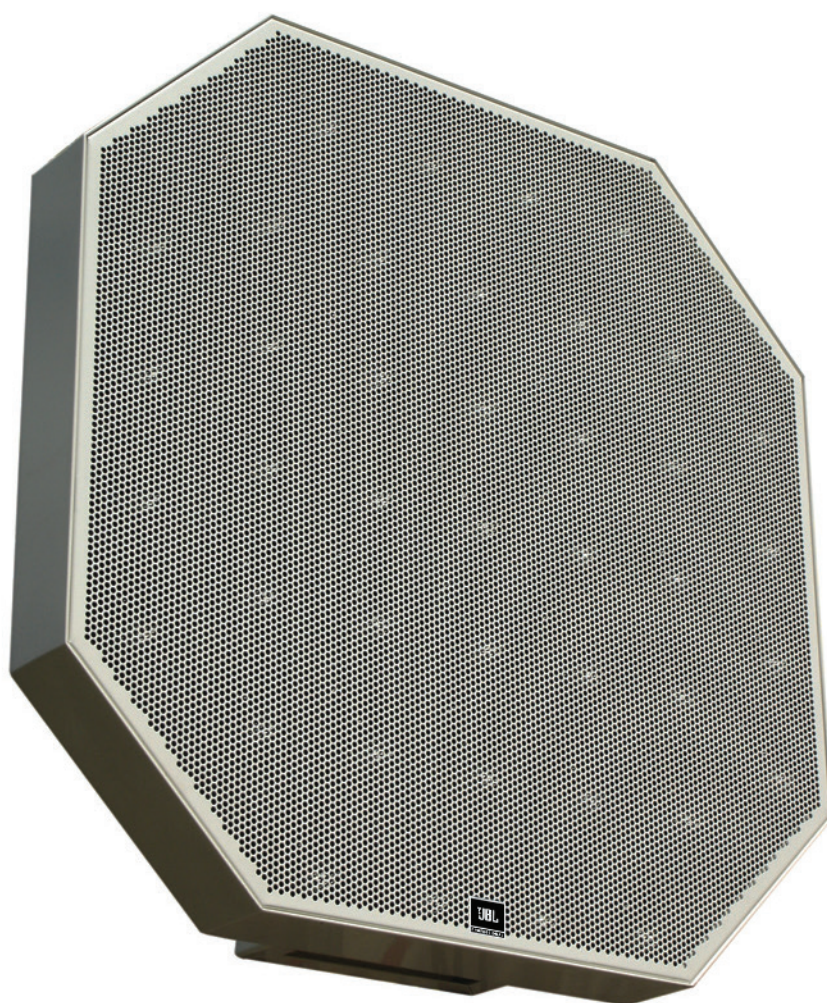


The JBL Professional® IntelliDisc-DS90

The world's first fully integrated, digitally controlled,
two dimensional loudspeaker array.



Intellivox
DBS

Shaping the future of sound reinforcement

JBL Professional® IntelliDisc-DS90

JBL Professional®IntelliDisc-DS90 was originally developed for the 'Berlin Hauptbahnhof' Berlin's main railway station. The station's layout of 14 platforms on 2 levels, with open areas between floors, required a solution that would offer high intelligibility with little or no overspill onto adjoining platforms and levels.



The JBL Professional® IntelliDisc-DS90 is the world's first fully integrated, digitally controlled, two dimensional loudspeaker array. The IntelliDisc utilises our DDS technology allowing control over both the horizontal and vertical beam steering. The dispersion can be shaped to a very narrow beam, keeping sound away from areas where it is not wanted. The beam can then be digitally steered to the left, to the right, up or down.

DDS stands for Digital Directivity Synthesis, which is a highly advanced array control optimization concept.

DDS is based on a unique, specially adapted 'constrained weighted least-squares' optimization algorithm. Starting from a desired direct SPL distribution in a hall or space, the optimum output filter for each array channel is calculated. In other words, the desired 'illumination' of the hall or space is 'mapped' back to the array, instead of mapping the array response to the hall, as would be done with a conventional loudspeaker array.

Using DDS technology any desired two dimensional radiation pattern can be synthesized from the IntelliDisc-DS90. This allows users to 'mould' both the vertical and horizontal dispersion of the array to perfectly fit the audience area; whilst at the same time avoiding unwanted reflections and spill. The result is an array which can offer a high ratio of direct sound to reverberant sound, which is critical for achieving high levels of speech intelligibility, in the most difficult of acoustic environments. In addition to this the unit can reduce noise nuisance in outdoor applications.

It has proven to be a versatile and effective solution for vocal reinforcement within reverberant environments, offering excellent speech intelligibility; even in demanding acoustic conditions.



Long Throw & Constant SPL

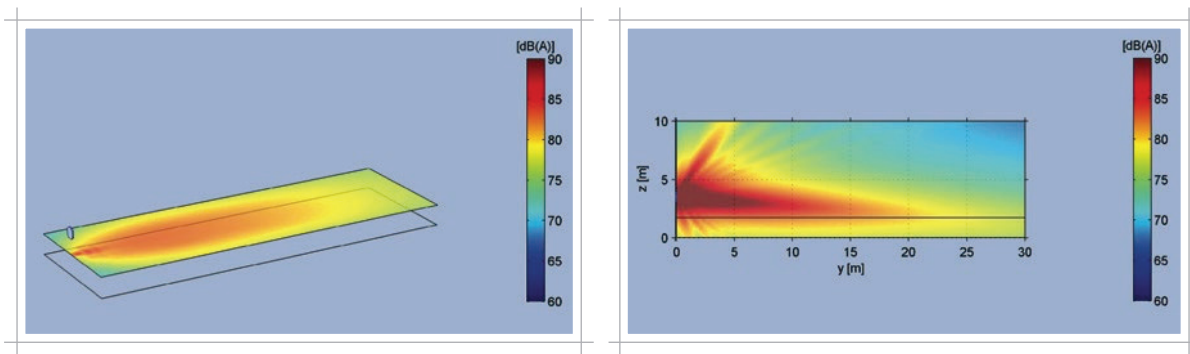
The IntelliDisc-DS90 is capable of providing a constant sound pressure level over a distance of up to 30 meters, although a substantial extension of this range can be achieved in less demanding acoustical conditions.

In order to achieve such outstanding performance the

IntelliDisc-DS90 is equipped with two 32-bit floating point DSPs (Digital Signal Processor) which handle the demanding mathematical calculations that are necessary to achieve highly accurate two dimensional directivity control. In addition to this the DSPs offers a wealth of useful audio processing features.

This includes: volume control, parametric EQ and delay. The 41 custom designed, 4" loudspeakers are driven by an 32 channel class-D amplifier, power for which is provided by two sophisticated switched mode power supplies, all of which combine to ensure years of reliable operation. An extensive set of surveillance functions have also been implemented to meet the stringent demands of typical VA applications.

The unit can be controlled using our proprietary WinControl software which offers user friendly control of the beam steering parameters, audio processing and surveillance features.



Horizontal and Vertical Direct SPL plots for a single JBL Professional®IntelliDisc-DS90

Safety Features

The IntelliDisc-DS90 is also equipped with a RISC processor to take care of surveillance routines, which are performed every 1/20 second. In addition to this the RISC processor is monitored by a watchdog, So, in the event of a failure, the processor will be reset.

Surveillance functions include, but are not limited to:

- Pilot tone detection
- Amplifier load surveillance
- Ambient microphone surveillance
- Amplifier surveillance
- Temperature surveillance
- DSP functionality

All relevant status parameters and temperatures can be monitored via the RS-485 network. Failures can be reported by the on board failure relay or via one of the many features offered by WinControl.

Short Form specifications

Acoustical:		
Freq range		: 130 - 12k Hz (+/-3 dB)
Max SPL	- Continuous - Peak	: 97 dB(A) @ 10 m : 101 dB(A) @ 10 m
Coverage	- Horizontal (DDS) - Vertical (DDS)	: geometry dependent : geometry dependent
Dynamic range		: >100 dB
Electrical:		
Input	- Nominal level - Type - Impedance (balanced)	: 0 dBV (line input) : dual line input, transformer balanced : 6k8 Ohm
DSP module(2x)	- Type - Memory - AD - DA conversion	: floating point 900 MFLOPS 32 bits : 64Mb SDRAM + 3Mb non volatile : 24 bits sigma-delta 128 x oversampling
Power amps	- Type - Power	: PWM (Class D) : 32 x 40 Wrms (4 Ohm)
Mains	- Voltage (+5%/-10%) - Power consumption	: 230 or 115V : 168 VA (idle) / 1450 VA (full load)
General:		
Temperature range (ambient)		: 0 to 40°C
Transducers		: 41 x 4" full range
Dimensions (H x W x D)		: 850 x 850 x 195 mm (33.5" x 33.5" x 7.7")
Default color	- Enclosure and grill - Speaker baffle	: RAL 9010 (white) : RAL 9011 (black)
Weight		: 56.5 kg (125 lbs)



JBL Professional
8500 Balboa Boulevard
Northridge, CA 91329 U.S.A.

© Copyright 2014 JBL Professional
www.jblpro.com