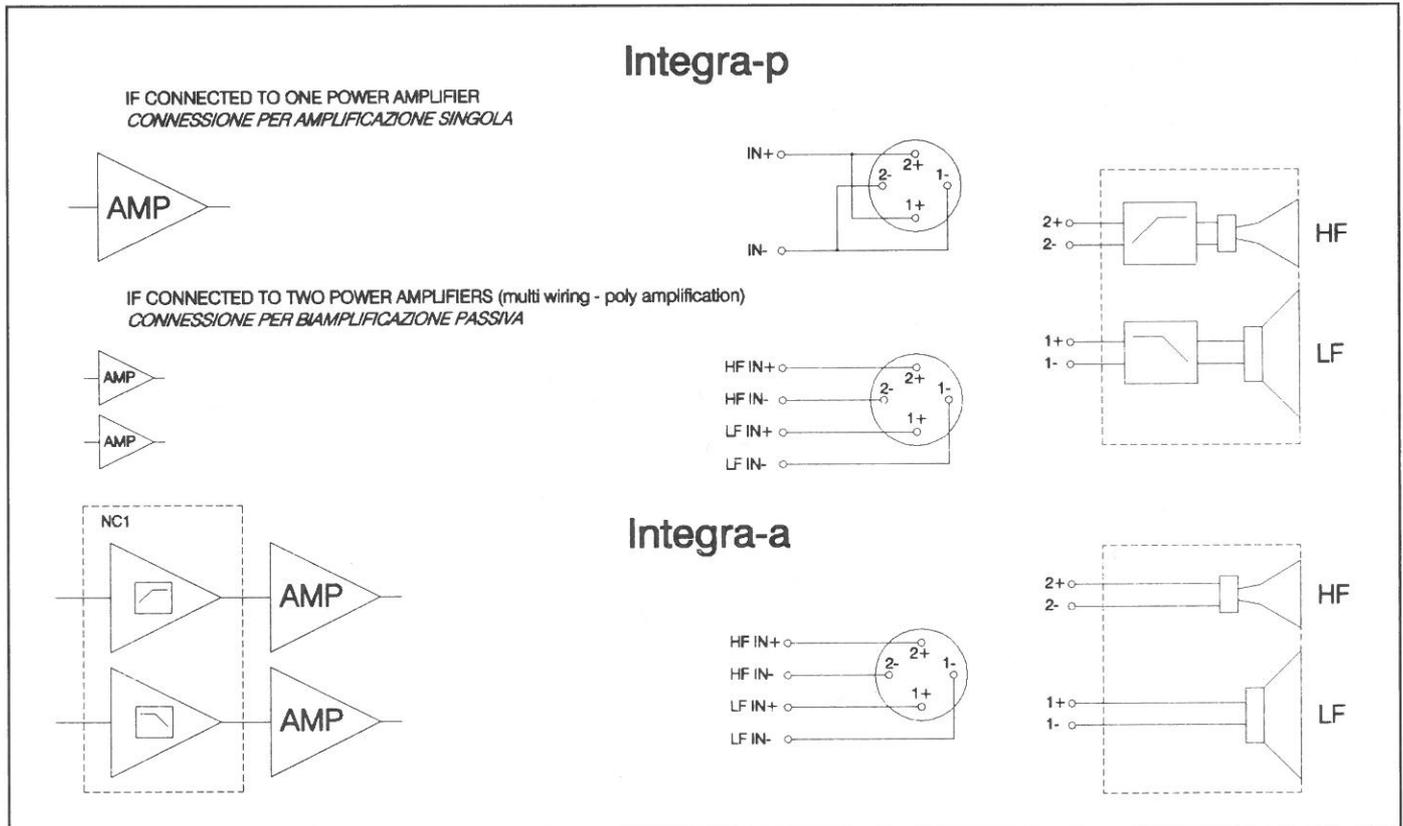
\* The suggested above power amplifiers are useful for fixed installations where it needs very high power with low dynamic as for disco sound systems.

In all other installations, as sound reinforcement in live show, more powerful amplifiers will be used under strict sound engineer supervision to achieve the right headroom for the best dynamic range before amplifier clipping.

## DIMENSIONS



## WIRING DIAGRAM



Outline continually engages in research related to product improvement. New materials, new production methods and design refinements are introduced into existing products without notice as a routine expression of our philosophy. For this reason, any current Outline product may differ in some respect from its published description, but will always equal or exceed the original design specifications unless otherwise stated.

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