

STADIUM & ARENA

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SCORE BIG WITH RCF AUDIO SOLUTIONS

RCF Stadium and Arena References catalog presents a wide range of integrated audio systems to immerse a crowd into any player's performance. When music and voice are clear and intelligible, the audience is completely engaged and feels the emotions on the field. RCF draws on extensive technical expertise in solving complex acoustical problems found in large arenas with advanced audio systems. Our goal is to always improve and enhance the spectator experience in every seat.

All RCF products provide incredibly balanced SPL, consistent coverage, and maximum reliability to an extended market of professional installers and integrators. Discover RCF's long-throw speaker selection for added flexibility, perfect intelligibility, and reliable directivity factors.

Explore the convenience of RDNet, RCF's proprietary control and monitoring platform to manage all connected speakers and amplifiers on one single network. This catalog includes speaker systems designed to meet all pro audio contractors' requirements for sports facilities, and small to large indoor and outdoor venues.

RCF SOUND CULTURE

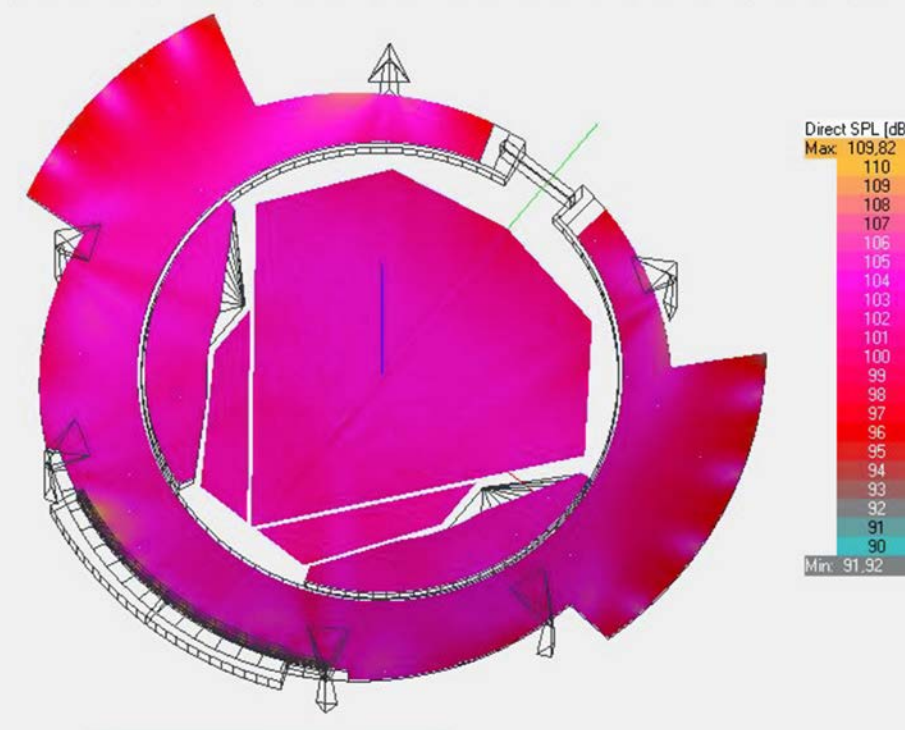
RCF is a leading technology brand of professional audio equipment, transducers, electronics, DSP, and custom solutions for any sound and any place. Established in Italy in 1949, RCF has been committed to the perfect reproduction and amplification of sound for events and concerts, recording, public address, broadcast, and portable audio. RCF has consistently transformed the pro-audio industry, developing components and products in-house to ensure maximum quality and reliability to the end-user.

FOREFRONT TECHNOLOGY

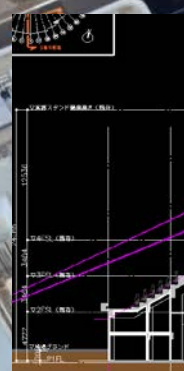
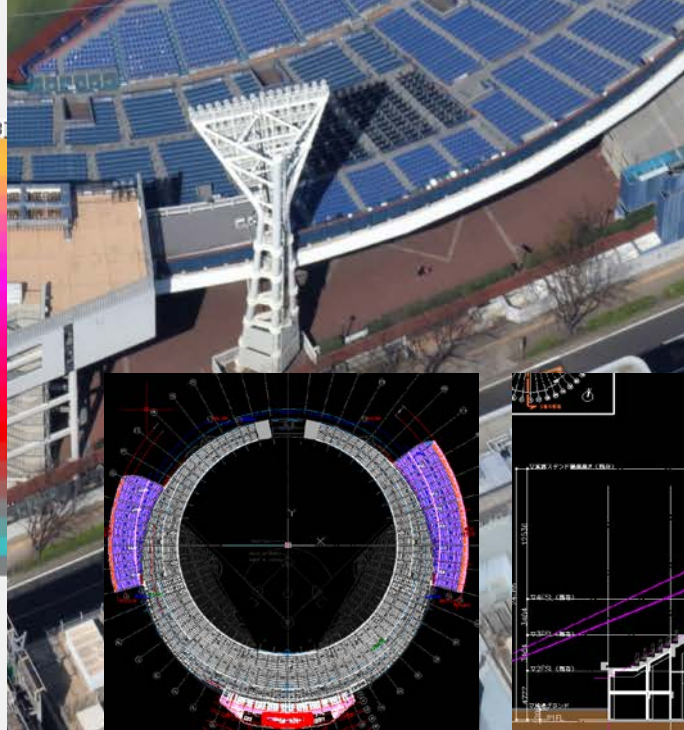
Innovation comes first and foremost, thanks to the RCF R&D team, developers of many original products and technologies, such as the hyper-venting system, the inside/outside voice coil, the dual silicone spiders, and countless mechanical, digital, and leading-edge electronic solutions. RCF is one of the few loudspeaker companies worldwide that internally manufacture transducers, speaker systems, electronics, and software. All products feature RCF's exclusive designs and technologies.

A REFERENCE IN INDUSTRY

RCF is always at the forefront of technologies and materials research, providing tools, documentation, technical support to help professionals deliver optimized sound to the listener. Training activities for all audio professionals and enthusiasts draw into 70 years of experience and knowledge of its engineers. The internal support engineering team is on hand to assist architects, system designers, or integrators during the design and customization of complex systems. Tangible technical expertise, modern Italian manufacturing facilities, and continuous technological refinement set RCF as an essential reference for all audio professionals and enthusiasts. RCF supports customers in its offices in the United States of America, France, Germany, Italy, Spain, the United Kingdom, and a network of more than hundreds of trusted distributors throughout the rest of the world.



Direct SPL [dB]
 Max. 109.82
 110
 109
 108
 107
 106
 105
 104
 103
 102
 101
 100
 99
 98
 97
 96
 95
 94
 93
 92
 91
 90
 Min. 91.92





ENGINEERING SUPPORT GROUP

CUSTOMIZATION WITHOUT BOUNDARIES

Our Engineering Support Group works side by side with the R&D Department to create tailor-made equipment based on the client's real needs – complete with rigging accessories, signal processing, or custom mechanics. We are not only suppliers of standard products but also a team of highly skilled engineers who develop personalized audio solutions. Contact the RCF team to learn more about customization and color options to suit your unique environment. Each project has important benchmarks and we will help you to get the job done.

RCF EXPERIENCE AT YOUR SERVICE

The direct involvement in particularly complex projects Worldwide is continually raising the know-how and reputation of our team of specialists that is considered one of the best Engineering Support Groups in our industry. A system design must always consider the environment's acoustics, the architectural and installation constraints, the maintenance costs, and the user's requirements. According to cost and performance requirements, the extensive and complete range of RCF products enables the Engineering Support Group to submit multiple design solutions optimized for each project.

RCF is committed to providing complete support, helping our customers choose the most suitable solutions for their projects to achieve the best results. This support team is crucial to RCF's continual success. We continue to invest in our knowledge and skill by expanding our engineering team of product specialists and the latest equipment and software technologies.

- **DESIGN PROPOSAL**

Based on supplied venue details, including environmental acoustic simulation, product list, block diagram, and speaker coverage mapping.

- **DESIGN VALIDATION**

Based on the client's design, we guide the proper selection and placement of RCF products.

- **DESIGN OF ALTERNATIVE SOLUTIONS**

Based on existing specs, we provide advice and improved system configurations based upon RCF products to optimize the installation.

- **ACOUSTICAL CONSULTANCY**

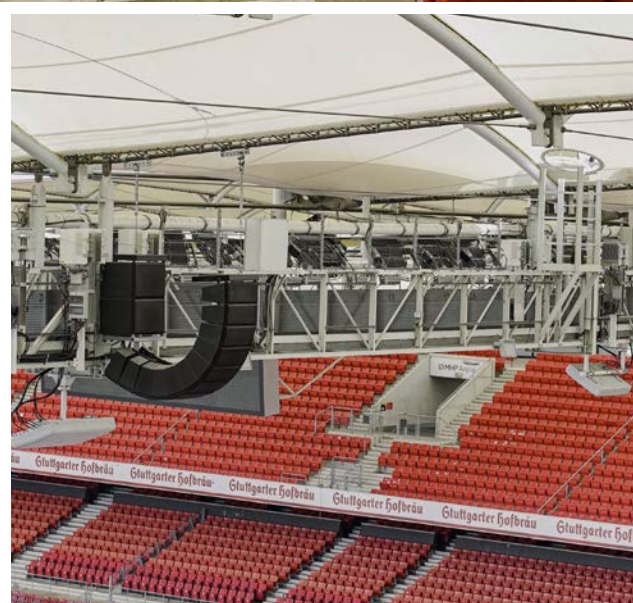
We help with the definition of the project's specifications in cooperation with architects and contractors.

- **ON SITE**

We provide system start-up and commissioning. RCF produces pre-wired racks on request, complete with connection diagrams and operation manuals.

AUDIO ACADEMY TRAINING ACTIVITIES

Our training sessions are available in our worldwide educational program or can be customized according to the client's requirements. ESG members are involved in education and training activities where they can exchange information and ideas with consultants and contractors participating in the RCF Audio Academy program. RCF provides an extensive selection of courses and workshops covering several subjects such as new products, technologies, user cases, and in-depth professional training. Sessions are organized worldwide by our Instructors/Engineers and also in RCF Audio Academy facilities in Italy and Germany.





MHP Arena - Stuttgart (Germany)

Stuttgart, Germany – RCF announces the successful installation of a cutting-edge sound system at the MHP Arena Stuttgart, serving its 61,000 seats and public areas with unparalleled RCF sound quality. Over 11 tons of equipment were integrated, featuring more than 400 speaker modules that deliver over 1 megawatt of continuous power. Meeting UEFA and FIFA standards, the installation has received high praise since its debut in August 2023. The audio system also functions as a voice alarm system to bolster safety protocols.

Stuttgart is renowned as the first regional stadium to host 1,000 Bundesliga matches. Established in the 1930s, it has been a cornerstone for Bundesliga sporting events since 1963. The renovation project, which includes a new media infrastructure, signifies a leap towards enhancing Stuttgart's position on the global stage for sports. After rigorous demonstrations and assessments, RCF was chosen for its superior performance.

Ebert Ingenieure's Managing Director, Matthias Zorn, led the project, while Richard Merget of RM Audio Engineering ensured adherence to all specifications. AVEO GmbH, a leading firm in media technology, managed the installation, working closely with Marcus Bretschneider, Head of Arena Operations and Services at VfB Stuttgart.

"The roof structure of the MHP Arena is based on ring-shaped and radial steel cables. Both the attachment and the dimensioning of the loudspeaker systems and their mounts were therefore subject to considerable restrictions. The use of standard rigging components was not possible," comments Wolfgang Huber from AVEO, as he describes a few of the challenges during the early stages. "Despite this, the installation was worth the effort, we developed special components for rigging and our collaboration with the RCF ESG team made the integration much easier. The focus was on optimizing the weight of the overall system."

Georg Hofmann of RCF Germany's Engineering Support Group offered his expertise in planning and implementing logistical and technological requirements. Hofmann noted the need for a system capable of handling extreme sound levels while ensuring clear speech intelligibility throughout the stadium. "The dual use of the system as a voice alarm plays a crucial role, as it aids in the efficient evacuation of the stadium during emergencies without the need to install a secondary audio system," Hofmann explained, highlighting the importance of tailored solutions.

The installation includes [187] HL 40WP line array modules, [36] HL 38-S subwoofers, [16] HL 2290/HL 2260 horn speakers, [73] P 4228W speaker modules, and [32] Compact C 45. Powered by [66] RCF's XPS 16KD amplifiers connected on a Dante™ network, the system boasts 264 channels, each with 4,000 Watts of continuous power. Specifically designed Q-Sys plug-ins allow sound system control and monitoring for seamless media management. Since being operational, the new RCF system has garnered positive feedback for its exceptional coverage and sound quality.

Products installed



P 4228 W



Compact C 45



HL 2260



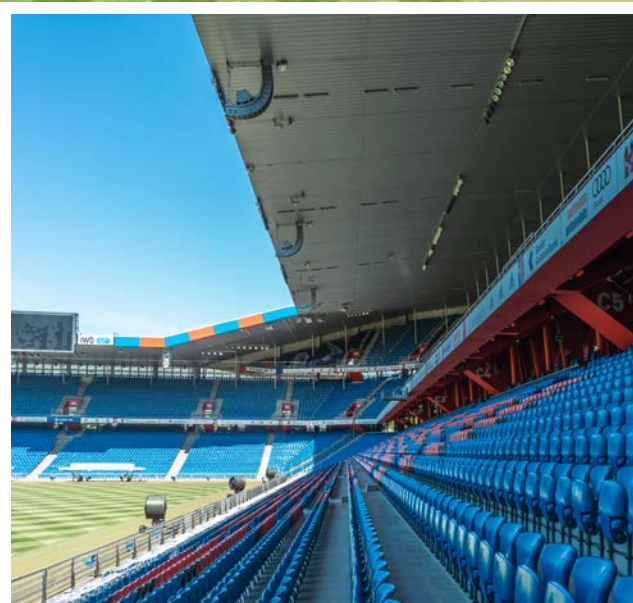
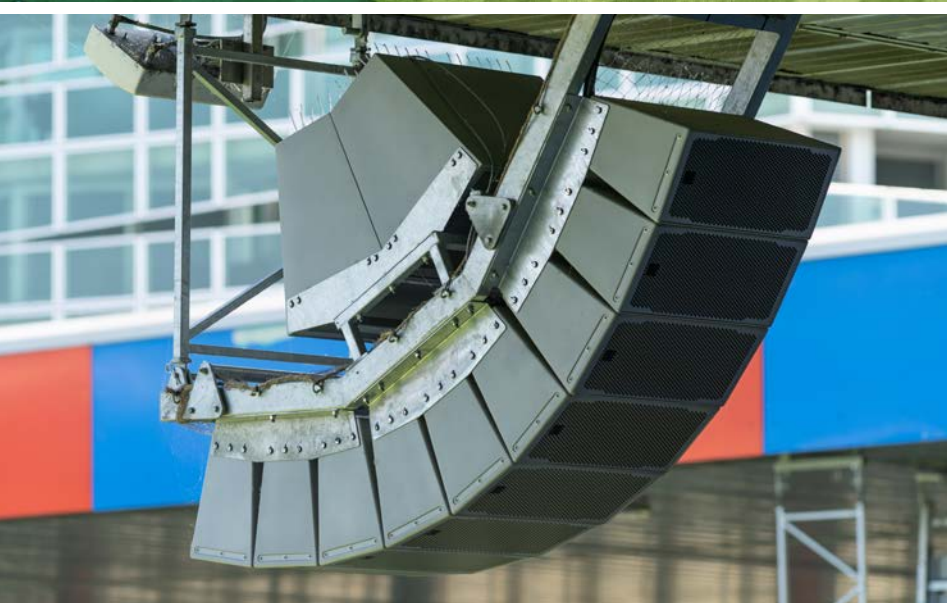
HL 2290



XPS 16KD



MH 61EN





ST Jakob Park - Basel (Switzerland)

The St. Jakob Park, locally referred to as “Joggeli”, looks back on a long history. The largest stadium in Switzerland follows a new construction managed by the architects Herzog & de Meuron. After several extensions, St. Jakob Park is the first multifunctional venue in Switzerland with apartments, a shopping center, restaurants, department stores, and is also a UEFA Category 4 stadium. During the most recent modernization in 2020 and 2021, the owner, FC Basel 1893 renewed the entire sound system with RCF sound systems. The under-balcony PA system and the entire grandstand PA system have been upgraded with RCF loudspeakers. Power amplifiers and audio matrix systems have also been replaced. In particular, the client chose passive systems of the HL, HVL, and P series from the Italian manufacturer to renew and improve the sound experience.

Since the modernization took place during running games of the season, the team around Martin Reich (audioconsulting ag) implemented the renewal of the audio system in three phases. First, the amplifiers and the audio matrix were replaced, followed by the installation of the under-balcony fills, and as a final step, a completely new sound system for the grandstands.

Martin Reich, CEO of audioconsulting ag, draws a first positive conclusion: “After the first few games, we have received very positive feedback. The music reproduction and the coverage by the new RCF systems have become more homogeneous in comparison, and speech intelligibility has also improved distinctly. With the line array systems, we can make much finer adjustments in terms of quieter and louder sections than was ever possible with the previous point-source loudspeakers.”

Due to the high acoustic requirements of the UEFA directive for a stadium sound system, the excellent experience with RCF loudspeakers in several Bundesliga stadiums, the decision was made to install loudspeakers from the HL, HVL and P Series. In total, the grandstand PA system comprises 205 HL 40 line array elements, 30 HS 2200 high-performance subwoofers for the main PA, and ten HVL 15 loudspeakers for the corner PA. A total of 330 P 4228 loudspeakers, specially manufactured in Basel-Red color, are used to reinforce the under-balcony areas and the walkways.

The RCF systems fulfilled all benchmarks in the decision of FC Basel 1893 as operator of the St. Jakob Park stadium and audioconsulting ag as an installer. The most important criterion was the improvement in speech and music reproduction, which is largely achieved. The audio system is also used for safety-related announcements, so it must guarantee the requirements of the Swiss SES guideline SN EN 50849. Equally crucial was a seamless transition from the old to the new system and excellent weather resistance and reliability parameters during day-to-day operation. The system can be controlled and monitored remotely, virtually down to the smallest transducer



Products installed



HVL 15-P



HVL 15-S



P 4228



HS 2200





Paul Brown Stadium - Cincinnati (USA)

For the last 20 years, the Cincinnati Bengals have been taking on NFL rivals at Paul Brown Stadium. This 65,515-seat gridiron arena has always placed a premium on the strength and quality of its audio systems. Equally known as the site of performances by artists ranging from Kenny Chesney to Guns N' Roses, PBS, as locals call it, subscribe to the notion that sound traveling throughout its concourses and seating areas should live up to concert-level expectations at all levels, whether it be on game day or for special events.

To that end, a three-phase project to re-energize the stadium's original, 20 year-old audio blueprint was just completed this fall, debuting on October 4th before a reduced crowd that watched as the Bengals beat the visiting Jacksonville Jaguars. Designed and implemented by Nashville, Tennessee-based Durrell Sports Audio Management, the new system is an amalgam of catalog products and custom speakers built in Italy expressly to meet the needs of this unique application by RCF.

"Paul Brown Stadium is unlike any other around the country when it comes to audio," Durrell's John Horrell explains. "Every aspect of its game-day production from simple announcements to music is as live as you can get. There is nothing here that even vaguely resembles a pre recorded TV show. That's why when we were chosen to upgrade the audio we felt it was essential to create a system that was capable of true, concert-level high performance."

The upgrade project was implemented in three phases, with the first kicking-off in 2018 and bringing, among other things, new delay loudspeakers from RCF to the upper deck and canopy level. Phase two added approximately 120 new RCF loudspeakers to the lower level and 70 more to the canopy level in 2019, along with eight dual 21-inch RCF subwoofers on each side of the canopy level. Phase three of the project was approved in January 2020, so by February the job was underway, with Durrell working hand-in-hand with Louisville, Kentucky's United Electric to turn the new vision into reality.

Critical to the audio heard within this space as well as sound traveling throughout the entire bowl, custom-built, hand-assembled loudspeakers from RCF figured prominently within the phase three additions. Wide horizontal coverage cabinets designated as model HVL 15-L1 and narrow coverage speakers bearing the model number HVL 15-P1 were provided by the Italian manufacturer as one-off custom units built to Durrell's specs just for PBS. In between these custom long-throw boxes, standard offerings from the RCF catalog including model P 4228, P 3115T, and P 6215 cabinets were interspersed as downfill in large number.

Products installed



HVL 15-P



HVL 15-S



P 4228



P 3115T



P 6215



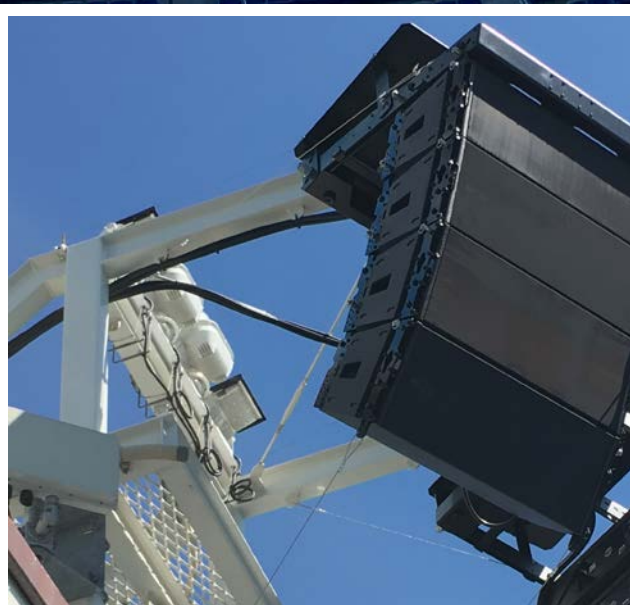
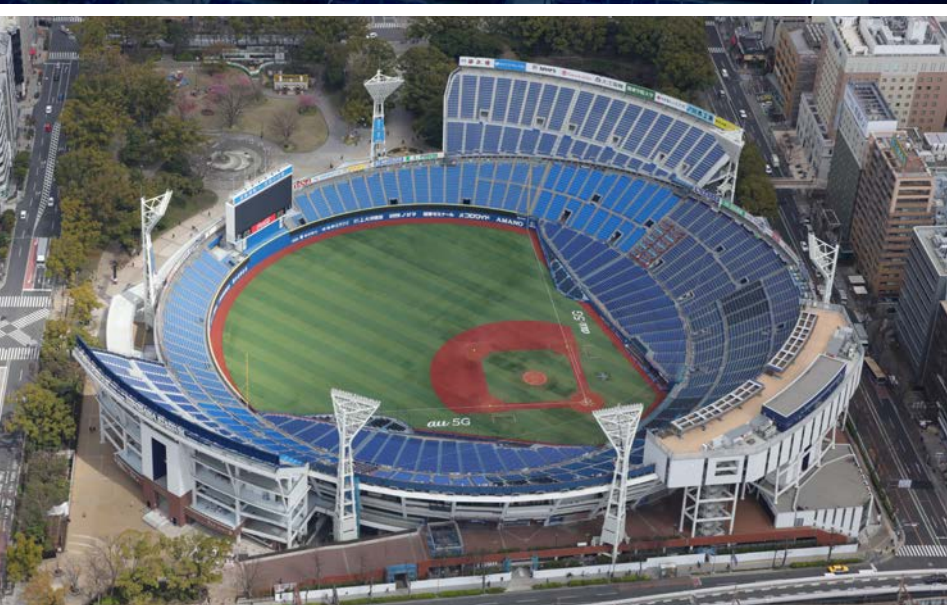
P 1108T



SUB 9007-AS



HL 2240





Yokohama Stadium - Yokohama (Japan)

Yokohama Stadium selects RCF as its sound reinforcement system for both sports and entertainment events. The stadium is one of the venues of the Summer Olympics and one of the most important sports facilities in Japan. It is, in fact, the largest venue in Kantō region of its kind, primarily used for baseball as the home field of the Yokohama DeNA BayStars. International artists also performed at the Stadium, such as Santana, David Bowie, Madonna, and Michael Jackson.

Yokohama Stadium started in 1876 as the common ground for cricket competitions. In 1929, it was reconstructed as a baseball stadium with 15,000 seats to host the country's most popular participatory and spectator sport. Then in 1978, Yokohama Stadium was rebuilt as the first multi-purpose Stadium in Japan, officially named Yokohama Stadium.

After a complete renovation started in 2018, Yokohama Stadium was selected as the venue for 2020 Tokyo Olympics and Paralympics, postponed to the following year to better manage the Covid-19 pandemic. Developers at Yokohama Stadium have added additional seating with the number of seats increased to just over 34,000. It is now known as the official venue of the baseball competitions for the 2021 Olympics. Baseball will be featured at the Summer Olympics in Tokyo for the first time since the Summer Olympics in 2008.

The RCF speaker system serves as a PAGA system (public address and general alarm system). The main systems, consisting of two arrays of four TTL 33-WP each, are placed on six light poles around the Stadium (total 48 speakers). Fly bars are fixed to custom built titanium brackets. Yokohama Stadium has expanded seating on each side, with 4 x P4228 placed on the top edge of the left wing and 5 units on the right wing. Additionally, 9 x P3108 and 1 x P4228 are placed under-balcony to cover the seats behind the plate. Lastly, 1 x P2110-T and 1 x P8015-S are installed to cover the dugout.

"In the renovation of Yokohama Stadium, our mission was to achieve both excellent quality for entertainment as a ballpark and clarity as a broadcasting facility," says Taketoshi Kobayashi (Lead engineer of Onkyo Tokki). "TTL 33-WP and other RCF loudspeakers were essential to maintain clarity of the sound without losing the volume of the lower part of the spectrum, contrary to the situation where the volume in the low frequency is lost due to prioritizing clarity, which is often seen in outdoor facilities. I was impressed by RCF's intelligibility. The system is perfect for the size and shape of the facility with its skillful design, easy tuning of the speaker, orientation, and level balance. In particular, sound from the opposite side of the field is well controlled. Currently, there are lots of sports facilities with line arrays installed. Still, the sound is very well controlled here, and this also contributes to the improvement of clarity and sound quality." He continues, "the support of the RCF team during the process was excellent. Quick response to changes in rigging points and model selection was an essential factor in the success of this project."

Products installed



TTL 33 WP



P 4228

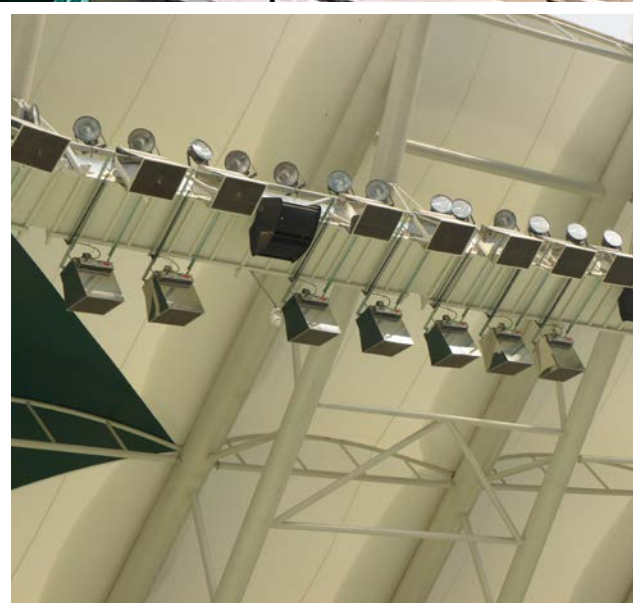


P 2110T



P 3108







Konya Torku Arena (Turkey)

When Konya was under consideration as one of the host cities for a future European Championship in Turkey, construction of a brand new UEFA-compliant stadium was proposed. While original plans set a capacity of around 33,000 seats, this was later upgraded to 42,276 seats — divided over two tiers, with an additional 50 VIP boxes — and the new facility, based in Selçuklu, will now provide the club Konyaspor KR with a ultramodern stadium for home matches.

Asimetrik, the Turkish-based distributors and AV system integrators, were awarded the contract to provide a network-based professional grandstand PA system, as well as broadcast infrastructure system, not only compatible with UEFA requirements, but also FIFA and IAFF. They also designed and supplied a PA/VA emergency evacuation system, C.I.S. infrastructure as well as full conference and visual presentation tools for conference, press and meeting rooms. All design, supply, installation and commissioning were undertaken by Asimetrik, who turned to RCF's H Series as their primary sound source.

To ensure such seamless acoustic design and installation, Asimetrik worked alongside main contractor, Sarıdaglar Construction Company and engineers from the Konya Municipality from the very beginning to design a seamless acoustic environment. Led by their project manager, Burak Bayrak, they designed a number of unique solutions, using EASE simulations to visualise the optimum distribution of sound to the seating areas, using the predictive software to set correct splay angles of the RCF loudspeakers and predict the performance with absolute precision.

Turker Baran, Asimetrik's Acoustical Design Engineer, and Burak Bayrak knew that the RCF solution was a proven model, having been inspired by the installation at Juventus Stadium in Turin. "The H Series is also a perfect fit for this stadium — in terms of both power and dispersion," says Mr. Bayrak. "RCF's technical project team partnered us to design the system for Konya. RCF is a unique and well-established brand with a very strong history, and as a partner for 14 years we are delighted to be their distributor."

RCF H 1315 WP loudspeakers were used for the network-based professional grandstand address system. Asimetrik specified 96 units of RCF H 1315 WP loudspeakers, a three-way full range loudspeaker that incorporates a 15in LF transducer, a 10in cone MF transducer and 1.4in exit titanium compression driver. These are mounted in double clusters across 48 rigging points, with a 12-metre distance between each cluster.

Products installed



H 1315 WP







Parken Stadium (Denmark)

Parken Stadium is Denmark's national football stadium and the current home of FC Copenhagen. Built between 1990-1992 it currently has a capacity of 38,065 (for football matches) although for other events the stadium can hold as many as 50,000 people with an end-stage set-up and 55,000 with a center-stage set-up.

Keeping pace with the club's recent success, Parken Stadium is equipped with a state of the art infrastructure, with a recently upgraded audio system.

"The new RCF speaker system at the Parken Stadium provides a perfect solution, and we have already received positive feedback from many people who say how impressed they are with the new sound," says Lars Bo Baadsgaard of Nordic Sales who delivered and installed the project. "This is due to the close collaboration with RCF and their project team. With their knowledge of stadia installations, we knew we could rely on their guidance when it came to designing the optimum speaker solution for the Parken Stadium."

To cover the site 42 units of RCF H 1315 WP were installed along with 18 RCF P 4228 and 12 RCF HD 6045EN fiberglass long-throw horns. Each cluster contains three units of the H 1315 WP, a three-way full range loudspeaker system that incorporates a 15" LF transducer, a 10" cone MF transducer and a 1.4" exit titanium compression driver.

In addition the RCF P 4228 speakers were installed to cover selected areas of the tribunes. This weatherproof, full range, wide-dispersion, two-way loudspeaker system offers substantial power and efficiency for a variety of professional indoor or outdoor applications. The HF section is a constant directivity CMD horn loaded with a 1.4" RCF Precision neodymium compression driver with a 2.5" diaphragm assembly for smooth, wide dispersion. The low-frequency transducer is a double 8" woofer with a 2.5" voice coil.

Finally the RCF HD 6045EN fiberglass horns are equally designed to withstand all weathers and offer high sound reproduction quality and sound pressure levels. These horns are used as a separate evacuation set-up, which can be automatically activated if special alert messages are required, or as a safety back up for the bigger H 1315 WP system.

Besides being the home base for FC Copenhagen and the national soccer team, Parken Stadium is also used for hosting big events, concerts and so on. In fact the new audio system has already proven its worth at several such events.

Products installed



H 1315 WP



P 4228



HD 6045EN







National Football Stadium - Belfast (United Kingdom)

The National Football Stadium at Windsor Park, Belfast, has been completely redeveloped, following £31m of funding from the Northern Ireland Executive. This included demolition and rebuild of the South and Railway (East) stands, and the subsequent demolition of the West stand, and complete renovation of the North stands by building contractors, O'Hare & McGovern.

This gives the National Stadium, where the Irish Football Association is headquartered, an all-covered seating capacity of 18,434.

Vital to the upgrade was a fully integrated PA and Voice Alarm system that was both EN54 compliant, with an impressive STI value, but at the same time incorporated a dynamic full range entertainment sound system to enhance the match day experience — both for the National team, and Linfield FC, whose home ground this is.

Belfast-based RCF partners, MGA Communication were the successful bidders, responding to a tender document originally drawn up by Arup. They were tasked with carrying out the implementation of commentary/broadcast systems, as well as disabled refuge, working under electrical contractors William Coates; their solution was based around an RCF DXT 7000 emergency evacuation system and Acustica P-series stadium speakers.

MGA managing director Aaron McKeown stated that the main requirement at Windsor Park was for the installation to be EN 54-16 compliant for the electronics, EN 54-24 for the speaker systems and the overall installation to be BS 5839 (Part 8) compliant. The system also needed to meet current FIFA requirements.

"On a normal match day, the crowd noise needs to be exceeded by 10dB," he said. On being awarded the contract MGA contacted RCF for assistance with the design, derivation and implementation of the PA/VA solution, and soon Francesco Venturi from RCF's Engineering Support Group in Italy was preparing an acoustic model of the stadium using EASE 4.4.

"For us it was a no brainer to use RCF," said McKeown. "We knew they would support it technically and having an existing working relationship was key," he said.

A master control rack is stationed in the South stand, with further 42U satellite racks located in other three, linked via optical fiber for the entertainment PA system, and copper for the emergency mic to conform to EN54 norms. Each rack plays its own emergency announcement independently, at an SPL of 89dB(A). There is a fireman's mic in each of the stands on a local buss, and the entire signal path from fireman's microphone to loudspeaker lines is completely and automatically monitored against faults within the DXT 7000's 8 x 80W matrix. Included in the coverage are the pre-existing speakers in the administrative offices in the main stand.

Products installed



P 6215



HD 21EN







Tondiraba Ice Arena - Tallinn (Estonia)

The city of Tallinn is carrying out a project of revitalization of its former Soviet residential neighborhoods. The stunning and innovative Tondiraba Ice Arena, was conceived and built with the aim of providing the Lasnamäe district with an avant-garde facility of great functional and architectural value.

Tondiraba's acoustic quality is outstanding – the whole ceiling is made of wooden beams and sound absorbing materials, thus creating very good environmental conditions. The sound system of this new multi-purpose sports arena, with an area of more than 20000 mq, 5840 permanent seats and 1780 additional chairs for concerts, was provided by the local company Event Center with RCF audio products.

The arena needed a complete array system able to reproduce both speech and music clearly even at high sound pressure levels and ensure excellent standards of weather resistance, because humidity inside the building can become quite severe. Simulations were arranged by the distributor using EASE software.

Event Center installed 10 clusters in the main hall, each consisting of three RCF P 4228 loudspeakers coupled with one P 8015S subwoofer. The clusters are directed towards the audience and used for broadcasting announcements and playing music, both from live mic input and playback. Eight additional P 2110T speakers ensure full coverage to the 30x60 metres playing field in the main hall.

Furthermore all practice rinks and the curling hall are equipped with 8 units of P 5228-L two-way speakers and 15 units of RCF TT 22-WP, a special weatherproof version that is adapted to open-air environments.

The distributor company designed the audio system of Tondiraba Ice Arena with the contribution of RCF Engineering Support Group. "We won the competitive tender called by Merko construction company with a bid based upon RCF products. Event Center met all criteria for sound coverage and resistance to humidity", said project manager Priit Hinnov. "The P Series is compact, light-weight and weatherproof. With its 110° horizontal and 60° vertical coverage angle, the P 4228 model guarantees perfect coverage of the whole area."

The system in the main arena is powered by 28 RCF HPS 2500 amplifiers installed in five racks, that allow a separate control of the various parts. "Being able to control independently the various zones where the audience is seated, and having a separate amplification for the playing areas, is extremely important in a venue where various activities are performed at the same time", Hinnov explains.

According to Hinnov, the building will become a major new facility for the country, not only for sports events, but also for concerts and conferences. This is one of the reasons why good intelligibility is a key feature of the chosen equipment.

Products installed



P 2110T



P 8015S



P 5228-L



P 4228







Legacy Arena - Alabama (USA)

In the heart of a thriving section of Birmingham, stands the Birmingham/Jefferson Convention Complex (BJCC) located in the Uptown Entertainment District. The multi-use complex boasts 220,000 square feet of flexible space which serves as a conference and entertainment destination for the city. Some areas of the complex include: one 3,000-seat concert hall, two theatres: one 1,000-seat, and one 274-seat. The largest venue, Legacy Arena with 19,000 seats, has recently undergone a complete audio system overhaul.

Originally build back in 1976, Legacy Arena may be the most impressive renovation of the \$300 million expansion of the Birmingham/Jefferson Convention Complex, which began in 2018. Some of music's biggest names performed at the arena — from Bob Dylan to Garth Brooks, Luciano Pavarotti to Prince, Led Zeppelin to Lynyrd Skynyrd, The Grateful Dead to Taylor Swift, JAY Z to ZZ Top, to name a few. It has hosted major sporting events as well, from basketball to hockey, to tennis matches, and attractions from tractor pulls to the Ringling Bros. and Barnum & Bailey Circus. And now, chosen venue for the Birmingham Squadron, DanceSport and Gymnastics events for the 2022 World Games.

When Populous, the project architects for the BJCC renovation, required audio design services they brought in top consultants Wrightson, Johnson, Haddon, Williams (WJHW) from Carrollton, Texas. Specializing in sound and video for many of the largest stadiums and arenas nationwide, WJHW Senior Consultant, Guillermo Wabi and his team were brought in to address the challenges and requirements for the arena and design a robust audio system for the installation.

"Imagine you have a venue with six unique areas — all having different sizes, elevations, and acoustic signature, while being open to each other, and having to be adaptable to multi-use scenarios," explains Wabi. "To design a sound system for those areas, that sounds clear, intelligible, and balanced to everyone, along with providing performance and flexibility, and to be configurable for multiple scenarios by the venue staff, while also having limitations in maximum weight, size, and budget — it was quite a challenge. Often when you design a system for a project like this, there must be a minimum of three systems to choose from, especially when using government funds," adds Wabi. "RCF became one of the three systems because of the variety of products and accessories in their portfolio that matched with the project needs and budget."

While the physical and acoustic evaluations were reviewed and analyzed, the contractors hired ESB Group Inc. out of Springville Alabama, who's main bowl sound system package was consisted of the RCF solution. The RCF solution is comprised with [112] HDL 28-A full-range line array modules and [24] flyable HDL 36-A subwoofers for the center of the arena, as well as a wide selection of speakers [RCF MR- and C-Series speakers] for 40 zones.

An integrated support system covered areas throughout the arena, under-balcony, luxury suites, and corridors. "We installed various C-Series and MR speakers, filling in all areas under balconies, supplemental to the main system". says Drew Breland, design engineer at ESB Group. "We're always impressed with RCF performance, and it's proven itself in this space,". Control of all zones was key to its success. "RNET was deployed with this system to control the primary bowl system. All things considered, we felt the installation was very successful in space," concluded Breland.

Products installed



HDL 28-A



HDL 36-AS



C 5212-66



C 3108-126

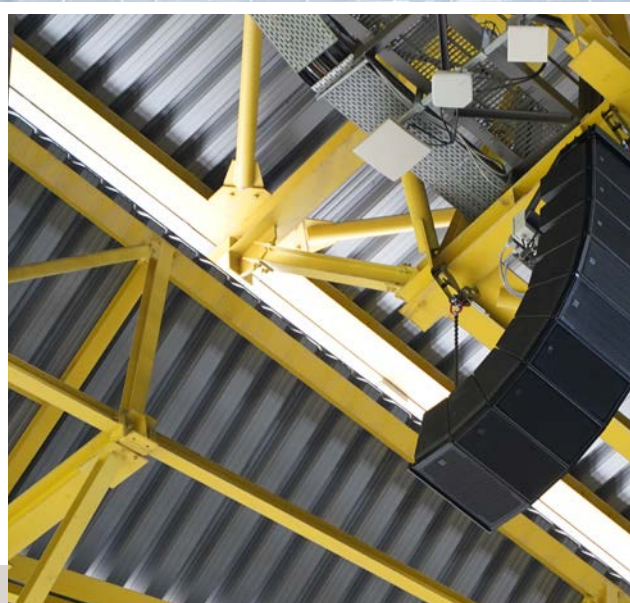


H 1315



RNET CONTROL 8







Signal Iduna Park stadium - Dortmund (Germany)

The Signal Iduna Park stadium is a world-renowned facility considered one of the biggest and most comfortable stadiums in Europe, with a total capacity of 81,365 spectators. The temple, as the fans affectionately call it, is the largest stadium in Germany and the home ground of football club Borussia Dortmund (BVB). With the increasing standards for entertainment and emergency announcements during events, the ownership decided to upgrade the existing sound reinforcement and evac systems with RCF speakers.

The aim of this project was to achieve state-of-the-art integrated PA/VA, ensuring not only intelligible voice-alarm announcements but also high-quality entertainment music programs, including emotional audio effects capable of transforming a soccer match into a show experience. The project was carried out by RCF headquarters and RCF Germany subsidiary engineers, working in synergy with the contractor engineering and consulting company Michael Creydt and fulfil engineering GmbH.

The sound system in the long stand area was modernized in 2013 with RCF TTL 33-A WP STADIUM line array systems. To further improve the performance and acoustic illumination of the arena, the sound systems in the corners of the SIP and the pitch area have been renewed in 2023. For this purpose, fulfil engineering GmbH installed 12 line arrays with 128 RCF HL 40 passive loudspeaker units and 4 TTS 36 passive subwoofers. 8 x RCF HL 2290 and 8 x RCF HL 2260 units were also installed for the sound reinforcement of the playing area. The passive systems draw their power from 24 Powersoft multi-channel power amplifiers. The entire stadium is now equipped with 358 RCF loudspeaker systems with over 500 kW RMS output.

Norbert Labudda, Managing Director of fulfil engineering GmbH, comments, "Our company installed the first RCF units in SIGNAL IDUNA PARK back in 2013. The venue operator decided to complete the sound reinforcement system to further finalise the performance and coverage of the arena in view of the 2024 European Championship. We chose passive elements from RCF, which, in addition to uncomplicated and safe rigging, have an optimal IP class and whose performance meets the client's high demands. After all, the system is installed in a stadium whose extraordinary atmosphere is famous and is also the venue for a semi-final match as part of the European Championship 2024."

Products installed



TTL 33-A WP Stadium



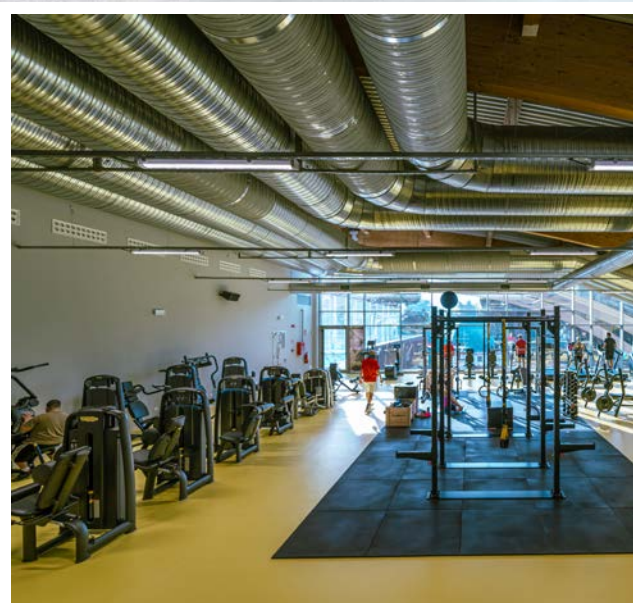
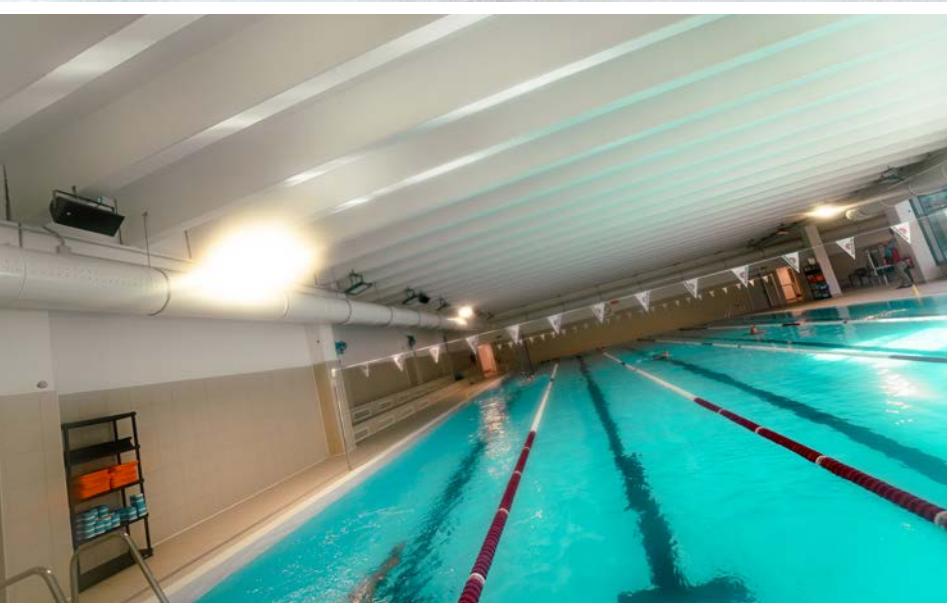
HL 2290



HL 2260



TTS 36-A





Acinque Ice Arena - Varese (Italy)

The new structure at the Varese ice rink is preparing for the Milan Cortina 2026 Olympics with new technological systems and the latest generation RCF audio system. The Varese ice rink, expanded and renamed Acinque Ice Arena, includes sports facilities for ice, swimming, fitness, and padel. The recent redevelopment at the structure has been completed with the best technology available, including new lighting services designed for light shows, a suspended LED cube, and RCF audio systems for both high-power diffusion and an EVAC EN54 system. The sound systems were installed by RCF partner Tecnoalarm/Tecnofire who have integrated anti-intrusion, automatic fire detection, and supervision systems, providing the customer with innovative technologies that are easy to manage. The complete system transitions the ice rink into an arena ready to welcome any type of national and international competition. The arena was officially inaugurated with the President of the Republic Sergio Mattarella, on November 15, 2022.

The Costigliola company followed the redevelopment of the project. "The structural redevelopment of the ice rink began in 2021, starting from the restoration of the roof and laminated wood structures, including the extensions up to the complete renovation of the technology upgrades." says Dr. Alberto Costigliola, Commercial Manager of Costigliola. "For the audio systems, we relied on the expertise of RCF, which assisted Costigliola through Pietro Mandelli of the Engineering Support Group. From the initial design phase, through system programming to commissioning and delivery of the system, RCF is a tremendous partner." Costigliola is a construction company active for over 40 years in the construction industry, with experience installing advanced technology, both in public and private sectors.

The RCF high powered INSTALLED SOUND system includes several zones. The ice arena with the relative 1110-seat grandstands and the two indoor swimming pools are served by RCF P4228 loudspeakers, which guarantee resistance to the unique environmental conditions of installation.

On the second floor, a large gymnasium with two multi-purpose training rooms are equipped by COMPACT M08 two-way speakers with wooden cabinets. The DX 1616 digital matrix processor is the master unit of the system, which manages the routing and processing of all audio signals and distributes them to the RCF QPS 9600, HPS 2500, DMA 162, and DMA 82 power amplifiers.

In the ice arena, a dedicated control room with one F 12XR mixer and two TX 4016 wireless microphones were installed. The DXT 3000 Interlink EVAC system guarantees emergency sound diffusion in all areas of the building. Different types of loudspeakers were installed, including HD 21EN horn loudspeakers, DU 50EN universal loudspeakers, and PL 68EN recessed ceiling lights, in accordance with the environmental and architectural constraints. The system is interfaced as per the UNI ISO 7240-19 standard with the fire detection unit of Tecno Alarm, RCF's partner for the construction of this system.



Products installed



Ferrara Stadium (Italy)



Products installed



P 6215

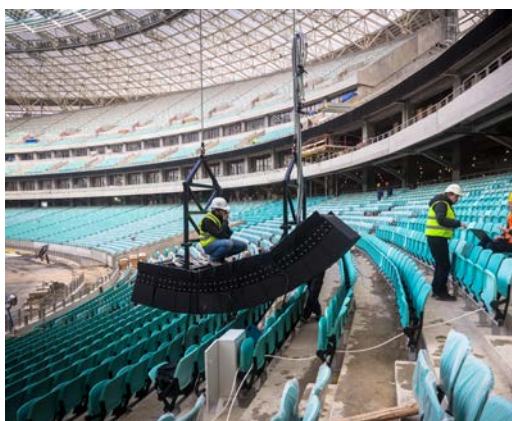


QPS 9600



DX 1616

Baku Olympic Stadium (Azerbaijan)



Products installed



P 2110T



H 1315 WP



TTL 55-A Stadium

Borussia Park Stadium (Germany)



Products installed



HL 20-WP



HL 2290



The Władysław Król Municipal Stadium (Poland)



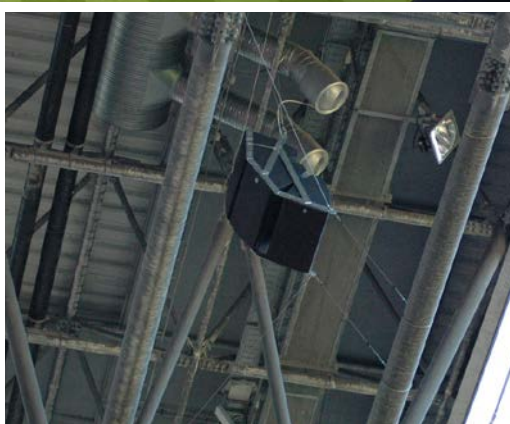
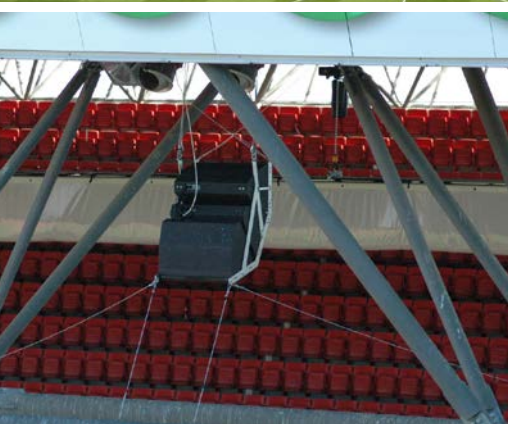
Products installed



P 6215



Copenhagen Stadium - (Denmark)



Products installed



P 4228

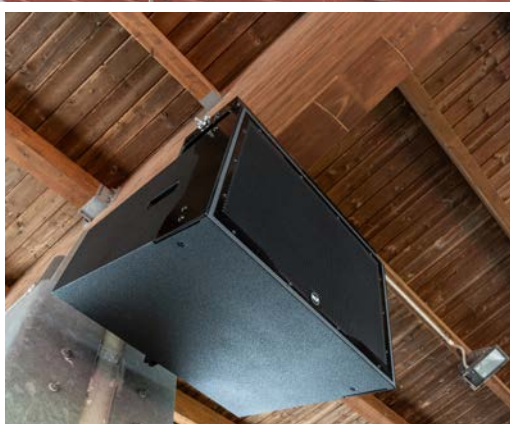
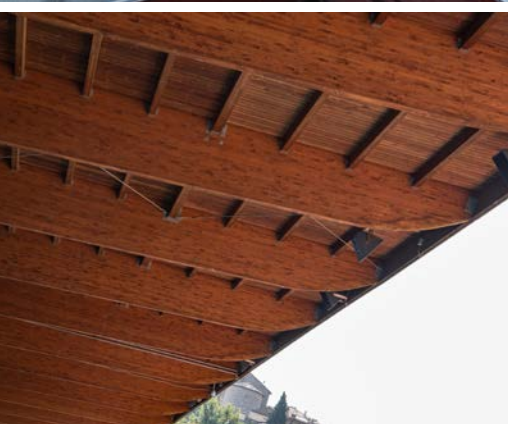


H 1315 WP



H 6045EN

San Marino Stadium (San Marino)



Products installed



P 3115T



P 6215



HS 2200

Daejeon World Cup Stadium (South Korea)



Products installed



HL 2290



HL 2260



HL 2240



HL 2200



P 3108

Ilie Oana Stadium (Romania)



Products installed



P 6215



P 4228



DX 4008

Kingspan Stadium - Belfast (United Kingdom)



Products installed



P 3115T

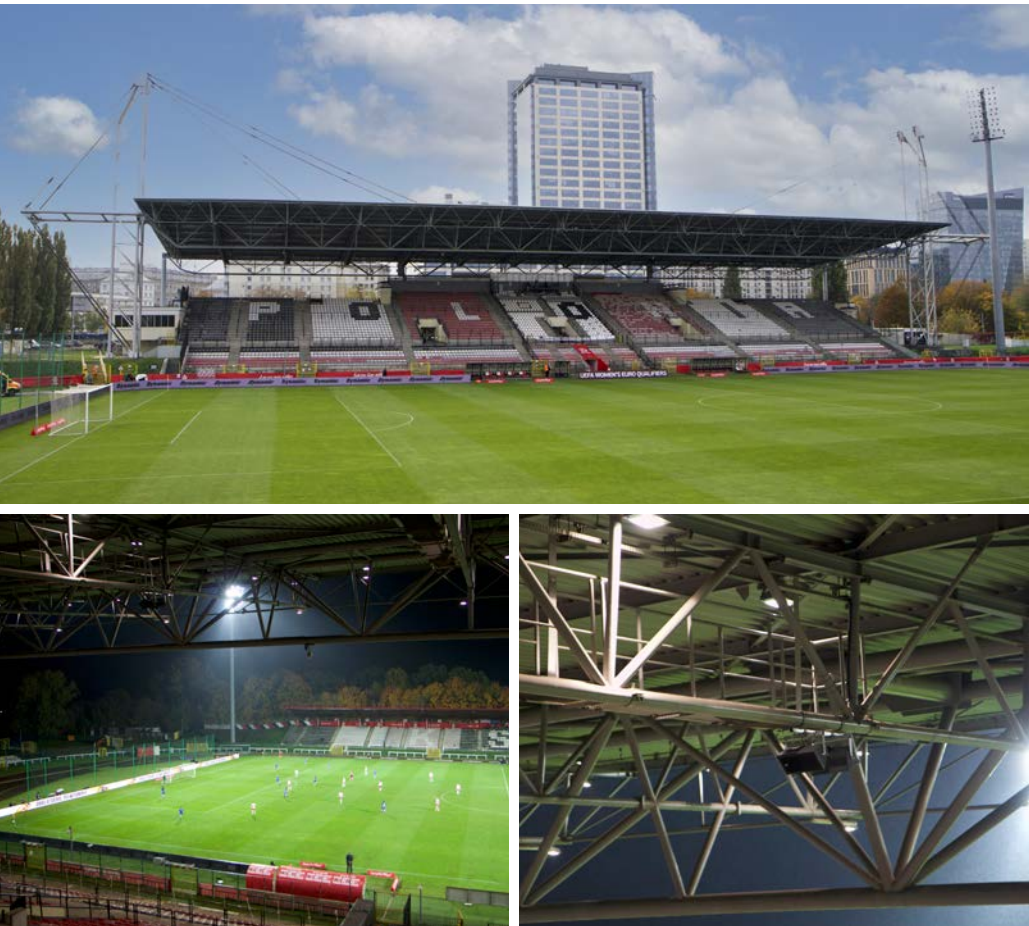


PL 70EN



DU 50EN

Stadium Generała Kazimierz Sosnkowski - Warsaw (Poland)



Products installed



P 3115T



P 3108

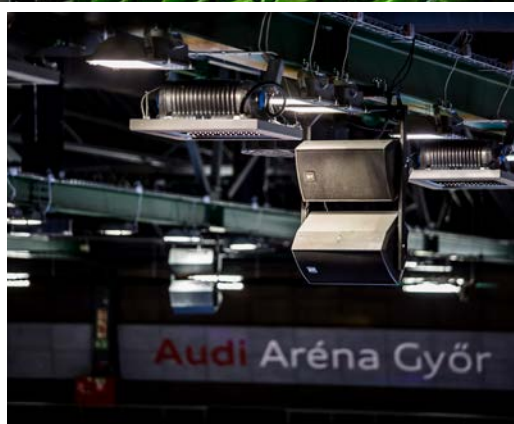
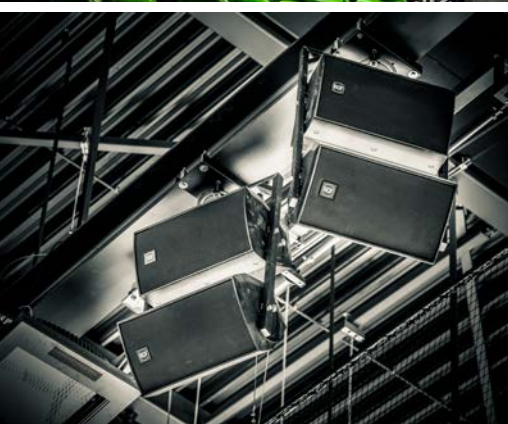


P 1108T



IPS 3700

Audi Arena Győr (Hungary)



Products installed



C 5212-96



IPS 3700



DX 4008



MQ 80P

Hockeycomplex 'Oosterplas' - Hertogenbosch (Netherlands)



Products installed



P 3115T

HL 6 & HL 35-S

COMPACT LINE ARRAY MODULES

Combined with robust rigging and a wide range of accessories, HL 6 and HL 35-S are perfect for installation, both in a corporate environment or music venue.

HL 6 is two-way full range system, ideal when line array performance is needed, and a fast and easy set-up is a must. The concept of this speaker derives from the touring industry, bringing in a compact cabinet all the experience of RCF professional sound. HL 6 features state-of-the-art RCF transducers, two powerful 6.0" woofers for a solid bass reproduction, plus a high powered 1.75" voice coil compression driver mounted on a precise 100° x 10° waveguide to deliver vocal clarity with high definition and incredible dynamic. Due to its symmetrical design the HL 6 produces constant coverage without break up or attenuation, maintaining intelligibility, definition, and signal strength over distance. HL 6 comes in a structurally wooden reinforced composite polypropylene enclosure, and it is equipped with two rear handles for portability.

PERFECT FOR INSTALLATION

The passive architecture makes the HL 6 one of the lightest line array modules on the market. Combined with flexible rigging options and a wide range of accessories, it's the ideal line array for installation both in corporate environments or music venues. HL 6 provides plenty of sound pressure and clarity that can replace antiquated, oversized sound systems with improved acoustic performance.

LEGENDARY SUBWOOFERS

The RCF HL 6 features RCF transducers with neodymium magnets. RCF's experienced engineering teams have specially developed and matched each component. An entire set of protections preserve product life and reliability.



HL 6

- 250 W RMS power handling
- 131 dB max SPL
- 65 ÷ 20000 Hz frequency range
- 100° x 10° coverage angles
- Fully equipped with neodymium transducers
- Horn Loaded symmetric design
- Wooden reinforced polypropylene enclosure
- Steel grille with clothing
- 2 x SPEAKON connectors



CONSTANT DIRECTIVITY WAVEGUIDE

The custom-designed waveguide allows a precise coverage of 100° x 10°, while also delivering a completely linear high-frequency response. The constant directivity waveguide delivers consistent coverage from 900 Hz to the highest audible frequencies.



The HL 35-S is the ideal flyable bass complement for the HL 6 array system. It features a Baltic birch plywood cabinet housing one 4.0" voice coil, 15" neodymium woofer to handle frequencies from 40 Hz to 140 Hz with the maximum linearity and lowest distortion. The hardware is designed for an easy and fast setup, completely compatible with the HL 6 rigging. The heavy-duty front grille is powder coated. A special transparent-to-sound foam backing inside helps to further protect the transducers from dust.

CABINET & MECHANICS

The hardware is designed for an easy and fast setup, completely compatible with the HL 6 rigging. The heavy-duty front grille is powder coated. A special transparent-to-sound foam backing inside helps to further protect the transducers from dust. For weatherproof capabilities, a rain cover is available.

DESIGNED FOR INSTALLATION

The passive architecture makes the HL 35-S one of the lightest 15" flyable bass modules on the market. Perfect for keeping the floor clear and maximizing the efficiency and coherence of the array. Combining it with robust rigging and a wide range of accessories, it's the perfect solution for installation in both sports arenas, corporate environments, and music venues. The HL 35-AS provides sound pressure and clarity that can replace antiquated, oversized sound systems with improved acoustic performance.



HL 35-S

- 134 dB max SPL
- 40 ÷ 140 Hz frequency range
- x 15" high-power woofer
- Baltic birch plywood cabinet
- Steel front grille with clothing
- M20 standard pole mount in the top section of the cabinet
- 2 x SPEAKON connectors

HL SERIES

THREE-WAY SPEAKERS AND HORN LOADED ARRAY SYSTEMS

The RCF HL Series is designed to provide high sensitivity, high output and directivity as required for larger scale installations.

AVAILABLE ON ORDER

Horn-loaded array systems can be easily converted from vertical installation mode to space saving horizontal placement. All speakers are equipped with RCF precision transducers and latest horn technology.

The RCF H Series cabinets are constructed using the highest quality Baltic birch plywood and finished with an extremely resistant epoxy paint. The cabinets have a multi-trapezoid shape that helps double coupling array configurations. Extensive fly-ware positions are provided for ease of installation.

SUPERIOR INTELLIGIBILITY OVER DISTANCE

Thanks to its large format compression driver on a waveguide, HL 20-WP offers superior intelligibility over distance.

SYMMETRICAL DESIGN

Due to its symmetrical design, HL 20-WP produces constant coverage without break or attenuation.

MADE-TO-ORDER ACCESSORIES

An example of RCF's full customization: our team created to order a special cluster flybar for two units of H 1315 WP in the Juventus stadium.



HL 2290

- 141 dB SPL Max
- 1500 W RMS Power
- 6000 W Peak Power
- Directivity Index Q: 16
- 60 ÷ 20000 Hz Freq. Range
- 90° x 23° coverage angle
- 4" C. Driver
- 2 x 12" Woofer
- Weatherproof treatment



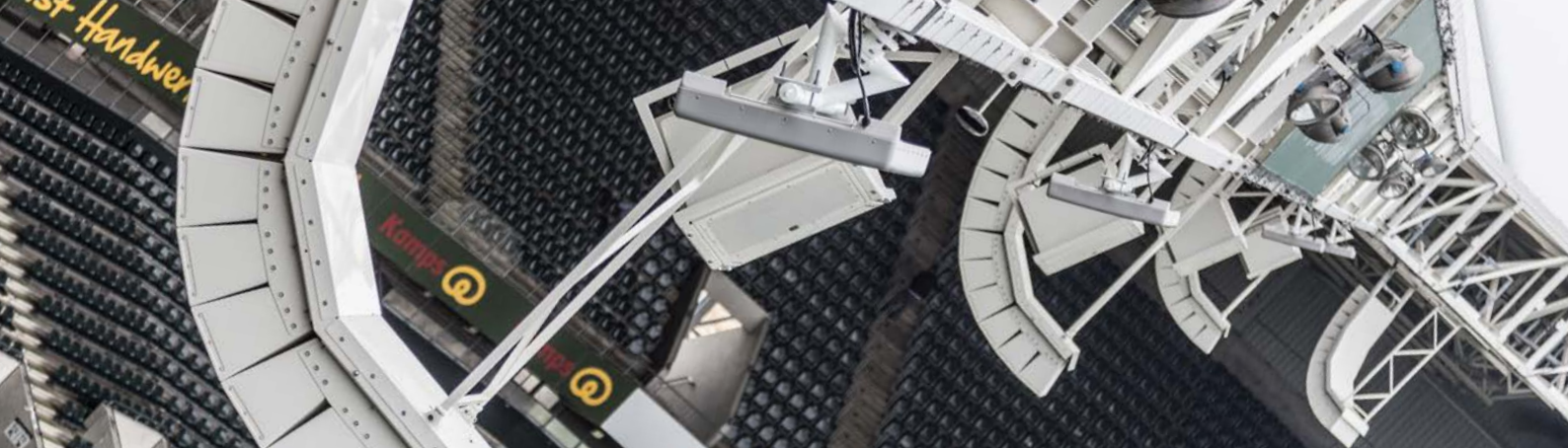
HL 2260

- 141 dB SPL Max
- 1500 W RMS Power
- 6000 W Peak Power
- Directivity Index Q: 14
- 60 ÷ 20000 Hz Freq. Range
- 60° x 23° coverage angle
- 4" C. Driver
- 2 x 12" Woofer
- Weatherproof treatment



HL 2240

- 141 dB SPL Max
- 1500 W RMS Power
- 6000 W Peak Power
- Directivity Index Q: 13
- 60 ÷ 20000 Hz Freq. Range
- 40° x 23° coverage angle
- 4" C. Driver
- 2 x 12" Woofer
- Weatherproof treatment



Horn loaded two-way full range array system designed for mid distance and long throw applications. Equipped with the latest generation of RCF precision transducers, this compact system provides very high output and accurate voice and sound reproduction, both clustered for long throw applications or point source configuration for mid distance.

PRECISION TRANSDUCERS

With in-house transducers' design and manufacturing for no-compromise performances, the HL Series excels in any comparison. All transducers feature state of the art neodymium magnetic circuits, radically new voice coil ventilation systems, titanium compression drivers, and ground-breaking voice coil assemblies.

A WEATHERPROOF SOLUTION

Rated for direct-exposure outdoor installations, each cabinet is made of Baltic birch plywood with polyurea coating and includes a weatherproof barrier strip for connections. The grille is powder-coated heavy-duty steel with open-cell fibers and water repellent woven-fabric backing.



The HL SYSTEM is equipped with standard array fittings and IP 55 weather protection.



HL 20-WP

- 135 dB SPL Max
- 700 W RMS Power
- 2800 W Peak Power
- Directivity Index Q: 16
- 55 ÷ 20000 Hz Freq. Range
- 100° x 15° coverage angle
- 3" C. Driver
- 2 x 10" Woofer
- Weatherproof treatment



H 1315 WP

- 136 dB SPL Max
- 900 W RMS Power
- 1800 W Peak Power
- Directivity Index Q: 12
- 50 ÷ 20000 Hz Freq. Range
- 3" neo C.Driver
- 10" neo Midrange
- 15" neo Woofer
- 60° x 40° coverage angle
- Weatherproof treatment

HVL SERIES

LONG THROW THREE-WAY SYSTEM

Focusing on stadiums and big arenas, HVL Series speakers are capable of true, concert-level high performance in arena-sized venues.

Featuring point source, line source, and subwoofers speakers, all modules embed RCF Precision Transducers, horns, and waveguides for optimal coverage and clarity. The cabinet's design with coplanar woofers and horns produces identical left and right coverage, capable of delivering serious sonic horsepower within the stadium while maintaining intelligibility and even coverage at every seat.

CONSISTENT ROBUSTNESS

Reduce the commissioning time on your new projects with HVL's modular array-ability, multiple directivity indexes (Q), and small footprint in comparison to its power. HVL can lower overall system costs by delivering full coverage with fewer modules precisely matching the audience area. Rated for direct-exposure outdoor installations, each cabinet is made of Baltic birch plywood with polyurea coating and includes a weatherproof barrier strip for connections. The grille is powder-coated heavy-duty steel with open-cell fibers and water repellent woven-fabric backing.



HVL 15-L

- 144 dB SPL Max
- 1900 W RMS Power
- 7600 W Peak Power
- Directivity Index Q: 12
- 43 ÷ 18000 Hz Freq. Range
- 90° x 30° coverage angle
- 4" neo C.Driver
- 2 x 10" neo Midrange
- 2 x 15" neo Woofer
- Weatherproof treatment

HVL 15-P

- 144 dB SPL Max
- 1900 W RMS Power
- 7600 W Peak Power
- Directivity Index Q: 18
- 43 ÷ 18000 Hz Freq. Range
- 45° x 15° coverage angle
- 4" neo C.Driver
- 2 x 10" neo Midrange
- 2 x 15" neo Woofer
- Weatherproof treatment

HVL 15-S

- 133 dB SPL Max
- 3000 W AES Power
- 6000 W Program Power
- 43 ÷ 180 Hz Freq. Range
- 2 x 15" neo Woofer
- Weatherproof treatment



PRECISION TRANSDUCERS

With in-house transducers' design and manufacturing for no-compromise performances, the HVL Series excels in any comparison. All transducers feature state of the art neodymium magnetic circuits, radically new voice coil ventilation systems, and ground-breaking voice coil assemblies.

LOW FREQUENCIES

2 x 15" high-power woofer, 3,5" inside/outside voice coil, dual spider, hyperventated, neodymium magnet.

MID FREQUENCIES

2 x 10" neodymium midrange, 3" voice coil, high performance sealed basket design.

HIGH FREQUENCIES

2 x 4" neodymium compression driver, titanium dome, 4 slot phase plug, copper inductance ring for extended response.



4PATH WAVEGUIDE

The custom 4 PATH-designed waveguide allows precise coverage while also delivering an excellent, linear high-frequency response. The unique shape of the four ducts forming the guide creates an ideal isophasic load from the vocal range up to the highest audible frequencies.



HVL 15-L1

- 144 dB SPL Max
- 1900 W RMS Power
- 7600 W Peak Power
- Directivity Index Q: 12
- 43 ÷ 18000 Hz Freq. Range
- 90° x 30° coverage angle
- 4" neo C.Driver
- 2 x 10" neo Midrange
- 2 x 15" neo Woofer
- Weatherproof treatment

HVL 15-P1

- 144 dB SPL Max
- 1900 W RMS Power
- 7600 W Peak Power
- Directivity Index Q: 15
- 43 ÷ 18000 Hz Freq. Range
- 60° x 30° coverage angle
- 4" neo C.Driver
- 2 x 10" neo Midrange
- 2 x 15" neo Woofer
- Weatherproof treatment

Q 15 SERIES

TWO-WAY POINT SOURCE MODULE

Q Series speakers are built upon RCF's premium concert-proven technologies for optimum power-to-size ratio able to cover large areas.

Q 15 is a two-way, bi-amp point source module for mid-distance and long-throw applications, combining a compact size with very high output and accurate speech and music reproduction.

Q Series typical applications span from point-source configurations for mid-distance applications to clusters up to 8 modules for long-throw applications.



Q 15

- 138 dB Max SPL
- 1500 W AES power handling
- 45 ÷ 20000 Hz
- 60° x 22.5° constant directivity coverage
- 1 x 15" neodymium woofer, 4.0" voice coil
- 4" neodymium compression driver
- Baltic birch plywood cabinet
- Steel front grille with clothing
- Integrated array mechanics
- Multi-pole Speakon connectors

CONSTANT CURVATURE ADVANTAGE

Delivering extraordinary clarity and power handling, the Q Series modules feature best in class flexibility for multiple applications. Due to its sleek form factor, the speaker is unobtrusive and preferred when space is a constraint. Component positioning of the Q Series and the ability to rotate the cabinet in any position, ensure precise directivity and a detailed sound image, reducing spots of break up or attenuation. RCF developed the Q Series for fixed installations requiring remarkable coverage and coherence in a premium yet discrete look. Despite their dimensions, Q Series speakers are built upon RCF's premium concert-proven technologies for optimum power-to-size ratio able to cover large areas.

Q 15-P

- 138 dB Max SPL
- 1500 W AES power handling
- 45 ÷ 20000 Hz
- 40° x 22.5° constant directivity coverage
- 1 x 15" neodymium woofer, 4.0" voice coil
- 4" neodymium compression driver
- Baltic birch plywood cabinet
- Steel front grille with clothing
- Integrated array mechanics
- Multi-pole Speakon connectors

Q 15-L

- 138 dB Max SPL
- 1500 W AES power handling
- 45 ÷ 20000 Hz
- 90° x 22.5° constant directivity coverage
- 1 x 15" neodymium woofer, 4.0" voice coil
- 4" neodymium compression driver
- Baltic birch plywood cabinet
- Steel front grille with clothing
- Integrated array mechanics
- Multi-pole Speakon connectors



USE ANYWHERE ATTITUDE

Q Series speakers can be deployed either horizontally or vertically, with a coverage angle proportionally equal to the sum of the enclosures in the array ($22.5^\circ \times n$). The cabinet features multiple M10 suspension points on both sides. Optional rigging accessories include two fly-bars for horizontal (up to 4) and vertical placement (up to 6 with a single flybar, or 8 with double flybar), stainless steel plates for rigging, and -10 degree spacing to decrease the coverage angle for long-throw applications. All rigging is made of high-strength structural steel with a high safety factor. The compactness and lightweight of the system, combined with top of class suspension system, guarantee a fast and secure hanging procedure.

LEGENDARY TRANSDUCERS

The RCF Q Series features state-of-the-art RCF transducers with neodymium magnets. RCF's experienced engineering teams have developed and matched each component. A set of protections preserve product life and reliability.

LOW FREQUENCIES

15" neodymium woofer, 4.0" v.c.
Water-resistant fiber doped cone
Polycotton M-roll surround
Hyperventilated magnetic structure

HIGH FREQUENCIES

The ND940 Compression Driver in pure Titanium with a 4 inches voice coil works from 600 Hz. This allows a better impulse response, fast decay, translating in perfect vocal clarity and enhanced quality in mid-frequency — leaving the woofer to manage the lower part of the spectrum. Lightweight and powerful, RCF neodymium drivers are a reference in performance and reliability.

The speaker can only be powered by two amplifiers, one for each transducer (4 poles via NL4 connector).

CONSTANT RELIABILITY

The Q Series speaker is carefully engineered to pack maximum output and superb sound quality with minimum size. The cabinet is made of high-quality water-resistant Baltic birch plywood with internal structural metal bracings, rigid and resonance-free. A special polyurea paint creates a very thick coating of the cabinet, making the speaker highly resistant to scratches, bumps, sun, and extreme weather conditions. The heavy-duty front grille is powder coated. A transparent-to-sound foam backing on the inside of the grille helps to further protect the transducers from dust.



P SERIES

COAXIAL SPEAKERS IN ROTO-MOLDED PLASTIC RESIN

Highly efficient coaxial designs offering excellent music and speech intelligibility in a compact, lightweight, and weatherproof enclosure.

The RCF P Series are highly efficient two-way designs offering excellent music and speech intelligibility in compact lightweight weatherproof design cabinets constructed with a heavy-duty roto-molded plastic resin UV-stabilized material. P Series speaker systems offer environmental protection up to the highest IP standard rating.

The design aesthetics of the P Series is suitable for outdoor applications as well as indoor installations in tough environments.

The front grille construction and included bracket are made of aluminum and stainless steel in all models.



P 6215

- 134 dB SPL Max
- 600 W RMS Power
- 2400 W Peak Power
- Directivity Index Q: 13
- 75 ÷ 20000 Hz Freq. Range
- 60° x 60° coverage angle
- 2.5" C. Driver
- 15" Coaxial neo Woofer
- IP 55 Protection Grade



P 3115T

- 129 dB SPL Max
- 300 W RMS Power
- 1200 W Peak Power
- Directivity Index Q: 13
- 75 ÷ 20000 Hz Freq. Range
- 90° x 60° coverage angle
- 1.5" C. Driver
- 15" Coaxial Woofer
- IP 55 Protection Grade



P 2110T

- 124 dB SPL Max
- 200 W RMS Power
- 800 W Peak Power
- Directivity Index Q: 11
- 95 ÷ 20000 Hz Freq. Range
- 90° x 40° coverage angle
- 1.5" C. Driver
- 10" Coaxial Woofer
- IP 55 Protection Grade



P 8015S

- 132 dB SPL Max
- 800 W RMS Power
- 3200 W Peak Power
- 50 ÷ 200 Hz Freq. Range
- 15" neo Woofer
- IP 55 Protection Grade



ALL-WEATHER PERFORMANCE

The single-piece rotomolded cabinet is fully UV protected, equipped with multiple brass inserts and a corrosion-resistant 316P stainless steel U-bracket. Connections to the amplifier are made through a watertight multi-pole connector. The front aluminum grille is powder coated with water-repellent backing material, front logo is rotatable. All P series speakers meet IP55 standard requirements (International Protection Rating), suitable for indoor and outdoor applications.

VERSATILITY FOR ANY APPLICATION

Focusing on outdoor and indoor large spaces, P Series speakers are capable of true, concert-level high performance in a compact enclosure, installed individually or coupled in array configurations. Featuring coaxial, line source, and subwoofers speakers, all modules embed RCF Precision Transducers, horns, and waveguides for optimal coverage and clarity. The cabinet's design with coaxial or coplanar woofers and horns produces identical left and right coverage, capable of delivering serious sonic horsepower within the stadium while maintaining intelligibility and even coverage at every seat.



P 5228-L

- 131 dB SPL Max
- 500 W RMS Power
- 2000 W Peak Power
- Directivity Index Q: 11
- 80 ÷ 20000 Hz Freq. Range
- 90° x 20° coverage angle
- 1.75" C. Driver
- 2 x 8" neo Woofers
- IP 55 Protection Grade



P 4228

- 129 dB SPL Max
- 400 W RMS Power
- 1600 W Peak Power
- Directivity Index Q: 9
- 80 ÷ 20000 Hz Freq. Range
- 110° x 60° coverage angle
- 2.5" C. Driver
- 2 x 8" Woofers
- IP 55 Protection Grade



P 3108

- 129 dB SPL Max
- 300 W RMS Power
- 1200 W Peak Power
- Directivity Index Q: 11
- 80 ÷ 20000 Hz Freq. Range
- 90° x 60° coverage angle
- 2.5" C. Driver
- 8" Woofers
- IP 55 Protection Grade



P 1108T

- 121 dB SPL Max
- 100 W RMS Power
- 400 W Peak Power
- Directivity Index Q: 11
- 80 ÷ 20000 Hz Freq. Range
- 90° x 60° coverage angle
- 1.5" C. Driver
- 8" Woofers
- IP 55 Protection Grade

COMPACT SERIES

TWO-WAY PROFESSIONAL SPEAKERS

Elegant design aesthetics and RCF signature sound quality that delivers a supreme audio experience in any application, from restaurants and retail shops to clubs, corporate spaces and venues.

Compact C Series is composed of two-way point source speakers for near and mid-distance applications, combining a compact size with very high output for accurate speech and music reproduction. Combining high-quality birch plywood cabinets with neodymium transducers and a 100° x 50° rotatable constant directivity horn.



COMPACT C 45

- 700 W power handling (RMS)
- 138 dB max SPL
- 48 ÷ 20000 Hz frequency range
- 100° x 50° constant directivity coverage angle
- 1 x 15" high power neodymium woofer
- 1 x 4.0" v.c. neodymium compression driver
- Steel front grille with protective foam
- Installation points available on top, bottom, rear, and side panels
- 2 x SPEAKON in/out connectors

COMPACT C 45 WP

- 700 W power handling (RMS)
- 138 dB max SPL
- 48 ÷ 20000 Hz frequency range
- 100° x 50° constant directivity coverage angle
- 1 x 15" high power neodymium woofer
- 1 x 4.0" v.c. neodymium compression driver
- Steel front grille with protective foam
- Installation points available on top, bottom, rear, and side panels
- 2 x AMPHENOL IP67 in/out connectors
- Steel front grille with protective foam and waterproof protection

MULTIPURPOSE SOUND

Elegant design aesthetics and RCF signature sound quality that delivers a supreme audio experience in any application, from sports halls to clubs, corporate spaces, and live venues. Available in three sizes - starting from 12-inch to 15-inch woofers with excellent acoustic performance for both background and foreground music.

CONSTANT DIRECTIVITY WAVEGUIDE

The special waveguide design allows the deployment of COMPACT C speakers with accurate control of the directional characteristics. In difficult acoustic environments, intelligibility is significantly increased. Using the optional HN-KIT COMPACT C 32 C 45 accessory, it is possible to replace the speaker horn with two different horns and change directivity to 100° x 25° or 60° x 25°.



COMPACT C 32

- 600 W power handling (RMS)
- 137 dB max SPL
- 54 ÷ 20000 Hz frequency range
- 100° x 50° constant directivity coverage angle
- 1 x 12" high power neodymium woofer
- 1 x 3.0" v.c. neodymium compression driver
- Steel front grille with protective foam
- Installation points available on top, bottom, rear, and side panels
- 2 x SPEAKON in/out connectors



COMPACT A Series is a multipurpose two-way full-range professional speaker system, suitable for a wide range of applications, such as live sound reinforcement and stage monitoring as well as distributed sound systems for clubs or music venues. The combination of a 1.75" compression driver, from 15" to 10" woofer", and the constant directivity True Resistive Waveguide produces coherent 100° x 60° coverage for the listening area with high SPL, distortion-free sound. The sleek and lightweight cabinet uses a special polypropylene composite material with an M-brace internal reinforcement, making it easy to carry and secure to install on a pole, flown-, wall-, or truss-mounted using the multiple rigging points and available accessories

EASY TO HANDLE, FAST TO INSTALL

COMPACT A is flexible and makes it a smart choice for a wide range of applications. The cabinet is easy to carry, thanks to ergonomic handles on both sides and the top. The lower side includes a steel pole socket for mounting on a stand or subwoofer pole. Each model can also be flown, wall- or truss-mounted using multiple M10 rigging points and special accessories. From molding to the final texture, COMPACT A offers maximum strength for fixed installation.



COMPACT A 15

- 450 W power handling
- Up to 130 dB Sound Pressure Level
- 50-20 kHz linear frequency response
- 1.75" Compression Driver
- 15" High Power Woofer
- Robust composite material cabinet
- Steel full front grille
- Optional mounting accessories
- 2 x SPEAKON connectors



COMPACT A 12

- 400 W power handling
- Up to 129 dB Sound Pressure Level
- 55-20 kHz linear frequency response
- 1.75" Compression Driver
- 12" High Power Woofer
- Robust composite material cabinet
- Steel full front grille
- Optional mounting accessories
- 2 x SPEAKON connectors



COMPACT A 10

- 350 W power handling
- Up to 128 dB Sound Pressure Level
- 60-20 kHz linear frequency response
- 1.75" Compression Driver
- 10" High Power Woofer
- Robust composite material cabinet
- Steel full front grille
- Optional mounting accessories
- 2 x SPEAKON connectors

RDNet 5

SOUND SYSTEM MANAGEMENT and CONTROL SOFTWARE

RDNet is a robust management network and control platform for small, medium and large arena-sized sound systems, as well as complex and extended installations.



RDNet is an advanced platform for integrated monitoring and control of sound systems - from small live and installed setups to massive arena systems. Based on a robust networked architecture, RDNet combines system control, line array design, and comprehensive audio measurements into a single powerful software package. Engineers and technicians can intuitively manage every device on the network, from individual components to multiple groups. The platform provides full DSP control of compatible devices, with flexible configuration tools for perfectly tuning the system response at maximum speed. Users have real-time access and oversight of all key settings from a centralized interface.

RDNET MEASURE

RDNet Measure is a powerful 4-input Dual-Channel FFT Audio Analyzer able to measure Magnitude, Phase, RTA, Coherence, and Impulse response. Functions included spans from a delay finder, a multiple signal generator, and an integrated SPL meter/logger with calibration tools. There's no need for external software to get the job done.

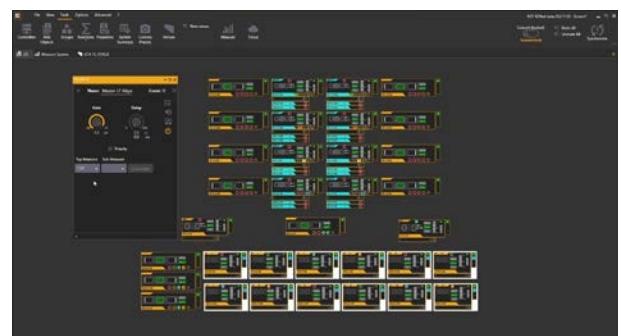


THE TOOLBOX FOR SYSTEM DESIGN AND OPTIMIZATION

RDNet displays all audio devices connected to the network as objects on the main window. The real-time monitoring features a multitude of parameters such as fan speed, temperature, the inclination of a single speaker, VU Meters, peak levels, and more. The operator has complete control of time delay and equalization of every speaker, individually or grouped. With its built-in DSP, each device is an active part of the system, able to store presets, receive commands, and continuously send status information. Comprehensive monitoring is standard in RDNet: VU metering, clip indicator, limiter intervention, device inclination, communication issues—down to the status of a single component or a transducer—and much more.

FEATURES

- Array and Zones Grouping for self- and externally-powered systems
- Real-time Discovery and Complete Monitoring
- Complete Real-Time FFT Analyzer with EQ integration and Auto-Alignment
- Adjust Hi-Pass, EQ, Gain, and Delay on individual components
- New IP-based RDNet-OE architecture
- Cloud Storage and Import full
- Shape Designer Array Calculator





WHAT'S NEW IN VERSION 5

The latest release features a streamlined workflow for seamlessly grouping self- and externally-powered systems. Device discovery is optimized with quicker drag-and-drop functionality, making it easy to manage hybrid systems. For example, a configuration using both TT+ Audio and RCF HDL loudspeakers. The improved user interface includes an advanced EQ visualization with amplitude/phase response plot and real-time FFT analysis. The redesigned cloud infrastructure allows projects and measurements to be saved remotely and recalled from any location.

GET THE MOST OUT OF YOUR SYSTEM

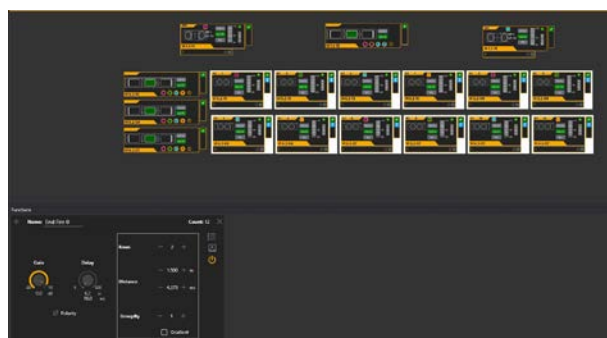
RDNet gives the ability to control devices in Groups for easy supervision. Arrays customizable Group properties are Zones, Air Compensation, Cluster Size, FIRPHASE Gain. When assigning Group Array objects in Zones: every Zone has its color for quick reference of set parameters. An incremental control shapes the Air Absorption Compensation, which can be very useful with changes in humidity or temperature (e.g., soundcheck on a sunny day, concert on a humid night). The line array's low-mid shaping is automatically calculated on the Cluster size to obtain the perfect linear frequency response from the entire system.

NEW: AUTOMATIC ALIGNMENT

The time-saving [Automatic LF Alignment] and [Fill/Delay Align] functions integrated with RDNet Measure allow for quickly aligning big systems directly from measurements. The process is simple: after saving RDNet Impulse Response Measurements by group of speakers (Line Array, Subwoofer group, Cluster or Fill Speakers), the [Automatic LF Alignment] function automatically calculates and applies the best phase alignment of the sound system with the subwoofer group, while the [Fill/Delay Align] provides the best temporal alignment between two groups of speakers.

LIVE SOUND AND INSTALL AUDIO APPLICATIONS

RDNet provides a comprehensive management system for both live and installed environments. This networked platform facilitates control and allows for the efficient monitoring, routing, and tuning of all RDNet-compatible devices



XPS SERIES AMPLIFIERS

RCF knows power amps, developing active speaker technology in many diverse solutions. Now we have unleashed our amplification and signal processing technology into a convenient 2U package for mobile touring and install applications.

MODULAR POWER MANAGEMENT

XPS 16K provides extreme power density with 4 x 4000 W continuous power outputs in 2 RU space for both touring and installed sound systems. The unit features 4 analog and digital AES/EBU inputs/outputs, Dante Network (KD model), and a complete signal processing, tuning, and routing capability at 96 kHz. Redundancy and full scalability are granted by the advanced and modular design of the circuitry. A complete set of RCF speaker presets is available, with powerful signal processing for a complete system's tuning.

More than a power amplifier. XPS 16K supports the RCF philosophy with a power-agnostic approach, where the Sound System Manager has complete freedom in choosing a powered or externally amplified modules for its system. XPS 16K offers balancing portability, weight, ease of installation, cabling, fast setup speed, and complete remote management of each connected device, via RDNet.

RCF's effort in assisting both installers and sound providers with the best audio technology and clear, powerful sound is at the core of the company's beliefs. Since 1949, providing both power amplifiers and transducers to the professional market, the RCF experience marks a new milestone with XPS 16K.

TOTAL OPERATIONAL CONTROL

A large 4.3" TFT color capacitive touch panel provides full operational control of the amplifier. The user interface is clear and easy to use providing large touch buttons and a practical edit knob, with high contrast menus designed to avoid any ambiguity in very bright or sunny environments. Proprietary RDNet Over Ethernet Management Network and OSC protocol compatibility allow the Sound System Manager to have complete remote control of the amplifier.



XPS 16K

- 16000 W Total Continuous Power
- 40-bit floating-point processing up to 96 kHz
- 32-bit fixed-point internal routing
- FIRPHASE, BMC, BASS Shaper
- RCF speakers' presets library
- RDNet Networked Management
- 4.3" TFT color touch screen
- Class-D modules with SMPS
- Dante Audio Network on XPS 16KD



FOUR CHANNELS DSP AMPLIFIER

XPS 16KD

- 16000 W Total Continuous Power
- 40-bit Floating-point DSP and 32-bit routing up to 96 kHz
- Dante Audio Network
- FIRPHASE, Bass Motion Control, Bass Shaper
- RDNet Networked Management
- Touch 4.3" Color TFT Interface
- Full On-board Processing with Delay, EQ, Comp/Limiter
- On-board Speaker Presets Library
- Class-D Modules with SMPS and Advanced PFC

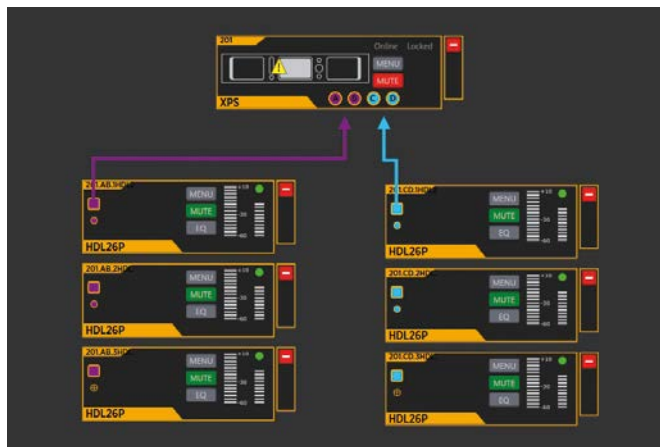


DANTE-EQUIPPED 4-CHANNEL DSP POWER AMPLIFIER



POWER-AGNOSTIC RDNET MANAGEMENT

RNet will manage XPS amplifiers as middlemen between the user and the speaker, so the speaker will always be at the center of the scene, maintaining the usual control paradigm of RNet software. The extensive RCF loudspeaker preset database is available within the amplifier and recallable via RNet. The software Synoptic Table will show both passive devices and active ones as fully featured speakers, while the amplifier will be seen as a simple controller for signal routing and maintenance controls. The user can also group speakers and manage advanced settings in a mixed fashion making no distinction between active or passive architecture.



FAULT-TOLERANT ARCHITECTURE

RCF amplifier blocks are fully self-protecting and designed on an 'audio-at-all-times' principle, with all fault protection features individually implemented for each amplifier channel and power supply. XPS 16K implements several safety strategies with fast and slow protections at both firmware and hardware levels. Scalability and Resilience concepts are interpenetrated in the so-called RNet-OE converged network, which transports audio and control in a simple and safe way, with priority management.

FLEXIBLE SIGNAL PROCESSING

The comprehensive digital architecture of the amplifier features multiple inputs and outputs that can be easily routed to suit any project. Analog inputs 3 and 4 can be switched to 4 AES/EBU digital I/O ports. Each input can be routed to any of the four digital and power outputs. The advanced clocking management design provides low latency sample rate conversion with high-quality AD/DA converters up to 96 kHz. Each XPS 16K amplifier combines two 40-bit floating-point SHARC DSP chips at 96 kHz and two more 32-bit DSP chips to independently manage audio processing and signal routing for maximum sound quality and redundancy.

CONVERGENCE

XPS is a converged system: multiple interconnected devices don't need overabundant infrastructures. Dante and control networks converge to the same connector, simplifying cabling and reducing malfunction occurrences.

SCALABILITY

XPS is a scalable system: system expansion only requires standard ethernet equipment. RNet will detect any new devices on the network, take immediate control, and provide monitoring from a remote computer.

PROFESSIONAL AMPLIFIERS

SOLUTIONS FOR ALL PASSIVE SPEAKERS

RCF offers an entire line of professional high-current and extended dynamic power amplifiers, suitable for stadiums and sports arena installations.

QPS SERIES

QPS Power Amplifiers boast 4 channel high-efficiency electronics delivering up to 4 x 1500 W continuous power @ 2 ohm. Both devices feature independent gain control, signal / clip and faults indicators, channels A and C XLR output link, mono and bridge mode, SPEAKON output connectors. Moreover, it is protected against shorts and open circuits. Thanks to its large-size heat sinks and variable speed fans, QPS 6.0K can withstand the hardest heat conditions ensuring great reliability.

- (QPS 10K) 4 x 2500 W class HD power amplifier
- (QPS 6.0K) 4 x 1500 W class HD power amplifier
- 20 ÷ 25000 Hz frequency range
- Fast response and low distortion
- Mono and bridge modes
- Extensive protective circuits
- Variable speed cooling system
- Signal, clip, fault led indicators
- XLR input connectors
- SPEAKON output connectors
- Limiter on each channel



FOUR CHANNELS PROFESSIONAL
POWER AMPLIFIER

IPS SERIES

IPS Series is a range of 2-channel professional amplifiers that combines high-quality performance and reliability with the latest power-amp technology. Three compact 2-RU devices with remarkable sound quality for both install and touring applications. Each amplifier features independent gain control, signal / clip and fault indicators, stereo XLR input and output link, mono / stereo / bridge switch, SPEAKON, and binding post output connectors. Moreover, it is protected against shorts and open circuits. Thanks to its high-efficiency heat sinks and variable-speed fans, IPS amplifiers can withstand the hardest heat conditions ensuring great reliability.

- (IPS 5.0K) 2 x 2600 W class H power amplifier
- (IPS 2.5K) 2 x 1250 W class H power amplifier
- (IPS 1.5K) 2 x 750 W class H power amplifier
- 20 ÷ 20000 Hz frequency range
- Fast response and low distortion
- Stereo, parallel, bridge modes
- Extensive protective circuits
- Variable speed cooling system
- Signal, clip, fault led indicators
- XLR input connectors
- SPEAKON and binding post output connectors
- Limiter on each channel



TWO CHANNELS PROFESSIONAL
POWER AMPLIFIER



DX 1616

DX 1616 AES-Dante remote software. This network-based software designed for Microsoft Windows and Mac OSX allows the management of the DX 1616 Matrix Sound Processor. -Pre-Amp configuration, selecting source types like analog, AES/EBU, Dante -Designing Input groups for festival applications -Input source processing with EQ, delay and compressor -Powerful 16x16 router to assign processing tasks to flexible output patches.

- Hybrid architecture DSP
- 48 KHz sampling, 40 bit floating point engine
- 16 x 16 I/O matrix
- Dante enabled network audio transport
- 8 AES/EBU inputs - 8 AES/EBU outputs
- Ethernet connectivity and control
- Maximum latency 3 ms
- Easy to use software GUI



MATRIX AUDIO PROCESSOR

DX 4008

The DX 4008 is a complete 4 input - 8 output digital loudspeaker management system designed for the touring or fixed sound installation markets. The absolute latest in available technology is utilized with 32-bit (40-bit extended) floating point processor and high performance 24-bit Analog Converters. The high-bit DSP prevents noise and distortion induced by truncation errors of the commonly used 24-bit fixed-point devices.

- The DX 4008 is a complete 4 input - 8 output digital loudspeaker management system designed for the touring or fixed sound installation markets
- Sampling rate can be set to 96kHz
- Precise frequency control is achieved with its 1 Hz resolution
- Inputs and outputs can be routed in multiple configuration to meet any requirements
- The DX 4008 is shipped with a special PC Graphic User Interface (GUI) application - XLink
- XLink gives the user an option to control the DX 4008 unit from a remote PC via the RS232 serial communication link
- The GUI application makes much easier control and monitor the device, allowing the user to get the whole picture on one screen
- Programs can be recalled and stored from/to PC's hard drive, thus expanding the storage to become virtuality limitless



4 INPUT - 8 OUTPUT DIGITAL PROCESSOR

EN 54 CERTIFIED

FIRST-CLASS ELECTRO-ACOUSTIC EQUIPMENT FOR VOICE ALARM

RCF offers a full range of EN 54-certified products, for both systems and speakers. Our solutions are widely adopted by railway stations, airports, shopping centers, subways and large sports arenas.

EN 54 is progressively turning into the default standard for fire detection and alarm systems in many countries around the world, thus an increasing number of customers require certified electro-acoustic equipment for their evacuation systems. Typical applications in a stadium include hallways, toilets, entrances, exits, cafés and all highly trafficked areas. Our EN 54-certified products ensure a clear transmission of alarm messages and signals, with full intelligibility of instructions given to avoid panic and provide guidance in case of emergency. RCF's supports all sports arenas needing to integrate a fine audio system for the spectators with a top-of-the-range evacuation system, with practical solutions that guarantee a safe and quick evacuation and are compliant with the sector's highest standards.

DXT 4000

COMPACT RACK MOUNT SOLUTION

The DXT 4000 series is an EN 54-16 intelligent evacuation system specifically designed for rack installation, featuring internal DSP and up to six RCF Class D+ power amplifiers, capable of delivering up to 500 W through 100 V or 70 V constant voltage lines. The MXR 4500 Master Unit serves as the core of the DXT 4000 Voice Alarm system, supporting 2, 4, or 6 independent zones and providing advanced environmental equalization for optimized voice intelligibility and background music performance. The system offers wall or table-mount paging consoles and allows for one amplifier to be configured as a backup for automatic replacement in case of failure, ensuring continuous operation. To better suit centralized or distributed medium-sized applications, DXT 4000 can be expanded by connecting up to 8 units. Designed for connection using J-type fire-resistant cables for consoles and unit linkages, the system ensures reliability and safety in any configuration.



DXT 3000

SCALABLE COMPACT SOLUTION

DXT 3000 is a wall-mounting intelligent evacuation system dedicated to small and medium size applications, where an EN 54-16 system is required. It includes a digital DSP-based master unit equipped with up to six RCF Class D+ power amplifiers, able to provide up to 500W on 100V or 70V speaker lines. A spare power amplifier with automatic replacement of a faulty unit is configurable too.

DXT 3000 hosts batteries and the necessary EN54-4 circuitry for the DC back-up. Furthermore it offers inputs, controls and pre-recorded messages to get a real plug & play solution.



DXT 7000

SMALL TO LARGE APPLICATIONS

DXT 7000 is a sound system conceived to completely control and manage background music and paging for emergency and evacuation purposes. The system has been designed to fulfill all requirements of EN 54-16 and EN 60849 standard, and it is entirely scalable, suitable for a wide range of applications: up to 32 MU 7100EN can be linked together in order to build an extended system, including many paging stations and up to 256 loudspeaker lines / paging zones. The main unit can play all necessary evacuation and alarm messages previously stored into its built-in digital memory.





The RCF range of products ensures the best acoustic efficiency on competitive EN54 compliant products. Furthermore, RCF loudspeakers are suitable for background music and public address, a role often expected for products used for public spaces requiring EVAC. The speakers are suitable for indoor and/or outdoor installation.

SCALABLE COMPACT SOLUTION

Fiberglass horn designed to withstand the most adverse weather conditions, offering high sound reproduction quality and sound pressure levels. A high level of efficiency and sound pressure can be obtained thanks to the use of four dynamic driver units for a total output power of 200W.



HORN SPEAKER

Thanks to IP66 protection and its UV resistant ABS housing, it is suitable for both indoors and outdoors applications. It can be used for sound reinforcement and speech systems in medium and large spaces, for instance sports halls, swimming pools, theme parks, stations, undergrounds, etc. and also in all environments that need high efficiency loudspeakers grade.



CEILING SPEAKERS

The ceiling speakers featuring a flameproof metal bottom are designed for recess installation in false ceilings or panels. They are especially suitable for broadcasting alarm messages thanks to highly intelligible sound reproduction and are resistant to the high temperatures reached during fires.



SOUND PROJECTORS

The speakers are certified weatherproof sound projectors. They are suitable for all installations where high intelligibility for alarm message broadcast and great sound reproduction quality are required. A modern and endearing design makes it the perfect product for environments where projectors are intended, as well as architectural elements, and contribute to improved global aesthetics.



COLUMN SPEAKERS

Two-way speakers with very compact dimensions are the features of the extended-range speakers and a tweeter. This model utilizes a series of innovative technological solutions that guarantee highly intelligible reproduction of the vocal message. Usable in railway stations, subways, churches, factories, warehouses, PA systems in general.



SPORT COMPLEXES

SOME REFERENCES

AUSTRIA	Taraun	Eishalle
	Feldkirch	Vorarlberghalle
AUSTRALIA	Melbourne	Collingwood Football Club
AZERBAIJAN	Baku	Olympic Stadium
CROATIA	Zadar	Visnjik Sports Arena
DENMARK	Copenhagen	Parken Stadium
	Herning	MCH Arena
ENGLAND	Newcastle	Kingston Park Stadium
ESTONIA	Tallinn	Tondiraba Ice Arena
FINLAND	Imatra	Imatra Stadium
FRANCE	Angers	Stadium Raymond Kopa
GERMANY	Bad Breisig	Römer Therme
	Bietigheim	Sportcenter
	Bünde	Sporthalle Bünde
	Crailsheim	Hakro Arena
	Dortmund	Signal Iduna Park
	Dortmund	Helmut Körnig Halle
	Forst	Waldseehalle
	Füssen	Bundesstützpunkt für Eishockey und Curling
	Hardtwaldstadion SV	Sandhausen
	Hochseilshow	Geschwister Weiheit
	Kiel	Sparkassenarena
	Koblenz	Stadion
	Leer	Schwimmhalle
	Lübeck	Buniamshof
	Luhe - Wildenau	Golfplatz Schwanhof
	Mönchengladbach	Borussia Park Stadium
	Mönchengladbach	Borussia Park
	Mörfelden-Walldorf	SV Rot-Weiss Walldorf e. V.
	Oberhof	Ski Langlauf-Meisterschaften
	Oldenburg	Marschwegstadion
	Sandhausen	Hardtwaldstadion
	Sandhausen	Sandhausen Stadium
	Siegburg	Sporthalle Anno-Gymnasium
	Stuttgart	MHP Arena
	Trier	Mosel Stadium
	Wiehl	Wiehler Wasser Welt
	Wilhelmshaven	Jadestadion

HUNGARY	Gyor	Aqua Sport Center
	Győr	Audi Arena Győr
ITALY	Ancona	City Stadium
	Brescia	Mario Rigamonti
	Cagliari	Sardegna Arena
	Carpi	Sandro Cabassi
	Ferrara	Paolo Mazza
	Florence	City Stadium
	Massa Carrara	
	Napoli	Maradona Stadium
	Assago (MI)	Mediolanum Forum
	Bergamo	Gewiss Arena
	Ravenna	Ravenna Stadium
	Reggio Emilia	Mapei Stadium
	Rome	Ostia Palasport
	Teramo	City Stadium
	Trapani	Stadio Polisportivo Provinciale
	Trento	Ice Stadium Palasmeraldo
	Trento	Palasport
JAPAN	Yokohama	Yokohama Park Stadium
LITHUANIA	Vilnius	Elektrenai Sports Arena
	Kaunas	Darius and Girėnas Stadium
	Kėdainiai	Kėdainiai Sports Arena
MALAYSIA	Kuala Lumpur	Bukit Jalil (PA)
	Kuala Lumpur	Bukit Jalil (SRS)
	Kuala Lumpur	DBKL Stadium
	Kuala Lumpur	Kuala Lumpur Sports City (KLSC)/ Bukit Jalil National Sports Complex
NETHERLANDS	Alkmaar	JumpSkillz Hoofddorp
	Purmerend	JumpSkillz Hoofddorp
	Hertogenbosch	Hockeycomplex 'Oosterplas'
NORWAY	Oslo	Jarlsberg Travbane Horse Racetrack
	Trondheim	Granåsen World Cup stadium (ski jump)
	Trondheim	Granåsen World Cup stadium (cross country)
POLAND	Łódź	Władysław Król Municipal Stadium
	Łódź	UKS Anilana Sports Hall

POLAND	Łańcut	OSiR Zamość Sports, Entertainment Hall, MOSiR Sports Hall
	Nikiszowiec	MOSiR Katowice Sports Center
	Jakuszyce	Lower Silesian Sports Center Polana Jakuszycka Ski Racing
	Jakuszyce	Ski Racing and Biathlon Centre
	Płock	Kazimierz Górski Stadium
	Radom	Radomiak Radom Stadium
	Skierniewice	Municipal Stadium
	Sosnowiec	Żeromskiego Street swimming pool
	Szczecin	Florian Krygier Municipal Stadium
	Warsaw	Stadium Generała Kazimierz Sosnkowski
	Wrocław	WKS Śląsk Wrocław (WKS denoting Army Sports Club)
QATAR	Doha	Al Gharafa Sports Complex
ROMANIA	Ploiesti	Ilie Oana Stadium
RUSSIA	Kaspijsk	Ali Aliev Athletic Arena
	Moscow	Luzhniki Olympic Sports Complex
	Nadym	Ice Arena
	Omsk	Sports Arena
	Shali	Vainakh football stadium
SAN MARINO	San Marino	Sport Complex of San Marino
SOUTH KOREA	Paju	Paju Yongsan Camp
	Suwon	ROTC Indoor Military Training Ground
	Daejeon	Daejeon World Cup Stadium
SOUTH AFRICA	Johannesburg	Coca Cola Ellis Park Stadium
	Nasrec	Soccer City Stadium
	Nelspruit	Mbombela Stadium
SWEDEN	Stockholm	Solvalla Travbana Horse Racetrack
	Stockholm	Stockholm Stadium
SWITZERLAND	Basel	St. Jakob-Park
THAILAND	Bangkok	Nongjok Futsal Stadium
TURKEY	Konya	Konya Torku Arena
	Trabzon	Trazbonspor Stadium
	Bursa	Bursa Stadium
	Antalya	Antalya Stadium
	Eskisemir	Eskisemir Stadium

TURKMENISTAN	Ashgabat	Ashgabat Olympics Complex
UK	Bangor	Aurora Aquatic & Leisure Complex
	Belfast	Ravenhill Ulster Rugby Stadium
	Belfast	Windsor Park Stadium
	Newcastle upon Tyne	Dance City
	Newcastle upon Tyne	Kingston Park Stadium
	Sheffield	Fire House Fitness
	UK	Flip Out
USA	Atlanta, GA	Mercades Benz NFL Stadium, Home of the Falcons
	Birmingham, AL	Legacy Arena
	Charlotte, NC	Bank of America Stadium
	Cincinnati, OH	Paul Brown Stadium
	Erie, PA	Mercyhurst Ice Arena
	Jamaica, NY	Aqueduct Race Track
	Kalamazoo, MI	Wings Stadium
	Kansas City	Arrowhead Stadium, home of the Kansas City Chiefs NFL
	Nashville	Bridgestone Arena
	New York City	New York Racing Association

INDEX AND PART NUMBERS

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P 6215 W	White	13100083	-	-	44
P 3115T	Black	13000135	-	-	44
P 3115T W	White	13100082	-	-	44
P 2110T	Black	13000125	-	-	44
P 8015S	Black	13000230	-	-	44
P 5228-L	Black	13000202	-	-	44
P 4228	Black	13000199	-	-	44

P SERIES

PRODUCT	Colour	-	220-240V	115V	Pag.
P 4228 W	White	13100081	-	-	44
P 3108	Black	13000198	-	-	44
P 1108T	Black	13000203	-	-	44
P 1108T W	White	13100084	-	-	44

COMPACT SERIES

PRODUCT	Colour	-	220-240V	115V	Pag.
COMPACT C 45	Black	13000602	-	-	46
COMPACT C 45 WP	Black	10307792	-	-	46
COMPACT C 32	Black	13000642	-	-	46
COMPACT A 15	Black	13000740	-	-	46
COMPACT A 12	Black	13000739	-	-	46
COMPACT A 10	Black	13000738	-	-	46

XPS 16K AMPLIFIERS

PRODUCT	Colour	EU	US	UK	Page
XPS 16K	Black	12100037	12100074	12100076	50
XPS 16KD	Black	12100064	12100075	12100077	50

AMPLIFIERS

PRODUCT	Colour	90-240V	220-240V	100-120 V	Pag.
QPS 10K	Black	-	12100057	12100058	52
QPS 6.0K	Black	-	12100055	12100056	52

AMPLIFIERS

PRODUCT	Colour	90-240V	220-240V	100-120 V	Pag.
IPS 5.0K	Black	-	12135087	12135086	52
IPS 2.5K	Black	-	12100059	12100060	52
IPS 1.5K	Black	-	12100065	12100066	52

PROCESSORS

PRODUCT	Colour	-	220-240V	100-120 V	Pag.
DX 1616	Black	12399033	-	-	53
DX 4008	Black	12135033	-	-	53



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