





1238CF

DSP Monitoring System

Applications

• Audio Recording • Broadcast Control Rooms • Pre Production & Composing Studios • Drama Studios • TV Control Rooms • Post Production • Mastering Suites

System

The Genelec 1238CF is a compact three-way DSP monitoring loudspeaker including drivers, multiple power amplifiers and digital signal processing (DSP) circuitry. The 1238CF is compatible with proprietary Genelec Loudspeaker Manager™ (GLM™) control software and can be combined with Genelec 8200/7200 Series products in the same control network. The 1038CF is optimized for systems utilizing one or multiple subwoofers in medium sized control rooms and suited for music recording studios, film and video post-production and general broadcasting monitoring as well as for mastering suites.

The 1238CF is designed to perform well both as a free-standing monitor and flush mounted into the control room wall. When flush mounting the loudspeaker, the space behind the loudspeaker enclosure must be sufficiently ventilated in order to dissipate heat generated by the amplifier unit located at the back panel of the loudspeaker.

The Directivity Control Waveguide™ (DCW™) Technology developed by Genelec provides excellent stereo imaging and frequency balance even in difficult acoustic en-

vironments. Versatile crossover controls allow for precise matching of the loudspeaker system to different acoustic conditions.

The rugged amplifier unit is mounted into the enclosure with vibration isolators which also act as quick release hinges making maintenance operations very easy and straightforward. The loudspeaker cabinet is constructed of painted MDF, which is heavily braced to eliminate structural resonances.

Digital Signal Processing

Genelec 1238CF and 8200 and 7200 Series loudspeakers and subwoofers feature an independent dedicated digital signal processing engine in each loudspeaker. All AES/EBU digital audio formats are supported, as well as standard line level analog signals. The system accepts sampling rates ranging from 32 kHz to 192 kHz.

Up to 30 loudspeakers and subwoofers can be connected on, set up, and controlled with GLM™ control network over standard CAT5 cabling. Genelec Loudspeaker Manager™ (GLM™) is a computer software providing full real-time control of all aspects of all loudspeakers on the network.

Fast and Easy Calibration With AutoCal™

AutoCal™ is a fully automated loudspeaker system alignment algorithm within GLM™ software. It sets levels, distance compensating delays, phase (for subwoofers) and room response equalization using a factory-calibrated Genelec measurement microphone included in the GLM™ software kit. SinglePoint™ and MultiPoint™ microphone locations for one, two, or three-person mixing environments can be selected. The Interactive Response Editor provides visual readout of measured and corrected response curves as well as full manual editing of all acoustical settings.

All functions and settings are stored in GLM™ System Setup Files or directly into each loudspeaker. As the control network is separate from the audio cabling, the control network can be dismantled and moved to another place after saving the settings into the loudspeakers. Furthermore, the 1238CF retains features similar to analog 8000 series active loudspeakers and can be used independently of the GLM™ control network.

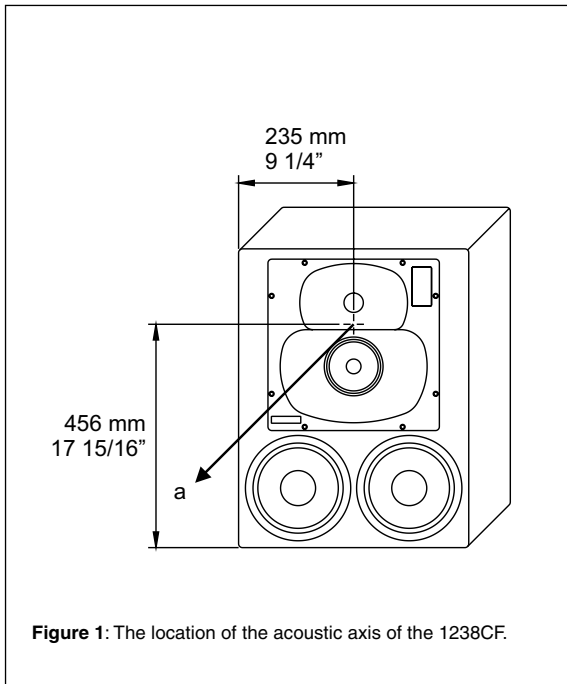


Figure 1: The location of the acoustic axis of the 1238CF.

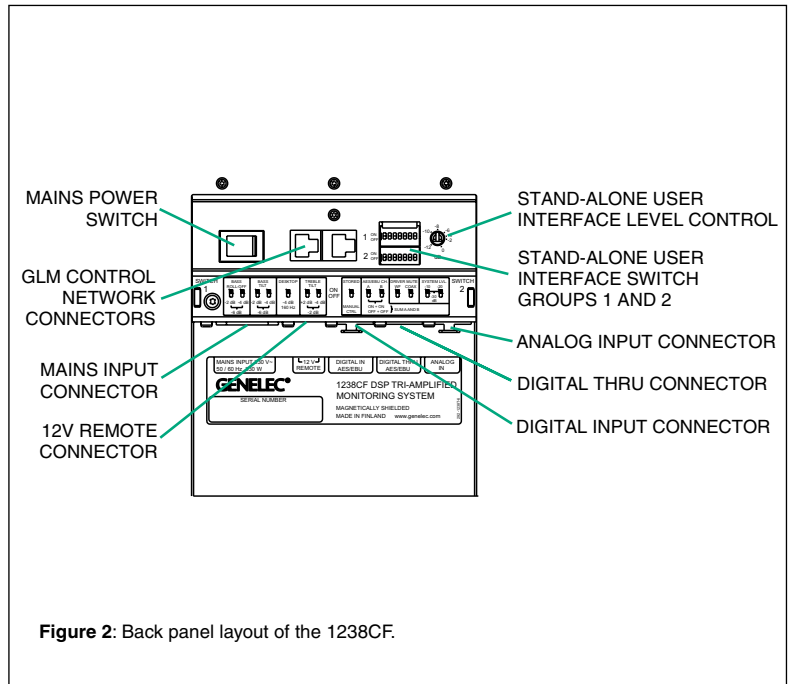


Figure 2: Back panel layout of the 1238CF.

Drivers

The low frequencies are reproduced by two 210 mm (8") bass drivers. The low frequency (-3 dB) cutoff point is 55 Hz and the high frequency acoustic response extends up to 20 kHz (-3 dB).

The midrange and high frequency driver layout features a proprietary 130 mm (5") direct radiating cone for the MF and a 25 mm (1") metal dome for the HF loaded by proprietary Directivity Control Waveguide.

All drivers are magnetically shielded.

Amplifiers

The bass, midrange and treble amplifiers on the 1238CF produce 150 W, 120 W and 120 W of short term power. The amplifiers are designed to operate at very low THD and IM distortion values and incorporate special circuitry for driver overload protection and amplifier thermal protection.

Mounting options

The Genelec 1238CF has an M10x30 thread on both sides of the enclosure and one M10x30 thread above the amplifier on the back of the enclosure. These can be used for securing the loudspeaker in its place. There is

also an adapter for a 35 mm tube type loudspeaker stand at the bottom of the enclosure. A wide selection of accessories for mounting the loudspeaker is available through your Genelec dealer.

DCW Technology

The revolutionary Directivity Control Waveguide Technology is a means of improving the performance of a direct radiating multi-way 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 a virtually uncoloured off-axis response. Due to improved control of the directivity, especially in the midrange frequencies, more direct sound and less early boundary reflections are received at the listening position. This results in more accurate stereo imaging and makes the system less sensitive to variations in room acoustics than any conventional direct radiator design.

The DCW Technology improves drive unit sensitivity by 2...6 dB compared to conventional designs, thus increasing the maximum sound pressure level produced by the system and decreasing distortion.

Guarantee

The 1238CF is guaranteed for a period of two years against faults in materials or workmanship.

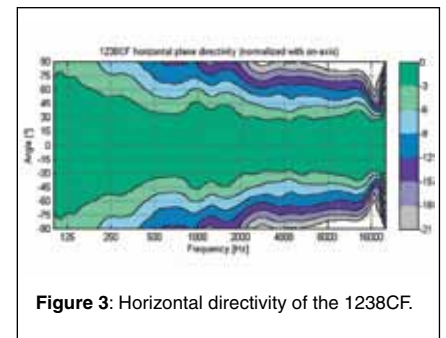


Figure 3: Horizontal directivity of the 1238CF.

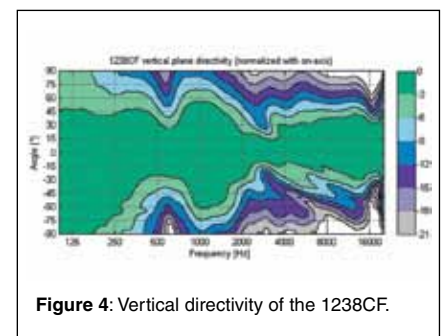
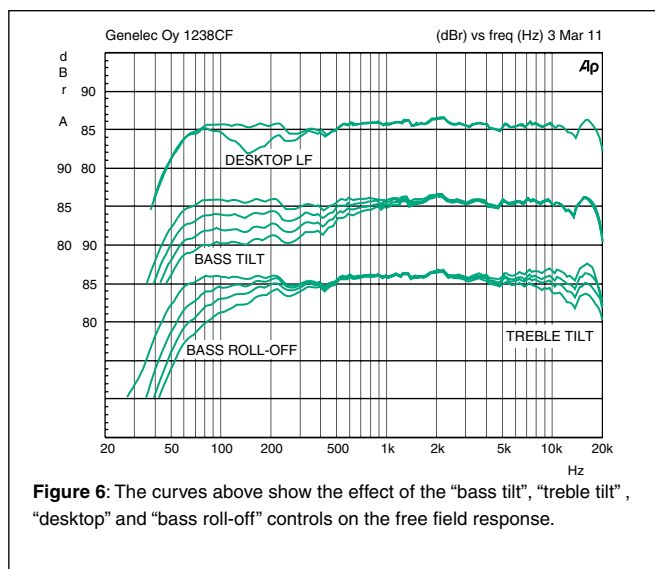
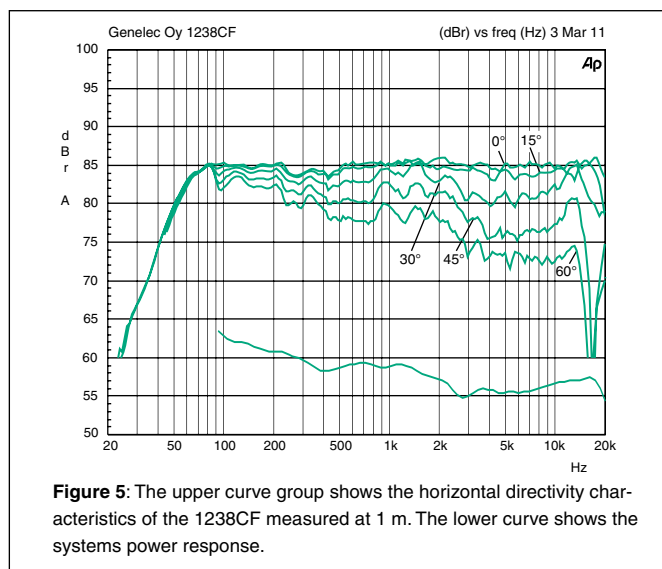


Figure 4: Vertical directivity of the 1238CF.



SYSTEM SPECIFICATIONS

	1238CF
Lower cut-off frequency, -3 dB	≤ 55 Hz
Upper cut-off frequency, -3 dB	≥ 20 kHz
Free field frequency response	57 Hz – 20 kHz (± 2.0 dB)
Maximum short term sine wave acoustic output on axis in half space, averaged from 100 Hz to 3 kHz	@ 1 m ≥ 117 dB SPL
Maximum long term RMS acoustic output in same conditions with IEC weighted noise (limited by driver unit protection circuit)	@ 1 m ≥ 107 dB SPL
Maximum peak acoustic output per pair with music material	@ 2 m ≥ 124 dB
Self generated noise level in half space at 1 m on axis (A-weighted)	≤ 15 dB
Harmonic distortion at 90 dB SPL at 1 m on axis Freq: 60...100 Hz > 100 Hz	< 1 % < 0.5 %
Drivers Bass Midrange Treble	2 x 210 mm (8") cone 125 mm (5") cone 25 mm (1") metal dome All drivers are magnetically shielded
Weight	42 kg (93 lb)
Dimensions Height Width Depth	610 mm (24") 470 mm (18 1/2") 257 mm (10 1/8")

AMPLIFIER SECTION

	1238CF
Bass amplifier short term output power Midrange amplifier short term output power Treble amplifier short term output power	150 W at 4 Ohm load 120 W at 8 Ohm load 120 W at 8 Ohm load
Long term output power is limited by driver unit protection circuitry	
Slew rate	80 V/us
Amplifier system THD at nominal output	< 0.05 %
Signal to Noise ratio, referred to full output Bass Midrange Treble	≥ 100 dB ≥ 100 dB ≥ 100 dB
Mains voltage Mains voltage operating range	100/200 or 115/230 V -10 to +6%
Power consumption (average) Idle Full output	23 VA 330 VA

SIGNAL PROCESSING SECTION

	1238CF
Digital signal input connector XLR female 110 kOhm	AES/EBU Single Wire or Dual Wire
Digital signal output / Thru connector XLR male 110 kOhm	AES/EBU Single Wire or Dual Wire
Analog signal input connector XLR female, balanced 10 kOhm	pin 1 gnd, pin 2 +, pin 3 -
Digital audio Word length Sample rate	16 - 24 bits 32 - 192 kHz
Control network Type Connection	Proprietary GLM™ network 2 RJ45, CAT5 cables
Crossover frequency Bass/Mid Mid/Treble	420 Hz 2.8 kHz
GLM™ software frequency response adjustment * Notch filters Shelving filters	4 LF and 2 HF 2 LF and 2 HF
System calibration	Auto Cal™, Stand-alone