1. General description

System
The Genelec 1037A is a three-way active monitoring system including drivers, multiple power amplifiers and active crossovers. The system is designed for medium sized control rooms and is ideal for project studios, general purpose broadcasting and television studios, digital workstations, post production facilities as well as mobile recording vehicles. The 1037A is designed to perform well both as a free-standing monitor and flush mounted into the control room wall.

The unique Directivity Control Waveguide (DCW) Technology used provides excellent stereo imaging and frequency balance even in difficult acoustics environments. The fast, low distortion amplifiers are capable of driving the system to peak output levels in excess of 125 dB SPL at 1.7 m with program signals. Versatile crossover controls allow for precise matching of the speaker system to different acoustical conditions.

Drivers
The bass frequencies are reproduced by an 306 mm (12"") bass driver loaded with a 65 litres vented box. The -3dB point is 38 Hz and the low frequency response extends down to 35 Hz. The midrange frequencies are reproduced with a very carefully designed 130 mm (5") direct radiating driver loaded with a proprietary DCW. The high frequency driver is a 25mm (1") dome loaded as well with a DCW.

Crossover filters
The active crossover network consists of three parallel bandpass filters. The crossover frequencies are 420Hz and 3.2 kHz. Bass, midrange and treble level controls, with 1 dB steps, are included in the crossover to obtain uniform frequency balance in different acoustic conditions. The low frequency tilt and roll-off controls both have four 2 dB steps to allow refined low frequency response tailoring. The crossover network is driven by an active balanced input stage. Variable input sensitivity allows for accurate level matching to the mixing console output signal.

Amplifiers
The bass, midrange and treble amplifiers each produce 160W, 160W and 120W, respectively of short term power with very low THD and IM distortion values. The negative output impedance of the woofers amplifiers improves acoustics transient. The system incorporates special circuitry for driver overload protection and amplifier thermal protection.

2. Installation
Each 1037A monitor is supplied with an integrated amplifier unit, a mains cable and an operating manual. Once unpacked, place the loudspeaker in its required listening position, taking note of the line of the listening axis (see figure 2). Before connecting up, ensure that the mains switch is off (see figure 4). Check that the mains voltage selector is correctly set and that the appropriate fuse is fitted. Audio input is made via a 10k Ohm balanced (XLR), but unbalanced leads may be used as long as pin 3 is grounded to pin 1 of the XLR (see figure 3). Once connection has been made, the speakers are ready to be powered-up.

Setting the input sensitivity
Adjustment of the input sensitivity of each speaker can be made to match that of the mixing desk or other sources, by use of the input sensitivity control on the rear panel (see figure 4). A small screw driver is needed for the adjustment. The manufacturer default setting for this control is -6 dBu (fully CW) which gives an SPL of 100 dB @1m with -6 dBu input level. Note that to get the full output level of 114 dB SPL, an input level of +8 dBu is needed at this setting.

Setting tone controls
The acoustic rcsponse of the system may also have to be adjusted to match the acoustic environment. The adjustment is done by setting the five tone control switches 'bass tilt', 'bass roll-off', 'bass level', mid level and treble level on the rear panel of the amplifier. The manufacturers default settings for these controls are 'All Off' to give a flat anechoic response. See Figure 1 for suggested tone control settings in differing acoustical environments. Figure 5 shows the effect of the controls on the anechoic response. Always start adjustment by setting all switches to the 'OFF' position. Then set only one switch to the 'ON' position to select the response curve required. If more than one switch is set to 'ON'
4. Safety Considerations

Although the 1037A has been designed in accordance with international safety standards, to ensure safe operation and to maintain the instrument under safe operating conditions, the following warnings and cautions should be observed.

Servicing and adjustment should only be performed by qualified service personnel. Opening the amplifier’s rear panel is strictly prohibited except by qualified service personnel who are aware of the hazards involved. It is forbidden to use this product with an unearthed mains cable, which may lead to personal injury.

WARNING! This equipment is capable of delivering Sound Pressure Levels in excess of 85 dB, which may cause permanent hearing damage.

5. Accessories

Opt 01 - Flight Case
Opt 11 - Rack Adapter
Opt 03 - Magnetic Shielding
Opt 05 - Floor stand
Opt 06 - Handles
Opt 09 - Grille

6. Guarantee

This product is supplied with a ONE YEAR guarantee against manufacturing faults or defects that might alter the performance of the 1037A unit. Refer to supplier for full sales and guarantee terms.


No user serviceable parts are to be found within the amplifier unit. Any maintenance or repair of the 1037A unit should only be undertaken by qualified service personnel. Ensure that if fuse replacement is required, only fuses of the appropriate voltage and current ratings are used. REMEMBER to disconnect the power supply by removal of the mains cable, before fuse replacement.
SYSTEM SPECIFICATIONS

Lower cut-off frequency, -3 dB: \( \leq 38 \text{ Hz} \)
Upper cut-off frequency, -3 dB: \( \geq 22 \text{ kHz} \)
Free field frequency response of system: \( \geq 39 \text{ Hz} - 21 \text{ kHz} \) (\( \pm 2.5 \text{ dB} \))

Maximum short term sine wave acoustic output on axis in half space, averaged from 100 Hz to 3 kHz: \( \geq 114 \text{ dB SPL} \)

Maximum long term RMS acoustic output in same conditions with IEC-weighted noise (limited by driver unit protection circuit): \( \geq 108 \text{ dB SPL} \)

Maximum peak acoustic output per pair on top of console, @1.7m from the engineer with music material: \( \geq 125 \text{ dB} \)

Self generated noise level in free field @1 m on axis: \( \leq 15 \text{ dB} \)

(A weighted)

Harmonic distortion at 95 dB SPL at 1 m on axis: freq. \( \leq 100 \text{ Hz} \) \( \leq 3\% \)

freq. \( > 100 \text{ Hz} \) \( \leq 0.5\% \)

Drivers: Bass 305mm (12") cone

Midrange 130mm (5") cone

Treble 25mm (1") metal dome

Weight: 35 Kg (77 lbs)

Dimensions: Height 680mm (26.3/4")

Width 400mm (15.3/4")

Depth 380mm (15")

AMPLIFIER SECTION

Bass amplifier output power with a 6 Ohm load: Short term 160W

Midrange amplifier output power with a 4 Ohm load: Short term 160W

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

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

Slow rate: \( 80 \text{ V/µs} \)

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 \( \geq 100 \text{ dB} \)

Midrange \( \geq 100 \text{ dB} \)

Treble \( \geq 100 \text{ dB} \)

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

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

Power consumption: Idle 50W

Full output 300W

CROSSOVER SECTION

Input connector: XLR female

pin 1 gnd

pin 2 +

pin 3 -

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 114 dB SPL @1m: variable from +20 to +8 dBu

Subsonic filter below 35 Hz:

18 dB/octave

Ultrasonic filter above 25 kHz:

12 dB/octave

Crossover frequency:

Bass/Mid 420 Hz

Mid/Treble 3.2 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 @38 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.

Note: All frequency response curves were measured in a calibrated, 12 m cube, anechoic chamber at 1 m using grade 1 measuring equipment. Input signal levels were set at -20 dBu. The anechoic chamber error in the free field response is less than 0.5 dB down to 60 Hz.