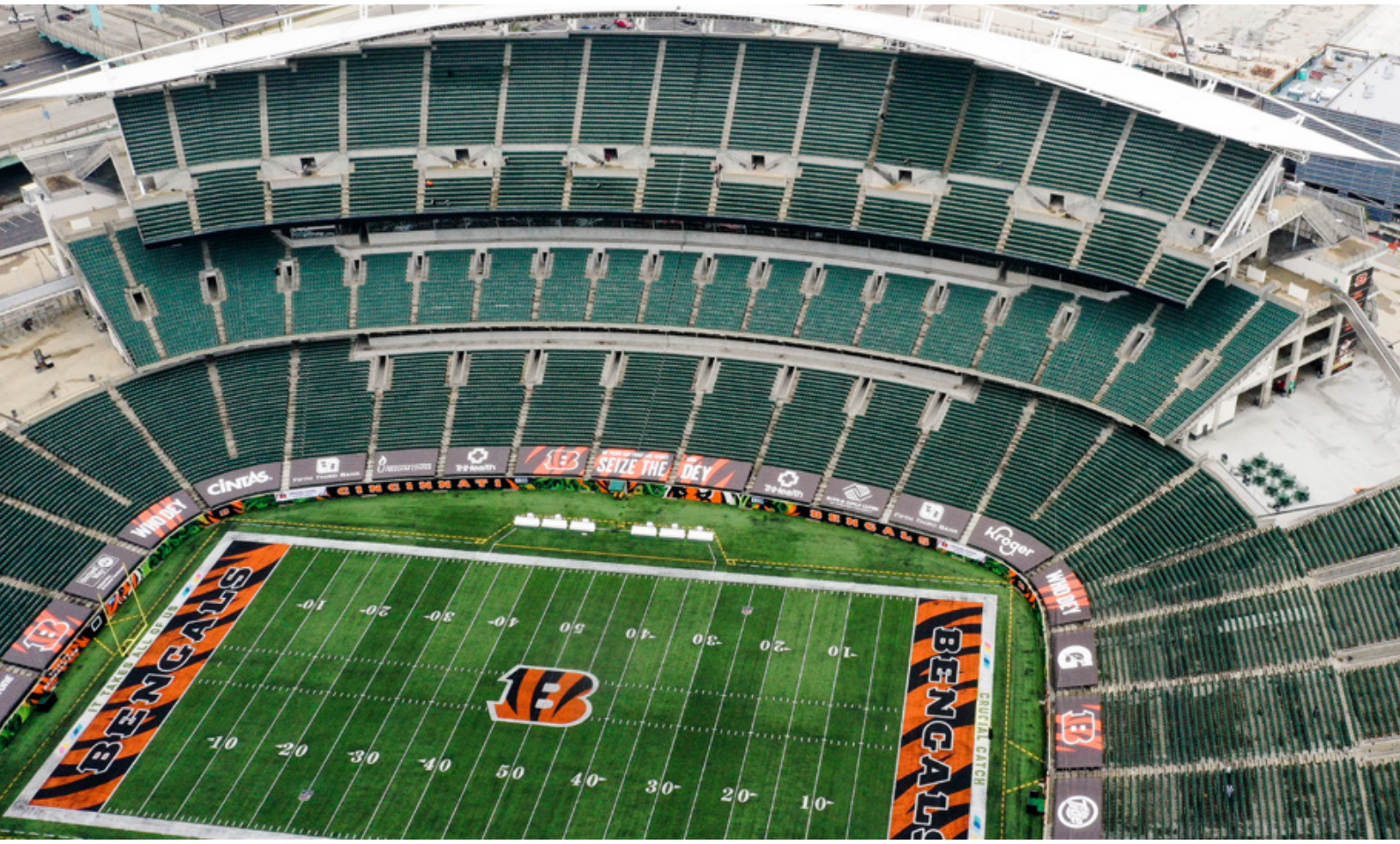

STADIUM & **ARENA**
REFERENCES


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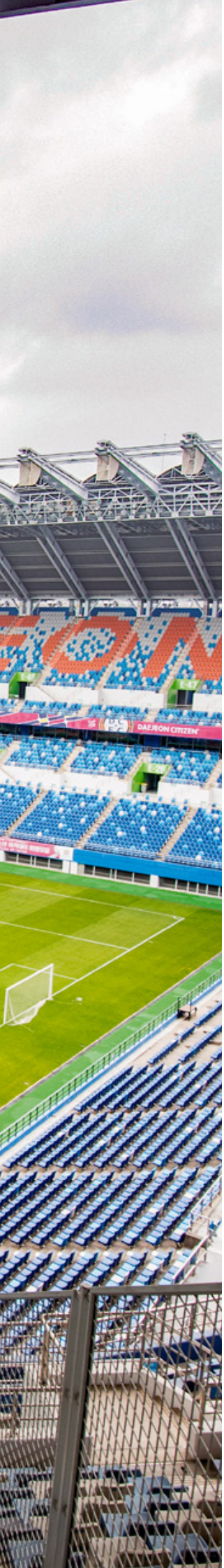


YOUR HOME FIELD ADVANTAGE INCREASES WITH RCF

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.

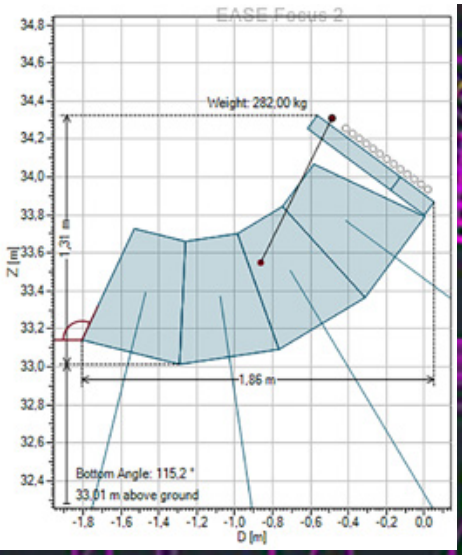
FOREFRONT TECHNOLOGY

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.


NAPOLI2019
30th SUMMER UNIVERSIADE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Weight: 282,00 kg
1,31 m
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Bottom Angle: 115,2 °
33,01 m above ground
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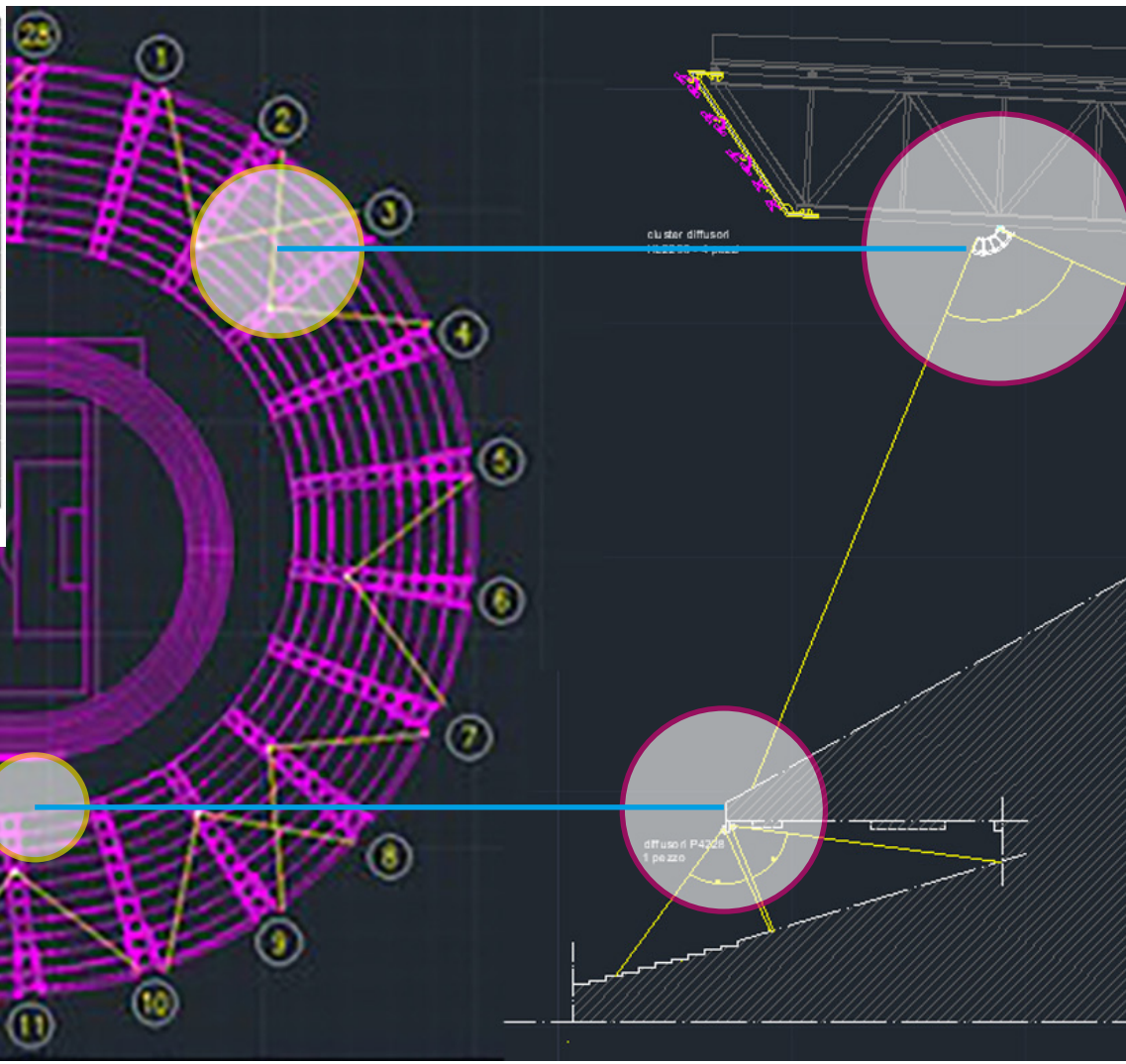
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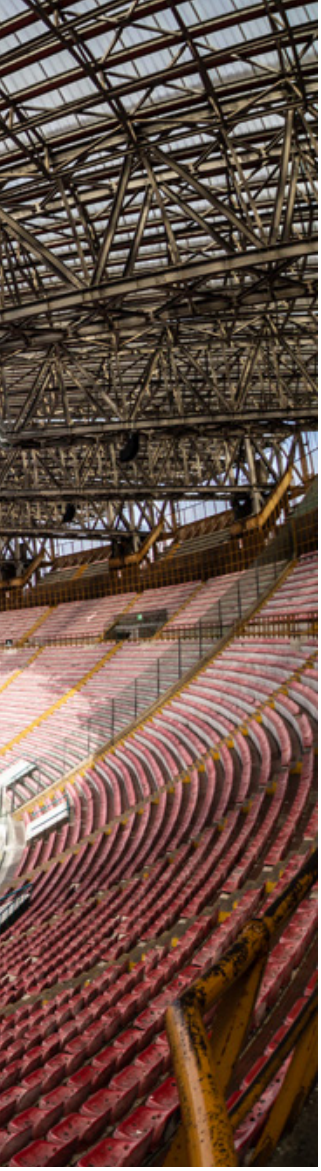
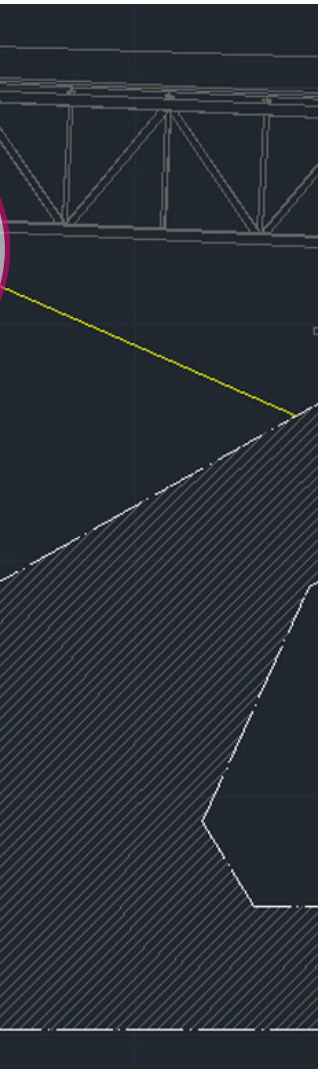




ENGINEERING SUPPORT GROUP

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

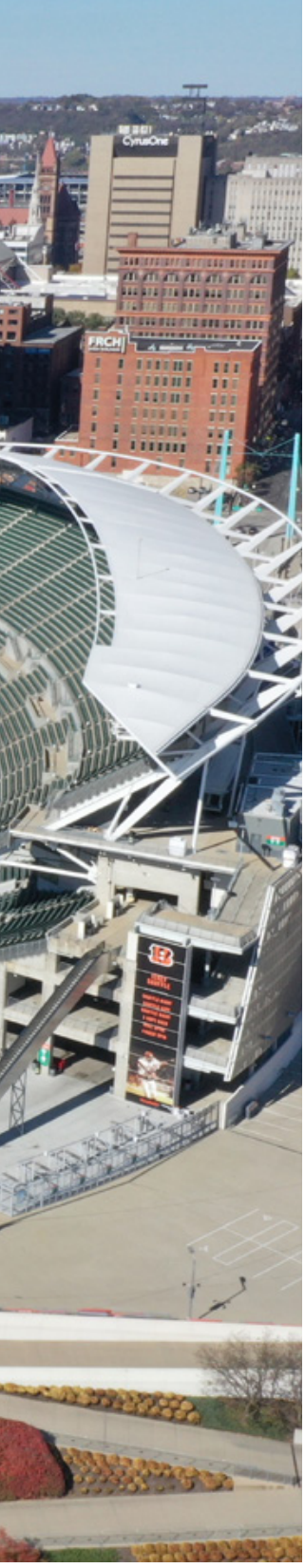
  We help with the definition of the project's specifications in cooperation with architects and contractors.

- 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.



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

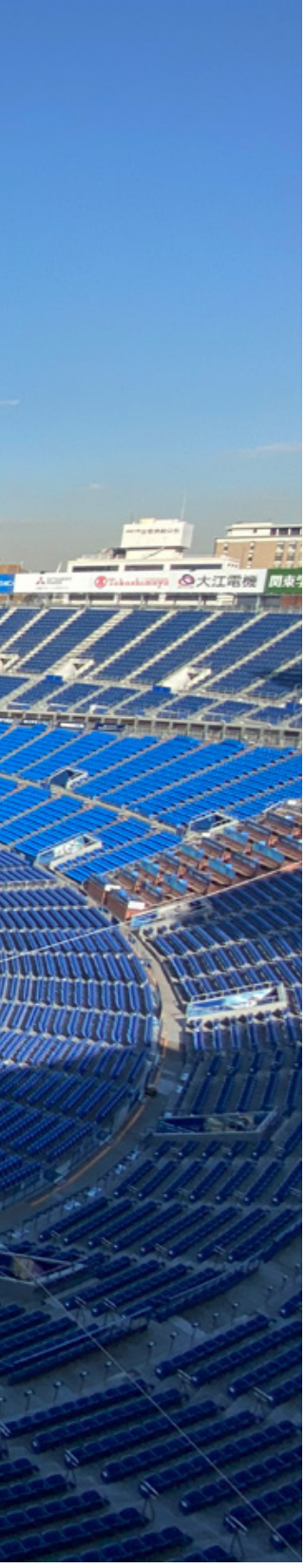

P 6215


P 1108T


SUB 9007-AS


HL 2240


Yokohama



Yokohama Stadium - Yokohama (Japan)

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

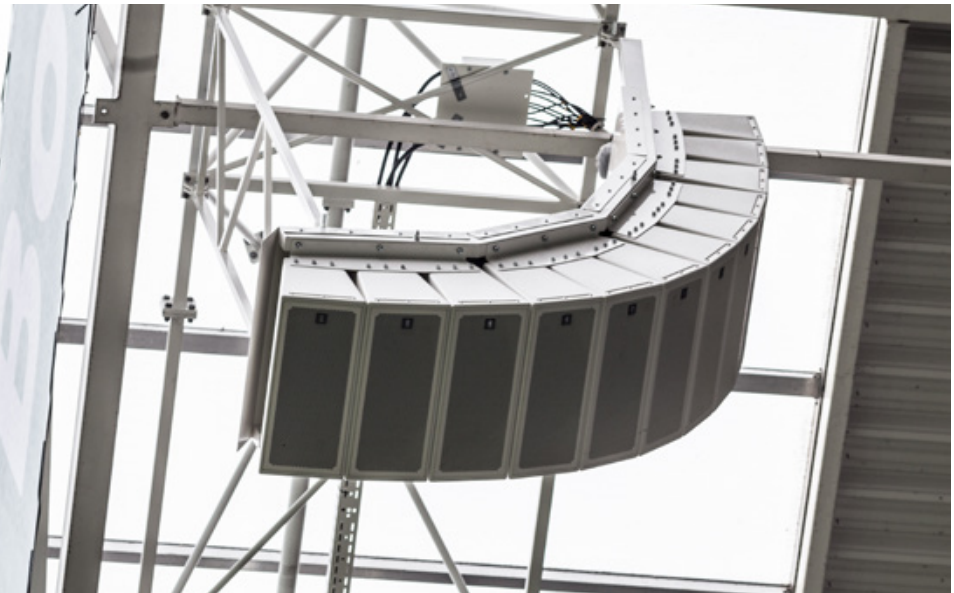
TTL 33 WP

P 4228

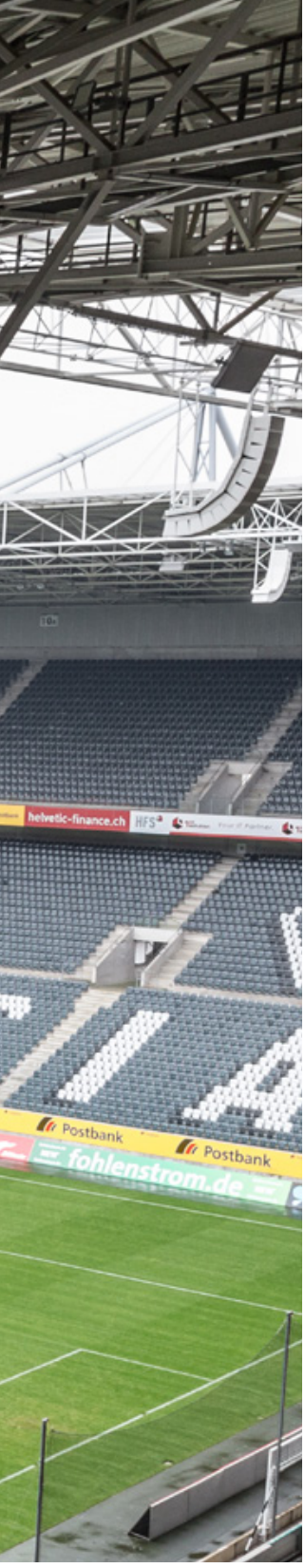
P 2110T

P 3108


en Rassismus
www.borussia.de
www.fanprojekt.de
Postbank
Eine Bank fürs Leben.
BRAX
KYOCERA
Audi
BORUSSIA




BORUSSIA



Borussia Park Stadium (DE)

RCF has recently concluded another notable audio project in one of Europe's main stadiums, Germany's Borussia Park in Mönchengladbach, with a capacity of 59'000 spectators. Despite having been built between 2002 and 2004, until 2015 the BMG was not equipped with a sound system up to the requirements of a modern football stadium, so the project marks an important advancement in the venue's technology.

The new audio system – developed by Graner & Partner consulting company in collaboration with Wärtsilla Funa integrator and RCF – required a considerable amount of adaptations to standard equipment and installation hardware, involving extensive know-how in acoustic solutions for large sports arena.

The final design includes 12 arrays of 12 x HL 20 WP passive speakers – six arrays on the west and east long grandstands, four on the north and south short grandstands, and two on the corners. The HL 20 WP weatherproof passive line array module guarantees high output and dynamics, with a precise coverage of 100°x15° thanks to the especially designed waveguide. The new system at Borussia Park also includes four arrays of 6 x HL 2290-WP horn-loaded two-way speakers, ideal for mid-to-long-throw applications, and four arrays of 2 x HL 2290 WP speakers for the playing area.

Requirements specified in the competitive tender were direct SPL of 101 ± 3 dB on 99% of the audience seats, and a minimum STI of 0.51 ± 0.02 in the fully occupied stadium. RCF technicians report the system as having an average STI of 0.53 and SPL of 107, with uniform distribution on all seats. Mr. Bernd Muckl, Head of Engineering at the Borussia Park, asserted that the results at the stadium marked a brilliant achievement and a significant upgrade in the stadium's technological equipment.

As stated by the technical staff of RCF's German division that was charged with delivering the project, the concern with weather conditions has played a significant role in the choice and configuration of the system. "The installation points are at the end of the roofs, leaving the system directly exposed to all weather conditions. There are no catwalks, so a passive system was preferred for reasons of maintenance simplicity," they report.

In this case concerns with harsh weather and security have not only led to the choice of weatherproof passive line arrays, but also to several customization requirements. In particular, all HL 20-WP and HL 2290 line arrays installed at Borussia Park were constructed from 21 mm plywood, equipped with fixed FRNC weatherproof cable and painted with a fire-resistant self-extinguishing coating. A test of the final equipment was made by the customer together with local authorities.

Products installed

HL 20-WP

HL 2290

Konya Torku Arena (TR)

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, Saridaglar 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


Heineken
PlayStation
UniCredit
UniCredit
MasterCard
Maestro
SONY BRAVIA
Ford
Ford
Enjoy Responsibly

Parken Stadium (DK)

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


WURTH
WURTH
WURTH

National Football Stadium - Belfast (UK)

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.

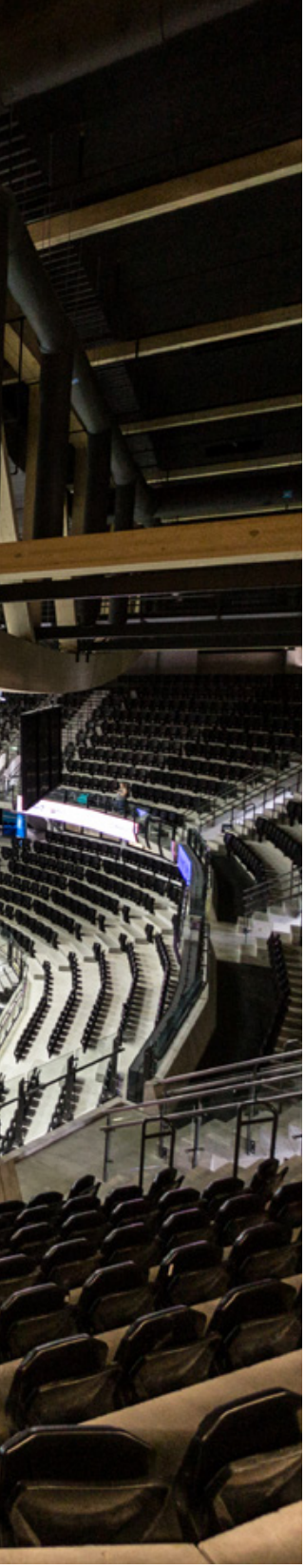
A master control rack is stationed in the South stand, with further 42U satellite racks located in other three, linked via optical fiber for the entertainment PA system, and copper for the emergency mic to conform to EN54 norms. Each rack plays its own emergency announcement independently, at an SPL 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.

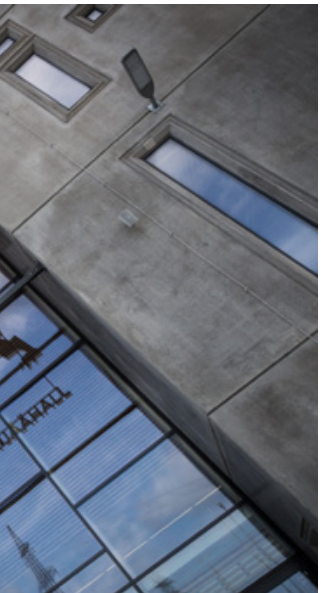
Products installed

P 6215

HD 21EN


TONDIRABAJAAHALL





Tondiraba Ice Arena - Tallinn (EST)

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

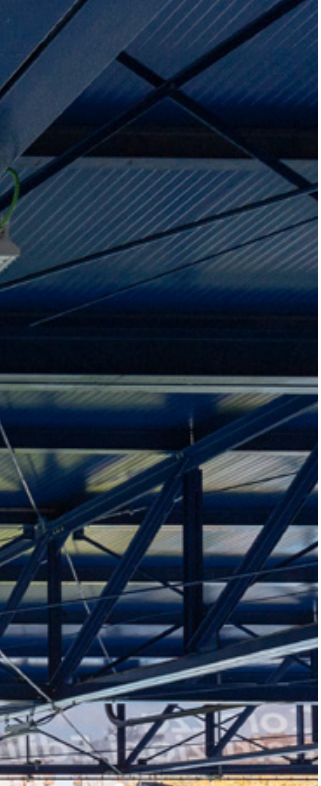
P 8015S

P 5228-L

P 4228


OVEST
12


OVEST
12
RCF



Ferrara Stadium (IT)

Since its inauguration in 1928, Ferrara's Paolo Mazza Stadium has been home to SPAL, the town's professional football club. Last year, the ground celebrated its 90th anniversary. A major refurbishment in 2018 doubled the crowd capacity and modernized the stadium's technical systems. This included a comprehensive overhaul of the audio system, which now fulfills FIFA standards. The new PA system exclusively uses RCF systems and speakers.

The ground's new look is reminiscent of Goodison Park stadium in Liverpool, England, home to Everton FC. Like Goodison Park, the Paolo Mazza Stadium is located in the city's centre. After a building phase lasting three months, the stadium offers capacity for 16,000 fans, double the capacity offered during the 2016/17 season. The refurbishment project included not only the pitch but the PA system, lighting, seating and stands. The West Stand, traditionally used by home fans, was extended and now features a new roof, as does the junction to the main stand. The East Stand was also extended.

All stands and club-level seating are now served by around 40 P 6215 Installed Sound series RCF speakers, driven by, among other equipment, extremely high-power 4-channel QPS 9600 amplifiers. Routing is handled by two DX 1616 matrix audio processors via a DANTE network. The control room houses a Touch7 unit, a 7" touchscreen by Xilica as well as an R44P, a 4x4-I/O Dante unit. The two main stands are each served by 10 P 6215 speakers, with the East and West Stands each using eight units of the same model. Another four P 6215 cover the pitch area. All installed loudspeakers are set up in pairs, with separate control available for each pair.

The amplifier system employs two control units, one for the South and East Stands and the other for the North and West Stands. Each control unit uses a DX 1616 audio processor and three 4-channel QPS 9600 power amplifiers. The two control units are connected via optical fiber cabling. Data transfer is accomplished using two separate VLAN networks: one handles the audio data using the DANTE protocol while the other transfers control data for system management and programming. The optical fiber cables run in a loop around the pitch, providing redundancy for the connection between the two control units. The system is controlled using a Touch7 touchscreen housed in the stadium's control room which is connected to the two optical fiber cables. Audio signals destined for the amplifiers are routed to the DANTE network using the R44P.

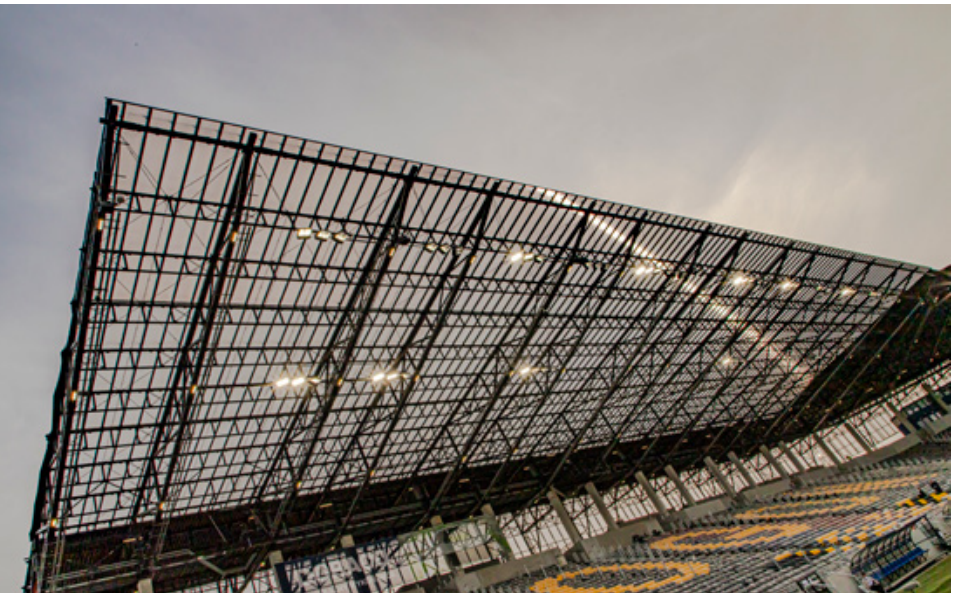
Using the touchscreen, operators can independently raise or lower the volume of any sector covering the stands or pitch. The system also offers a number of Mute functions. These include full, stadium-wide Mute (for security reasons this function is also available via two voltage-free contacts on one of the control units), a number of Mute options for individual stadium sectors as well as muting for each speaker pair. If needed, speaker pairs located near the edge of the pitch can be muted without affecting the speakers serving the rest of the stand.

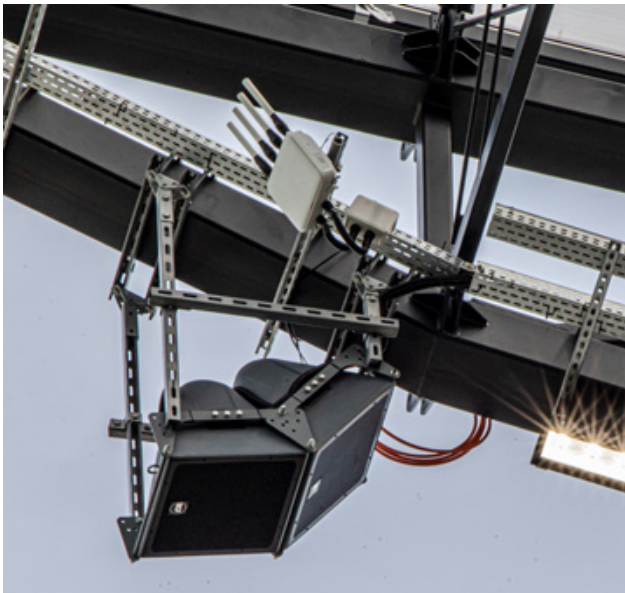
Products installed

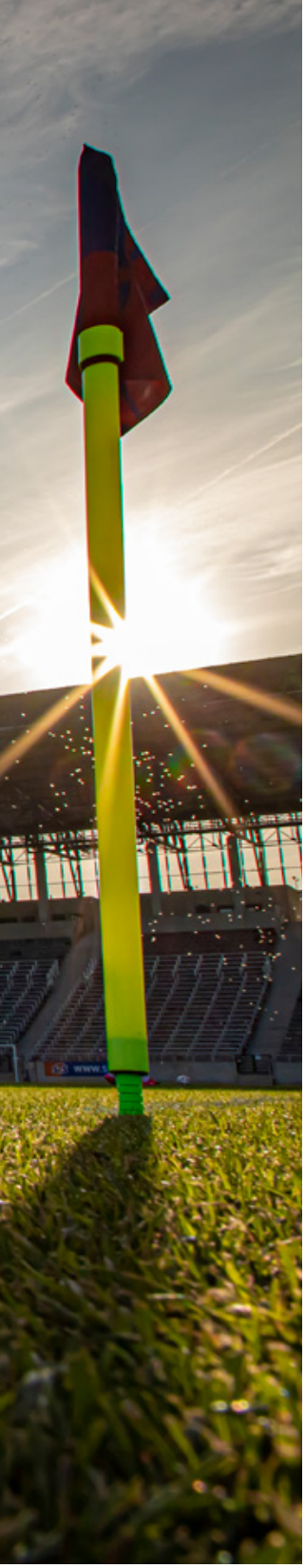
P 6215

QPS 9600

DX 1616







Florian Krygier Municipal Stadium - Szczecin (PL)

The Florian Krygier Municipal Stadium has recently undergone a complete modernization which includes the installation of a new sound system based on RCF P Series speakers.

The Florian Krygier Municipal Stadium located in Szczecin, Poland, is a football stadium with a long history. It was built in 1925 with the name of Florian Krygier, named after a Polish football coach who was an instrumental figure in Pogoń Szczecin's history.

Since the 1950s club management was under MKS Pogoń Szczecin until 1989 when Szczecin City Commune transferred operations to the Municipal Sports, Recreation and Rehabilitation Centre (Polish: Miejski Ośrodek Sportu, Rekreacji i Rehabilitacji - MOSRiR). Until the beginning of 2007, it was the most prominent facility in the Polish Orange Ekstraklasa football league. It is currently used for football matches and is the home stadium of Pogoń Szczecin.

The stadium itself has recently undergone a complete modernization, so only part of the old stadium is still in place. A significant reconstruction started in 2019 with planned completion scheduled for 2022. The investment includes the Training Centre for Childres and Youth (Centrum Szkolenia Dzieci i Młodzieży), remodeling and expanding the stadium, football fields, and associated infrastructure. The new stadium will reach 20,500 seat capacity and 22,000 square meters of covered area. It will transform into a "closed" stadium with four grandstands and roofed.

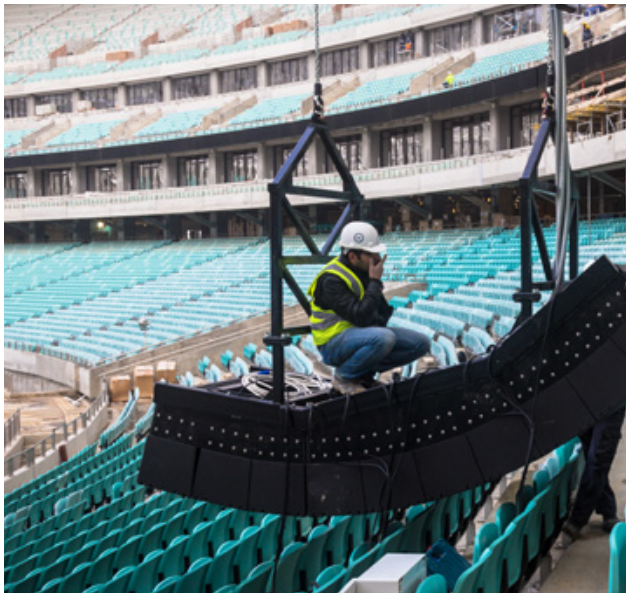
The first phase of modernization of the stadium within the west and south grandstands has been completed recently with a new sound system based on RCF P Series speakers. All P 6215 are suspended to the roof of the stadium coupled in vertical clusters, two speakers per cluster.

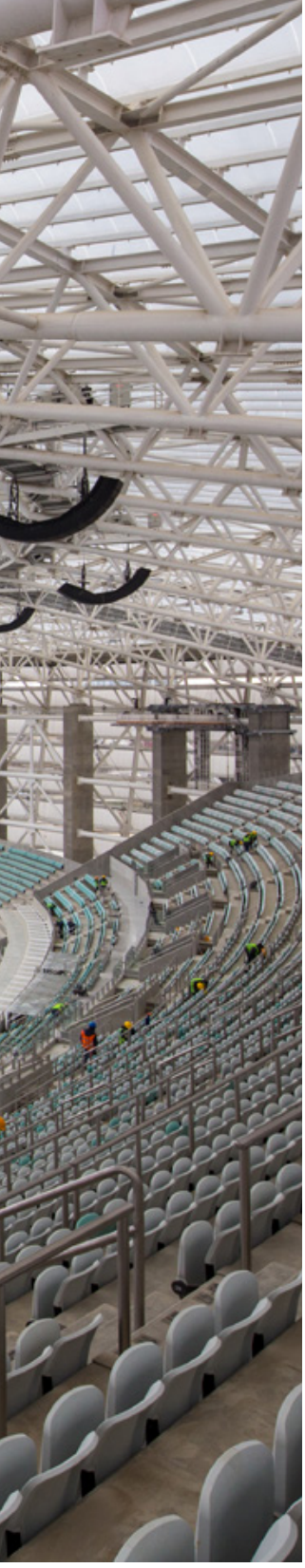
The sound experience provided by the new system confirms an improved change in sound quality. "We are going to hear a qualitative leap during football matches," confirms the stadium presenter /commentator Mr. Adam Wosik, who has taken part in testing the RCF system. "If we will build the new stadium with the quality of the sound system, then it is going to be a Champions League facility!"

The sound system has been delivered and completed by TOMMEX company, official distributor of RCF install products in Poland, in cooperation with the Elektro - BUD Sp. z o.o. company, providing the electrical infrastructure for low voltage wiring of the sound system.

Products installed

P 6215





Baku Olympic Stadium (AZ)

When RCF's project team first arrived in Azerbaijan in November 2014, construction work on the new stadium was already at an advanced stage. With a capacity of 68,000 spectators, and characterized by remarkable architecture, Baku Olympic Stadium was positioned to become one of the landmarks of Azerbaijan's capital city, with a population of 2 million. It was officially inaugurated in March 2015 to host the inaugural European Games in June.

RCF's Engineering Support Group (ESG) and R&D Department had worked together with the local distributor, Asimetrik, during the previous year, in order to develop the best acoustic solution for the venue. After the final approval and a Factory Acceptance Test in April 2014, with the main contractor, subcontractor and local distributor visiting RCF's production facilities in Italy, official installation of the system started with the team's first trip to Baku in November 2014.

"We used as many as 270 customized units of TTL 55-A STADIUM for 1 MW of audio power. This is one of the biggest permanent installations we have undertaken so far," RCF explains. "It was a very stimulating project because our standard TTL 55-A STADIUM active 3-way line arrays had to be adjusted and customized, particularly in respect of their mechanic and electronic system." Thanks to the significant expertise developed with previous experiences, such as Signal Iduna Park in Dortmund and other international stadia, the team rose to the challenge. "We made a few visits to Baku and provided some specific instructions for the set-up. The whole installation process was supervised remotely from our headquarters through RDNet," adds RCF with obvious satisfaction.

TTL 55-A STADIUM modules were chosen due to their familiar vocal clarity and high SPL of more than 120 dB. These were two of the contractor's main requirements for the system, because part of the audience is seated as far as 63 metres from the speakers. The final configuration is composed of 20 clusters, delivering excellent sound to all the tribunes (10 clusters containing 17 cabinets and 10 clusters with 10 cabinets, for a total of 270 cabinets).

An active line array was the right choice for this project because it allows very simple and discreet wiring, with only two signal cables – one for the audio signal and the other for the digital control system. Despite its imposing size, the system's cabling is clean and easy to manage.

The overall acoustical design of the Stadium includes 64 units of P 2110T (10" coaxial 2-way speakers) for the under balcony area and 12 units of H 1315 WP (three-way horn-loaded bi-amped mid throw cabinets) for the playing area.

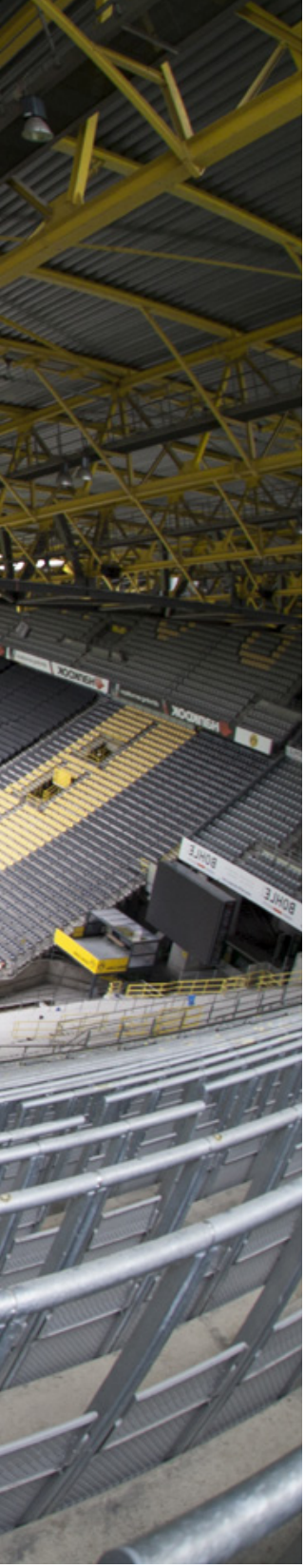
The use of standard fly-bars was excluded from the beginning and a special frame was fabricated instead. The aim was to create line arrays flown parallel to the ground, ensuring perfect sound coverage to the whole audience when the cabinets are placed above the tribune.

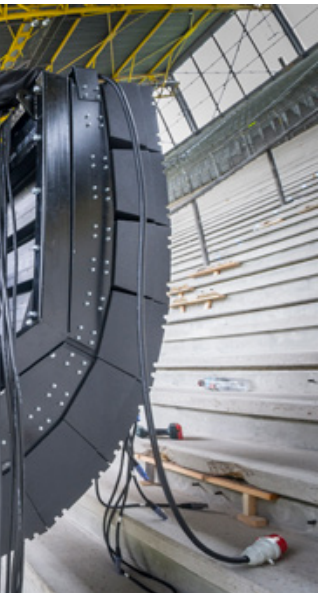
Products installed

P 2110T

TTL 55-A Stadium

H 1315 WP





Borussia Dortmund (DE)

The Signal Iduna Park stadium is considered one of the biggest and most comfortable stadiums in Europe with an international capacity of 65,000 people (seating only) that rise to over 80,000 for league matches (seating and standing). The last architectural renovation was in 2003 that brought the stadium to the actual look.

Nowadays, considering the increasing standards for the entertainment and for the emergency announcements required during the events, the ownership decided to upgrade the existing sound reinforcement system for the North, South, East and West stands. The existing system was built up during the years, by adding speakers following the expansion of the building.

The aim of this remake was to reach the state of the art in terms of integrated PA/VA, by ensuring not only intelligible voice-alarm announcements but also high quality entertainment music programs, including emotional audio effects able to transform a soccer match into a show experience.

Besides the acoustical requirements, that were the driving force for this project, there were a lot of technical aspects as well to take into consideration, such as the integration of the Fire Alarm System and the complete monitoring of the speakers and amplifiers according to the EN and DIN regulations.

All the activities have been carried out by RCF headquarters and RCF Germany subsidiary engineers, always in synergy with the contractor engineering and consulting company Michael Creydt, during a period of eight months.

RCF TTL 33-A WP STADIUM was suggested because of its ability to fulfill all the acoustical requirements. It was accepted as a possible solution, but some customization had to be done in order to allow safe rigging and hanging, also considering the unusual array shape. Furthermore a special weatherproof version was conceived to ensure durability in a permanent outdoor installation and withstand all seasons under the roof.

The integration of the 14 arrays with the voice alarm system required RCF's Engineering Support Group to report the general array fault-monitoring to the VA system and to monitor the presence of a tone signal generated by the VA system itself on each array module, in order to verify the whole critical audio path from the VA management system to the speakers. Then, for increased system reliability, the 14 modules of each array were split in two interleaved connection lines in order to get a connection diversity approach.

Products installed

TTL 33-A WP Stadium

Copenaghen Stadium - (DK)

Products installed

P 4228

H 1315 WP

H 6045EN

San Marino Stadium (SM)

Products installed

P 3115T

P 6215

HS 2200

Daejeon World Cup Stadium (KR)

Products installed


HL 2290


HL 2260


HL 2240


HL 2200


P 3108

Ilie Oana Stadium (RO)

Products installed


P 6215


P 4228


DX 4008

Kingspan Stadium - Belfast (UK)

Products installed


P 3115T


PL 70EN


DU 50EN

Stadium Generała Kazimierz Sosnkowski - Warsaw (PL)

Products installed


P 3115T


P 3108


P 1108T


IPS 3700

Audi Arena Györ (HU)

Products installed


C 5212-96


IPS 3700


DX 4008


MQ 80P

Hockeycomplex ‘Oosterplas’ - Hertogenbosch (NL)

Products installed


P 3115T

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.

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-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

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.

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, hypervented, 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.

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

HL SERIES

PASSIVE 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.

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 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

HS 2200

- 136 dB SPL Max
- 900 W RMS Power
- 3600 W Peak Power
- 30 ÷ 200 Hz Freq. Range
- 18" 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

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.

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.

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

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 2260

- 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

P SERIES

PASSIVE 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

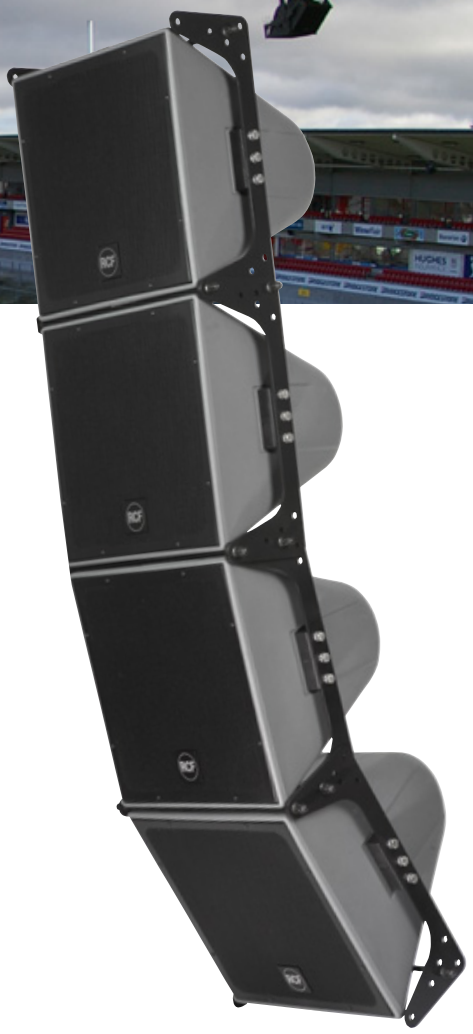
- 129 dB SPL Max
- 300 W RMS Power
- 1200 W Peak Power
- Directivity Index Q: 13
- 75 ÷ 20000 Hz Freq. Range
- 90° x 60° coverage angle
- 1.5” C. Driver
- 15” Coaxial Woofer
- IP 55 Protection Grade

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 PASSIVE SPEAKER

The Compact Series is a powerful and highly advanced range of passive near-field two-way direct radiating loudspeaker systems based on CMD - Coverage Matched Design.

The Compact Series is a powerful and highly advanced range of passive near-field two-way direct radiating loudspeaker systems based on CMD - Coverage Matched Design technology, designed to guarantee a smooth transition between high frequency horns and low frequency transducers directivity. Featuring several mounting points and handles it simplifies permanent install applications.

The Compact Series is a full range extremely versatile wide-dispersion, two-way loudspeaker system offering substantial power and efficiency for several professional applications that include main sound systems for permanent installations, plus portable systems and supplementary fill for larger systems.

EASY RIGGING

The cabinet is made of Baltic birch (heavy duty painted) and allow different installation options, as it is equipped with top and bottom 'Multiplates' for either wall or suspended mounting with chains.

Installation points are available on its rear panel as well. The steel front grille is protected with a double layer polyurethane fabric. The front RCF logo is easily rotatable.

C 5215 SERIES

- 500 W RMS Power
- 2000 W Peak Power
- 48 ÷ 20000 Hz Freq. Range
- 2.5" C. Driver
- 15" Woofer
- Crossover 1.2 kHz

LOW FREQUENCY

The low-frequency transducer is an 15" RCF PRECISION woofer with a 3" voice coil.

C 5215-99

- 133 dB SPL Max
- Direc. Index Q: 11
- 90° x 90° CMD

C 5215-96

- 133 dB SPL Max
- Direc. Index Q: 12
- 90° x 60° CMD

C 5215-94

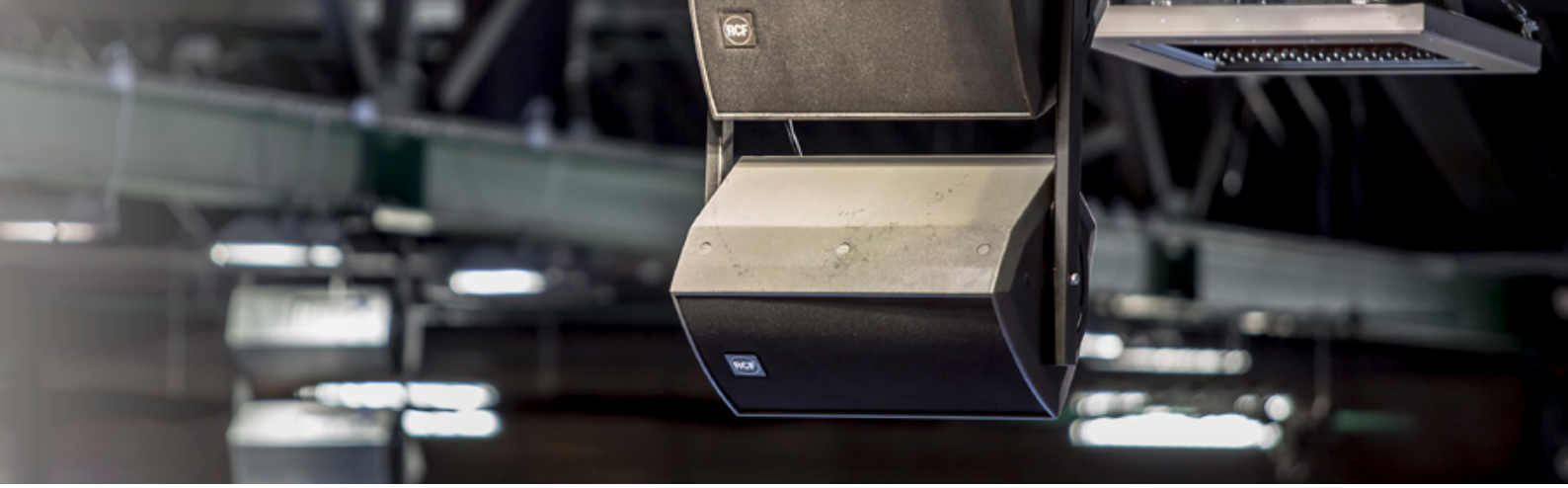
- 133 dB SPL Max
- Direc. Index Q: 14
- 90° x 40° CMD

C 5215-66

- 134 dB SPL Max
- Direc. Index Q: 20
- 60° x 60° CMD

C 5215-64

- 134 dB SPL Max
- Direc. Index Q: 20
- 60° x 40° CMD



LICC - Low Impedance Compensated Crossover

The system includes a high-level crossover network that features lower than conventional induction values. Its benefits are delay reduction, reduced phase shift and superior transient response for improved audio performance and stability.

CMD - Coverage Matching Design

RCF exclusive CMD technology helps guarantee an optimal transition between the high frequency horn polar pattern and the low frequency woofer directivity. The horn can be rotated, allowing to install the loudspeaker either vertically or horizontally.

HIGH FREQUENCY

The hi-frequency transducer is a 1.4" RCF PRECISION compression driver with a 2.5" voice coil for smooth, wide dispersion.

C 5212 SERIES

- 500 W RMS Power
- 2000 W Peak Power
- 54 ÷ 20000 Hz Freq. Range
- 2.5" C. Driver
- 12" Woofer
- Crossover 1.2 kHz

LOW FREQUENCY

The low-frequency transducer is an 12" RCF PRECISION woofer with a 3" voice coil.

C 5212-99

- 132 dB SPL Max
- Direc. Index Q: 13
- 90° x 90° CMD

C 5212-96

- 132 dB SPL Max
- Direc. Index Q: 13
- 90° x 60° CMD

C 5212-94

- 132 dB SPL Max
- Direc. Index Q: 13
- 90° x 40° CMD

C 5212-66

- 133 dB SPL Max
- Direc. Index Q: 16
- 60° x 60° CMD

C 5212-64

- 133 dB SPL Max
- Direc. Index Q: 16
- 60° x 40° CMD

TT+ STADIUM PRODUCTS

THREE-WAY LINEARRAY SYSTEM

The flagship RCF touring solution for first class sport events, speech reinforcement and high-end fixed installations.

The TT+ install range consists of true active and passive speaker models for vertical deployment with a top of the class sound performance and maximum scalability. TT+ Series are RCF's state-of-the-art loudspeakers, designed for large-scale applications. These excellent audio systems are adapted for outdoor environments, and sports arenas in particular, with the name of TT+ Stadium Series.

However, each project we develop is unique. TT+ Stadium active and passive models are only the starting point for creating tailor-made solutions for demanding environments. RCF's Engineering Support Group and R&D Department contribute to building a sound culture in continuous evolution, with more than 70 years of experience and a widely recognized know-how.

ADVANCED ELECTRONICS

The high-powered TT+ Class-D amplifiers, tailored for each transducer, deploy pristine sound with efficient heat dissipation at the lowest possible distortion, along with low power consumption.
High-end AD/DA conversion up to 96 kHz - 32-bit floating-point, and onboard DSP for the best sound quality. Thanks to the proprietary RDNet networked management and control, every TT+ speaker provides in-depth remote monitoring through multiple sensors. The system engineer has immediate feedback of transducer status, speaker module inclination, fan speed, temperature, VU meters, limiters and much more.

TTL 55-A WP STADIUM

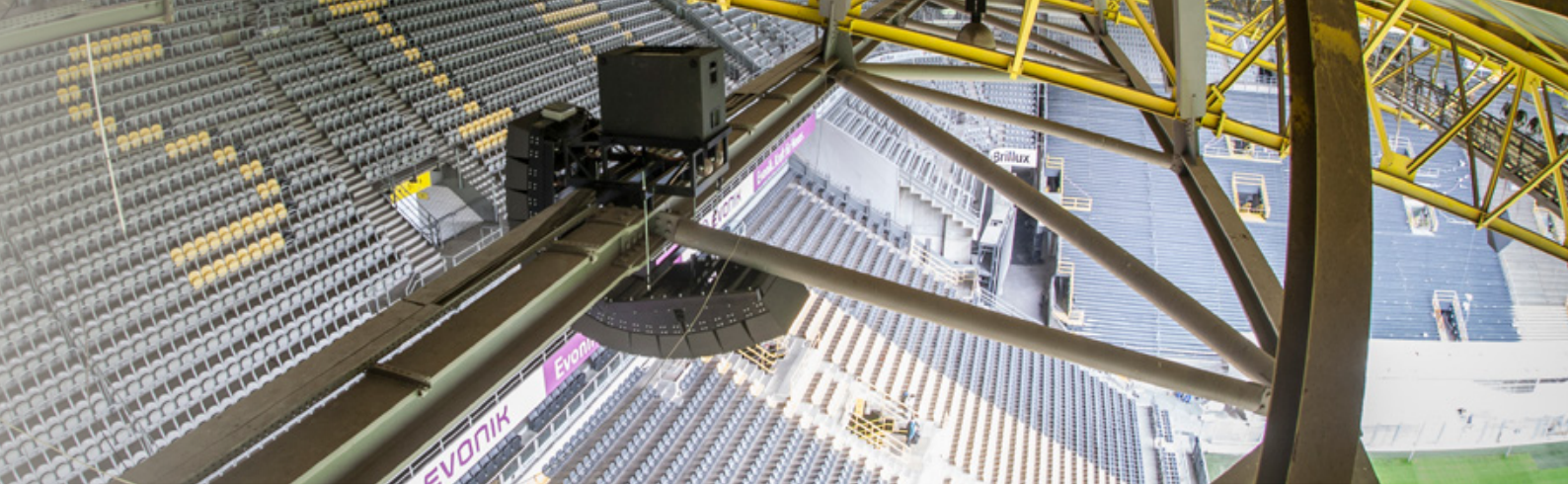
- 143 dB SPL Max
- 3500 W RMS Power
- 7000 W Peak Power
- 320 - 1300 Hz Crossover Freq.
- 90° x 7° coverage angle
- 3 X 2.5" neo C.Driver
- 10" neo Midrange
- 2 x 12" neo Woofer
- RDNet ON BOARD

TTL 33-A II WP STADIUM

- 135 dB SPL Max
- 1250 W RMS Power
- 2500 W Peak Power
- 400 - 1800 Hz Crossover Freq.
- 100° x 15° coverage angle
- 3 X 1.5" neo C.Driver
- 8" neo Midrange
- 2 x 8" neo Woofer
- RDNet ON BOARD

TTL 33 WP

- 133 dB SPL Max
- 600 W RMS Power
- 2400 W Peak Power
- 500 Hz Crossover Freq.
- 100° x 15° coverage angle
- 1.4" C.Driver
- 8" Midrange
- 2 x 8" Woofer
- IP 67 Connectors



PRECISION TRANSDUCERS

We design our transducers to maximize the purity of sound, combining the absence of distortion and the ability to withstand long term high-power levels. RCF develops advanced transducer technology internally, being instrumental in technological inventions such as carbon fiber cone molding, double silicon spiders, inside/outside voice coil windings to edge wound voice coil manufacturing, and pure titanium diaphragm forming. Our latest developments have resulted in designing state of the art neodymium magnetic circuits, radically new voice coil ventilation systems, and ground breaking direct drive voice coil assemblies.

ROBUST AND DURABLE

The high-quality Baltic birch plywood cabinet features every layer glued by a water-resistant adhesive already before the painting process. The weatherproof polyurea paint forms a thick full coating of the cabinet, making it highly resistant to scratches and bumps. All the mechanical rigging is built-in high strength structural Swedish steel. After a quenching and tempering process, this special steel guarantees a yielding strength almost four times higher compared to commercial-grade steel and maintains the mechanical properties down to –40° C. Rigging has a high safety factor, with all the weight under control. TT cabinets feature die-cast aluminum handles with ergonomic rubber hand-grip.

Grille with double painting, foam and rain slim cover

Polyurea painting inside and outside

IP 67 connectors

Inox steel screws & mechanics with protective film

NETWORKED SOUND SYSTEM MANAGER

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 the RCF management software suite for Sound System Engineers. A robust management network for RCF devices, a line-array design tool, a monitoring platform, and a complete audio analyzer in one package. RDNet provides intuitive management of every connected device/ object on the network. A network user can control all DSP settings inside any compatible device, including advanced subwoofer configurations, from a single object to a group of objects.

TOOLBOX FOR SOUND SYSTEM DESIGN

RDNet is more than just a speaker management software - you can control parameters and internal routings of multiple RCF devices, such as digital matrixes or amplifiers, both in live or installed applications. Featuring an advanced measurement suite and the ability to save/ recall presets on the cloud, RDNet is the all-in-one solution for both touring and installed sound systems.

STRAIGHT-FORWARD SOUND DESIGN

Shape Designer prediction software enables a two-dimensional acoustic simulation of the array configuration and suggest LF Corrections based on the cluster size. The system curvature angles and sound projection data are computed with maximum sound pressure levels for the given design. The software provides system curvature and weight, system rigging points, and cabinet angles.

MONITOR AND MANAGE

The RDNet Scan function sequentially scans all audio devices, recognizes, assigns digital address labels, and adds devices as objects in 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. RDNet takes direct control on the internal EQ and High-Pass filter on each cabinet.

RDNet measures

TAKE ALL APPROPRIATE MEASURES

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.

NETWORKED SPEAKER CONTROL

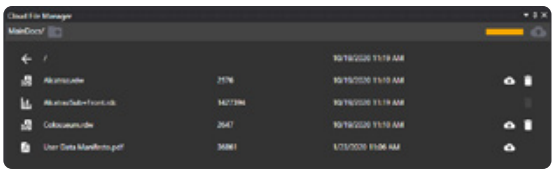
When the RCF sound system is connected via CONTROL 2 or CONTROL 8 interfaces, the system engineer has complete control of time delay and equalization of all speakers, individually or grouped. With its built-in communication board and DSP, each device is an active part of the system, able to store presets, receive commands, and continuously send status information of single components or transducers. Comprehensive monitoring is standard in RDNet: VU metering, clip indicator, limiter intervention, device inclination, communication issues, and much more.

EASY SUBWOOFER CONFIGURATION

Guided subwoofer configurations help the engineer to set up subwoofer Cardioids, Arcs, or EndFire configurations in one pass, while the Bass Shaper fine-tunes the desired timbre on low frequencies. With three slides and a few steps, it's easy to correct low-end behavior, while maintaining tonal balance across the entire system.

GET THE MOST 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.



TRAVEL LIGHT ON CLOUDS

You don't need your personal computer anymore. Simply connect any computer to the Internet, sign-in to your account, and you are ready to go with a complete set of audio tools for your RCF audio system. You can also save and recall your projects and measurements.

PROFESSIONAL AMPLIFIERS

SOLUTIONS FOR ALL PASSIVE LOUDSPEAKERS

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

RCF offers an entire line of professional high-current and extended dynamic power amplifiers, suitable for stadium and sports arena installations and compatible with all RCF Stadium passive loudspeakers. High reliability, fast response, low distortion, and reliability are guaranteed by the use of the latest power amplification technologies.

QPS 9600

- Fast response and low distortion
- Easy to configure in stereo / mono / bridge modes
- XLR input connectors
- SPEAKON NL4 output connectors
- Voltage clip switchable limiters
- Minimum load impedance (stereo / mono): 2 Ohm
- Extensive protective circuits ensure high reliability and operating safety
- Front panel signal / clippings / protection/ temperature LEDs indicators

4 X 2400 HIGH POWER PRO AMPLIFIER

IPS SERIES

- 2 unit 19" rack, easy transportation
- 2 X 1500W Power Pro Amplifier (IPS 3700)
- 2 X 1100W Power Pro Amplifier (IPS 2700)
- 2 X 450W Power Pro Amplifier (IPS 1700)
- 2 X 300W Power Pro Amplifier (IPS 700)
- Fast response and low distortion
- Easy to configure in stereo / mono / bridge modes
- Front panel signal / clip / protect LED indicators
- XLR input connectors
- Extensive protective circuits ensure high reliability and operating safety
- SPEAKON NL4 output connectors

CLASS H PROFESSIONAL POWER AMPLIFIER

Product range also includes digital sound processors with multiple inputs and outputs and Dante AoIP connectivity. All DSP are capable of complex routing to accommodate each project need and incorporates a GUI that is designed to reduce DSP design time.

DX 1616

- 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
- 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 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.

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.

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.

HD 6045EN

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.

MH 61EN

HORN SPEAKER FOR INDOOR AND OUTDOOR APPLICATIONS

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.

CS 6520EN / CS 6940EN

COLUMN SPEAKERS FOR INDOOR AND OUTDOOR APPLICATIONS

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.

BD 5EN / DP 5EN / BS 5EN

SOUND PROJECTORS FOR INDOOR AND OUTDOOR APPLICATIONS

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.

PL 50EN / PL 82EN

CEILING SPEAKERS FOR INDOOR APPLICATIONS

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.

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
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
	Füsen	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
	Trier	Mosel Stadium
	Wiehl	Wiehler Wasser Welt
	Wilhelmshaven	Jadestadion
HUNGARY	Gyor	Aqua Sport Center
	Györ	Audi Arena Györ
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
	Kėdainiai	Kedainiai 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	Szczecin	Florian Krygier Municipal Stadium
	Warsaw	Stadium Generała Kazimierz Sosnkowski

QATAR	Doha	Al Gharafa Sports Complex
ROMANIA	Ploiesti	Ilie Oana Stadium
SAN MARINO	San Marino	Sport Complex of San Marino
SOUTH KOREA	Paju	Paju Yongsan Camp
	Suwon	ROTC Indoor Millitary 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
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 Comples
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	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

PART NUMBERS

HVL SERIES

PRODUCT	Colour	-	220-240V	115V
HVL 15-L	Black	13000747	-	-
HVL 15-L	White	13000640	-	-
HVL 15-L1	Black	13000749	-	-
HVL 15-L1	White	13000701	-	-
HVL 15-P	Black	13000746	-	-
HVL 15-P	White	13000565	-	-
HVL 15-P1	Black	13000748	-	-
HVL 15-P1	White	13000700	-	-

HL SERIES

PRODUCT	Colour	-	220-240V	115V
HL 20-WP	Black	13000643	-	-
HL 20-WP	White	13000473	-	-
H 1315 WP	Black	13000266	-	-
HS 2200	Black	13000406	-	-
HL 2290	Black	13000405	-	-
HL 2260	Black	13000407	-	-
HL 2240	Black	13000404	-	-

P SERIES

PRODUCT	Colour	-	220-240V	115V
P 6215	Black	13000131	-	-
P 6215 W	White	13100083	-	-
P 3115T	Black	13000135	-	-
P 3115T W	White	13100082	-	-
P 2110T	Black	13000125	-	-
P 8015S	Black	13000230	-	-
P 5228-L	Black	13000202	-	-
P 4228	Black	13000199	-	-
P 4228 W	White	13100081	-	-
P 3108	Black	13000198	-	-
P 1108T	Black	13000203	-	-
P 1108T W	White	13100084	-	-

COMPACT SERIES

PRODUCT	Colour	-	220-240V	115V
C 5215-99	Black	13000313	-	-
C 5215-96	Black	13000311	-	-
C 5215-94	Black	13000309	-	-
C 5215-66	Black	13000312	-	-
C 5215-64	Black	13000310	-	-
C 5212-99	Black	13000308	-	-
C 5212-96	Black	13000306	-	-
C 5212-94	Black	13000304	-	-
C 5212-66	Black	13000307	-	-
C 5212-64	Black	13000305	-	-

TTL WP

PRODUCT	Colour	-	220-240V	115V
TTL 55-A WP STADIUM	Black	-	13000424	-
TTL 33-A II WP STADIUM	Black	-	13000402	-
TTL 33 WP	Black	13000309	-	-

AMPLIFIERS

PRODUCT	Colour	-	230V	115V
QPS 9600	Black	-	12135102	12135103
IPS 3700	Black	-	12135093	12135092
IPS 2700	Black	-	12135091	12135090
IPS 1700	Black	-	12135089	12135088
IPS 700	Black	-	12135087	12135086
DX 1616	Black	12399033	-	-
DX 4008	Black	12135033	-	-

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Note to specifications: audio power data refers to peak power

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