ESL X Series

ELECTROSTATIC LOUDSPEAKER

ESL 2812X
ESL 2912X



3 YEAR WARRANTY

Scan the QR code using a smart-phone device, for product warranty registration online.

User Manual

QUAD

the closest approach to the original sound

Important Safety Instructions



IMPORTANT SAFETY INFORMATION

Read these instructions.

Keep these instructions.

Heed all warnings.

Follow all instructions.

Do not use this apparatus near water. Clean only with a dry cloth.

Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

Do not install near any heat sources, such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

Do not defeat the safety purpose of the polarised or grounding plug. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician to have the obsolete outlet replaced.

Protect the power cord from being walked on or pinched, particularly at the plugs, convenience receptacles, and the point where it exits the apparatus.



Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the apparatus. When using a cart or rack, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

Unplug this apparatus during lightning storms or when unused for long periods.

Refer all servicing to qualified service personnel. Servicing is required when the apparatus is damaged, such as when a power supply cord or plug is damaged, the liquid is spilt, objects fall into the apparatus, it is exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING: Only use attachments/accessories specified or provided by the manufacturer (such as the exclusive supply adapter, battery, etc.)

WARNING: The mains plug/appliance coupler/direct plug-in adapter is a disconnection device; it must remain readily operable.

CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Please do not install this equipment in a confined or built-in space such as a bookcase or similar unit, and keep it well-ventilated in an open space. The ventilation should not be impeded by covering the ventilation openings with items such as newspapers, tablecloths, curtains, etc.

WARNING: Do not expose this apparatus to rain or moisture to reduce the risk of fire or electric shock. The apparatus shall not be exposed to dripping or splashing, and ensure that objects filled with liquids, such as vases, shall not be placed on the apparatus. No naked flame sources, such as lighted candles, should be placed on the apparatus.



This equipment is a Class II or double-insulated electrical appliance. It has been designed not to require a safety connection to the electrical earth.



IAG-QUAD

Correct disposal of this product. This marking indicates that this product should not be disposed of with other household waste throughout the EU. To prevent possible environmental or human health harm from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.

Catalogs

Introduction	1
The ESL Choice	2
What's in the Box?	3
Unpacking and Assembly	4
Positioning the Loudspeakers	5
Choosing and Preparing Loudspeaker Cable	6
Connecting Your Loudspeakers	6
Operation	6
Final Adjustments	8
Horizontal Directivity	9
Maintenance and Service	11
Quality Assurance	14
About Your ESL Loudspeaker	15
Specifications	16
Physical Measurement	17

Introduction

Congratulations! You are now the proud owner of the very best Electrostatic loudspeakers in the world—introducing the ESL 2812X and 2912X from QUAD Electroacoustics.

Since 1956, QUAD has been at the forefront of Electrostatic loudspeaker technology, crafting products renowned for their unmatched accuracy and neutrality. The ESL 2812X and 2912X are not just the latest iterations of the world's most iconic loudspeakers; they are the pinnacle of ESL evolution.

With such unsurpassed accuracy, the ESL 2812X and 2912X have earned their place as staples in major recording studios and a highly sought-after choice among discerning audiophiles. These speakers embody the clear, natural sound that has become synonymous with all QUAD products, ensuring that your listening experience will be nothing short of extraordinary. Welcome to the next generation of audio excellence!

Through a process of continued evolution, thorough observation of the original ESL design, technological implementation, manufacturing techniques, and further enhancement by the most up-to-date materials and production processes, the new evocations of our design philosophy achieve levels of detail, clarity, and perspective that will be a revelation and source of continuing delight to all music lovers.

Like all previous iterations, the ESL 2812X and 2912X are doublets or dipole speakers, incorporating unique panels that produce a spherical sound field from a point source. All naturally created sounds emanate from a point source, and the ESL speaker concept recreates this effect more than any other speaker currently available. The ESL 'push-pull' design offers very low distortion, meaning that your QUAD ESLs are probably the lowest-distortion loudspeakers ever made—and this includes the bass region, where conventional speakers suffer from time-related delays and harmonically related distortions.

With such unsurpassed accuracy, the ESL 2812X and 2912X have earned their place as staples in major recording studios and a highly sought-after choice among discerning audiophiles. These speakers embody the clear, natural sound that has become synonymous with all QUAD products, ensuring that your listening experience will be nothing short of extraordinary.

Welcome to the next generation of audio excellence!



The ESL Choice

Ask many of the world's most respected music industry professionals what their speaker of choice is—the answer is surprisingly common. The QUAD ESL opens a window on a recording, unlike any other speaker.

More hi-fi critics regard the QUAD ESL as an absolute reference for their listening than any other loudspeaker. They are regularly praised by leading hi-fi press, listed in '14 of the most legendary hi-fi products of all time' by What Hi-Fi?, lauded with multiple five-star reviews, winning 'Golden Ears' from 'The Absolute Sound' (USA) and not just 'Product of the Year', but also 'Component of the Year' from 'Stereophile' (USA), a 'Diapason d'Or' award (France); a 'System of the Year' award from Hi-Fi News Magazine; and a 'Best Product' from EISA Award.

When using the QUAD ESLs for listening at home, you can be sure that your experience will mirror that of the concert hall. Known for their incredibly natural, transparent, and detailed sound, the ESL has a reputation for being one of the most accurate and revealing speakers in the world, especially praised for its ability to reproduce vocals and midrange frequencies with astonishing clarity.

You can expect superior Midrange Clarity and Transparency. The ESL produces a very smooth and coherent midrange, where vocals, instruments, and other mid-frequency sounds sound lifelike and accurate. Voices and acoustic instruments are presented, making them sound incredibly natural. High frequencies are very detailed but not exaggerated or harsh. They're smooth, airy, and refined without fatigue, enabling the ESL for immersive listening sessions.

Unlike other 'electrostatic panel' loudspeakers, the ESL does not have an integrated subwoofer, nor is one required. The low end is tight and accurate. The bass is fast, clean, and seamless, as is the concert hall performance, a testament to the ESL's lifelike performance.

The QUAD ESL excels in creating a wide, open, and three-dimensional soundstage. The sound feels like it extends well beyond the physical boundaries of the speaker, creating a sense of space and depth in the music. The placement of instruments and voices in specific locations within the soundstage is unparalleled.

The proprietary electrostatic design of the QUAD ESL allows it to have an incredibly fast transient response, capturing the fast attacks of percussive sounds with great accuracy. The precision in the delivery of details allows the listener to pick up on subtle nuances in the music that would remain unheard with traditional moving coil loudspeakers.

The overall balanced presentation is breathtakingly accurate. The QUAD ESL is unmatched.



What's in the Box?

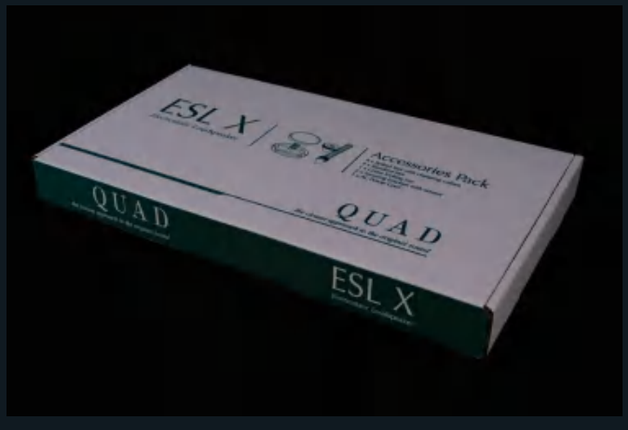
The packing contains the following items:

- The QUAD ESL loudspeaker
- AC power lead 3m with a mains connector suitable for your region
- This Owner's Manual
- A set of four spiked feet
- A set of four standard feet
- Four clamping collars
- One collar locking bar
- Base stabiliser weight
- Two securing brackets, screws and shake-proof washers
- Two pairs of cotton gloves

Consult the dealer from whom you purchased the equipment if any of these items are not present.

Please retain the packing materials for future use or return them to your dealer. If you decide not to keep the packing, please dispose of it sensibly. The timber, paper and plastic components are recoverable and may be taken to an appropriate recovery service.

Please retain the owner's manual and the information concerning the date and place of purchase of this equipment for future reference. In the unlikely event that you pass this product on to a third party, please include all the accessories and this owner's manual.





Unpacking and Assembly

These loudspeakers are heavy! It needs two people to lift and manoeuvre the loudspeakers into position.

Caution: DO NOT USE THE TENSIONING BRACE TO LIFT OR MANOEUVER THE ESL, OR YOU WILL DAMAGE THE LOUDSPEAKER. WHEN MOVING THE LOUDSPEAKER, HOLD IT BY THE SIDES OR THE SIDES AND BASE.

Always use the supplied cotton gloves when handling exposed surfaces.

Before you unpack the loudspeakers, ensure that you have a large and clear floor area on which to work. Remove or protect any fragile carpets, etc., to avoid any damage.

Each ESL loudspeaker is packed in an outer cardboard carton and then on a pallet for safe transportation. The carton has a lidded top and a tabbed seam down one long edge, which is taped over.

Place the speaker upright on its wooden pallet. Open the top first, then the tabbed seam all the way down. Remove the top packing insert and the box containing the accessories. Remove the side packing pieces. The loudspeaker may now be lifted out of the base packing.

The stabiliser block is strapped to one of the side packing pieces. Cut the ties and remove the block.

Caution: The block is heavy - exercise care.

The ESLs are provided with both spiked and standard feet, which screw into the threaded holes in the baseplate. The heights of individual feet can be adjusted to ensure that the loudspeaker sits securely and level on the floor. Determine whether you will be using the spiked or the standard feet. Remember that spiked feet are only suitable for use with carpets as they will damage wood and stone floors. When using spikes, take care to avoid the sharp tips.



Gently lay the loudspeaker on its front. If the floor surface is hard, place a soft cloth under the speaker first, such as a towel. Spin one collar onto each foot all the way down, but do not tighten.

Attaching the front feet: Insert the two front feet in the threaded inserts on the base and thread them fully, but only hand-tighten them at this stage. Refer to Illustration A below.

Attaching the stabiliser and rear feet: It is essential that you attach the stabiliser as this is both a safety and operational feature. (As an alternative, the speaker may be attached to the floor - see Page 7)

First, attach the two clamps to the block using the provided screws and shake-proof washers. Line up the assembly with the mounting holes in the base. Insert the feet through the support brackets and thread them into the base. Ensure that the feet protrude below the clamps by an equal distance. When the speaker is operational, the weight/clamp assembly should be clear of the floor surface. Tighten both rear feet. Insert the collar locking bar into a hole in the clamping ring and tighten. Progressively move the bar from hole to hole until the feet are fully locked in place. Refer to Illustration B below.

A Insert bar and tighten clamping ring clockwise.



B Attach the stabiliser and rear feet.



Positioning the Loudspeakers

However good the loudspeaker is, the final results will depend on the acoustic characteristics of the listening room and the position of the loudspeakers in it. Do not be afraid to experiment with both position and orientation and make a point of trying some of the less obvious as well as the more obvious positions. The benefits obtained from the time spent doing this can be very rewarding. The subject of room acoustics is complex and beyond the scope of this manual. It is assumed that the loudspeakers will be used in a room with moderate reverberation, neither too bright nor overdamped. Furnishings can alter the acoustic characteristics of the listening room, and here, common sense is the best guide.

The loudspeakers have constant directivity over a wide angle in both horizontal and vertical planes, so the response does not vary with the height of the listener's ears from the floor.

When experimenting, it is preferable to use high-quality recordings, works you are familiar with in the concert hall, or speech.

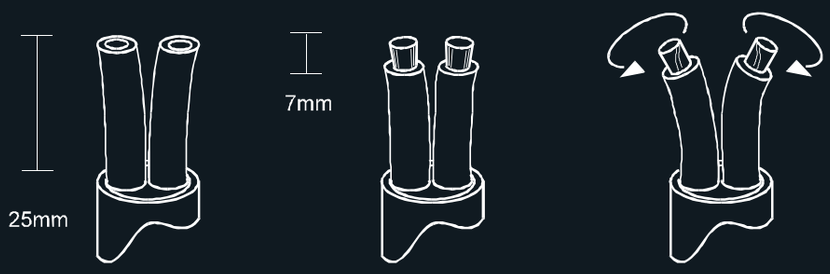
As a dipole source, the ESL loudspeaker has considerable advantages over conventional loudspeakers regarding room placement. No energy is radiated in the diaphragm's plane, so the axial room modes are discriminated against. Usually, the loudspeaker is placed at an angle to both horizontal room axes, which excites both sets of horizontal axial modes. However, this excitation is 3 dB less than with a conventional source, and it discriminates entirely against the vertical axial modes.

The loudspeakers should be placed at least 60cm (2 ft) from the rear wall of the listening room and angled towards the listener. Placing the ESLs too close to the rear walls will adversely affect their dispersion characteristics; about 1/3 of the way down the room's length is a good starting point. Operating the loudspeakers across corners, in alcoves or behind furniture is not advisable. Because ESLs are a homogeneous sound source, it will be found that they can be placed considerably further apart than usual, broadening the stereo sound stage. Proximity to the side walls is not detrimental to performance and can actually benefit the bass response. Simple geometry will show that if the ESL is placed at an angle to the side wall, there will be no audible reflection at the listening position.



Choosing and Preparing Loudspeaker Cable

Specialist audio cables usually offer better performance than general-purpose 'bell' or 'zip' wires. Audio cable is polarised, with two cores of different colours, or often, in the case of twin cable, a coloured tracer or ridge along one wire to indicate polarity. Choose a cable of suitable diameter – a cable that is too thin will limit the dynamics of the sound and may impair the bass response. Split the twin cores to a depth of about 25mm. Carefully strip the insulation from each end, leaving about 7mm of bare wire. If the cable is stranded, lightly twist together any loose strands.

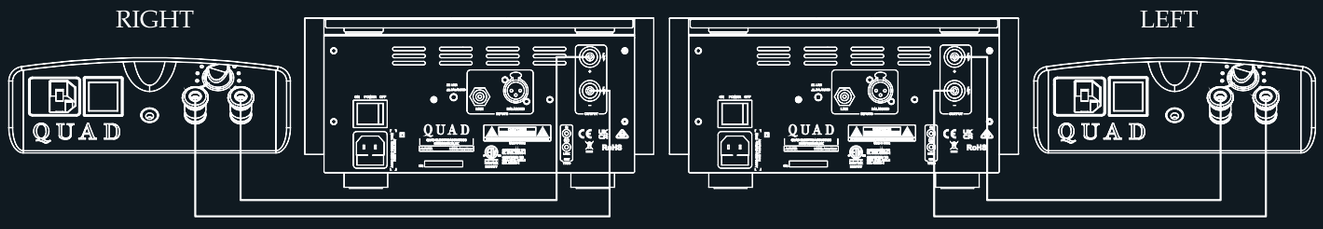


Connecting Your Loudspeakers

Lift the cover off the connections panel box and store it safely until you have finished connecting the speakers. The cover is magnetic for easy removal and replacement.

Choose an equal length of twin core speaker cable for each channel, and prepare the ends as described above. Unscrew each speaker terminal. Thread the bared end of each cable through the hole in the bottom of the terminal post. Ensure that there are no loose strands which may touch adjacent terminals. Retighten the terminal securely.

Connect the Left loudspeaker's positive(+) terminal to the corresponding (+) amplifier terminal. Connect the negative(-) terminals similarly. Repeat this procedure for the Right Channel. Note that the positive(+) terminals are located on the right.



Phase

If the loudspeakers' phasing is unclear, they can be easily checked by playing a mono source. The sound should appear to emanate from a point midway between the two loudspeakers. If this is hazy and poorly defined, the connections to one of the loudspeakers should be reversed. When correctly connected, the loudspeakers will give a precise, defined centre sound source with more full-bodied tenor and bass registers.

Operation

The ESL loudspeaker requires an energising voltage for operation and needs to be connected to an AC power supply. Before connecting to the AC power supply check that the voltage range marked on the base corresponds with that of the supply.

The on/off switch has a rocker action; press the bottom to switch the ESL on and the top to switch it off. An LED next to the on/off switch indicates that the speaker is on.

LED Illumination

The QUAD logo on the speaker bezel is illuminated. This function can be switched on/off according to your preference by way of the Logo Dimmer control on the rear panel.

The LED Halo (underside) illumination can also be adjusted according to your preference. Press and hold the ‘touch control’ button for 3 seconds, until the underside LED Halo flashes twice. This will indicate that the unit is in 'brightness adjustment mode'. Tapping the touch controller will cycle the LED Halo illumination settings through ‘high’, ‘medium’ (Default), ‘low’ and ‘off’ options.

The unit will automatically exit 'brightness adjustment mode' after 5 seconds of inactivity.



Amplifier Requirements

The ESL loudspeaker should be used with an amplifier of an output capability of 20V - 30V RMS (40-100W into 8 Ohms). The impedance characteristic presents no problems to an amplifier that is unconditionally stable. Protection circuits limit the maximum input voltage to 40V and there is no benefit from using an amplifier with an output greater than 30V RMS (100W into 8 Ohms). Amplifiers with an output capability in excess of 35V RMS (150W into 8 Ohms approx) may be used but with caution – see Loudspeaker Protection.

If the QUAD 405/2 power amplifier is used, the amplifier voltage limiters should not be fitted.

Loudspeaker Protection

The ESL loudspeaker is fitted with a protection circuit, incorporating a special device called a multifuse, which prevents damage from excessive programme input signals. Should the loudspeaker be severely overdriven for any length of time, the circuit will operate and effectively reduce the drive to the loudspeaker, causing a reduction in the volume level with some loss of quality.

If this occurs, then the volume control of the amplifier should be turned down. After a delay of a few seconds to allow the circuit to reset, the volume can be increased, but only to a point below which the protection circuit initially functioned, otherwise the circuit may operate again.

Persistently overdriving the loudspeaker will cause the multifuse to completely fail, necessitating its replacement by a qualified engineer. The above conditions are unlikely to occur in normal use or with amplifiers with a power output rating of less than 100W unless driven into distortion. Steady state signals such as pure sine waves in excess of 10V RMS should not be fed to the loudspeaker.

When the AC power to the loudspeaker is switched off or disconnected, the signal input protection circuit operates to prevent excessive signals being fed to the loudspeaker elements. Even so, care should be taken to ensure that the loudspeakers are not driven for long periods (minutes) with no AC power applied.

Caution: The QUAD logo on the front grill is set to flash if the protection circuit detects abnormally high voltage on the ESL element. If the logo light flashes please switch off for 15 minutes then play again at a lower volume if you were previously listening at loud volume levels. If the logo flashes at normal listening levels and reoccurs after the 15 minutes waiting time then please contact your local QUAD Distributor for further advice.

Final Adjustments

After you have finalised the position of the loudspeakers, you should level the speaker by adjusting the feet.

Tensioning the Speaker

This is the final adjustment. Tighten the tensioner anti-clockwise. This pulls the tensioning rod tight and rigidifies the assembly. Do not omit this stage, as it significantly improves performance at high power levels. The tensioner should be periodically checked to ensure the speaker is fully rigid, as temperature and humidity variations may cause the tension to slacken slightly.



After completing all the adjustments, gently drop the connection panel cover into place.

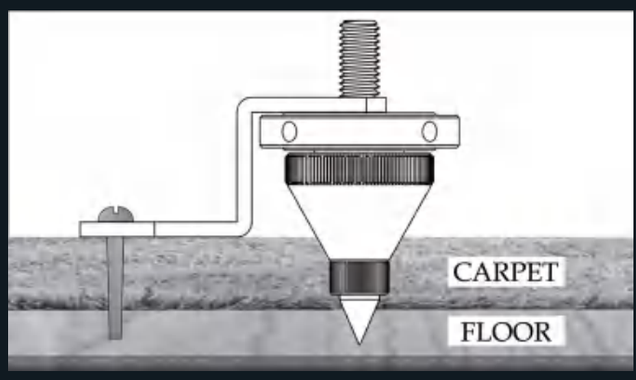
Mounting Alternatives

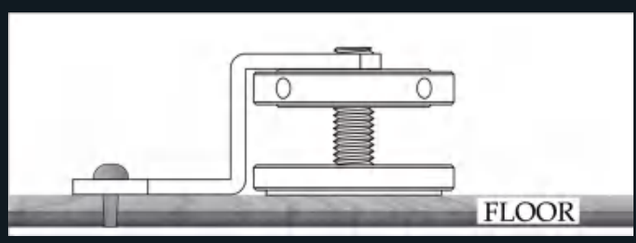
After finalising the position of the loudspeakers, for added safety and to improve the coupling with the floor still further, the loudspeakers may be screwed to the floor.

Disconnect each loudspeaker from the mains supply and the amplifier. Mark the position of all four feet with tape or chalk. Place a soft towel or similar item on the floor and lay the loudspeaker carefully on its front. Remove the stabilising block. Undo the collars on the rear feet half a turn to loosen the bracket and rotate each bracket so that it is facing the rear of the loudspeaker. Retighten the collars.

Floor Spikes on Carpet: The pointed foot should only be used with carpets. Adjust the rear feet so that the tapered section of the spike protrudes below the bottom of the bracket. When you screw the bracket into the floor through the carpet, the bracket will rest on the carpet, thus avoiding damage to the carpet surface.







Standard Feet: The bottom of the floor clamp should be marginally above the bottom of the foot. Make sure the feet rest firmly on the floor and that the bracket is not supporting the weight of the loudspeaker.

Stand the speaker upright. Carefully manoeuvre the loudspeaker so that the feet stand on their marked location. Now screw the clamps to the floor using suitable screws and fixings.

Check that both front feet support the speaker. Reconnect both loudspeakers to the amplifier and the mains supply.

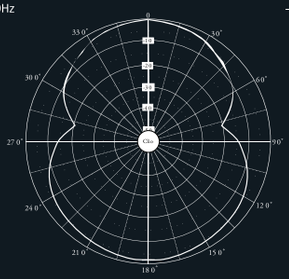
Horizontal Directivity

These are actual measurements taken from our reference samples. The directivity pattern is exceptionally well maintained, from very low frequencies to well beyond audibility. This consistent pattern ensures a smooth spatial response with no peaks and troughs. In addition, the ESL's virtually massless diaphragms ensure near-instantaneous starting and stopping with an almost total absence of hysteresis, providing lightning-fast transients and phenomenally accurate bass response.

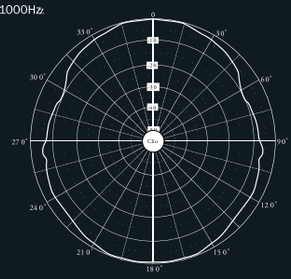
▶QUAD ESL 2812X

Horizontal Directivity

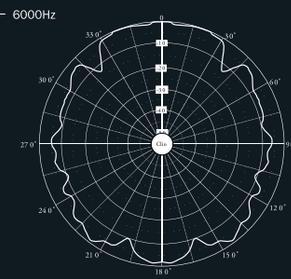
100Hz



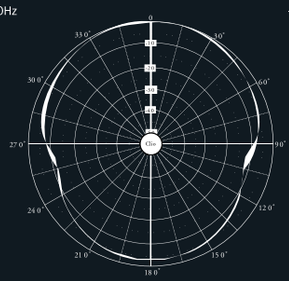
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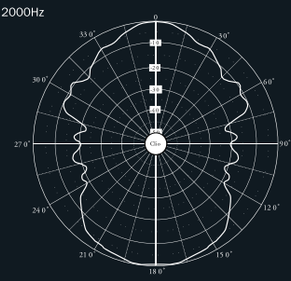
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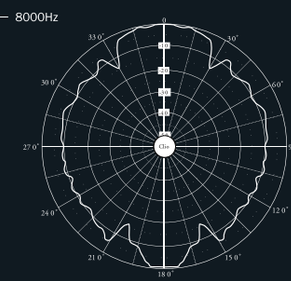
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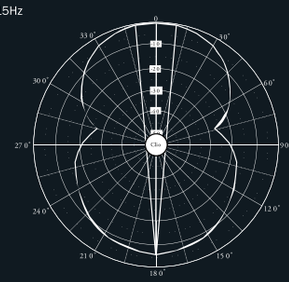
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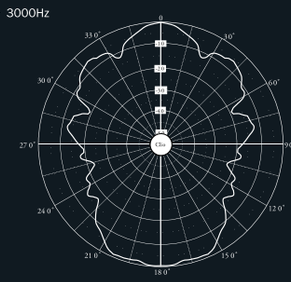
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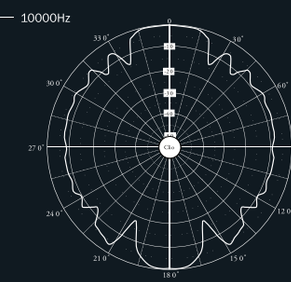
315Hz



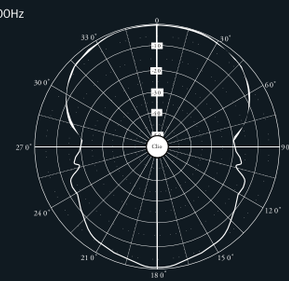
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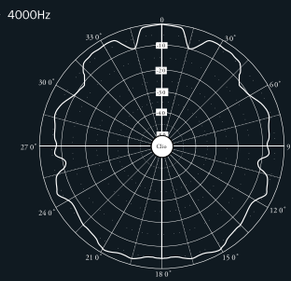
10000Hz



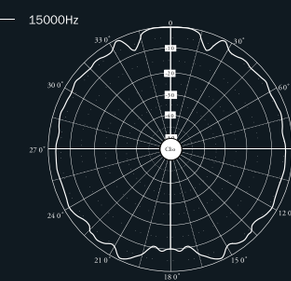
500Hz



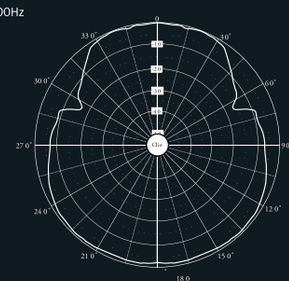
4000Hz



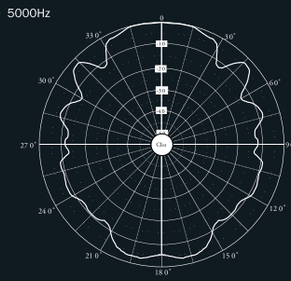
15000Hz



800Hz



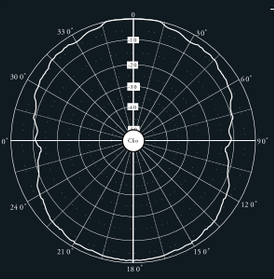
5000Hz



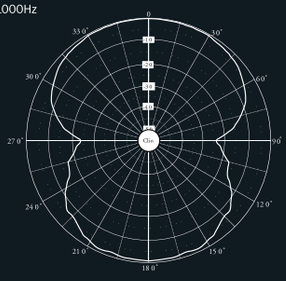
▶QUAD ESL 2912X

Horizontal Directivity

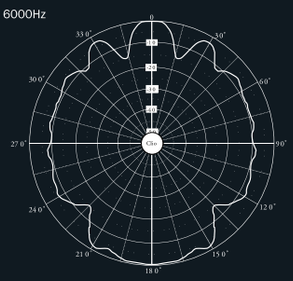
100Hz



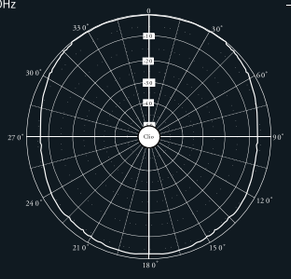
1000Hz



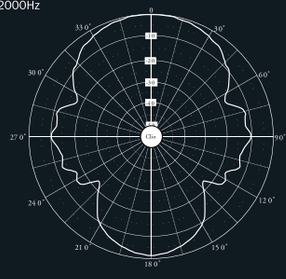
6000Hz



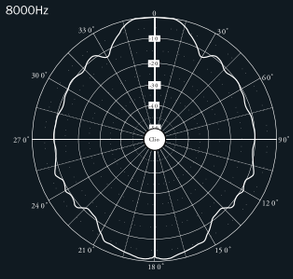
250Hz



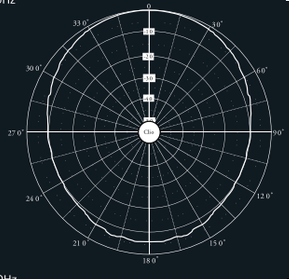
2000Hz



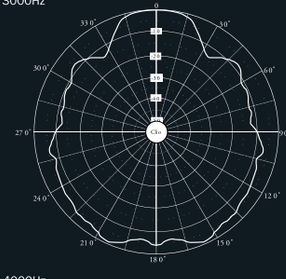
8000Hz



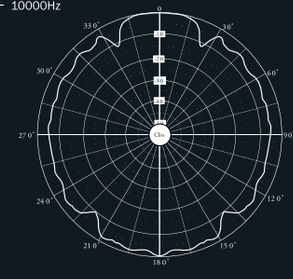
315Hz



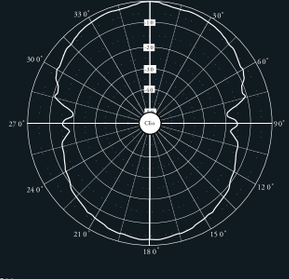
3000Hz



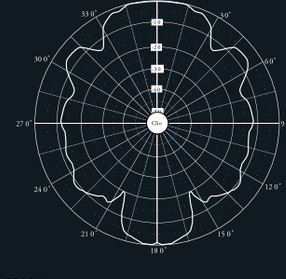
10000Hz



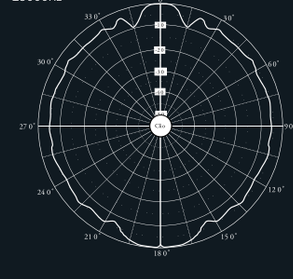
500Hz



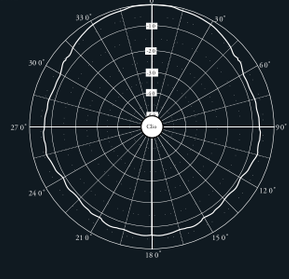
4000Hz



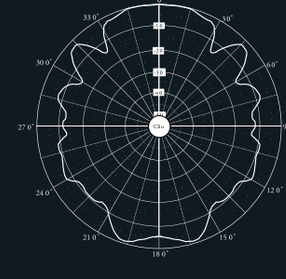
15000Hz



800Hz



5000Hz



Care and Cleaning

The surfaces of the speaker should be wiped occasionally with a barely damp soft cloth. The grille cloth may be cleaned with a soft brush or a handheld vacuum cleaner. The loudspeakers are protected against the ingress of dust, etc. Periodic servicing at two-year intervals is recommended to keep your speakers in pristine condition. Great care has been taken in the selection of materials to ensure long-term stability under a wide range of temperatures and humidity. In environments where the relative humidity regularly exceeds 80%, it is recommended that the listening room be air conditioned for optimum performance.

Caution: SWITCH THE LOUDSPEAKERS OFF AND DISCONNECT THEM FROM THE MAINS BEFORE CLEANING.

Servicing

If your QUAD equipment requires servicing, return it to the dealer from whom you purchased it. For further support and advice, please contact the regional distributor. You are strongly advised to keep the original packaging for transport or long-term storage.

Warranty Coverage

Your loudspeakers have been constructed to the highest standards. From top grade furniture construction and finish to carefully designed and selected acoustic components, QUAD speakers are built to provide a lifetime of sonic pleasure. We hope you will derive many years of good service from our products.

QUAD warrants its products, subject to the following terms and conditions below, to be free from defects in materials and workmanship.

Online Registration

3 YEAR WARRANTY

Scan the QR code using a smart-phone device, for product warranty registration online.

The three (3) year extended warranty is applicable to items purchased from Jan 1st 2021, onwards. Items purchased prior to this date are not eligible for this extended warranty service but are subject to statutory warranty claims and all applicable consumer rights.

To qualify for the extended 3 year warranty, you must register your product within ninety (90) calendar days from the date of purchase. Visit https://www.quad-hifi.co.uk/warranty-registration to complete your online registration. Items not registered online will have a Limited Warranty for one (1) year, or for the period of your country's statutory warranty, whichever is longer.

Warranty can only be offered to products registered with proof of purchase with date, model and details of the authorised dealer clearly stated on the receipt/invoice. Please keep the original receipt/invoice in case it is required for a warranty claim.

This Limited Warranty is non-transferable and is offered exclusively to the original owner.

This Limited Warranty is valid only in the original country of purchase.

Warranty Coverage

Repairs or replacements are provided under this warranty are the exclusive remedy of the consumer. QUAD shall not be liable for any incidental or consequential damages for breach of any expenses or implied warranty with any product. Except to the extent prohibited by law, this warranty is exclusive and in lieu of all other warranties whatsoever, both expressed and implied, including but not limited to the warrant of merchantability and fitness for practical purpose.

This warranty provides benefits that are additional to and do not affect your statutory consumer rights.

This Limited Warranty offer is subject to correct information being submitted in your application. Incorrect dates or mismatched purchase receipt dates that are outside of the warranty terms will immediately invalidate any warranty claim.

*Please check with your dealer local distributor for further information.

Exclusions

The following items are excluded from the QUAD warranty:

Normal wear and tear and cosmetic damage (including but not limited to any wear from reasonable use, environmental deterioration or neglect)

Products on which the serial number has been removed, altered or otherwise made illegible.

Products not purchased from an authorised QUAD dealer.

Products that were not new at the time of original purchase.

Products sold ‘as is’, ‘as seen’ or ‘with faults’.

Product not purchased from an Authorised Dealer/Distributor within the region of the claim (ie parallel imports or grey market products)

Accidental damage or faults caused by commercial use, acts of God, incorrect installation, incorrect connection, incorrect packaging, misuse or careless operation or handling which is not in accordance with the user instructions.

Equipment that has been operated in conjunction with unsuitable, inappropriate or faulty apparatus.

Repairs, alterations or modifications carried out by parties other than QUAD or its authorised service partners.

Damage in transit that cannot be attributable to the fault of QUAD, the authorised distributor or dealer (ie. claims otherwise covered by transit insurance.)

Faults relating to abnormal or inappropriate power supply voltage or power surges.

Faults relating to extremities in temperature, exposure to heat, water or other liquids, insects, excessive moisture, sand, chemicals, battery leakage or any other contaminants.

Any force majeure events, including but not limited to any acts of God, fire, lightning, typhoon, storm, earthquake, hurricane, natural disaster, tsunami, flood, war, riot, public disturbance.

Any other causes beyond the reasonable control of either QUAD and its Authorised Distributor.

Please note items purchased before 1st Jan 2021 are not eligible for the extended warranty claim.

How to Claim

To obtain warranty service please contact the authorised dealer from which you purchased this product and present the limited warranty certificate offered upon registration of your product’s extended warranty offer.

Do not dispatch goods without the prior agreement of the dealer distributor or authorised service centre.

Warranty Coverage

If asked to return products for inspection and or repair, please pack carefully preferably in the original carton or packaging affording an equal degree of protection and returned via insured, trackable courier service.

The authorised dealer or distributor will offer full return details and instructions. However, please note if unsuitable packaging is used the warranty may be deemed void due to improper action in return.

QUAD or the authorised distributor, dealer or service centre may make a charge for the supply of new packaging for the return of the repaired item. Please note, insurance is recommended as goods are returned at the owner's risk. Authorised distributors or service centres can not be held liable for loss or damage in transit. insurance and freight charges on the return journey will be paid for by QUAD, authorised dealer, distributor or service centre if corrective work proves to be necessary.

In the event of 'no-fault found' or 'no repair necessary', the return shipping charge will be the responsibility of the owner.

Repairs

All repairs will be carried out by the appointed distributor (or locally appointed service centre). Repairs handled or processed without authorisation or approval of the appointed representative will be excluded from this limited warranty. Please note, QUAD is not able to supply parts or replacement items to any other entity than the official distributor or authorised service centre.

Other than the warranty and services set out in this warranty, to the fullest extent permitted by law, QUAD shall not be liable to you and/or any third party or entity whatsoever for:

- Any loss, damages and/or malfunction caused to any product(s) which is/are connected to any of the products covered by this warranty.
- Any damages, loss and liability, whether direct, indirect, incidental, consequential special, punitive or otherwise, howsoever caused by, arising out of or otherwise, in relation to the installation, delivery, use, service, repair, replacement and/or maintenance of the product;
- Any damages, loss and liability under this warranty in respect of any act, omission, or negligence of any of their technicians, employees, agents, representatives or independent contractors relating to the actual or purported performance of any of the obligations under this warranty.

Service Centre Address

For technical support, servicing or product queries and information please contact either your local retailer or the office below.

IAG Service Dept.
13/14 Glebe Road
Huntingdon
Cambridgeshire
PE29 7DL
UK

Tel: +44(0)1480 452561
Email: service@quad-hifi.co.uk

For information on other authorised service centres worldwide contact QUAD International, UK.

A world wide distributors list is available on the QUAD website: www.quad-hifi.co.uk

Q is for Quality

QUAD's attention to detail and our quality management standards are a byword in the hi-fi industry.



▲
The finest C-Core transformers in the audio path provide excellent linearity, wide bandwidth and very low phase shift.



▲
Inspecting a panel.



▲
The delay line - the ingenious solution that gives the ESL its legendary point-source capability.



▲
A section of an ESL panel.

About Your ESL Loudspeaker

Your ESL loudspeaker consists of a vertical multiple-element or membrane line array mounted on top of an electronic matching circuit contained within the base structure.

In order to achieve the efficiency needed for full-range audio operation, a large moving diaphragm is required. This is achieved using several individual elements connected within a rigid frame. The smaller ESL 2812X features four elements, two bass elements and two mid and high-frequency elements, whilst the ESL 2912X features six elements with the addition of two further bass elements.

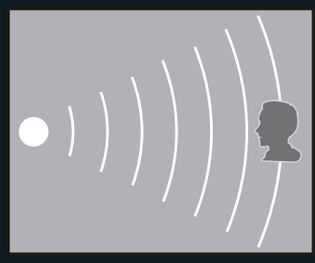
The membrane (diaphragm) in each element is a highly charged ultra light, immensely strong plastic film, pre-stretched and fixed to an open frame. To achieve constant-charge conditions, this membrane is coated with a specially formulated high-resistivity coating. This membrane is one-tenth of the thickness of a human hair and virtually massless compared to other types of loudspeakers. Again, unlike a conventional loudspeaker, the membrane, when energised, is driven simultaneously over its entire surface. This combination results in an extremely fast transient response - the diaphragm responds to alternating motion without introducing any time lag - completely unlike the sluggish, high-mass conventional loudspeaker.

The ESL is a dipole – the sound radiates equally from both sides of the diaphragm.

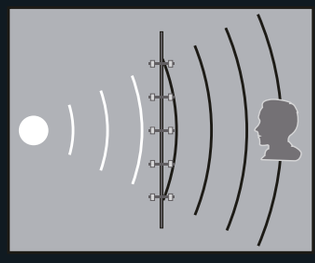
The centre two panels in each loudspeaker incorporate divisions in the diaphragm. These can be seen as concentric rings on the outer grid plates surrounding the diaphragm. Each ring is subjected to a minuscule time delay and attenuated by its own individual circuit, the sound spreading gradually from the centre outwards through each successive ring. This carefully structured delay line creates a near-perfect spherical wave front originating from an apparent point 400mm behind the loudspeaker. In the vertical plane the elements are line arrayed, the mid and high frequency elements being centrally sited to preserve the spherical shape.

In order to eliminate even the slightest cancellation effect caused by diaphragm motion interacting with the speaker frame, the base is weighted at the rear with a steel mass spaced away from the cabinet base. An adjustable strut further increases rigidity and improves cabinet coupling. The result is a structure of immense stability and rigidity.

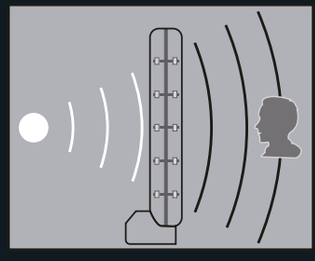
The ultimate design goal of any high-fidelity loudspeaker is faithfully to preserve the illusion of a naturally occurring sonic event. That this is fully realised by the QUAD ESL in practice can be seen from the loudspeakers' polar plots reproduced on Pages 8 and 9. These loudspeakers give a truly three-dimensional sound stage like no other.



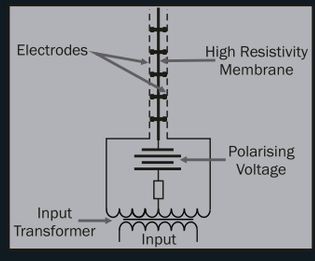
1: A perfect point source produces a spherical wave pattern.



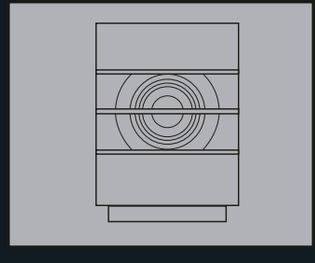
2: Air particle movement at a plane some distance from the source.



3: An identical movement in the ESL membrane produces an identical wave front.

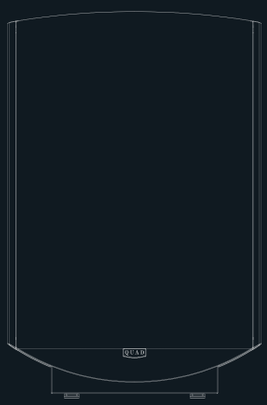


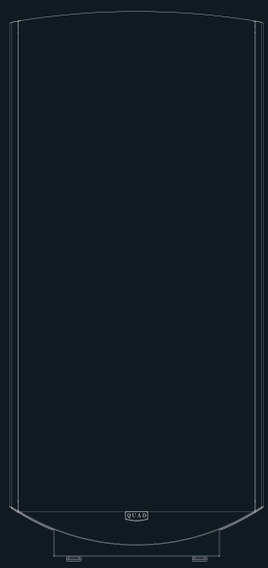
4: The membrane carries a constant charge. The charge on the electrodes fluctuates according to the music signal.



5: The music signal is fed first to the centre section, then to each ring in turn via delay coils

Specifications





Model	ESL 2812X	ESL 2912X
Format	Floor standing dipole with 3° fixed tilt	Floor standing dipole with 3° fixed tilt
Type	Multiple electrostatic drive membranes	Multiple electrostatic drive membranes
Point Source Time Delay	Progressive concentric rings	Progressive concentric rings
Chassis Structure	Heavy duty composite aluminium / steel	Heavy duty composite aluminium / steel
Panel Elements	4	6
Maximum Output	2 N / m2 at 2m on axis	2 N / m2 at 2m on axis
Sensitivity	1.5 mbar per volt referred to 1m (86dB/2.83V rms equivalent)	1.5 mbar per volt referred to 1m (86dB/2.83V rms equivalent)
Nominal Impedance	8 Ohms	8 Ohms
Impedance Variation	4 - 15 Ohms	4 - 20 Ohms
Maximum Input	Continuous input voltage (rms): 10V Programme Peak for undistorted output: 40V Permitted peak input: 55V	Continuous input voltage (rms): 10V Programme Peak for undistorted output: 40V Permitted peak input: 55V
Frequency Response	37Hz - 21kHz (-6dB) 33Hz - 23kHz (useable)	32Hz - 21kHz (-6dB) 28Hz - 23kHz (useable)
Directivity Index	See Polar Diagrams	See Polar Diagrams
Distortion (100dB @ 1m)	Above 1000Hz <0.15% Above 100Hz <0.5% Above 50Hz <1.0%	Above 1000Hz <0.15% Above 100Hz <0.5% Above 50Hz <1.0%
AC Input	220 - 240V, 100-120V	220 - 240V, 100-120V
Power Fuse	100mA anti-surge, 200 - 240V 200mA anti-surge, 100 - 120V	100mA anti-surge, 200 - 240V 200mA anti-surge, 100 - 120V
Power Consumption	8W	8W
Dimensions (H x W x D)	1070 x 690 x 380 (mm)	1470 x 690 x 380 (mm)
Net Weight	35kg	44kg

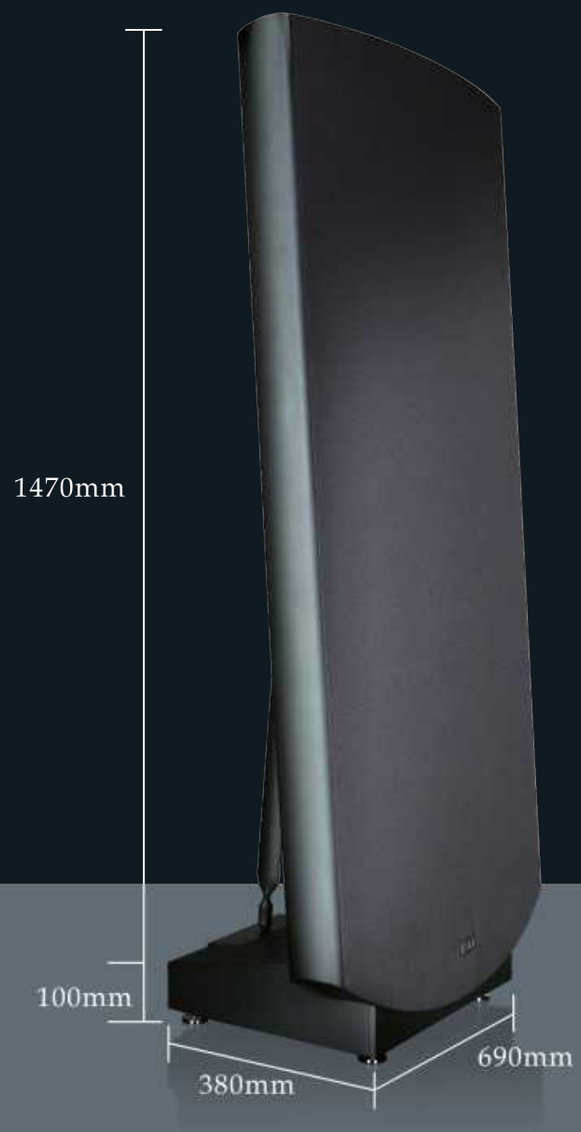
*The right is reserved to alter performance, specifications and appearance as required.

Physical Measurement

ESL 2812X



ESL 2912X



* Cabinet dimensions are in millimeters (mm).


1984
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Correct Disposal of this product. This marking indicates that this product should not be disposed of with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.



QUAD

IAG House, 13/14 Glebe Road, Huntingdon, Cambridgeshire, PE29 7DL, UK
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