



iPaul

ANALOG AUDIOKRAFTWERK



IQ-LINE

DREAMLINE

SOUND LINE

GERMANIUM LINE

PROFI LINE

VANADIUM LINE

PLATIUNUM LINE

REFERENCE LINE



HAMMER

AMBOSS

PROFI

VANADIUM



ENCLOSURE SUBWOOFERS



WATERPROOF

INSTALLER CORNER



CAR HIFI PROGRAM

The steadily increasing power provided by modern car audio technology is simply too much to handle for the acoustics systems available in most of today's vehicles. Crystal-clear reproduction of complex sound passages and wide frequency ranges is something that only top-quality speaker systems can give you. And this is precisely the challenge that our engineers and technicians at rainbow have taken on – car audio technology consistent and systematic down to the very last detail.

Anyone wishing to really listen to music in the car as more than just incidental background noise needs a speaker system that, even at high volume and under difficult conditions, provides the extended linear quality and the necessary dynamics to properly handle car audio.

rainbow's engineers have taken developments a step further and, with their IQ Line, provide systems that are at once car-specific and capable of meeting the most exacting audio demands. The different crossovers for the left-hand and right-hand sides help correct, precisely where needed, the phase and level of the axes radiating from the mid-ranges and tweeters, thus ensuring optimal car acoustics – tuned perfectly for your auto. And these systems can be fitted precisely into your car's original factory audio system location – just PLUG AND PLAY – no ifs, ands, or buts.

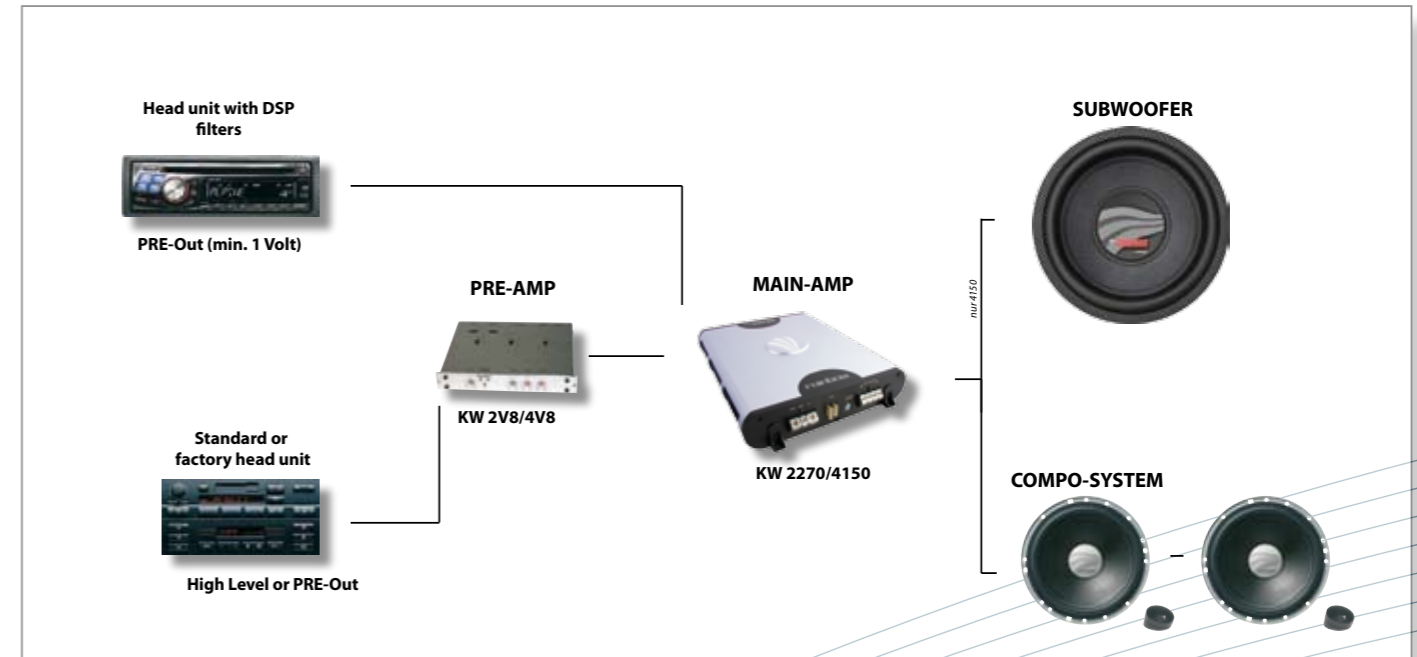
The development and manufacturing of rainbow's car speaker systems is performed solely in Germany – ensuring high-quality components, a reasonable price/performance ratio, and state-of-the-art technical know-how.

Just sit back and enjoy the next few pages. Here, you can believe what you read.

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just simple and genius



Connector for external fan and temperature sensor

Cooling fins

Illuminated logo

Phase + gain control via remote control

Integrated high-level adapter

Phase-shifter

Remote control connector

Specialists developed and tested the new amplifier program of the AUDIOKRAFT- WERK series for enthusiastic Car-HiFi freaks. The digital technics allows the step ahead and makes the in car sound to a perfect delight. High and fast impulse peaks will be transferred distortions free and true to original to the loudspeakers. Integrated active crossovers make the AUDIOKRAFTWERK amplifiers to a universal all-rounder and offer for every purpose the right individual adjustments. Switching power supplies and amplifier circuits of the latest generation guarantee enormous power reserves and linear frequency response without annoying distortions.

As a matter of course all amplifiers of the AUDIOKRAFTWERK series passed the required European E-certification for a legal and safe operation in your vehicle. The E-certification assures that the amplifiers of the AUDIOKRAFTWERK series do not disturb the onboard electronic and security relevant equipments of your vehicle as well as can not be disturbed by other E-certificated devices.

Technical features of the Audiokraftwerk:

- Performance amplifier with integrated high-current MOSFET-switch power supply
- Inverted Output stages for performance coupling during mono-bridged mode
- Output stage 2 Ω stable, bridge and tri-mode capable
- Amplifier design for minimal noise
- Reversible safety switch-off with thermal monitoring
- Safety switch-off with DC current to loudspeakers
- Safety switch-off for loudspeaker short-circuit and loudspeaker under impedance
- Softstart remote muting for suppression of switch-on peaks
- Low power requirements for remote-muting electrical circuits
- Rhodium-plated 25 mm² power and 10 mm² loudspeaker connection
- Connector for external fan module (optional)
- Connector for temperature-sense and display module (optional)
- Connector for peak power doubling module (optional)
- High-tech semi-SMD built structure with low coupling conductive wiring
- Interference-proof certified by European E-Standard



KW 2270 + KW 2V8

2-CH Amplifier + Pre-Amplifier Part-No.: 271040

- 2 x 135 Watt RMS at 4 Ohm
- 2 x 230 Watt RMS at 2 Ohm
- 1 x 450 Watt RMS at 4 Ohm
- Input Sensitivity: 1 V / 5.5 V switchable
- Frequency Response: 10 Hz – 50 KHz
- Signal Noise Ratio: < -85 dBA
- Total Harmonic Distortions: < 0.05 @ 1W / 4 Ohm
- Damping Factor: > 200
- Operating Voltage: 11 V – 16 V
- Integrated flat fuse 2 x 25 A in accordance with DIN-standard, replaceable from outside.
- Dimensions (W x D x H): 376 x 273 x 59 mm
- Weight: 4,2 kg



KW 2V8 / DSP Head Unit

KW 2270

(without active crossover) 2-CH Amplifier Part-No.: 271026



KW 4150 + KW 4V8

4-CH Amplifier + Pre-Amplifier Part-No.: 271041

- 4 x 75 Watt RMS at 4 Ohm
- 4 x 130 Watt RMS at 2 Ohm
- 2 x 260 Watt RMS at 4 Ohm
- Input Sensitivity: 1 V / 5.5 V switchable
- Frequency Response: 10 Hz – 50 KHz
- Signal Noise Ratio: < -85 dBA
- Total Harmonic Distortions: < 0.05 @ 1W / 4 Ohm
- Damping Factor: > 200
- Operating Voltage: 11 V – 16 V
- Integrated flat fuse 2 x 30 A in accordance with DIN-standard, replaceable from outside.
- Dimensions (W x D x H): 396 x 273 x 59 mm
- Weight: 4,5 kg



KW 4V8 / DSP Head Unit

KW 4150

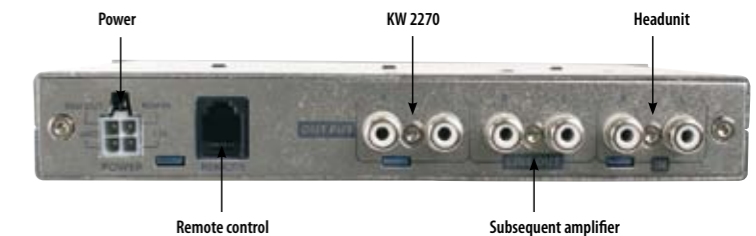
(without active crossover) 4-CH Amplifier Part-No.: 271027



KW 2V8 + KW 2270

2-CH Pre Amplifier + Amplifier Part-No.: 271040

- Frequency Response: 10 Hz – 50 KHz
- Signal Noise Ratio: < -85 dBA
- Total Harmonic Distortions: < 0.05
- Operating Voltage: 11 V – 16 V
- Integrated High-Level adapter for direct connection to head-unit speaker outputs
- Input Sensitivity: 0.4 ~ 4V / 0.4 ~ 8V switchable
- Low noise amplifier sections
- Output Voltage: 5.5 V
- Mono switch for subwoofer operation
- 24 dB High-Pass 15 Hz – 5 kHz
- 24 dB Low-Pass 50 Hz – 5 kHz
- 24 dB Band-Pass 15 Hz – 5 kHz
- Phase Shifter 0° to 180°
- Gain and Phase control via Remote control with 5m cable
- Signal Clipping Indication for left and right channel
- Stereo Output for subsequent amplifiers
- Dimensions (W x D x H): 196 x 152 x 28 mm
- Weight: 0,56 kg



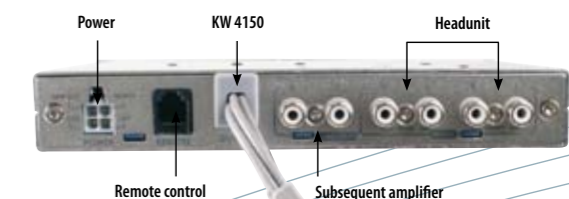
KW 2V8

2-CH Pre-Amplifier Part-Nr.: 271028



KW 4V8

4-CH Pre-Amplifier Part-No.: 271029



KW 4V8 + KW 4150

4-CH Pre-Amplifier + Amplifier Part-No.: 271041

- Frequency Response: 10 Hz – 50 KHz
- Signal Noise Ratio: < -85 dBA
- Total Harmonic Distortions: < 0.05
- Operating Voltage: 11 V – 16 V
- Integrated High-Level adapter for direct connection to head-unit speaker outputs
- Input Sensitivity: 0.4 ~ 4V / 0.4 ~ 8V switchable
- Low noise amplifier sections
- Output Voltage: 5.5 V
- Mono switch for subwoofer operation
- 24 dB High-Pass 15 Hz – 5 kHz (FRONT)
- 24 dB Low-Pass 50 Hz – 5 kHz (FRONT)
- 24 dB High-Pass 15 Hz – 500 Hz (REAR)
- 24 dB Low-Pass 50 Hz – 5 kHz (REAR)
- 24 dB Band-Pass REAR possible
- Phase Shifter 0° to 180° (REAR)
- Gain and Phase control via Remote control with 5m cable (REAR)
- Signal Clipping Indication for front and rear channel
- Stereo Output for subsequent amplifiers
- Dimensions (W x D x H): 196 x 152 x 28 mm
- Weight: 0,56 kg



Our recommendation for KW 2270/KW 4150:

Vanadium Line, Profi Line, Power Line, Germanium Line see page 10 ff.

Vanadium, Profi see page 12 ff. AMBOSS, HAMMER, Enclosure subwoofers, see page 22 ff.



CS 230.25 GERMANIUM

2-way 5.25 Inch Compo Set 25 mm silk dome tweeter Max. 120 Watt Part-No. : 231140

Frequency response: 50 - 30.000 Hz Minimum amplifier power: 50 Watt



CS 265.25 GERMANIUM

2-way 6.5 Inch Compo Set 25 mm silk dome tweeter Max. 150 Watt Part-No. : 231138

Frequency response: 39 - 30.000 Hz Minimum amplifier power: 75 Watt



CS 465.25 GERMANIUM

2-way Double Woofer 6.5 Inch Compo Set 25 mm silk dome tweeter Max. 300 Watt Part-No. : 231539

Frequency response: 39 - 30.000 Hz Minimum amplifier power: 100 Watt



Vented dustcap and voice coil airgap



Copper shortcut ring on pole piece



Spider ventilation



Tweeter CAL 25 Silk VOF acoustic volume



Vented tweeter magnet backplate



Configuration via cable jumpers

The new audiophile component set from rainbow impresses as a perfectly integrated system with its unique combination of an aluminum die-cast woofer with aluminum compound cone and a sound coated silk dome tweeter.

The selection of the material components of this component set guarantees optimal sound performance that meets every challenge.

Der Woofer :

- Low resonance 165 mm/6.5" Euro standard woofer in aluminum die-cast basket with maximal airflow and eight-way screw-hole circle for kick-bass proof attachment
- Extensive ventilation and cooling in dust cap, magnet motor, air gap and spider
- Palladium-plated screw terminals and silver-coated conductors for unhindered sound transport
- Aluminum compound cone for fast drums and precise mids
- Anti-resonance dust cap
- Copper short-circuit ring and copper cap in the magnet system to linearize impedance and lower distortion

The Tweeter :

- Further development of the legendary and proven 25 mm fabric dome tweeter CAL 25 Fabric, which has been used since 1993 when it was part of the first Profi Line component sets. The enhancement of the CAL 25 Fabric with a new ventilated and ferro fluid free magnet system as well as an acoustic volume makes an even deeper resonance frequency possible.
- The use of sound coated silk as dome material offers a more audiophile sound reproduction.
- The magnet back plate with 12-way bored holes connects the tweeter with the tuned acoustic volume. This, together with the advanced ventilation for a distortion-free sound, ensures optimal front staging and extreme linear frequency response.

The Crossover :

- Phase corrected 2 x 12 dB crossover with adjustable crossover point for woofer and tweeter
- High quality foil capacitors in upper frequency range offer a soft voice reproduction
- The specially developed large, low-resistance air coils guarantee a dynamic, accurate and fast mid-bass
- Low noise MOX resistors with machined aluminium heat sinks for optimized temperature levels
- Tweeter level attenuations via 4 separate jumpers
- PTC tweeter protection via high quality silver wire connectors
- For absolute audiophile listening enjoyment it is possible to disable the PTC and HALO protection system on the crossover
- Linear output via jumper for sound board or speaker box operation


Woofer-Sätze:


Woofer-Set 130 Germanium	5.25 Inch	Max. 120 Watt	Part-No.:231141
Woofer-Set 165 Germanium	6.5 Inch	Max. 150 Watt	Part-No.: 231059

Tweeter-Satz ohne Weiche :

CAL 25 SILK VOF	25 mm	Max. 150 Watt	Part-No. : 231436
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Our recommendation for Germanium Line:

 rainbow
7" – 12" Vanadium und Profi,
see page 12 ff.

 rainbow Audiokraftwerk,
see page 4 ff.



Tweeter CAL 27 VOF with acoustic volume

Vented tweeter magnet backplate

Silk tweeter dome

Copper shortcut ring on pole piece

Vented double magnet and screw terminal

Tweeter level attenuation

We take the words research and development to heart – not just posting them on the department door, but following through with action and results. At rainbow we're not just dabbling in what we do – we challenge the fundamentals to improve the outcome.

Fast, controlled and peppy. These are the attributes of the new power system and the logical result of a powerful woofer coupled with a super-fast volume tweeter. This combination makes the CS 275.27 Power the top model in its class.

For unlimited music fun, impressive bass and a remarkable dynamic range without compromise.

Up to the threshold of pain and far beyond, the CS 275.27 Power offers perfect performance. It plays deeply, accurately, and with fascinating precision and liveliness. Controlled bass attacks are without inertia, explosive and with extreme power.

The Woofer :

- Aluminum diecast basket with extreme stiffness for resonance-free operation
- Palladium-plated screw terminals for high quality cables with large diameter
- Butyl rubber surround for controlled cone motion and minimal distortion
- Authentic sound reproduction despite the use of aluminum with an aluminum compound cone on a polymer cellulose base
- Innovative concave dust cap for best frequency response
- Machined aluminum phase plug for phase correction around the crossover frequencies and additional cooling for magnet motor
- High temperature 40 mm voice coil former of black kapton for minimal current loss and maximum excursion
- Vented voice coil duroplastic baked with high-temperature glue
- Ventilated spider to prevent air compression

- Extremely flexible surface-refined lead wires fixed via glue-points to guarantee resonance- and break-free operation
- Vented, distortion-free double-magnet-system for better magnet motor cooling and dustcap ventilation
- Symmetrical pole piece for optimized magnet field symmetry
- Short cut ring made of copper to reduce distortion
- Optimized ferror-strontium double magnet for high sensitivity with additional cooling via 8 mm chromium-plated backplate

The Tweeter :

- Tweeter dome made of stamped, ultraviolet-resistant natural fibersilk mixture
- Fabric surround for controlled cone motion
- Tweeter dome sound-coated by hand
- Felt pad underneath tweeter dome to prevent turbulence
- Vented voice coil former with flexible stainless steel lead wires
- Connected acoustic volume for low resonance frequency and extreme linear frequency response
- 8-holed backplate to connect tweeter to defined acoustic volume
- High efficiency neodymium magnet with reversible magnet energy up to 175 degrees celsius
- Ferrofluid free magnet system for extremely fast and precise pulse response
- Professional and vibration-free 4-point fixing
- Distortion-free sound reproduction with unbelievably low resonance frequency and ultra linear frequency response of 1.200 – 35.000 Hz

The Power controller :

CS 275.27 POWER

2-way 6.9 Inch Compo Set 27 mm silk dome tweeter Max. 250 Watt Part-No. : 231161

Frequency response: 35 - 35.000 Hz Minimum amplifier power: 50 Watt

Uncompromising frequency range is paramount for sound quality. The showcase controller with hand-selected components handles the real kick-bass punch. Distortion-free copper transformer core coils and super-fast MKP foil capacitors guarantee sound with maximum neutrality, depth, and fast mid-basses. The 4-level attenuation in combination with the HALO-Systems provides for individual adjustment of tweeter level and protects the tweeter against excessive power output.



Tweeter-set ohne Weiche :

CAL 27 SILK VOF 27 mm Max. 250 Watt Art.-Nr. : 231448

Woofer-set :

Woofer 175 Power 6.9 Inch Max. 250 Watt Art.-Nr. : 231028

Our recommendation for Power Line:

- rainbow 10" - 12" Vanadium see page 14 ff
- 10" - 12" Amboss und Hammer see page 22 ff.
- rainbow Audiokraftwerk, see page 4 ff.



Felt pad on tweeter pole piece

Silk tweeter dome

Vented tweeter voice coil

Vented woofer magnet

Vented woofer aluminium backplate

Machine aluminium woofer phase plug

The Profi Line, with its premium-quality components, is one of the most highly touted car speaker systems in history, as the numerous first place honors awarded in tests and reviews in the worldwide car audio press demonstrate. As with all the company's product lines, rainbow is dedicated to continuous development and improvement of the Profi Line, resulting in an ultimate auditory combination, with plasticity and front staging. The highest possible resolution definition with superb dynamic range and pulse response ensures sound reproduction of complex audio passages even at extreme volume levels.

The Woofer & Midrange :

- Special plastic compound basket with extreme stiffness for resonance-free operation
 - Palladium-plated screw terminals for high quality, large diameter cables
 - Extremely flexible surface refined lead wires fixed via glue-points to guarantee rattle- and break-free operation
 - Butyl rubber surround for controlled cone motion and low distortion
 - Natural fiber cone for authentic and brilliant sound reproduction
 - Innovative dust cap formed of reinforced natural fiber for optimal frequency response
 - Machined aluminium phase plug for phase correction around the crossover frequencies and additional cooling for magnet motor
 - High temperature 37 mm voice coil former of black kapton for minimal current loss and maximum excursion
- Duroplastic backed and vented voice coil with temperature-resistant glue
 - Vented spider to avoid compression
 - Vented magnet system for better magnet motor cooling and vented dust cap to prevent thermal compression
 - Optimized ferror-ceramics magnet for high sensitivity with additional cooling via aluminum backplate

The Tweeter :

- Tweeter dome made of stamped, ultraviolet-withstanding, natural fiber silk mixture
- Fabric surround for controlled cone motion
- Tweeter dome sound-coated by hand
- Felt pad underneath tweeter dome to prevent turbulence
- Vented voice coil former with flexible stainless steel lead wires
- Connected acoustic volume for low-resonance frequency and superior linear frequency response
- Ferrofluid-free magnet system for fast and precise pulse response
- 8-holed backplate to connect tweeter to the acoustic volume
- High-efficiency neodymium magnet with reversible magnet energy at temperatures up to 175 degrees Celsius

The Crossover :

Profi Line crossovers are remarkable for their intrinsic features. Fitted with low impedance and low-distortion foil capacitors, they provide high saturation, excellent fidelity, and faithful phase linearity throughout the treble range. The low-impedance, low-stray coils ensure minimum power loss at the crossovers. Palladium-plating ensures the best possible connections, and the variable tweeter level attenuation in combination with the HALO-system prevents excessive treble output.

CS 210 PROFI

2-way 4 Inch Compo Set 26 mm silk dome tweeter Max. 110 Watt Part-No. : 231502
Frequency response: 75 - 35.000 Hz Minimum amplifier power: 30 Watt

CS 230 PROFI

2-way 5.25 Inch Compo Set 26 mm silk dome tweeter Max. 150 Watt Part-No. : 231496
Frequency response: 48 - 35.000 Hz Minimum amplifier power: 75 Watt

CS 265 PROFI

2-way 6.5 Inch Compo Set 26 mm silk dome tweeter Max. 180 Watt Part-No. : 231497
Frequency response: 39 - 35.000 Hz Minimum amplifier power: 75 Watt

CS 265 PROFI KICK BASS

2-way 6.5 Inch Compo Set 26 mm silk dome tweeter Max. 180 Watt Part-No. : 231489
Frequency response: 80 - 35.000 Hz Minimum amplifier power: 100 Watt

CS 265 PROFI PHASE PLUG

2-way 6.5 Inch Compo Set 26 mm silk dome tweeter Max. 180 Watt Part-No. : 231111
Frequency response: 39 - 35.000 Hz Minimum amplifier power: 75 Watt

CS 365 PROFI

3-way 6.5 Inch Compo Set 26 mm silk dome tweeter Max. 180 Watt Part-No. : 231498
Übertragungsbereich: 39 - 35.000 Hz Minimum amplifier power: 75 Watt

CS 365 PROFI KICK 6.5 Inch Max. 180 Watt Part-No. : 231490

Woofer-Sets:

Midrange 100 Profi	4 Inch	Max. 110 Watt	Part-No. : 231073
Woofer 130 Profi	5.25 Inch	Max. 150 Watt	Part-No. : 231071
Woofer 165 Profi	6.5 Inch	Max. 180 Watt	Part-No. : 231072
Woofer 165 Profi Phase Plug	6.5 Inch	Max. 180 Watt	Part-No. : 231501
Woofer 165 Profi Kick	6.5 Inch	Max. 180 Watt	Part-No. : 231074

Tweeter-Sets without crossover :

CAL 26 SILK VOF 26 mm Max. 180 Watt Art.-Nr. : 231435



Our recommendation for Profi Line:

rainbow 8" - 12" Profi, see page 12 ff.

rainbow Audiokraftwerk, see page 4 ff.



Tweeter CAL 26 with acoustic volume

Titanium tweeter dome

Vented tweeter magnet backplate

Lead wires fixes by glue points

Vented woofer aluminium backplate

Machined aluminium woofer phase plug

rainbow products symbolize our commitment to technological progress and intensive research. Revolutionary innovations and developments have always served as a driving motivation for our engineers. These factors result in making rainbow the most sought after audio products.

The highest level of quality and precision in sound and tone reproduction is what rainbow's Vanadium Line promises – and delivers. The Vanadium Line grew out of our original Profi Line, allowing our design engineers to maintain all the features that make the Profi Line so exceptional. The enhanced Vanadium Line is part of rainbow's ongoing pursuit of audio perfection. The woofers and mid-range speakers all come in foil alloys. This systematic use of alloys in all Vanadium Line components ensures homogenous sound and allows for greatly improved stability and precise reproduction. Reduction of partial oscillations enhances overall stability, resulting in an unparalleled transparent sound experience.

The Vanadium line offers an open, precise reproduction of voice, instruments and fast-kick bass without loss of control of bass reproduction.

The Woofer & Midrange :

- Extremely stiff special plastic compound basket for resonance-free operation
- Palladium-plated screw terminals for high quality cables with large diameters
- Extremely flexible surface-refined lead wires fixed via glue-points to guarantee resonance- and break-free operation
- Butyl rubber surround for controlled cone motion and minimal distortion
- Despite use of aluminum compound cone on a polymer cellulose base, authentic sound reproduction
- Machined aluminum phase plug for phase correction around the crossover frequencies and additional cooling for magnet motor
- High temperature 37 mm voice coil former of black kapton for minimal current loss and maximum excursion
- Duroplastic-backed and vented voice coil with temperature-resistant glue
- Vented spider to prevent compression
- Vented magnet system for better magnet motor cooling and vented dust cap to prevent thermal compression
- Optimized ferrite-ceramics magnet for high sensitivity with additional cooling via aluminum backplate

The Tweeter :

- Titanium dome with Neoprene surround for controlled dome motion and authentic sound reproduction
- Tweeter dome with hand-stamped anti-resonance rim
- Felt pad underneath the tweeter dome to prevent turbulence
- Vented voice coil former with flexible stainless steel lead wires
- Connected acoustic volume for low-resonance frequency and optimal linear frequency response
- Ferrofluid-free magnet system for fast and precise pulse response
- 8-holed backplate to connect tweeter to the acoustic volume
- High efficiency neodymium magnet with reversible magnet energy up to 175 degrees Celsius

The Crossover :

Vanadium Line crossovers are remarkable for their intrinsic features. Fitted with low-impedance and low-distortion foil capacitors, they provide high saturation, excellent fidelity, and faithful phase linearity throughout the treble range. The low-impedance, low-stray coils ensure minimum power loss at the crossovers. Palladium-plating ensures the best possible connections, and the variable tweeter level attenuation in combination with the HALO-system prevents excessive treble output.

CS 210 VANADIUM

2-way 4 Inch Compo Set 26 mm titanium tweeter Max. 110 Watt Part-No.: 231526

Frequency response: 65 - 35.000 Hz Minimum amplifier power: 50 Watt

CS 230 VANADIUM

2-way 5.25 Inch Compo Set 26 mm titanium tweeter Max. 150 Watt Part-No.: 231531

Frequency response: 48 - 35.000 Hz Minimum amplifier power: 75 Watt

CS 265 VANADIUM

2-way 6.5 Inch Compo Set 26 mm titanium tweeter Max. 180 Watt Part-No.: 231532

Frequency response: 39 - 35.000 Hz Minimum amplifier power: 75 Watt

CS 265 VANADIUM KICK *

2-way 6.5 Inch Compo Set 26 mm titanium tweeter Max. 180 Watt Part-No.: 231564

Frequency response: 80 - 35.000 Hz Minimum amplifier power: 75 Watt

CS 265 VANADIUM PHASE PLUG

2-way 6.5 Inch Compo Set 26 mm titanium tweeter Max. 180 Watt Part-No.: 231612

Frequency response: 39 - 35.000 Hz Minimum amplifier power: 75 Watt

CS 365 VANADIUM

3-way 6.5 Inch Compo Set 26 mm titanium tweeter Max. 180 Watt Part-No.: 231533

Frequency response: 39 - 35.000 Hz Minimum amplifier power: 75 Watt

CS 365 VANADIUM KICK* 6.5 Inch Max. 180 Watt Part-No.: 231529

Woofer-sets :

Midrange 100 Vanadium	4 Inch	Max. 110 Watt	Part-No.: 231082
Woofer 130 Vanadium	5.25 Inch	Max. 150 Watt	Part-No.: 231083
Woofer 165 Vanadium	6.5 Inch	Max. 180 Watt	Part-No.: 231084
Woofer 165 Vanadium Phase Plug	6.5 Inch	Max. 180 Watt	Part-No.: 231471
Woofer 165 Vanadium Kick*	6.5 Inch	Max. 180 Watt	Part-No.: 231034

Tweeter-sets without crossover :

CAL 26 TITAN VOF 26 mm Max. 180 Watt Part-No.: 231440



Our recommendation for Vanadium Line:

rainbow 7" - 12" Vanadium, see page 14 ff.

rainbow Audiokraftwerk, see page 4 ff.



The difference between Vanadium Line and Vanadium Cross Line

Vanadium Cross = Vanadium Woofer + CAL 26 Silk VOF (Profi) Tweeter

CS 210 VANADIUM CROSS

2-way 4 Inch Compo Set 26 mm silk dome tweeter Max. 110 Watt Part-No.: 231540

Frequency response: 65 - 35.000 Hz Minimum amplifier power: 50 Watt



CS 230 VANADIUM CROSS

2-way 5.25 Inch Compo Set 26 mm silk dome tweeter Max. 150 Watt Part-No.: 231541

Frequency response: 48 - 35.000 Hz Minimum amplifier power: 75 Watt



CS 265 VANADIUM CROSS

2-way 6.5 Inch Compo Set 26 mm silk dome tweeter Max. 180 Watt Part-No.: 231542

Frequency response: 39 - 35.000 Hz Minimum amplifier power: 75 Watt



CS 265 VANADIUM KICK CROSS *

2-way 6.5 Inch Compo Set 26 mm silk dome tweeter Max. 180 Watt Part-No.: 231543

Frequency response: 80 - 35.000 Hz Minimum amplifier power: 100 Watt



CS 265 VANADIUM PHASE PLUG CROSS

2-way 6.5 Inch Compo Set 26 mm silk dome tweeter Max. 180 Watt Part-No.: 231544

Frequency response: 39 - 35.000 Hz Minimum amplifier power: 75 Watt



CS 365 VANADIUM CROSS

3-way 6.5 Inch Compo Set 26 mm silk dome tweeter Max. 180 Watt Part-No.: 231545

Frequency response: 39 - 35.000 Hz Minimum amplifier power: 75 Watt



CS 365 VANADIUM KICK CROSS*

3-way 6.5 Inch Compo Set 26 mm silk dome tweeter Max. 180 Watt Part-No.: 231546

Frequency response: 80 - 35.000 Hz Minimum amplifier power: 75 Watt



* „Fazit: Bester Kickbass der Welt...“
autofahrer TESTURTEIL
05/2005
71
Absolute Spitzenklasse
Preis/Leistung ★★★★★

Our recommendation for Vanadium Cross Line:



rainbow
7" - 12" Vanadium, see page 14 ff.



rainbow Audiokraftwerk,
see page 4 ff.

Tweeter-sets without crossover:

CAL 26 SILK VOF 26 mm Max. 180 Watt Part-No.: 231435



8 INCH PROFI

Max. 250 Watt / 2 x 3.6 Ohm Enclosure : sealed from 27 l ported from 25 l Part-No. : 231593

Frequency response: 30 - 200 Hz Dual voice coil Subwoofer

10 INCH PROFI

Max. 450 Watt / 2 x 3.2 Ohm Enclosure : sealed from 11 l ported from 25 l Part-No. : 231594

Frequency response: 28 - 200 Hz Dual voice coil Subwoofer

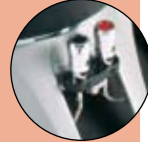
12 INCH PROFI

Max. 600 Watt / 2 x 3.2 Ohm Enclosure : sealed from 24 l ported from 48 l Part-No. : 231116

Frequency response: 25 - 200 Hz Dual voice coil Subwoofer



Copper shortcut ring on pole piece



Push terminal



Vented voice coil with double spider

The most impressive experience is a true bass sound pumping in the car. Only these subwoofer chassis allow you to effectively achieve a deep bass sound in the really low octaves. To efficiently convert deep bass power, sound pressure subwoofers are essential. These are faced with rigorous thermal, mechanical load capacity and sensitivity demands. It is not enough that maximum volume levels be reached, there must also be a top-sound propagation in the bass range. To enable listeners to assemble powerful subwoofer enclosures for the most intensive sounding music, we have developed a high quality subwoofer line that is produced exclusively in Germany. In doing so, we have made it possible to design subwoofer enclosures with maximum volume levels, variable sound characteristics to meet individual tastes, and the ability to be expanded or supplemented at any time. The Profi series subwoofers are perfectly suited for the Classic- and Rock & Pop listening audiophile. The Vanadium series subwoofers, with an aluminium compound cone are exactly the right thing for those looking for just the right kick. These series offer innovative and technological configurations. The choice of 8", 10" or 12" size ensures the right bass sound output in every inch of your car.

- Aluminum die-cast basket for resonance-free operation
- Palladium-plated push terminals for high quality cables with large diameters
- Butyl rubber surround for controlled cone motion and minimal distortion
- Natural fiber cone for authentic and brilliant sound reproduction
- Innovative dust cap formed of reinforced natural fiber for optimal frequency response
- High temperature, 40 – 75 mm voice coil former of black kapton for minimal current loss and maximum excursion
- Duroplastic-backed, low-inductance, and vented voice coil with temperatureresistant glue
- Vented double spider to prevent compression
- Extremely flexible surface-refined lead wires fixed via glue-points to guarantee resonance- and break-free operation
- Vented double magnet system for better magnet motor cooling and vented dust cap to prevent thermal compression
- Symmetrical pole piece for optimized magnet field symmetry
- Short cut ring made of copper to reduce distortions
- Optimized ferror-ceramics double magnet for high sensitivity with additional cooling via 8 mm chromium-plated backplate
- Suitable for enclosures of between 14 and 48 liters
- Application : bandpass, ported and sealed



Our recommendation for Subwoofer Profi:



Profi Line, Germanium Line, see page 8 ff.



rainbow Audiokraftwerk, see page 4 ff.



7 INCH VANADIUM

Max. 250 Watt / 1 x 3.6 Ohm Enclosure: Sealed from 16 l ported from 22 l Part-No.: 231167

Frequency response: 30 - 200 Hz Single voice coil Subwoofer

8 INCH VANADIUM

Max. 250 Watt / 2 x 3.6 Ohm Enclosure: Sealed from 16 l ported from 25 l Part-No.: 231595

Frequency response: 30 - 200 Hz Dual voice coil Subwoofer

10 INCH VANADIUM

Max. 450 Watt / 2 x 3.6 Ohm Enclosure: Sealed from 11 l ported from 27 l Part-No.: 231596

Frequency response: 28 - 200 Hz Dual voice coil Subwoofer

12 INCH VANADIUM

Max. 600 Watt / 2 x 3.6 Ohm Enclosure: Sealed from 23 l ported from 40 l Part-No.: 231597

Frequency response: 25 - 200 Hz Dual voice coil Subwoofer



Vented symmetrically pole piece



Vented double magnet



Vented spider in top plate

The most impressive experience is a true bass sound pumping in the car. Only these subwoofer chassis allow you to effectively achieve a deep bass sound in the really low octaves. To efficiently convert deep bass power, sound pressure subwoofers are essential. These are faced with rigorous thermal, mechanical load capacity and sensitivity demands. It is not enough that maximum volume levels be reached, there must also be a top-sound propagation in the bass range. To enable listeners to assemble powerful subwoofer enclosures for the most intensive sounding music, we have developed a high quality subwoofer line that is produced exclusively in Germany. In doing so, we have made it possible to design subwoofer enclosures with maximum volume levels, variable sound characteristics to meet individual tastes, and the ability to be expanded or supplemented at any time. The Profi series subwoofers are perfectly suited for the Classic- and Rock & Pop listening audiophile. The Vanadium series subwoofers, with an aluminium compound cone are exactly the right thing for those looking for just the right kick. These series offer innovative and technological configurations. The choice of 8", 10" or 12" size ensures the right bass sound output in every inch of your car.

- Aluminum die-cast basket for resonance-free operation
- Palladium-plated push terminals for high quality cables with large diameters
- Butyl rubber surround for controlled cone motion and minimal distortion
- Aluminum compound cone on polymer cellulose base offers authentic sound reproduction
- Concave dust cap form for optimal frequency response
- High-temperature, 40 – 75 mm voice coil former of black kapton for minimal current loss and maximum excursion
- Duroplastic-backed, low-inductivity, and vented voice coil with temperature-resistant glue
- Vented double spider to prevent compression
- Extremely flexible surface-refined lead wires fixed via glue-points to guarantee resonance- and break-free operation
- Vented double magnet system for better magnet motor cooling and vented dust cap to prevent thermal compression
- Symmetrical pole piece for optimized magnet field symmetry
- Short cut ring made of copper to reduce distortions
- Optimized ferror-ceramics double magnet for high sensitivity with additional cooling via 8 mm chromium-plated backplate
- Suitable for enclosures of between 16 and 33 liters
- Application : bandpass, ported and sealed

Our recommendation for Subwoofer Vanadium:



Vanadium Line, Profi Line, Power Line, Germanium Line, see page 8 ff.



rainbow Audiokraftwerk, see page 4 ff.



THUNDER 8"

8" Subwoofer ported Max. 250 Watt SPL 128 dB Part-No. : 231112



Terminals



3" Aeroport



Stainless steel protector rods

Bass power without installation stress and space issues. For bass generation there is one simple and valid rule. Nothing can take the place of cone area. The larger the cone area the more powerfully and loudly the subwoofer plays. A disadvantage of too large cones is not being able to install them in the car without using plate shears. To avoid this problem it is possible to install a very large woofer in a small enclosure relying on the principle that a small enclosure will fit into a larger one (trunk). Because of the pressure chamber effect in the car the frequency range below 50 Hz is amplified up to 20 dB (10 times). This fortuitous effect could be of practical use in car bass generation. The subwoofer enclosures use the optimized loudspeaker parameters for small and powerful enclosures to offer lots of power enjoyment. Deep tuning frequency of 25 – 35 Hz, high volume levels of up to 128 dB, and super-heightened sensitivity boost the enclosures' performance up to hearing loss levels.

- Flame-resistant carpet felt in accordance with German automobile standards
- Solvent-free glue in accordance with European Community standards
- Medium density fiberboard / particle board compound glued, bearing E1-seal of German production and guaranteed formaldehyde free
- Screwed, airtight enclosure for dynamic load capacity
- Chromium-plated terminal with gasket und 2 x 4 mm² OFC copper cable
- Interior attenuation of enclosure to prevent reflections between enclosure and speaker cone
- Solid stainless steel protector rods to prevent speaker cone damage
- Optimized aero-ports to prevent air current noise
- Deep bass thanks to optimized enclosure calculations
- All enclosures tested to ensure airtight and readjusted as necessary

Enclosure Technology :

The 22 mm medium-density fiberboard enclosure construction with high interior density functions as an additional bass impulse stabilizer and prevents bass impulse delay caused by strong decoupling. The back of the enclosure is sealed with a sound-absorbent insulating mat. The application of this technology ensures precise bass reproduction and provides, in conjunction with the subwoofer chassis, heightened sound quality.

Our recommendation for Enclosuresubwoofer:



Vanadium Line, Profi Line, Power Line, Germanium Line, see page 8 ff.



rainbow Audiokraftwerk, see page 4 ff.



ACCESSORIES



ACCESSORIES AUDIOKRAFTWERK



ISO-RCA adapter cable for High-Level input:

2 Channel	2 m	Part-No. : 273029
2 Channel	5 m	Part-No. : 273030



ISO-RCA adapter cable for High-Level input:

4 Channel	2 m	Part-No. : 273031
4 Channel	5 m	Part-No. : 273032



ANGLE MOUNT CAL 25 VOF
included
Part-No.: 161043



BRACKET CAL 25 / 26 VOF
mitgeliefert
Art.-Nr.: 161157



THREADED BOLT
included
Part-No.: 161154



ACCESSORIES PROFI AND VANADIUM LINE



MOUNTING RING CAL 26
optional
Part-No.: 151105



ANGLE MOUNT CAL 26
optional
Part-No.: 161397

ACCESSORIES GERMANIUM LINE



FLUSH MOUNT CAL 25 VOF
included
Part-No.: 161178



TWEETER STAND CAL 25 VOF
optional
Part-No.: 161184



BRACKET CAL 25 / 26 VOF
included
Part-No.: 161157



WIRING-SET
included
Part-No.: 151217



Part-No. / Art.-Nr.	Thunder 8"
Type / Typ	231112 ported
Peak power / Impulsbelastbarkeit	250 Watt
In car / SPL max im KFZ	128 dB
Tuning Frequency / Abstimm-Frequenz	39 Hz
Impedance / Impedanz	6 Ohm
No. Of Speakers / Anzahl der LS	1
Speaker Type / LS-Typ	8" VANADIUM
Volume / Volumen	24 liters / Liter
Reflex-Port	3" Aeroport
Weight / Gewicht	13 kgs / Kg
Dimensions (LxWxH) / Abmessungen (LxBxH)	45 x 33 / 22 x 28 cm

Art.-Nr.	KW 2270	KW 4150	KW 2V8	KW 4V8
Ausgangsleistung Stereo 4 Ω	271026 2 x 135 Watt RMS	27027 4 x 75 Watt RMS	271028	271029
Ausgangsleistung Stereo 2 Ω	2 x 230 Watt RMS	4 x 130 Watt RMS		
Ausgangsleistung Mono 4 Ω	1 x 450 Watt RMS	2 x 260 Watt RMS		
Ausgangsleistung Mono 2 Ω				
Ausgangsleistung Mono 1 Ω				
Gesamtklirrfaktor THD+N	<0,02 %	<0,02 %	<0,05 %	<0,05 %
Signal-Störabstand S/N	>85 dBA Bewertung	>85 dBA Bewertung	>85 dBA Bewertung	>85 dBA Bewertung
Übertragungsbereich -3 dB	10 Hz - 50 kHz	10 Hz - 50 kHz	10 Hz - 50 kHz	10 Hz - 50 kHz
Eingangsempfindlichkeit Level In	1V / 5.5V umschaltbar	1V / 5.5V umschaltbar	400 mV - 4V	400 mV - 4V
Eingangsempfindlichkeit High Level In			4V - 8V	4V - 8V
Hochpass / Subsonic - Front			15 Hz - 5 kHz, 24 dB/Okt.	15 Hz - 5 kHz, 24 dB/Okt.
Hochpass / Subsonic - Rear				15 Hz - 500 Hz, 24 dB/Okt.
Tiefpass / 4V8 nur Rear			50 Hz - 5 kHz, 24 dB/Okt.	50 Hz - 5 kHz, 24 dB/Okt.
Bandpass / 4V8 nur Rear			15 Hz - 5 kHz, 24 dB/Okt.	15 Hz - 5 kHz, 24 dB/Okt.
Bassanhebung				
Phaseshifter				
Fernbedienung (5m Kabel)				
Anschlussimpedanz Stereo [Ω]	2 x 4 / 2 x 2 möglich	2 x 4 / 2 x 2 möglich		
Anschlussimpedanz Mono [Ω]	1 x 8 / 1 x 4 möglich	1 x 8 / 1 x 4 möglich		
Anschlussimpedanz Tri-Mode (Woofer + Satelliten) [Ω]	1 x 4 + 2 x 4 Tri-Mode > 200	1 x 4 + 2 x 4 Tri-Mode > 200		
Dämpfungsfaktor @ 4 Ω	11V - 16V DC	11V - 16V DC		
Betriebsspannung	51 A bei 1% THD	61 A bei 1% THD		
Stromaufnahme max. @ 14.4 V	8 mA	8 mA		
Stromaufnahme Remote	<0.8 A	<0.8 A		
Ruhestromaufnahme ohne Signal	72°C Abschaltung	72°C Abschaltung		
Temperaturüberwachung Kühlkörper	Sofortabschaltung	Sofortabschaltung		
Kurzschlussicherung - Überlastung	1s Einschaltverzögerung	1s Einschaltverzögerung		
Softstart-Muting an / aus	376 x 59 x 273 mm	396 x 59 x 273 mm		
Abmessungen: B x H x T	4,2 Kg	4,5 Kg		
Gewicht	E11 10R-023307	E11 10R-023306		
Zulassungsnummer	Art.-Nr. 271090	Art.-Nr. 271090		
Option: Externer Lüfter	Art.-Nr. 271091	Art.-Nr. 271091		
Option: Externer Lüfter & Temperaturanzeige				
Option: Kabel ISO -> Cinch 2-Kanal				Art.-Nr. 273029 2m / 273030 5m
Option: Kabel ISO -> Cinch 4-Kanal				Art.-Nr. 273031 2m / 273032 5m



	CS 230.25 Germanium	CS 265.25 Germanium	CS 465.25 Germanium	CAL 25 Silk VOF Set	W 130 Germanium Set	W 165 Germanium Set
Part Number / Art.-Nr.:	130 mm/5.25" 231140	165 mm/6.5" 231138	165 mm/6.5" 231539	231436	130 mm/5.25" 231141	165 mm/6.5" 231059
Peak power / Impulsbelastbarkeit:	120 Watt	150 Watt	300 Watt	150 Watt	120 Watt	150 Watt
Power rating / Nennbelastbarkeit:	80 Watt	100 Watt	200 Watt	100 Watt	80 Watt	100 Watt
Minimum amplifier power / Mindestverstärkerleistung:	50 Watt	75 Watt	100 Watt	-	50 Watt	75 Watt
Sensitivity / Wirkungsgrad:	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m
Frequency response / Übertragungsbereich:	55 - 30.000 Hz	39 - 30.000 Hz	39 - 30.000 Hz	1.000 - 30.000 Hz	55 - 10.000 Hz	39 - 5.000 Hz
Impedance / Impedanz:	4 Ohm	4 Ohm	2 Ohm	4 Ohm	4 Ohm	4 Ohm
Slope / Flankensteilheit:	2 x 12 dB/Okt.	2 x 12 dB/Okt.	2 x 12 dB/Okt.	* 12 dB/Okt.	-	-
Crossover frequency / Übernahmefrequenz	2.200 Hz	2.200 Hz	2.200 Hz	* 2.600 / 2.200 Hz	-	-
Tweeter attenuation / Hochtonabsenkung:	4x	4x	4x	-	-	-
Thermal protection / Thermoschutz:	HALO + PTC	HALO + PTC	HALO + PTC	-	-	-
Woofer / Tieftöner:						
Mounting depth w/o / w. ring / Einbautiefe ohne / mit Ring:	W 130 Germanium 57 / 52 mm	W 165 Germanium 65 / 64 mm	W 165 Germanium 65 / 64 mm	-	W 130 Germanium 57 / 52 mm	W 165 Germanium 65 / 64 mm
External Ø w/o / w. ring / Außen-Ø ohne / mit Ring:	137 / 156 mm	166 / 190 mm	166 / 190 mm	-	137 / 156 mm	166 / 190 mm
External Ø with edges / Außen-Ø mit Ohren:	-	-	-	-	-	-
Installation Ø / Einbau-Ø:	114 mm	143 mm	143 mm	-	114 mm	143 mm
Fastening Ø / Befestigungsteilkreis:	126 mm	156 mm	156 mm	-	126 mm	156 mm
Midrange / Mitteltöner:						
Mounting depth w/o / w. ring / Einbautiefe ohne / mit Ring:	-	-	-	-	-	-
External Ø w/o / w. ring / Außen-Ø ohne / mit Ring:	-	-	-	-	-	-
External Ø with edges / Außen-Ø mit Ohren:	-	-	-	-	-	-
Installation Ø / Einbau-Ø:	-	-	-	-	-	-
Fastening Ø / Befestigungsteilkreis:	-	-	-	-	-	-
Tweeter / Hochtöner:						
Mounting depth / Einbautiefe:	CAL 25 Silk VOF 16 / 22 ² mm	CAL 25 Silk VOF 16 / 22 ² mm	CAL 25 Silk VOF 16 / 22 ² mm	CAL 25 Silk VOF 16 / 22 ² mm	-	-
External Ø / Außen-Ø:	46 / 58 ³ mm	46 / 58 ³ mm	46 / 58 ³ mm	46 / 58 ³ mm	-	-
Installation Ø / Einbau-Ø:	40 / 49 ² mm	40 / 49 ² mm	40 / 49 ² mm	40 / 49 ² mm	-	-
Fastening Ø / Befestigungsteilkreis:	-	-	-	-	-	-

* = recommended active crossover setup / empfohlene Aktivweicheneinstellungen

	CS 275.27 Power	CAL 27 Silk VOF Set	W 175 Power Set
Part Number / Art.-Nr.:	175 mm/6.9" 231161	231448	175 mm/6.9" 231028
Peak power / Impulsbelastbarkeit:	250 Watt	250 Watt	250 Watt
Power rating / Nennbelastbarkeit:	180 Watt	180 Watt	180 Watt
Minimum amplifier power / Mindestverstärkerleistung	150 Watt	-	150 Watt
Sensitivity / Wirkungsgrad:	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m
Frequency response / Übertragungsbereich:	35 - 35.000 Hz	1.000 - 35.000 Hz	35 - 5.000 Hz
Impedance / Impedanz:	4 Ohm	4 Ohm	4 Ohm
Slope / Flankensteilheit:	2 x 18 dB/Okt.	* 12 dB/Okt.	-
Crossover frequency / Übernahmefrequenz	2.300 Hz	* 2.400 Hz	-
Tweeter attenuation / Hochtonabsenkung:	3x	-	-
Thermal protection / Thermoschutz:	HALO + PTC	-	-
Woofer / Tieftöner:			
Mounting depth w/o / w. ring / Einbautiefe ohne / mit Ring:	W 175 Power 96 mm	-	W 175 Power 96 mm
External Ø w/o / w. ring / Außen-Ø ohne / mit Ring:	180 mm	-	180 mm
External Ø with edges / Außen-Ø mit Ohren:	-	-	-
Installation Ø / Einbau-Ø:	141 mm	-	141 mm
Fastening Ø / Befestigungsteilkreis:	166 mm	-	166 mm
Tweeter / Hochtöner:			
Mounting depth / Einbautiefe:	CAL 27 Silk VOF 20 mm	CAL 27 Silk VOF 20 mm	-
External Ø / Außen-Ø:	62 mm	62 mm	-
Installation Ø / Einbau-Ø:	47 mm	47 mm	-
Fastening Ø / Befestigungsteilkreis:	-	-	-

* = recommended active crossover setup / empfohlene Aktivweicheneinstellungen



	CS 210 Profi	CS 230 Profi	CS 265 Profi	CS 265 Profi Kick	CS 265 Profi Phase Plug	CS 365 Profi
Part Number / Art.-Nr.:	100 mm/4"	130 mm/5.25"	165 mm/6.5"	165 mm/6.5"	165 mm/6.5"	165 mm/6.5"
Peak power / Impulsbelastbarkeit:	231502	231496	231497	231489	231111	231498
Power rating / Nennbelastbarkeit:	110 Watt	150 Watt	180 Watt	180 Watt	180 Watt	180 Watt
Minimum amplifier power / Mindestverstärkerleistung:	80 Watt	100 Watt	120 Watt	120 Watt	120 Watt	120 Watt
Sensitivity / Wirkungsgrad:	50 Watt	75 Watt	75 Watt	100 Watt	75 Watt	75 Watt
Frequency response / Übertragungsbereich:	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m
Impedance / Impedanz:	75 - 35.000 Hz	48 - 35.000 Hz	39 - 35.000 Hz	80 - 35.000 Hz	39 - 35.000 Hz	39 - 35.000 Hz
Slope / Flankensteilheit:	4 Ohm	4 Ohm	4 Ohm	4 Ohm	4 Ohm	4 Ohm
Crossover frequency / Übernahmefrequenz:	2 x 18 dB/Okt.	2 x 18 dB/Okt.	2 x 18 dB/Okt.	2 x 18 dB/Okt.	2 x 18 dB/Okt.	2 x 18 / 1 x 12 dB/Okt.
Tweeter attenuation / Hochtonabsenkung:	2.400 Hz	2.400 Hz	2.400 Hz	2.400 Hz	2.400 Hz	2.400 Hz
Midrange attenuation / Mitteltonabsenkung:	3x	2x	2x	2x	2x	4x
Thermal protection / Thermoschutz:	HALO + PTC	HALO + PTC	HALO + PTC	HALO + PTC	HALO + PTC	HALO + PTC
Woofer / Tieftöner:	MR100 Profi	W 130 Profi	W 165 Profi	W 165 Profi Kick	W 165 Profi Phase Plug	W 165 Profi
Mounting depth w/o/w. ring / Einbautiefe ohne / mit Ring:	48 / 44 mm	59 / 54 mm	66 / 64 mm	66 / 64 mm	66 / 64 mm	66 / 64 mm
External Ø w/o/w. ring / Außen-Ø ohne / mit Ring:	114 / 130 mm	137 / 156 mm	167 / 190 mm	167 / 190 mm	167 / 190 mm	167 / 190 mm
External Ø with edges / Außen-Ø mit Ohren:	-	-	-	-	-	-
Installation Ø / Einbau-Ø:	95 mm	120 mm	145 mm	145 mm	145 mm	145 mm
Fastening Ø / Befestigungsteilkreis Ø:	107 mm	128 mm	156 mm	156 mm	156 mm	156 mm
Midrange / Mitteltöner:	-	-	-	-	-	MR 100 Profi
Mounting depth w/o/w. ring / Einbautiefe ohne / mit Ring:	-	-	-	-	-	48 / 44 mm
External Ø w/o/w. ring / Außen-Ø ohne / mit Ring:	-	-	-	-	-	114 / 130 mm
External Ø with edges / Außen-Ø mit Ohren:	-	-	-	-	-	-
Installation Ø / Einbau-Ø:	-	-	-	-	-	95 mm
Fastening Ø / Befestigungsteilkreis Ø:	-	-	-	-	-	107 mm
Tweeter / Hochtöner:	CAL 26 Silk VOF	CAL 26 Silk VOF	CAL 26 Silk VOF	CAL 26 Silk VOF	CAL 26 Silk VOF	CAL 26 Silk VOF
Mounting depth / Einbautiefe:	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm
External Ø / Außen-Ø:	51 mm	51 mm	51 mm	51 mm	51 mm	51 mm
Installation Ø / Einbau-Ø:	44 mm	44 mm	44 mm	44 mm	44 mm	44 mm
Fastening Ø / Befestigungsteilkreis Ø:	-	-	-	-	-	-

	CS 365 Profi Kick	CAL 26 Silk VOF Set	MR 100 Profi Set	W 130 Profi Set	W 165 Profi Set	W 165 Profi Kick Set
Part Number / Art.-Nr.:	231490	231435	231073	231071	231072	231074
Peak power / Impulsbelastbarkeit:	180 Watt	180 Watt	110 Watt	150 Watt	180 Watt	180 Watt
Power rating / Nennbelastbarkeit:	120 Watt	120 Watt	80 Watt	100 Watt	120 Watt	120 Watt
Minimum amplifier power / Mindestverstärkerleistung:	100 Watt	-	50 Watt	75 Watt	75 Watt	100 Watt
Sensitivity / Wirkungsgrad:	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m
Frequency response / Übertragungsbereich:	80 - 35.000 Hz	1.000 - 35.000 Hz	75 - 8.000 Hz	48 - 8.000 Hz	39 - 5.000 Hz	80 - 5.000 Hz
Impedance / Impedanz:	4 Ohm	4 Ohm	4 Ohm	4 Ohm	4 Ohm	4 Ohm
Slope / Flankensteilheit:	2 x 18 / 1 x 12 dB/Okt.	*12 dB / Okt.	-	-	-	-
Crossover frequency / Übernahmefrequenz:	500 / 2.400 Hz	*2.600 Hz	-	-	-	-
Tweeter attenuation / Hochtonabsenkung:	4x	-	-	-	-	-
Midrange attenuation / Mitteltonabsenkung:	4x	-	-	-	-	-
Thermal protection / Thermoschutz:	HALO + PTC	-	-	-	-	-
Acoustic volume w/o ferrofluid / Akustikvolumen ohne Ferrofluid:	-	ja	-	-	-	-
Woofer / Tieftöner:	W 165 Profi Kick	W 165 Profi Kick	MR 100 Profi	W 130 Profi	W 165 Profi	W 165 Profi Kick
Mounting depth w/o/w. ring / Einbautiefe ohne / mit Ring:	66 / 64 mm	-	-	59 / 54 mm	66 / 64 mm	66 / 64 mm
External Ø w/o/w. ring / Außen-Ø ohne / mit Ring:	167 / 190 mm	-	-	137 / 156 mm	167 / 190 mm	167 / 190 mm
External Ø with edges / Außen-Ø mit Ohren:	-	-	-	-	-	-
Installation Ø / Einbau-Ø:	145 mm	-	-	120 mm	145 mm	145 mm
Fastening Ø / Befestigungsteilkreis Ø:	156 mm	-	-	128 mm	156 mm	156 mm
Midrange / Mitteltöner:	MR 100 Profi	-	MR 100 Profi	-	-	-
Mounting depth w/o/w. ring / Einbautiefe ohne / mit Ring:	48 / 44 mm	-	48 / 44 mm	-	-	-
External Ø w/o/w. ring / Außen-Ø ohne / mit Ring:	114 / 130 mm	-	114 / 130 mm	-	-	-
External Ø with edges / Außen-Ø mit Ohren:	-	-	-	-	-	-
Installation Ø / Einbau-Ø:	95 mm	-	95 mm	-	-	-
Fastening Ø / Befestigungsteilkreis Ø:	107 mm	-	107 mm	-	-	-
Tweeter / Hochtöner:	CAL 26 Silk VOF	CAL 26 Silk VOF	CAL 26 Silk VOF	CAL 26 Silk VOF	CAL 26 Silk VOF	CAL 26 Silk VOF
Mounting depth / Einbautiefe:	20 mm	20 mm	-	-	-	-
External Ø / Außen-Ø:	51 mm	51 mm	-	-	-	-
Installation Ø / Einbau-Ø:	44 mm	44 mm	-	-	-	-
Fastening Ø / Befestigungsteilkreis Ø:	-	-	-	-	-	-

*empfohlene Aktivweicheinstellungen / recommended active crossover setup



	CS 210 Vanadium	CS 230 Vanadium	CS 265 Vanadium	CS 265 Vanadium Kick	CS 265 Vanadium Phase Plug	CS 365 Vanadium
Part Number / Art.-Nr.:	100 mm/4" 231526	130 mm/5.25" 231531	165 mm/6.5" 231532	165 mm/6.5" 231564	165 mm/6.5" 231612	165 mm/6.5" 231533
Peak power / Impulsbelastbarkeit:	110 Watt	150 Watt	180 Watt	180 Watt	180 Watt	180 Watt
Power rating / Nennbelastbarkeit:	80 Watt	100 Watt	120 Watt	120 Watt	120 Watt	120 Watt
Minimum amplifier power / Mindestverstärkerleistung:	50 Watt	75 Watt	75 Watt	100 Watt	75 Watt	75 Watt
Sensitivity / Wirkungsgrad:	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m
Frequency response / Übertragungsbereich:	65 - 35.000 Hz	48 - 35.000 Hz	39 - 35.000 Hz	80 - 35.000 Hz	39 - 35.000 Hz	39 - 35.000 Hz
Impedance / Impedanz:	4 Ohm	4 Ohm	4 Ohm	4 Ohm	4 Ohm	4 Ohm
Slope / Flankensteilheit:	2 x 18 dB/Okt.	2 x 18 dB/Okt.	2 x 18 dB/Okt.	2 x 18 dB/Okt.	2 x 18 dB/Okt.	2 x 18 / 1 x 12 dB/Okt.
Crossover frequency / Übernahmefrequenz:	2.400 Hz	2.400 Hz	2.400 Hz	2.400 Hz	2.400 Hz	500 / 2.400 Hz
Tweeter attenuation / Hochttonabsenkung:	3x	2x	2x	2x	2x	4x
Midrange attenuation / Mitteltonabsenkung:	-	-	-	-	-	4x
Thermal protection / Thermoschutz:	HALO + PTC	HALO + PTC	HALO + PTC	HALO + PTC	HALO + PTC	HALO + PTC
Woofers / Tieftöner:	MR 100 Vandium	W 130 Vanadium	W 165 Vanadium	W 165 Vanadium Kick	W 165 Vanadium	W 165 Vanadium
Mounting depth w/o/w. ring / Einbautiefe ohne / mit Ring:	48 / 44 mm	59 / 59 mm	66 / 64 mm	66 / 64 mm	66 / 64 mm	66 / 64 mm
External Ø w/o/w. ring / Außen-Ø ohne / mit Ring:	114 / 130 mm	137 / 156 mm	167 / 190 mm	167 / 190 mm	167 / 190 mm	167 / 190 mm
External Ø with edges / Außen-Ø mit Ohren:	-	-	-	-	-	-
Installation Ø / Einbau-Ø:	95 mm	120 mm	145 mm	145 mm	145 mm	145 mm
Fastening Ø / Befestigungsteilkreis Ø:	107 mm	128 mm	156 mm	156 mm	156 mm	156 mm
Midrange / Mitteltoner:	-	-	-	-	-	MR 100 Vandium
Mounting depth w/o/w. ring / Einbautiefe ohne / mit Ring:	-	-	-	-	-	48 / 44 mm
External Ø w/o/w. ring / Außen-Ø ohne / mit Ring:	-	-	-	-	-	114 / 130 mm
External Ø with edges / Außen-Ø mit Ohren:	-	-	-	-	-	-
Installation Ø / Einbau-Ø:	-	-	-	-	-	95 mm
Fastening Ø / Fastening Ø / Befestigungsteilkreis Ø:	-	-	-	-	-	107 mm
Tweeter / Hochtöner:	CAL 26 Titan VOF	CAL 26 Titan VOF	CAL 26 Titan VOF	CAL 26 Titan VOF	CAL 26 Titan VOF	CAL 26 Titan VOF
Mounting depth / Einbautiefe:	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm
External Ø / Außen-Ø:	51 mm	51 mm	51 mm	51 mm	51 mm	51 mm
Installation Ø / Einbau-Ø:	44 mm	44 mm	44 mm	44 mm	44 mm	44 mm
Fastening Ø / Befestigungsteilkreis Ø:	-	-	-	-	-	-



	CS 365 Vanadium Kick	CAL 26 Titan VOF Set	MR 100 Vandium Set	W 130 Vanadium Set	W 165 Vanadium Set	W 165 Vanadium Kick Set
Part Number / Art.-Nr.:	165 mm/6.5" 231529	231440	231082	231083	231471	231034
Peak power / Impulsbelastbarkeit:	150 Watt	180 Watt	110 Watt	150 Watt	180 Watt	180 Watt
Power rating / Nennbelastbarkeit:	120 Watt	120 Watt	80 Watt	100 Watt	120 Watt	120 Watt
Minimum amplifier power / Mindestverstärkerleistung:	100 Watt	-	50 Watt	75 Watt	75 Watt	100 Watt
Sensitivity / Wirkungsgrad:	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m
Frequency response / Übertragungsbereich:	80 - 35.000 Hz	1.000 - 35.000 Hz	65 - 5.000 Hz	48 - 5.000 Hz	39 - 3.500 Hz	80 - 3.500 Hz
Impedance / Impedanz:	4 Ohm	4 Ohm	4 Ohm	4 Ohm	4 Ohm	4 Ohm
Slope / Flankensteilheit:	2 x 18 / 1 x 12 dB/Okt.	*12 dB / Okt.	-	-	-	-
Crossover frequency / Übernahmefrequenz:	500 / 2.400 Hz	*2.600 Hz	-	-	-	-
Tweeter attenuation / Hochttonabsenkung:	4x	-	-	-	-	-
Midrange attenuation / Mitteltonabsenkung:	4x	-	-	-	-	-
Thermal protection / Thermoschutz:	HALO + PTC	-	-	-	-	-
Acoustic volume w/o ferrofluid / Akustikvolumen ohne Ferrofluid:	-	ja	-	-	-	-
Woofers / Tieftöner:	W 165 Vanadium Kick	W 130 Vanadium	W 165 Vanadium	W 165 Vanadium	W 165 Vanadium	W 165 Vanadium Kick
Mounting depth w/o/w. ring / Einbautiefe ohne / mit Ring:	66 / 64 mm	-	59 / 59 mm	66 / 64 mm	66 / 64 mm	66 / 64 mm
External Ø w/o/w. ring / Außen-Ø ohne / mit Ring:	167 / 190 mm	-	137 / 156 mm	167 / 190 mm	167 / 190 mm	167 / 190 mm
External Ø with edges / Außen-Ø mit Ohren:	-	-	-	-	-	-
Installation Ø / Einbau-Ø:	145 mm	-	120 mm	145 mm	145 mm	145 mm
Fastening Ø / Befestigungsteilkreis Ø:	156 mm	-	128 mm	156 mm	156 mm	156 mm
Midrange / Mitteltoner:	MR 100 Vandium	-	MR 100 Vandium	-	-	-
Mounting depth w/o/w. ring / Einbautiefe ohne / mit Ring:	48 / 44 mm	-	48 / 44 mm	-	-	-
External Ø w/o/w. ring / Außen-Ø ohne / mit Ring:	114 / 130 mm	-	114 / 130 mm	-	-	-
External Ø with edges / Außen-Ø mit Ohren:	-	-	-	-	-	-
Installation Ø / Einbau-Ø:	95 mm	-	95 mm	-	-	-
Fastening Ø / Befestigungsteilkreis Ø:	107 mm	-	107 mm	-	-	-
Tweeter / Hochtöner:	CAL 26 Titan VOF	CAL 26 Titan VOF	CAL 26 Titan VOF	CAL 26 Titan VOF	CAL 26 Titan VOF	CAL 26 Titan VOF
Mounting depth / Einbautiefe:	20 mm	20 mm	-	-	-	-
External Ø / Außen-Ø:	51 mm	51 mm	-	-	-	-
Installation Ø / Einbau-Ø:	44 mm	44 mm	-	-	-	-
Fastening Ø / Befestigungsteilkreis Ø:	-	-	-	-	-	-

*recommended active crossover setup / empfohlene Aktivweicheinstellungen



	CS 210 Vanadium Cross	CS 230 Vanadium Cross	CS 265 Vanadium Cross	CS 265 Vanadium Kick Cross	CS 265 Vanadium Phase Plug Cross	CS 365 Vanadium Cross	CS 365 Vanadium Kick Cross
Part Number / Art.-Nr.:	100 mm/4"	130 mm/5.25"	165 mm/6.5"	165 mm/6.5"	165 mm/6.5"	165 mm/6.5"	165 mm/6.5"
Peak power / Impulsbelastbarkeit:	231540	231541	231542	231543	231544	231545	231546
Power rating / Nennbelastbarkeit:	110 Watt	150 Watt	180 Watt	180 Watt	180 Watt	180 Watt	180 Watt
Minimum amplifier power / Mindestverstärkerleistung:	80 Watt	100 Watt	120 Watt	120 Watt	120 Watt	120 Watt	120 Watt
Sensitivity / Wirkungsgrad:	50 Watt	75 Watt	75 Watt	100 Watt	75 Watt	75 Watt	75 Watt
Frequency response / Übertragungsbereich:	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m	90 dB 1W/1m
Impedance / Impedanz:	65 - 35.000 Hz	48 - 35.000 Hz	39 - 35.000 Hz	80 - 35.000 Hz	39 - 35.000 Hz	39 - 35.000 Hz	80 - 35.000 Hz
Slope / Flankensteilheit:	4 Ohm	4 Ohm	4 Ohm	4 Ohm	4 Ohm	4 Ohm	4 Ohm
Crossover frequency / Übernahmefrequenz:	2 x 18 dB/Okt.	2 x 18 dB/Okt.	2 x 18 dB/Okt.	2 x 18 dB/Okt.	2 x 18 dB/Okt.	2 x 18 / 1 x 12 dB/Okt.	2 x 18 / 1 x 12 dB/Okt.
Tweeter attenuation / Hochtonabsenkung:	2.400 Hz	2.400 Hz	2.400 Hz	2.400 Hz	2.400 Hz	500 / 2.400 Hz	500 / 2.400 Hz
Midrange attenuation / Mitteltonabsenkung:	3x	2x	2x	2x	2x	4x	4x
Thermal protection / Thermoschutz:	-	-	-	-	-	4x	4x
	HALO + PTC	HALO + PTC	HALO + PTC	HALO + PTC	HALO + PTC	HALO + PTC	HALO + PTC
Woofer / Tieftöner:	MR 100 Vandium	W 130 Vanadium	W 165 Vanadium	W 165 Vanadium Kick	W 165 Vanadium	W 165 Vanadium	W 165 Vanadium Kick
Mounting depth w/o/w. ring / Einbautiefe ohne / mit Ring:	48 / 44 mm	59 / 59 mm	66 / 64 mm	66 / 64 mm	66 / 64 mm	66 / 64 mm	66 / 64 mm
External Ø w/o/w. ring / Außen-Ø ohne / mit Ring:	114 / 130 mm	137 / 156 mm	167 / 190 mm	167 / 190 mm	167 / 190 mm	167 / 190 mm	167 / 190 mm
External Ø with edges / Außen-Ø mit Ohren:	-	-	-	-	-	-	-
Installation Ø / Einbau-Ø:	95 mm	120 mm	145 mm	145 mm	145 mm	145 mm	145 mm
Fastening Ø / Befestigungsteilkreis Ø:	107 mm	128 mm	156 mm	156 mm	156 mm	156 mm	156 mm
	-	-	-	-	-	-	-
Midrange / Mitteltoner:	-	-	-	-	-	MR 100 Vandium	MR 100 Vandium
Mounting depth w/o/w. ring / Einbautiefe ohne / mit Ring:	-	-	-	-	-	-	-
External Ø w/o/w. ring / Außen-Ø ohne / mit Ring:	-	-	-	-	-	48 / 44 mm	48 / 44 mm
External Ø with edges / Außen-Ø mit Ohren:	-	-	-	-	-	114 / 130 mm	114 / 130 mm
Installation Ø / Einbau-Ø:	-	-	-	-	-	-	-
Fastening Ø / Befestigungsteilkreis Ø:	-	-	-	-	-	95 mm	95 mm
	-	-	-	-	-	107 mm	107 mm
Tweeter / Hochtöner:	CAL 26 SIIK VOF	CAL 26 SIIK VOF	CAL 26 SIIK VOF	CAL 26 SIIK VOF	CAL 26 SIIK VOF	CAL 26 SIIK VOF	CAL 26 SIIK VOF
Mounting depth / Einbautiefe:	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm
External Ø / Außen-Ø:	51 mm	51 mm	51 mm	51 mm	51 mm	51 mm	51 mm
Installation Ø / Einbau-Ø:	44 mm	44 mm	44 mm	44 mm	44 mm	44 mm	44 mm
Fastening Ø / Befestigungsteilkreis Ø:	-	-	-	-	-	-	-

	8" Profi	10" Profi	12" Profi	7" Vanadium	8" Vanadium	10" Vanadium	12" Vanadium
Part-Nr. / Art.-Nr.	231593	231594	231116	231167	231595	231596	231597
Peak power / Max. Belastbarkeit	250	450	600	250	250	450	600
Nominal power handling / Nennbelastbarkeit	30-150	50-250	50-350	30-150	30-150	50-250	50-350
Frequency Response / Übertragungsbereich	30-200	28-200	25-200	30-200	30-200	28-200	25-200
DC-Resistance / Gleichstromwiderstand	2 x 3,6	2 x 3,20	2 x 3,20	1 x 3,6	2 x 3,6	2 x 3,20	2 x 3,20
Max. SPL in car (ported) / Max. SPL im KFZ (Bass-Reflex)	128	136	146	125	128	136	146
Magnet weight / Magnetgewicht	1100	2780	2780	1100	1100	2780	2780
Frame diameter / Außendurchmesser	221	279	330	180	221	279	330
Mounting diameter / Einbautiefe	183	231	281	144	183	231	281
Basket rim height w/o. w. ring / Randhöhe ohne / mit Ring	5	6	6	5	5	6	6
Mounting depth / Einbautiefe	104	135	155	96	104	135	155
Overall depth / Gesamttiefe	108	140	157	105	108	140	157
Magnet diameter / Magnetdurchmesser	100	158	160	100	100	158	160
Displacement / Volumen-Verdrängung	1,0	3,0	4,1	0,8	1,0	3,0	4,1
Suitable for... / Geeignet für...	Enclosure / Gehäuse	Enclosure / Gehäuse	Enclosure / Gehäuse	Enclosure / Gehäuse	Enclosure / Gehäuse	Enclosure / Gehäuse	Enclosure / Gehäuse
F_s	40,00	30,00	27,00	38,00	35,00	35,00	30,00
R_e dc*	6,80	2 x 3,20	2 x 3,20	3,55	7,00	2 x 3,20	2 x 3,20
Q_{ms}	6,52	4,74	4,70	5,90	6,89	3,29	3,63
Q_{ts}	0,61	0,38	0,38	0,72	0,63	0,45	0,52
Q_{es}	0,56	0,35	0,37	0,64	0,57	0,40	0,45
L_v*	2,16	1,80	2,00	0,56	2,33	1,80	2,00
V_a (Sd)	27,00	35,00	70	19,00	28,00	25,00	55,00
S_d	233,00	347,00	510,00	133,00	217,00	347,00	510,00
Z @ 100 Hz*	8,90	8,40	8,80	4,10	8,50	8,90	8,50
Z @ 1 kHz*	19,30	24,00	24,00	6,20	19,30	24,00	22,30
Z @ 10 kHz*	99,00	78,00	74,00	23,00	104,00	71,00	67,70
R_{ms}	1,60	4,70	4,90	1,00	1,85	9,30	10,40
X_{ms}	14,00	25,00	25,00	14,00	14,00	25,00	25,00
Enclosure / Gehäuse							
Sealed minimum / Geschlossen mindestens	27	11	24	16	26	11	23
Ported minimum / Bass-Reflex mindestens	25	25	48	22	26	27	40
Aeroport-tube Ø / length / Aeroport-Rohr Ø / Länge	3 / 29	3 / 39	3 / 19	3 / 18	3 / 24	3 / 33	3 / 19,4

* If dual voice coil subwoofer: This specifications are measured with the subwoofer voice coils in series. For parallel wired specifications divide Redc*, Le* and Z* by 4. All other specifications remain the same.

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