HK AUDIO®

Concert Sound



Catalog 2009

English



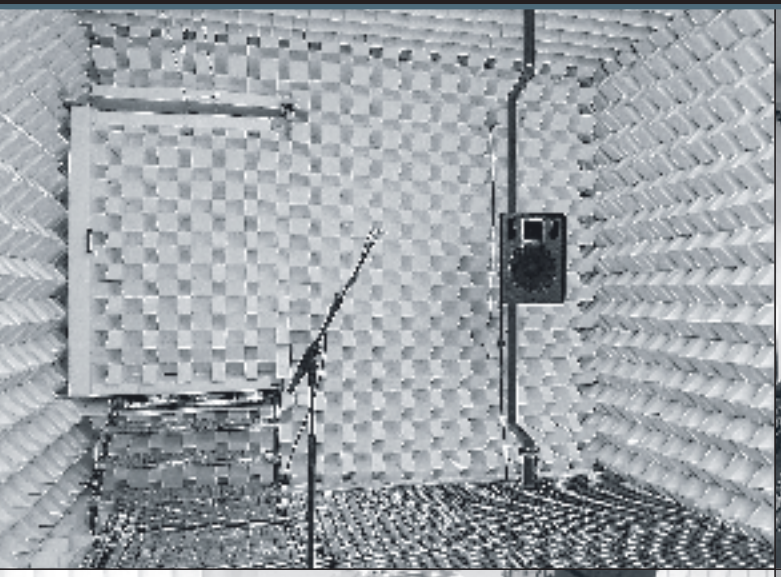
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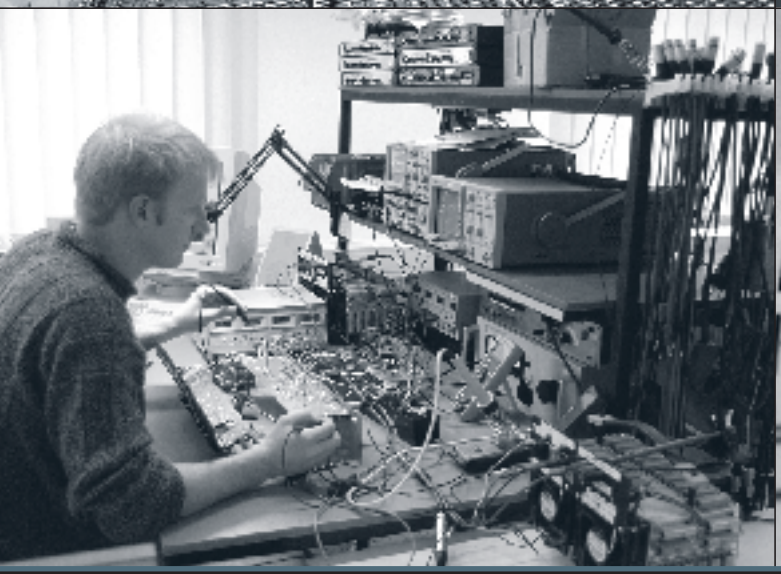
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HK Audio – Made in Germany









With more than 25 years experience, HK AUDIO ranks among the leading European manufacturers in the professional audio business. More than 200 people are employed in the development, manufacturing and marketing of sound reinforcement systems at the main plant in St. Wendel, Germany. From self-powered Portable Sound solutions, to fixed install systems and on to the Concert Sound range, which is presented in this catalog – HK AUDIO provides end-to-end solutions engineered to rise to every sound reinforcement challenge. And the painstaking development effort invested in these solutions always puts faithful dynamic response and easy, intuitive handling first.









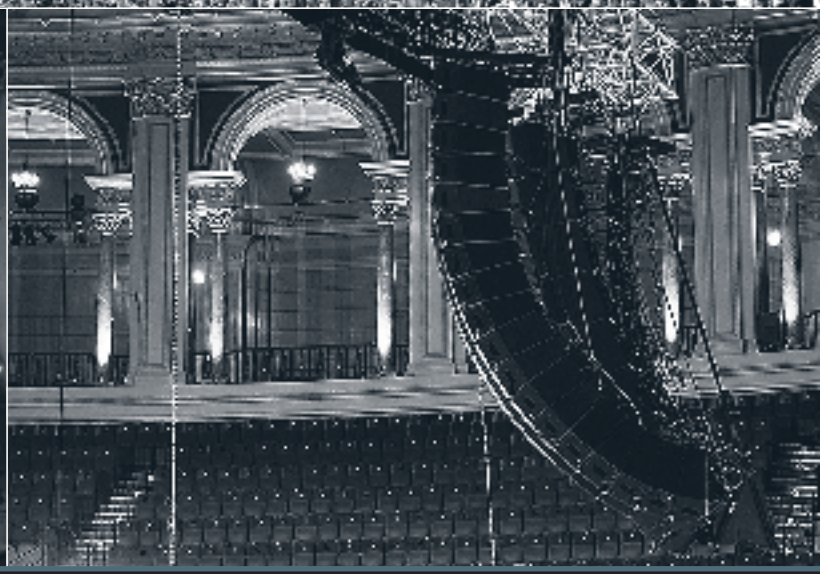
A team of engineers specializing in acoustics and physics as well as analog and digital electronics, work side by side with experienced audio technicians and musicologists to live up to this performance promise with every new product. All this great know-how is backed by leading-edge technology. HK AUDIO owns one of the world's most advanced acoustical measurement labs. And though industrial machines such as precision CNC mills and enameling robots figure prominently in manufacturing, the skills of master craftsmen and women also play a big role, especially in Concert Sound systems.

The spirited dialog and exchange of insights with users is another key building block of HK AUDIO systems. The worldwide distribution network of partners in 56 countries ensures their availability and provides service in your neighborhood.

HK AUDIO CONCERT SOUND







Top row, from left:
Stars for Free Festival, Magdeburg, Germany • Jazz Days Leverkusen, Germany
FIFA Fan Fest 2006, Stuttgart, Germany

Bottom row, from left:
Beijing Olympics 2008 presentation, China • The Waterboys 2007 Tour of England and Ireland
The Tall Ships Race, Newcastle, England • Corporate function, Gold Coast Convention Centre, Australia









HK AUDIO CONCERT SOUND









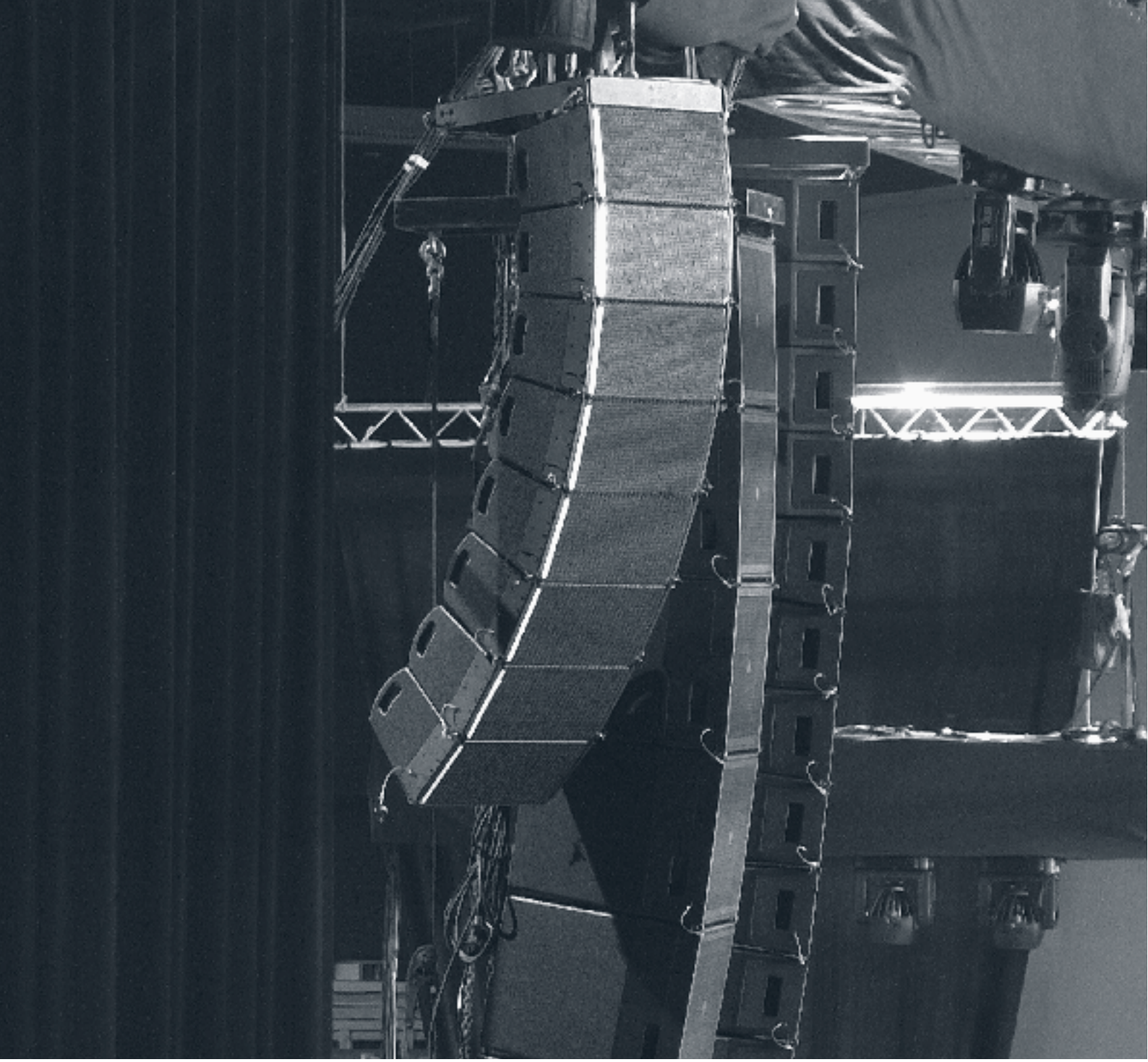
Top row, from left:
CT 112 on tour with Magnum in Europe • Classical Open Air, Nuremberg, Germany
PUR promo tour, E-Werk, Cologne, Germany • 6- Days Race, Ahoy, Rotterdam, The Netherlands

Bottom row, from left:
Playmobil HOB Center, Zirndorf, Germany • Rhema Church, Randburg, South Africa • Juanes, Las Palmas, Spain









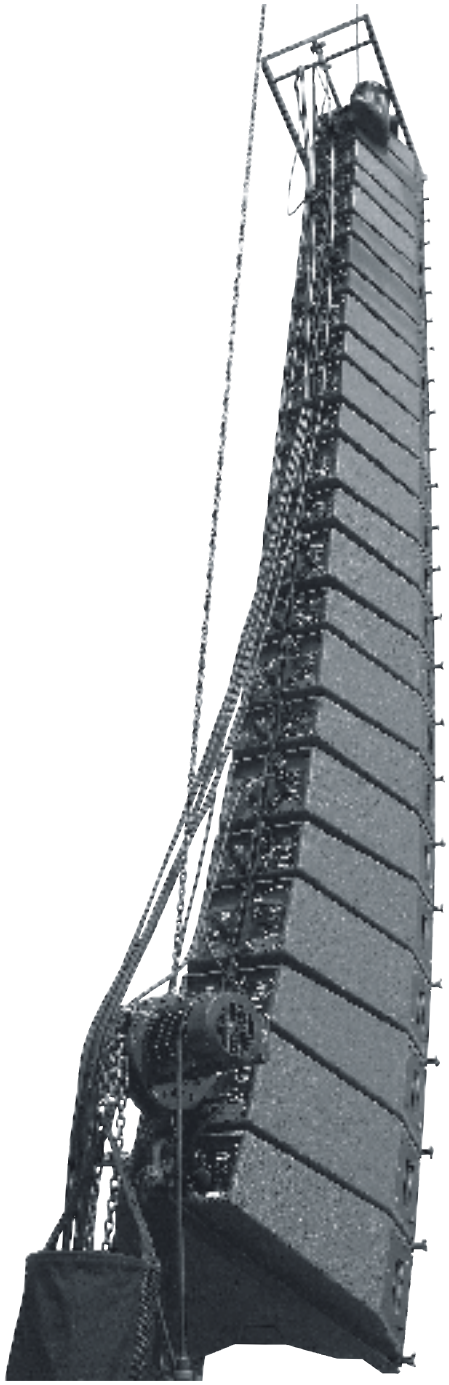
Cohedra™ Line Arrays



Short for Coherent Dynamic Response Array, COHEDRA™ is the next higher rung up the line array's evolutionary ladder. It was born of a vision to combine utmost authenticity in natural-sounding dynamic response with greater range and resistance to wind. COHEDRA™ stands out in the crowd with its AcousticLens™ technology featuring a genuine CD horn design and a compression chamber for the midrange drivers. Paired with COHEDRA™ Power Racks and the FIRNET™ Controllers, this line array achieves a very stable coherent wave front that brings this vision to life.

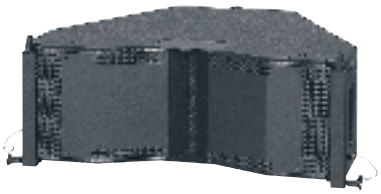
COHEDRA COMPACT™packs this technology into an even more compact and flexible format, bringing its benefits to smaller application scenarios.

Both systems come as end-to-end solutions encompassing speakers, specially designed power racks and controller, rigging hardware, and the necessary cabling and transportation system. What's more, audio and system technicians are sure to value these two line arrays' ease of use and light weight.



COHEDRA

COHEDRA™ is a scalable line source array for midsized to large events. It is more compact, lighter, and thus more flexible than other large arrays. A one-ton motor can fly configurations comprising up to 24 CDR 208 mid/high-range units. COHEDRA™ operates with and without flyable CDR 210 F subwoofers. However, big events benefit from flown CDR 210 F because these rigs are able to render a far more expansive sonic image from a line source. This flexibility makes the system a very cost-effective and profitable investment.



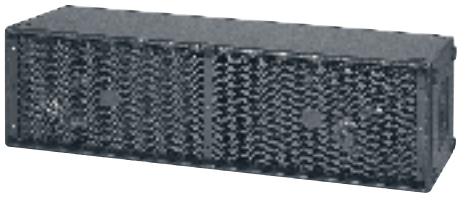
CDR 208 S/T

These 2x 8"/1.4" mid/high units with 80° horizontal dispersion deliver faithful dynamic response and greater range courtesy of their COHEDRA™ AcousticLens™ technology, CD horn design, and compression chambers for midrange drivers. Equipped with fully integrated rigging hardware with quick-release pins, the CDR 208 S and T housings come in two forms to curve the array as desired. They also serve to optimize acoustical gaps within the array and thus minimize side lobes.



CDR 210 F

Based on the CDR 210 Sub's design and audio performance specs, this 2 x 10", direct radiating, flyable subwoofer shares the basic form of the CDR 208 S/T mid/high units and may be flown using the same rigging hardware. Slanted on the top and bottom, the housing gives the option to curve flown bass arrays. CDR 210 F cabinets may be mounted directly on the rigging frame, suspended above mid/high units, or may be flown as a separate bass array. Used with the COHEDRA™ stack frame, they also provide the base for mid/high units arrayed in ground stacks.

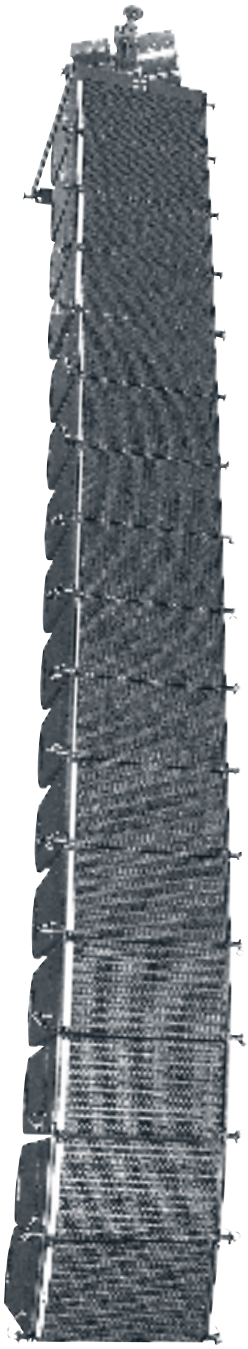


CDR 210 Sub

This 2x 10" direct-radiating subwoofer delivers remarkably faithful impulse response for crisp, natural-sounding low-end performance. The CDR 210 Sub's compact design affords maximum flexibility for diverse configurations—left-right clusters, quad blocks, and sub arrays. A special coating protects the loudspeakers against dirt and moisture.

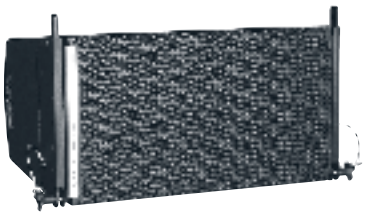
To learn more about COHEDRA™ and COHEDRA COMPACT™, visit www.cohedra.info or simply request our special brochures.

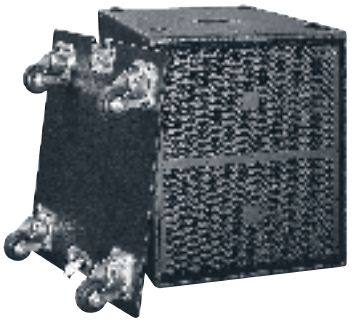
Cohedra Compact™



COHEDRA COMPACT

Industry events, club concerts, and small open-air festivals - COHEDRA COMPACT™ brings the bona fide line array experience to events that were once served strictly by conventional sound reinforcement systems. Endowed with technology and features from its bigger sibling system, COHEDRA COMPACT™ not only supplies audio in the form of both music and speech in extraordinary quality. It also kicks with a real rock'n'roll attitude and aptitude. The system's compact dimensions, light weight, and easy ground-stacking afford users all the flexibility they need to get the job done at smaller gigs.





CDR 108 C

This 1x 8" / 2x 1" mid/high unit projects with a 100° horizontal coverage pattern. An array of CDR 108 C cabinets offers faithful dynamic response and great range, courtesy of 1" drivers featuring COHEDRA™ AcousticLens™ technology, a CD horn design, and a compression chamber for the 8“ midrange driver. Rigging hardware with quick release pins is fully integrated in the housing.

CDR 210 C

This direct radiating 2 x 10" subwoofer delivers exceedingly faithful impulse response enabling powerful, natural-sounding, low-end performance. The compact dimensions and integrated rigging hardware afford maximum flexibility for both flown and ground-stacked configurations.
The CDR 210 C serves as the base for the CDR 108 C mid/high unit. A special coating protects the loudspeakers against dirt and moisture. A dolly with 80 mm casters and butterfly latches is factory-included.

To learn more about COHEDRA™ and COHEDRA COMPACT™, visit www.cohedra.info or simply request our special brochures.

COHEDRA™ AMPING





THE COHEDRA™ ENGINE

Featuring a shock-mount case in handy truck-pack dimensions, the rugged PR 8 and PR 16 Power Racks are designed to withstand the rigors of the road. The combination of VX 2400 power amps, FIRNET™ Controller with all current filter sets pre loaded, and PB 5 or PB 2 Patchbays, makes for an inseparable unit, serving as the standardized engine that powers every COHEDRA™ and COHEDRA COMPACT™ system. This setup brings the best possible sound quality and compatibility to users' rigs worldwide.

COHEDRA™ PR 8

Power Rack for 8 COHEDRA™ CDR 208 S/T and/ or CDR 210 (F) enclosures, or up to 16 COHEDRA COMPACT™ CDR 108 C mid/high units, or 8 CDR 108 C and 4 CDR 210 C subwoofers.
1x Shock-mount rack, 6U, 100 mm Blue Wheels
1x FIRNET™ Controller
2x VX 2400 power amps
1x PB 2 Patchbay (optionally with PB 5)
1x PS 32 power supply

COHEDRA™ PR 16

Power Rack for 16 COHEDRA™ CDR 208 S/T and/ or CDR 210 (F) enclosures, or up to 32 COHEDRA COMPACT™ CDR 108 C mid/high units, or 16 CDR 108 C and 8 CDR 210 C subwoofers.
1x Shock-mount rack, 12U, 100 mm blue wheels
2x FIRNET™ Controller
4x VX 2400 power amps
2x PB 5 Patchbay
1x PS 32 power supply



PR 8/PR 16 LAB.GRUPPEN

HK AUDIO and the Swedish amplifier specialists LAB.GRUPPEN have teamed up to equip PR 8 and PR 16 Power Racks with 10000Q power amps. These optionally available amps pack even more headroom into a far lighter package with a much smaller footprint. If required, these Power Racks can connect to the NomadLink network to enable remote power-amp monitoring. For details about LAB. GRUPPEN products, visit www.labgruppen.com.



PB 5

Reconfigurable without juggling cables and connectors, the PB 5 interfaces all COHEDRA™ or COHEDRA COMPACT™ components. It provides analog and digital input ports, as well as four speaker outputs wired to individual NL4 Speakon connectors and to NL8 multi-outs. Selector switches assign the mid/high-range signal or subwoofer signal to any power amp channel (speaker pair). This lets you configure any number of rack setups swiftly and easily. The Multi-Outs serve LSM 20 8x 4mm^2 speaker multicore cables. LSM mid/high-range or subwoofer splitters separate the signals at the cabinets.



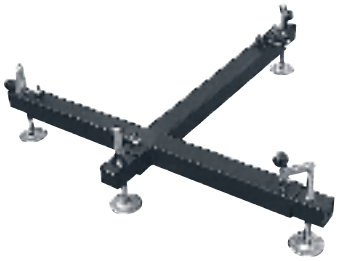
PB 2

This 19", 1U, stereo Speakon Patchbay is designed for PR 8 Power Racks. It features XLR In and Through, Ground Lift, Phase Reverse and two biamp Speakon outputs per channel (Mid/High 1+/-, Bass 2+/-), wired in parallel.

COHEDRA™ ACCESSORIES







CDR 208 MID/HIGH CASE

A special truck-pack flight case with adjustable base allowing one of two positions transports four CDR 208 S/T mid/high-range units or two CDR 210 F subwoofers. The T and S versions of the mid/high-range cabinet may be combined freely. A Plexiglas window shows you at a glance what is inside. What's more, barcodes and scanners let you track equipment without opening the case.

BASS DOLLY

Four CDR 210 subwoofers may be stacked for transport on a dolly with brake casters, and secured with lashing strap and protective cover. These quad blocks are easy to roll around on the dolly, making it much more convenient to place and aim bass bins in front of the stage.

COHEDRA™ RIGGING HARDWARE

Tested and certified by the German TÜV and fulfilling BGV-C1 standards, COHEDRA™ Rigging Hardware comprises an upper and lower rigging frame for up to 24 CDR 208 mid/high-range units and/or CDR 210 F flyable bass bins. The upper rigging frame offers ten pick points for the motor, which adjusts the overall array's tilt angle.
A lashing strap or chain hoist connects the lower and upper rigging frames. Pulling on the strap or chain compresses the array, bringing it to the calculated curvature. The lower rigging frame may be used to tie off the array to prevent twisting, for example, by wind. A rigging case in truck-pack format transports one rigging hardware set. Each set is comprised of two upper and lower frames and all mounting hardware required for two hangs.

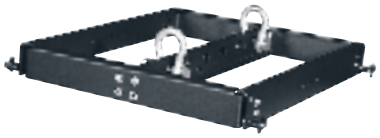
COHEDRA™ STACK FRAME

The COHEDRA™ stack frame provides a base for stacking a mid/high-range array or a full-range stack comprising CDR 210 F subwoofers and CDR 208 S/T mid/high-range units. It offers four height-adjustable telescopic feet, to compensate for uneven flooring. The entire stack may be inclined forward or back to aim it directly at the audience and achieve best coverage.



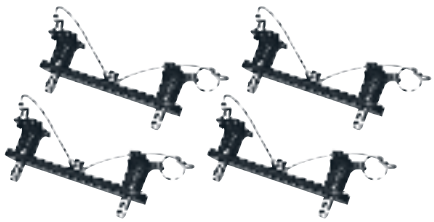
CDR 108 C Mid/High Case

This heavy-duty flight case in standard format (W x H x D including casters: 60 x 70 x 80 cm) transports four COHEDRA COMPACT™ CDR 108 C mid/high-range units and a standard rigging frame.



Cohedra Compact™ Standard Rigging Frame

Tested and certified by the TÜV (Germany's Technical Monitoring Association) and fulfilling BGV-C1 standards, the COHEDRA COMPACT™ Rigging Frame provides a load-handling capacity of 350 kg. It can fly up to 16 CDR 108 C mid/high-range units or six CDR 210 C subwoofers, as well as combinations of the two. The standard rigging frame offers 14 pick points that adjust the array's tilt angle. Deployed on the ground, the rigging frame provides a base for stacking mid/high-range units.



Cohedra Compact™ Connector Set

The Connector Set attaches stacked CDR 210 C subwoofers to the standard rigging frame in both flown and groundstacked configurations. It stabilizes stacked arrays. A Connector Set consists of four metal plates with quick-release pins.



ConTour Series™



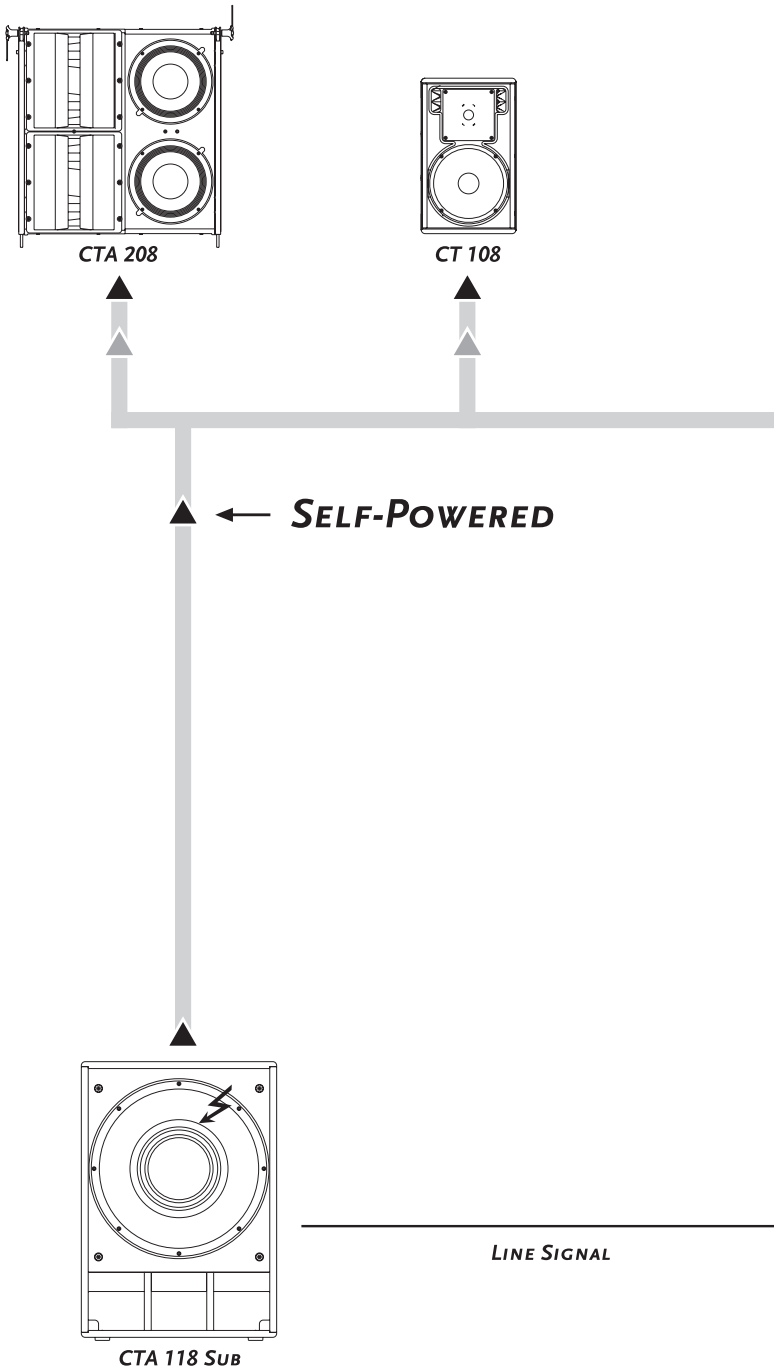
The CONTOUR SERIES™ offers high-performance loudspeaker cabinets for near-field sound reinforcement and on-stage monitoring. They are the enclosures of choice for every application demanding superbly dynamic, exceedingly faithful response and muscular, assertive projection over short to medium distances. Other hallmarks of this line include its great flexibility, easy handling and tough, rugged finish.

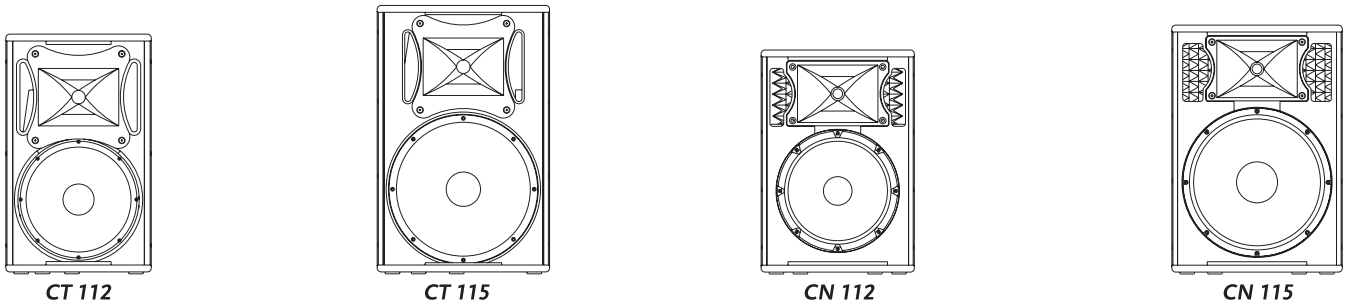
As a part of the CONTOUR SERIES™, the CONTOUR ARRAY™ closes the gap between conventional PA systems and big touring line arrays. It excels at mastering many sound reinforcement challenges, bringing the benefits of affordable and profitable line array technology to a whole new range of applications.

One investment - many possible applications!

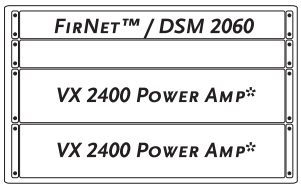
The CONTOUR SERIES™ is synonymous with total flexibility in sound reinforcement, and its systems are easily sized in many different configurations. The eight models may be mixed and matched to create systems powered by the CTA 118 subwoofer's on-board circuitry or by an external amp rack.

Distributed speech reinforcement, club PA, front fill, delay line, stage monitor, or line array—the CONTOUR SERIES™ satisfies the ever-changing demands of day-to-day sound reinforcement.





External Amping



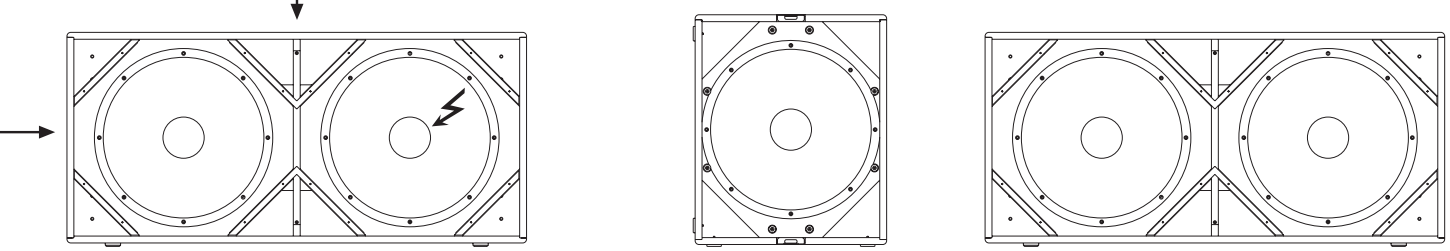
PR ConTour

DSM 2060

+ other Power Amp*

Line Signal

Sublow



*) We recommend the LAB.gruppen FP 10000Q power amp as an alternative to the HK AUDIO VX 2400.



ConTour Array™

Configurable in setups ranging from compact club system to a 2.5-metre line array for larger events, the CONTOUR ARRAY™ scales to suit the task at hand. Flown or stacked, CONTOUR ARRAY™ adapts to the most diverse sound reinforcement situations. CTA 208 mid/high units are equipped with COHEDRA™ AcousticLens™ technology, to produce a very stable coherent wave front with precise directivity and maximum efficiency in the mid and high-frequency ranges. The fine-tuned combination of active circuitry and perfectly matched speakers ensures uniform and transparent sound, even at the highest volume levels.





A dolly for the CTA 118 subwoofer is included. Butterfly latches fasten down the bins quickly and conveniently. The dolly protects the active circuitry against dirt and damage during transport.







CTA 208

This 2x 8" / 4x 1" line array mid/high unit features the COHEDRA™ AcousticLens™ and 100° horizontal dispersion. The intuitive DualCurve™ three-point rigging system and the built-in DuoTilt™ pole mount serve to adapt the cabinet to the given acoustical conditions quickly and flexibly. The surprisingly low weight of the neodymium components makes the CTA 208 even easier to handle.

CTA 118 Sub

This direct-loaded 18" subwoofer features an onboard DDO-Pro™ Digital Controller and two 1,000-watt RMS PWM power amps, one of which drives the subwoofer's 18" speaker; the other is configured by the controller to drive the CTA 208 mid/high unit, or any other CONTOUR SERIES™ enclosure. Packing a powerful punch, the CTA 118 Sub delivers low-ranging and amazingly uniform bass response, rendering impulses with great speed, accuracy and authority, even when handling high loads.

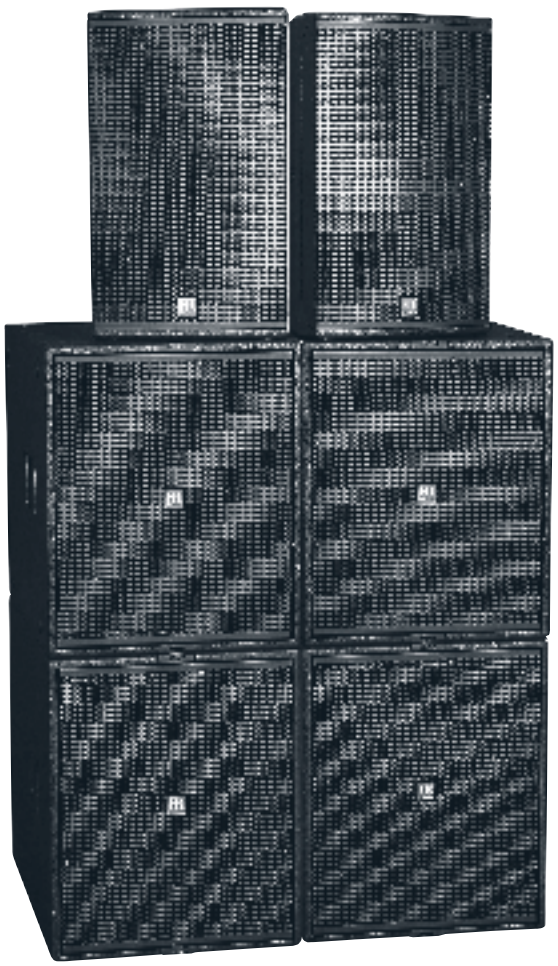
Loudspeakers, due to the very nature of their design, are unable to render musical signals in linear fashion all the way from soft to loud. The 56-bit DDO-Pro™ Controller is on board to optimize their transient response and to correct both frequency and dynamic response. The result is an aurally compensated, dynamically correct rendition of the master signal, with dramatically improved definition, intelligibility, and presence!

The Controller offers suitable presets for every system configuration. A built-in delay allows time alignment to compensate for any incongruities between flown CTA 208 cabinets and bass bins on the ground. Multi-band Limiters protect the system components, ensuring true response and utmost operating safety, even at very high volumes.



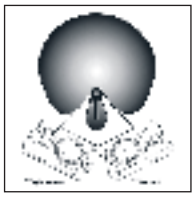
The ConTour Array™ may also be operated passively with CT 118 subwoofers (see p. 29) and the DSM 2060 Controller and/or a ConTour Series™ Power Rack (p. 30/38). This configuration is an excellent option for fixed installation and full-range speech reinforcement, without additional subwoofers.

CT Models



The CT models were designed for deployment scenarios demanding assertive, authoritative performance, such as large speech reinforcements, fairs and on loud rock stages. Although they brook no compromises in their ability to deliver high SPLs, these cabinets are remarkably feedback-resistant. Hallmark features include superb intelligibility and extraordinary phase linearity. Featuring dual-purpose housings, these enclosures can serve as FOH speakers as well as stage monitors. They come in left and right-handed versions enabling symmetrical setups.

CT models can be run with or without controllers. For the best audio results with biamped systems, we recommended operating these enclosures with an HK AUDIO DSM 2060 or FIRNET™ Controller.



Left and right versions: V-shaped monitor setups may be configured by combining L and R models. The advantage to this type of set up is that it delivers the mid/high-range output so vital in rendering speech and vocals directly at the listeners' ears.



CT 108

Tweaked for public address, this compact 8"/1" full-range speaker sports a rotatable 90° x 60° HF horn. It is an excellent choice for rendering the human voice and acoustic instruments. Able to deliver considerable output while retaining the signal's clarity and integrity, it is very well suited for speech reinforcement and as a low-profile monitor in theatres and for orchestras. In combination with a CT 118 subwoofer, it also serves as a small FOH club system.



CT 112

Configurable in passive and biamp modes, this 12"/1.4" enclosure provides high SPLs, assertive performance, and great speech intelligibility. It chiefly serves as a mid/high unit in combination with the CT 118 subwoofer, as a monitor on big and deep stages, and as a standalone speaker for public address applications. Its rotatable 60° x 40° CD horn is fine-tuned to match the driver and provide precise directivity.



CT 115

Offering switchable passive and biamp modes, this 15"/1.4" enclosure delivers enhanced low-frequency response. It serves primarily as a full-range cabinet without an added subwoofer, as a stage monitor on big stages, and as a mid/high unit in combination with the CT 118 subwoofer. Its rotatable 60° x 40° CD horn is fine-tuned to match the driver and provide precise directivity.



The built-in TripleTilt™ pole mount offers three inclination angles (+5°, -3°, -10°) that make it so much easier to aim CT 112 and CT 115 enclosures.



The Shape switch of the CT 112 and CT 115 fine-tunes the crossover to satisfy the different requirements of FOH and monitoring applications. Setting the Shape switch to Monitor reduces the 1.4" driver's attenuation somewhat, ensuring the speaker cuts through even on loud stages.

CN Models





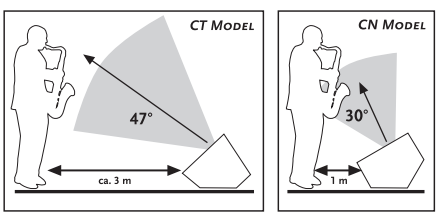
CN 112

Offering switchable passive and biamp modes, this 12"/1.4" full-range speaker sports a 60° x 40° CD horn. It is a fine choice of cabinet for speech and background sound reinforcement, as a monitor for short distances or on small stages, and as a mid/high unit in combination with a CT 118 or CTA 118 subwoofer. The built-in two-way DuoTilt™ mount makes it easy to aim cabinets on a pole or tripod directly at the audience.

CN 115

Configurable in passive and biamp modes, this 15"/1.4" full-range speaker features a 60° x 40° CD horn. Its 15" neodymium woofer delivers low-midrange and bass frequencies with efficiency and authority. It may be deployed as a standalone cabinet, as a monitor for short distances and on small stages, and as a mid/high unit in combination with a CT 118 or CTA 118 subwoofer. Aiming cabinets on a pole or tripod directly at the audience is easy with the built-in two-way DuoTilt™ mount.

The requirements of industry and cultural events, as well as monitoring on club stages, differ markedly from the demands of big rock'n'roll stages. Designed to provide gratifying performance for these more refined applications, CN full-range cabinets deliver a beautifully balanced, sweet-sounding sonic image even at lower volumes. The CN models are truly members of the ConTour family in that their hallmarks include exemplary phase linearity, excellent intelligibility and assertive delivery. The CN 112 and CN 115's symmetrical, dual-purpose housings enable their deployment as FOH speakers as well as stage monitors—each can be used as either a left or a right version floor monitor! Like their CT siblings, CN models operate with and without controllers.



Stage monitoring with the ConTour Series™: While the CT 112/115's 47° angle and high SPLs work very well even on deep stages, the CN 112 and CN 115's 30° angles make them better suited for near-field coverage on small stages, especially for stationary players such as background singers, horns, and keyboard players.

Subwoofers



CT 118 Sub

This direct-loaded 18" subwoofer features a bass reflex housing designed for two-way active operation in combination with CONTOUR SERIES™ mid/high-range units. Exceedingly compact, it is also very light owing to its neodymium woofer. Its amazingly uniform bass response renders impulses with great accuracy and authority even at the highest loads. The CT 118 Sub provides the perfect bass boost when using the CONTOUR SERIES™ as a FOH system in clubs or as a side fill or drum fill on larger stages.



SL 218

This 2 x 18" sublow is perfect for adding a hefty boost to a PA system's low-end response. The 18" woofers handle 1,000 W RMS at 4 ohms each. They are housed in two separate chambers and may be driven separately at 4 ohms or in parallel with a 2-ohm enabled power amp rated to deliver this kind of output. We recommend using HK AUDIO PR 8 or PR 16 Power Racks to drive SL 218 subwoofers for controller-managed COHEDRA™, COHEDRA COMPACT™, and CONTOUR SERIES™ systems.



SL 218 A

Sporting two integrated 1,000 W PWM power amps, this is the active version of the SL 218. It provides a convenient sublow enhancement without requiring further power amp racks. The SL 218 A is easily matched to a given PA system using its Gain knob, Phase Reverse switch (0 ° – 180 °), and active crossover with continuously variable crossover frequencies from 60 Hz to 100 Hz. The SL 218 A also comes equipped with a Preamp Bypass switch to configure it for use in controller-managed systems.

ConTour Series™ Accessories



PR ConTour

With its shock-mount cage, heavy-duty appointments, and 100 mm blue wheels, the CONTOUR SERIES™ Power Rack is ready for the rigors of the road. In keeping with the underlying philosophy of the CONTOUR SERIES™, this stereo rack is tremendously versatile. Suitable for both full-range and biamped systems, it can drive up to four CT 112/115 or eight CT 108 mid/high units and four CT 118 subwoofers each.

- 1 heavy-duty shock-mount-rack with 6U und 100 mm blue wheels
- 2 VX 2400 power amps (2 x 1,200 watts RMS at 4 ohms)
- 1 DSM 2060 Digital Controller
- 1 PB 2 Patchbay
- 1 PS 32 Power Supply



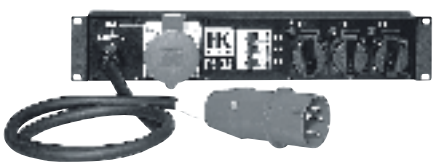
VX 2400

The power amps of the HK AUDIO VX Series are the product of years of experience in the development and design of high-performance power amps. Offering utmost reliability, neutral response, excellent dynamics, and massive headroom, these amps make good on the HK AUDIO promise.
The VX 2400's features and performance make it perfect for CONTOUR SERIES™ systems. It offers state-of-the-art protective circuits, front-to-back ventilation, Speakon and clamp connectors, a Ground Lift switch, and a switchable Limiter.
See page 47 for technical specifications.



PB 2

This 19" / 1U stereo Speakon Patchbay, is designed for use in CONTOUR SERIES™ Power Racks. It features XLR in and Through, Ground Lift, Phase-Reverse, and two biamp Speakon outputs per channel (Mid/High 1+/-, Bass 2+/-), wired in parallel.





PS 32 Power Supply

This 2U power supply complies with the applicable VDE and CE standards and is an indispensable component of professional audio system racks.
• 1x 32 A CEE connector with 1.5 m feed cable
• 1x 32 A CEE parallel output
Output: 9 shockproof 16A sockets (3 per phase, 1 in front, 2 at the rear); 3 phase displays L1, L2, L3; 3 C 16 circuit breakers (one for each phase); rugged metal housing; 19“ wide, 2U high, and 10 cm deep

Flight Cases and Protective Covers

Padded protective covers and flight cases with heavy-duty fittings and 100 mm blue wheels are available as optional accessories for all CONTOUR SERIES™ models.

LS Loudspeaker Cables

These flexible, professional-grade 4x4 mm^2 speaker cables with Neutrik Speakon NL4 FX connectors are suitable for passive and biamped systems, and are available in the following lengths:

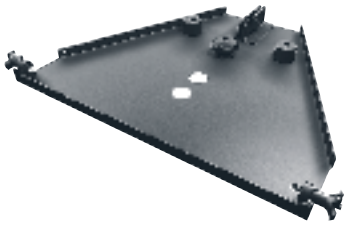
LS 0.5	0.5 m
LS 3	3 m
LS 7	7 m
LS 15	15 m

ConTour Series™ Accessories



ConTour Array™ Rigging Frame

This TÜV and BGV-C1-certified rigging frame is for arrays of up to five CTA 208 mid/high-range units. All the fittings for rigging are integrated, so cabinets are easily mounted without requiring any tools or added parts.



ConTour Array™ Stacking Plate

The CONTOUR ARRAY™ Stacking Plate provides the base connection between subwoofers and mid/high units. It bolts onto the subwoofer's M20 pole mount. Its tilt angle is adjustable up to 9° in 1.5° steps.

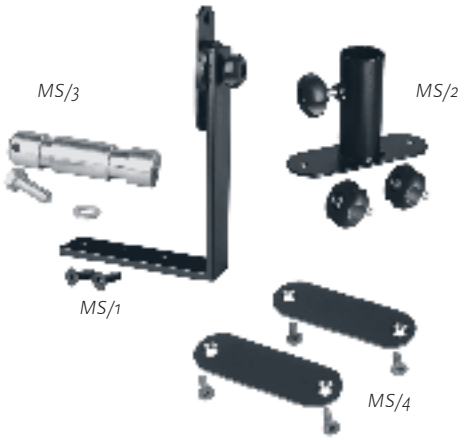


CT 118 Sub Dolly

A dolly for the CT 118 subwoofer is optionally available. Butterfly latches fasten down the bins quickly and conveniently. The dolly protects the CT 118 front grille against dirt and damage during transport.







Rigging Yoke for CT Models

This TÜV and BGV-C1-certified rigging yoke attaches directly to the Aeroquip rail of the CT 112 and CT 115 enclosures. The tilt angle is continuously variable. Its M10 bits are prepped for attaching half couplers, MS/3 TV studs, or MS/2 pole mount adapters.



The CT 112 and CT 115 models may also be flown and/or installed using steel cables and Aeroquip studs.

Rigging Yoke for CN Models

Dedicated, TÜV and BGV-C1-certified vertical rigging yokes with continuously variable tilt angles are available for CN 112 and CN 115 enclosures.

CT 108 Mounting Accessories

MS/1
L-frame mounting adapter for the CT 108

MS/2
35-mm stand adapter for MS/1 L-frame mount

MS/3
TV spigot for the MS/1 and rigging yoke for the CT 112, CT 115, CN 112, and CN 115

MS/4
Cluster plates (1 pair) for CT 108 clusters



Controlling & Software



Speaker management with programmable filter setups, gain structures, and limiter functions is a big part of the HK AUDIO approach. Perfectly matched speakers, power amps and filter settings afford maximum protection and achieve the best possible performance. Two controller models are available to professional users. One is the FIR-filter-based FIRNET™ Linear Phase FIR Controller, developed especially for HK AUDIO systems. The other is the freely programmable IIR controller DSM 2060, which manages CONTOUR SERIES™ enclosures and HK AUDIO Installation Line cabinets, along with other vendors' speaker systems.



FirNet™

The FIRNET™ Linear Phase FIR Controller is a 2-in/4-out system controller, developed specifically for HK AUDIO systems. It was born of more than ten years experience working with FIR filtering technology, developing state-of-art AD/DA converters, and programming cutting-edge DSPs. The FIRNET™ Controller incorporates all the functions necessary to equalize, protect, control, and remotely manage COHEDRA™, COHEDRA COMPACT™, and CONTOUR SERIES™ systems.

FIR

FIR (Finite Impulse Response) filtering technology provides total phase linearity across all components (speakers, controllers, and amps), enabling you to equalize a sound system's frequency response and phase (or group delay) while maintaining complete phase linearity. Thus, the system renders the different frequency ranges of a sonic image coherently; that is, in time and faithfully. Differences in phase response, experienced as listening fatigue, are gone, dramatically improving transparency and three-dimensional imaging.

Unlike IIR (Infinite Impulse Response) filters, FIR filters do not consist of a specific number of separately computed filter elements. Instead, they contain a complete sampled copy, with the magnitude and phase function required for equalization. The FIR filters in the FIRNET™ Controller equalize all components of HK AUDIO sound reinforcement systems, including the speaker chassis, speaker enclosures, passive crossovers, power amps, and the controller itself.

The FIRNET™ Controller exploits the benefits of FIR filters at a maximum latency of just 5.8 ms – that is, the round-trip time the audio signal takes to flow through the controller and its signal processing components. Such low latency was previously confined to conventional IIR controllers. The A/D converter's dynamic range of more than 128 db and an internal sampling frequency of 96 kHz enable extremely high resolution, attaining far more transparent audio signals. The sophisticated combination of RMS limiters with overshoot functions and look-ahead peak limiters afford loudspeakers optimum protection. The free LIPAN™ PC software runs on PCs and laptops, allowing control of up to 60 networked controllers remotely in real time (see page 41).



General Features

- 2x In / 4x Out signal routing
- AES/EBU
- FIR filtering for phase accuracy and true response
- Maximum latency of 5.8 ms (including filters)
- Top-drawer converter technology for outstanding dynamic range of over 128 dB (A/D)
- Sophisticated limiters with advanced features (PEAK, RMS, Overshoot)
- 96-kHz sampling rate for highest resolution and transparency
- Ethernet ports for network integration
- Option slot for future interface upgrades
- GPIO interface
- LIPAN™—PC software for remote monitoring with IIR Master EQ



DSM 2060

The HK AUDIO DSM 2060 is a freely configurable digital controller that delivers excellent audio quality for touring rigs and installed systems. It features two inputs and six outputs, individually configurable for FOH and monitor applications. Every input and output may be processed with up to six parametric EQs and two additional shelving filters to fine-tune the system.

A very remarkable feature is the DSM 2060's fourth-order and eighth-order Hardman filter, which is used in configuring the crossover functions. In contrast to conventional filters with steep slopes, the Hardman filter minimizes phase shifting and group delay even at maximum slopes to preserve signal integrity. This results in exceptionally precise frequency crossover and faster roll-off rates, thereby minimizing distortion, enabling lower crossover frequencies, and affording drivers greater protection. And all this makes the most of the connected system's headroom and enhances operating reliability. The DSM 2060 is equipped with high-end 24-bit, 96-kHz converters that ensure pure, unadulterated digital signal processing and frequency response ranging up to 40 kHz. It offers input delays ranging up to 400 ms and output delays ranging up to 80 ms, for configuring delay zones and aligning the times of speaker components in systems comprised of multiple amped signals. Various limiters can be assigned to each output and adjusted in fine 0.2 dB increments to protect speakers and drivers. At the heart of the controller, alongside the Hardman filters, is an extensive arsenal of Butterworth, Bessel, and Linkwitz-Riley crossovers with slopes varying from 6 to 24 dB. DSM 2060 Podware serves to remote-control a DSM 2060 from a laptop computer (see page 41).

To learn more about the functions and technical data, see the technical specifications on page 46, or on the separate DSM 2060 data sheet available for download at www.hkaudio.com.





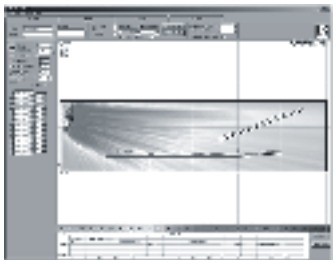
The optional BVNET module is available to manage several DSM 2060 controllers simultaneously and remotely. It installs quickly and conveniently by simply plugging it into the option slot of the controller's rear panel.

General Features

- Flexible 2x-in / 6x-out signal routing for FOH, monitoring, and fixed installation
- 24-bit / 96-kHz technology with a dynamic range > 112 dB
- HFT™ Hardman filter technology
- Extensive crossover functions
- A total of 64 EQ bands in the inputs and outputs (shelving and parametric)
- Analog look and feel for intuitive operation
- Up to 480 ms input and output delay
- High-performance limiter
- Option slot for BVNET module
- 45 preset memory slots
- PODWARE™ – PC software for remote monitoring

CAPS



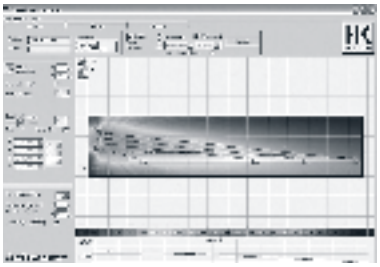


COHEDRA™ Acoustic Prediction Software

Designed to generate two-dimensional simulations, CAPS predicts the COHEDRA™ and COHEDRA COMPACT™ mid/high array's dispersion patterns in a given room. Its side view panel lets you quickly and easily generate venue plans with up to three audience areas/levels. The Rigging menu provides insight into the array's total height, weight, and center of gravity, as well as the splay (angles) between individual CDR 208 mid/high-range units. The application simulates rigs comprising up to 24 CDR 208 or 16 CDR 108 units. The CAPS software's Setup menu lets you get creative. This is where the angles for curving the rig and the resultant sound projection data are computed and displayed.

The application provides insight into delay times and sound pressure levels at the audience positions. All this yields reliable predictions about obtainable SPL (peak/continuous/A-weighted). Accurate analysis in 1/3-octave steps and two-dimensional mapping with an optimizing function are also possible. For more detailed 3D simulations, we recommend the venue calculation software EASE (version 4.0 or higher) from Software Design Ahnert GmbH. It offers EASE-DLL, an application developed specifically for COHEDRA™ and COHEDRA COMPACT™.

CAPS CTA



CONTOUR ARRAY™ Acoustic Prediction Software

The CONTOUR ARRAY™ version of the CAPS software serves to predict the dispersion patterns of up to five CTA 208 cabinets in a two-dimensional simulation. CAPS CTA provides the same functions as the COHEDRA™ version and offers the CONTOUR ARRAY™ user an easy-to-use, efficient application for positioning flown and stacked arrays correctly.

LIPAN™



Software for managing and monitoring the FIRNET™ Linear Phase FIR Controller

LIPAN™ (Linear Phase Audio Network) PC software lets you remotely control and manage FIRNET™ Linear Phase FIR Controllers—up to 60 in a network—using a PC or laptop. Its intuitive interface shows all connected controllers. An on-screen mixer displays individual parameter level, delay, channel mute, phase, filter setup, IP address, controller name, and scene settings. All key parameters are editable online. The Admin menu lists the controller's basic parameters. You can assign controllers to 16 different groups (shown as group mixers), thereby quickly and easily devising setups to handle several controllers with same parameters simultaneously. An optional W-LAN link enables wireless remote control from every point in the auditorium.

DSM 2060 Podware



Software for managing and monitoring the DSM 2060

The DSM PC software application Podware lets you handle and edit all controller functions on a PC or laptop. A clearly ordered main window shows the selected controllers with all their functions and settings. DSM 2060 Podware affords direct access to gain structures, delay times, channel assignments, and filter settings—online and without latency. A dedicated, optional BVNET module integrates into each controller, enabling up to 60 controllers to be networked. For added convenience, the Podware also serves to update the DSM 2060 Controller's firmware.

Live Sound Reference



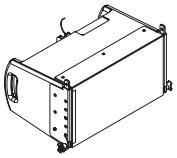
The Mobile Sound Calculator

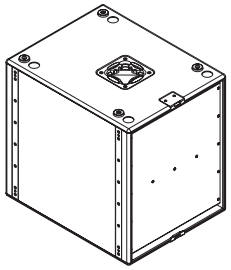
Nowadays audio techs need a good working knowledge concerning the physics of line array systems, including their coverage, near-field radius, frequency response, and signal delay times. What's more, they must be able to deduce wavelengths from frequencies, and apply intricate formulas to calculate the complex interaction of volts, ohms, amperes, and dB.

The free Live Sound Reference Calculator solves the most common equations associated with seven key areas: volt and dB; watts, volts and ohms; frequency and wavelength; SPL and distance; delay; near-field line array; frequency-dependent damping at distances.

Best of all, the Live Sound Reference Calculator is not only available for Windows-based PCs, but also for all standard Java-enabled mobile phones, in German as well as English versions. The free Live Sound Reference Calculator is available at www.hkaudio.com/lsr.

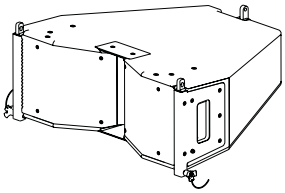
Cohedra Compact™

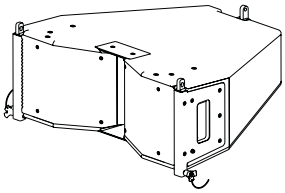


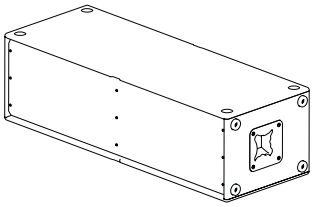


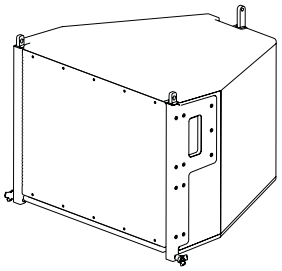
	CDR 108 C	CDR 210 C
Power-handling nominal	250 W RMS	600 W RMS
Power-handling program/peak	500 W / 1000 W	1200 W / 2400 W
Frequency response - 10 dB	75 Hz – 19 kHz	39 Hz – fx
Frequency response +/- 3 dB	88 Hz – 19 kHz	47 Hz – fx
Sensitivity, 1W@1m*	107 dB	104 dB
Max. SPL calculated*	137 dB @ 10% THD**	138 dB @ 10% THD****
Max. SPL peak*	140 dB**	142 dB****
Max. SPL*	136 dB**	139 dB****
Nominal impedance	16 ohms	8 ohms
Low/mid wooofer	1x 8" with compression chamber	2x 10" bass reflex
High frequency driver	2x 1" with Cohedra™ AcousticLens	-
Horn	100° CD horn	-
Crossover frequency	800 Hz, 12 dB/oct.	Controlled by controller
Connectors	2x Speakon NL4	2x Speakon NL4
Enclosure	15 mm (5/8"), 13-ply birch plywood	18 mm (3/4"), 13-ply birch plywood
Finish	Acrylic enamel, black	Acrylic enamel, black
Grille	Steel grille	Steel grille
Rigging hardware	Integrated rigging attachments	Integrated rigging attachments
Adjustable curvature angles	0°, 1.5°, 3°, 4.5°, 6°, 7.5°, 9°	-
Weight	17.9 kg / 40 lbs.	48 kg / 70.4 lbs.
Dimensions (w x h x t)	50 x 26 x 32.5 cm	50 x 60 x 63 cm
	19-5/8" x 10-1/4" x 12-3/4"	23-5/8" x 19-11/16" x 24-13/16"
Accessories	Rigging stacking frame, touring flight case for four CDR 108	Dolly, protective cover

COHEDRA™







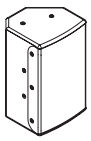


	CDR 208 S/T	*CDR 210 SUB*	*CDR 210 F*
Power-handling nominal	500 W RMS	600 W RMS	600 W RMS
Power-handling program/peak	1000 W / 2000 W	1200 W / 2400 W	1200 W / 2400 W
Frequency response - 10 dB	75 Hz – 19 kHz	39 Hz – fx	39 Hz – fx
Frequency response +/- 3 dB	88 Hz – 16 kHz	47 Hz – fx	47 Hz – fx
Sensitivity, 1W@1m*	108 dB	104 dB	104 dB
Max. SPL calculated*	141 dB @ 10% THD **	138 dB @ 10% THD***	138 dB @ 10% THD ***
Max. SPL peak*	146 dB**	142 dB***	142 dB***
Max. SPL*	139 dB**	139 dB***	139 dB***
Nominal impedance	8 ohms	8 ohms	8 ohms
Low/mid wooofer	2x 8"	2x 10" bass reflex	2x 10" bass reflex
High frequency driver	1,4"	-	-
Horn	80° CD horn	-	-
Crossover frequency	800 Hz, 12 db/oct.	Controlled by controller	Controlled by controller
Connectors	2x Speakon NL4	2x Speakon NL4	2x Speakon NL4
Enclosure	15/18 mm (3/4") 13-ply birch plywood	18 mm (3/4") 13-ply birch plywood	18 mm (3/4") 13-ply birch plywood
Finish	Acrylic enamel, black	Acrylic enamel, black	Acrylic enamel, black
Grille	Steel grille	Steel grille	Steel grille
Rigging hardware	Integrated rigging attachments	-	Integrated rigging attachments
Adjustable curvature angles	0°, 1.5°, 3°, 4.5°, 6°, 7.5°, 9°	-	0°, 1.5°, 3°, 4.5°
Weight	30 kg / 66 lbs.	32 kg / 70.4 lbs.	41 kg / 88 lbs.
Dimensions (w x h x t)	65 x 25.5 x 60 cm (CDR 208 T)	110 x 32 x 40 cm	65.5 x 48.2 x 59.4 cm
	25-5/8" x 10-1/16" x 23-5/8	43-1/8" x 12-1/4" x 15-5/16"	25-3/4" x 19" x 23-3/8
Accessories	Touring flight case for four CDR 208	Dolly, protective cover	Touring flight case for two CDR 210 F

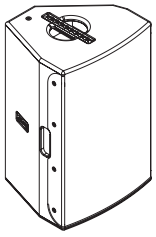
* Half Space ** measured with 4x CDR 208 or CDR 108 *** measured with 4x CDR 210 or CDR 210 (F) Sub **** measured with 4x CDR 210 C

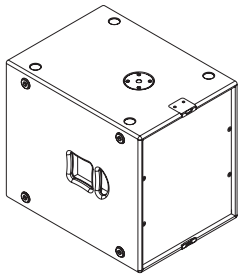
Technical Data

ConTour Series™

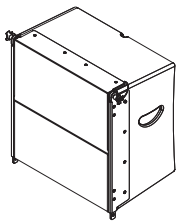
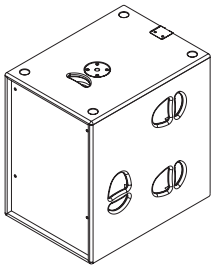
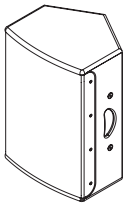
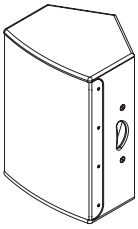
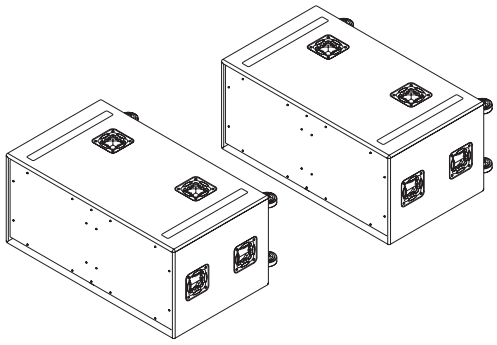








	CT 108	CT 112	CT 115	CT 118 Sub
Power-handling nominal	200 W RMS	400 W RMS	600 W RMS	1000 W RMS
Power-handling progr./peak	400 W/ 800 W	800 W/ 1800 W	1200 W/ 2400 W	2000 W/ 4000 W
Recomm. amp power	1200 W RMS / 4 ohms	1200 W RMS / 4 ohms	1200 W RMS / 4 ohms	min. 1200 W RMS / 4 ohms
Output power subwoofer	-	-	-	-
Output power mid/High	-	-	-	-
Frequency response -10 dB	90 Hz – 19 kHz	65 Hz – 19 kHz	55 Hz – 19 kHz	32 Hz – 350 Hz
Frequency response +/-3 dB	100 Hz – 19 kHz	80 Hz – 16 kHz	65 Hz – 16 kHz	41 Hz – 350 Hz
Directivity	90° x 60° / 60° x 90°	60° x 40° / 40° x 60°	60° x 40° / 40° x 60°	-
	CD horn rotatable	CD horn rotatable	D horn rotatable	-
Sensitivity 1W@1m*	101 dB	107 dB	106 dB	100 dB (50 Hz – 200 Hz)
Max. SPL calculated*	130 dB**	139 dB**	140 dB**	136 dB**
Max. SPL peak*	129 dB	138 dB	138 dB	133 dB
Max. SPL*	128 dB @ 10% THD	134 dB @ 10% THD	134 dB @ 10% THD	131 dB@10% THD
	(200 Hz – 5 kHz)	(200 Hz – 5 kHz)	(200 Hz – 5 kHz)	(50 Hz – 200 Hz)
Nominal impedance	16 ohms	8 ohms	8 ohms	8 ohms
Low/mid wooofer	8"	12" Neodymium	15" Neodymium	18" Neodymium
High frequency driver	1", 2" voice coil	1.4", 3" voice coil	1.4", 3" voice coil	-
Crossover frequency	1.8 kHz, 12 dB/oct.	850 Hz, 12 dB/oct.	850 Hz, 12 dB/oct.	100 Hz – 130 Hz, Controlled by controller
Crossover modes	passive	Bi-amp/ passive, switchable	Bi-amp/ passive, switchable	-
Crossover shapes		FOH, Monitor	FOH, Monitor	-
Connectors	2x Speakon NL4	2x Speakon NL4	2x Speakon NL4	2x Speakon NL4
Enclosure (plywood)	12 mm (1/2"), 9-ply	18 mm (3/4"), 13-ply	18 mm (3/4"), 13-ply	18 mm (3/4"), 13-ply
Angles up	45° monitor application	47° + 18° (monitor)	47° + 18° (monitor)	-
Rigging hardware	9x M8 threaded bushing	2x Aeroquip fly tacks, 2x M10 threaded bushing	2x Aeroquip fly tacks, 2x M10 threaded bushing	-
Pole mount	optional	TripleTilt™ Ø 35 mm, +5°, -3 °, -10°	TripleTilt™ Ø 35 mm, 5°, -3 °, -10°	M20 plate
Weight	8 kg / 17,6 lbs.	25 kg / 55 lbs.	33 kg / 72,6 lbs.	42,5 kg / 93,5 lbs.
Dimensions (w x h x t)	24,7 x 40,6 x 23,1 cm	38 x 61 x 33,5 cm	45 x 69,6 x 39,6 cm	50 x 60 x 68 cm
	9-3/4" x 16" x 9-1/4"	15" x 24" x 13-1/4"	17-3/4" x 27 3/8" x 15-2/3"	19-2/3" x 23-2/3" x 26-3/4"
Accessories	MS/1, MS/2, MS/3, MS/4 cluster plate, Touring flightcase (2x CT 108)	Rigging yoke, protective covers, Touring flightcase (2x CT 112)	Rigging yoke, protective covers, Touring flightcase (2x CT 115)	Dolly, protective covers

CTA 208	*CTA 118 Sub*	*CN 112*	*CN 115*	*SL 218 A*	*SL 218*
500 W RMS	-	400 W RMS	400 W RMS	-	2x 1000 W RMS
1000 W/ 1500 W	-	800 W/ 1600 W	800 W/ 1600 W	-	2x 2000 W
-	-	1200 W RMS / 4 ohms	1200 W RMS / 4 ohms	-	1200 W RMS / 4 ohms
-	1000 W EIAJ, Class D @ 40 Ω	-	-	2x1000 W EIAJ, Class D @ 40 Ω	-
-	1000 W EIAJ, Class D @ 40 Ω	-	-	-	-
80 Hz – 20 kHz	36 Hz – fx	65 Hz – 19 kHz	52 Hz – 19 kHz	39 Hz – 130 Hz	39 Hz – 130 Hz
95 Hz – 19 kHz	42 Hz – fx	78 Hz – 19 kHz	68 Hz – 19 kHz	39 Hz – 130 Hz	39 Hz – 130 Hz
100° horizontal	-	60° x 40°	60° x 40°	-	-
-	-	CD horn	CD horn	-	-
105 dB	101 dB	105 dB	106 dB	105 dB	105 dB
138 dB**	134 dB**	134 dB**	135 dB**	139 dB**	139 dB**
136 dB***	133 dB	133 dB	134 d B	135 dB	135 dB
134 dB @ 10% THD	130 dB @ 10% THD	131 dB @ 10% THD	132 dB @ 10% THD	132 dB @10% THD	132 dB @ 10% THD
(200 Hz – 5 kHz)***	(50 Hz – 200Hz)	(200 Hz – 5 kHz)	(200 Hz – 5 kHz)	-	-
8 ohms		8 ohms	8 ohms	-	2x 4 ohms
2x 8"	1x 18"	12" Neodym	15" Neodym	2x 18"	2x 18"
4x 1", 2" voice coil		1.4"	1.4"	-	-
2 kHz, 12 dB/oct.	controlled by filter settings	-	-	60 Hz - 100 Hz, 12 dB/oct.	60 - 100 Hz, 24 dB/oct. or 12 dB/oct.
-	-	Bi-amp/ passive, switch.	Bi-amp/ passive, switch.	-	-
-	-	1,1 kHz, 12 dB/oct.	1 kHz, 12 dB/oct.	-	-
2x Speakon NL4	1x XLR In/Through, 1x Speakon NL4	3x Speakon NL4	3x Speakon NL4	XLR In/Out	4x Speakon NL4
15/18 mm (1/2"), 9/13-ply	18 mm (3/4"), 13-ply	18 mm (3/4"), 13-ply	18 mm (3/4"), 13-ply	18 mm (3/4")13-ply	18 mm (3/4") 13-ply
-	-	2x 30°	2x 30°	-	-
DualCurve™, integrated with quick-release pins	-	optional	optional	-	-
HK Audio DuoTilt™	M20 plate	HK Audio DuoTilt™	HK Audio DuoTilt™	-	-
29 kg / 63,8 lbs.	59 kg / 129,8 lbs.	19,6 kg / 43,2 lbs.	24 kg / 52,9 lbs	98 kg / 215,6 lbs.	88 kg / 193,6 lbs.
51 x 52,5 x 34,6 cm	51 x 73 x 71 cm	40,0 x 58,5 x 34,3 cm	44,5 x 65,0 x 38,2 cm	120 x 56 x 79 cm	120 x 56 x 79 cm
20" x 20-2/3" x 13-2/3"	20" x 28-3/4" x 27-7/8"	15-3/16" x 23" x 13-1/2"	17-1/2" x 25-19/32" x 15-1/32"	47-2/8" x 21-5/8" x 23-5/8"	47-2/8" x 21-5/8" x 23-5/8"
Touring flightcase (2x CTA 208)	Protective cover, stacking plate	Protective cover, Touring flightcase, rigging yoke	Protective cover, Touring flightcase, rigging yoke		

* Half space ** based upon peak power capacity *** measured with 2x CTA 208 mid/high units

Controlling





	FirNet™	DSM 2060
Input /output channel	2x In, 4x Out	2x In, 6x Out
Input impedance	9 k-ohms	>10 k-ohms, electron. balanced
Output impedance	35 ohms	<100 ohms, balanced to ground
Maximum input level	+6, +12, +18 +24 dBu, switchable	+20 dBu
Max. output level	+6, +12, +18 +24 dBu, switchable	+22 dB 600 Ohm
Dynamic range, input	>128 dB A weighted (A/D)	>112 dB A weighted (A/D)
Dynamic range, output	125 dB(A)	>112 dB (A)
Internal-bit depth	28 bit A/D, 24 bit D/A	24 bit A/D, 24 bit D/A
Frequency response (-1 dB)	5,5 Hz – 34 KHz	10 Hz – 40 KHz, -1 dB
Output channel source	A-A/B, B-C/D, fixed	Input A,B, Master A+B
Filter type	FIR	IIR
Latency	AD/DA 96 kHz, 3,15 ms+ FIR filter: max 5,8 ms	AD/DA 96 kHz, > 0,85 ms
Limiters	Peak overshoot protection, RMS limiter	High-perform. limiter, threshold ad-justable in 0.2 dB steps
Options	GPIO option slot	BVNet option module
Digital interfaces	In-Out (3-pol. XLR)	-
Sampling rate	96 kHz	-
Protocols	AES 3 (AES/EBU)	-
Input impedance digital	110 ohms	-
Output impedance digital	110 ohms	-
Delay	Input 500 ms, Output 25 ms	Input 400 ms, Output 80 ms
Network	Ethernet X,II – RJ45	optional
Serial ports		RS232
Mains	IEC connector	IEC connector
Mains voltage / frequency	100 – 240 V / 50 – 60 Hz	100 – 250 V / 50 – 60 Hz
Power consumption	40 VA	19 VA
Weight	3 kg / 6.6 lbs.	2,7 kg / 5.9 lbs.
Dimensions (w x h x t)	48 x 4.4 x 23.2 cm	48.2 x 4.4 x 25.4 cm

VX Power Amp



	VX 2400
Verstärker Typ	H
Continous power @ 8 ohms	750 W x 2
Continous power @ 4 ohms	1200 W x 2
Continous power bridged mode	2400 W @ 4 ohms
Burst power @ 8 ohms	1200 W x 2
Burst power @ 4 ohms	2150 W x 2
Burst power bridged mode	4350 W @ 4 ohms
Frequency response (± 1dB)	20 – 20.000 Hz
Signal to noise ratio	-106 dB
THD - 20 Hz – 20kHz	<0.1% @ 4 ohms
Input impedance - bal./unbal.	20.000 / 10.000 ohms
Input sensitivity	1,4 Vrms
Max. voltage gain	36 dB
Stereo/mono/bridged	S/M/B
Protection	DC, Load, Thermal
Limiter	Peak
Cooling	int. fan, front to back
Inputs	2x XLR, 2x 1/4" Jack
	(un)balanced
Outputs	2x Speakon NL4,
	2x binding post
Power consumption	1130 W typ / 1800 W max
2-ohms- / 4-ohms mode	4 ohms min. load
Dimensions (w x h x t)	48.3 x 8.9 x 43.9 cm
	19" x 3-1/2" x 17-3/10"
Weight	19.8 kg / 43.5 lbs.

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