StepArray SA180P

Based on the new line-array concept DGRC*, StepArray active columns feature an ideal control of the radiated field, thus ensuring perfect speech intelligibility. Their wide frequency bandwidth and their high dynamic capability yield an amazingly clear sound for optimum acoustic comfort.

With a distance range of 30m, model SA180P is dedicated to rooms of medium volume. Its slim shape and reduced width make it very easy to integrate in the interior design of a room.

Alike all StepArray columns, it operates with DSP processor UT26 which ensures filtering (gain, EQ, delay, directivity, anti-larsen, automatic gain control…), as well as surveillance functions.

It is a cost-effective solution, specially when associating several columns to a processor.

➢ Speech Intelligibility

Implementing the DGRC* principle, StepArray columns provide a strong direct sound and minimize the energy of the sound reflected by the room for perfect speech intelligibility, even in highly reverberant environments, even far from the column.

➢ Homogeneous SPL

Same sound level and same timbre at 1m and 30m from the SA180P column ! An unbelievable homogeneity of the SPL and timbre is achieved over the audience area by implementing the DGRC principle.

➢ Acoustic Comfort

Column SA180P uses 22 high quality three inch loudspeakers. Sound is amazingly clear and sharp.
With the microphone option (MIC), the level of diffusion can be automatically adjusted according to the background noise level in the room.

➢ Aesthetics

With their slim shape and a wide choice of colors, StepArray columns can be made almost invisible.

➢ Cost effectiveness

Public address in a large room requires only very few StepArray columns. Cabling is reduced to a minimum. Maintenance is easy.
Several columns can be connected to the same UT26 processor. Up to four SA180P columns can be connected to a single MPA6150 amplifier.

➢ Easy Installation

Column SA180P operates with processor UT26 and amplifier MPA6150. Installation (flush mounted on a wall or suspended at the ceiling) is very straightforward. Simplicity of the directivity control principle makes their tuning easy and robust.

➢ CAD

We supply directivity files for modeling the column radiation with CATT and EASE.

➢ High-level DSP functions

In addition to directivity control, the DSP ensures EQ, delay, anti-larsen, RS485 interface (to PC), AGC function (automatic level adjustment based on background noise), SSS function (Security Sound System – EN-60849).

➢ SAdrive PC control software

SAdrive can control up to 254 UT26 processors. It allows adjustment of all DSP parameters, create groups, supervise the system operation…

Processor UT26

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SA180P – Technical Data [1]

Column SA180P operates with DSP processor UT26 and amplifier MPA6150. Several columns can share the same processor (see StepArray General Presentation).
Column SA180P may be connected to a PC running SAdrive, but it can also operate autonomously.

➤ Acoustical data

Range (±3dB, avrg 500Hz-2kHz)	30 m
Range (±5dB, avrg 500Hz-2kHz)	40 m
Max SPL (pink noise)	95dB$_{SPL}$ at 15m
Frequency bandwidth (-6dB)	220Hz-16kHz
Horizontal opening angle (-6dB 1kHz-2kHz)	180°

➤ Electrical data [1]

- Signal Inputs :
  2 symmetrical analog 0dBU line inputs [2] (XLR-F)
  Stereo Digital input AES/EBU (XLR-F).
  Dynamic range [3] : > 93dB Lin.
- Connection to PC : SuD9-M or SubD25-F [4].
- Command link between columns : SudB25, max 300m.
- Symmetrical filtered output for Sub bass (option).
- Other characteristics : see UT26 data sheet.
- MPA6150 amplifier :
  6 channel, 100W /chan under 8Ω, 150W /chan under 4Ω.
  Mains : 230v – 50Hz, max: 800VA.

➤ Software data [1]

- Equalization, delay 170ms, gain, limiter, anti-larsen.
- AGC function [5] : Automatic level adjustment according to background noise in the room.
- Input priority management [6] : input 1 overrules input 2 (e.g. announcement overrules music background).
- Security Sound System (SSS option).

➤ SAdrive : Tuning and exploitation

SAdrive PC software allows creation of configurations comprising up to 254 processors UT26, adjust all DSP parameters (directivity, EQ, delay, gains, anti-larsen…) of columns or groups of columns, save / load presets…

A control PC running SAdrive supervises operation of the processor(s) : DSP whatchdog, bus operation, overloads, anti-larsen,… (see SAdrive presentation).

StepArray columns can be used without running SAdrive.

➤ Options

- CV232 : For interfacing a PC on the RS232 port of UT26.
- MIC : Microphone for AGC function.
- SUB : Filtered analog output on UT26 for a sub bass.
- COL : Specific RAL color.
- SSS : Conformity to standard EN-60849.

[1] With processor UT26 and amplifier MPA6150. Data are subject to change without notice.
[2] Headroom 9.5dB. Only one with MIC option.
[3] Max continuous output level at 1kHz / output level when input is 0v.
[4] SubD9 RS232 with option CV232 ; SubD25 RS485 otherwise. 38400 baud.
[5] With MIC option.
[6] Not available with MIC option.

➤ Physical data

Operation under shelter, temperature : 0-40℃
Dimensions (HxWxD) : 1840x124x135 mm. Weight : 17 kg.
Materials : steel and PVC.
Protection grid : perforated steel.
Colors : White (RAL9010), Grey (RAL7035),
Black (RAL9011), other RAL on demand (COL option).
Flush mounted or suspended with accessories (supplied).
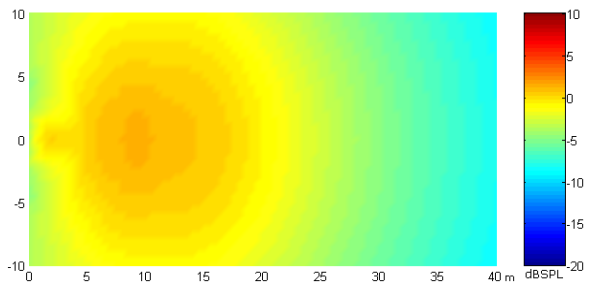
SA180P : SPL (dB relative to the average value between 6 and 25 m) on the listening plane, oct 500Hz-2kHz.
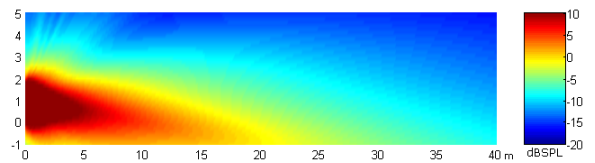
SA180P : SPL (dB relative to the mean value from 6 to 25 m) in the median vertical plane, oct 500Hz-2kHz
(Column is at x=0, Column bottom at y=1m. Listening plane at y=0).
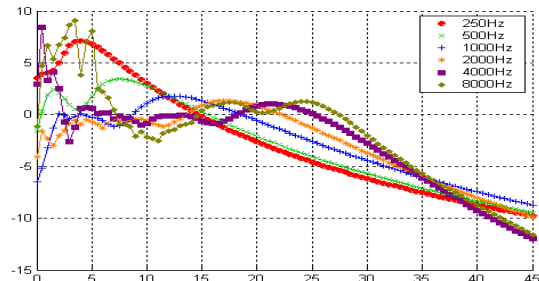
SA180P: SPL (dB) per octave bands vs distance from the column.

Example : Connection of several columns to a single UT26 processor, and four SA180P columns to a single MPA6150 amplifier.

4x SA180P

3   3

1 x MPA6150

1x UT26

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