

# Inner Excellence. True Music.

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Fidelity Components

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Edited 24.10.2024	Holger Kuban



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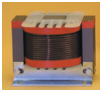







**FERRITE / ARONIT Drum Core**



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### **Capacitors**

Capacitors (Latin term: condensus = compressor) are capacitive, i.e. they store electric charge. The physical unit of measure for capacity [C] (Latin term: capacitas = capacity) is Farad [F] (in honour of the English physicist and chemist Michael Faraday). Capacitors consist of two electrodes (surfaces conducting electricity) which are arranged close to each other, and a dielectric (insulating layer) in between.

Capacitors (abbr. cap) are frequency-dependent resistors. This is an important property for audio applications because capacitors can filter out low frequencies (i.e. low tones) from music signals. As the filter effect decreases with increasing frequency, the reverse conclusion is: The lower the capacity, the higher the filter effect (i.e. the higher the separating frequency).

### **Coils**

Coils (also referred to as inductors) are inductive, i.e. they influence the current flowing through them by their own magnetic field. The physical unit of measure for inductivity [L] (Latin term: inductio = induce) is Henry [H] (in honour of the US-American physicist Joseph Henry). Coils consist of a wire wound around a core (ideally air).

Similar to capacitors, coils are frequency-dependent resistors. Their filter effect increases with increasing frequency allowing for the elimination of high frequencies (= high tones), i.e. the higher the inductivity, the lower the separating frequency.

### **Resistors**

Resistors (R) (Latin term: resistere = to resist) reduce the current flowing through them by converting part of the energy into heat. The physical unit of measure indicating electric resistance is  $[\Omega]$  (according to the German physicist Georg Simon Ohm).

The effect which is important for audio applications is that resistors attenuate the entire audio signal irrespective of the frequency. The higher the resistance value, the more energy is converted.

### **Stereophony**

Lowest tolerances of components used in the left and right signal path are fundamental for realistic and stereophonic (Greek stereos = spatial) music reproduction. Only if the characteristics of both channels are close to identical, each musician can be exactly allocated and an according spatial reproduction is possible.

### **Richness of detail**

The conversion of mechanical into electrical vibrations is referred to as microphonic effect. This effect results in vibrations added to the electric music signal thus overlaying and alienating it. On the one hand, the transparency and stereophony of reproduction decreases, and on the other hand, distortions and tonal irritations increase significantly. Therefore, mechanically solid and vibration-damping components are a vital prerequisite for audiophile music reproduction.

### **Raw materials & processing**

Lowest tolerances and highest mechanical stability can only be guaranteed by using raw materials of highest quality and pureness, maximum accuracy regarding to controls as well as utmost precision and continuity in production. Furthermore, these characteristics which apply for all products made by MUNDORF ensure highest audio pleasure.

**Dielectric and constructive structure** - in addition to the electrode used (see the following section: Conductor Materials) - are crucial to the sound characteristics of a capacitor. In order to offer you the optimal capacitor for each application, we use alternative insulation materials in different - some self-developed - patented winding processes.

### 1.0 Electrolytic Capacitors

Aluminium oxide (Al<sub>2</sub>O<sub>3</sub>) forms the dielectric in all our electrolytic capacitors. It is also called clay or electrocorundum and is sometimes found as a natural mineral whose crystals are known to us as ruby or sapphire. Al<sub>2</sub>O<sub>3</sub> is an extremely hard and resistant insulator with high heat conductivity. In particular, aluminium oxide is characterised by very high dielectric strength and ultra-thin layer thickness and thus allows the manufacture of extremely compact capacitors with an excellent price/performance ratio.

**1.1 Polarised Electrolytic Capacitors** possess the most compact of structural forms and are therefore used at very high capacities, as required for example, in the voltage supply of amplifiers. However, since they are not AC voltage-proof, polarised electrolytic capacitors cannot transmit audio signals.

**1.1.1 Mlytic® Power Capacitors** have a whole range of special features, all of which serve one purpose: the most authentic music playback possible. A basic requirement for achieving this aim is to minimise the undesired losses (ESR) and inductivities (ESL) occurring in the capacitor that impact negatively on the original signal. The use of high-purity materials for the anode foil and the highest production precision ensure a homogeneous etching structure of the crystalline Al<sub>2</sub>O<sub>3</sub> layer, the actual basis for detailed music playback with balanced sound character. The use of a special, titanium-coated cathode foil allows capacitors with unusually low ESR values characterised by 'holographic' spatial music playback with broad and deep on-stage representation and absolutely stable focus.

Between these two foils we combine highly flowable, chloride-free and largely water-free longlife electrolytes with extremely soft special paper (mostly abaca-esparto paper) that is characterized by high mechanical stability, outstanding internal damping and electrolyte absorption capacity. Moreover, we do not use magnetisable, inflexible, poorly conducting steel for the connectors (global snap-in standard); instead we exclusively use highly conductive tin-plated copper wires for the highest currents, alongside the familiar, multiple-contact, solid aluminium screw terminals.

**1.1.2 Mlytic+® 4-pole Filter Capacitors** also combine this outstanding technology. However, contacting takes place at the start and end of the respective foil. Although these low-current types have a comparatively reduced current capacity, they possess outstanding filter characteristics with again reduced ESR and ESL. The engineering office IB Steinbach (ib.steinbach@netcologne.de) is happy to develop corresponding circuits for and with audio manufacturers.

**1.2 Bipolar Electrolytic Capacitors** (also called non-polarized or NP) possess a second anode foil that makes them AC voltage-proof and thus music signal-suitable. ECap raw possess foils whose surfaces have been roughened and thus enlarged by means of a special etching process. In contrast, ECap plain are made from unetched and thus lower-loss foils.

### 2.0 Film Capacitors

Polypropylene (PP) is used as the dielectric in all our film capacitors. As a capacitor film PP is globally the No.1. It is a partially crystalline hydrocarbon that reliably fulfils the highest standards of safety in use, pulse handling capability, AC voltage proofness and dielectric strength. The extreme temperature and frequency stability of PP's ultra-low ESR and capacity value is absolutely unique. This is added to by fantastic mechanical features such as the very equal film thickness for the highest precision in production or the high elasticity and thermal plasticity for ultra stable and vibration-cushioned capacitor winding.

Of course, in the past decades we have regularly conducted comparative listening tests with various alternatives (paper, PTFE, polyester, PEN and polycarbonate). Although these materials were – technically and in terms of sound - equal or even superior in some individual aspects, the overall experience was always nicest and the enjoyment of the music the greatest with PP film capacitors\*.

**2.1 Film/foil capacitors (KP)** are wound as conductors from solid metal foils. The enormous conductivity and the high inertia of the metal foil ensures a minimal loss angle and prevents resonances. This leads to very lively playback. The disadvantages of the high use of material are the costs, an increased failure rate due to the physical load of the dielectric and the lack of self-healing properties (i.e. breakdowns in the insulator lead to full signal passage). We therefore advise against use in electronics and in industrial production!

**2.2 Metallised capacitors (MKP)** are wound using films with a vacuum-metallised metal layer. This modern structure is more compact, more reliable and more value-for-money than film/foil capacitors and also possesses outstanding self-healing properties (i.e. the metal coat evaporates around damaged spots in the dielectric, thus insulating them).

**2.2.1 MCap® EVO** are metallised PP film capacitors based on the innovative EVOLUTION winding Technology. Its main feature is its unusually narrow and high capacitor winding. This geometry produces two acoustically clearly perceptible advantages compared to traditional, easier-to-manufacture MKPs. One advantage is that the shortest, low-loss signal routes as well as particularly large contact surfaces are ensured (and thus extremely low residual resistance ESR); the other advantage is that an extremely large number of windings are parallel-connected, minimising inductivity (ESL). In addition, they are moulded by hand according to the highly precise winding process in specially developed, compact housings. This prevents the winding from vibrating and microphony effects on a sustained basis. In the sound pattern, all these special features are perceived through sound-quality liveliness, nuanced, transparent dynamics as well as outstanding authenticity and stereophony.

**2.2.2 MCap® SUPREME** are metallised PP film capacitors based on the audiophile SUPREME winding technology. The special layout of the capacitor films makes it possible to interlace two interlying, counterwound capacitor windings in such a way that the inductivities of the individual windings almost cancel each other out. The two windings are connected in series; consequently, two windings, each of 2 $\mu$ F - i.e. in total material for a 4 $\mu$ F conventional structure - are processed to manufacture a 1 $\mu$ F SUPREME capacitor. This process - challenging in production technology terms - which has been offered since 1992 demands the greatest care in production, which is, to a large extent, manual. To rule out colouration of the music signal due to microphony, they are mechanically stabilised by hand in an additional process and moulded in special housings. This high degree of effort is absolutely justified by the fascinatingly realistic music experience, with plasticity of the on-stage representation that is fully released by the loudspeaker and is virtually holographic, with crystal-clear contours and outstanding offset in depth.

**2.2.3 MCap® SUPREME EVO** are the perfect liaison of the two aforementioned Mundorf MKP special structures and were specially developed for and tailored towards the heightened requirements and increased opportunities of the latest generation of loudspeaker chassis. In addition to increased effectiveness, richness of detail and transmission range, these chassis are characterised above all by a previously unknown synthesis of explosive dynamics and distortion-free silkiness. Our new top class fulfils the high standards by combining the stimulatingly authentic verve with the outstandingly three-dimensional spaciousness of EVO and SUPREME in a virtuoso manner to create brilliant, richly faceted, emotionally captivating musicality and pure listening pleasure.

**2.2.4 Oil impregnation** of metallised PP film capacitors in vacuo is a particular speciality of our company and was used for the first time with MCap® SUPREME Silver.Oil in 2002. In this process, even the smallest air bubbles are squeezed out of the capacitor winding and even the most subtle of hollow spaces are filled and softened with oil. Both electrical and mechanical losses in the capacitor due to vibration are thus reduced to a minimum. Mundorf oil capacitors are characterised by their extremely sophisticated and highly dynamic detail and are superior to their respective dry counterpart in presence, speed and precision.

**The conductor material** of the electrode - in addition to the insulator and the structural design (see preceding section: Dielectrics & Structures) - is crucial to the sound characteristics of a capacitor. In order to offer you the optimal audio capacitor for different applications and your individual standards with regard to the range and facet richness of tonality, acoustic colours and overtones, we use five conductor materials of the highest cleanliness.

**3.1 Zinc** as an electrode material is the specialist for the highest dielectric strength and is therefore used by us in capacitors for the voltage supply of audio electronics. Compared to electrolytic capacitors with a similar purpose and a maximum of 500 to 550VDC, with zinc-damped PP film we can produce AC voltage-proof capacitors in the kV range that have significantly fewer losses, an unlimited lifespan and outstanding self-healing properties. However, due to the acoustic properties we advise against use in audio capacitors!

**3.2 Tin** is characterised by its particular softness and pliability and is therefore outstandingly suitable for use as a metal foil in KP capacitors. The mechanical load of the dielectric and thus the failure rate are minimised as far as possible through the use of tin foil and internal damping is maximised. The incredible dynamics and the richness of detail that result from this structure compensate for the characteristic acoustic disadvantages of this conductor material.

**3.3 Copper\*** harmonises better with paper than with PP film as a dielectric, in our experience, and thus forms the famous exception to the rule. The outstanding conductivity of copper leads to a dynamic and richly detailed sound pattern with outstanding tonality and naturalness in some frequency ranges; this sound pattern, however, lacks brilliance, balance and precision overall.

**3.4 Aluminium** is the standard and benchmark in the construction of capacitors, due to its having the highest conductivity of all non-precious metals with respect to weight and its outstanding price/performance ratio. Aluminium MKPs are characterised by richly detailed, lively and harmonious music playback. It is simply indispensable for the manufacture of aluminium electrolytic capacitors on whose anode electrode the dielectric Al<sub>2</sub>O<sub>3</sub> is formed (also called anodic oxidation).

**3.5 Silver** of the highest cleanliness (typically 99.99%) is highly valued and preferred by many audio enthusiasts as a conductor material due to its outstanding ability to reproduce voices and instruments even more dynamically, with greater richness of detail and with more acoustic colours.

**3.6 SilverGold** 99% silver + 1% gold = 100% music. The use of this conductor material can be condensed into this simple formula. The ultrapure Gold (typically 99.99%) changes the crystalline structure of silver and maximises its very good electrical conductivity. Instruments and voices unfurl their whole range of lively acoustic colours and their character is illuminated and becomes experiential in all nuances. ‚Crystal clear‘ on the one hand, the playback is lively and warm at the same time, embedded into a delicately differentiated picture and steeped in musical beauty. Delicate elegance, tonal purity and its lively dynamics make this exquisite material stand out from all others!





The **MCap® EVO** was designed in 2012 as the successor of the RXF to facilitate utmost musical enjoyment even in small spaces on a limited budget. The PP capacitor film used here is first metallised with the thickest possible aluminium layer, then wound precisely into innovative EVO-LUTION winding geometry and then potted by hand into special casings.



These features are reflected in the music playback with colorful liveliness, remarkable micro dynamic alongside enhanced transparency, authenticity and stereophony. In addition, the **MCap® EVO** is characterised by low tolerances, compact dimensions, low costs and the highest standards of safety in use (self-healing).

Its asymmetrical leads make it possible to assemble it in a classic, horizontal style or vertical.

You will find extensive information about the technologies used on pages 6 to 8 in sections **2.0 • 2.2 • 2.2.1 • 3.4**.

Thanks to its **2.2.4 Oil impregnation**, the **MCap® EVO Oil** offers further developed dynamics. Its additional wrapping as well as its imprint in red-metallic impart an appropriate quality look and haptic.

**ME**

**MCap EVO**

Capacity [µF]	VDC	Body Ø* L [mm]	Wire Ø* E/A [mm]
0,010 ±5%	650	12 * 12	0,6 * 35/35
0,10 ±5%	650	12 * 12	0,6 * 35/35
0,15 ±5%	450	16 * 14	0,8 * 35/50
0,22 ±4%	450	16 * 14	0,8 * 35/50
0,27 ±4%	450	18 * 14	0,8 * 35/50
0,33 ±3%	450	18 * 14	0,8 * 35/50
0,39 ±3%	450	20 * 14	0,8 * 35/50
0,47 ±3%	450	20 * 14	0,8 * 35/50
0,56 ±3%	450	22 * 16	0,8 * 35/50
0,68 ±3%	450	22 * 16	0,8 * 35/50
0,82 ±3%	450	25 * 16	0,8 * 35/50
1,00 ±3%	450	25 * 16	0,8 * 35/50
1,50 ±3%	450	30 * 16	0,8 * 35/50
1,80 ±3%	450	25 * 21	0,8 * 35/50
2,20 ±3%	450	25 * 21	0,8 * 35/50
2,70 ±3%	450	30 * 21	0,8 * 35/50
3,30 ±3%	450	30 * 21	0,8 * 35/50
3,90 ±3%	450	25 * 27	0,8 * 35/50
4,70 ±3%	450	30 * 27	1,0 * 35/60
5,60 ±3%	450	30 * 27	1,0 * 35/60
6,80 ±3%	450	35 * 27	1,0 * 35/60
8,20 ±3%	450	35 * 27	1,0 * 35/60
10 ±3%	450	40 * 27	1,0 * 35/60
12 ±3%	450	35 * 35	1,0 * 35/65
15 ±3%	450	40 * 35	1,0 * 35/75
18 ±3%	450	50 * 35	1,0 * 35/75
22 ±3%	450	50 * 35	1,0 * 35/75
33 ±3%	450	65 * 35	1,2 * 35/90
47 ±3%	350	50 * 50	1,2 * 35/90
56 ±3%	350	65 * 50	1,4 * 50/105
68 ±3%	350	65 * 50	1,4 * 50/105
82 ±3%	350	75 * 50	1,4 * 50/105
100 ±3%	350	75 * 50	1,4 * 50/105
150 ±3%	250	50 * 90	1,4 * 50/140
220 ±3%	250	65 * 90	1,4 * 50/140
270 ±3%	250	65 * 90	1,4 * 50/140
330 ±3%	250	75 * 90	1,4 * 50/140

**General Information:**

Dielectric: Polypropylene (PP)

Metallisation: Aluminium

tan δ: = 0.0002@1kHz · 0.0001@10kHz

Max. ambient temperature: 85°C/185°F

Highly recommended for new designs.

Further voltages, capacities and custom labeling are available on request.

**MEO**

**MCap EVO Oil**

Capacity [µF]	VDC	Body Ø* L [mm]	Wire Ø* E/A [mm]
0,010 ±5%	650	12 * 12	0,6 * 35/35
0,10 ±5%	650	12 * 12	0,6 * 35/35
0,15 ±5%	450	16 * 14	0,8 * 35/50
0,22 ±4%	450	16 * 14	0,8 * 35/50
0,33 ±3%	450	18 * 14	0,8 * 35/50
0,47 ±3%	450	20 * 14	0,8 * 35/50
0,68 ±3%	450	22 * 16	0,8 * 35/50
1,00 ±3%	450	25 * 16	0,8 * 35/50
1,50 ±3%	450	30 * 16	0,8 * 35/50
1,80 ±3%	450	25 * 21	0,8 * 35/50
2,20 ±3%	450	25 * 21	0,8 * 35/50
2,70 ±3%	450	30 * 21	0,8 * 35/50
3,30 ±3%	450	30 * 21	0,8 * 35/50
3,90 ±3%	450	25 * 27	0,8 * 35/50
4,70 ±3%	450	30 * 27	1,0 * 35/60
5,60 ±3%	450	30 * 27	1,0 * 35/60
6,80 ±3%	450	35 * 27	1,0 * 35/60
8,20 ±3%	450	35 * 27	1,0 * 35/60
10 ±3%	450	40 * 27	1,0 * 35/60
15 ±3%	450	40 * 35	1,0 * 35/75
18 ±3%	450	50 * 35	1,0 * 35/75
22 ±3%	450	50 * 35	1,0 * 35/75
27 ±3%	450	50 * 35	1,2 * 35/90
33 ±3%	450	65 * 35	1,2 * 35/90
39 ±3%	350	50 * 50	1,2 * 35/90
47 ±3%	350	50 * 50	1,2 * 35/90
56 ±3%	350	65 * 50	1,4 * 50/105
68 ±3%	350	65 * 50	1,4 * 50/105
100 ±3%	350	75 * 50	1,4 * 50/105
150 ±3%	250	50 * 90	1,4 * 50/140
220 ±3%	250	65 * 90	1,4 * 50/140

## Audio Capacitors MCap SUPREME EVO

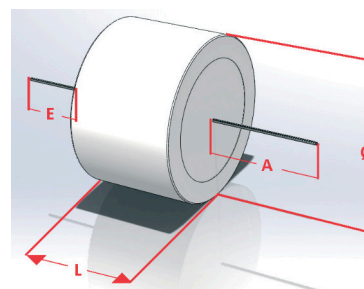


The **MCap® SUPREME EVO** is a complete new development for 2015. It combines the excellent impulse playback of the EVOLUTION winding technology with the unsurpassed holographic three-dimensionality of the SUPREME winding technology in a capacitor which is comparably cost-effective due to its aluminium metallisation.

After running through our latest and greatest winding process, the capacitors are potted by hand into aluminium tubes to minimise microphony. The asymmetrical leads make it possible to assemble it in a classic, horizontal style or vertical.

You will find extensive information about the technologies used on pages 6 to 8 in sections [2.0](#) • [2.2](#) • [2.2.3](#) • [3.4](#) .

Thanks to its [2.2.4 Oil impregnation](#), the **MCap® SUPREME EVO Oil** offers further increased presence and dynamics.



### General Information:

Dielectric: Polypropylene (PP)  
Metallisation: Aluminium  
 $\tan \delta = 0.0002@1\text{kHz} \cdot 0.0001@10\text{kHz}$   
Max. ambient temperature: 85°C/185°F  
Highly recommended for new designs.  
Further voltages, capacities and custom labeling are available on request.

### SE

#### MCap SUPREME EVO

Capacity [µF]	VDC	Body Ø * L [mm]	Wire Ø * E/A [mm]
0,10±2%	1000	17 * 23	0,6 * 35/45
0,15±2%	1000	21 * 23	0,8 * 35/48
0,22±2%	1000	26 * 23	0,8 * 35/50
0,33±2%	1000	31 * 23	0,8 * 35/50
0,47±2%	1000	31 * 23	0,8 * 35/50
0,68±2%	1000	36 * 23	0,8 * 35/55

### SEO

#### MCap SUPREME EVO Oil

Capacity [µF]	VDC	Body Ø * L [mm]	Wire Ø * E/A [mm]
1,0±2%	1000	36 * 28	1,0 * 35/60
1,5±2%	1000	41 * 28	1,0 * 35/60
2,2±2%	800	36 * 33	1,0 * 35/65
2,7±2%	800	41 * 33	1,0 * 35/70
3,3±2%	800	46 * 33	1,4 * 35/70
3,9±2%	800	46 * 33	1,4 * 35/70
4,7±2%	800	51 * 33	1,4 * 35/75
5,6±2%	800	56 * 33	1,4 * 40/75
6,8±2%	800	51 * 41	1,4 * 35/80
8,2±2%	800	56 * 41	1,4 * 40/85
10±2%	800	66 * 41	1,4 * 45/90
15±2%	800	76 * 41	1,4 * 50/95
18±2%	700	66 * 55	1,4 * 45/100
22±2%	700	66 * 55	1,4 * 45/100
27±2%	700	76 * 55	1,4 * 50/105
33±2%	600	66 * 67	1,4 * 45/115
47±2%	600	76 * 67	1,4 * 50/120

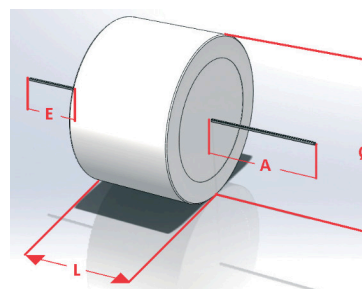
## Audio Capacitors MCap EVO SilverGold.Oil

Inner Excellence

The **MCap® EVO SilverGold.Oil** was developed in 2012 to specifically create the powerful and finely nuanced acoustic colours that are typical to the SilverGold in as compact and cost-effective a format as possible. The large capacities created as a result also permit efficient use in high-quality midrange applications.

The self-healing PP capacitor film is impregnated with oil after the EVOLUTION winding process and potted by hand into special casings. Any impact on the audio signal caused by microphony is practically ruled out as a result. The directly gold-plated, asymmetrical pure copper terminals make it possible to assemble it in a classic horizontal style or vertical.

You will find extensive information about the technologies used on pages 6 to 8 in sections **2.0 • 2.2 • 2.2.1 • 2.2.4 • 3.6.**



### General Information:

Dielectric: Polypropylene (PP)  
Metallisation: 99% Silver + 1% Gold  
 $\tan \delta: = 0.0002@1\text{kHz} \cdot 0.0001@10\text{kHz}$   
Max. ambient temperature: 85°C/185°F  
Highly recommended for new designs.  
Further voltages, capacities and custom labeling are available on request.

### MCap EVO SilverGold.Oil

Capacity [µF]	VDC	Body Ø* L [mm]	Wire Ø* E/A [mm]
0,010 ±5%	650	12 * 12	0,6 * 35/35
0,10 ±5%	650	12 * 12	0,6 * 35/35
0,15 ±5%	450	16 * 14	0,8 * 35/50
0,22 ±4%	450	16 * 14	0,8 * 35/50
0,33 ±3%	450	18 * 14	0,8 * 35/50
0,47 ±3%	450	20 * 14	0,8 * 35/50
0,68 ±3%	450	22 * 16	0,8 * 35/50
1,00 ±3%	450	25 * 16	0,8 * 35/50
1,50 ±3%	450	30 * 16	0,8 * 35/50
2,20 ±3%	450	25 * 21	0,8 * 35/50
2,70 ±3%	450	30 * 21	0,8 * 35/50
3,30 ±3%	450	30 * 21	0,8 * 35/50
3,90 ±3%	450	25 * 27	0,8 * 35/50
4,70 ±3%	450	30 * 27	1,0 * 35/60
5,60 ±3%	450	30 * 27	1,0 * 35/60
6,80 ±3%	450	35 * 27	1,0 * 35/60
8,20 ±3%	450	35 * 27	1,0 * 35/60
10 ±3%	450	40 * 27	1,0 * 35/60
15 ±3%	450	40 * 35	1,0 * 35/75
22 ±3%	450	50 * 35	1,0 * 35/75
33 ±3%	450	65 * 35	1,2 * 35/90
47 ±3%	350	50 * 49	1,2 * 35/90
68 ±3%	350	65 * 49	1,4 * 50/105
100 ±3%	350	75 * 49	1,4 * 50/105

# Audio Capacitors

## MCap SUPREME EVO SilverGold



Since 2015, the **MCap® SUPREME EVO SilverGold** has been our undisputed top capacitor model. It combines all our technical highlights, such as SilverGold metallisation, SUPREME and EVOLUTION winding technology and over 30 years of experience in the manufacturing of audiophile masterpieces into a unique capacitor type of equally unique musicality: finely nuanced and lively shining acoustic colours, which combine into a breathtaking, beautiful, live-like music experience with the utmost precision, presence and three-dimensional plasticity.

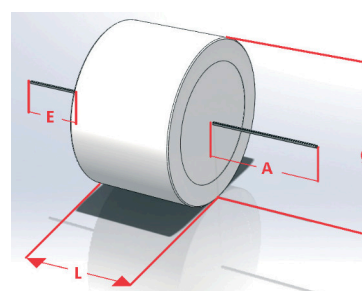
Metallised polypropylene as the dielectric guarantees low tolerances and the highest standards of safety in use thanks to its self-healing properties. After running through our new top-quality winding process, the capacitor winding is potted by hand into aluminium tubes to minimise microphony. The directly gold-plated, asymmetrical pure copper wires make it possible to assemble it in a classic, horizontal style or vertical.

You will find extensive information about the technologies used on pages 6 to 8 in sections [2.0](#) • [2.2](#) • [2.2.3](#) • [3.6](#).

Thanks to its [2.2.4 Oil impregnation](#), the **MCap® SUPREME EVO SilverGold.Oil** offers even superior presence and dynamics.

### General Information:

Dielectric: Polypropylene (PP)  
 Metallisation: 99% Silver + 1% Gold  
 $\tan \delta = 0.0002@1\text{kHz} \cdot 0.0001@10\text{kHz}$   
 Max. ambient temperature: 85°C/185°F  
 Highly recommended for new designs.  
 Further voltages, capacities and custom labeling are available on request.



### SESG

#### MCap SUPREME EVO SilverGold

Capacity [µF]	VDC	Body Ø* L [mm]	Wire Ø* E/A [mm]
0,0010±5%	1500	14 * 16	0,6 * 35/35
0,010±3%	1500	14 * 16	0,6 * 35/35
0,10±2%	1000	17 * 23	0,6 * 35/45
0,15±2%	1000	21 * 23	0,8 * 35/48
0,22±2%	1000	26 * 23	0,8 * 35/50
0,33±2%	1000	31 * 23	0,8 * 35/50
0,47±2%	1000	31 * 23	0,8 * 35/50
0,68±2%	1000	36 * 23	0,8 * 35/55

### SESGO

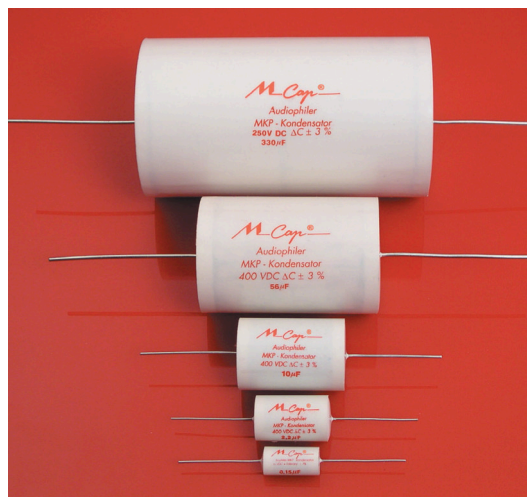
#### MCap SUPREME EVO SilverGold.Oil

Capacity [µF]	VDC	Body Ø* L [mm]	Wire Ø* E/A [mm]
1,0±2%	1000	36 * 28	1,0 * 35/60
1,5±2%	1000	41 * 28	1,0 * 35/60
2,2±2%	800	36 * 33	1,0 * 35/65
2,7±2%	800	41 * 33	1,0 * 35/70
3,3±2%	800	46 * 33	1,4 * 35/70
3,9±2%	800	46 * 33	1,4 * 35/70
4,3±2%	800	51 * 33	1,4 * 35/75
4,7±2%	800	51 * 33	1,4 * 35/75
5,1±2%	800	56 * 33	1,4 * 40/75
5,6±2%	800	56 * 33	1,4 * 40/75
6,2±2%	800	51 * 41	1,4 * 35/80
6,8±2%	800	51 * 41	1,4 * 35/80
7,5±2%	800	56 * 41	1,4 * 40/85
8,2±2%	800	56 * 41	1,4 * 40/85
10±2%	800	66 * 41	1,4 * 45/90
15±2%	800	76 * 41	1,4 * 50/95
22±2%	700	66 * 55	1,4 * 45/100
33±2%	600	66 * 67	1,4 * 45/115
47±2%	600	76 * 67	1,4 * 50/120

The **M.Cap® Classic** series has formed the basis of the Mundorf audio film capacitors since 1990. Avoiding an additional housing, the simple printing method and the classic longitudinal structure make it possible to create our most compact and cost-effective MKP-types.

True to our motto of “Inner Excellence”, the best material selection and highest production quality guarantee low tolerances and the highest standards of safety in use, even in our entry-level model. The M.Cap® Classic’s three-dimensional, precise sound pattern, the richly detailed, harmonic music playback and dynamics are guaranteed with aluminised PP capacitor film.

You will find extensive information about the technologies used on pages 6 to 8 in sections **2.0 • 2.2 • 3.4**.



**General Information:**

Dielectric: Polypropylene (PP)  
Metallisation: Aluminium  
tan δ: = 0.0002@1kHz · 0.0001@10kHz  
Max. ambient temperature: 85°C/185°F  
Recommended for new designs.  
Further capacities and custom labeling are available on request.

**MCAP250**

**M.Cap Classic, 250 VDC**

Capacity [µF] ±5%	Body Wire Ø * L [mm] Ø * L [mm]		
1,0	11 * 23	0.8 * 30	2,99
1,5	13 * 23	0.8 * 30	3,19
2,2	13 * 28	0.8 * 30	3,39
2,7	15 * 28	0.8 * 30	3,59
3,3	16 * 28	0.8 * 30	3,79
3,9	17 * 28	0.8 * 30	3,99
4,7	16 * 33	0.8 * 30	4,19
5,6	18 * 33	1.0 * 35	4,39
6,8	20 * 33	1.0 * 35	4,79
8,2	22 * 33	1.0 * 35	5,49
10	22 * 35	1.0 * 35	6,29
12	26 * 39	1.0 * 35	7,99
15	26 * 39	1.0 * 35	9,49
18	29 * 44	1.0 * 40	10,90
22	29 * 44	1.0 * 40	12,90
33	33 * 49	1.0 * 45	16,90
47	37 * 54	1.2 * 45	21,90
68	43 * 61	1.2 * 45	27,90
82	47 * 61	1.2 * 45	34,90
100	46 * 66	1.6 * 55	44,90

**MCAP400**

**M.Cap Classic, 400 VDC**

Capacity [µF] ±3%	Body Wire Ø * L [mm] Ø * L [mm]		
1,0	12 * 23	0.8 * 30	3,49
1,5	14 * 28	0.8 * 30	3,69
2,2	16 * 28	0.8 * 30	3,99
2,7	18 * 29	0.8 * 30	4,29
3,3	17 * 34	0.8 * 35	4,59
3,9	18 * 34	0.8 * 35	4,99
4,7	20 * 34	1.0 * 35	5,49
5,6	22 * 34	1.0 * 35	5,99
6,8	24 * 34	1.0 * 35	6,99
8,2	24 * 39	1.0 * 35	7,99
10	26 * 39	1.0 * 35	8,99
15	28 * 46	1.0 * 40	12,90
22	34 * 46	1.0 * 40	18,90



**MCAP630**

**M.Cap Classic, 630 VDC**

Capacity [µF] ±3%	Body Wire Ø * L [mm] Ø * L [mm]		
0,10	10 * 19	0.8 * 30	3,19
0,15	10 * 21	0.8 * 30	3,19
0,22	10 * 23	0.8 * 30	3,19
0,33	12 * 23	0.8 * 30	3,29
0,47	12 * 25	0.8 * 30	3,49
0,68	14 * 26	0.8 * 30	3,69
1,0	16 * 26	0.8 * 30	3,99
1,5	17 * 29	0.8 * 30	4,29
2,2	18 * 34	1.0 * 35	4,79
3,3	22 * 34	1.0 * 35	5,39
4,7	24 * 39	1.0 * 35	5,99
6,8	26 * 44	1.0 * 40	7,99
10	29 * 49	1.0 * 40	9,99

## Audio Capacitors MCap SUPREME Classic

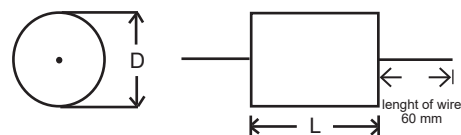


Very soon after its market launch in 1992 the **MCap® SUPREME Classic** has been internationally acclaimed as top-class capacitor. Today it is considered by many users as a milestone in the modern audiophile capacitor generation.

The self-healing PP capacitor film used here is first metallised with the thickest possible aluminium layer, then wound precisely into distinctive SUPREME winding geometry and finally potted by hand into special aluminium cans to minimise microphony.

These features are reflected in the music reproduction with their holographic three-dimensionality and outstanding tonal balance.

You will find extensive information about the technologies used on pages 6 to 8 in sections [2.0](#) • [2.2](#) • [2.2.2](#) • [3.4](#).



### General Information:

Dielectric: Polypropylene (PP)  
Metallisation: Aluminium  
tan  $\delta$ : = 0.0002@1kHz · 0.0001@10kHz  
Max. ambient temperature: 85°C/185°F  
Recommended for new designs.  
Further capacities and custom labeling are available on request.

### SUP8

#### MCap SUPREME Classic

Capacity [µF] ±2%	VDC	Body Ø * L [mm]	Wire Ø * L [mm]
1,0	800	20 * 39	1.0 * 60
1,5	800	25 * 52	1.0 * 60
1,8	800	25 * 52	1.0 * 60
2,2	800	25 * 52	1.0 * 60
2,7	800	30 * 56	1.0 * 60
3,3	800	30 * 56	1.4 * 60
3,9	800	30 * 56	1.4 * 60
4,7	800	36 * 56	1.4 * 60
5,6	800	36 * 56	1.4 * 60
6,8	800	41 * 53	1.4 * 60
8	800	36 * 106	1.4 * 60
10	800	36 * 106	1.4 * 60

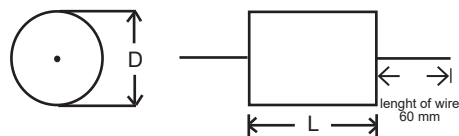
## Audio Capacitors MCap SUPREME Classic Silver.Oil

Inner Excellence

For the very first time the **MCap® SUPREME Classic Silver.Oil** successfully combined the advantages of metallized PP-film capacitors with the benefits of oil impregnated capacitors and the multi-faceted detail of silver conductors in 2002.

Silver of the highest purity (typically 99.99%) is first metallised with the thickest possible layer, then wound precisely into distinguished SUPREME winding geometry, then equipped with tin-plated copper wires and finally potted by hand into aluminium cans.

You will find extensive information about the technologies used on pages 6 to 8 in sections [2.0](#) • [2.2](#) • [2.2.2](#) • [3.5](#).



### General Information:

Dielectric: Polypropylene (PP)  
Metallisation: Silver  
tan  $\delta$ : = 0.0002@1kHz · 0.0001@10kHz  
Max. ambient temperature: 60°C/140°F  
Further capacities and custom labeling are available on request.

### SUP.SO

#### MCap SUPREME Classic Silver.Oil

Capacity [ $\mu$ F]	VDC	Body $\varnothing$ * L [mm]	Wire $\varnothing$ * L [mm]
0,10 ±5%	1000	17 * 36	0.8 * 60
0,22 ±5%	1000	19 * 39	0.8 * 60
0,33 ±5%	1000	19 * 39	1.0 * 60
0,47 ±3%	1000	26 * 41	1.0 * 60
0,68 ±3%	1000	26 * 41	1.0 * 60
1,0 ±3%	1000	31 * 42	1.4 * 60
1,5 ±3%	1000	36 * 42	1.4 * 60
2,2 ±3%	1000	41 * 57	1.4 * 60
3,3 ±3%	1000	41 * 57	1.4 * 60
4,7 ±2%	1000	41 * 71	1.4 * 60
5,6 ±2%	1000	46 * 71	1.4 * 60
6,8 ±2%	1000	50 * 71	1.4 * 60

# Audio Capacitors

## MCap SUPREME Classic SilverGold



With the **MCap® SUPREME Classic SilverGold** we have once again lived up to our reputation as one of the internationally leading manufacturers of audiophile components in 2004. It combines the outstanding three-dimensionality of our SUPREME technology with the brilliant and vibrant timbres of our SilverGold-alloy.

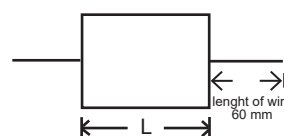
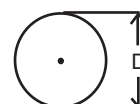
The listening experience with **MCap® SUPREME Classic SilverGold** capacitors excels with tonal beauty and elegance, finely nuanced and colourful timbres of sound, an accurate detail reproduction and sheer joy of music.

You will find extensive information about the technologies used on pages 6 to 8 in sections [2.0](#) • [2.2](#) • [2.2.2](#) • [3.6](#).

Thanks to its [2.2.4 Oil impregnation](#), the **MCap® SUPREME Classic SilverGold.Oil** enjoys improved presence and dynamics.

### General Information:

Dielectric: Polypropylene (PP)  
 Metallisation: 99% Silver + 1% Gold  
 $\tan \delta = 0.0002@1\text{kHz} \cdot 0.0001@10\text{kHz}$   
 Max. ambient temperature: 85°C/185°F  
 Further capacities and custom labeling are available on request.



### SUP.SG

#### MCap SUPREME Classic SilverGold

Capacity [µF] ±2%	VDC	Body Ø * L [mm]	Wire Ø * L [mm]
1,0	1000	31 * 42	1.4 * 60
1,5	1000	36 * 42	1.4 * 60
2,2	1000	36 * 56	1.4 * 60
3,3	1000	41 * 57	1.4 * 60
4,7	1000	46 * 71	1.4 * 60

### SUP.SGO

#### MCap SUPREME Classic SilverGold.Oil

Capacity [µF]	Tolerance	VDC	Body Ø * L [mm]	Wire Ø * L [mm]
0,010	±5%	1000	17 * 36	0.6 * 60
0,10	±3%	1000	17 * 36	0.6 * 60
0,15	±3%	1000	17 * 36	0.6 * 60
0,22	±3%	1000	19 * 39	0.6 * 60
0,33	±3%	1000	19 * 39	0.6 * 60
0,47	±3%	1000	26 * 41	0.6 * 60
1,0	±2%	1000	31 * 42	0.6 * 60
1,5	±2%	1000	36 * 42	0.6 * 60
2,2	±2%	1000	36 * 56	1.0 * 60
3,3	±2%	1000	41 * 57	1.0 * 60
3,9	±2%	1000	41 * 57	1.0 * 60
4,7	±2%	1000	46 * 71	1.0 * 60
5,6	±2%	1000	46 * 71	1.0 * 60
6,8	±2%	1000	51 * 71	1.0 * 60
10	±2%	1000	51 * 106	1.4 * 60



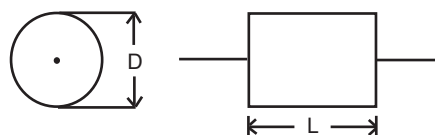
## Audio Capacitors MCap ZN Classic

Inner Excellence

Since 2001 the **MCap® ZN Classic** enjoys with ultimate vividness and dynamics of all our capacitors that results from the enormous conductivity of the used massive tin foil. Its loss factor [ $\tan \delta @ 1\text{kHz}$ ] is ten-times lower than of metallised PP-film capacitors. Additionally the mass inertia of the tin foil prevents oscillations in the benefit of transparency and spatiality.

Lead-free tin foil means – aside from positive environmental aspects – also an improved sound characteristic as of year of manufacture 2007.

You will find extensive information about the technologies used on pages 6 to 8 in sections [2.0](#) • [2.1](#) • [3.2](#).



### General Information:

Dielectric: Polypropylen (PP)

Electrode: Zinnfolie (6µm)

$\tan \delta$ : 0,00002@1 kHz · 0,00001@10 kHz

Max. ambient temperature: 85°C/185°F

Further capacities and custom labeling are available on request.

### ZN

#### MCap ZN Classic

Capacity [µF] ±3%	VDC	Body Ø * L [mm]	Wire Ø * L [mm]
0,10	630	12 * 25	0,8 * 30
0,22	630	14 * 30	0,8 * 30
0,33	630	15 * 30	1,0 * 30
0,47	630	17 * 30	1,0 * 30
0,68	630	19 * 38	1,0 * 35
1,0	630	21 * 38	1,0 * 35
1,5	250	21 * 38	1,0 * 35
2,2	250	25 * 40	1,0 * 35
2,7	100	21 * 40	1,0 * 35
3,3	100	25 * 40	1,0 * 35
3,9	100	26 * 40	1,0 * 35
4,7	100	26 * 40	1,0 * 35

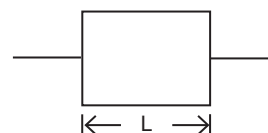
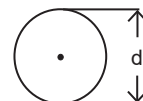
Aluminium electrolytic capacitors are used in applications for which film capacitors are not suitable for reason of space and/or cost. Polarised electrolytic capacitors which have the most compact design and are therefore used for very high capacities (e.g. for the voltage supply of amplifiers) cannot transfer any audio signal audio signals are AC signals.

Bipolar electrolytic capacitors such as the ECap AC series have a second aluminium foil providing AC voltage resistance and thus making them suitable for music signals. Further special features of all **ECap AC capacitors**:

Short delivery times      Any values listed on page 18/19 are normally immediately available from stock  
Special designs are available within only 4-6 weeks and already from a quantity of 144 items

Variety of applications      RoHS-compliant · lead-free  
REACH-compliant  
All ingredients are UL listed  
Specifications according to DIN 41332 · IEC 60384-4  
Thermal tests according to IEC 60068 40/105/56

Guarantee of origin      Manufactured in Germany



The bipolar electrolytic capacitors of the **ECap AC · Audio Coupling & Signal Cap RAW** series have foils with surfaces which are roughened by a special etching process thus enlarging the surface. As the capacity of capacitors is proportional to their surface, this process provides the smallest and cheapest Mundorf audio capacitors. Additional special features:

Capacity range      1µF to 800µF  
Electric strength      AC23 DC63 · AC35 DC100  
Temperature range -      40°C/-40°F to 85°C/+185°F  
Service life [U<sub>R</sub> · I<sub>R</sub>~]      3,000 hours at +85°C/+185°F  
Loss angle [tan α]      0.050 @ 1kHz



### ECAP100

#### Electrolytic capacitors 100 VDC / 35 VAC, raw

Capacity [µF] ±5%	Body Ø * L [mm]	Wire Ø * L [mm]
10	10 * 30	0.8 * 40
15	10 * 30	0.8 * 40
22	12 * 30	0.8 * 40
33	12 * 30	0.8 * 40
47	14 * 37	0.8 * 40
56	14 * 38	0.8 * 40
68	16 * 39	0.8 * 40
82	18 * 39	0.8 * 40
100	18 * 39	0.8 * 40

### ECAP63

#### Electrolytic capacitors 63 VDC / 23 VAC, raw

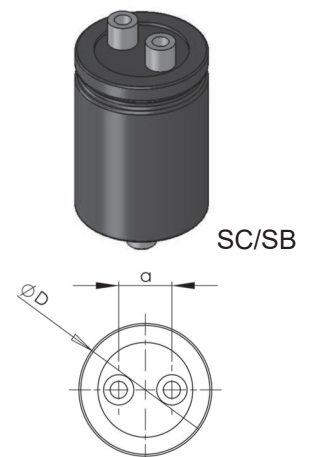
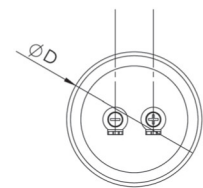
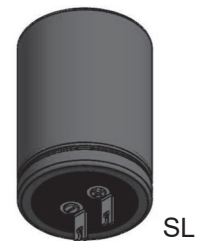
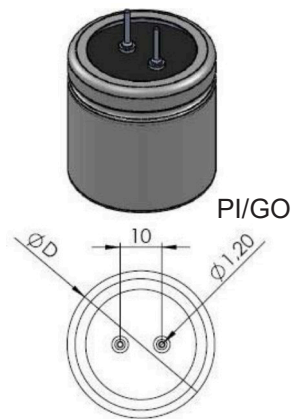
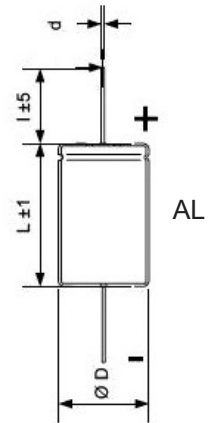
Capacity [µF] ±5%	Body Ø * L [mm]	Wire Ø * L [mm]
150	14 * 37	0.8 * 40
180	16 * 39	0.8 * 40
220	16 * 39	0.8 * 40
270	21 * 36	0.8 * 40
330	21 * 36	0.8 * 40
390	25 * 38	0.8 * 40
470	25 * 38	0.8 * 40
560	25 * 38	0.8 * 40
680	25 * 38	0.8 * 40

# Power Capacitors MLytic AG



The **MLytic® AG · Audio Grade Power Cap** series offers all benefits of Mundorf's unique MLYtic® technology as described in detail on page 6 plus the following features:

Supply availability	Typically immediately ex stock for all types listed on page 21  4-6 weeks for your individual combination of features · from 144pcs only
Versatile applicable	RoHS-compliant · lead free REACH compliant Finest UL-listed ingredients only Sectional specification DIN 41332 · IEC 60384-4 Climatic category IEC 60068 40/105/56
Indication of origin	Made in Germany with greatest care
Capacitance range	47µF to 330 000µF
DC voltage range	16 · 25 · 35 · 40 · 50 · 63 · 80 · 100 · 160
Temperature range - -	40°C/-40°F to 125°C/+255°F for 16V to 63V 25°C/-13°F to 105°C/+220°F for 80V to 160V
Diverse connectors	AL · axial leaded PI · plug-in GO · glue-on SL · solder-lugs SC · screw-terminal clamp mounted SB · screw-terminal bolt mounted
Useful lifetime [U <sub>R</sub> · I <sub>R~</sub> ]	3 000 hours at +125°C/+255°F for 16V to 63V 8 000 hours at +105°C/+220°F for 16V to 160V 16 000 hours at +85°C/+185°F for 16V to 160V
Rated lifetime [U <sub>R</sub> ]	1 000 hours at +125°C/+255°F for 16V to 63V 2 000 hours at +105°C/+220°F for 16V to 160V
Case diameters [mm]	10 · 12 · 14 · 16 · 18 · 20 · 25 · 30 35 · 40 · 45 · 50 · 65 · 75 · 90
Case heights [mm]	Customized from 25 to 230 [typically in 5mm steps]
Case diameters [inch]	0.39 · 0.47 · 0.55 · 0.63 · 0.71 · 0.79 · 0.98 · 1.18 1.38 · 1.57 · 1.77 · 1.97 · 2.56 · 2.95 · 3.54
Case heights [inch]	Customized from 0.98 to 9.06 [typically in 0.2inch steps]
External insulation	Lead free PVC sleeve with end disk · voltage proof ≥2500 A
Leakage current [I <sub>L</sub> ] [ESL]	≤ 0,008 * C <sub>R</sub> [µF] * U <sub>R</sub> [V] + 6µA after 5 minutes at U <sub>R</sub> 20nH equivalent series inductance
Maximal reverse voltage	2V



## Power Capacitors MLytic AG

Inner Excellence

The **MLytic® AG • Audio Grade Power Cap** series is especially engineered for use in small power and pre amplifiers.

**MLGO • glue-on** capacitors offer non-magnetic, straight, tinned copper wires Ø 1.2mm ≈ AWG17. Additionally they own a vibration-reducing, traction-relieving, self-adhesive MPSA • Mounting Pad.

They supersede the well-known MLSI series. Drill hole spacing [pitch] of **MLGO • glue-on** remains 10mm/0.39inch. Hence they are snap-in capacitor intermateable and so particularly suitable for repairs and modifications.



### MLGO Audio Grade Power Cap, Glue-On, 2Pin

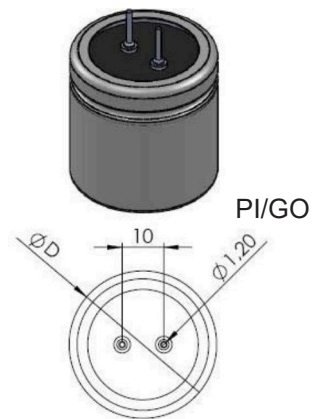
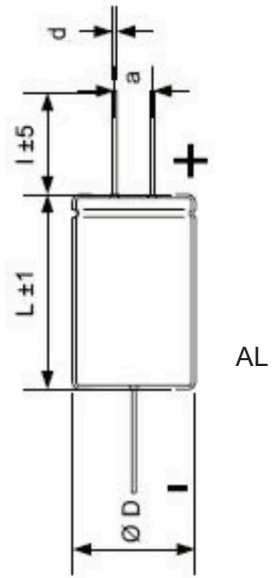
Rated Voltage [VDC]	Capacitance [µF] ±20%	Case Size Ø * L [mm]	Wire Size Ø * L [mm]	Rated Ripple Current IR~ at Tmax and 100Hz [A]	Surge Voltage [VDC]	ESR at 100 Hz [mOhm]	Tan δ @ 100Hz	Nominal Current IR for 5 Min. [µA]
100	1000	25 * 30	1,2 * 1,0 1,2		115	127	8	600
100	1500	25 * 35	1,2 * 1,0 1,5		115	85	8	900
80	10000	35 * 50	1,2 * 1,0 3,9		92	24	15	4800
63	2200	25 * 30	1,2 * 1,0 1,7		72	58	8	830
63	3300	30 * 30	1,2 * 1,0 2,1		72	48	10	1246
63	4700	30 * 35	1,2 * 1,0 2,6		72	41	12	1776
63	6800	30 * 40	1,2 * 1,0 3,0		72	28	12	2570
63	8200	30 * 45	1,2 * 1,0 3,4		72	23	12	3100
63	10000	30 * 50	1,2 * 1,0 3,5		72	24	15	3780
63	15000	35 * 60	1,2 * 1,0 5,1		72	16	15	5670
63	22000	35 * 70	1,2 * 1,0 6,0		72	13	18	8316
40	4700	25 * 30	1,2 * 1,0 1,8		46	51	15	1128
40	6800	25 * 35	1,2 * 1,0 2,1		46	42	18	1632
40	10000	30 * 40	1,2 * 1,0 2,7		46	35	22	2400
40	22000	35 * 50	1,2 * 1,0 4,4		46	18	25	5280
40	33000	35 * 60	1,2 * 1,0 5,3		46	14	30	7920
25	10000	25 * 35	1,2 * 1,0 2,4		28	32	20	1500
25	22000	30 * 40	1,2 * 1,0 3,5		29	20	28	3300
25	47000	35 * 50	1,2 * 1,0 5,9		29	10	30	7050

# Power Capacitors MLytic HV



The **MLytic® HV · High Voltage Power Cap** series offers all benefits of Mundorf's unique MLytic® technology as described in detail on page 6 plus the following features:

Supply availability	Typically immediately ex stock for all types listed on page 23  4-6 weeks for your individual combination of features · from 144pcs only
Versatile applicable	RoHS-compliant · lead free REACH compliant Finest UL-listed ingredients only Sectional specification DIN 41332 · IEC 60384-4 Climatic category IEC 60068 40/105/56
Indication of origin	Made in Germany with greatest care
Capacitance range	4,7µF to 4 700µF
DC voltage range	250 · 350 · 400 · 450 · 500 · 550
Temperature range -	25°C/-13°F to 105°C/+220°F for 250V to 450V - 40°C/-40°F to 85°C/+185°F for 500V to 550V
Diverse connectors	AL · axial leaded PI · plug-in GO · glue-on SL · solder-lugs
Useful lifetime [U <sub>R</sub> · I <sub>R-</sub> ]	8 000 hours at +105°C/+220°F for 250V to 450V 16 000 hours at +85°C/+185°F for 250V to 450V 8 000 hours at +85°C/+185°F for 500V to 550V
Rated lifetime [U <sub>R</sub> ]	2 000 hours at +105°C/+220°F for 250V to 450V 2 000 hours at +125°C/+255°F for 500V to 550V
Case diameters [mm]	10 · 12 · 14 · 16 · 18 · 20 · 25 · 30 · 35 · 40 · 45
Case heights [mm]	Customized from 25 to 100 [typically in 5mm steps]
Case diameters [inch]	0.39 · 0.47 · 0.55 · 0.63 · 0.71 · 0.79 · 0.98 · 1.18 · 1.38 · 1.57 · 1.77
Case heights [inch]	Customized from 0.98 to 3.94 [typically in 0.2inch steps]
External insulation	Lead free PVC sleeve with end disk · voltage proof ≥2500 AC
Leakage current [I <sub>L</sub> ]	≤ 0,008 * C <sub>R</sub> [µF] * U <sub>R</sub> [V] + 6µA after 5 minutes at U <sub>R</sub>
[ESL]	20nH equivalent series inductance
Maximal reverse voltage	2V



The **MLytic® HV • High Voltage Power Cap series** is especially engineered for use in tube amplifiers. Two classic double-capacity versions and two contemporary 2-pin layouts are available ex stock.

The ultra compact, axial leaded **MLAL** capacitors feature non-magnetic, tinned copper wires.

The superior **MLSL** 500V offers more powerful, non-magnetic DIN connectors for higher currents.

The snap-in intermateable **MLGO** capacitors offer non-magnetic, straight, tinned copper wires  $\varnothing$  1.2mm  $\approx$  AWG17. Additionally they own a vibration-reducing, traction-relieving, self-adhesive MPSA • Mounting Pad.



**MLAL**

**High Voltage electrolyte Twin-Power Cap, Axial-Leaded, 3Pin**

Rated Voltage [VDC]	Capacitance [ $\mu$ F] $\pm$ 20%	Case Size $\varnothing$ * L [mm]	Wire Size $\varnothing$ * L [mm]	Rated Ripple Current IR~ at Tmax and 100Hz [A]	Surge Voltage [VDC]	ESR at 100 Hz [mOhm]	Tan $\delta$ @ 100Hz	Nominal Current IR for 5 Min. [ $\mu$ A]
450	47+47	30 * 50	1,4 * 500,3		495	3386	10	600
450	100+100	35 * 50	1,4 * 50	0,5	495	1592	10	270

**MLAL**

**High Voltage Power Cap, Axial-Leaded, 2Pin**

Rated Voltage [VDC]	Capacitance [ $\mu$ F] $\pm$ 20%	Case Size $\varnothing$ * L [mm]	Wire Size $\varnothing$ * L [mm]	Rated Ripple Current IR~ at Tmax and 100Hz [A]	Surge Voltage [VDC]	ESR at 100 Hz [mOhm]	Tan $\delta$ @ 100Hz	Nominal Current IR for 5 Min. [ $\mu$ A]
500	10	16 * 39	0,8 * 40	0,1	550	9549	6	30
500	22	21 * 36	0,8 * 40	0,2	550	4341	6	66
500	33	25 * 38	0,8 * 40	0,3	550	2894	6	100
500	47	25 * 49	0,8 * 40	0,4	550	2032	6	142
500	100	30 * 49	1,0 * 40	0,6	550	955	6	300

**MLSL**

**High Voltage Electrolyte Twin-Power Cap, Solder-Lugs, 3Pin**

Rated Voltage [VDC]	Capacitance [ $\mu$ F] $\pm$ 20%	Case Size $\varnothing$ * L [mm]	Wire Size $\varnothing$ * L [mm]	Rated Ripple Current IR~ at Tmax and 100Hz [A]	Surge Voltage [VDC]	ESR at 100 Hz [mOhm]	Tan $\delta$ @ 100Hz	Nominal Current IR for 5 Min. [ $\mu$ A]
500	50+50	35 * 50	1 * 4 * 70,4		550	3183	10	400
500	100+100	35 * 66	1 * 4 * 7	0,5	550	1592	10	300
500	200+200	35 * 80	1 * 4 * 7	0,8	550	796	10	600

**MLGO**

**High Voltage Power Cap, Glue-On, 2Pin**

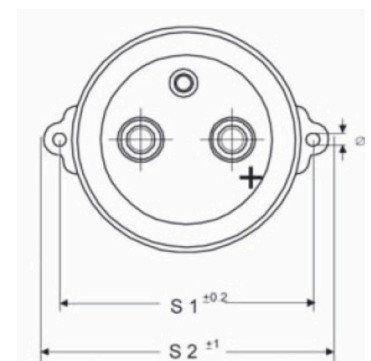
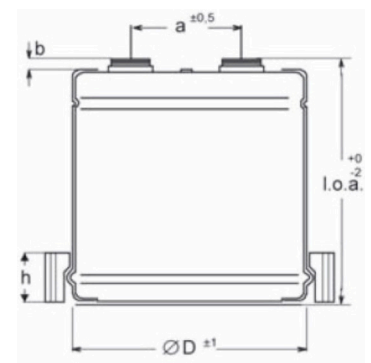
Rated Voltage [VDC]	Capacitance [ $\mu$ F] $\pm$ 20%	Case Size $\varnothing$ * L [mm]	Wire Size $\varnothing$ * L [mm]	Rated Ripple Current IR~ at Tmax and 100Hz [A]	Surge Voltage [VDC]	ESR at 100 Hz [mOhm]	Tan $\delta$ @ 100Hz	Nominal Current IR for 5 Min. [ $\mu$ A]
450	22	22 * 25	1,2 * 1,0	0,2	495	5064	7	180
450	47	22 * 25	1,2 * 1,0	0,3	495	2310	7	240
450	100	25 * 30	1,2 * 1,0	0,3	495	2387	15	270
450	150	30 * 30	1,2 * 1,0	0,5	495	1592	15	406
450	220	30 * 40	1,2 * 1,0	0,6	495	1085	15	594
450	330	35 * 40	1,2 * 1,0	0,8	495	723	15	892
450	470	35 * 50	1,2 * 1,0	1,1	495	508	15	1270
450	680	35 * 60	1,2 * 1,0	1,4	495	351	15	1836

# Power Capacitors MLytic HC



The **MLytic® HC · High Current Power Cap** series offers all benefits of Mundorf's unique MLYtic® technology as described in detail on page 6 plus the following features:

Supply availability	Typically immediately ex stock for all types listed on page 25  4-6 weeks for your individual combination of features · from 18pcs only
Versatile applicable	RoHS-compliant · lead free REACH compliant Finest UL-listed ingredients only Sectional specification DIN 41332 · IEC 60384-4 Climatic category IEC 60068 40/105/56
Indication of origin	Made in Germany with greatest care
Capacitance range	1 000µF to 220 000µF
DC voltage range	40 · 50 · 63 · 80 · 100 · 160 · 250 · 350 · 450
Temperaturbereich -	25°C/-13°F to 105°C/+220°F
Useful lifetime [U <sub>R</sub> · I <sub>R~</sub> ]	8 000 hours at +105°C/+220°F 16 000 hours at +85°C/+185°F
Nennlebensdauer [U <sub>R</sub> ]	2 000 hours at +105°C/+220°F
Gehäuse-Ø [mm]	50 · 75 · 90
Case heights [mm]	Customized from 70 to 100 [typically in 5mm steps]
Case diameters [inch]	1.97 · 2.95 · 3.54
Case heights [inch]	Customized from 2.76 to 3.94 [typically in 0.2inch steps]
External insulation	Lead free PVC sleeve with end disk voltage proof ≥2500 AC
Leakage current [I <sub>L</sub> ]	≤ 0,008 * C <sub>R</sub> [µF] * U <sub>R</sub> [V] + 6µA after 5 minutes at U <sub>R</sub>
[ESL]	20nH equivalent series inductance
Maximal reverse voltage	2V



## Power Capacitors MLytic HC

Inner Excellence

The **MLytic® HC • High Current Power Cap** offers ultra-low ESR and ESL, due to a patented internal connection technique.

These capacitors, which were originally developed for use in locomotives, are consequently optimized for audio purposes and designed for heatsink mounting.

They can handle hundreds of amperes and supply extreme pulse currents. That is why even massive bass attacks are performed absolutely authentic and punchy.

Additionally their exceptional fastness results in most dynamic and accurate low frequency as well as a revealing and vivid mid and high frequency reproduction.



Casing	D	I.o.a	a	b	h	s1	s2	x
	[mm]	[mm]	Dimensions [mm]					
1	50	71	22.0	4	20	63	75	4.5
2	75	70	31.7	4	20	90	102	4.5
3	90	75	31.7	6	20	106	118	4.5
4	90	104	31.7	6	20	106	118	4.5

### MLHC

#### High Current Power Cap, Screw-Terminal, 2Pin

Rated Voltage [VDC]	Capacitance [ $\mu$ F] $\pm$ 20%	Case Size $\varnothing$ * L [mm]	Wire Size $\varnothing$ * L [mm]	Rated Ripple Current IR~ at Tmax and 100Hz [A]	Surge Voltage [VDC]	ESR at 100 Hz [mOhm]	Tan $\delta$ @ 100Hz	Nominal Current IR for 5 Min. [ $\mu$ A]
100	22000	90 * 69	M6 (3Nm) 14,9	14,9	115	7	10	13200
100	33000	90 * 69	M6 (3Nm) 18,3	18,3	115	5	10	19800
100	47000	90 * 98	M6 (3Nm) 24,4	24,4	115	3	10	28200
80	10000	50 * 67	M5 (2Nm) 9,2	9,2	92	11	7	4800
80	22000	75 * 66	M5 (2Nm) 13,0	13,0	92	7	10	10560
80	47000	90 * 69	M6 (3Nm) 21,8	21,8	92	3	10	22560

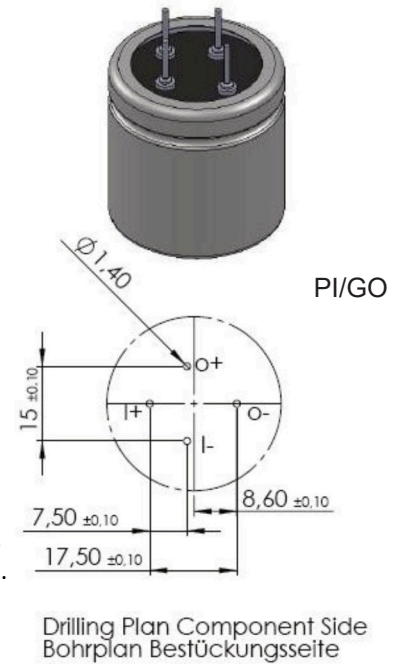


# Filter Capacitors MLytic +



The **MLytic®+ 4-pole Filter Capacitor** series offers all benefits of Mundorf's unique MLYtic® technology as described in detail on page 6 plus the following features:

Supply availability	Typically immediately ex stock for all types listed on page 27  4-6 weeks for your individual combination of features · from 144pcs only
Versatile applicable	RoHS-compliant · lead free REACH compliant Finest UL-listed ingredients only Sectional specification DIN 41332 · IEC 60384-4 Climatic category IEC 60068 40/105/56
Indication of origin	Made in Germany with greatest care
4-Pole Technology	Separated in- and outputs for minimized ESR and ESL, no magnetic loss and exceptional filter characteristics. Note: Usable only in low-current applications!
Capacitance range	300µF to 3 300 000µF
DC voltage range	16 · 25 · 35 · 40 · 50 · 63 · 80 · 100 · 160 250 · 350 · 400 · 450 · 500 · 550
Temperature range	-40°C/-40°F to 125°C/+255°F [ 16V to 63V] -25°C/-13°F to 105°C/+220°F [ 80V to 450V] -40°C/-40°F to 85°C/+185°F [500V to 550V]
Useful lifetime [U <sub>R</sub> · I <sub>R~</sub> ]	3 000 hours at +125°C/+255°F [ 16V to 63V] 8 000 hours at +105°C/+220°F [ 16V to 450V] 16 000 hours at +85°C/+185°F [ 16V to 450V] 8 000 hours at +85°C/+185°F [500V to 550V]
Rated lifetime [U <sub>R</sub> ]	1 000 hours at +125°C/+255°F [ 16V to 63V] 2 000 hours at +105°C/+220°F [ 16V to 450V] 2 000 hours at +85°C/+185°F [500V to 550V]
Case diameter [mm]	35
Case heights [mm]	Customized from 30 to 100 [typically in 5mm steps]
Case diameters [inch]	1.38
Case heights [inch]	Customized from 1.38 to 3.94 [typically in 0.2inch steps]
External insulation	Lead free PVC sleeve with end disk · voltage proof ≥2500 AC
Leakage current [I <sub>l</sub> ]	≤ 0,008 * C <sub>R</sub> [µF] * U <sub>R</sub> [V] + 6µA after 5 minutes at U <sub>R</sub>
[ESL]	20nH equivalent series inductance
Maximal reverse voltage	2V



The **MLytic®+ 4-pole Filter Capacitor** series is especially engineered for use in small but excellent power and pre amplifiers as well as in innovative first class tube amplifiers.

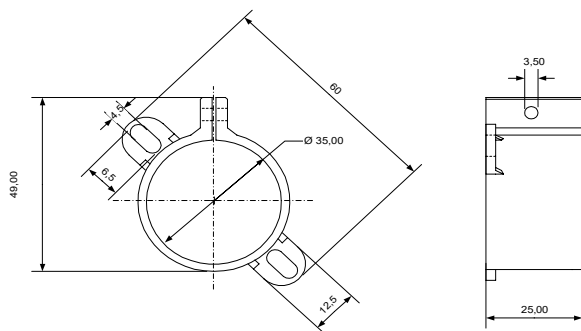
Due to their superior filter characteristics they are first choice for ambitious audio engineers. See previous page and key point **1.1.2** on page 6.

**MLGO+ • glue-on** capacitors offer non-magnetic, straight, tinned copper wires Ø 1.2mm ≈ AWG17. Additionally they own a vibration-reducing, traction-relieving, self-adhesive **Mounting Pad**.



**MLGO+**  
**Audio Grade Power Cap, Glue-On, 4Pin**

Rated Voltage [VDC]	Capacitance [µF] ±20%	Case Size Ø * L [mm]	Wire Size Ø * L [mm]	Rated Ripple Current IR~ at Tmax and 100Hz [A]	Surge Voltage [VDC]	ESR at 100 Hz [mOhm]	Tan δ @ 100Hz	Nominal Current IR for 5 Min. [µA]
550	100	35 * 55	1,2 * 8	0,6	600	1273	8	330
550	220	35 * 55	1,2 * 8	0,8	600	579	8	724
550	470	35 * 70	1,2 * 8	1,0	600	508	10	1552
160	1000	35 * 35	1,2 * 8	1,3	184	159	10	960
160	1500	35 * 40	1,2 * 8	1,5	184	127	12	1440
100	2200	35 * 35	1,2 * 8	2,1	115	65	9	1320
100	3300	35 * 40	1,2 * 8	2,6	115	43	9	1980
100	4700	35 * 60	1,2 * 8	3,7	115	30	9	2820
80	6800	35 * 40	1,2 * 8	2,9	92	35	15	3264
80	10000	35 * 50	1,2 * 8	3,4	92	32	20	4800
63	15000	35 * 60	1,2 * 8	3,5	72	29	27	5670
63	22000	35 * 70	1,2 * 8	4,9	72	20	27	8316



- MPSA**  
**3M Mounting Pad, self-adhesive**  
Capacitor  
Ø [mm]
- 25
  - 30
  - 35

- MCNV**  
**Mounting Clamp, nylon, vertical, black**  
Capacitor  
Ø [mm]
- 35
  - 40
  - 50
  - 65
  - 75

# Power Capacitors TubeCap



The **TubeCap®** is made of polypropylene film with special features. This is particularly thin and the self-healing properties are markedly pronounced due to a special coating. This leads to a very high electrical strength in the capacitor with compact dimensions.

The **TubeCap®** combines a high degree of dielectric strength and low residual inductivity with a very compact form of construction. It has been developed as a high-quality technical alternative to high-voltage electrolytic capacitors and is thus ideally suited to use in tube amplifiers.

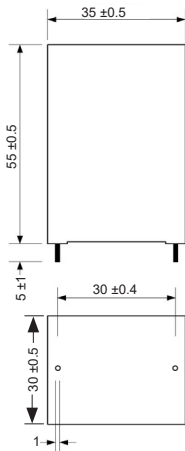
### The advantages vis-à-vis electrolytic capacitors are:

- Lower ESR and lower residual inductivity
- No drying out; therefore longer service life
- Excellent Self-healing properties
- More compact form of construction
- There is no series connection necessary for increasing the dielectric strength.

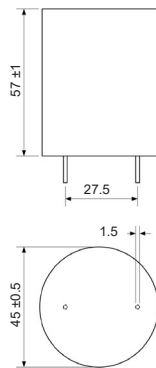


### Technical specifications:

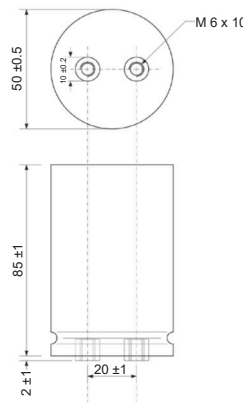
Dielectric: Polypropylen  
 Dielectric strength: 550-1 000 VDC  
 Loss factor:  $\tan \delta < 0.005$  bei 1 kHz  
 Sealing compound: PU UL 94-V0  
 Useful Life: 100 000 h @ hot spot 60°  
 Failure rate: 1 fit  
 Cover:  $0.5 \times U_N$ ; 40°  
 Permissible ambient temperature 85°C/185°F



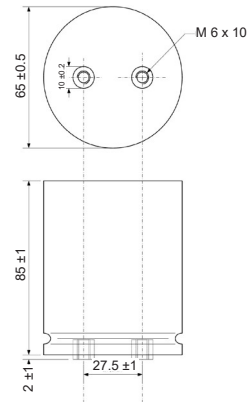
**Specifications casing 1:**  
 Bucket: Plastic bucket UL 94-V0  
 Terminals:  
 copper wire, tin-plated Ø1.0 mm  
 Weight: approx. 70g



**Specifications casing 2:**  
 Bucket: aluminum bucket, unshrunk UL 94-V0  
 Terminals:  
 copper wire, tin-plated Ø1,4 mm  
 Weight: approx. 105g



**Specifications casing 3:**  
 Bucket: aluminum bucket, unshrunk UL 94-V0  
 Terminals:  
 internal screw thread M6 x 10  
 Weight: approx. 215g



**Specifications casing 4:**  
 Bucket: aluminum bucket, unshrunk UL 94-V0  
 Terminals:  
 internal screw thread M6 x 10  
 Weight: approx. 345g

### TCAP

#### MKP-capacitors for tubes applications

Capacity [µF] ±5%	VDC	Casing	ESR @10 Hz [mOhm]	ESL @500kHz [nH]
10	1000	1	13	17,0
20	750	1	10	17,0
30	600	1	9	17,0
47	600	2	7	24,5
100	550	3	9	88,6
200	550	4	9	92,5

## Power Capacitors Car Audio

Inner Excellence

**Storage capacitors** are basic equipment for every high class car stereo. Because no audio system is better than its power supply!

The installation should be performed by an expert only. Also any follow-up works at the car's electrical system have to be performed with utmost caution (danger of short circuit).

**Mundorf HeadCaps** solving almost every car receiver problem caused by voltage issues, like:

- Flickering monitors
- Losing navigation data while start/stop processes
- Losing phone connections while start/stop processes

Additional Features:

- More detailed, subtle and powerful music reproduction
- Available as on-board computer friendly version MPC68i
- Relieves and protects batteries and alternators
- Follow-me-home-music

### MPowerSupply HeadCap

Type	Rated Voltage [VDC]	Capacitance [ $\mu$ F]	Body $\varnothing$ * L [mm]	Wire $\varnothing$ * L [mm]
MPC68	25	68000	50 * 80	M5 (2Nm)
MPC68i	25	68000	50 * 90	M5 (2Nm)

**Mundorf PowerCaps** guarantee stabilized voltage directly at the amp. Consequently optimized for highest power pulse currents, our storage capacitors ensure extra power at the decisive moment. The result is a powerful and precise bass and a brilliant, open sound characteristics.

### MPowerSupply PowerCap

Type	Rated Voltage [VDC]	Capacitance [F]	Body $\varnothing$ * L [mm]	Wire $\varnothing$ * L [mm]
PCC100	18	1,0	75 * 225	M5 (2Nm)
PCC150	18	1,5	75 * 225	M5 (2Nm)



MPC68



MPC68i



PCC 1000

The sound characteristics of a coil are not only determined by the coil core (see p. 32) and the manufacturing quality but also by the wire type used. In order to be able to offer you the right coil for each application we use **three types of wires** made of **three materials** of highest purity.

#### OFC copper

Coils that use oxygen-free copper (99.997% purity) as conductor material are characterised by a harmonic, stereophonic reproduction of music, rich in detail, and an excellent price/performance ratio.

#### Pure silver

Due to their ability to reproduce voices and instruments in a more dynamic, detailed, spatial manner and with more timbres compared to copper coils, silver coils of highest purity (type 99.99%) are highly appreciated and preferred by a number of audio enthusiasts.

#### SilverGold

99% silver + 1% gold = 100% music.

This does not only add up for capacitors such as the MCap® SUPREME SilverGold.Oil and audio cables, but also for coils. The high-purity gold (type 99.99%) changes the crystalline structure of silver and maximises its very good electric conductivity. Instruments and voices unfold their full range of timbres and their character is illuminated and becomes perceivable in all shades. On the one hand 'crystal clear,' the reproduction is at the same time vibrant and warm, embedded in a finely differentiated, location-true image. Purity and fine elegance combined with a vibrant character distinguish this exquisite material from all others!

#### SolidCore wires

The reproduction of music by coils made of **solid round wires** (also referred to as SolidCore) excels by natural vibrancy and fineness as well as highest tonal neutrality. Another benefit of round wire coils are their highly compact dimensions. Like all Mundorf coils, they are wound and mounted by hand with highest accuracy and precision using special machines in Germany.

**OFC standard** is the most cost-efficient, audio-compatible coil wire and available in diameters from 0.50 to 3.90mm. Coils made of this material, however, do not have an additional coil fixation and thus have a disadvantage with respect to sound compared to all other coil types manufactured by Mundorf: This is because electric current passing through a coil will always cause a vibration of the entire winding. Due to the microphonic effect (the conversion of mechanical oscillations to electric oscillations) these mechanical oscillations are added to the original signal as additional information. This results in an interference with and an alienation of the details of the original signal. On the one hand, this results in a loss of spatial quality and transparency of the music and on the other hand in an increase of distortions and tonal discolorations of the signal. This physically induced unwanted effect, however, can be eliminated completely by the use of baked varnish wire or by means of vacuum impregnation.

**Baked varnish coils** have a special, solid OFC round wire with an additional layer of varnish. After the coil has been wound, it is heated up by means of an electric impulse causing the additional layer to melt. When cooling down, the individual windings are firmly bonded together by the baked varnish and are thus prevented from vibrating and the original signal remains uncorrupted. Unfortunately, self-bonding wires are only available in diameters from 0.50 to 1.40mm.

Vacuum impregnation is another procedure, equally effective as heat bonding, which we offer for coils with larger wire diameters (2.00 to 3.90mm). In vacuum impregnation, the coil is first impregnated with a special lacquer up to the innermost windings under vacuum. Subsequently, the impregnated coil is dried at 130° Celsius. Thus the whole coil is baked into a very solid unit.

**Vacuum impregnation** is another procedure, equally effective as heat bonding, which we offer for coils with larger wire diameters (2.00 to 3.90mm). In vacuum impregnation, the coil is first impregnated with a special lacquer up to the innermost windings under vacuum. Subsequently, the impregnated coil is dried at 130° Celsius. Thus the whole coil is baked into a very solid unit.

**Hepta strand**

The use of a strand of **seven individually isolated OFC self-bonding wires** gives the reproduction of music a fine, smooth, harmonic character, which is rich in detail at the same time. These acoustic characteristics are praised and appreciated by our customers, in particular when it comes to the musical `cultivation` of speaker chassis with a tendency to tonal sharpness or hardness without having a negative impact on qualities such as brilliance and richness in detail. The character is mainly formed by the use of round wires as single conductors and their special stranding. The baked winding and the reinforced PA coil body together form a winding unit of **highest mechanical stability** and tranquillity. Distortions and discolorations of the music signal are thus largely eliminated. In addition, the large surface of the seven-fold strand improves the effective conductivity for higher-frequent AC (skin effect). Our 7 x 0.6mm strand corresponds to a round wire diameter of approx. 1.60mm.

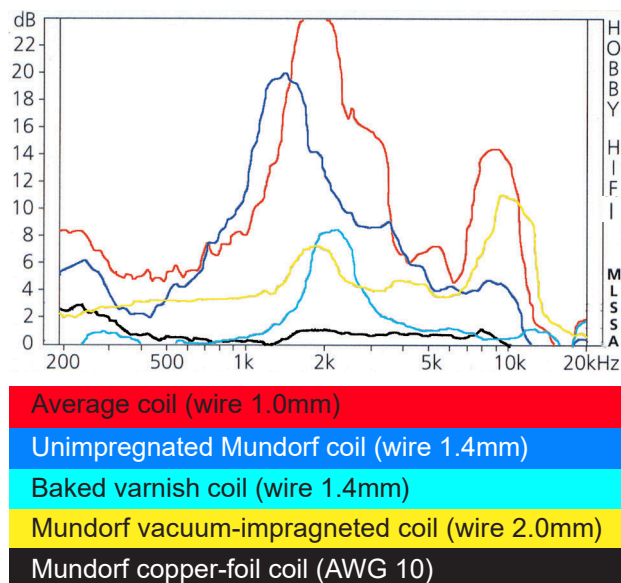
**Foil coils**

The reproduction of music by coils made of **solid metal foil** (also referred to as ribbon coils) excels by extraordinary dynamics, unparalleled detail and holographic spatial quality and lowest distortions and discolorations - Even finest nuances are represented in a realistic manner. Mundorf foil coils have thus become an integral part of many top-class audiophile products.

With its individual coils wound on each other, the foil coil corresponds to the **physically ideal coil** more than any other design. This is for example reflected in the quality of the coil which remains constant up to beyond 100 kilohertz. Furthermore, these coils are particularly **low-capacitive**, even though the similarity to a wound capacitor suggests the opposite so that even very high frequencies are isolated effectively. In addition, the large surface of the metal film improves the effective conductivity for higher-frequency alternating current (skin effect).

Another remarkable feature is the **high mechanical stability** of these coil types, which are carefully baked by hand: Due to the **large contact surface** between the individual windings and the visco-plastic isolation of the polypropylene foil the oscillations of the individual windings are eliminated effectively. These advantages can be seen clearly in the diagram shown below: Foil coils have the **lowest measured vibrations**. We offer copper foils in widths corresponding to round wire diameters of approx. 1.25mm • 1.60mm • 2.00mm and 2.50mm.

**Vibrations of coils**



The sound characteristics of a coil are not only determined by the coil wire (see p. 30) and the manufacturing quality but also by the coil core used. As the use of different cores results in coils with different advantages and disadvantages we offer **four core materials** and a total of seven core types. This enables us to manufacture exactly the right coil for each application.

In order to avoid microphonic effects, all Mundorf coils are wound on a coil body. This ensures mechanical stabilisation of the winding, decoupling of the coil from the board and, in addition, facilitates the manufacturing process.

#### **Air coils**

The ideal core material for coils is air. Air cored coils are, for physical reasons, superior to all metal core coils as far as accurate pulse reproduction and freedom from distortion are concerned. They can be used in all areas; either as highpass filter in the middle frequency range, as bass coil (with large conductor cross section) or in correcting components (with thin wire cross section).

Precision, dynamic, subtle tonal gradations, great detail and liveliness distinguish coils with air core from all others. In high-quality speakers, they are thus the basis for realistic and harmonic musical enjoyment. (from p. 33)

#### **Core coils**

Core coils have a metal core which reinforces the magnetic field. Compared to air coils, smaller, cheaper coils with higher inductivity and lower ohmic resistance can be realised. However, the metal core also affects the music signal (among other things due to unwanted distortions).

**Ferrite cores** are sintered from a metal-plastic-powder. The high-performance material HP3616 we use is characterised by low elementary distortions and low hysteresis losses (= rapid change in magnetization). The marginal music signal delay makes ferrite inductors perfectly suitable for equalization networks and mid-driver applications. Additionally our HP3616 is also well-suited for low-power mid-woofers. (from p. 40)

**Aronit cores** (also known as P cores) are made of metal-ceramics-powder, which causes only low power distortions. Due to their compact dimensions, low RDC and excellent price/performance-ratio they are perfectly suitable for woofer, subwoofer and PA applications. (from p. 40)

**Feron cores** consist of an iron-silicon alloy (also called electrical sheets). Our high-performance transformer plates are rolled and tampered several times using special procedures so that all crystals are oriented in the same direction (grain oriented) and a uniform crystal-lattice structure is obtained. Mundorf Feron core coils thus differ from conventional, similar looking coils in a measurable and audible way. They stand out due to minimum basic distortion, magnetic reversal losses and distortions while having a high performance and are thus suitable for flexible applications. (from p. 44)

**Zero-Ohm Coils (ZOC)** are a speciality of our company. In the ZOC, an air gap is calibrated and precisely adjusted by hand between two sheet metal packages made of Feron. The air gap determines the inductivity of the coil and demands great care in the manufacturing process. The high production costs of the ZOC are always justified when maximum faithfulness in pulse reproduction of the playback is required. This special form of the Feron core coil helps to realise lower internal resistances as compared to other core types. (from p. 46)

**MCoil Air Coils** made from massive copper round-wire have been specially developed for high quality loudspeakers, which focus on achieving an utmost natural, detailed and acoustically balanced music performance.

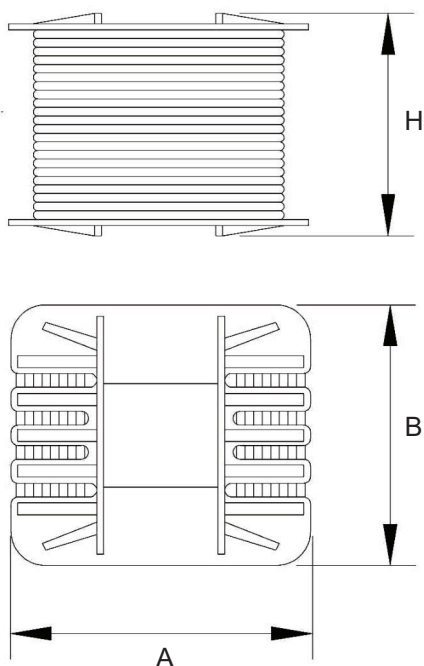
The acoustical properties of the **L** series can yet be significantly enhanced by applying Baked Wire Treatment - on air coils using wires with a larger cross-section - by Vacuum Impregnation.

Baked Wire Treatment coils are listed as in the following table. Vacuum impregnated coils are marked **VL**.

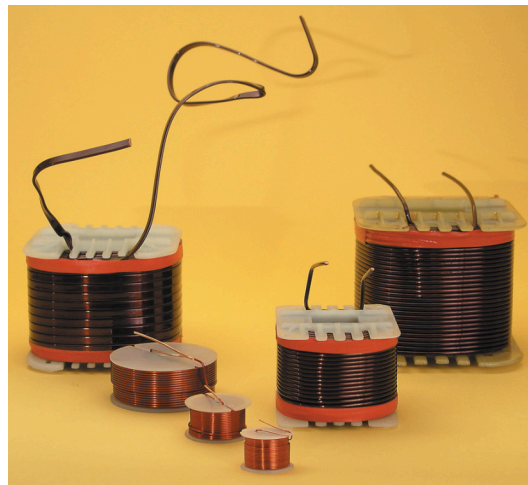
Please find detailed information on the advantages of different coil technologies on pages 30 to 32.

Key words: **Air coils • OFC-Copper • Solid Core**

Body cubical	A	B	H
	Dimensions [mm]		
106	89	76	61
130	105	93	79
150	123	108	89
170	151	120	106
195	162	136	138



**BL**



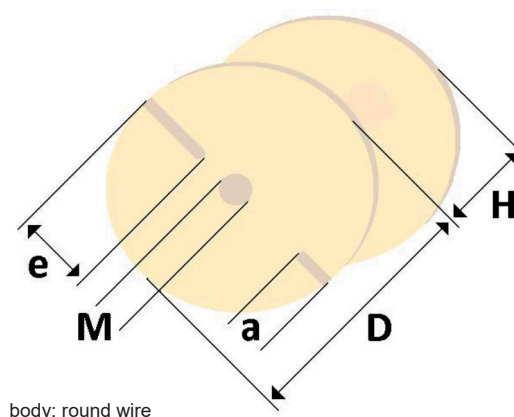
**Technical specifications:**

OFC-Copper 99.99%

Coil form: PA, fibre-glass reinforced

Coil body heat resistant up to max. 230°C/446°F

Body round	D	H	M	a	e
	Dimensions [mm]				
2510	25	10	5	3	6
3020	30	20	5	3	9
4020	40	20	5	5	12
5818	58	18	5	6	20
5822	58	22	5	10	20
5828	58	28	5	10	20
7029	70	29	5	10	22
7728	77	28	5	6	26
7059	70	59	22	10	22



body: round wire



**L50 Air-core coils, wire Ø 0.50 mm**

Inductance [mH] ±2%	RDC [Ohm]	Body
0,10	0,36	2510
0,12	0,42	2510
0,15	0,45	2510
0,18	0,52	2510
0,22	0,59	2510
0,27	0,67	2510
0,33	0,78	2510
0,39	0,85	2510
0,47	1,08	3020
0,56	1,16	3020
0,68	1,31	3020
0,82	1,40	3020
1,0	1,65	3020
1,2	1,80	3020
1,5	1,98	3020
1,8	2,26	3020
2,0	2,37	3020
2,2	2,47	3020
2,7	2,81	3020
3,0	2,98	3020
3,3	3,13	3020
3,9	3,49	4020
4,7	3,85	4020

**BL71 Air-core coils, wire Ø 0.71 mm**

Inductance [mH] ±2%	RDC [Ohm]	Body
0,010	0,06	2510
0,015	0,08	2510
0,022	0,09	2510
0,033	0,11	2510
0,047	0,14	2510
0,068	0,18	2510

**L100 and BL100 Air-core coils, wire Ø 1.00 mm**

Inductance [mH] ±2%	RDC [Ohm]	Body
0,10	0,14	3020
0,12	0,15	3020
0,15	0,17	3020
0,18	0,19	3020
0,22	0,21	3020
0,27	0,23	3020
0,33	0,26	4020
0,39	0,29	4020
0,47	0,32	4020
0,56	0,36	4020
0,68	0,39	4020
0,82	0,44	4020
1,0	0,49	5818
1,2	0,54	5818
1,5	0,62	5818
1,8	0,70	5818
2,0	0,74	5822
2,2	0,77	5822
2,7	0,90	5828
3,0	0,98	5828
3,3	1,00	5828
3,9	1,13	5828
4,7	1,22	7029
5,6	1,35	7029
6,8	1,56	7029
8,2	1,69	7029
10	1,91	7028
12	2,14	7728
15	2,41	7728

**L71 and BL71 Air-core coils, wire Ø 0.71 mm**

Inductance [mH] ±2%	RDC [Ohm]	Body
0,10	0,23	2510
0,12	0,28	3020
0,15	0,31	3020
0,18	0,34	3020
0,22	0,38	3020
0,27	0,42	3020
0,33	0,47	3020
0,39	0,52	3020
0,47	0,58	3020
0,56	0,64	3020
0,68	0,71	3020
0,82	0,79	3020
1,0	0,88	3020
1,2	0,99	4020
1,5	1,11	4020
1,8	1,22	4020
2,0	1,31	4020
2,2	1,39	4020
2,7	1,53	4020
3,0	1,63	4020
3,3	1,76	4020
3,9	1,91	5818
4,7	2,19	5818
5,6	2,35	5818
6,8	2,61	5818
8,2	3,05	5828
10	3,38	5828
12	3,65	7029
15	4,30	7029
18	4,77	7029
22	5,26	7029
27	5,95	7029

**L125 and BL125 Air-core coils, wire Ø 1.25 mm**

Inductance [mH] ±2%	RDC [Ohm]	Body
0,10	0,09	3020
0,12	0,10	3020
0,15	0,11	4020
0,18	0,13	4020
0,22	0,14	4020
0,27	0,15	5818
0,33	0,18	5818
0,39	0,20	5818
0,47	0,22	5818
0,56	0,24	5818
0,68	0,28	5818
0,82	0,29	5818
1,0	0,34	5822
1,2	0,44	5828
1,5	0,47	5828
1,8	0,55	5828
2,0	0,55	5828
2,2	0,57	7029
2,7	0,61	7029
3,0	0,65	7029
3,3	0,69	7029
3,9	0,75	7029
4,7	0,84	7728
5,6	0,95	7728
6,8	1,19	7059
8,2	1,34	7059
10	1,49	7059

**L140 and BL140 Air-core coils, wire Ø 1.40 mm**

Inductance [mH] ±2%	RDC [Ohm]	Body
0,10	0,07	4020
0,12	0,08	4020
0,15	0,10	4020
0,18	0,11	5818
0,22	0,12	5818
0,27	0,13	5818
0,33	0,15	5818
0,39	0,16	5818
0,47	0,19	5818
0,56	0,20	5822
0,68	0,23	5828
0,82	0,26	5828
1,0	0,28	5828
1,2	0,31	7029
1,5	0,38	7029
1,8	0,40	7029
2,0	0,43	7029
2,2	0,46	7029
2,7	0,51	7728
3,0	0,55	7728
3,3	0,58	7728
3,9	0,65	7728
4,7	0,77	7059
5,6	0,89	7059
6,8	0,96	7059
8,2	1,10	7059

**BL180 Air-core coils, wire Ø 1.80 mm**

Inductance [mH] ±2%	RDC [Ohm]	Body
0,10	0,05	5818
0,12	0,05	5818
0,15	0,06	5818
0,18	0,07	5818
0,22	0,08	5822
0,27	0,09	5828
0,33	0,10	5828
0,39	0,11	5828
0,47	0,12	7029
0,56	0,14	7029
0,68	0,15	7029
0,82	0,17	7029
1,0	0,20	7728
1,2	0,22	7728
1,5	0,28	7059
1,8	0,31	7059
2,0	0,32	7059
2,2	0,34	7059
2,7	0,39	7059
3,0	0,40	106
3,3	0,42	106
3,9	0,47	106
4,7	0,53	130
5,6	0,59	130
6,8	0,65	130
8,2	0,72	130
10	0,80	130
12	0,90	130

**L236 and BL236 Air-core coils, wire Ø 2.36 mm**

Inductance [mH] ±2%	RDC [Ohm]	Body
0,10	0,04	5828
0,12	0,04	5828
0,15	0,05	5828
0,18	0,05	5828
0,22	0,06	5828
0,27	0,06	7029
0,33	0,07	7728
0,39	0,08	7728
0,47	0,09	7059
0,56	0,10	7059
0,68	0,11	7059
0,82	0,12	7059
1,0	0,14	7059
1,2	0,15	106
1,5	0,17	106
1,8	0,20	130
2,0	0,21	130
2,2	0,22	130
2,7	0,25	130
3,0	0,26	130
3,3	0,28	130
3,9	0,30	130
4,7	0,34	150
5,6	0,38	150
6,8	0,42	150
8,2	0,46	150
10	0,54	170
12	0,59	170
15	0,67	170
18	0,74	170

**L300 and BL300 Air-core coils, wire Ø 3.00 mm**

Inductance [mH] ±2%	RDC [Ohm]	Body
0,10	0,02	7029
0,12	0,03	7029
0,15	0,03	7728
0,18	0,04	7728
0,22	0,04	7059
0,27	0,04	7059
0,33	0,05	7059
0,39	0,05	7059
0,47	0,06	7059
0,56	0,06	130
0,68	0,07	130
0,82	0,08	130
1,0	0,09	130
1,2	0,10	130
1,5	0,12	130
1,8	0,13	150
2,0	0,14	150
2,2	0,15	150
2,7	0,17	150
3,0	0,18	150
3,3	0,19	150
3,9	0,21	170
4,7	0,24	170
5,6	0,25	170
6,8	0,29	170
8,2	0,32	170
10	0,38	195
12	0,42	195
15	0,46	195

**L390 and BL390 Air-core coils, wire 6x2 mm**

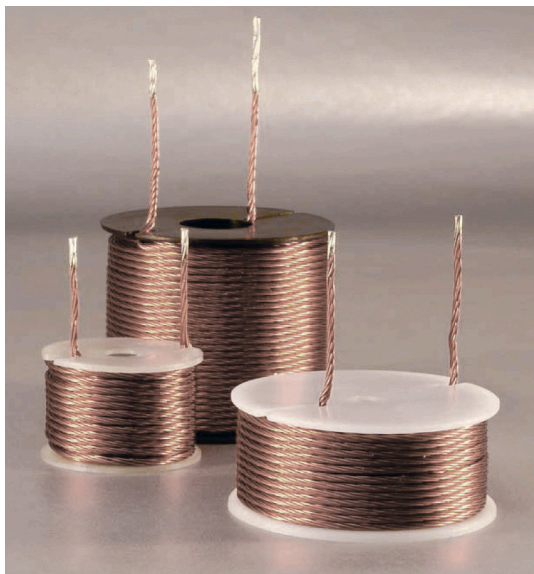
Inductance [mH] ±2%	RDC [Ohm]	Body
0,10	0,01	106
0,12	0,01	106
0,15	0,02	130
0,18	0,02	130
0,22	0,03	130
0,27	0,03	130
0,33	0,03	130
0,39	0,04	130
0,47	0,04	150
0,56	0,04	150
0,68	0,05	150
0,82	0,06	150
1,0	0,06	170
1,2	0,07	170
1,5	0,08	170
1,8	0,09	170
2,0	0,11	170
2,2	0,12	170
2,7	0,13	195
3,0	0,14	195
3,3	0,15	195
3,9	0,17	195
4,7	0,19	195
5,6	0,22	195

**MCoil Hepta Strand** coils unite the tonal clarity, beauty and distortion-free performance of air core coils with the stereophonic spaciousness of tightly-wound coils, alongside the harmonious-warmth and splendid brightness of strand copper wire.

They are therefore the first choice for high quality high and mid frequency applications which focus on a finely detailed, utmost refined musical fidelity performed within a truly holographic life-like staging.

Please find detailed information on the ad-vantages of different coil technologies on pages 30 to 32.

Key words: **Air coils** • **OFC-Copper** • **Hepta Strand**



**Technical specifications:**

OFC-Copper 99.99%

Coil form: PA, fibre-glass reinforced

Coil body heat resistant up to max. 230°C/446°F

**LL45 Air-core coils, litz of wire 7 \* 0.45 mm, baked varnish**

Cross-section 1,11 mm<sup>2</sup> ± round wire Ø 1.19 mm

Inductance [mH] ±2%	RDC [Ohm]	Body
0,10	0,11	4020
0,12	0,12	4020
0,15	0,14	4020
0,18	0,17	4020
0,22	0,18	5818
0,27	0,20	5818
0,33	0,22	5818
0,39	0,24	5818
0,47	0,27	5822
0,56	0,30	5822
0,68	0,34	5828
0,82	0,38	5828
1,0	0,42	5828
1,2	0,46	7029
1,5	0,51	7029
1,8	0,56	7029
2,0	0,61	7029
2,2	0,66	7728
2,7	0,76	7728
3,0	0,81	7728
3,3	0,93	7059
3,9	1,01	7059
4,7	1,16	7059
5,6	1,29	7059
6,8	1,42	7059

**MCoil FC** foil coils are wound layer by layer and are of particularly low-capacitive, even though their similarity to our foil wound capacitors would suggest otherwise.

Their unique performance quality unites the tonal virtues of OFC Copper foil with the clarity and precision generally typical for all air core coils, alongside the authenticity of a tightly cemented reel which is practically microphonic-free.

For High-End mid and high frequency applications, they are particularly distinguished by their 3D-like staging, their harmoniously-dynamic vitality and detailed performance.

If you want truly distortion-free but multi-faceted and all-musical beauty, you may consider copper foil coils as first choice for your bass coils.

Please find detailed information on the advantages of different coil technologies on pages 30 to 32.

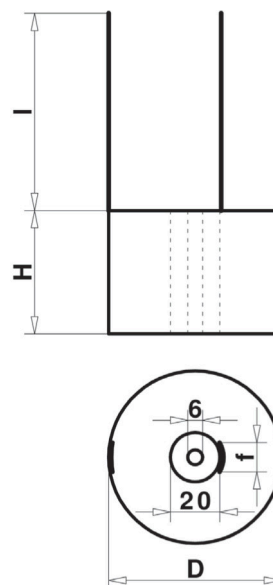
Key words: **Air coils** • **OFC-copper** • **Foil coils**

AWG	Foil W*H [mm]	Insulation [µm]	Cross section [mm <sup>2</sup> ]	≙ round wire Ø [mm]	f ± 1 [mm]
...FC16	17 * 0,07	20	1,19	1,23	17
...FC14	28 * 0,07	20	1,96	1,58	15
...FC12	44 * 0,07	20	3,08	1,98	16
...FC10	70 * 0,07	20	4,90	2,50	19
...FC7	70 * 0,15	30	10,50	3,70	19



**Technical specifications:**

Cu-Foil: 70 µ / OFC-Copper 99,99% pure  
Insulation: Polypropylen 20 µ / central bore: 6 mm  
Permissible ambient temperature: 85°C/185°F



**CFC16 Air-core coils, foil 17 mm**

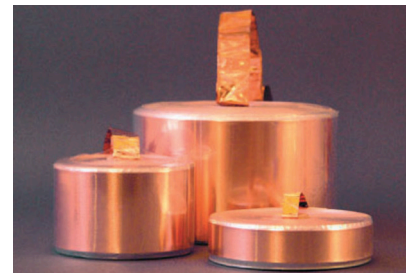
Cross-section 1.19 mm<sup>2</sup> ± round wire Ø 1.23

Inductance [mH] ± 2%	RDC [Ohm]	Ø * H [mm]
0,10	0,10	34 * 24
0,12	0,11	35 * 24
0,15	0,12	37 * 24
0,18	0,13	38 * 24
0,22	0,15	39 * 24
0,27	0,16	42 * 24
0,33	0,18	44 * 24
0,39	0,20	46 * 24
0,47	0,23	48 * 24
0,56	0,26	50 * 24
0,68	0,29	52 * 24
0,82	0,31	54 * 24
1,0	0,37	57 * 24
1,2	0,41	61 * 24
1,5	0,47	65 * 24
1,8	0,50	68 * 24
2,0	0,55	70 * 24
2,2	0,58	69 * 24
2,7	0,65	77 * 24
3,0	0,70	79 * 24
3,3	0,74	81 * 24
3,9	0,84	85 * 24
4,7	0,93	88 * 24
5,6	1,05	93 * 24
6,8	1,18	100 * 24
8,2	1,31	108 * 24

**CFC14 Air-core coils, foil 28 mm**

Cross-section 1.96 mm<sup>2</sup> ± round wire Ø 1.58 mm

Inductance [mH] ± 2%	RDC [Ohm]	Ø * H [mm]
0,10	0,07	36 * 34
0,12	0,08	38 * 34
0,15	0,09	40 * 34
0,18	0,10	41 * 34
0,22	0,11	44 * 34
0,27	0,12	46 * 34
0,33	0,13	48 * 34
0,39	0,14	50 * 34
0,47	0,16	52 * 34
0,56	0,18	54 * 34
0,68	0,20	56 * 34
0,82	0,22	59 * 34
1,0	0,26	62 * 34
1,2	0,29	65 * 34
1,5	0,33	69 * 34
1,8	0,36	72 * 34
2,0	0,39	75 * 34
2,2	0,41	77 * 34
2,7	0,46	82 * 34
3,0	0,48	84 * 34
3,3	0,50	85 * 34
3,9	0,55	89 * 34
4,7	0,62	94 * 34
5,6	0,68	99 * 34
6,8	0,78	101 * 34
8,2	0,86	109 * 34
10	0,90	114 * 34
12	0,95	118 * 34
15	1,20	125 * 34



**CFC12 Air-core coils, foil 44 mm**

Cross-section 3.08 mm<sup>2</sup> ± round wire Ø 1.98

Inductance [mH] ± 2%	RDC [Ohm]	Ø * H [mm]
0,10	0,05	41 * 52
0,12	0,06	41 * 52
0,15	0,06	44 * 52
0,18	0,07	45 * 52
0,22	0,08	47 * 52
0,27	0,09	49 * 52
0,33	0,10	51 * 52
0,39	0,11	53 * 52
0,47	0,12	55 * 52
0,56	0,14	57 * 52
0,68	0,15	60 * 52
0,82	0,17	64 * 52
1,0	0,19	68 * 52
1,2	0,21	70 * 52
1,5	0,24	74 * 52
1,8	0,26	76 * 52
2,0	0,28	80 * 52
2,2	0,29	81 * 52
2,7	0,32	84 * 52
3,0	0,35	88 * 52
3,3	0,37	91 * 52
3,9	0,39	95 * 52
4,7	0,46	96 * 52
5,6	0,50	105 * 52
6,8	0,56	110 * 52
8,2	0,63	117 * 52
10	0,72	120 * 52
12	0,80	128 * 52
15	0,88	132 * 52
18	0,99	135 * 52

**CFC10 Air-core coils, foil 70 mm**

Cross-section 4.90 mm<sup>2</sup> ± round wire Ø 2.50 mm

Inductance [mH] ± 2%	RDC [Ohm]	Ø * H [mm]
0,10	0,04	43 * 77
0,12	0,04	44 * 77
0,15	0,05	47 * 77
0,18	0,05	48 * 77
0,22	0,06	50 * 77
0,27	0,06	53 * 77
0,33	0,07	56 * 77
0,39	0,08	57 * 77
0,47	0,09	59 * 77
0,56	0,10	62 * 77
0,68	0,11	65 * 77
0,82	0,12	67 * 77
1,0	0,14	71 * 77
1,2	0,15	76 * 77
1,5	0,17	80 * 77
1,8	0,19	83 * 77
2,0	0,20	83 * 77
2,2	0,21	88 * 77
2,7	0,23	93 * 77
3,0	0,25	93 * 77
3,3	0,27	97 * 77
3,9	0,28	104 * 77
4,7	0,31	108 * 77
5,6	0,36	111 * 77
6,8	0,41	121 * 77
8,2	0,47	124 * 77
10	0,54	130 * 77
12	0,60	132 * 77
15	0,66	136 * 77

**CFC7 Air-core coils, foil 70 mm**

Cross-section 10.50 mm<sup>2</sup> ± round wire Ø 3.70 mm

Inductance [mH] ± 2%	RDC [Ohm]	Ø * H [mm]
0,10	0,02	67 * 78
0,12	0,02	68 * 78
0,15	0,03	72 * 78
0,18	0,03	74 * 78
0,22	0,03	77 * 78
0,27	0,04	81 * 78
0,33	0,04	85 * 78
0,39	0,05	86 * 78
0,47	0,05	89 * 78
0,56	0,06	93 * 78
0,68	0,06	98 * 78
0,82	0,07	102 * 78
1,0	0,08	106 * 78
1,2	0,09	113 * 78
1,5	0,10	118 * 78
1,8	0,11	122 * 78
2,0	0,12	125 * 78
2,2	0,12	129 * 78
2,7	0,13	133 * 78
3,0	0,14	137 * 78
3,3	0,17	143 * 78

**MCoil SFC** silverfoil coils have been developed for uncompromising state-of-the-art audio applications focused on absolutely flawless and a holographic 3D-like performance at utmost dynamics providing a considerably increased range of vivid, subtle timbres and precision.

Their acoustic features unite the typical tonal beauty and authenticity of air core coils with the three-dimensional staging of a tightly cemented, microphonic-free reel alongside the outstanding tonal properties of silver foil in terms of multi-faceted and truly 'life-like' performance of voices and instruments.

However, the exceptional tonal quality of the **SFC** series can be further enhanced by adding 1% of the purest gold making it the **SGFC** series then.

Please find detailed information on the advantages of the different coil technologies on pages 30 to 32.  
Key words: **Air coils** • **Silver/SilverGold** • **Foil coils**



**Technical specifications:**

Insulation: Polypropylene (20µm)  
SFC Conductor: Silver (70µm)  
SGFC Conductor: 99% Silver + 1% Gold (70µm)  
Conductor's Purity: min. 99,97% typ. 99,99%  
Mounting Hole Ø: 6 mm

**SCF16 and SGCF16**

**Air-core coils, foil 17 mm, Silver/SilverGold**  
Cross-section 1.19 mm<sup>2</sup> ± round wire Ø 1.23 mm

Inductance [mH] ± 2%	RDC [Ohm]	Ø * H [mm]	Price on request
0,10	0,08	34 * 24	
0,15	0,10	37 * 24	
0,22	0,12	38 * 24	
0,33	0,15	44 * 24	
0,47	0,19	48 * 24	
0,68	0,24	52 * 24	
1,0	0,30	57 * 24	
1,5	0,38	65 * 24	
2,2	0,48	72 * 24	
2,7	0,52	77 * 24	
3,3	0,60	81 * 24	
3,9	0,68	85 * 24	
4,7	0,75	88 * 24	
5,6	0,84	93 * 24	

**SFC14 and SGFC14**

**Air-core coils, foil 28 mm, Silver/SilverGold**  
Cross-section 1.96 mm<sup>2</sup> ± round wire Ø 1.58 mm

Inductance [mH] ± 2%	RDC [Ohm]	Ø * H [mm]	Price on request
0,10	0,06	36 * 34	
0,15	0,08	40 * 34	
0,22	0,09	44 * 34	
0,33	0,11	48 * 34	
0,47	0,13	52 * 34	
0,68	0,16	56 * 34	
1,0	0,21	62 * 34	
1,5	0,27	69 * 34	
2,2	0,33	77 * 34	
2,7	0,37	82 * 34	
3,3	0,40	85 * 34	
3,9	0,44	89 * 34	
4,7	0,50	94 * 34	
5,6	0,55	99 * 34	

**SCF12 and SGCF12**

**Air-core coils, foil 44 mm, Silver/SilverGold**  
Cross-section 3.08 mm<sup>2</sup> ± round wire Ø 1.98 mm

Inductance [mH] ± 2%	RDC [Ohm]	Ø * H [mm]	Price on request
0,22	0,07	47 * 52	
0,33	0,08	51 * 52	
0,47	0,10	55 * 52	
0,68	0,12	60 * 52	
1,0	0,16	67 * 52	
1,5	0,20	74 * 52	
2,2	0,24	82 * 52	
3,3	0,30	91 * 52	
3,9	0,32	95 * 52	
4,7	0,37	100 * 52	
5,6	0,40	105 * 52	

**SCF10 and SGCF10**

**Air-core coils, foil 70 mm, Silver/SilverGold**  
Cross-section 4.90 mm<sup>2</sup> ± round wire Ø 2.50 mm

Inductance [mH] ± 2%	RDC [Ohm]	Ø * H [mm]	Price on request
1,0	0,12	71 * 77	
1,5	0,14	80 * 77	
2,2	0,17	88 * 77	
2,7	0,19	91 * 77	
3,3	0,22	97 * 77	
3,9	0,23	104 * 77	
4,7	0,25	108 * 77	
5,6	0,29	111 * 77	
6,8	0,33	121 * 77	
8,2	0,38	124 * 77	
10	0,47	128 * 77	
12	0,55	134 * 77	
15	0,69	141 * 77	

## FERRITE / ARONIT Core MCoil PipeCore



The smaller **MCoil FERRITE PipeCore Coils** made from solid core copper wire, have been specially developed for mid, low and parallel applications, for which compact dimensions and a reasonable price/performance-ratio are of essential importance as given for, e.g., adjustment devices or car audio crossovers.

The larger **MCoil ARONIT PipeCore Coils** combine the balanced, detailed and dynamic tone colour of OFC round wire with the low output distortions and internal resistance of Aronit cores. They are therefore an excellent choice for good value and compact yet heavy-duty midwoofer, woofer and subwoofer coils, including for PA applications.

The tonal qualities of the **P** series and its much satisfying music performance can yet be enhanced by Baked Varnish as shown for the **BP** series.

Please find detailed information on the advantages of different coil technologies on pages 30 to 32. Key words:

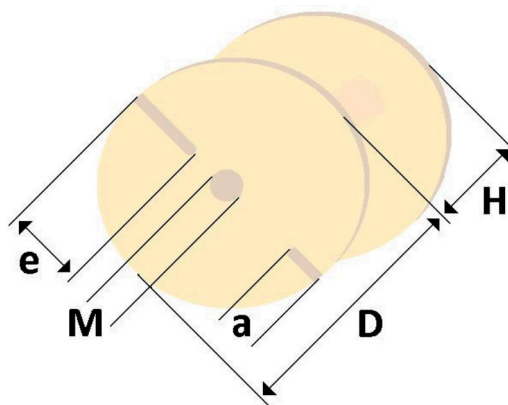
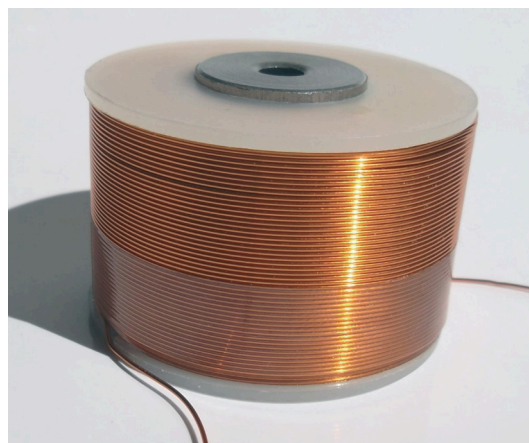
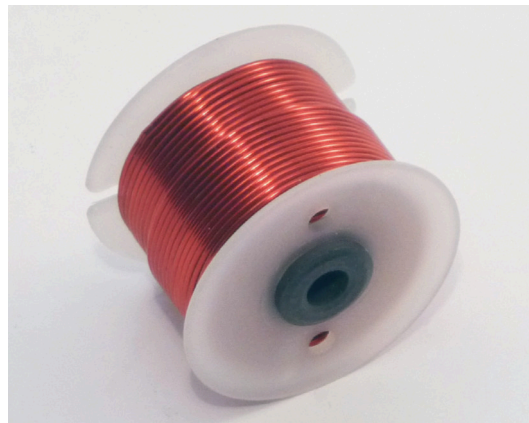
**Ferrite Core • OFC-Copper • Solid Core**

### Technical specifications:

OFC-Copper 99.99%

Coil form: PA, fibre-glass reinforced

Coil body heat resistant up to max. 230°C/446°F



Body	D	H	M	a	e
Dimensions [mm]					
F3023	30	23	4	3	9
F4023	40	23	4	5	12
A4530	45	30	5	7	11

**P50**

**PipeCore Coils, wire Ø 0,50 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body
2,7	1,48	F3023
3,0	1,59	F3023
3,3	1,71	F3023
3,9	1,81	F3023
4,7	2,15	F3023
5,6	2,29	F3023
6,8	2,63	F3023
8,2	3,01	F3023
10	3,50	F4023
12	4,08	F4023
15	4,79	F4023
18	5,77	F4023
22	6,58	F4023

**P100 BP100**

**PipeCore Coils, wire Ø 1,00 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body
0,27	0,13	F3023
0,33	0,15	F3023
0,39	0,16	F3023
0,47	0,19	F3023
0,56	0,21	F3023
0,68	0,23	F4023
0,82	0,27	F4023
1,0	0,32	F4023
1,2	0,37	F4023
1,5	0,38	A4530
1,8	0,44	A4530
2,0	0,45	A4530
2,2	0,47	A4530
2,7	0,53	A4530
3,3	0,64	A4530
3,9	0,71	A4530
4,7	0,80	A4530

**P71 BP71**

**PipeCore Coils, wire Ø 0,71 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body
0,68	0,36	F3023
0,82	0,41	F3023
1,0	0,46	F3023
1,2	0,57	F3023
1,5	0,61	F3023
1,8	0,73	F3023
2,0	0,76	F3023
2,2	0,81	F3023
2,7	1,01	F4023
3,0	1,04	F4023
3,3	1,08	F4023
3,9	1,23	F4023
4,7	1,37	F4023
5,6	1,46	A4530
6,8	1,65	A4530
8,2	1,89	A4530
10	2,19	A4530
12	2,55	A4530

**P125 BP125**

**PipeCore Coils, wire Ø 1,25 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body
1,2	0,24	A4530
1,5	0,27	A4530
1,8	0,31	A4530
2,0	0,35	A4530

**P140 BP140**

**Pipe-core coils, wire Ø 1,40 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body
0,47	0,11	A4530
0,56	0,13	A4530
0,68	0,14	A4530
0,82	0,16	A4530
1,0	0,18	A4530



## FERRIT Core coils MCoil DrumCore



**MCoil DrumCore** made from oxygen-free copper (OFC) round-wire have been developed for applications for which compact dimensions, the lowest possible internal resistance and a great value for money are of key importance.

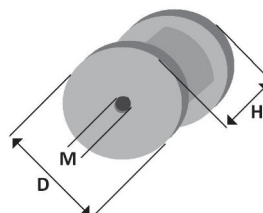
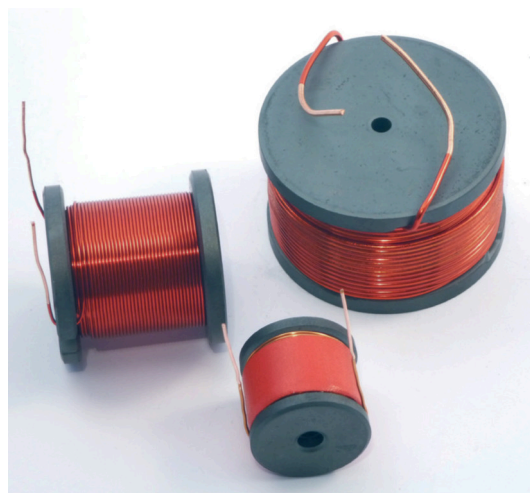
Because of their low high-load distortions, the **ARONIT** versions particularly distinguish in midwoofer, woofer and subwoofer applications.

The **FERRITE** types are highly recommended for middriver, midwoofer and parallel applications, due to their low basic distortion level. The tonal quality of these coils is a convincing blend of the typical harmoniously-neutral sound of solid core copper round-wire and the natural vitality and enhanced tonal dynamic of HP3616.

The fine properties of the **H** series can be further improved by applying Baked Varnish treatment as introduced with **BH** series. The all-new **LH** styles add the unique sound character of baked **OFC Hepta Strand wire**, which is same times very detailed and silky, to the superb core features.

Please find detailed information on the advantages of different coil technologies on pages 30 to 32. Key words:

**Ferrite Cores • OFC-Copper • Solid Core**



Body	D	H	M
	Dimensions [mm]		
F2625	26	25	5,2
F3025	30	25	5,3
F3525	35	25	5,3
F4037	40	37	5,6
A5151	51	51	6,4

### LH45

**DrumCore Coils, litz of wire 7 \* 0,45 mm, baked varnish**

Cross-section 1,11 mm<sup>2</sup>  $\triangle$  round wire  $\varnothing$  1,19 mm

Inductance [mH] $\pm$ 3%	RDC [Ohm]	Body
1,0	0,12	F4037
1,2	0,14	F4037
1,5	0,16	F4037
1,8	0,18	F4037
2,0	0,21	F4037
2,2	0,21	A5151
2,7	0,24	A5151
3,0	0,26	A5151
3,3	0,27	A5151
3,9	0,31	A5151
4,7	0,34	A5151
5,6	0,40	A5151
6,8	0,53	A5151

**H50**  
DrumCore Coils, wire Ø 0,50 mm

Inductance [mH] ± 3%	RDC [Ohm]	Body
3,9	0,96	F2625
4,7	1,06	F2625
5,6	1,14	F2625
6,8	1,31	F2625
8,2	1,57	F2625
10	1,50	F3025
12	1,75	F3025
15	2,01	F3025
18	2,30	F3025
22	2,67	F3025
27	3,11	F3025

**H71 BH71**  
DrumCore Coils, wire Ø 0,71 mm

Inductance [mH] ± 3%	RDC [Ohm]	Body
1,0	0,22	F2625
1,2	0,25	F2625
1,5	0,29	F2625
1,8	0,33	F2625
2,0	0,35	F2625
2,2	0,37	F2625
2,7	0,43	F2625
3,0	0,46	F2625
3,3	0,50	F2625
3,9	0,51	F3025
4,7	0,58	F3025
5,6	0,67	F3025
6,8	0,65	F3525
8,2	0,75	F3525
10	0,87	F3525
12	1,02	F3525
15	1,15	F4037
18	1,28	F4037
22	1,49	F4037
27	1,68	F4037
33	1,93	F4037
39	2,36	A5151
47	2,80	A5151

**H100 BH100**  
DrumCore Coils, wire Ø 1,00 mm

Inductance [mH] ± 3%	RDC [Ohm]	Body
1,0	0,13	F3025
1,2	0,15	F3025
1,5	0,17	F3025
1,8	0,18	F3525
2,0	0,19	F3525
2,2	0,20	F3525
2,7	0,24	F3525
3,0	0,26	F3525
3,3	0,27	F4037
3,9	0,30	F4037
4,7	0,34	F4037
5,6	0,39	F4037
6,8	0,46	F4037
8,2	0,56	A5151
10	0,64	A5151
12	0,72	A5151
15	0,81	A5151
18	0,95	A5151
22	1,10	A5151

**H125 BH125**  
DrumCore Coils, wire Ø 1,25 mm

Inductance [mH] ± 3%	RDC [Ohm]	Body
0,68	0,09	F3025
0,82	0,10	F3525
1,0	0,11	F3525
1,2	0,12	F3525
1,5	0,12	F4037
1,8	0,14	F4037
2,0	0,15	F4037
2,2	0,17	F4037
2,7	0,19	F4037
3,0	0,20	F4037
3,3	0,22	F4037
3,9	0,24	F4037
4,7	0,27	A5151
5,6	0,33	A5151
6,8	0,37	A5151
8,2	0,42	A5151
10	0,48	A5151
12	0,54	A5151

**H140 BH140**  
DrumCore Coils, wire Ø 1,40 mm

Inductance [mH] ± 3%	RDC [Ohm]	Body
1,0	0,08	F4037
1,2	0,09	F4037
1,5	0,10	F4037
1,8	0,12	F4037
2,0	0,13	F4037
2,2	0,14	F4037
2,7	0,18	A5151
3,0	0,19	A5151
3,3	0,20	A5151
3,9	0,22	A5151
4,7	0,25	A5151
5,6	0,29	A5151
6,8	0,33	A5151

**H180 BH180**  
DrumCore Coils, wire Ø 1,80 mm

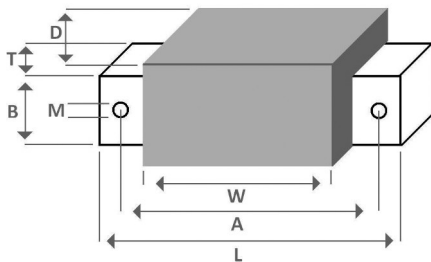
Inductance [mH] ± 3%	RDC [Ohm]	Body
0,39	0,04	A5151
0,47	0,05	A5151
0,56	0,05	A5151
0,68	0,06	A5151
0,82	0,06	A5151
1,0	0,07	A5151
1,2	0,08	A5151
1,5	0,09	A5151
1,8	0,10	A5151
2,0	0,11	A5151
2,2	0,12	A5151

**MCoil iCore Coils** combine both the typical low basic output distortions and the low internal resistance of Feron core coils with the enhanced dynamic in music performance of copper wire featuring our Baked Wire Treatment.

They are highly suitable to be used for high quality mid frequency crossover within subwoofer applications. They also offer an excellent value for money ratio as well as they come at compact dimensions.

Please find detailed information on the advantages of different coil technologies on pages 30 to 32.

Key words: **Feron Core • OFC-Copper • Solid Core**



**Technical specifications:**

OFC-Copper 99.99% pure  
Coil form: PA, fibre-glass reinforced  
Core material: FERON  
Grain-oriented silicon iron 0.35 mm

Body	L	T=B	Dimensions (mm)		
			A	W	M
S66	66	11	55	41	4
S84	84	14	72	58	4
S96	96	16	82	67	5
S106	106	14,5	94	79	5
S130	130	18	115	99	6
S150	150	20	134	118	6

**BS100**  
**iCore Coils, baked varnish wire Ø 1,00 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body	D Ø [mm]
4,7	0,41	S84	27
5,6	0,46	S84	27
6,8	0,52	S84	29
8,2	0,58	S84	29
10	0,63	S84	31
12	0,71	S84	33
15	0,82	S84	33

**BS140**  
**iCore Coils, baked varnish wire Ø 1,40 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body	D Ø [mm]
1,0	0,09	S84	27
1,2	0,10	S84	27
1,5	0,12	S84	27
1,8	0,13	S84	28
2,0	0,14	S84	28
2,2	0,15	S84	28
2,7	0,17	S96	29
3,0	0,18	S96	29
3,3	0,19	S96	29
3,9	0,19	S106	31
4,7	0,23	S106	32
5,6	0,25	S106	32
6,8	0,28	S106	34
8,2	0,32	S106	34
10	0,35	S130	35
12	0,39	S130	35
15	0,45	S130	37
18	0,46	S130	37
22	0,52	S130	39
27	0,67	S130	41
33	0,70	S150	43

**BS125**  
**iCore Coils, baked varnish wire Ø 1,25 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body	D Ø [mm]
2,7	0,21	S84	21
3,0	0,22	S84	30
3,3	0,23	S84	30
3,9	0,25	S84	32
4,7	0,30	S96	32
5,6	0,31	S96	32
6,8	0,35	S96	32
8,2	0,39	S96	32
10	0,42	S106	34
12	0,46	S106	36
15	0,57	S106	36
18	0,59	S130	36
22	0,67	S130	38

**BS180**  
**iCore Coils, baked varnish wire Ø 1,80 mm**

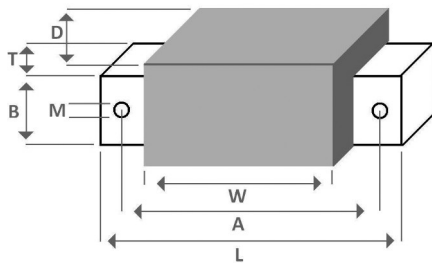
Inductance [mH] ± 3%	RDC [Ohm]	Body	D Ø [mm]
1,0	0,06	S106	33
1,2	0,07	S106	33
1,5	0,08	S106	33
1,8	0,09	S106	34
2,0	0,10	S106	34
2,2	0,10	S106	34
2,7	0,11	S106	35
3,0	0,12	S106	35
3,3	0,13	S106	36
3,9	0,14	S130	36
4,7	0,15	S130	37
5,6	0,17	S130	37
6,8	0,19	S130	39
8,2	0,21	S130	39
10	0,23	S150	41
12	0,26	S150	43
15	0,30	S150	45
18	0,34	S150	47
22	0,39	S150	49
27	0,45	S150	51
33	0,51	S150	53
39	0,57	S150	55
47	0,65	S150	58

**MCoil iCore Coils** made from copper foil combine both the low level output distortions and the low internal resistance of Feron core coils with the high resolution and the great dynamic properties of OFC copper foil. They are highly suitable to be used in high quality mid frequency crossovers within subwoofer applications. Furthermore, they are distinguished by an excellent value for money ratio as well as by their compact dimensions.

With the **CFS** series we are once again complying to the very innovation and quality standards we set on day 1 for making us a leading manufacturer of state-of-the-art components for music lovers, since +30 years.

Please find detailed information on the advantages of different coil technologies on pages 30 to 32.

Key words: **Feron Core • OFC-Copper • Foil coils**



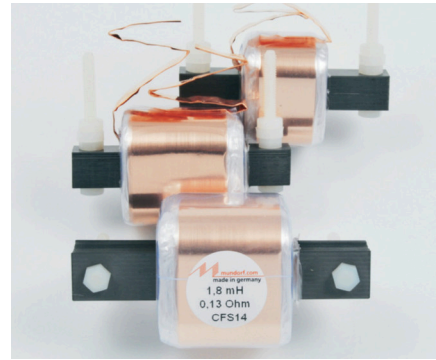
Body	L	T=B	A	W	M
Dimensions (mm)					
S66	66	11	55	41	4
S84	84	14	72	58	4
S96	96	16	82	67	5
S106	106	14,5	94	79	5
S130	130	18	115	99	6
S150	150	20	134	118	6

**CFS14**

**iCore Coils, foil 28 mm**

Cross-section = 1.96 mm<sup>2</sup>,  $\pm$  round wire  $\varnothing$  1,58mm

Inductance [mH] $\pm$ 3%	RDC [Ohm]	Body	D $\varnothing$ [mm]
0,47	0,05	S84	31
0,56	0,06	S84	32
0,68	0,07	S84	34
0,82	0,08	S84	35
1,0	0,09	S84	37
1,2	0,10	S84	38
1,5	0,11	S84	40
1,8	0,13	S84	43
2,0	0,14	S96	44
2,2	0,14	S96	45
2,7	0,16	S106	46
3,0	0,17	S106	47
3,3	0,17	S106	48
3,9	0,21	S106	51
4,7	0,24	S106	54
5,6	0,28	S106	58
6,8	0,30	S106	62
8,2	0,34	S106	67
10	0,40	S106	73



**Technical specifications:**

Cu-foil: 70  $\mu$  / OFC-Copper 99.99% pure  
Insulation: Polypropylen 20  $\mu$   
Core material: FERON  
Grain-oriented silicon iron 0.35 mm  
Permissible ambient temperature 105°C/221°F

**CFS12**

**iCore Coils, foil 44 mm**

Cross-section 3.08 mm<sup>2</sup>  $\pm$  round wire  $\varnothing$  1.96

Inductance [mH] $\pm$ 3%	RDC [Ohm]	Body	D $\varnothing$ [mm]
1,0	0,06	S130	37
1,2	0,06	S130	39
1,5	0,07	S130	41
1,8	0,07	S130	43
2,0	0,08	S130	44
2,2	0,09	S130	45
2,7	0,10	S130	47
3,0	0,11	S130	49
3,3	0,12	S130	50
3,9	0,12	S130	53
4,7	0,14	S130	56
5,6	0,16	S130	59
6,8	0,19	S130	63
8,2	0,22	S130	67
10	0,26	S130	74
12	0,32	S130	78
15	0,37	S130	82
18	0,43	S130	87
22	0,49	S130	94

**CFS10**

**iCore Coils, foil 70 mm**

Cross-section 4.90 mm<sup>2</sup>  $\pm$  round wire  $\varnothing$  2.50 mm

Inductance [mH] $\pm$ 3%	RDC [Ohm]	Body	D $\varnothing$ [mm]
1,0	0,04	S150	41
1,2	0,04	S150	42
1,5	0,05	S150	44
1,8	0,05	S150	46
2,0	0,06	S150	47
2,2	0,06	S150	48
2,7	0,07	S150	50
3,0	0,08	S150	52
3,3	0,09	S150	54
3,9	0,10	S150	56
4,7	0,11	S150	59
5,6	0,12	S150	63
6,8	0,13	S150	67
8,2	0,15	S150	71
10	0,18	S150	77
12	0,20	S150	82
15	0,24	S150	89
18	0,27	S150	95
22	0,33	S150	103
27	0,41	S150	114
33	0,50	S150	128

## FERON Core coils MCoil Zero-Ohm



Our **Zero-Ohm Coil (ZOC)** not only is a remarkable milestone in our +30 years lasting company history but certainly a true milestone within the field of audiophile coil technology in general, too. As back then, today, the ZOC is still to set the standards for the utmost musical fidelity in all respects considering a convincingly performed low frequency spectrum in subtle coloration.

They were specially developed for low frequency applications for which maximum performance fidelity, tonal neutrality and the smallest possible internal resistance are of primary importance. That way, these coils also enable the high efficiency of today's High End loudspeakers to be optimally enhanced, even with low-output single-ended tube applications.

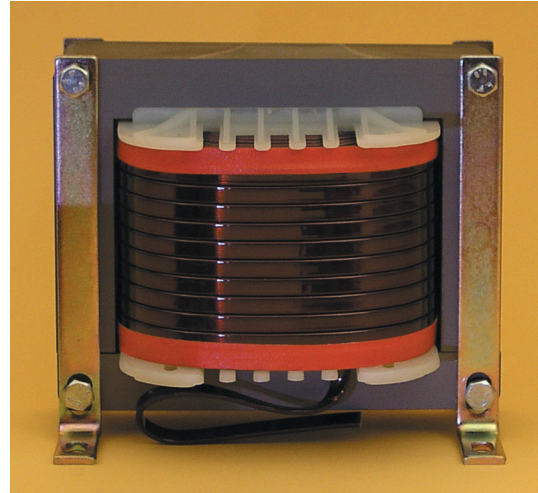
Moreover, we are pleased to present a completely revised and expanded model series, which now meets numerous customer requests for smaller dimensions, too.

The excellent qualities of the **N** series with its transparency and musical authenticity can yet be further enhanced by applying Baked Wire Treatment. Same applies for vacuum impregnated ZOCs made from copper round wires with larger conductor cross sections.

Baked Wire Treatment featuring coils are listed as **BN** in the following table, vacuum impregnated coils are marked **VN**.

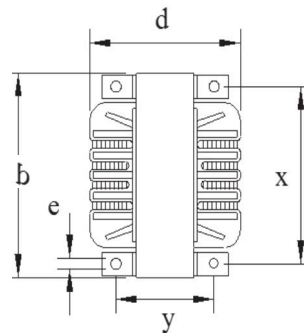
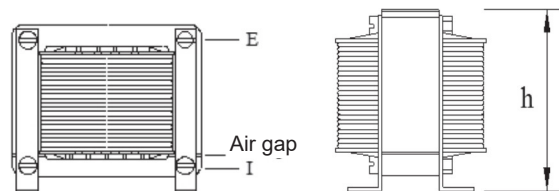
Please find detailed information on the advantages of different coil technologies on pages 30 to 32. Key words:

**Feron Core ZOC • OFC-Copper • Solid Core**



### Technical specifications:

Core material: FERON  
Grain-oriented silicon iron 0.35 mm  
OFC-Copper 99.99% pure



Body	b	h	d	x	y	e
Dimensions (mm)						
N66	66	61	63	54	48	4,8
N84	84	76	70	72	57	4,8
N96	96	86	84	80	69	5,8
N106	106	93	87	95	67	5,8
N130	130	115	97	78	114	5,8
N150	150	131	121	135	86	7,0

## FERON Core coils MCoil Zero-Ohm

Inner Excellence

### BN125

Zero-Ohm Coils, baked varnish wire Ø 1,25 mm

Inductance [mH] ± 5%	RDC [Ohm]	Body
15	0,36	N84
18	0,44	N84
22	0,47	N84
27	0,53	N96
33	0,60	N96

### BN140

Zero-Ohm Coils, baked varnish wire Ø 1,40 mm

Inductance [mH] ± 5%	RDC [Ohm]	Body
1,0	0,07	N66
1,2	0,08	N66
1,5	0,08	N66
1,8	0,10	N66
2,0	0,11	N66
2,2	0,12	N66
2,7	0,12	N66
3,0	0,14	N66
3,3	0,14	N84
3,9	0,16	N84
4,7	0,17	N84
5,6	0,19	N84
6,8	0,21	N84
8,2	0,23	N84
10	0,26	N84
12	0,29	N84

### BN180

Zero-Ohm Coils, baked varnish wire Ø 1,80 mm

Inductance [mH] ± 5%	RDC [Ohm]	Body
2,2	0,07	N84
2,7	0,08	N84
3,0	0,09	N84
3,3	0,09	N84
3,9	0,10	N84
4,7	0,11	N96
5,6	0,12	N96
6,8	0,13	N96
8,2	0,15	N96
10	0,16	N96
12	0,17	N96
15	0,22	N106
18	0,25	N106
22	0,29	N106
27	0,32	N106
33	0,34	N106

### N236 VN236

Zero-Ohm Coils, wire Ø 2,36 mm

Inductance [mH] ± 5%	RDC [Ohm]	Body
2,7	0,05	N96
3,0	0,06	N96
3,3	0,06	N96
3,9	0,06	N96
4,7	0,06	N96
5,6	0,08	N106
6,8	0,09	N106
8,2	0,10	N106
10	0,12	N106
12	0,13	N106
15	0,15	N130
18	0,17	N130
22	0,19	N130
27	0,21	N130
33	0,24	N130

### N300 VN300

Zero-Ohm Coils, wire Ø 3,00 mm

Inductance [mH] ± 5%	RDC [Ohm]	Body
1,0	0,02	N96
1,2	0,02	N96
1,5	0,02	N96
1,8	0,03	N96
2,0	0,03	N96
2,2	0,03	N96
2,7	0,03	N106
3,0	0,04	N106
3,3	0,04	N106
3,9	0,04	N106
4,7	0,05	N106
5,6	0,05	N130
6,8	0,06	N130
8,2	0,07	N130
10	0,08	N130
12	0,09	N130
15	0,1	N130
18	0,11	N130
22	0,11	N150
27	0,13	N150
33	0,14	N150

### N390 VN390

Zero-Ohm Coils, wire 6 x 2 mm

Inductance [mH] ± 5%	RDC [Ohm]	Body
1,0	0,02	N106
1,2	0,02	N106
1,5	0,02	N106
1,8	0,02	N106
2,0	0,02	N106
2,2	0,02	N106
2,7	0,02	N106
3,0	0,02	N130
3,3	0,03	N130
3,9	0,03	N130
4,7	0,03	N130
5,6	0,04	N130
6,8	0,04	N150
8,2	0,04	N150
10	0,05	N150
12	0,05	N150
15	0,05	N150
18	0,05	N150
22	0,05	N150

## FERON Core coils MCoil Zero-Ohm



Our **Zero-Ohm Coil (ZOC)** made from copper foil impressively combines the outstanding natural music performance of extremely low ohm Feron ZOC cores with the finely detailed musical texture and multifaceted richness of OFC copper foil.

These coils were specially developed for low frequency applications which do not focus on maximum capacity, but rather exceptional performance quality, micro-dynamics and outstanding technical properties such as matching perfectly with highly-efficient loudspeakers specially designed for low-power, single-ended tube-amplifiers.

Please find detailed information on the advantages of the different coils technologies on pages 30 to 32.

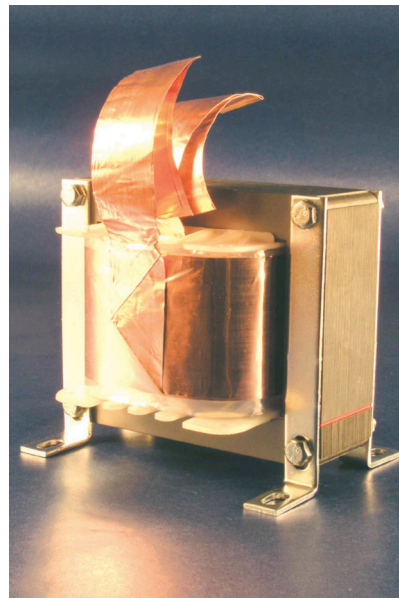
Key words: **Feron Core ZOC • OFC-Copper • Foil coils**

### Technical specifications:

Core material: FERON

Grain-oriented silicon iron 0.35 mm

OFC-Copper 99.99% pure



### CFN14

#### Zero-Ohm Coils, foil 28 mm

Cross-section = 1.96 mm<sup>2</sup>,  $\triangle$  round wire  $\varnothing$  1.58 mm

Inductance [mH] $\pm$ 5%	RDC [Ohm]	Body
2,7	0,10	N84
3,0	0,11	N84
3,3	0,12	N84
3,9	0,13	N84
4,7	0,15	N84
5,6	0,17	N84
6,8	0,19	N84

### CFN12

#### Zero-Ohm Coils, foil 44 mm

Cross-section = 3.08 mm<sup>2</sup>,  $\triangle$  round wire  $\varnothing$  1.98 mm

Inductance [mH] $\pm$ 5%	RDC [Ohm]	Body
8,2	0,14	N106
10	0,15	N106
12	0,17	N106
15	0,19	N106
18	0,22	N106
22	0,25	N106

**MCoil TransformerCore Coils** combine both lowest distortion rate and precise pulse signal with low internal resistance, even under highest output levels. Therefore they have been the benchmark for extremely precise and powerful but deep bass performance for more than 25 years!

We are very pleased to present a completely revised and expanded model series, now meeting frequent customer requests for smaller dimensions, too.

The outstanding features of this series can be considerably enhanced yet by the appliance of Baked Wiring Treatment or Vacuum Impregnation.

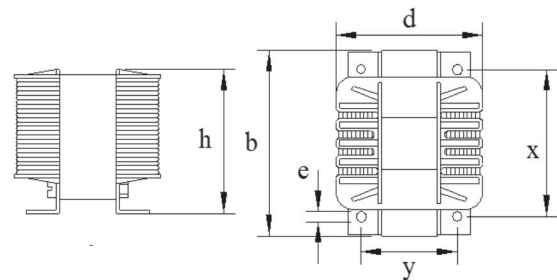
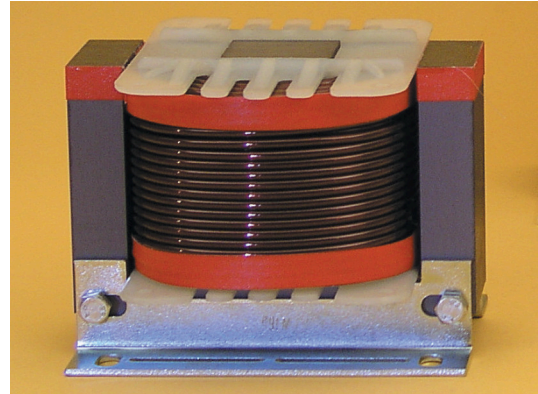
Baked Wiring Treatment is marked **BT** in the following table. Vacuum impregnated coils are marked **VT**.

Please find detailed information on the advantages of different coil technologies on pages 30 to 32. Key words are:

**Feron Core • OFC-Copper • Solid Core**

**Technical specifications:**

Core material: FERON  
Grain-oriented silicon iron 0.35 mm  
OFC-Copper 99.99% pure



Body	b	h	d	x	y	e
Dimensions (mm)						
T84	84	60	59,5	65	48	4,8
T96	96	69	76,1	85	62	5,8
T106	106	81	88	84	56	5,8
T130	130	100	106	104	73	5,8
T150	150	115	121	130	87	7

**BT125**

**TransformerCore Coils, baked varnish wire Ø 1,25 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body
3,9	0,28	T84
4,7	0,31	T84
5,6	0,34	T84
6,8	0,37	T84
8,2	0,43	T84

**BT140**

**TransformerCore Coils, baked varnish wire Ø 1,40 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body
1,0	0,10	T66
1,2	0,11	T66
1,5	0,12	T66
1,8	0,11	T84
2,0	0,13	T84
2,2	0,15	T84
2,7	0,17	T84
3,0	0,19	T84
3,3	0,21	T84
3,9	0,23	T96
4,7	0,25	T96
5,6	0,28	T96
6,8	0,32	T96
8,2	0,35	T96
10	0,38	T96
12	0,45	T96

**BT180**

**TransformerCore Coils, baked varnish wire Ø 1,80 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body
1,0	0,08	T84
1,2	0,08	T84
1,5	0,09	T84
1,8	0,10	T84
2,0	0,11	T84
2,2	0,11	T96
2,7	0,12	T96
3,0	0,13	T96
3,3	0,14	T96
3,9	0,15	T96
4,7	0,17	T96
5,6	0,19	T106
6,8	0,21	T106
8,2	0,25	T106
10	0,27	T106
12	0,31	T106
15	0,36	T106
18	0,39	T130
22	0,45	T130
27	0,50	T130
33	0,57	T130
39	0,63	T130
47	0,71	T130



**T236 VT236**  
**TransformerCore Coils, wire Ø 2,36 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body
1,0	0,05	T96
1,2	0,05	T96
1,5	0,06	T96
1,8	0,06	T96
2,0	0,07	T106
2,2	0,08	T106
2,7	0,09	T106
3,0	0,09	T106
3,3	0,10	T106
3,9	0,11	T106
4,7	0,12	T106
5,6	0,13	T106
6,8	0,14	T130
8,2	0,16	T130
10	0,18	T130
12	0,21	T130
15	0,24	T130
18	0,26	T130
22	0,28	T150
27	0,32	T150
33	0,36	T150

**T300 VT300**  
**TransformerCore Coils, wire Ø 3,00 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body
1,0	0,03	T106
1,2	0,03	T106
1,5	0,04	T106
1,8	0,04	T106
2,0	0,05	T130
2,2	0,05	T130
2,7	0,06	T130
3,0	0,06	T130
3,3	0,07	T130
3,9	0,07	T130
4,7	0,08	T130
5,6	0,09	T130
6,8	0,10	T150
8,2	0,10	T150
10	0,12	T150
12	0,13	T150
15	0,15	T150

**T390 VT390**  
**TransformerCore Coils, wire 6 x 2 mm**

Inductance [mH] ± 3%	RDC [Ohm]	Body
1,0	0,03	T130
1,2	0,03	T130
1,5	0,03	T130
1,8	0,04	T130
2,0	0,04	T130
2,2	0,04	T150
2,7	0,04	T150
3,0	0,05	T150
3,3	0,05	T150
3,9	0,06	T150

**MCoil TransformerCore Coils** from copper foil combine both the natural dynamic fidelity and typical tonal transparency of OFC foil with the remarkable performance precision of Feron core coils, particularly, at the lowest frequency range.

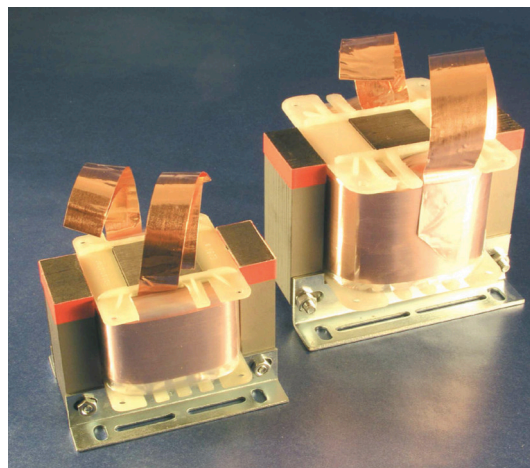
They are specially developed for an extended ultra-low bass performance at the highest performance level with incredible precision and pulse signal fidelity. Altogether with its low internal resistance rate this coil type is most definitely first choice for high quality subwoofer applications.

Please find detailed information on the advantages of different coil technologies on pages 30 to 32. Key words are:

**Feron Core • OFC-Copper • Foil coils**

**Technical specifications:**

Core material: FERON  
Corroded silicon iron 0.35mm  
Cu foil: 70 µ / OFC copper with 99.997% pureness  
Insulation: polypropylene 20 µ



**CFT12**

**TransformerCore Coils, foil 44 mm**  
cross-section = 3,30 mm<sup>2</sup>, △ round wire Ø 2,05 mm

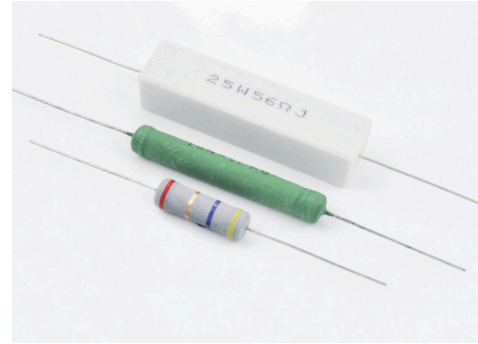
Inductance [mH] ± 3%	RDC [Ohm]	Body
2,7	0,13	T106
3,0	0,14	T106
3,3	0,15	T106
3,9	0,17	T106
4,7	0,18	T106
5,6	0,21	T106
6,8	0,23	T106

# Resistors MResist



For high-load applications, wire-wound **cement resistors** with a continuous load capacity of 25 watt are a good option.

In comparison, **metal-oxide film resistors** do not have any residual inductivity. This is the reason why metal oxide film resistors should be favoured whenever impulse speed is required, e.g. in the medium/high frequency range. The versions we offer have a continuous load capacity of two and a half, five or ten watt. In the impulse range, however, they have a much higher continuous load capacity.



### MR5 Metal-Oxide Film Resistors 5 watt

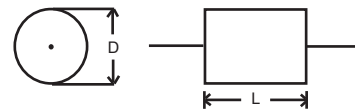
Resistance [Ω] ± 2%
0,10
0,22
0,33
0,47
0,68
0,82
1,0
1,2
1,5
1,8
2,2
2,7
3,3
3,9
4,7
5,6
6,8
8,2
10
12
15
18
22
27
33
39
47
56

### MR10 Metal-Oxide Film Resistors 10 watt

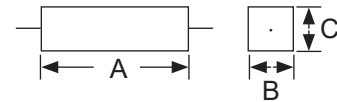
Resistance [Ω] ± 2%
0,10
0,15
0,22
0,27
0,33
0,39
0,47
0,68
0,82
1,0
1,2
1,5
1,8
2,2
2,7
3,3
3,9
4,7
5,6
6,8
8,2
10
12
15
18
22
27
33
39
47
56

### R25 High-Load Resistors 25 watt

Resistance [Ω] ± 5%
1,0
1,2
1,5
1,8
2,2
2,7
3,3
3,9
4,7
5,6
6,8
8,2
10
12
15
18
22
27
33
39
47
56



Type	L [mm]	D [mm]	Wire pack Ø * l [mm]	Bulk pack [pc]
MR5	24	8	0.8 * 35	12/567
MR10	52	8	0.8 * 35	12/288



Type	A [mm]	B [mm]	C [mm]	Wire pack Ø * l [mm]	Bulk pack [pc]
R25	60	15	13	0.8 * 35	36

### Colour codes for resistors

Color	1. Ring 1. Numeral	2. Ring 2. Numeral	3. Ring Multiplier	4. Ring Tolerance
without				20%
silver			0.01	10%
gold			0.1	5%
black		0	1	
brown	1	1	10	1%
red	2	2	100	2%
orange	3	3	1.000	
yellow	4	4	10.000	
green	5	5	100.000	0.5%
blue	6	6	1.000.000	0.25%
purple	7	7	10.000.000	0.10%
grey	8	8	100.000.000	0.05%
white	9	9	1.000.000.000	

## Resistors MResist

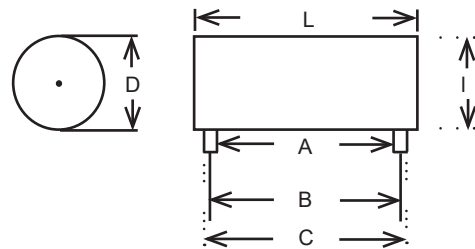
Inner Excellence

With our **MResist SUPREME** you can enjoy even finest details and spatial information which normally get lost. Due to the complex bifilar structure from  $1\Omega$  with two wires being wound around the high-temperature-resistant cement element simultaneously the inductance is always below  $0,075\mu\text{H}$

In addition, the **MResist SUPREME** series features acoustic neutrality and music reproduction close to reality. This is due to a special manually applied fire-resistant casting compound which optimally fixes and stabilises the resistor winding thus protecting it against microphony effects.

In order to maintain high sound quality even at high load, we apply a special copper-nickel alloy as conducting material featuring a positive and extremely low temperature coefficient of only **50ppm/°C**.

Further details which guarantee that **MResist SUPREME** resistors are hardly noticeable anymore are the use of non-magnetic materials and welded contacts.



Type	D [mm]	L [mm]	Wire Ø * l [mm]	A [mm]	B [mm]	C [mm]
MRES20	11	51	1.0*30	32	39	45

### MRES20

**Audiophile-resistors, non-magnetic,  
non-inductive, 50ppm/°C, 20 watt**

Resistance  
[Ω] ± 2%

1,0
1,2
1,5
1,8
2,2
2,7
3,3
3,9
4,7
5,6
6,8
8,2
10
12
15
18
22
27
33
39
47

We offer tin-solder from 2 alloys used as materials that show a considerably higher purity than is required by DIN standards:

**MSolder SilverGold** boosts the advantages of silver solder by adding purest Gold which also lowers the melting point and ensures the outstanding sound properties of our silver/gold components.

The **MSolder SUPREME SilverGold** is our second to none solder for tube applications as well as for assembling our SilverGold wires, foils and cables due to its surpassing conductivity combined with a high liquidus.



**Technical specifications:**

- 1.00 mm diameter
- Amine, diamine, urea and lead free
- Low odour
- Optimum processing temperature
- Special NO-CLEAN liquid  
2.5% liquid content - Type 2.2.3 B - DIN EN 29 454.1
- Copper compatible
- Gentle on components
- Time saving
- User and environmental friendly

Purity of silver: min. 99.97% typ. 99.99%

Purity of gold: min. 99.97% typ. 99.99%

**MSOL.SG**

Tin solder MSolder SilverGold

**Liquidus 217°C/422°F, Sn95,5Cu0,7Ag3,8Au, Ø 1,00 mm**

Weight [g]	Lenght [m]
10	1,7
50	8,5
100	17,0
330	56

**MSOL.SUP**

Tin solder MSolder SUPREME SilverGold

**Liquidus 290°C/554°F, Sn88,6Cu1,8Ag9,5Au0,1, Ø 1,0 mm**

Weight [g]	Lenght [m]
10	1,7
50	8,5
100	17,0
330	56,0

**TWARON® Unicorn's Tail** is a speaker cabinet filler for acoustic damping purpose which is produced by Thüringisches Institut für Textil- und Kunststoff-Forschung (TITK), Germany, exclusively for MUNDORF company, Germany.

Unicorn's Tail is predominantly made from cleaned and karded TWARON® fibres as user-friendly "endless" strings. It was especially developed to absorb and damp the lower audio frequency range (<1 kHz) in subwoofers, transmission line tubes, insulation panels, etc. The material is easy to work with and does not age. The damping performance of TWARON® compares so favourably with that of all other known damping materials that it is today a "must" for many well-known developers and manufacturers of high-end speakers.

The extremely thin TWARON® fibres are karded into an extremely soft and dense so-called Horsetail Hair we named Unicorn Hair. In contrast to fibreglass and other plastic fibres, TWARON® conducts heat generated vibrations away very well and absorbs this type of acoustic motion energy in an entirely different manner than all conventional materials which are commonly used for damping purpose. Owing to the endless fibre tapes used in Unicorn Hair, the effective functional frequency-range is lower in comparison with the Angel Hair described below. It constitutes a significantly better alternative to the damping materials which are otherwise used in transmission line systems. In short, Unicorn Hair results in a very direct and dry bass reproduction in (sub-) bass cabinets, and in transmission-line tubes. The low-frequency vibrations are attenuated so efficiently that an extremely deep and clean bass reproduction "like by itself" is achieved.

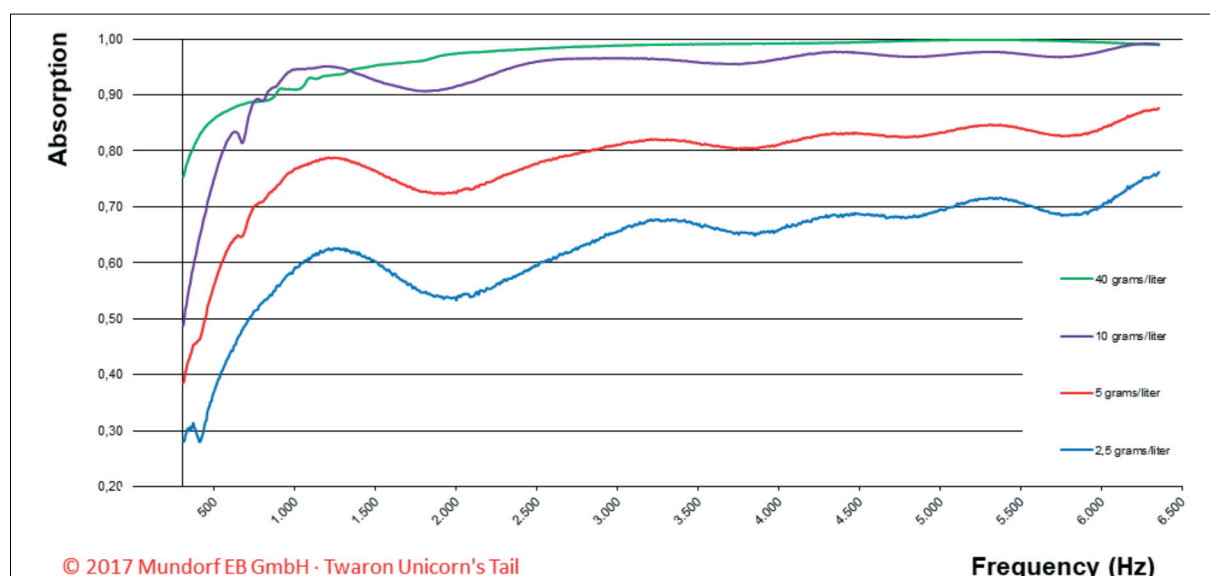


Unicorn's Tail

**UNICORN**  
**MSilence TWARON® Unicorn's Tail**

Order number	Packing unit	weight [kg]
UNICORN-200G	1	0,2
UNICORN-200G	5	1
UNICORN-200G	60	12
UNICORN-200G	720	144

The frequency/damping performance diagram show how the low and medium audio frequency range can be adjusted very easily with the correct quantity of Unicorn's Tail filling.





Angel Hair

**TWARON® Angel Hair** is a speaker cabinet filler for acoustic damping purpose which is produced by Thüringische Institut für Textil- und Kunststoff-Forschung (TITK), Germany, exclusively for MUNDORF company, Germany

For to make Mundorf Angel Hair, the TWARON® base fibres are processed several times: The TWARON® fibres with their immense number of hairs are first cut into 60 mm long sections, herafter karded, mixed and finally carefully pressed into a mass. In contrast to fibreglass and other plastic fibres, TWARON® conducts heat generated vibrations away very well and absorbs this type of acoustic motion energy in a fundamentally different manner than other known materials which are commonly used for this purpose.

The choice of the right fibre lengths and the right process for combing them into a workable mass leads to remarkable acoustic results which were first discovered by audio professionals. The improvement in the sound quality (fine dynamics in the midrange, “more airy” reproduction of voices and instruments, better 3D properties, etc.) is absolutely comparable with replacing cheaper standard connections with high-end cables. With the difference that Angel Hair is much less expensive.

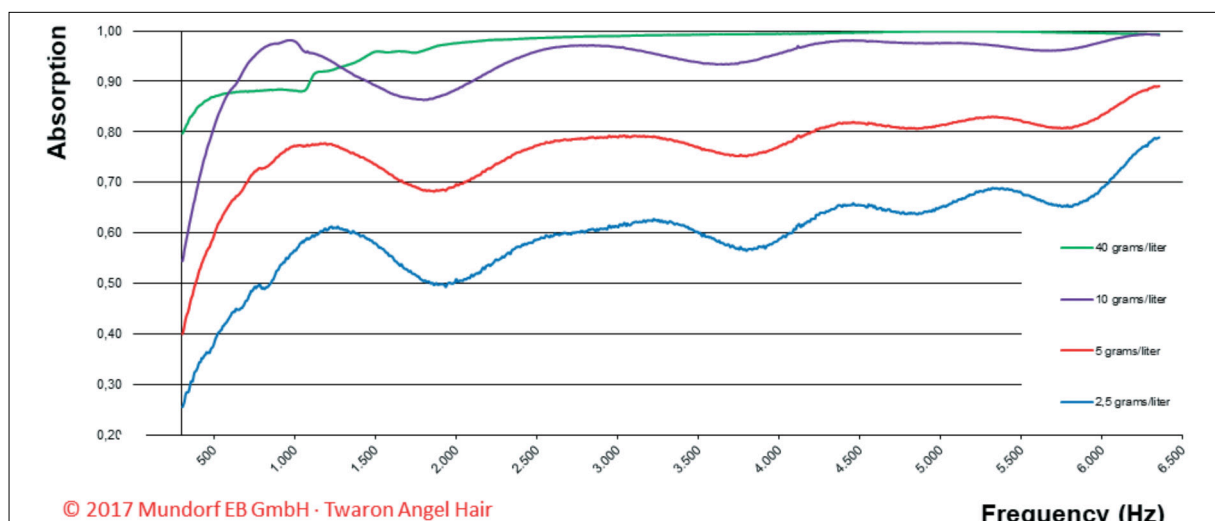
Comparisons with the kg price for conventional fibres can make Angel Hair look expensive at first glance, but you only need approx. 10-20% of the weight of other materials. More importantly: the sound quality improves significantly; this can particularly be heard in the signal definition in the midrange and in bass reproduction. In comparison with the costs for high quality cables or equipment such as absorbers etc., Angel Hair is an extremely cost-effective way of improving the sound quality.

In contrast to other insulating materials, the insulating properties of Angel Hair are almost linear from 700 Hz. As shown in the diagrams, 3-10 grams/litre of volume in speaker systems is an appropriate quantity, depending on the damped frequency range and the size and design of the speaker cabinet. It is certainly never necessary to fill large speakers and bass reflex boxes completely! At best, this would have a negative effect on the acoustics of your speaker system. For such cases, we recommend just filling the space behind the woofer. And another tip: by exchanging the standard BAF filler for Angel Hair, you generally achieve a further increase in the precision of the bass reproduction for existing speakers.

The diagrams below show how absorption-specific room reflections in the midrange/ upper range can be achieved through filling of absorption boards or insulation backdrops with Angel Hair.

MSilence TWARON® Angel hair

Order number	Packing unit	weight [kg]
ANGEL-200G	1	0,2
ANGEL-200G	5	1
ANGEL-200G	60	12
ANGEL-200G	720	144



The reproduction of music by PTFE-insulated SolidCore Copper wires **CUW** excels by natural vibrancy and fineness as well as highest tonal neutrality, and an excellent price/performance ratio.

Initial listening test with regular stranded wires quickly showed that our coil wires, used as internal cabling for loudspeakers impress by their detailed and acoustically balanced music performance.

An additional PTFE sheath prevents the oxygen-free copper conductor (99.997% purity) from abrasion and tonal influences by unwanted microphonics.

The following, individually isolated and twisted versions are particularly appropriate:

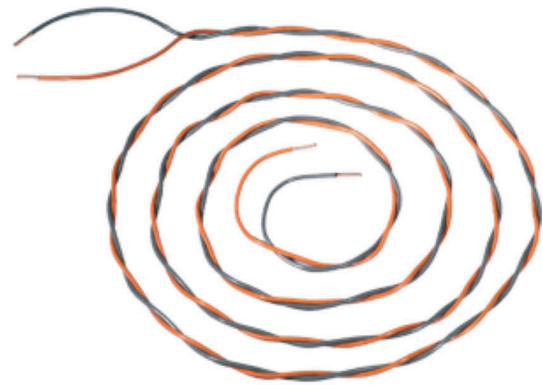
- 2 \* 1.0mm for tweeters
- 2 \* 1,5mm for mid-drivers and mid-woofers
- 6 \* 1,5mm for complete audio signals
- 2 \* 2,0mm for woofers and sub-woofers

**CUW210GY/OG**  
Copper wire 2 \* 0 8 mm<sup>2</sup>, PTFE-insulated grey/orange

**CUW215GY/OG**  
Copper wire 2 \* 1 8 mm<sup>2</sup>, PTFE-insulated grey/orange

**CUW615GY/OG**  
Copper wire 6 \* 1 8 mm<sup>2</sup>, PTFE-insulated grey/orange

**CUW220GY/OG**  
Copper wire 2 \* 3 1 mm<sup>2</sup>, PTFE-insulated grey/orange



\* Insulation test voltage 2 500V DC,  
Max. operating voltage 250V AC  
Strength of PTFE insulation: min. 0.25 mm

The mixture of **silver plus 1% gold** has proven itself excellently as capacitor film for the MCap® SUPREME SilverGold series. The resulting sound is so impressive that it was only natural to think of using this alloy for the internal wiring of electronic devices.

Listening tests with individually isolated conductors quickly proved that SilverGold shows its superior strengths every bit as convincingly in this application as well. Purity and elegance are the terms that automatically lend themselves to this exquisite material.

We offer the SilverGold wire in various diameters and insulated in PTFE. The following, individually isolated and twisted versions are particularly appropriate:

- 2 \* 0,5mm for tweeters
- 6 \* 0,5mm for tweeters
- 6 \* 0,5mm (shielded) for LF-Signals
- 2 \* 1,0mm for mid-drivers
- 2 \* 1,5mm for mid-woofers and woofers
- 4 \* 1,5mm for woofers and sub-woofers
- 4 \* 1,5mm for complete audio signals
- 6 \* 1,5mm for complete audio signals
- 8 \* 1,5mm for complete audio signals

**SGW105**

SilverGold-wire 0,5 mm, non-insulated

price/meter

**SGW105WH**

SilverGold-wire 0,5 mm, PTFE-insulated, white \*

price/meter

on request

**SGW105YE**

SilverGold-wire 0,5 mm, PTFE-insulated, yellow \*

price/meter

**SGW205WH/YE**

SilverGold-wire 2 \* 0,5 mm, PTFE-insulated, white/yellow \*

price/meter

**SGW605WH/YE**

SilverGold-wire 6 \* 0,5 mm, PTFE-insulated, white/yellow \*

price/meter

**SGW605SHLD**

SilverGold-wire 6 \* 0,5 mm, PTFE-insulated, shielded \*

price/meter



Purity of silver: min. 99.97% typ. 99.99%

Purity of gold: min. 99.97% typ. 99.99%

\* Insulation test voltage 2 500V DC,  
Max. operating voltage 250V AC  
Strength of PTFE insulation: min. 0.25 mm

**SGW110**

SilverGold-wire 1,0 mm, non-insulated

price/meter

**SGW110WH**

SilverGold-wire 1,0 mm, PTFE-insulated, white \*

price/meter

on request

**SGW110YE**

SilverGold-wire 1,0 mm, PTFE-insulated, yellow \*

price/meter

**SGW210WH/YE**

SilverGold-wire 2 \* 1,0 mm, PTFE-insulated, white/yellow \*

price/meter

**SGW115**

SilverGold-wire 1,5 mm, non-insulated

price/meter

**SGW115WH**

SilverGold-wire 1,5 mm, PTFE-insulated, white \*

price/meter

**SGW115YE**

SilverGold-wire 1,5 mm, PTFE-insulated, yellow \*

price/meter

**SGW215WH/YE**

SilverGold-wire 2 \* 1,5 mm, PTFE-insulated, white/yellow \*

price/meter

**SGW415WH/YE**

SilverGold-wire 4 \* 1,5 mm, PTFE-insulated, white/yellow \*

price/meter

**SGW615WH/YE**

SilverGold-wire 6 \* 1,5 mm, PTFE-insulated, white/yellow \*

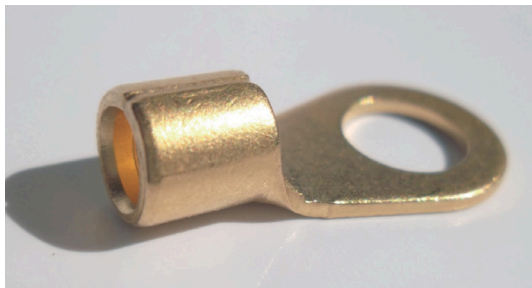
price/meter

**SGW815WH/YE**

SilverGold-wire 8 \* 1,5 mm, PTFE-insulated, white/yellow \*

price/meter





Our **cable lugs** are made from the purest OFC-copper. The acoustic advantages are described in the chapter on pole terminals. Even large cable cross-sections can be processed. Because soft copper is unsuitable for the use of threads, we have decided to use a crimp connection between the lug and the cable.

**MCONCL**

**Cable lugs, Beryllium-copper, gold-plated, to crimp properly for**

Fork, M6, 4,0-6,0mm <sup>2</sup> cable	2 pairs	Bulk Pack
Ring, M6, 0,5-1,0mm <sup>2</sup> cable	2 pairs	Bulk Pack
Ring, M6, 1,5-2,5mm <sup>2</sup> cable	2 pairs	Bulk Pack
Ring, M6, 4,0-6,0mm <sup>2</sup> cable	2 pairs	Bulk Pack
Ring, M8, 1,5-2,5mm <sup>2</sup> cable	2 pairs	Bulk Pack
Ring, M8, 4,0-6,0mm <sup>2</sup> cable	2 pairs	Bulk Pack



Our **banana plugs** are manufactured using a special beryllium copper sheet and subsequently gold plated. The beryllium gives the copper the necessary spring tension that is needed in order to ensure a high contact pressure when in contact with a socket and therefore guaranteeing security. The acoustic advantages of copper remain largely unaffected.

**MCONBP**

**Banana plugs, Beryllium-copper, gold-plated**

Insulation		
non insulated	2 pairs	Bulk Pack
Insulation		
BK, black	1 piece	Bulk Pack
RD, red	1 piece	Bulk Pack



**BLADE8.RDD**

**Blade receptacles, 0,5-1,5mm<sup>2</sup> cable, red**

2,8G gold-plated	10 pcs
4,8G gold-plated	

**BLADE8.RBL**

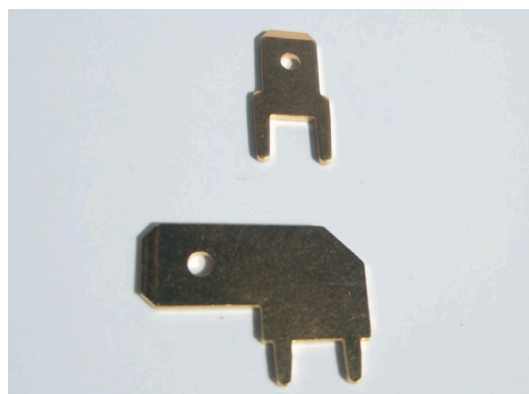
**Blade receptacles, 1,5-2,5mm<sup>2</sup> cable, blue**

2,8G gold-plated	10 pcs
4,8G gold-plated	
6,3G gold-plated	10 pcs

**BLADE8.RYE**

**Blade receptacles, 4,0-6,0mm<sup>2</sup> cable, yellow**

6,3G gold-plated	10 pcs
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**BLADE.TS**

**Contact pin, straight**

2,8G gold-plated	10 pcs
4,8G gold-plated	
6,3G gold-plated	10 pcs

**BLADE.TA**

**Contact pin, angle form**

6,3G gold-plated	10 pcs
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The **TPCU Terminal Posts** from **OFC-copper** are designed to meet the highest demands on mechanical precision, acoustical performance and aesthetics. Made in Germany from the solid our TPCU series combines maximum conductor cross-section with lowest transfer resistances. Thus they unite tonal clarity, beauty and stereo-phonics spaciousness with harmonious-warmth and splendid brightness.

Pure copper terminals should be cleaned periodically with copper-polish or a mixture of vinegar and water to prevent oxidation. Alternatively we offer 'maintenance-free' versions plated with **silver** or **gold**.

The scope of delivery includes two nuts, one washer and a spring washer for safe assembly. Standard insulation material furthermore acts as rotation protection and polarity marking.

We offer red and black coloured markings ex stock and spot colours upon request.

Mundorf recommends non-metallic mounting plates. Else the terminal posts induce a charge via counter-rotating magnetic fields into the mounting plate that distorts the music signal by absorbing energy from it. So more electric power is transmitted, the higher is the inductance and hence the loss of energy and fine details (see diagram).

**TPCU670 Connections**

External:  
6mm cable lugs (spades),  
1x 4mm banana plug  
Internal:  
6mm cable lugs (spades), Solder Terminal

**TPCU750 Connections**

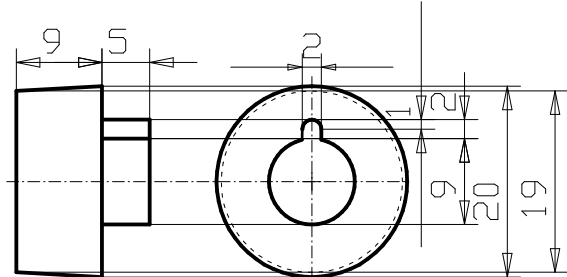
External:  
6mm cable lugs, 8mm cables lugs (spades),  
2x 4mm banana plugs, bare cable ends  
Internal:  
6mm cable lugs (spades), Solder Terminal

**TPCU870 Connections**

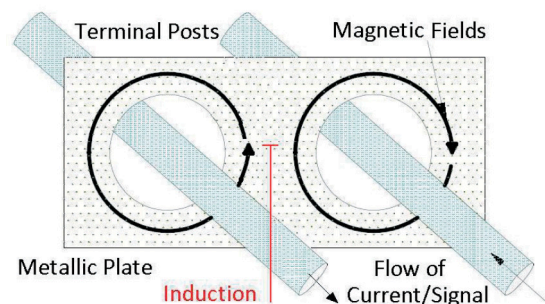
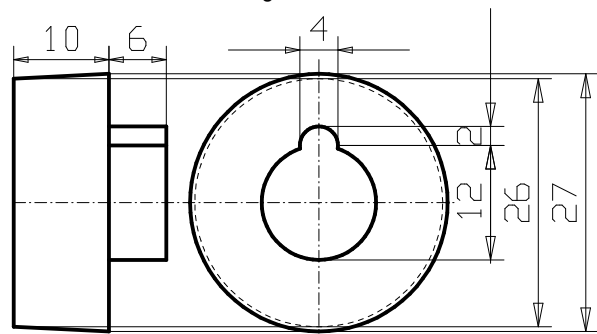
External:  
6mm cable lugs, 8mm cable lugs (spades)  
2x 4mm banana plugs, bare cable ends  
Internal:  
8mm cable lugs (spades), 4mm banana plugs  
Solder Terminal (see also highly recommended MSolder on page 54)



Insulation and mounting hole TPCU670 und TPCU750

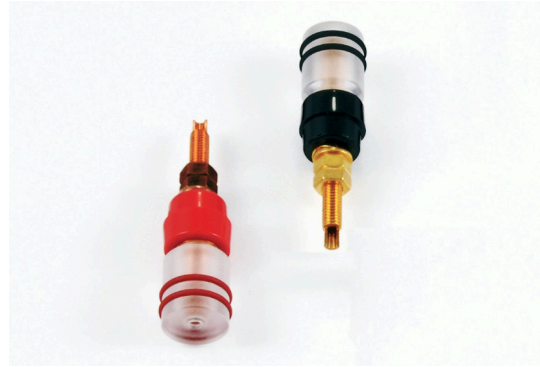


Insulation and mounting hole TPCU870

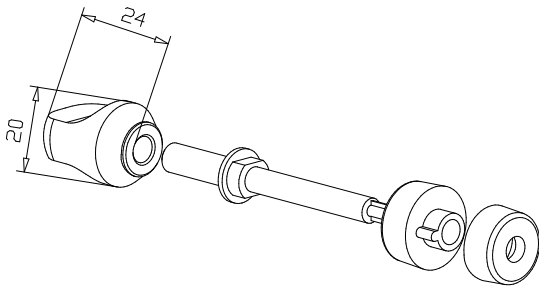




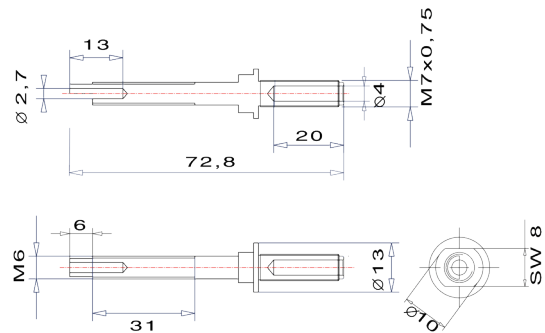
Binding posts 670



Binding posts 670 Evo



Copper terminal M6 isometric representation



**Binding posts 670, 2 red + 2 black**

TPCU670C	Pure copper Classic	2 pair
TPCU670E	Pure copper EVO	2 pair
TPCU670GC	Copper gold-plated Classic	2 pair
TPCU670GE	Copper gold-plated EVO	2 pair

All terminal posts are also offered unassembled as TPCU-OEM for efficient construction.

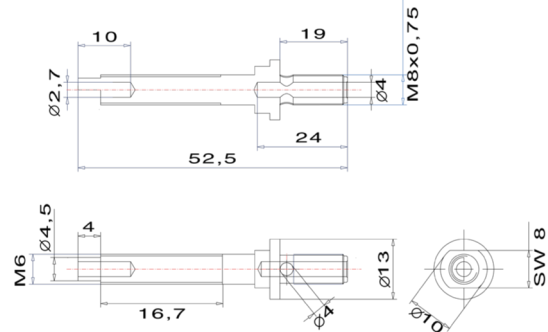


Binding posts 750 EVO

The Terminal Posts **TPCU750** were designed in 2015 for the use in audio applications with low wall thicknesses, like for example amplifiers and loudspeaker terminals.

These combine the superior connectivity of TPCU870 with the lean appearance of TPCU670.

Though their diameter is 20mm only, they own a cross hole to accommodate bare cable ends or a second 4mm banana plug.



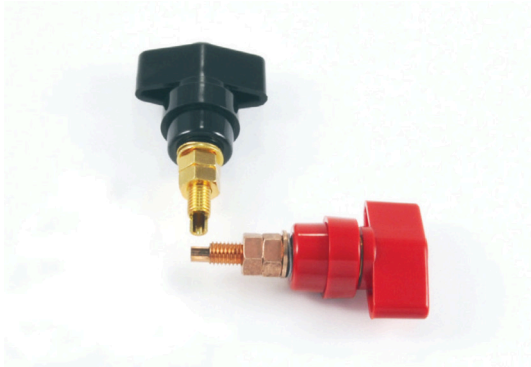
**Binding posts 750, 2 red + 2 black**

TPCU750E	Pure copper EVO	2 pair
TPCU750GE	Copper gold-plated EVO	2 pair

All terminal posts are also offered unassembled as TPCU-OEM for efficient construction.

**Terminals  
Terminal Posts**

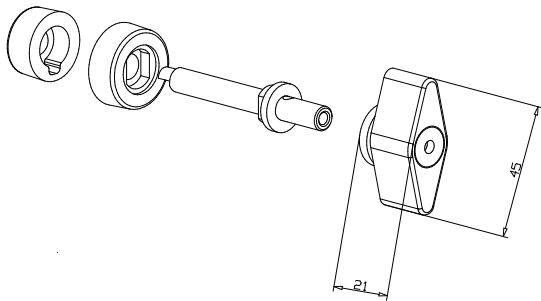
**Inner Excellence**



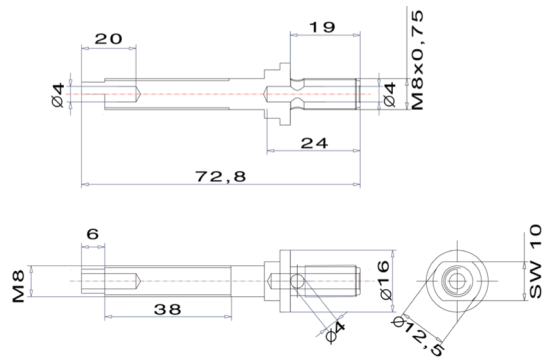
Polklemmen 870 Classic



Polklemmen 870 EVO



Copper terminal M8 isometric representation



**Binding posts 870, 2 red + 2 black**

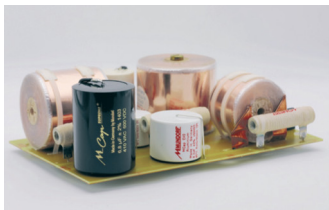
TPCU870C	Pure copper Classic	2 pair
TPCU870E	Pure copper EVO	2 pair
TPCU870GC	Copper gold-plated Classic	2 pair
TPCU870GE	Copper gold-plated EVO	2 pair

All terminal posts are also offered unassembled as TPCU-OEM for efficient construction.



**MUNDORF *hifi*AMT®**

Discover our innovative AMT loudspeaker drivers functioning accordingly the Air Motion Transformer principle invented by Oskar Heil. Those drivers, which can also be altered and manufactured to your requirements, are developed and manufactured in our Cologne headquarter.



**MUNDORF Services & Solutions for industrial clients**

In-house turnkey crossover network manufacturing from best budget quality to audiophile top-level at competition adequate manufacturing costs and competitive prices.



**MUNDORF *pro*AMT®**

Line source by principle.  
135db at crystal clear.  
1000W cool and safe.  
Think AMT!

