GENELEC®

ACTIVE MONITORING

Genelec S30C
Active Monitoring System

Data sheet

S30C Active Monitoring System

APPLICATIONS

Broadcast Control Rooms

TV Control Rooms

Mobile Vans

Near Field Monitoring

Post Production

Work Stations

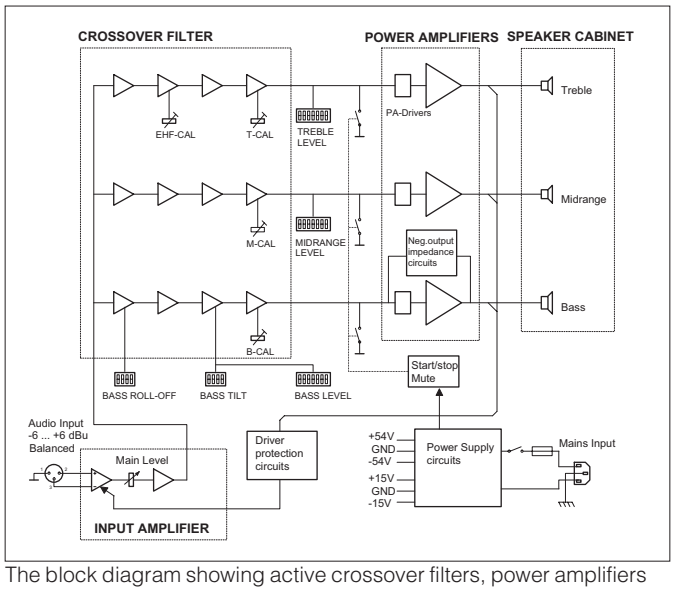
CD Mastering

SYSTEM

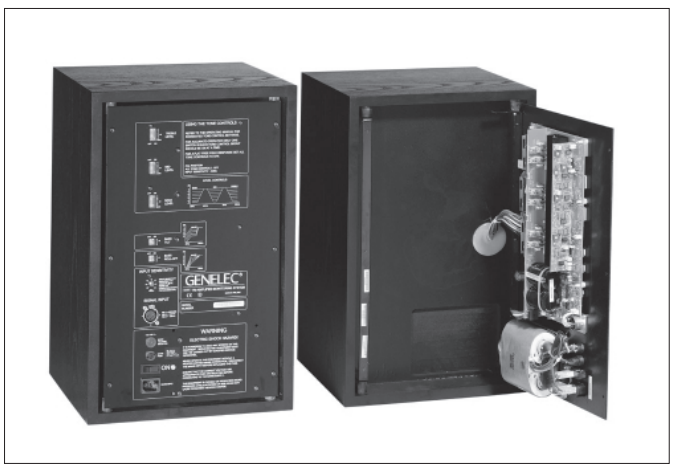
The Genelec S30C is a three-way Active Monitoring System including loudspeaker drivers, speaker enclosure, multiple power amplifiers and active, low level crossovers. All these are housed entirely within the speaker cabinet. Featuring a proprietary ribbon tweeter the S30C is a no compromise design. The fast, low distortion amplifiers are capable of driving a stereo system to peak output levels in excess of 122 dB SPL at 1 m with program signals. Versatile crossover controls allow for precise matching of the speaker system to different acoustic conditions. Designed for relatively small control rooms and available in vertical and horizontal versions, this system is ideal for general purpose broadcasting and television studios, digital workstations, post production facilities and mobile recording vehicles. The high output and absolute reproduction accuracy make the S30C an ultimate nearfield monitor in recording studios.

INTEGRATED CONSTRUCTION

The system is very easy to use as only mains power and input signal are needed. The performance is consistent because the loudspeakers and amplifiers are built as a single integrated, matched and calibrated package. The rugged amplifier is mounted into the enclosure with vibration isolators which act also as quick release hinges making possible maintenance operations very easy and straightforward. The speaker cabinet is constructed of veneered MDF, which is heavily braced to eliminate structural resonances.



The block diagram showing active crossover filters, power amplifiers and driver units.



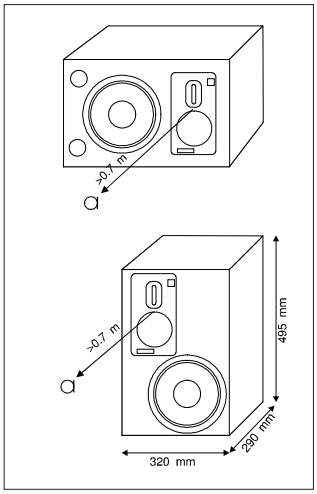
Three 120 W amplifiers are housed in the speaker cabinet

AMPLIFIERS

The bass, midrange and treble amplifiers each produce 120 W of short term power with very low THD and IM distortion. Special attention is paid to electronics design to get also the subjective sound quality as good as currently possible. To improve acoustic transient response the output impedance of the woofer amplifier is made negative. The system incorporates a special circuitry for protecting drivers from overload. Thermal protection is included for the amplifiers.

Horizontal version S30C H

Vertical version S30C V



The reference axis lies between midrange and tweeter drivers.

CROSSOVER FILTERS

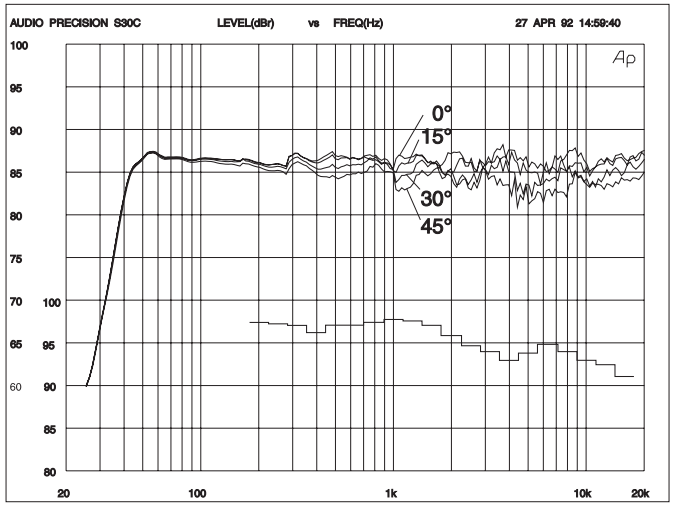
The crossover frequencies of the active crossover network are 420 Hz and 4 kHz. In order to reach uniform frequency balance in different acoustic conditions, special calibrated controls are included in the crossover. The Bass, Midrange and Treble level controls operate in 1 dB steps. Moreover, the low frequency Tilt- and Roll-off controls both have four 2 dB steps to allow refined LF response tailoring. A high-pass filter is included in the LF channel to protect the woofer from subsonic signals. The crossover network is driven by an active balanced input stage. Variable input sensitivity allows for accurate level matching to the mixing console.

Calibrated 'Level' switch. MUTE disconnects the channel for testing.

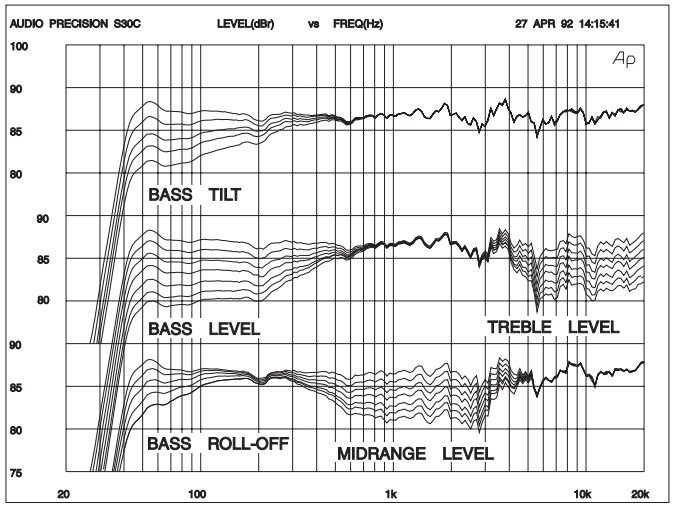
DRIVERS

The 210 mm (8") woofer is loaded with a 24 liters (0.85 cu.ft.) vented box. The woofer has a very large magnet and a long linear excursion capability (±9 mm, ±0.35"). Both features are needed to reach low frequencies with reasonable efficiency and high acoustic output (SPL) in a small enclosure. The -3dB point is 42 Hz and the low frequency response extends down to 35 Hz. A carefully designed 80 mm cone driver, sealed in a cast aluminum alloy housing, reproduces the critical midrange where the ear is most sensitive. To minimize coloration the diaphgram is specially impregnated. As a result, the midrange driver's response actually extends well beyond the range required by the crossovers. The high frequency driver is a proprietary ribbon tweeter with a moving mass of only 32 mg and frequency response extending into ultrasonic range. The dispersion characteristics of both tweeter and midrange driver are matched for uniform tonal balance in different rooms. A magnetic shielding option is available for applications where magnetic stray field must be minimized.

The unique ribbon tweeter and the sealed midrange driver are mounted on a separate chassis to match the dispersion characteristics.



The upper curve group shows the horizontal directivity characteristics of S30C in its vertical configuration measured at 1 m. The lower curve is a 1/3 octave band power response, measured in an IEC approved reverberation chamber.



The curves above left show the effect of the 'bass tilt', 'bass level' and 'bass roll-off' controls on the free field response. The curves to the right show the effect of the treble and midrange 'level' controls.

Options

Opt-01
Flight case
Order Code
1001-401

Opt-05
Floor stand
Order Code
1010-405-V
1010-405-H

Opt-03
Magnetic shielding
Order Code
1010-403

Opt-06
Handles
Order Code
1001-406

Opt-04
Wall mount
Order Code
1010-404-V
1010-404-H

Opt-09
Grille
Order Code
1010-409

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SYSTEM SPECIFICATIONS

Lower cut-off frequency, -3 dB: ≤42 Hz

Upper cut-off frequency, -3 dB: ≥25 kHz

Free field frequency response of system: 43 Hz - 25 kHz (±2.5 dB)

Maximum short term sine wave acoustic output on axis in half space, averaged from 100 Hz to 3 kHz:

@1m	≥111 dB SPL
@0.5m	≥117 dB SPL

Maximum long term RMS acoustic output in same conditions with IEC-weighted noise (limited by driver unit protection circuit):

@1m	≥102 dB SPL
@0.5m	≥108 dB SPL

Maximum peak acoustic output per pair on top of console, @ 1m from the engineer with music material: ≥122 dB

Self generated noise level in free field @ 1m on axis: ≤10 dB (A-weighted)

Harmonic distortion at 90 dB SPL at 1m on axis:

freq. ≤200 Hz	<2%
freq. >200 Hz	<1%

Drivers:	Bass	210 mm cone
	Midrange	80 mm cone
	Treble	9x65 mm ribbon

Weight: 20 kg (44 lb)

Dimensions: Height 495 mm (19 1/2")
Width 320 mm (12 5/8")
Depth 290 mm (11 7/16")

AMPLIFIER SECTION

Bass amplifier output power with an 8 Ohm load:
Short term 120W

Midrange amplifier output power with an 8 Ohm load:
Short term 120W

Treble amplifier output power with an 8 Ohm load:
Short term 120W

Long term output power is limited by driver unit protection circuitry.

Slew rate : 80V/µs

Amplifier system distortion at nominal output:

THD	≤0.05%
SMPTE-IM	≤0.05%
CCIF-IM	≤0.05%
DIM 100	≤0.05%

Signal to Noise ratio, referred to full output:

Bass	≥100 dB
Midrange	≥100 dB
Treble	≥100 dB

Mains voltage: 100/200V or 115/230V

Voltage operating range at 230V setting: 207 - 253V (±10%)

Power consumption:

Idle	30W
Full output	200W

CROSSOVER SECTION

Input connector: XLR female pin1 gnd
pin2 +
pin3 -

Input impedance: 10 kOhm

Input level for 100 dB SPL output @1m:
variable from +6 to -6 dBu

Input level for maximum short term output of 111 dB SPL @1m:
variable from +17 to +5 dBu

Subsonic filter below 38 Hz :
18 dB/octave

Ultrasonic filter above 25 kHz:
12 db/octave

Crossover frequency:

bass/mid	420 Hz
mid/treble	4 kHz

Crossover acoustical slopes:
18 - 24 dB/octave

Crossover level control operating range in 1 dB steps:

bass	from 0 to -6 dB
mid	from 0 to -6 dB
treble	from 0 to -6 dB

Bass roll-off control in 2 dB steps:
from 0 to -8 dB @42 Hz

Bass tilt control in 2 dB steps:
from 0 to -8 dB @80 Hz

The 'CAL' position is with all tone controls set to 'off' and input sensitivity control to maximum.

GENELEC®

Genelec Oy, Olvitie 5
FIN - 74100 IISALMI, FINLAND
Phone: +358 - 17 - 813 311
Telefax: +358 - 17 - 812 267
E-mail: genelec@genelec.com
Web: http://www.genelec.com

Genelec Inc, 7 Tech Circle
Natick, MA 01760, USA
Phone: +1 - 508/652-0900
Fax: +1 - 508/652-0909
E-mail: genelec@compuserve.com

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