REFERENCE SERIES MODEL 107

INSTALLATION MANUAL

KEF ELECTRONICS LIMITED, TOVIL, MAIDSTONE, KENT, ENGLAND

CONTENTS LIST

1.0 INTRODUCTION

KEF Model 107 is a free-standing three-way loudspeaker system of the highest quality. The system uses four drive units and includes active low-level equalisation in the form of K-UBE (KEF Universal Bass Equaliser).

The low-frequency section comprises two 250mm units, linked by a force-cancelling rod, mounted inside the main enclosure in Coupled Cavity configuration. This arrangement, proven in KEF's multi-award-winning Model 104/2, allows maximum power handling where the musical demands are greatest, with exceedingly low distortion. Bass energy is vented upwards at the top of the main enclosure. This obviates floor reflections which often lead to over-prominent bass.

The midrange and high-frequency units are mounted in a separate enclosure above the bass section. This head assembly is specially contoured to control diffraction effects. It contains mineral-loaded polymer damping to eliminate mid-band colourations, and is rotatable to permit precise focusing of the stereo image, independent of the orientation of the main cabinet.

Conjugate Load Matching in the dividing network enables the speaker to present a flat, resistive load to the amplifier. The impedance is set at 4 ohms, resulting in a doubling of effective sensitivity and therefore of output level, over a conventional nominal 8 ohm load, without any need for a more powerful amplifier.

An optional head cover is provided.

What makes KEF Model 107 unique is the inclusion, as an integral part of the system, of K-UBE. K-UBE acts as part of Model 107's entirely new hybrid dividing network to combine passive frequency division with active response shaping. This arrangement maximises the system's dynamic range with any given amplifier and, by providing independent control over low- frequency balance, extension and 'Q', allows the user to optimise the LF/MF balance to suit the speaker's room position and to select bass performance characteristics appropriate to the programme material.

KEF Model 107 combines excellent dynamic range and power handling with unusually vivid stereo imaging and a remarkable freedom from cabinet induced colourations. Its simple elegance and flat resistive impedance make it both easy to house and to drive. Above all Model 107 offers genuine bass extension flat to 20Hz whilst giving the user unprecedented control over all important aspects of low-frequency performance.

1.1 GENERAL NOTES

Your new KEF Model 107 loudspeakers contain a number of significant innovations, chief among which is the ability they give you, with K-UBE, to tailor the sound balance to your room, and to select both bass extension and characteristic to suit the programme material you choose and your listening preference.

Set-up is simple, but somewhat more critical than with most conventional loudspeakers.

Please take the time to read this manual carefully and follow the procedures for assembling and connecting your Model 107.

Care taken over set-up will ensure their optimum performance and your listening pleasure.

One pair of KEF Model 107 is contained in four cartons:

- 2 cartons each containing 1 bass enclosure
- 1 carton containing 2 head covers
- 1 carton containing:
  - 2 MF/HF head assemblies
  - 1 K-UBE active equaliser
  - 1 K-UBE power supply

IMPORTANT

1. In addition to adjustable low-frequency response, K-UBE also contains important equalisation and unit pair matching elements. Model 107 will only operate correctly therefore with K-UBE in circuit. No damage will be done should K-UBE inadvertently be left 'off', the system simply will not sound right.

2. When assembling and setting up the systems, always connect according to the channel identification (L,R) contained on the rear labels of the head assemblies, K-UBE, and the bass cabinets.

Always assemble and connect up to your hi fi system with the left and right speakers on the left and right channels. Care should also be taken to connect K-UBE correctly to your amplifier (see section on connecting K-UBE).

1.2 INSTALLATION PROCEDURE

Installation should be carried out in the following sequence. Full details of each step will be found in Sections 2.0 and 3.0 below.

1. Unpack bass cabinets
2. Unpack head assemblies
3. Fit and connect head assemblies to bass cabinets
4. Unpack (do not fit) head covers
5. Position speakers and connect to amplifier
6. Unpack K-UBE
7. Connect K-UBE to amplifier
8. Connect K-UBE to power supply
9. Set K-UBE controls to reference setting
10. Switch on system
11. Carry out listening tests and make any necessary adjustments

2.0 MODEL 107: THE LOUDSPEAKERS

2.1 UNPACKING, ASSEMBLY AND AFTERCARE

Spread the top and bottom carton flaps of the two largest cartons and lift off.

Unpack the two head assemblies. Identify the left and right markings and assemble with the appropriate bass cabinet, carefully inserting the metal spigot into the receptacle on the top of the bass cabinet. This will be a tight fit so take care to insert as vertically as possible to avoid any damage to the bearing surfaces. Connect the flying lead/XLR plug to the socket on the rear of the head assembly.

Unpack the head covers. Their use is optional. If you intend to use them we suggest you place them on the speaker only after listening and positioning tests have been concluded.

Unpack K-UBE and identify the connection markings on the rear panel. Do not connect the K-UBE to your amplifier at this time.

Aftercare

Your Model 107 loudspeakers are supplied in matched pairs of real wood veneer cabinets. The cabinets should be treated with the same care with which you would treat fine furniture, and the use of a good quality wax polish is recommended.

It is normal for walnut cabinets to darken and rosewood to lighten with the passing of time, but locations in direct sunlight should, if possible, be avoided.

2.2 ROOM POSITION AND LISTENING WINDOW

The Model 107 is designed to stand on the floor, it does not require any other form of stand or support. If the speaker is to be used on wood or tiled floor, use the feet as supplied. On thick carpet, however, stability will be considerably improved by removing the caps and using the pointed feet. Place the speaker in its chosen position and level it by screwing the rear feet fully in and adjusting the front, using additional washers as necessary to level the speaker.

Tighten the screws firmly when levelling up is completed. Only in rare cases of very uneven floors should you need to adjust the rear feet.

The tonal quality and clarity of the reproduction, and above all, the sharpness of the stereo image, are determined by the sound that reaches the listener directly, without reflection from walls, floor or ceiling.

Reflections from nearby walls, mirrors, even the television set can spoil stereo definition by confusing the primary image. Large items of soft furniture can cause absorption of midrange and high frequencies.

The head assembly on Model 107 may be rotated to allow the midrange and high-frequency directional information to be directed towards the listener independently of the position of the bass cabinet. Thus it is possible to place the speaker to fit in with other furniture in the room, or to be sited parallel to walls for neatness, whilst still allowing the listener to benefit from optimum stereo performance.

Model 107 is capable of giving a stable stereo image over a wide listening area with an unusually vivid sense of depth perspective. Since this is achieved in part by the shaping and proportioning of the enclosures to permit sound to diffract smoothly, these benefits may be impaired by reflections from nearby walls.

The loudspeakers should therefore ideally be stationed at least 1m from side walls and a minimum of 50cm from any back wall.

The spacing between the two speakers, and the listening distance from the speakers is important.

If the speakers are placed too close together, the stereo image will not be fully developed. For normal listening, placement will usually be between 2m and 4m apart depending upon the listening distance and the room size. The listeners' distance from the speakers should be equal to, or greater than, the distance between the loudspeakers. Tests should be made with both music and speech before deciding upon the final location for the speakers.

NB: To avoid damage to the mid/high-frequency enclosure mounting, it is recommended that cabinet location is achieved by lifting from the bottom front, with one hand at the upper rear.

2.3 SPEAKER CONNECTIONS

The terminals fitted to the Model 107 will accept either bare wire, 4mm 'banana' plugs, or 6mm spade connectors. If you use bare wire you will need to strip 12.5mm (1/2") of insulation - twist it tightly together with clean fingers, and having previously unscrewed the terminal, push the wire through the hole in the terminal and screw it up TIGHT. Make sure there are no stray strands of wire which can cause a short circuit between the two terminals. If 4mm 'banana' plugs are used, choose a good quality sprung or expanding type, making sure the cable is properly connected and that the plugs fit tightly into the sockets. Normal polarity of connections (amp positive/red to speaker positive/red and amp black to speaker black) should be observed.

NB: All connections should be made with the equipment switched OFF. Only switch ON once all connections have been made and are secure.

Correct polarity is vital to the proper operation of the system. Once the system is fully installed, with K-UBE lead connected, you can check the polarity in the following manner.

Place the two loudspeakers close together facing each other about 5-7.5cm (2"-3") apart. Play a recording which has plenty of deep bass such as an organ solo, operating both speakers simultaneously with the amplifier switched to 'mono'. Repeat the test after changing over the connections on one loudspeaker. Correct polarity is indicated by firm, full bass. When polarity is incorrect, the bass will be noticeably weaker.

Keep the speakers facing each other and, after establishing correct polarity as above, again reverse the connections on one loudspeaker. Using the same piece of music, and keeping the signal in mono, rotate the balance control on your amplifier on either side of 'centre'. You will hear a point at which the signal almost disappears. At this point the output from both loudspeakers is the same. In an ideal symmetrical listening set-up this should be the setting adopted (do not forget to correct the polarity change you have just made). You may need to use the balance control to compensate for an "off centre" listening position, or asymmetrical speaker positions within the room. Model 107's imaging capabilities are outstanding and it is worthwhile spending some time in achieving the correct balance between the two speakers from your normal listening position.

Always try to keep the cable run from amplifier to speakers as short as possible to minimise power and high frequency losses.

The choice of cable to use with Model 107 is less critical than with most other loudspeakers owing to the resistive nature of the load it presents to the amplifier. The total resistance, however, should not exceed 0.2 ohms.

The table (A) shows the maximum length that can be used in various gauges without audible effect on speaker performance. As a general guide good audiophile speaker cable has a cross section of approximately 4 square mm. Colour coded cable is recommended to assist checking polarity.

Always use cables of equal length to both speakers even if the actual length of the cable run in the room is different. If one run is shorter than the other the excess cable should be folded neatly, concertina fashion, and secured with a cable tie or elastic band.

The importance of good, clean, tight connections to your loudspeakers cannot be over emphasised.

It is good practice occasionally to remake all connections. In the case of wrapped connections, cut off the old wire and strip the insulation back to expose fresh.

CAUTION: Certain exotic types of cable have high capacitance which can cause instability with some amplifiers. If in doubt, select a cable from the table, or consult your dealer.

2.4 AMPLIFIER REQUIREMENTS AND POWER HANDLING

The Model 107 will give its optimum performance on programme material having a wide dynamic range when driven by an amplifier capable of delivering up to 300 watts into a 4 ohm resistive load. In practice this means an amplifier whose output rating is 150 watts into an 8 ohm load. Model 107 can, however, be driven to perfectly adequate domestic listening levels by an amplifier rated at as little as 50 watts. The Model 107 is capable of achieving very high volume levels without distress, and of sustaining short term amplifier output peaks in excess of 400 watts.

If Model 107 is used with your existing amplifier you will almost certainly find that you need a lower volume setting than you have been used to, and the dynamic range you hear (dynamic range is the difference between the loud and soft parts of the music) will be greater. This, coupled with the imaging capability and overall balance of the Model 107, will enable you to hear more musical detail, and perceive more about how, and where, the recording was made.

We suggest you retain all the packaging in case you need to transport the speakers at a later date.

2.5 RECORD SUGGESTIONS

The importance of listening tests in setting up your hi fi system has been emphasised in these instructions. Use records having good tonal balance with good imaging qualities, covering as wide a range of music and voice as possible. To assist your setting-up, and add to your musical enjoyment, KEF recommend the following records (table B) in either analogue or CD (where available) format.

A general check on system performance can also be carried out using one of the many test discs available. One such, which is particularly simple to use is 'The Enjoyment of Stereo' by John Borwick, EMI SEOM26.

Wire Type Type fil Section Kabel Typ Querschnitt area mm2	Resistance per metre Resistance pour metre Widerstand pro meter milliohms	Length for 0.2 ohms Longeur pour 0.2 ohms Lange fur 0.2 ohms m
0.75	46.0	4.3
1.0	34.5	5.8
1.25	27.6	7.2
1.5	23.0	8.7
2.5	13.8	14.5
4.0	8.6	23.3
6.0	5.7	35.1
10.0	3.4	58.8
USA AWG		
18	42.2	4.7
16	26.4	7.6
14	16.5	12.1
12	10.4	19.2
10	6.5	30.8
8	4.1	48.8

TABLE A

Rachmaninov/ Saint Saens	Rhapsody/ Piano Concerto 2	Philips 410 052
Brahms	Piano Concerto 2	Decca 410 199
Debussy	Preludes	Denon 38C37
de Falla	Three Cornered Hat	Decca 410 008
Rachmaninov	Symphonic Dances	Decca 410 124
Canteloube	Auvergne Songs	Decca 410 004
Laurie Anderson	Mister Heartbreak	Warner 925077
Peter Gabriel	Four	Charisma 800091
Elton John	Superior Sound of	DJM 810 062
Rickie Lee Jones	Rickie Lee Jones	Warner 256 628
Joe Jackson	Body and Soul	CBS 6500
Thomas Dolby	The Flat Earth	EMI 85930

TABLE B

3.0 MODEL 107: K-UBE

3.1 DESCRIPTION OF K-UBE AND ITS CONTROLS

K-UBE is an active low-level equaliser which, when connected between the pre- and power amplifier or in the tape or processor loop of your pre-amplifier, provides two types of equalisation, one fixed, the other variable.

The fixed equalisation affects the midrange and high- frequency sections of Model 107. It is set to provide frequency response shaping and precise sensitivity matching between the two loudspeakers to better than 0.5dB. This equalisation is a part of the system design, your K-UBE being unique to your pair of loudspeakers, and should be used with that pair only.

The variable equalisation consists of three controls allowing you to optimise low-frequency performance to suit both listening environment and programme material.

These three controls are marked **Contour** (controlling LF/MF balance), **Extension** (setting the speakers' bass cut-off frequency), and **Q-factor** (to adjust damping).

NB: Because K-UBE contains part of your loudspeakers' crossover network, it should always be in circuit when the loudspeakers are operating. Switching the Tape Monitor loop in and out to try to make A/B comparison of the effects of bass equalisation will not cause any damage, but will result in incorrect mid and high- frequency balance.

3.2 INSTALLING K-UBE

SIGNAL CONNECTIONS

The preferred method of connection will depend upon your particular amplifier combination. Please refer to the appropriate section below for connection instructions.

1. Separate Pre-and Power Amplifiers

Connect the K-UBE flying leads marked Signal In to the pre-amplifier output phono sockets, and the leads marked Signal Out to the power amplifier input phono sockets, observing correct left and right channel orientation.

2. Integrated Amplifiers and Receivers

If your amplifier/receiver is equipped with an external processor loop facility, then connect the K-UBE flying leads marked Signal In to the processor loop output phono sockets, and the leads marked Signal Out to the processor loop input phono sockets.

If no external processor loop facility is provided, K-UBE should be connected in the tape monitor loop. Connect the K-UBE flying leads marked Signal In to the amplifier tape-loop phono sockets marked TAPE OUT/RECORD OUT/LINE OUT, and then connect the flying leads marked Signal Out to the amplifier tape-loop phono sockets marked TAPE IN/TAPE REPLAY/LINE IN. If you have only one tape monitor loop, into which a tape deck is already connected, disconnect the tape deck from your amplifier and re-connect to the tape sockets provided on the rear of K-UBE.

NOTE: Some integrated amplifiers/receivers are fitted with a removable link between pre-amplifier and power amplifier sections, to allow external equipment to be inserted between pre- and power amplifier. If your amplifier/receiver is so equipped, K-UBE should be connected there, observing the connection instructions in Section 1 above.

POWER SUPPLY CONNECTIONS

K-UBE is powered by means of an external AC adaptor fitted with two flying leads. One is the power cord and the other, terminated in a DIN plug, is the low voltage AC supply for K-UBE.

The AC adaptor is pre-wired at the factory, and appropriately labelled, for either 110V or 220V nominal working voltage.

CAUTION: Check that the voltage marked on your K-UBE AC adaptor corresponds to the AC supply in your home. If correct, connect the AC adaptor power cord to a suitable AC outlet, either in the wall, or if available, on your amplifier. Next, plug the DIN plug into the low voltage power input socket on the rear of K-UBE, and check that the front panel LED is lit.

K-UBE power consumption is negligible and so it is convenient to leave it 'ON' all the time that your system is in regular use. If for any reason your equipment is not going to be used for an extended period, e.g. holidays, then it is good safety practice to switch off K-UBE by removing the power cord from the AC outlet.

3.3 USING K-UBE

INSTALLATION CHECK

Before switching on your hi fi system, make a final check on the following points:

Is head assembly 'L' installed on bass cabinet 'L' and 'R' on 'R'?

Are the speakers connected to the amplifier?

Are the speakers 'L' and 'R' connected to the appropriate channel?

Is K-UBE connected correctly, according to the instructions above?

PRELIMINARY SET UP

Check that the LED on the front panel of K-UBE is illuminated.

Identify the TAPE MONITOR push button on the rear of K-UBE, and make sure this is in the 'SOURCE' position, i.e. Out.

If K-UBE is connected in the tape monitor/external processor loop of your amplifier, select TAPE MONITOR/EXTERNAL PROCESSOR on your amplifier controls. If you wish to replay signals from a tape deck, please refer to sections 3.2 and 3.3.

Select the desired source (CD, Disc etc.)

Set all three rotary controls on the front panel of K- UBE with the dot on the knob at 12 o'clock, and the tone controls on your amplifier 'flat'.

For best results adjust the controls in the following order. Resist the temptation to adjust **Extension** or **Q-factor** whilst setting **Contour** - you are likely to end up with a confused and incorrect result.

USING THE CONTROLS: CONTOUR

All speakers interact both with the room in which they are used, and with their position within that room. It is unlikely that any speaker can sound equally well in all rooms, and certainly not in all positions. K- UBE's **Contour** control is designed to allow you to optimise Model 107 for your listening room and preferred sound balance. It does this by raising or lowering the frequencies below about 160Hz by up to 3dB.

Select disc or CD and play a record with well defined extended bass. Listen carefully to the balance between bass and midrange. If you think the bass is too 'full-bodied' or over

prominent, turn the right- hand knob on K-UBE (**Contour**) anti-clockwise. If the speakers sound 'thin', turn the knob clockwise. Experiment with different records, giving yourself time to get used to the way the **Contour** control operates.

If you have difficulty achieving a suitable balance try experimenting with the speakers' position, remembering that moving them closer to a wall or corner will produce more bass, away from walls will give less.

It may take some time, and a number of records before the right setting is achieved.

Once the correct speaker position and contour setting has been established you should be able to leave the contour setting where it is and ignore it.

USING THE CONTROLS: EXTENSION AND Q FACTOR

An ideal reproducing system must have a very extended low-frequency response if the true character of the lowest musical sounds and concert hall ambience, are to be accurately conveyed.

Although such information is present on the finest modern recordings it is seldom heard correctly due mainly to deficiences in the low-frequency performance of most conventional loudspeaker systems.

In Model 107 these deficiencies can be removed by means of K-UBE's **Extension** and **Q-Factor** controls.

The **Extension** control allows Model 107's lower cut-off frequency to be set to 50, 35, 25 or 18Hz. The cut- off frequency you choose will depend on the type of programme material and conditions of use.

For critical listening to music containing significant low-frequency information (e.g. pipe organ, synthesiser, piano or percussion) then a setting of 25Hz or 18Hz should be chosen. The higher settings of 35Hz and 50Hz should be used for less critical listening, when the source material does not require extension or is of inferior quality. These settings should also be used if Model 107 is to be used to provide continuous high-level background music at parties, thus avoiding the possibilities of amplifier overload.

The **Q-Factor** control allows you to vary low-frequency damping and will normally be set to Q = 0.5, at which setting the system is critically damped. Higher or lower Q values may be required if incorrect equalisation has been applied to the recording, or if the recording acoustic is too dry or too reverberant. A higher Q-Factor will increase overhang or 'boom' and a lower factor will produce less overhang, sounding drier or tighter.

Only your ears can guide you in the use of these two controls, so wide are the variations of programme over which you now have control.

CAUTION: K-UBE applies PRECISELY the right amounts of equalisation to your system. The use of graphic equalisers, or your amplifier's Bass or Loudness controls is not only unnecessary, but may lead to the possibility of amplifier overload and consequent damage.

USING THE CONTROLS: TAPE MONITOR

If your tape deck is connected to the rear of K-UBE (see section 3.2.2) and you wish to play a tape, push in the MONITOR button on the rear of K-UBE. For listening to signals going onto the tape when recording, the button should be out.

Note that the signal passing through the K-UBE to the tape deck is not modified. K-UBE is only operative on replay. At all other times, leave the TAPE MONITOR button out.

4.0 SERVICE INFORMATION

Loudspeakers are inherently reliable and rarely give trouble. It is important to remember that faults arising in any part of the reproducing system will be heard via the loudspeakers and therefore when faults occur, careful and analytical diagnosis will be required to locate the actual source of trouble. Loudspeakers cannot generate hiss or hum. Spurious noises of this type generally originate in the electronic sections of the equipment or even in the programme source itself. Faults in a loudspeaker will be audible on all programme sources. A fault which is evident only when playing discs but not, for example, when using the radio tuner, is not likely to originate with the loudspeakers.

Service problems should be discussed in the first place with the dealer from whom the goods were originally purchased. Generally warranty claims are best handled by your dealer. However, in case of difficulty, contact:

Customer Service Department, KEF Electronics Limited,
Tovil, Maidstone, Kent, ME15 6QP. Telephone 0622 672261
Telex 96140.

This precision engineered KEF product is guaranteed against faulty material and workmanship for a period of five years from the date of original purchase subject to the following restrictions:

1. This warranty is only valid in the country of purchase

2. That the equipment has not been disassembled, modified or tampered with by any person other than an expressly authorised representative of KEF Electronics Limited

3. That the equipment has not been abused or operated in conjunction with unsuitable or faulty apparatus

4. That the equipment has not suffered mechanical damage or derangement in transit

Should service be required, notify the dealer from whom you purchased the equipment and have him arrange onward shipment to KEF ELECTRONICS LIMITED or an authorised agent if he confirms the need for factory attention. Do not despatch goods without prior agreement of KEF or their authorised agents.

If asked to return products for inspection and/or repair, pack carefully, preferably in the original cartons and return prepaid.

Insurance is recommended as goods are returned at owner's risk. KEF or their authorised agents cannot be held liable for loss or damage in transit. Packing and insurance and freight on the return journey will be paid by KEF if warranty work proves to be necessary.

Failure to register in no way limits or invalidates the warranty, but in the event of service being required, delay may result since our Service Department cannot begin warranty work until the original sale has been verified.

FOR THE USA

This KEF loudspeaker is warranted to the original purchaser against original factory defects in material or workmanship for a PERIOD OF FIVE YEARS FROM THE DATE OF ORIGINAL PURCHASE.

What we will do

Should your KEF loudspeaker fail to function properly because of a manufacturing defect, KEF will repair or replace it free of charge. If the product is still defective after a reasonable number of attempts by the warrantor to remedy the defect, you may elect a refund of the purchase price or replacement without charge. Before a refund or replacement can be made, the product must be free of all liens and other encumbrances.

How to obtain service

Should service be required, contact the dealer from whom you purchased the equipment and have him arrange onward shipment to KEF Electronics Limited or an authorised agent. Ship the product prepaid, only after receiving written authorisation and instructions from the dealer.

Include a written description of the claimed defect, and your original sales slip or other proof of ownership and date of purchase.

We strongly recommend that speakers be packed in their original cartons and packing material and that all shipments be insured (KEF cannot be responsible for loss or damage in shipment). Packing, insurance and return freight will be paid for by KEF if work covered under the warranty is necessary.

What is not covered

This warranty does not cover a loudspeaker system which has been:

1. damaged while in your possession

2. overloaded, abused, misused or operated with faulty or unsuitable equipment

IN NO EVENT SHALL THE WARRANTOR BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, whether damages result from breach of express or implied warranties, tort, negligence or otherwise.

Some states do not allow exclusion or limitation or incidental of consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

If you have any questions about this warranty and your dealer has not been able to assist you, please contact:

KEF Electronics of America Inc., 14120-K Sullyfield Circle, Chantilly, VA22021.
Telephone (703) 631 8810 Telex 510 100 2304.

OWNER REGISTRATION INFORMATION

Please complete and return the product safety registration card within 14 days of purchase. Failure to register does not invalidate your warranty, but in the remote event any safety hazard develops with this product, your registration card will facilitate our notifying you promptly.

KEF reserves the right to incorporate developments and amend the specifications without prior notice in line with continuous research and product improvement.

KEF Electronics Limited, Tovil, Maidstone, ME15 6QP
England Tel: 0622 672261

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KEF Electronics of America Inc.
14120-K Sullyfield Circle, Chantilly, VA22021
Telephone: (703) 6318810. Telex: 510 100 2304

Part No. PL356EN01

SPECIFICATION MODEL 107 TYPE SP3059

Frequency Response	20Hz-20kHz +/-2dB at 2m on reference axis
Directional Characteristics	Within 2dB of response on reference axis up to 15kHz for +/-10° vertically up to 10kHz for +/-30° horizontally
Maximum Output	112dB spl on programme peaks under typical listening conditions
Enclosure Volumes	Low frequency enclosure: 72 litres MF/HF enclosure: 8.5 litres
Amplifier Requirements	Suitable for use with amplifiers capable of providing between 50 and 300W into 4 ohms resistive load
Nominal Impedance	4 ohms resistive from 20-20,000Hz
Characteristic Sensitivity Level	90dB spl at 1m on reference axis for pink noise input of 2.83V rms, band limited 50Hz-20kHz (anechoic conditions)
Weight	45 kg (99 lb)
Dimensions	1165(h) x 330(w) x 448(d)mm 45.9" x 13" x 17.6"
Height of Origin of Reference Axis	1020mm (40") above base of cabinet (not including feet)
Angle of Reference	+1.5° from horizontal

KUBE TYPE SP2051

Description	Active equaliser
Controls	Contour: continuously variable shelf control allows frequencies below c. 160Hz to be varied +/-3dB. Extension: switched rotary control allows cut-off frequency to be set to 50Hz, 35Hz, 25Hz, 18Hz. Q Factor: continuously variable between 0.3 and 0.7 calibration at Q=0.3 - overdamped Q=0.5 - critically damped Q=0.7 - maximally flat (Butterworth)
Rear Panel Connections	Signal Input/Output and Tape Input/ Output via gold plated phono (RCA) sockets
Input Impedance	50 Kohms
Source Impedance	100 ohms
Signal to Noise Ratio	94dBA ref 1V rms
Power Supply	Factory set for nominal 110 or 220V 50-60Hz
Weight	1.9kg (4 1/4 lb)
Dimensions	70(h) x 160(w) x 210(d)mm 2.7" x 6.4" x 8.2"