REFERENZ AIR

HANDMADE CABLES

inakustik

KABEL | LAUTSPRECHER | MUSIK

AIR CABLES

True sound experiences captivate, give you goosebumps or move you to tears. But only cables that have been perfected down to the last detail are able to transport this truly sensuous pleasure without interference. We at in-akustik are pioneers in perfect signal transmission, helping to convey the finest nuances that appeal to all senses. We put passion, ambition and love into the development and production of our cables, which are known throughout the world for outstanding quality. The ultimate proof for this is Referenz Selection. Dynamics, power and precision cannot be more clearly sensed with any other product range. That's why these cables are only available in select specialised stores.

Many elaborate separation processes are needed to make conductive copper from copper ore. For Referenz Selection, only highly pure batches are used.

PERFECT SOUND BEGINS IN THE MINE

It is a long way from the sound source to the ear. It starts somewhere in the world in one of the mines in which copper ore is mined. From there the material is delivered to Germany, liquefied in melting pots in copper smelting plants in northern Germany and separated from impurities like phosphorus and iron. Only then is it poured into bars. But the raw copper is not yet suitable for electronic applications.

In order to create the purest possible, most conductive copper, the valuable raw material must first be placed in an electrolysis bath. The oxygen-free copper is again melted down, poured into a copper wire approximately 10 millimetres thick and wrapped into coils. In strict quality control tests, material samples are then examined and sorted according to their purity.

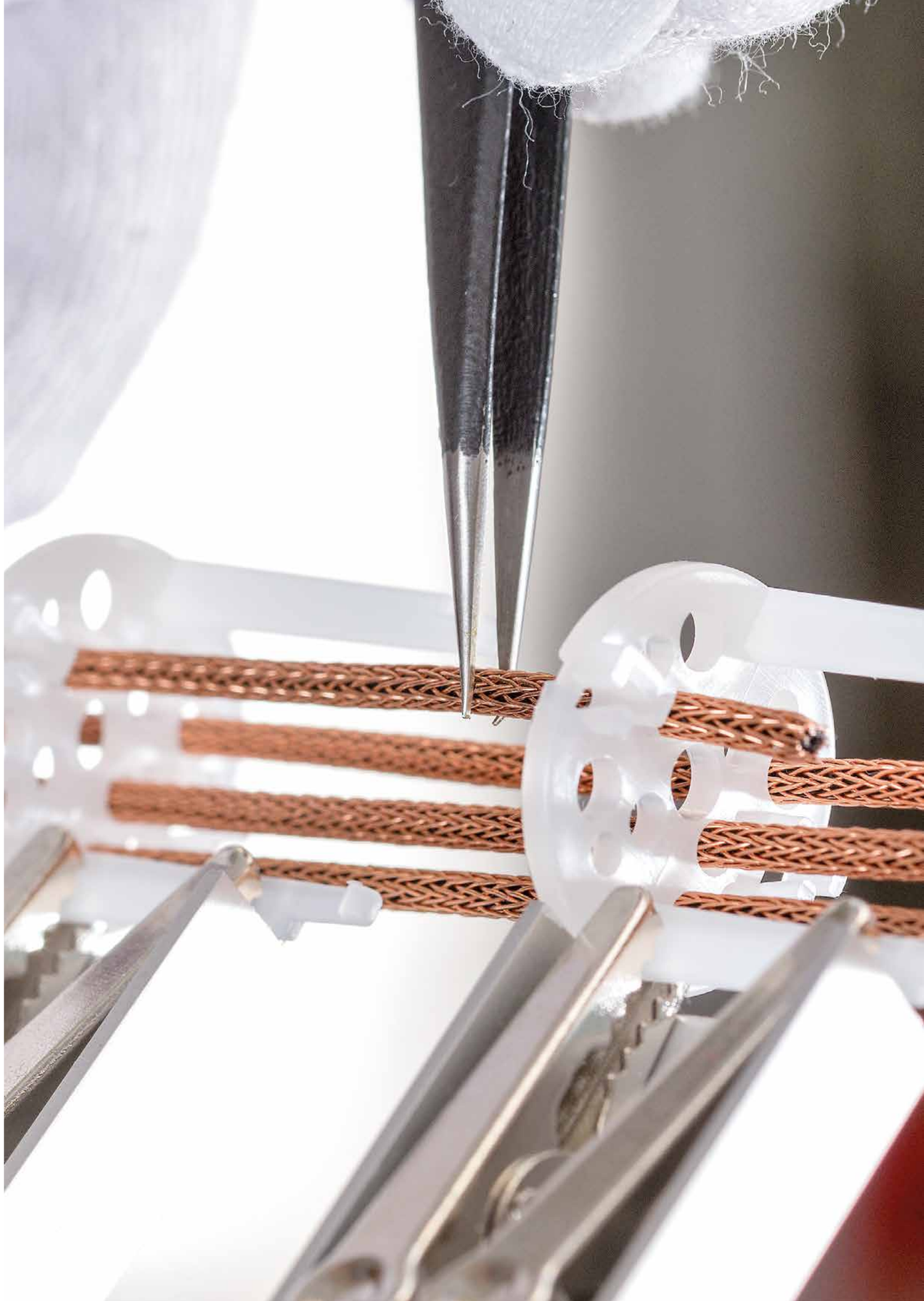
For Referenz Selection, only select, highly pure batches are used. Only after this pure material is found in elaborate processes is the copper drawn to the required diameter in several stages in the wire-drawing mill and later provided with our DUO-PE II insulation in a German cable mill. After that it is stranded with air-filled PE tubes and enveloped with the PE network jacket. And after all of this has happened, it comes to us – to in-akustik in Ballrechten- Dottingen – for the final steps and finishing.

MADE IN GERMANY

HANDMADE

We have long set the bar very high in regard to quality, because cables and connections are extremely sensitive. Physical phenomena that arise during the transmission of signals can only be controlled with technical finesse and the best materials. For this reason all cables are manufactured in a German cable mill and finished by us in Ballrechten-Dottingen in elaborate manual work. Some production steps are carried out in close cooperation with the Caritas workshops in our neighboring town Heitersheim.

For our Referenz Selection cables, we also offer an after sales service. For technical questions regarding the product or the right cable connection, please contact our support team directly. You can contact our experts Monday to Friday from 9–12 a.m. and 13–17 p.m. on the telephone number +49 (0) 7634 5610-70. In addition, we grant to all Referenz Selection cables extended warranty to 5 years. Please follow the instructions on the warranty card supplied with the product.



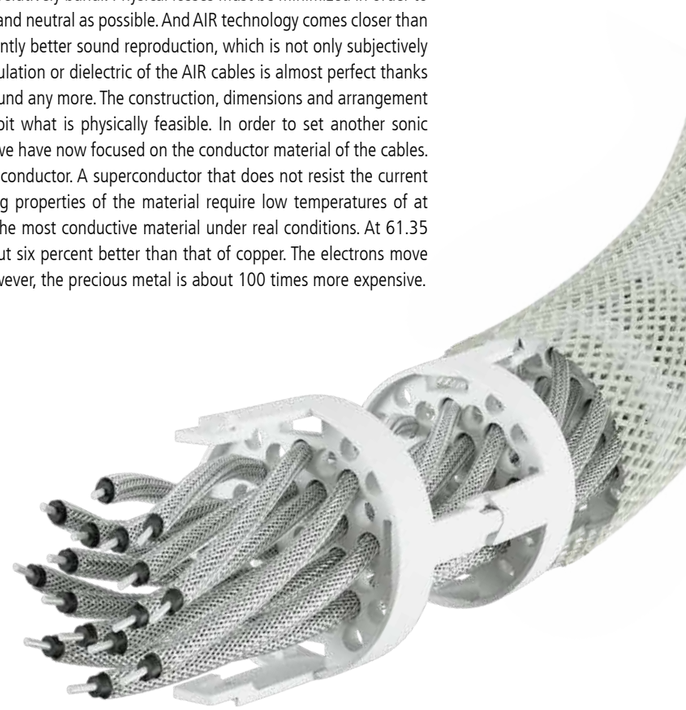
AIR TECHNOLOGY

The air-helix construction is wholly unique. We have developed a special clip to ensure air insulation that is as close to perfection as possible. A large number of these clips form the supporting structure on the inside of the cable. This holds the signal conductor free in the air in a helix form and guides it through the cable at defined intervals. The flexibility of this construction is attained with two bridges that hold the clips together evenly and at exact intervals. The Cross Link Super Speed waveguides are threaded and fitted with clips by hand with extreme care in our own manufacturing unit. Afterwards the air-helix created in this manner is given its PE network jacket – again by hand. Finally the rhodium-coated plugs are fitted and the cable function is tested.

The conductors themselves of course also play a major role. The LS-4004 AIR and LS-2404 AIR are made of 24 highly pure copper wires braided on a PE core. An exceedingly thin coating layer on the wires prevents eddy currents inside this Cross Link Super-Speed Waveguide – the rigorous further development of the super-speed waveguide. This conductor is also used in the NF-2404, but it is considerably more effective in the LS-2404 AIR. The reason for this is that by far the largest currents in the entire audio chain flow through the loudspeaker cables. Part of the correspondingly strong magnetic fields are already compensated by the eight wires on their own. This is ensured by the braided and therefore opposed stranding of the individual wires. Their wafer-thin lacquer coating insulates the wires from each other. The structure ensures greater stability and "peace" in the conductor.

LS-4004 AIR
PURE SILVER

The AIR technology is a milestone in our more than 40-year company history and is causing a worldwide sensation in the hi-fi industry. The approach sounds relatively banal: Physical losses must be minimized in order to transmit the original music signal as unchanged and neutral as possible. And AIR technology comes closer than ever to lossless transmission. It leads to significantly better sound reproduction, which is not only subjectively audible, but also objectively measurable. The insulation or dielectric of the AIR cables is almost perfect thanks to the air insulation and hardly influences the sound any more. The construction, dimensions and arrangement of the conductors are optimized and fully exploit what is physically feasible. In order to set another sonic highlight on this basis of audiophile perfection, we have now focused on the conductor material of the cables. Copper of the appropriate purity is a very good conductor. A superconductor that does not resist the current would be perfect. However, the superconducting properties of the material require low temperatures of at least minus seventy degrees. Silver is currently the most conductive material under real conditions. At 61.35 S/m (Siemens per meter), its conductivity is about six percent better than that of copper. The electrons move 1.5 times faster than in a copper conductor. However, the precious metal is about 100 times more expensive.



- PURE SILVER CONDUCTOR
- AIR HELIX DESIGN
- AIR DIELECTRIC
- DOUBLE LAYER MULTICORE
- 16 X CROSS LINK SUPER SPEED WAVE GUIDE
- LACQUERED WIRES
- PE-NETWORK JACKET
- DIAMETER: ABOUT 44MM
- PLUGS MADE OF TELLURIUM COPPER; RHODIUM-COATED
- ANGLE OF PLUGS ADJUSTABLE
- PRESSURE-GROUTED PLUGS (1.5 T PRESSURE!)
- BFA BANANA AND SPADES INCLUDED IN THE SET

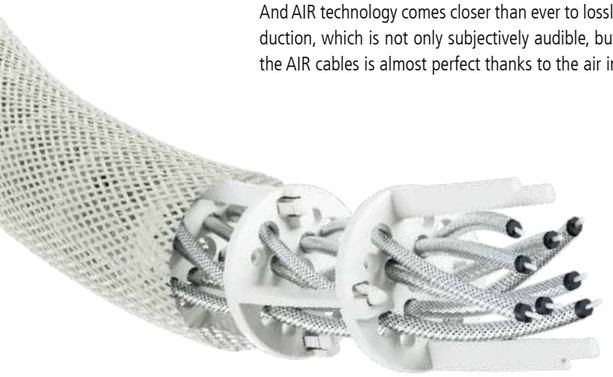
„This is a speaker cable with the license to thrill: in-akustik`s LS-4004 Air Pure Silver is as thick as your forearm and a real statement piece that`s very hard to beat in terms of appereance, workmanship, and, of course, sound quality. The serpent destined to entice high end users who enjoy lingering in the garden of good listening […] but rather one of the best speaker cables money can buy." Fidelity | LS-4004 AIR Pure Silver

EXPAND THE LIMITS

Theoretically, the copper cross-section could simply be increased. However, this would require considerable compromises in cable construction, which would ultimately have a negative effect on the sound. That is why we have decided to deliberately disregard the costs and instead consistently expand the limits of what is feasible once again. The result is a combination of the legendary AIR Helix construction and the associated air insulation (the best possible dielectric in addition to the vacuum) with the best conductor material in the form of pure silver - instead of, for example, alloyed or merely silver-plated wires. The high quality sound of the outstanding AIR-Silver cables now sets new standards in the high-end sector.

LS-2404 AIR PURE SILVER

The LS-2404 Pure Silver has the same features as the flagship LS-4004 AIR Pure Silver. The only difference is the number of conductors - cable construction, design as well as the physical approach are identical: Physical losses must be minimized in order to transmit the original music signal as unchanged and neutral as possible. And AIR technology comes closer than ever to lossless transmission. It leads to significantly better sound reproduction, which is not only subjectively audible, but also objectively measurable. The insulation or dielectric of the AIR cables is almost perfect thanks to the air insulation and hardly influences the sound any more.



- PURE SILVER CONDUCTOR
- AIR HELIX DESIGN
- AIR DIELECTRIC
- DOUBLE LAYER MULTICORE
- 8 X CROSS LINK SUPER SPEED WAVE GUIDE
- LACQUERED WIRES
- PE-NETWORK JACKET
- DIAMETER: ABOUT 25MM
- PLUGS MADE OF TELLURIUM COPPER; RHODIUM-COATED
- ANGLE OF PLUGS ADJUSTABLE
- PRESSURE-GROUTED PLUGS (1.5 T PRESSURE!)
- BFA BANANA AND SPADES INCLUDED IN THE SET

LS-1204 AIR PURE SILVER

With the LS-1204 AIR Pure Silver, the entry-level model in AIR technology is now also available as a pure silver cable. The design, the dimension and the arrangement of the conductors correspond to the copper version of this cable - the LS-1204 AIR. As with the LS-4004 AIR Pure Silver and LS-2404 AIR Pure Silver, we have optimized the conductors. Pure silver is used as the conductor material. Silver is currently the most conductive material under real conditions. At 61.35 S/m (Siemens per meter), its conductivity is about six percent better than that of copper. The electrons move 1.5 times faster than in a copper conductor!

- PURE SILVER CONDUCTOR
- AIR HELIX DESIGN
- AIR DIELECTRIC
- 4 X CROSS LINK SUPER SPEED WAVE GUIDE
- LACQUERED WIRES
- PE-NETWORK JACKET
- DIAMETER: ABOUT 12MM
- PLUGS MADE OF TELLURIUM COPPER; RHODIUM-COATED
- PRESSURE-GROUTED PLUGS (1.5 T PRESSURE!)

"It was the best cable that has ever operated between the amp and speakers." AUDIO 02-2020 | LS-2404 AIR Pure Silver

in-akustik LS-2404 AIR PURE SILVER AUDIO 02/20 EMPFEHLUNG DAS ULTIMATIVE

THE PLUGS

We have opted for tellurium copper as the plug base material rather than brass. This is because tellurium copper offers twice the conductivity. Each plug comprises a basic terminal with a spade or BFA banana adapter laterally threaded to it. This connector design provides maximum flexibility with regard to adjusting the angle between the cable and the connector and also mitigates the effects of mechanical forces acting on both the cable and the connector including their contact interfaces. The connector surfaces are rhodium-coated because this extremely robust material ensures optimum contact even after many mating cycles.

LS-4004 AIR

With the Referenz LS-4004 speaker cable, we continue the incredible story of their Air Helix technology: To achieve perfect air insulation, the new cable uses no less than 16 Cross Link Super Speed waveguides (rather than eight as with the Referenz Air Helix LS 2404). Obviously, the individual conductors themselves play a key role, too. With the LS-4004, too, these are made of 24 high-purity copper wires, each with a razor-thin lacquer coating for extra insulation and braided around a PE core. This design considerably increases stability inside the waveguide by effectively preventing the formation of eddy currents. (These are caused by the very high currents transmitted on the speaker cables - actually the highest ones within the entire audio path.) The LS-4004 AIR is a perfect example of a low-inductance speaker cable: The double-layer multicore design leads to a neutralization of overlapping magnetic fields around the individual conductors. This considerably reduces cable inductance, ensuring that all frequencies are transmitted freely and without any latency. Plus a full range of connector options offers maximum flexibility.

Between the aluminum splitter and the connectors of the LS-4004 AIR, we have implemented ultra flexible parts molded from a special elastomer. These parts are fixed inside the splitter using a specifically designed plastic plug, thus ensuring maximum cable flexibility even in the connector region. Those molded parts extend to the connector front and enclose the inner connector components, thus emphasizing the plain yet charming appearance of the LS-4004 AIR. The aluminum splitters are screwed tightly with the first clip in the cable. In summary, this creates a visually appealing and mechanically reliable design - consistent from the connectors on the amplifier side to their counterparts on the speaker side.

- AIR HELIX DESIGN
- AIR DIELECTRIC
- DOUBLE LAYER MULTICORE
- 16 X CROSS LINK SUPER SPEED WAVE GUIDE
- LACQUERED WIRES
- PLUGS MADE OF TELLURIUM COPPER; RHODIUM-COATED
- ANGLE OF PLUGS ADJUSTABLE
- PRESSURE-GROUTED PLUGS
- PE-NETWORK JACKET
- DIAMETER: ABOUT 44MM

AudioVideo EDITORS CHOICE

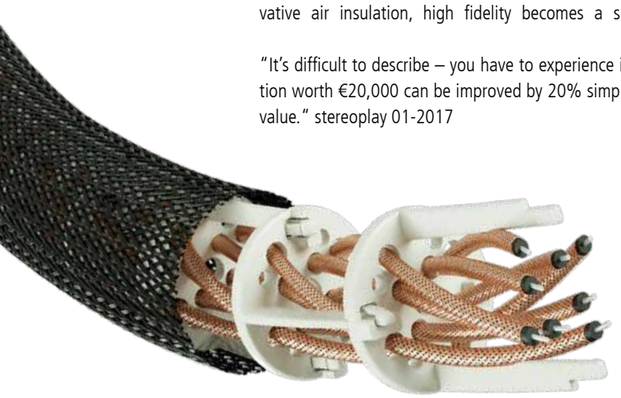
stereoplay HIGHLIGHT 01/2018

The Sound Advocate 10-2019 (Canada): „Although admittedly, I have not assessed the top of the line cables by Siltech, Transparent Audio or Nordost, at the moment, the LS-4004 Air Speaker Cables, though costly, are less expensive than the above products, and most importantly, are of reference quality as well as demonstrating the current 'state of the art' in their overall build, musicality and performance attributes. These cables are just about flawless in the way they transform music from any set of reference electronics and loudspeakers they may be used with."

LS-2404 AIR

The new Reference LS-2404 AIR loudspeaker cable combines the outstanding qualities of its predecessor – the LS-2404 – and the almost legendary NF-2404 audio cable. This has resulted in a loudspeaker cable that not only has the all-important low inductivity necessary for its application, but also low capacity values and low dielectrical losses. Interdependencies have been reduced and the amplifier can function in a more detached manner. Even if this may seem paradoxical: Thanks to the innovative air insulation, high fidelity becomes a simply breath-taking sound experience with this cable.

"It's difficult to describe – you have to experience it yourself. Or to put it in terms of money, a hi-fi combination worth €20,000 can be improved by 20% simply with the LS-2404 AIR. That amounts to an extraordinary value." stereoplay 01-2017

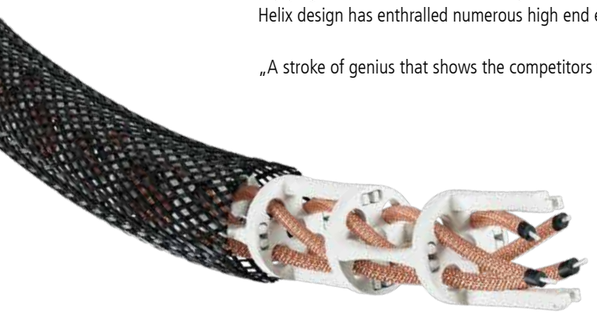


- AIR HELIX DESIGN
- AIR DIELECTRIC
- DOUBLE LAYER MULTICORE
- 8 X CROSS LINK SUPER SPEED WAVE GUIDE
- LACQUERED WIRES
- PE-NETWORK JACKET
- DIAMETER: ABOUT 25MM
- PLUGS MADE OF TELLURIUM COPPER; RHODIUM-COATED (MKII-VERSION)
- ANGLE OF PLUGS ADJUSTABLE (MKII-VERSION)
- PRESSURE-GROUTED PLUGS (1.5 T PRESSURE!)

LS-1204

In our quest to find true air insulation, we have certainly set standards with our Reference series for high end audio. Our unique Air Helix technology leads the way to unspoiled audio transmission. Now we have added two top notch Reference Air Helix cables for the high end audiophile that is on a budget. The LS-1204 AIR is for every aspiring music aficionado and they can benefit from this high tech design. Thanks to air insulation, enjoying hi-fi sound becomes literally a breath taking experience. References cables with our innovative Air Helix design has enthralled numerous high end enthusiasm around the world as well as the trade press.

„A stroke of genius that shows the competitors the limits. Precious finish: outstanding" Audio 12-2018



- AIR HELIX DESIGN
- AIR DIELECTRIC
- 4 X CROSS LINK SUPER SPEED WAVE GUIDE
- LACQUERED WIRES
- PE-NETWORK JACKET
- DIAMETER: ABOUT 12MM
- PLUGS MADE OF TELLURIUM COPPER; RHODIUM-COATED
- PRESSURE-GROUTED PLUGS (1.5 T PRESSURE!)

ELECTROSTATICS AND CAPACITY

If you take off a sweater with a high synthetic content it crackles and sparks. The reason for this is that the integrated plastic material stores electrical energy, which is then discharged again. The same happens in the insulation material of a cable. It „absorbs" electrical energy like a sponge and then releases it again. With an audio cable, however, these are parts of the audio signal. A dimension for this is the cable capacity, i.e. the unwanted storage capacity of the cable. While capacitors are supposed to store energy and have a correspondingly high capacity, the capacity of the cable should be as low as possible. It significantly influences the transmission characteristics through losses and also leads to interactions with the connected electronics. The ideal solution is therefore an air insulation such as the one implemented with the Air-Technology, as this separates the „capacitor plates" of the cable and thus reduces the capacitance.

LS-804 AIR

The unique AIR-technology from in-akustik impressively demonstrates what high-end cables can achieve in terms of sound. The German manufacturer is now expanding its Reference Selection Series with another top-class loudspeaker cable. For the entry into this class, the sophisticated Air technology is now available for the first time in a flat „ribbon" construction. The Air-Ribbon technology has made it possible to achieve an exquisite sound very efficiently by changing the cable architecture. In the new Reference LS-804 AIR speaker cable, four wires run flat and not helically next to each other, as in the Air Helix cables LS-1204, 2404 and 4004 AIR.

In this way, the electrical parameters capacitance and inductance are yet again finely tuned to each other. The division into several smaller, separate conductors also reduces the skin effect. In conjunction with Air technology, i.e. the „omission" of insulation material, which would „absorb" part of the energy like a sponge, even the Reference LS-804 AIR is capable of following very fast impulses. The sophisticated details of the Air technology counteract unwanted cable effects and make it an extraordinary loudspeaker cable.
Especially with less monumental amplifiers, the LS-804 AIR harmonizes perfectly and provides relaxed music enjoyment.

- AIR-RIBBON DESIGN
- AIR DIELECTRIC
- 4 X CROSS LINK SUPER SPEED WAVE GUIDE
- PLUGS MADE OF TELLURIUM COPPER; RHODIUM-COATED
- PRESSURE-GROUTED PLUGS (1.5 T PRESSURE!)
- LACQUERED WIRES
- CROSS CONNECTED
- PE-NETWORK JACKET

AUDIO 06/19
PROCESSING: OUTSTANDING

"There's no getting away from it: €1000 is a lot of money for a loudspeaker cable. But in our listening room we tested much more expensive cables that couldn't do what the LS-804 manages. The concept is fantastic, the sound is finely balanced and exceeds our expectations in every respect. In all honesty a masterpiece." AUDIO 06-2019

CABLE BASE

High-end and hi-fi systems are a combination of high-precision and intricately made devices. Perfectly attuned to each other, they allow music to be played back in outstanding quality. To ensure that all components can function flawlessly, they need to be kept free of interference to the greatest extent possible, just like high precision measuring equipment does. The same also applies for the connection cables. Interference is caused in a number of different ways. Along with typical electromagnetic interference, which can, for example, be minimised by using good shielding, mechanical vibrations and shocks also have an impact on the playback quality. The Reference Cable Bases have been developed specifically for cables. Their base also contains a special gel, along with natural rubber strips, in which the cables can float freely. Along with absorbing the vibrations, the Reference Cable Bases also keep the cables at a distance to the floor. This reduces unwanted capacitances and reduces the effects on the electronics.

- MECHANICAL AND CAPACITIVE CABLE DECOUPLING
- SUITABLE FOR CABLE DIAMETERS OF 10 – 25MM
- HIGH-TECH GEL PAD INSIDE THE BASE
- RUBBER BANDS HOLDING THE CABLE
- OPEN OR CLOSED CABLE SUSPENSION
- DIAMETER: 47 MM
- TOTAL HEIGHT: 48 MM
- HEIGHT LEVELS: 25 / 33 / 44 MM

STRUCTURE-BORNE NOISE

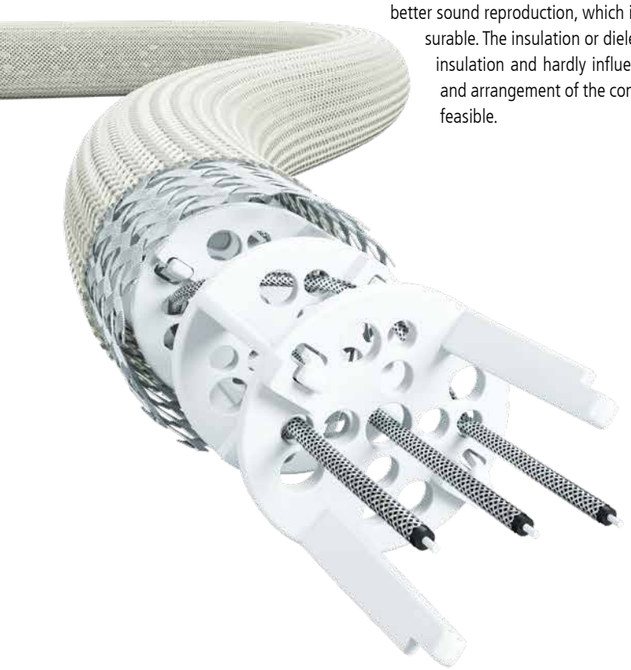
Vibrations are caused in different ways and they can be transmitted by structure-borne and air-borne noise. Structure-borne noise refers to vibrations that are exhibited by a body, such as the housing of a device. An example of this is the loudspeaker box. The membranes of the speakers are stimulated, making them vibrate. However, as the membranes feature a mechanical connection with the loudspeaker housing, they also transfer vibrations to the housing. The vibrations will be stronger or weaker according to the housing weight and the insulation. The vibrations are also transferred to the surface on which the loudspeakers are placed, this being the floor. Two things now occur. On the one hand, the floor emits some of the structure-borne energy as airborne sound (resulting in the typical droning noise), while on the other hand, the structure-borne noise is transferred, for example, to the cable placed on the floor.

AIRBORNE NOISE

Airborne sound refers to vibrations that are transferred through the air and that are audible for humans (with the exception of infrasound and ultrasound). The primary purpose of a hi-fi system is to produce sound. However, airborne noise not only stimulates the eardrum, but also acts on all other surfaces it reaches. This causes the walls, floors and other surfaces, and ultimately the hi-fi components and cables, to vibrate as well. The combination of airborne and structure-borne noise not only causes glasses in a display case to vibrate mechanically, but all components, including the cable used for a hi-fi signal chain, as well. Experiments have shown that the sound from the components and from the cables is impaired by the vibrations. One reason for this is, for example, the capacity values of components in relation to each other, which constantly change due to the vibrations. In order to minimise these so-called microphonic effects, the components must be isolated from the surface on which they are placed.This can be done by using the Reference High Tech Gel Absorber, for example, for appliances and loudspeakers. Their core contains a special gel, which physically converts the vibrations into heat.

NF-2404 AIR PURE SILVER

Our cables of the REFERENCE AIR series have already caused a sensation in the world of high-end connections: "It was the best cable that ever acted between amp and speakers!" (AUDIO 02-2020 | LS-2404 AIR PURE SILVER). With the NF-2404 AIR Pure Silver, the analog device connection of the AIR family is now also available as a pure silver cable. Dimension, structure and arrangement of the conductors correspond to the respective copper versions. As with the LS-4004 AIR Pure Silver, LS-2404 AIR Pure Silver and LS-1204 Pure Silver, the signal conductors have been optimized. The AIR technology is a milestone in our more than 40-year company history and is causing a worldwide sensation in the hi-fi industry. The approach sounds relatively banal: Physical losses must be minimized in order to transmit the original music signal as unchanged and neutral as possible. And AIR technology comes closer than ever to lossless transmission. It leads to significantly better sound reproduction, which is not only subjectively audible, but also objectively measurable. The insulation or dielectric of the AIR cables is almost perfect thanks to the air insulation and hardly influences the sound any more. The construction, dimensions and arrangement of the conductors are optimized and fully exploit what is physically feasible.



- PURE SILVER CONDUCTOR
- AIR HELIX DESIGN
- AIR DIELECTRIC ENSURES EXTREMELY LOW CAPACITANCE
- CROSS LINK SUPER SPEED WAVEGUIDE
- LOW LONGITUDINAL INDUCTANCE RESULTING FROM BRAIDED LACQUERED CONDUCTORS
- BRAIDED SHIELD MADE OF LOW-OXIDATION COPPER
- PE-NETWORK JACKET
- RHODIUM-COATED CONTACTS (RCA & XLR)
- DIAMETER: ABOUT 25MM

In order to set another sonic highlight on this basis of audiophile perfection, we have now focused on the conductor material of the cables. Copper of the appropriate purity is a very good conductor. A superconductor that does not resist the current would be perfect. However, the superconducting properties of the material require low temperatures of at least minus seventy degrees. Silver is currently the most conductive material under real conditions. At 61.35 S/m (Siemens per meter), its conductivity is about six percent better than that of copper. However, the precious metal is about 100 times more expensive

WHY NOT JUST INCREASE THE COPPER CROSS SECTION?

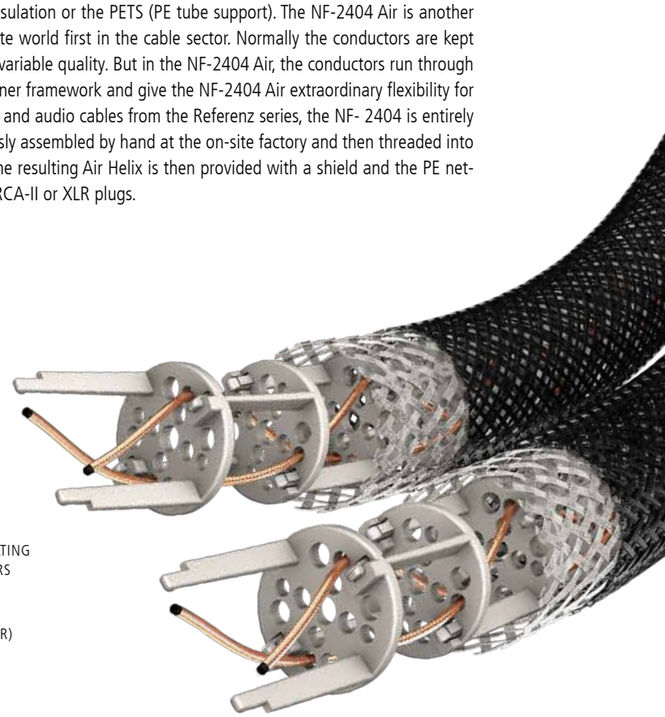
Theoretically, the copper cross-section could simply be increased. However, this would require considerable compromises in cable construction, which would ultimately have a negative effect on the sound. That is why we have decided to deliberately disregard the costs and instead consistently expand the limits of what is feasible once again. The result is a combination of the legendary AIR Helix construction and the associated air insulation (the best possible dielectric in addition to the vacuum) with the best conductor material in the form of pure silver - instead of, for example, alloyed or merely silver-plated wires. The high quality sound of the outstanding AIR-Silver cables now sets new standards in the high-end sector.

LS- & NF-2404 AIR

„From a sound perspective, both Referenz products boast excellent transparency and texture. But anyone looking for that elusive special sound experience or even seeking to compensate for deficits in other equipment has definitely come to the wrong place. The cables give you what they receive at their own connection sockets, but in a crystal-clear, "airy" and breathtakingly open quality that's hard to top. And in light of the sometimes astronomical price tags for other top-class cables, the Referenz Selection series from In-Akustik can even be regarded as easy on the pocket book." Fidelity 01-2017

NF-2404 AIR

Breathtaking sound through air insulation - On their way to perfect insulation we have realized many innovative designs - for example, the DUO PE insulation or the PETS (PE tube support). The NF-2404 Air is another milestone along this route and an absolute world first in the cable sector. Normally the conductors are kept apart by filling and insulating material of variable quality. But in the NF-2404 Air, the conductors run through a successive chain of clips that form an inner framework and give the NF-2404 Air extraordinary flexibility for a high-end cable. Just like all loudspeaker and audio cables from the Referenz series, the NF- 2404 is entirely made in Germany. The clips are meticulously assembled by hand at the on-site factory and then threaded into the Cross Link Super Speed waveguide. The resulting Air Helix is then provided with a shield and the PE network jacket and fi nally fi tted with GAP-RCA-II or XLR plugs.



- AIR HELIX DESIGN
- EXTREMELY LOW CAPACITIES THANKS TO AIR DIELECTRIC
- CROSS LINK SUPER SPEED WAVE GUIDE
- BRAIDED SHIELD MADE OF LOW-OXIDATION COPPER
- LOW LONGITUDINAL INDUCTANCE RESULTING FROM BRAIDED LACQUERED CONDUCTORS
- PE-NETWORK JACKET
- RHODIUM-COATED CONTACTS (RCA & XLR)
- DIAMETER: ABOUT 25MM

„The Triple improves an existing HiFi system worth € 25,000 by around 15%, which is a luxury value.This is only possible with in-akustik - most competitors can not fight against this profit. The workmanship could not be more beautiful, moreover it is nice to see that everything is done handmade."
Audio 12-2019 | LS- & NF- & AC-2404 AIR

NF-1204 AIR

With audio connections between individual devices, the cable capacities play a key role. As the signal sources have very low levels and are rather sensitive to high cable capacities, audio cables are perfect candidates to air insulation using the Air Helix technology. For the Referenz NF-1204 Air, we have developed an entirely new and fully solderless RCA-connector design. It comprises several parts that are assembled only during the manufacture process. First, just like with the speaker cable, the highly-pure copper wires of the Cross Link Super Speed waveguide are mechanically stripped from their thin lacquer coating; then, the tellurium-copper connector pin is crimped onto the wire at a 1.5-t pressure. Another innovation is the shield bonding, which is hermetically sealed using a screw.

- AIR HELIX DESIGN
- EXTREMELY LOW CAPACITIES THANKS TO AIR DIELECTRIC
- CROSS LINK SUPER SPEED WAVE GUIDE
- BRAIDED SHIELD MADE OF LOW-OXIDATION COPPER
- PE-NETWORK JACKET
- DIAMETER: ABOUT 12MM
- PLUGS MADE OF TELLURIUM COPPER; RHODIUM-COATED
- PRESSURE-GROUTED PLUGS (1.5 T PRESSURE!)
- HERMETIC GROUND CONNECTION

The new RCA plug comprises several parts that are assembled only during the manufacture process. First, just like with the speaker cable, the highly-pure copper wires of the Cross Link Super Speed waveguide are mechanically stripped from their thin lacquer coating; then, the tellurium-copper connector pin is crimped onto the wire at a 1.5-t pressure. Another innovation is the shield bonding, which is hermetically sealed using a screw. The NF-1204 AIR is also available with XLR plugs.

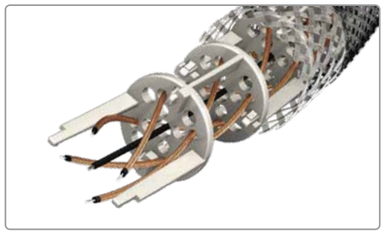
PHONO-2404 AIR

Nowhere else in the audio world are smaller currents used. And they must be forwarded perfectly. The signal level of an MM or MC system is extremely sensitive, at just a few thousandths of a volt. Additionally, the systems have an inductive character. In combination with the cable capacity, they form what is known as an oscillating circuit, which favours specific frequencies. If these frequencies are unfavourable due to excessively high capacities, this has a major effect on the harmony of the sound. Extremely low capacities and dielectric losses are only two advantages of Reference Phono 2404. They form the basis of your unadulterated enjoyment of your vinyl treasures. There is no finer resolution for the sound of good LPs.

- AIR HELIX DESIGN
- EXTREMELY LOW CAPACITIES THANKS TO AIR DIELECTRIC
- CROSS LINK SUPER SPEED WAVE GUIDE
- BRAIDED SHIELD MADE OF LOW-OXIDATION COPPER
- PE-NETWORK JACKET
- DIAMETER: ABOUT 25MM
- RHODIUM-COATED CONTACTS
- SYMMETRICALLY CONSTRUCTED CHANNELS
- SIGNAL-FREE PROTECTIVE COVER
- EARTH CABLE

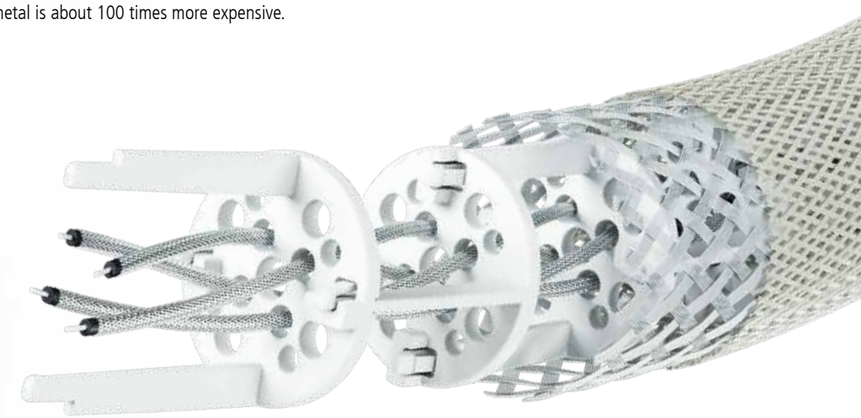
"This is where the reference class of super cables begins. In-akustik has created something groundbreaking with its Air Helix structure. The sound is fast, analytical, and yet effortless. In addition, exceptionally fine and dynamic. Stereoplay 09-2016

„Physics wins: The large phono cable from In-Akustik is the best example of how excellent results can be achieved in a cable through the consistent use of technology." LP magazine 01-2018



DIGITAL 2404 AIR PURE SILVER

The AIR technology is a milestone in our more than 40-year company history and is causing a worldwide sensation in the hi-fi industry. The approach sounds relatively banal: Physical losses must be minimized in order to transmit the original music signal as unchanged and neutral as possible. And AIR technology comes closer than ever to lossless transmission. It leads to significantly better sound reproduction, which is not only subjectively audible, but also objectively measurable. The insulation or dielectric of the AIR cables is almost perfect thanks to the air insulation and hardly influences the sound any more. The construction, dimensions and arrangement of the conductors are optimized and fully exploit what is physically feasible. In order to set another sonic highlight on this basis of audiophile perfection, the developers at in-akustik have now focused on the conductor material of the cables. Copper of the appropriate purity is a very good conductor. A superconductor that does not resist the current would be perfect. However, the superconducting properties of the material require low temperatures of at least minus seventy degrees. Silver is currently the most conductive material under real conditions. At 61.35 S/m (Siemens per meter), its conductivity is about six percent better than that of copper. However, the precious metal is about 100 times more expensive.



- PURE SILVER CONDUCTOR
- AIR HELIX DESIGN
- AIR DIELECTRIC ENSURES EXTREMELY LOW CAPACITANCE
- CROSS LINK SUPER SPEED WAVEGUIDE
- DOUBLESYMMETRICAL DESIG
- LOW LONGITUDINAL INDUCTANCE RESULTING FROM BRAIDED LACQUERED CONDUCTORS
- BRAIDED SHIELD MADE OF LOW-OXIDATION COPPER
- PE-NETWORK JACKET
- RHODIUM-COATED CONTACTS (RCA & XLR)
- IMPEDANCE 75 Ω (RCA) / 110 Ω (XLR / AES-EBU)
- DIAMETER: ABOUT 25MM

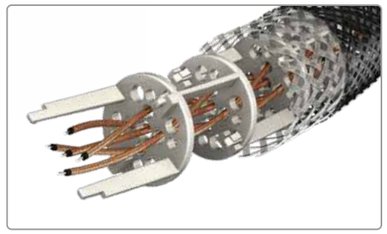
DIGITAL PURE SILVER CABLE

Our cables of the REFERENCE AIR series have already caused a sensation in the world of high-end connections: „It was the best cable that ever acted between amp and speakers!“ (AUDIO 02-2020 | LS-2404 AIR PURE SILVER). With the Digital-2404 AIR Pure Silver, the digital device connection of the AIR family is now also available as a pure silver cable. Dimension, structure and arrangement of the conductors correspond to the respective copper versions. As with the LS-4004 AIR Pure Silver, LS-2404 AIR Pure Silver and LS-1204 Pure Silver, the signal conductors have been optimized.

DIGITAL 2404 AIR

The air-helix construction of the Reference Digital-2404 is wholly unique. We have developed a special clip to ensure air insulation that is as close to perfection as possible. A large number of these clips form the supporting structure on the inside of the cable. This holds the signal conductor free in the air in a helix form and guides it through the shielding at defi ned intervals. The fl exibility of this construction is attained with two bridges that hold the clips together evenly and at exact intervals. With coaxial cables, the shielding is usually used as an earth conductor. The Reference Digital 2404 RCA on the other hand has a double-symmetric structure and has two positive and two negative conductors. This means that the shielding is completely separate and the signal remains free of interference.

- AIR HELIX DESIGN
- EXTREMELY LOW CAPACITIES THANKS TO AIR DIELECTRIC
- CROSS LINK SUPER SPEED WAVE GUIDE
- DOUBLESYMMETRICAL DESIGN
- LOW LONGITUDINAL INDUCTANCE RESULTING FROM BRAIDED LACQUERED CONDUCTORS
- BRAIDED SHIELD MADE OF LOW-OXIDATION COPPER
- PE-NETWORK JACKET
- DIAMETER: ABOUT 25MM
- RHODIUM-COATED CONTACTS
- IMPEDANCE 75 Ω (RCA) / 110 Ω (XLR)



AIR POWER CORDS
AC-4004 | 2404 | 1204

A hi-fi system basically reproduces nothing more than modulated household electricity. Ideally, this should be available to the components unrestrained. Dynamic music with complex bass runs impulsively loads the electronics of the integrated or power amplifiers of an audiophile hi-fi system. Here the power cord (power cable) plays a significant role. The challenge for power supply cables of audio devices with a high sound quality are extreme current peaks, which generate strong magnetic fields and interference radiation and thus lead to power losses at line and transition resistances.

- AIR HELIX CONSTRUCTION
- AIR DIELECTRIC ENSURES EXTREMELY LOW CAPACITANCE
- GROUNDING CONDUCTOR (PROTECTION CLASS 1)
- DENSE SHIELDING BRAID MADE OF COPPER WITH OXIDATION PROTECTION (TINNED)
- RHODIUM COATED CONTACTS (AC-4004 AIR)
- INDIVIDUALLY TESTED (FUNCTION, INSULATION, HIGH VOLTAGE)
- CE COMPLIANT | WITH CERTIFICATE
- LVD 2014/35/EU COMPLIANT
- ROHS 2011/65/EU COMPLIANT
- EN 60320-1 COMPLIANT

EN 60320-1 CERTIFIED RoHS 2011/65/EU

CE

BACKGROUND

Dynamic music impulsively loads the power amplifiers of an audiophile hi-fi system. Therefore, the power cable Reference AC-2404 AIR was developed this way and now completed by the AC-4004 AIR and the AC-1204 AIR. Specially developed clips keep the individual wires at a fixed distance. The resulting „air dielectric" reduces power losses to a minimum and improves the electrical parameters significantly. The Reference AC-4004 AIR with a multi-core structure of 16 conductors is a combination of the AC-2404 AIR power cable, which has received particularly excellent ratings in various test reports, and the LS-4004 AIR loudspeaker cable, sometimes referred to as a „dream cable". As a basis for the development of the Reference AC-1204 AIR, the technology of the speaker cable LS-1204 AIR was used, which has also caused an excitement in the hi-fi scene. The multi-core construction leads to an overlapping and thus compensation of the magnetic fields around the individual wires. Depending on the number of cores, the line inductance is thus extremely minimized, and the skin effect caused by steep current flanks at high frequencies is significantly and audibly reduced. In addition, the usable conductor cross-section is expanded effectively and without the negative effects of thick cables. A dense shielding braid of tinned copper protects nearby cables and audio components from external interference and also prevents oxidation.

These very rapidly changing current increases and decreases must be fed to the electronic components with as little delay as possible, since a blocked current flow would have a negative effect on the sound. As is known from physics, an electrical conductor has capacitive and inductive characteristics in addition to its resistance, which disturb the flow of energy from the socket to the hi-fi device. The goal is always a low-loss power supply without any time-lag, so that very large amounts of energy can be transported in a very short time. Thus, the supply line from the wall socket to the HiFi equipment plays a very important role in the transmission.

AIR TECHNOLOGY

That's why we have developed the power cable Reference AC-2404 AIR and now, two years later, added the AC-4004 AIR and the AC-1204 AIR, so that both, a moderate version for filigree components and a full-grown version for powerful cars are available now. The clips, which were specially developed for the Reference AIR technology, keep the individual wires at a defined distance and insulate them from each other with air. The resulting „air dielectric" reduces power losses to a minimum and significantly improves the electrical parameters.

PERFECT AUDIOPHILE SOUNDS

The Reference AIR power supply cables are specially designed for connecting high-quality high-end audio systems and are based on the already legendary in-akustik AIR technology. Their many special features effectively counteract the undesirable effects of operating powerful audio components and make them what they are: Outstanding energy pipelines for perfect audiophile sounds.

MULTICORE CONSTRUCTION

The multi-core construction leads to an overlap and thus compensation of the magnetic fields around the individual cores. Thus, the line inductance is strongly or extremely minimized depending on the number of cores. In addition, the larger number of individual cores significantly reduces the skin effect caused by steep current edges at high frequencies. Furthermore, the distribution over several cores extends the usable conductor cross-section without the negative effects of thick cables.

AC-4004 AIR

- 16 COPPER WIRES
- TOTAL CROSS-SECTION 2X4,0MM²
- SCHUKO HQ -> C15 | C19
- US -> C15 | C19

AC-2404 AIR

- 4 COPPER WIRES
- TOTAL CROSS-SECTION 2X3,0MM²
- SCHUKO HQ -> C15 | C19
- SCHUKO BASIC -> C15 | C19
- US -> C15 | C19

AC-1204 AIR

- 4 COPPER WIRES
- TOTAL CROSS-SECTION 2X1,5MM²
- SCHUKO BASIC -> C15 | C19

SHIELDING AGAINST INTERFERENCE FIELDS

In contrast to most other power cables, the in-akustik Reference AIR cables are covered by a dense shielding braid of tinned copper. This protects the hi-fi system from external interference and nearby cables and audio components from radiating interference fields caused by the high current peaks in the cable. The tinning of the braid also prevents oxidation of the cable.

SCHUKO HQ

US PLUG HQ

SCHUKO BASIC

SAFETY IS VERY IMPORTANT TO US

For all its love of audiophile sound, safety plays a special role in this cable category. That's why every Reference AIR power cord is tested and inspected extremely carefully. In addition to an intensive functional test, each cable is also subjected to an insulation and high-voltage test. The results are registered, and each cable is given an individual serial number.

PRESS

„The Triple (LS- / NF- / AC-2404 AIR) improves an existing HiFi system worth € 25,000 by around 15%, which is a luxury value.This is only possible with in-akustik - most competitors can not fight against this profit. The workmanship could not be more beautiful, moreover it is nice to see that everything is done handmade." Audio 12-2019

„In conclusion, we can say that in-akustik has opened a new door into the world of hi-fi with the Reference AC 2404 Air." audiohile-online.de 03-2020

AC-3500P

Where does fine sound begin? Where does it end? Audio enthusiasts have kept asking those questions for ages. As a matter of fact, physical conditions have a considerable impact on the sound quality produced by audio systems. In this, power supply is one of the key factors. In principle, we listen to domestic current modulated by a music signal. This useful signal mixes with modulations or interference from other consumers at your home or even your neighborhood all the time – and this is where sound degradation starts. Countless consumers – in particular, digital devices – and switched-mode power supplies (SMPS) cause heavy distortion in the power system, and their number is still rising. This distortion poses serious problems for your hi-fi components, overlaying your sound like patches of acoustic mist. As the number of hi-fi aficionados running their own power plants is obviously quite low, most devices will almost certainly be fed from a grid under heavy load. So to most of us, this means that sound begins at the power outlet or maybe the fuse box – everything upstream is beyond our control. The Referenz Power Station AC-3500P reliably suppresses all unwanted interference from the power system and becomes a key factor to a fine yet powerful sound.

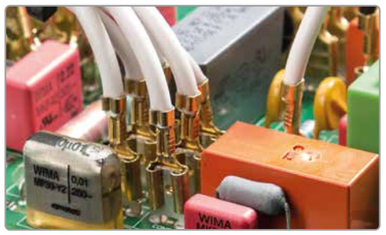
We are bound to filter out interference from the supplied power; traditional filters, however, are notorious dynamics "guzzlers", which is particularly true for serial circuits: inductors inserted into the feed line definitely increase the transition resistance and hamper dynamic pulse currents. The Referenz AC-3500P pursues a different approach: it implements a highly efficient parallel filter perfectly attuned to the audiophile's needs. The filter leads off all interference from both the power system and the connected devices themselves without restricting the supply. Add to this the dampened sub chassis that reduces AC-3500P mechanical vibrations of the filter components caused by the 50-Hz grid frequency. In addition, the star-shaped distribution topology ensures uniform supply of all connected units. This way, the Referenz Power Station AC-3500P becomes a key factor to a fine yet powerful sound.

PRESS

„This is not about Voodoo, but one of the best power filters we have ever tested" Audio 03-2020

„We have seen many blenders. They promised holy water and delivered tap water. Here finally a master. in-akustik shows what a good power conditioner can do. The sound gain was clear, even outstanding. You can not increase high end sound in a better way. We are critical - but here we give a clear highlight." Stereoplay 07-2019

„Unbelievable - you hear the difference right away. It's really fascinating how much sound comes out of the power supply. I relive many of my records and CDs and hear extra details that I was not aware of before." HiFi Stars 41.



- HIGHLY EFFICIENT CENTRALIZED PARALLEL FILTER
- DAMPENED SUB CHASSIS
- BALANCED POWER DISTRIBUTION
- HIGH-END SCHUKO SOCKETS
- HIGH-CURRENT POWER INLET (IEC C20)
- OVERVOLTAGE PROTECTION
- SUPPLY VOLTAGE: 100-250V AC / 50-60HZ
- OPERATING CURRENT (MAX.): 16 A
- INPUT POWER (MAX.): 3,680 W (230VAC / 16 AMPERE)
- ALL-POLE DISCONNECTION
- WEIGHT: APPROX. 12.8 KG
- 450 MM × 370 MM × 160 MM (W × D × H)

REFERENZ AIR CABLES

SPEAKER CABLE	LS-4004 AIR PURE Silver	LS-4004 AIR	LS-2404 AIR Pure Silver	LS-2404 AIR
Air Helix Design	x	x	x	x
Air Ribbon Design				
Low capacities thanks to air dielectric	x	x	x	x
DUO-PE II Insulation				
Pure Silver Conductor	x		x	
Cross Link Super Speed Wave Guide	x	x	x	x
Super Speed Wave Guide				
High Speed Wave Guide				
Double Layer Multicore	x	x	x	x
Multicore	16-fach	16-fach	8-fach	8-fach
PE-Network Jacket	x	x	x	x
Lacquered wires	x	x	x	x
Number of single conductor	16	16	8	8
Conductor cross-section	16 x 1,2 mm²	16 x 1,2 mm²	8 x 1,2 mm²	8 x 1,2 mm²
Diameter	44mm	44mm	24 mm	24 mm
High Power Management	x	x	x	x
Concentric Copper				

CONNECTIONS				
Singlewire	x	x	x	x
Single-BiWire	x	x	x	x
Plugs made of tellurium copper	x	x	x	x (MK II)
Pressure-grouted plugs (1.5 T pressure!)	x	x	x	x (MK II)
BFA adjustable | rhodium coated	x	x	x	x (MK II)
BFA 45° | rhodium coated				x
BFA | rhodium coated				x
Spade lug | adjustable | rhodium coated	x	x	x	x (MK II)
Spade lug | rhodium coated				x
Easy Plug				x
Screw Type	x	x	x	x
Standard length	2 x 3,0m	2 x 3,0m	2 x 3,0m	2 x 3,0m
Custom-made length	x	x	x	x
Page in catalogue	10	14	12	16
				

LS-1204 AIR PURE Silver	LS-1204 AIR	LS-804 AIR
x	x	
		x
x	x	x
x		
x	x	x
4-fach	4-fach	4-fach
x	x	x
x	x	x
4	4	4
4 x 1,2 mm²	4 x 1,2 mm²	4 x 1,2 mm²
14 mm	14 mm	12 mm
x	x	x

x	x	x
x	x	x
x	x	x
x	x	x
x	x	x
		x
2 x 3,0m	2 x 3,0m	2 x 3,0m
x	x	x
16	12	18
		

LS-4004 AIR Pure Silver

LS-4004 AIR

LS-2404 AIR Pure Silver

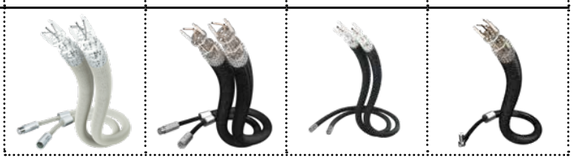
LS-2404 AIR

LS-1204 AIR

LS-804 AIR

REFERENZ AIR CABLES

AUDIO | PHONO | DIGITAL | MAINS CABLE	NF-2404 AIR Pure Silver	NF-2404 AIR	NF-1204 AIR	Phono 2404 AIR	Digital-2404 AIR Pure Silver	Digital-2404 AIR	AC-4004 AIR	AC-2404 AIR	AC-1204 AIR
Air Helix Design	x	x	x	x	x	x	x	x	x
Low capacities thanks to air dielectric	x	x	x	x	x	x	x	x	x
Pure Silver Conductor	x				x				
Cross Link Super Speed Wave Guide	x	x	x	x	x	x			
High Speed signal conductor									
Conductor cross-section							2 x 4,0 mm²	2 x 3,0 mm²	2 x 1,5 mm²
Braided shield, oxidation protected	x	x	x	x	x	x	x	x	x
Signal-free shielding	x	x		x	x	x	x	x	x
Separate earth cable				x					
Grounding conductor							protection class 1	protection class 1	protection class 1
PE-Network Jacket	x	x	x	x	x	x			
Construction	symm.	symm.	coaxial	symm.	double symm.	double symm.	16 fold Multicore	4 fold Multicore	4 fold Multicore
Diameter	24 mm	24 mm	14 mm	24 mm	24 mm	24 mm	24 mm	24 mm	24 mm
Impedance					75/110 Ohm	75/110 Ohm			
CONNECTIONS									
RCA -> RCA | rhodium coated	x	x	x	x	x (75 Ohm)	x (75 Ohm)			
XLR -> XLR | rhodium coated	x	x	x		x (110 Ohm)	x (110 Ohm)			
SME 90° -> RCA | rhodium coated				x					
SME -> RCA | rhodium coated				x					
SME 90° -> XLR | rhodium coated				x					
SME -> XLR | rhodium coated				x					
SCHUKO -> C15 (C13) | HIGH END							x	x	
SCHUKO -> C19 | HIGH END							x	x	
SCHUKO - C13 | BASIC								x	x
SCHUKO - C19 | BASIC								x	x
US -> C15 (C13) | HIGH END							x	x	
US -> C19 | HIGH END							x	x	
Pressure-grouted plugs (1.5 T pressure!)			x						
Hermetic ground connection			x						
Standard length	0,75 | 1,0 | 1,5	0,75 | 1,0 | 1,5	0,75 | 1,0 | 1,5	1,0 | 1,5 | 2,0	1,0 | 1,5 | 2,0	1,0 | 1,5 | 2,0	1,0 | 1,5 | 2,0 | 3,0	1,0 | 1,5 | 2,0 | 3,0	1,0 | 1,5 | 2,0 | 3,0
Custom-made length	x	x	x	x	x	x	x	x	x
Page in catalogue	22	24	26	27	28	30	32	34	34



NF-2404 AIR Pure Silver

NF-2404 AIR

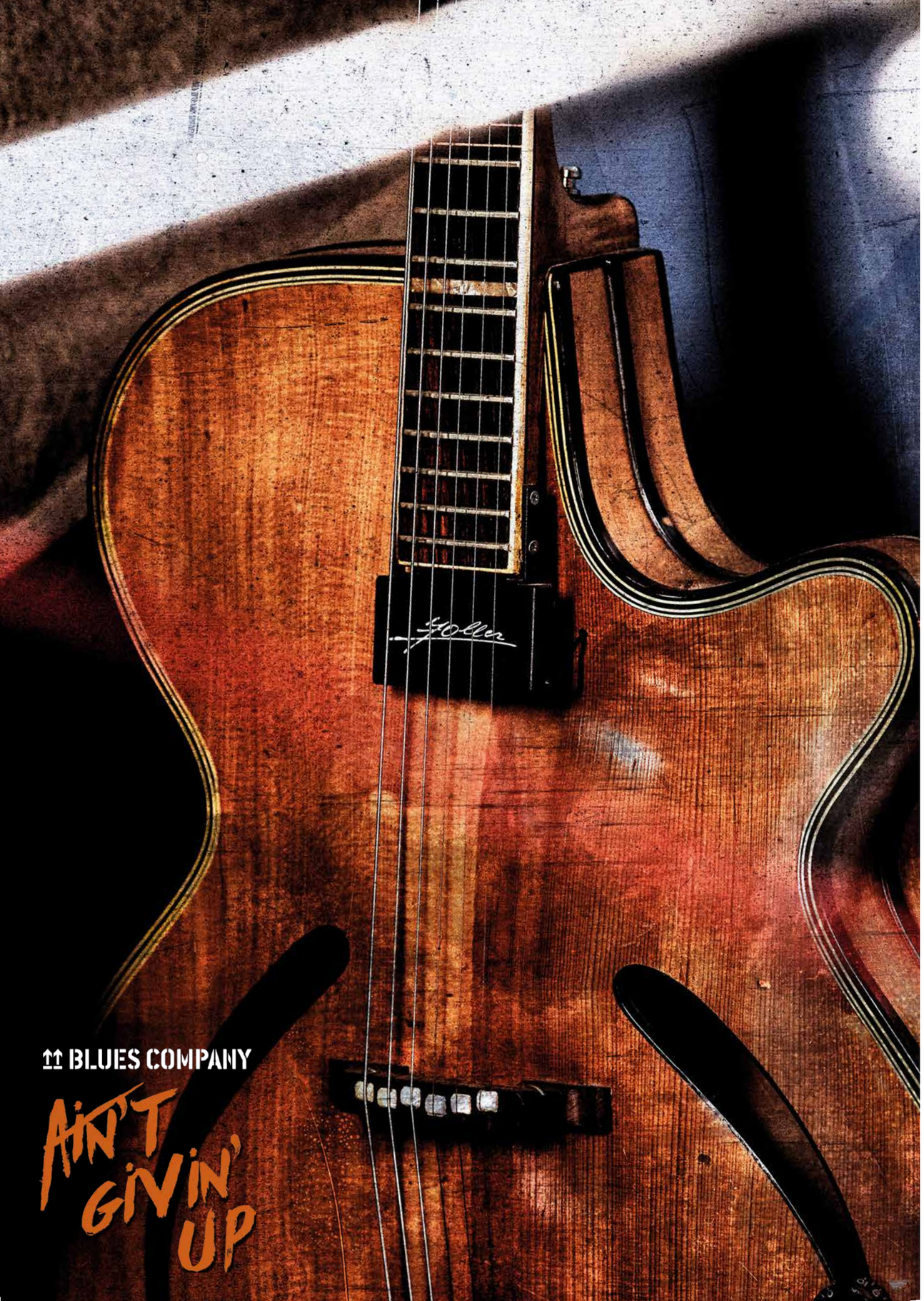
NF-1204 AIR

Phono-2404 AIR

STOIC

THE BASES OF GOOD SOUND

Vinyl on the turntable is a sensitive passion, nothing disturbs the enthusiasm for music more than an impaired sound. Every vibration, however delicate is annoying, unless the fundament is right. HighStandArt delivers it: with the STOIC-Wallmount and the STOIC-Base. Every STOIC combines all the features it needs for a perfect music reproduction. It decouples Hi-Fi devices completely and securely from vibrating floors, furniture or HiFi-racks and thereby from annoying vibrations and ressonances. For all HiFi-components. Be it analogue or digital.



MUSIC

THE IN-AKUSTIK RECORD LABEL

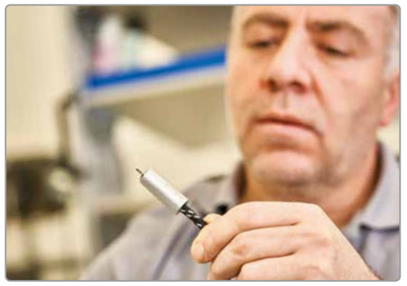
As one of the largest independent labels in Germany, we have high standards, especially when it comes to our unique range of music & media. We offer you rock and pop, jazz and classical, blues and singer/songwriters, as well as audiophile studio recordings or legendary concerts on DVD or Blu-ray.

Highlight: The samplers of our Reference Sound Edition have been assembled with a love of musical detail. RESO Mastering (Reference Sound Mastering), the high definition mastering procedure, provides significant acoustic improvements in transparency, dynamics, bass reproduction and depth differentiation. The music is gaining more atmosphere and emotion. To best transmit this musical experience, instead of a normal CD, a HQCD respectively to get even closer to the master quality, a UHQ-CD is used as sound carrier and instead of normal LP vinyl, 180g audiophile Virgin Vinyl. NEW: 4 samplers of the RESO-Edition are now also available as Mastertape (Direct to Tape Mastertape).

MADE IN GERMANY

We don’t know where others acquire their cables. For our part, we manufacture our speaker cables here in Germany. And most of our home hi-fi and video cables in the Referenz and Exzellenz quality classes are manufactured by in-house production plants at Company headquarter in Ballrechten-Dottingen.

In our product design we do everything to ensure excellent quality from the outset. We subject our products to intense scrutiny and continuously carry out quality controls during the production process. We check the tolerances of each individual part, the print quality, the colours and the construction. We test the electrics for short circuits and configuration at each production step. We carry out both functional and mechanical tests. And, of course, we test the live performance. This is what we mean by maximum precision.



MADE IN GERMANY

in-akustik GmbH & Co. KG
Untermatten 12-14
79282 Ballrechten-Dottingen
Germany

Tel.: +49 (0) 7634 5610-70
Fax: +49 (0) 7634 5610-80
E-Mail: info@in-akustik.de
Web: www.in-akustik.de

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