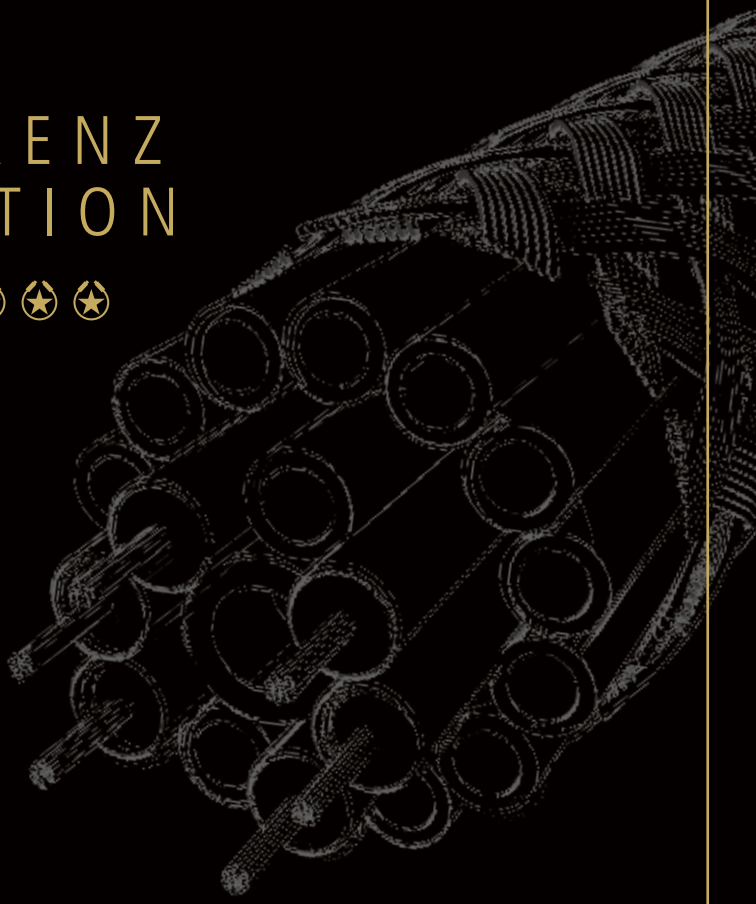
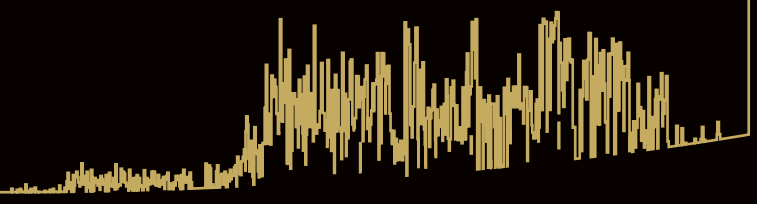
REFERENZ
SELECTION





inakustik

KABEL | LAUTSPRECHER | MUSIK

FOR THE SENSES

EXCLUSIVE REFERENZ SELECTION IN STORES

REFERENZ SELECTION

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. A list of our specialist dealers can be found on our micro-site: **www.in-akustik.de/referenzselection**

- "The new in-akustik cable range Referenz 03 has not only managed to surpass its predecessors, but also to set new standards. That is being honoured with a stereoplay highlight."
  (stereoplay 9/2011)

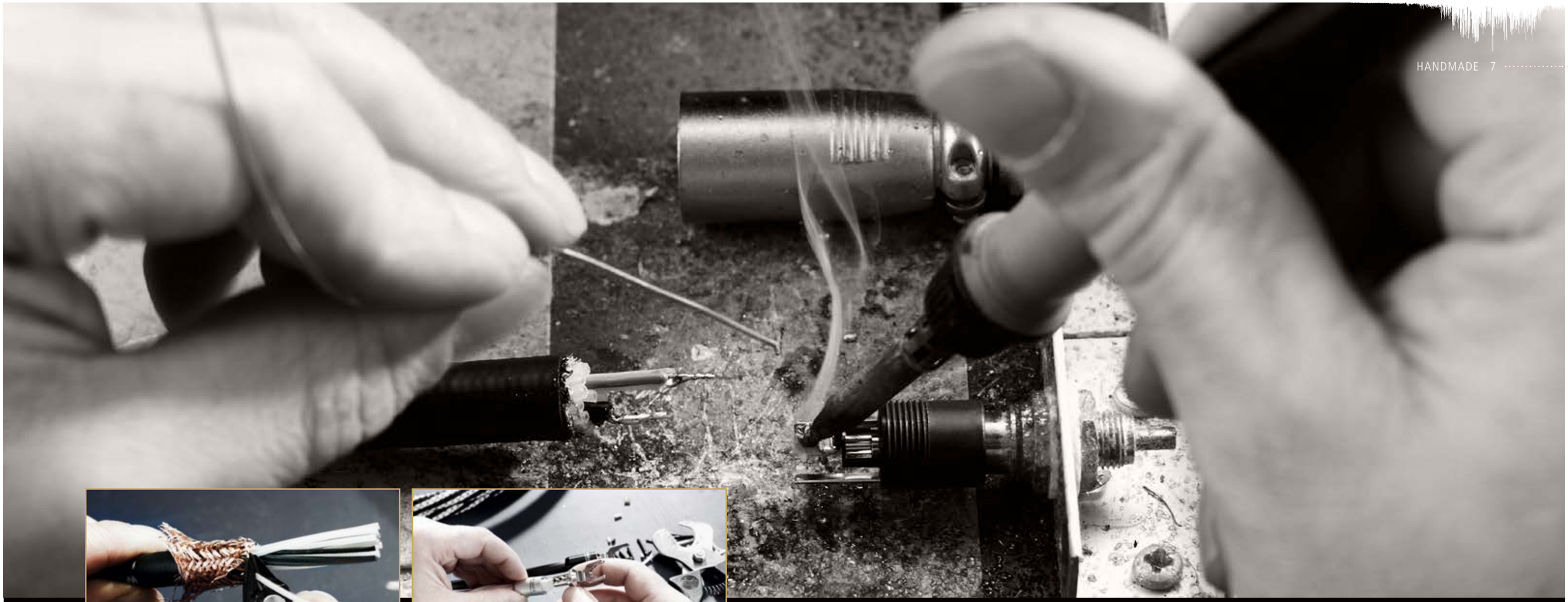
PERFECT SOUND BEGINS IN THE MINE.

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.

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



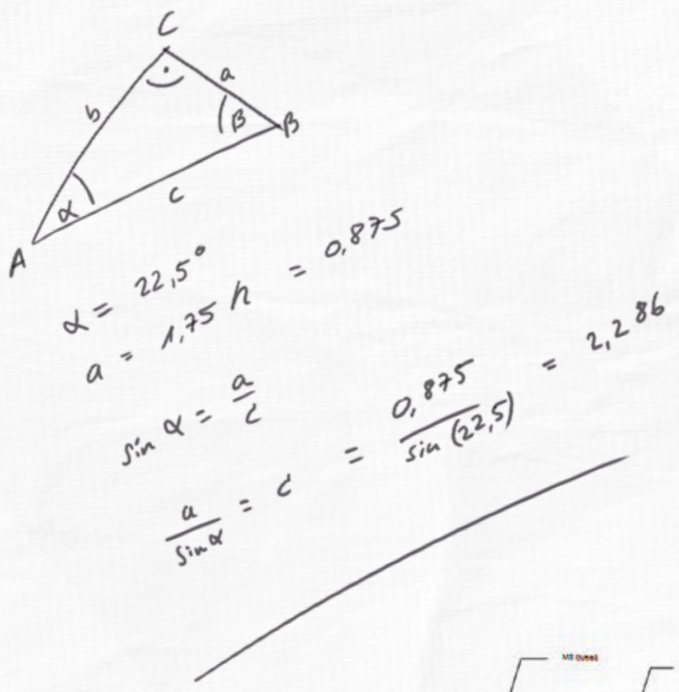
A Referenz Selection cable is manufactured in many manual steps that are often meticulous and elaborate.

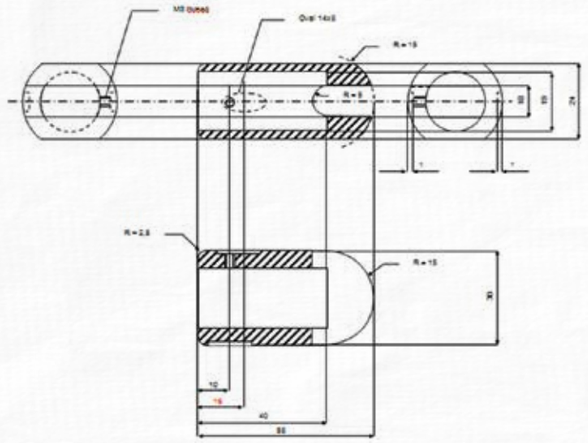
MADE WITH LOVE AND KNOW-HOW

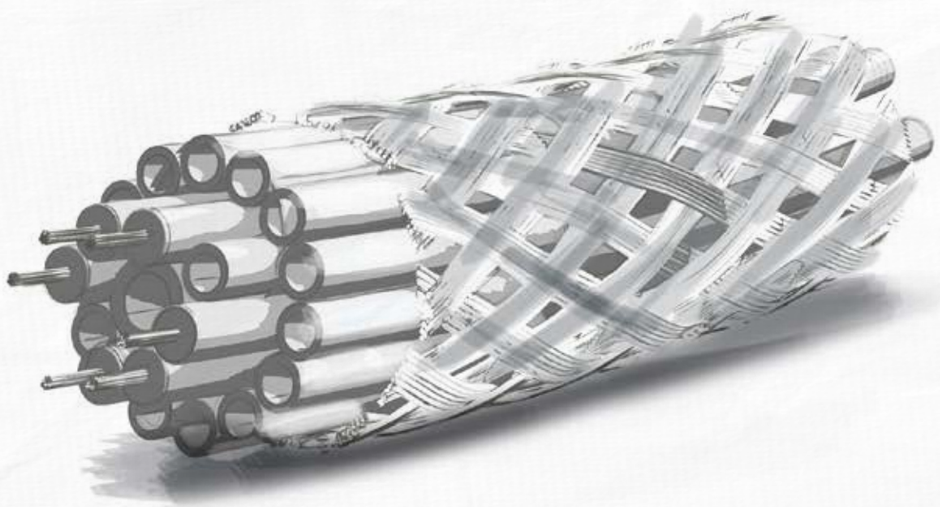
We have long set the bar very high in regard to quality, because cables and connections are extremely sensitive. Physical phenomena that arise during the transmission of signals can only be controlled with technical finesse and the best materials. For this reason all cables are manufactured in a German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

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.

HANDMADE BY IN-AKUSTIK SINCE 1977 IN GERMANY







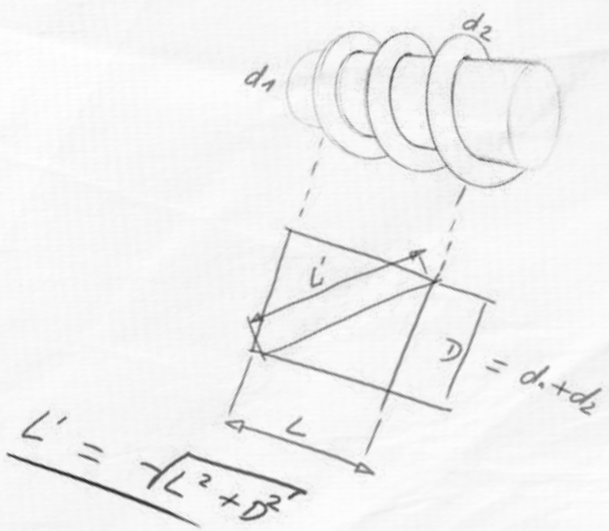
TO GET THE LAST BIT OF QUALITY

"In the early '80s, when so many exotic high-end device was developed and built in some garages, there were no rare situations, for example, where certain amplifiers or only certain combinations of speaker cables had a right sound. The times of the craft-Hifis, however, are over.

Today we have very different devices and technologies. Entire teams of engineers to develop the first class High end components, their weaknesses will no longer be corrected by cable parameters need. On the one hand, somehow sad. On the other hand, the sonic potential of new generations of devices is enorm, and other, higher demands are on the cable. This makes us very exciting.

What tickles you the last bit of quality of the components? No idea is too crazy for us. The best experience we've ever had was with the developments on the basic electrical engineering and physics base. Meanwhile, we can predict fairly well in sound which tends towards a cable. At the beginning of a development is still wild outlined, deliberate and calculated. Ideas are sometimes discarded and redesigned, to the construction an creating of detailed technical drawings . In the development and implementation, it helps us a lot that our own cable plantis available in our company. In our own assembly we can also build and perfect the prototypes. "

Holger Wachsmann
Product Development

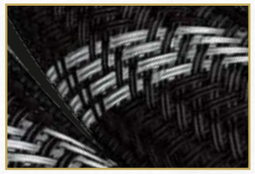


TECHNOLOGY IN ITS FINEST FORM

Copper

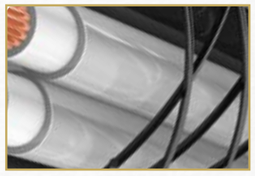
The transmission of acoustic signals is susceptible to many different types of interference: resistance, inductance, capacitance, conductance of the insulation and skin effect have a negative influence on the sound. The conductor material is also very significant. Because every contamination in the conductor material prevents the flow of current, impairing the conductance and increasing the background noise. That's why we use only especially pure, oxygen-free copper (OFC) with a high conductance in our Referenz cables.

PE NETWORK JACKET



Every additional material used has negative influences on the signal transmission. Many cables have a subcoating between the coat braid and the wires, made of PVC for instance, which has an unfavorable impact on the electrical parameters. In contrast, the wires of Referenz cables are directly braided with a PE network jacket. The cables consist of two materials: copper and polyethylene. The PE network jacket consists of monofilaments that hold the wires together tightly. This reduces micro-vibrations and facilitates the clean conversion of extreme dynamic peaks.

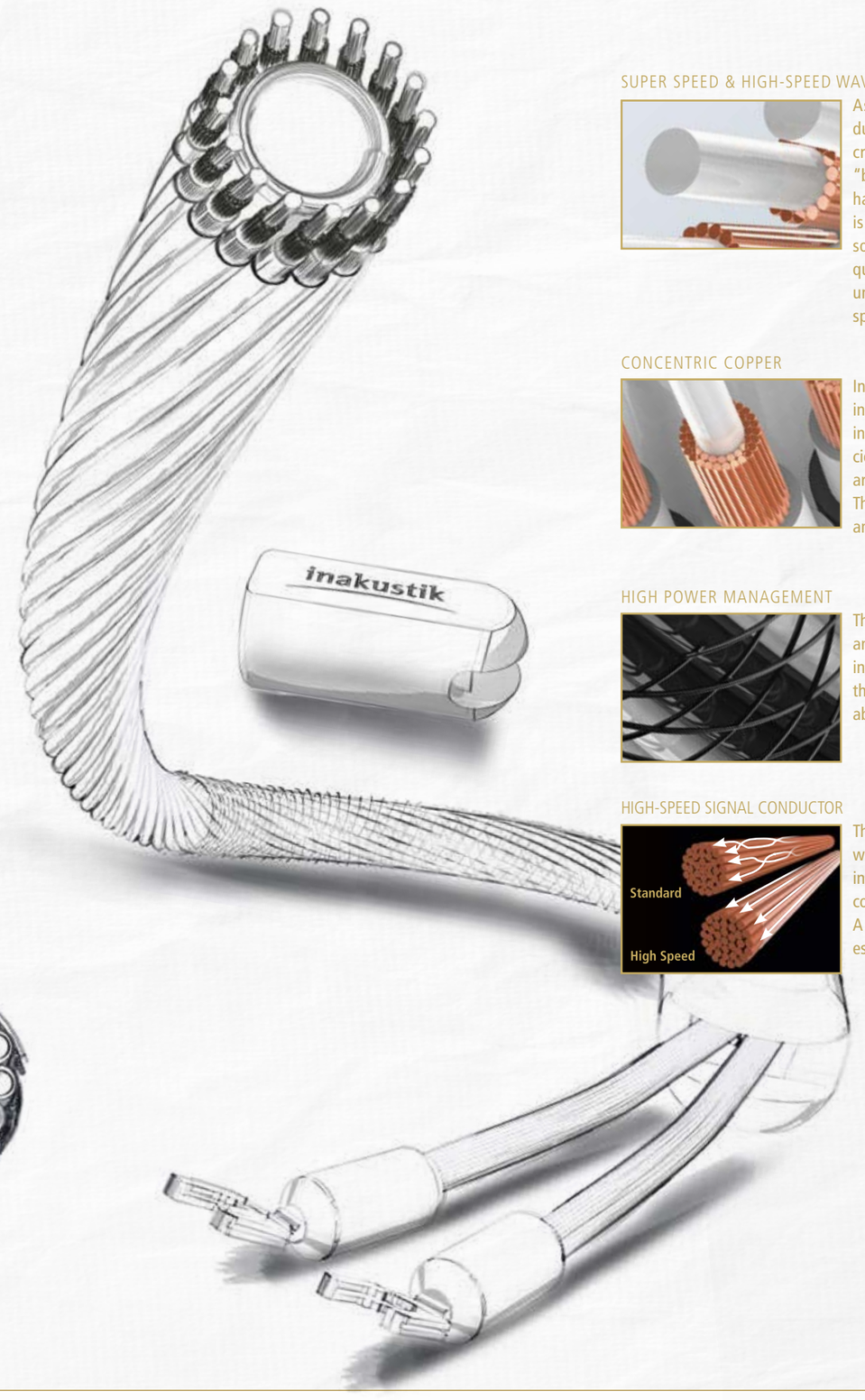
DUO-PE II ISOLATION



Theoretically, air is the best insulator, and polyethylene is also excellent in practice. For Referenz cables, in-akustik developed insulation consisting of two layers of polyethylene. The first layer is foamed with air. A second, solid PE sheath is applied over that. This DUO-PE II insulation prevents high capacitance and eases the work for the electronics.

MULTICORE

The flow of current causes magnetic fields to be created in the cable, leading to a partial loss of power. High frequencies are slowed down – and time lag is created between low and high sound frequencies. The circular arrangement of several wires around the polyethylene support causes the magnetic fields of plus and minus conductors to overlap and neutralise each other. The high sound frequencies are transported unhindered and synchronously.



SUPER SPEED & HIGH-SPEED WAVEGUIDE

As the frequency rises, the signal increasingly flows on the conductor surface. The higher the frequency, the lower the effective cross-section, and the greater the resistance. The cable sounds "bass-heavy". The conductors from the Referenz speaker cable have a core made of polyethylene. In this way a circular waveguide is formed and the actual cross-section used is the same for all sound frequencies. On the Super Speed waveguides, a layer of lacquer insulates the copper wires from each other and prevents unwanted eddy currents. The result: a homogeneous, balanced speaker cable with a wide-ranging sound spectrum.

CONCENTRIC COPPER

In conventional cables, the individual wires are arranged chaotically in the strands. The signals move in a zigzag fashion. The consequence: individual signals are "in transit" for longer than others; high frequencies lose their dynamic. In concentric copper strands, the wires are arranged in several layers around a polyethylene core in the middle. The signals flow more harmonically, impulses are reproduced exactly and the spatial information is retained.

HIGH POWER MANAGEMENT

The tightly fitted PE network jacket holds the wires close together and reduces micro-vibrations that arise in the cable from the changing magnetic fields caused by the beat of the music. The cable therefore also transmits high levels and extreme dynamic peaks with absolute precision.

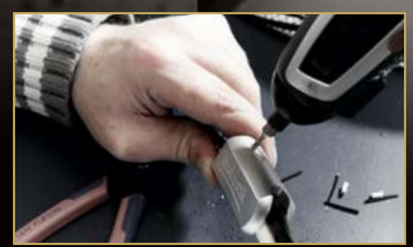
HIGH-SPEED SIGNAL CONDUCTOR

The new generation of Referenz NF cables has finely stranded signal wires, with each individual wire having a lacquer coating. This coating insulates the wires from each other, creating a larger effective conductor surface. It also prevents eddy currents between the wires. A conductor that can also pass on extremely dynamic signal sequences very quickly and precisely.

SPEAKER CABLE

A heavenly CD by legendary artists. Listen and adore. If only it was that easy. By the time the first note reaches your ear, it has travelled a long way. The longest leg being between amplifier and speaker, with any number of obstacles. The signals are vulnerable to many distortions. We can prevent this. Ingenious conductor engineering, complex shielding and only the best materials. And we can also confirm this with independent test results from throughout the world.

- "A lot is going on under this surface: in-akustik allows signals to ring true with a revolutionary new design – with a double waveguide." (Audiophile 3/2011)



HANDMADE BY IN-AKUSTIK SINCE 1977 IN GERMANY

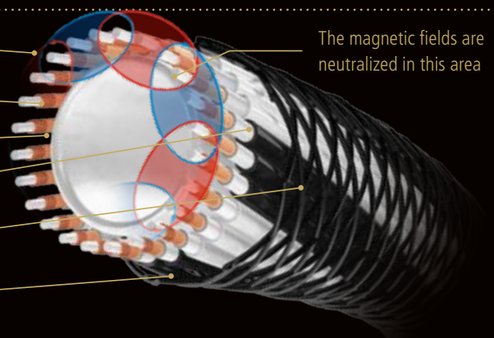
LS-2404

With the LS-2404 we have moved on to the fourth generation of Referenz speaker cables. The improvement in sound from the high-speed hollow conductors introduced in the third generation was so overwhelming that we have further refined and optimised the technology. In addition to the waveguide design, where the individual copper wires are arranged around a polyethylene core, in the fourth generation the copper wires are lacquered as insulation from each other. This prevents chaotic and undefined contact between the copper wires, which might otherwise lead to uncontrolled eddy current. As well as this, the new cables are characterised by extremely low inductivity. A total of 24 Super Speed waveguides are wound through the LS-2404. They form a multi-core structure where the magnetic fields of the forward and return conductors caused by the signal current cancel each other out, thus significantly reducing unwanted inductivity.

HANDMADE BY IN-AKUSTIK SINCE 1977 IN GERMANY

KEY FEATURES

- 24-fold Multicore
- Super Speed waveguide technology
- Concentric Copper
- DUO-PE II insulation
- PE Network Jacket
- High Power Management



Lacquer-insulated wires (Super Speed waveguide technology)

ADDITIONAL PRODUCT DATA

- Length 2 x 3.0 m; individual assemblies on request
- As a Single-wire or Single-BiWire available
- 24 conductors; 24 x 0.74 mm²
- Insulation 1: foamed PE
- Insulation 1: massive PE
- Diameter: 24 mm

CONNECTIONS

- Referenz Easy Plug
- Referenz Banana BFA-103
- Referenz Spade Lug KS-103

CAPTIVATING QUALITY. FROM BEGINNING TO END.

Our technical know-how, which is bundled in Referenz Selection, is also drawn upon for the development of our plugs. Arriving signals are not altered – the sound quality at the end is as pure as at the beginning. For unsurpassed listening enjoyment. This is achieved with the KS-103 cable shoe, for example. The rhodium surface treatment is extremely durable. The contact surfaces and the screw connection are manufactured from a single piece, allowing contact resistance to be avoided.

Spade deforms

The spade changes shape. The contact surface, which is slitted on the side, changes to a concave shape when the screw connections are tightened, thus preventing the spade lug from sliding out.

LS-2404 SPADE LUG

LS-2404 BFA

LS-2404 EASY PLUG

REFERENZ LS-2404

ITEM NO.	VERSION	COLOUR	LENGTH
007702431	Easy Plug; Single-Wire	Black	2 x 3.0 m
0077024311	Easy Plug; Single-BiWire	Black	2 x 3.0 m
007702433	Spade Lug; Single-Wire	Black	2 x 3.0 m
0077024331	Spade Lug; Single-BiWire	Black	2 x 3.0 m

We would also be glad to manufacture custom lengths for you. Ask our support department: +49 (0) 7634 5610-57

LS-1603

For Referenz Selection cables, the focus is on neutrality in addition to technical finesse. Sounds are reproduced unaltered. As with the LS-1603. It controls all facets of the sound spectrum: from the subtle symbol clash of a jazz percussionist to the sententious voice of a female soul singer to the roaring final chord of a symphony orchestra. The basis for this is the specially developed high-speed waveguide technology. Oxygen-free copper (OFC) wires are wrapped around a polyethylene core and provided with the proven DUO-PE II insulation. The LS-1603 has 16 of these high-speed waveguides, which are finely tuned to each other and stranded in groups around a polyethylene support (16-fold multicore). The PE network jacket proved itself already in the second Referenz generation. A major reason why the third generation of Referenz speaker cables is benefiting from this technology.

- "The flagship in price, weight, value – and clearly also in sound" (Audiophile 3/2011)

EDITION 09/2011

KEY FEATURES

- 16-fold Multicore
- High Speed waveguide technology
- Concentric Copper
- DUO-PE II insulation
- PE Network Jacket
- High Power Management

ADDITIONAL PRODUCT DATA

- Length 2 x 3.0 m; individual assemblies on request
- As a Single-wire or Single-BiWire available
- 16 conductors; 16 x 0.74 mm²
- Insulation 1: foamed PE
- Insulation 1: massive PE
- Diameter: 16 mm

REFERENZ LS-1603

ITEM NO.	VERSION	COLOUR	LENGTH
007701631	Easy Plug; Single-Wire	Black	2 x 3.0 m
0077016311	Easy Plug; Single-BiWire	Black	2 x 3.0 m
007701632	BFA Banana; Single-Wire	Black	2 x 3.0 m
0077016321	BFA Banana; Single-BiWire	Black	2 x 3.0 m
007701633	Spade Lug; Single-Wire	Black	2 x 3.0 m
0077016331	Spade Lug; Single-BiWire	Black	2 x 3.0 m
007701634	Screw Type; Single-Wire	Black	2 x 3.0 m
0077016341	Screw Type; Single-BiWire	Black	2 x 3.0 m
00719306	Spade Lug; BiWire, set of 2	Black	20 cm
00719307	BFA Banana; BiWire; set of 2	Black	20 cm

We would also be glad to manufacture custom lengths for you. Ask our support department: +49 (0) 7634 5610-57

LS-1603 SCREW TYPE

LS-1603 BFA

LS-1603 EASY PLUG

LS-1203

Referenz LS-1203 also features perfect sound reproduction. Unaltered and pure. Equipped with the same basic technologies as the LS-1603, it also has the high-speed waveguide technology. The actually usable cross section of these circular waveguides remains constant for all sound frequencies. The result: an extremely homogeneous, balanced speaker cable with a wide-ranging sound spectrum.

- "The testers anticipated improvements in the family – and were still surprised by the LS-1203. Here the sound demonstrated that the total of all the family's good genes was more than the sum of its parts." (Audiophile 3/2011)

KEY FEATURES

- 12-fold Multicore
- High Speed waveguide technology
- Concentric Copper
- DUO-PE II insulation
- PE Network Jacket
- High Power Management

ADDITIONAL PRODUCT DATA

- Length 2 x 3.0 m; individual assemblies on request
- As a Single-wire or Single-BiWire available
- 12 conductors; 12 x 0.74 mm²
- Insulation 1: foamed PE
- Insulation 1: massive PE
- Diameter: 13 mm

REFERENZ LS-1203

ITEM NO.	VERSION	COLOUR	LENGTH
007701231	Easy Plug; Single-Wire	Black	2 x 3.0 m
0077012311	Easy Plug; Single-BiWire	Black	2 x 3.0 m
007701232	BFA Banana; Single-Wire	Black	2 x 3.0 m
0077012321	BFA Banana; Single-BiWire	Black	2 x 3.0 m
007701233	Spade Lug; Single-Wire	Black	2 x 3.0 m
0077012331	Spade Lug; Single-BiWire	Black	2 x 3.0 m
007701234	Screw Type; Single-Wire	Black	2 x 3.0 m
0077012341	Screw Type; Single-BiWire	Black	2 x 3.0 m
00719304	Spade Lug; BiWire, set of 2	Black	20 cm
00719305	BFA Banana; BiWire; set of 2	Black	20 cm

We would also be glad to manufacture custom lengths for you. Ask our support department: +49 (0) 7634 5610-57

LS-1203 SPADE LUG

LS-1203 SCREW TYPE

LS-1203 EASY PLUG

AUDIO CABLE

Every sound begins quite small. Such as a CD or DVD player to send only weak signals. The first steps are therefore particularly vulnerable. Electromagnetic interactions let the delicate tones come easily stumble. Not so with our Audio cables. The in-akustik Referenz cable while helping the small pulses, unadulterated to come up to the amplifier. With intricate designs, select materials and thicker shielding. So every note comes out great.

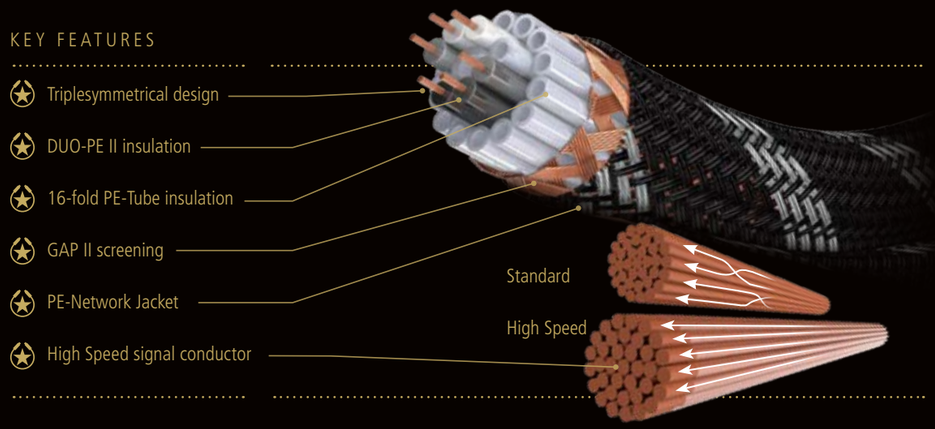
HANDMADE BY IN-AKUSTIK SINCE 1977 IN GERMANY

NF-1603

Due to the large effective overall surface of the six high-speed signal conductors, the Referenz NF-1603 becomes a powerful high-end link. At the same time, the DUO-PE II insulation and the air-filled PE tubes reduce unwanted capacitance and enable the signal source to work comfortably. The GAP II screening of the NF-1603 is a combination of lacquer-insulated wires and an aluminium-coated film with an air gap. The screening prevents the formation of interfering eddy currents. Another highlight of the third-generation is the GAP II cinch plugs, which ensure three-way symmetry in this connection. As an alternative, this cable is also available as an XLR version. The PE network jacket also prevents micro-vibrations.

HANDMADE BY IN-AKUSTIK SINCE 1977 IN GERMANY

KEY FEATURES



ADDITIONAL PRODUCT DATA

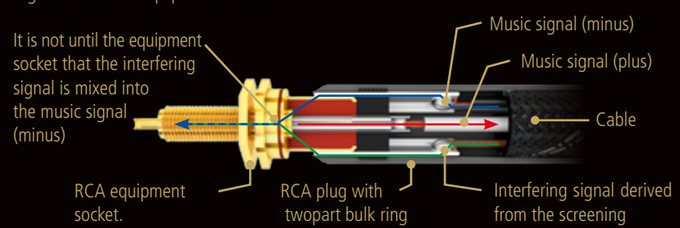
- Diameter: about 10.5 mm

CONNECTIONS

- Referenz GAP II cinch plug
- XLR

REFERENZ GAP II CINCH PLUG

This newly developed high-end plug enables a symmetrical connection to be made to the equipment sockets. Thanks to its two-piece earth contact, this cinch plug has three contacts, exactly like an XLR plug. The screening and negative conductor are not brought back together until the equipment sockets.



NF-1603 XLR

NF-1603 RCA

REFERENZ NF-1603

ITEM NO.	VERSION	LENGTH
007186007	RCA	0.75 m
0071860073	XLR	0.75 m
007186015	RCA	1.5 m
0071860153	XLR	1.5 m

We would also be glad to manufacture custom lengths for you. Ask our support department: +49 (0) 7634 5610-57

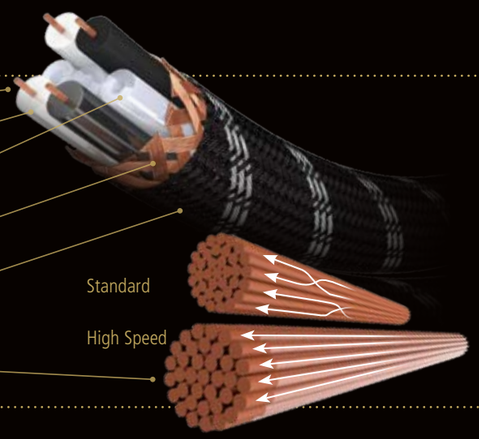
NF-1203

Four high-speed signal conductors provide the signal transport for the NF-1203. The DUO-PE II insulation and the air-filled PE tubes reduce undesired capacitance. The GAP II screening of the NF-1203 consists of lacquerinsulated wires. It prevents the formation of interfering eddy currents. The PE network jacket also prevents micro-vibrations. Another highlight is the solid Referenz XLR plugs, which round out the two-way symmetry of this connection. As with the NF-1603, the NF-1203 is available either with GAP II cinch plugs or as an XLR version.

HANDMADE BY IN-AKUSTIK SINCE 1977 IN GERMANY

KEY FEATURES

- Doublesymmetrical design:
- DUO-PE II insulation
- 3-fold PE-Tube insulation
- GAP II screening
- PE-Network Jacket
- High Speed signal conductor



ADDITIONAL PRODUCT DATA

- Diameter: about 8.8 mm

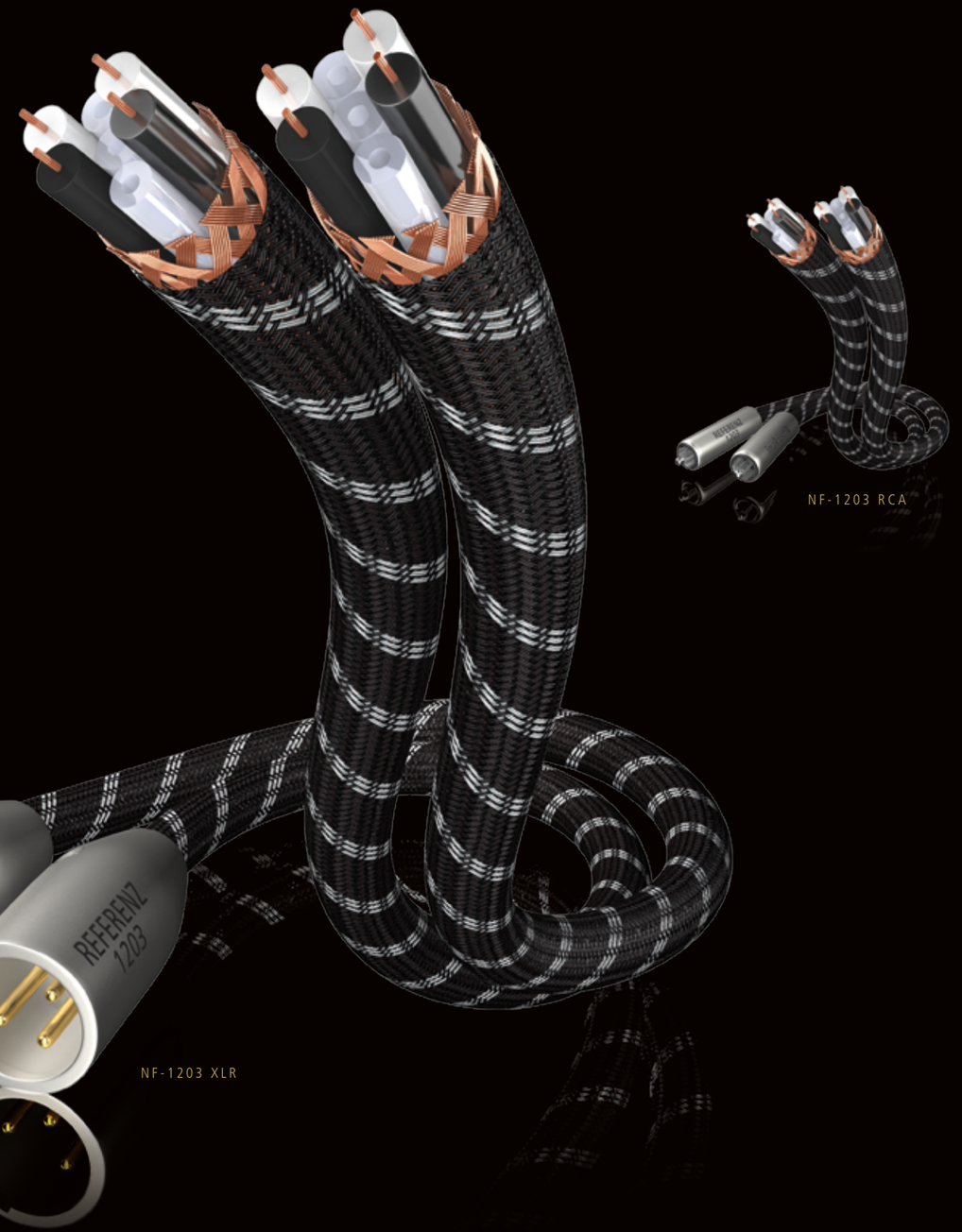
CONNECTIONS

- Referenz GAP II cinch plug
- XLR

TIP: EXPERIENCE EXQUISITE SOUNDS EVEN MORE INTENSIVE

To provide an impressive demonstration of the first-class precision of our Referenz Selection, we refined the Referenz Sound Edition Vol. 1 and Vol. 2 using what is known as RESO mastering. The new high-definition procedure provides significant acoustic improvements in terms of transparency, dynamics, bass reproduction and bass response. The music is instilled with more atmosphere and emotion. And to transport this musical experience accordingly, it is not a common CD that is the sound storage material, but instead an HQCD, and instead of common LP vinyl, 180 g Audiophile Virgin Vinyl is used. In short: the highest quality to meet the highest standards.

More on that account, we have compiled on our web site in-akustik.de for them. Available is the Referenz-selection edition in stores or at amazon.de and jpc.de



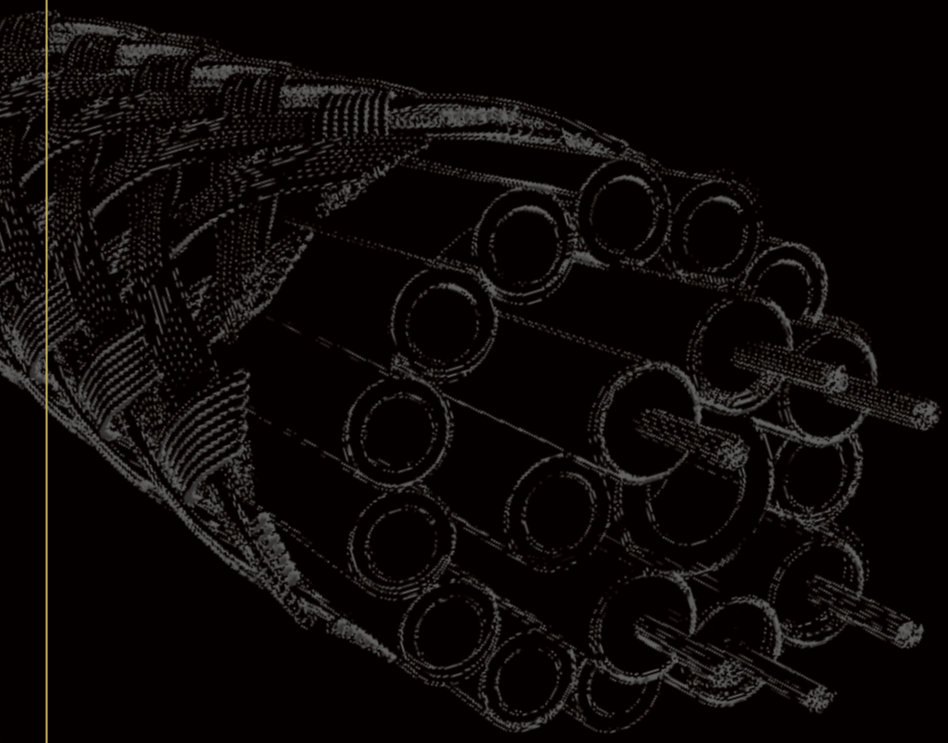
NF-1203 RCA

NF-1203 XLR

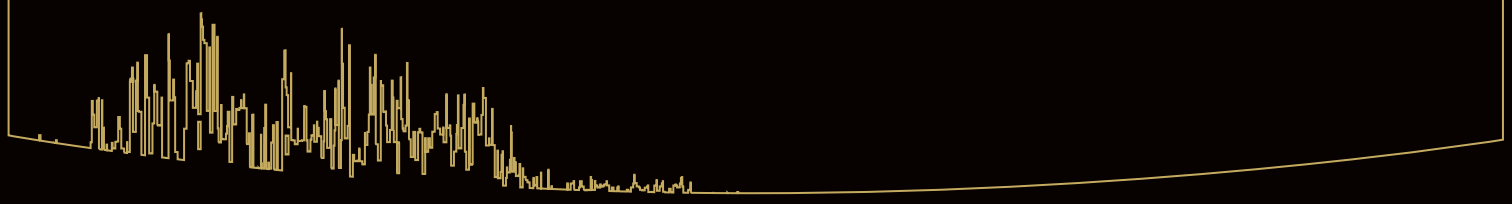
REFERENZ NF-1203

ITEM NO.	VERSION	LENGTH
007185007	RCA	0.75 m
0071850073	XLR	0.75 m
007185015	RCA	1.5 m
0071850153	XLR	1.5 m

We would also be glad to manufacture custom lengths for you. Ask our support department: +49 (0) 7634 5610-57



www.in-akustik.de/referenzselection



00789920121

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

Find us on:
facebook
www.facebook.com/inakustik

We are member of:
HIGH END SOCIETY