

GENELEC®

A C T I V E M O N I T O R I N G

Genelec 1038AC
Tri-amplified Monitoring System

Data sheet



1038AC Tri-amplified Active Monitoring System



APPLICATIONS

- Video/Film Post Production
- DVD Mastering
- Broadcast Monitoring
- Project Studios

SYSTEM

The Genelec 1038AC is a dedicated center channel speaker for three channel (LCR) and Surround systems. Its slim and compact cabinet has been designed for optimum placement in the limited space above, below or in vertical orientation, on either side of a video monitor or screen.

As its name suggests, the Genelec 1038AC is best suited for use as a center channel speaker with a pair of standard Genelec 1038A active monitors. The 1038AC employs the same mid and treble drivers and Directivity Control Waveguide as a standard 1038A and the amplifier unit is also the same to ensure complete tonal compatibility.

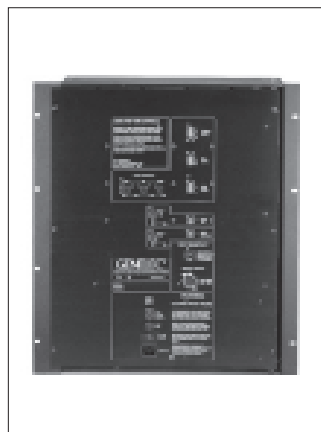
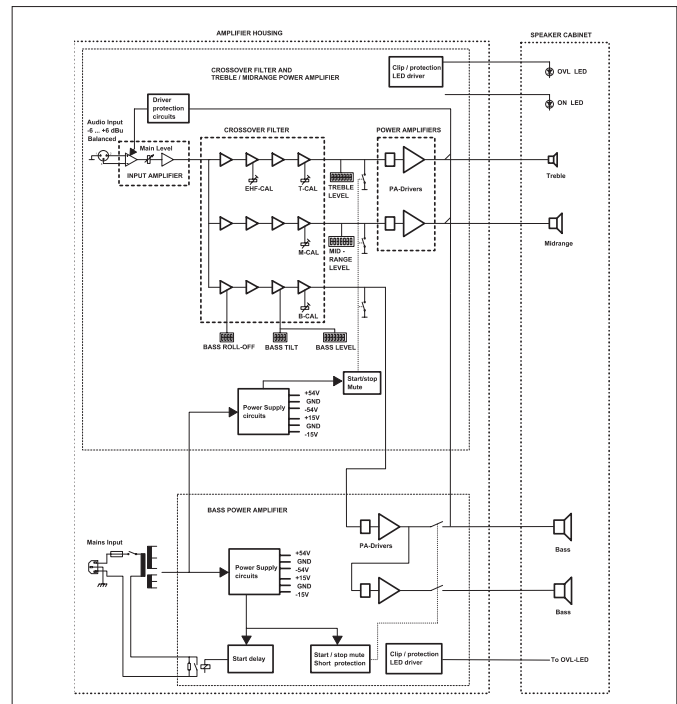
Genelec 1038AC is a three-way active monitoring system including magnetically shielded loudspeaker drivers, speaker enclosure, multiple power amplifiers and active, low signal level crossovers. Although designed for film and video post-production and medium sized control rooms this system is also ideal for project studios and broadcast monitoring. DVD mastering is also well tailored for where broad bandwidth, high SPL's and extended low frequency response are essential.

The separate amplifier unit is built into a rack mount chassis for easy fitting into a standard 19" equipment rack. A 10 meter connecting cable set to go between the amplifier and speaker is standard. The 1038AC is recommended

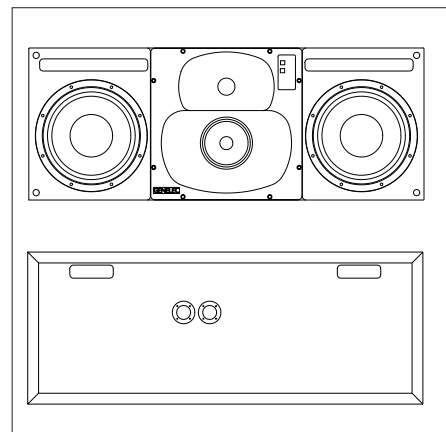
to be flush mounted into the control room wall, but it can also be used as a free-standing monitor.

The unique Directivity Control Waveguide (DCW) Technology provides excellent stereo imaging and frequency balance even in difficult acoustic environments. The fast acting, low distortion amplifiers are capable of driving the stereo system to peak output levels in excess of 124 dB SPL at 2 m with program signals. Versatile crossover controls allow for precise matching of the speaker system to different acoustic conditions. The system can be used both in vertical and horizontal orientations by simply rotating the DCW unit.

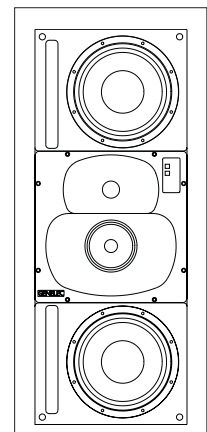
Block diagram showing active crossover filters, power amplifiers and driver units.



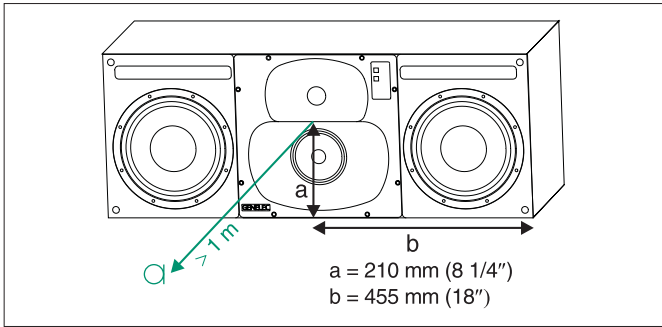
Three channel amplifier is housed in a rack adapter chassis



Horizontal mounting and rear view of the speaker



Vertical mounting



The reference axis lies between midrange and tweeter drivers.

INTEGRATED CONSTRUCTION

Uniform performance is obtained through the matching of the loudspeakers and amplifiers as a complete, calibrated package.

The rugged amplifier is mounted into a rack mount chassis with vibration isolators which also act as quick release hinges making maintenance operations easy and straightforward. The speaker cabinet is constructed of veneered MDF which is heavily braced to eliminate structural resonances.

AMPLIFIERS

The bass, midrange and treble amplifiers each produce 400W, 120W and 120W, respectively of short term power with very low THD and IM distortion. Special attention has been paid to electronic design to ensure the highest subjective sound quality currently possible. The system incorporates special overload protection circuitry for the drivers. Thermal protection is also included for the amplifiers.

DRIVERS

The bass frequencies are reproduced by two 250 mm (10") bass drivers loaded with a 110 liters vented box. The -3dB point is 33 Hz and the low frequency response extends down to 29 Hz (-6 dB). The midrange frequencies are reproduced by a proprietary 130 mm (5") direct radiating cone driver loaded with a DCW. The high frequency driver is a 25 mm (1") metal dome also loaded by a DCW.

The 1038AC is magnetically shielded in order to minimise interference with video monitors.

DCW TECHNOLOGY

The revolutionary Directivity Control Waveguide Technology is a means of vastly improving the

performance of a direct radiating multiway loudspeaker in normal listening conditions.

The basic idea is to match the different drive units precisely, both in terms of frequency response and directivity. This will result in a smoother and virtually uncoloured off-axis response of the system. Also due to improved directivity control especially in the midrange and high frequencies, more direct sound and less early boundary reflections are received at the listening position. This gives a more accurate stereo imaging and makes the system less sensitive to differing control room acoustics than any conventional direct radiator design. The DCW Technology improves drive unit sensitivity from +2 to +6 dB thus increasing the system's maximum sound pressure level.

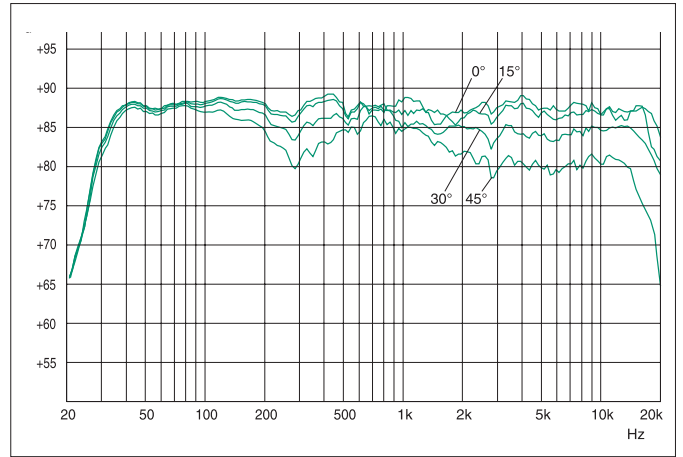
CROSSOVER FILTERS

The crossover frequencies of the active crossover network are 410 Hz and 3.0 kHz. In order to obtain a uniform frequency balance under different acoustic conditions, special calibrated controls are included in the crossover; the Bass, Midrange and Treble level controls operate in 1 dB steps. Furthermore, the low frequency Tilt and Roll-off controls both have four 2 dB steps to allow refined LF response tailoring.

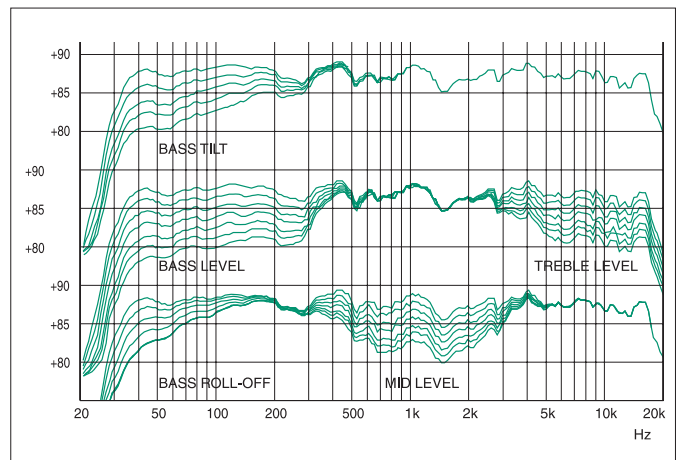
A high-pass filter is included in the LF channel to protect the woofer from subsonic signals. The crossover network is driven by an active balanced input stage. Variable input sensitivity allows for accurate level matching to the mixing console.

Options

Opt-09 Grille	Order Code 1038-439
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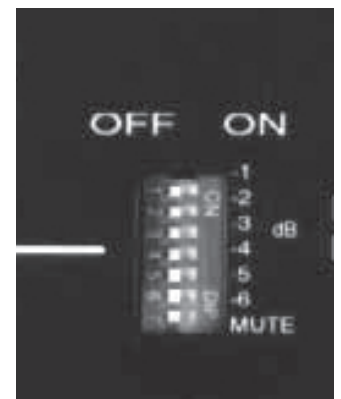
The curve group above shows the horizontal directivity characteristics of 1038AC in its vertical configuration measured at 1 m.



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. Note that the free-field mid-range ripple is substantially reduced when the speaker is flush mounted as recommended.



The tweeter and the sealed midrange driver are mounted on a DCW to match their dispersion characteristics. The DCW can be rotated for horizontal mounting (see previous page).



Calibrated 'LF, MF or HF Level' switch. MUTE disconnects the channel for testing.

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1038AC SYSTEM SPECIFICATIONS

Lower cut-off frequency, -3 dB: ≤ 33 Hz
Upper cut-off frequency, -3 dB: ≥ 20 kHz

Free field frequency response
of system: 35 Hz - 20 kHz (± 2.5 dB)

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

@1m ≥ 120 dB SPL
@0.5m ≥ 126 dB SPL

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

@1m ≥ 116 dB SPL
@0.5m ≥ 122 dB SPL

Maximum peak acoustic output
per pair @ 2m from the engineer
with music material: ≥ 124 dB SPL

Self generated noise level in
free field @ 1m on axis: ≤ 15 dB
(A-weighted)

Harmonic distortion at 95 dB SPL @ 1m on
axis / freq: 50...100 Hz $< 1\%$
>100 Hz $< 0.5\%$

Drivers: Bass 2 x 250 mm (10") cone
Mid 130 mm (5") cone
Treble 25 mm (1") metal dome

Speaker weight: 60 kg (130 lb)
Amplifier weight: 14 kg (31 lb)

Speaker dimensions (horizontal mounting):
Height 350 mm ($13\frac{3}{4}$ ")
Width 910 mm ($35\frac{13}{16}$ ")
Depth 453 mm ($17\frac{7}{8}$ ") *

Amplifier dimensions:
Height 530 mm ($20\frac{7}{8}$ ")
Width 480 mm ($18\frac{7}{8}$ ")
Depth 113 mm ($4\frac{7}{16}$ ") *

* Without connecting cable. Cable connec-
tors require additional 100 mm (4") of space
behind the speaker and the amplifier.

AMPLIFIER SECTION

Bass amplifier output power with an 8 Ohm
load: 400 W

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

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

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

Slewrate : 80 V/ μ s

Amplifier system distortion at
nominal output:

THD	$\leq 0.05\%$
SMPTE-IM	$\leq 0.05\%$
CCIF-IM	$\leq 0.05\%$
DIM 100	$\leq 0.05\%$

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 ($\pm 10\%$)
115V setting: 104 - 126V ($\pm 10\%$)

Power consumption:
Idle 60W
Full output 500W

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
120 dB SPL @1m:
variable from +26 to +14 dBu

Subsonic filter below 33 Hz :
18 dB/octave

Ultrasonic filter above 25 kHz:
12 dB/octave

Crossover frequency:
Bass/Mid 410 Hz
Mid/Treble 3 kHz

Crossover acoustical slopes:
24 - 32 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 @ 33 Hz

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

The calibration position is with all tone con-
trols set to 'off' and input sensitivity control
to maximum.



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