

LR24 pro-ribbon line-array

advanced technology › evolutionary audio solutions®
alconsaudio.com

Philharmonisches
Stadtorchester
Hamburg

Hambu

ICA

Phil

Exceeding client's expectations requires more preparation and know-how from the audio-visual supplier than ever before.

Quality and Flexibility are the two main ingredients for long term success.

What You
Mix Is What
You Get

LR24 Evolutionary sound system

- Ultra-robust multiple-patented pro-ribbon transducer technology
- Intuitive 1:1 linear response with unparalleled definition and dynamics
- Very precise horizontal and vertical projection control
- Fully integrated solution with processing & amplification, rigging & transportation
- Factory-direct application and dry-hire support
- Future-proof for excellent return on investment

The LR24 is a mid-size line-array sound system, designed to enable a 1:1 non-compressed reproduction of the original sound source at any sound pressure level; Due to the completely neutral response of the system, it can be used for any application and source possible, from speech, to classical music, jazz, all the way to pop and hard-rock performances.

The system is characterized by a fully predictable, linear response from the lowest to the highest SPL's, with a completely flat frequency response up to 20kHz., giving room for full artistic "sound sculpting", without having to work around or against the system.

What You Mix Is What You Get!

The complete LR24 system contains no less than 6 global patents and patent-applications.



30+
Years of
Pro-ribbon
technology

The power behind the glory

Conveying emotions through the pro-ribbon transducer

The heart of the LR24 system is the purpose-designed RBN1202rs 12" pro-ribbon transducer. This technology combines a very high dynamic range with an ultra-low distortion. The all-natural cylindrical wavefront and the patented horizontal projection bring a unique pattern control in both the vertical as well as the horizontal plane, up to the highest frequencies without any complex distortion-inducing horn constructions.

The consistent horizontal dispersion extends the imaging sweet-spot to a larger audience; The ultra-coherent vertical dispersion enables a perfect inter-cabinet coupling for ultimate HF throw and wind stability.

The ear-catching intelligibility and remarkable dynamic headroom reserve is due to the RBN1202rs's enormous power handling of 2500W and RMS-to-peak power handling ratio of 1:15, from 1 kHz to 20 kHz.

Literally the center-piece of the LR24; the RBN1202rs.

The R&D team of Alcons Audio, led by Philip "Dr. Phil" de Haan, has a 30+ year background in the research and development of pro-ribbon transducer technology; This has resulted in numerous patents and pending-patents, through which Alcons Audio can be seen as leader in this technology.



12" tall RBN1202rs
pro-ribbon transducer

The unique Alcons pro-ribbon mid and high frequency transducers reproduce the original sound without adding any coloration or distortion; The multiple-patented technology has some significant advantages over traditional transducer technology.

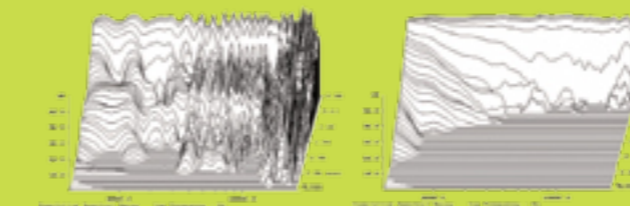
Highest dynamics, lowest distortion

The power behind the glory

Real-world advantages of pro-ribbon technology

HiFi sound at concert sound pressure levels

The RBN pro-ribbon drivers have up to 90% less distortion than any conventional mid/high transducer (@ same SPL), due to the light weight diaphragm and the lack of a compression chamber.



Perfect speech-intelligibility

The fast transient response and the lack of a compression “threshold” brings a perfect intelligibility and identical tonal balance, from the lowest all the way up to the highest SPLs.

No listening fatigue

The non-occurrence of listening fatigue, even after prolonged listening hours, is another benefit of the superb transient response and the lack of “time-smear” (common in other, traditional HF transducers).

“Unlimited” headroom

The unique RMS-to-peak power ratio of 1:15 (vs. 1:2 of traditional technology) completely facilitates the dynamic range of live-sound and high-res digital audio; This results in a virtually infinite headroom.

Superb imaging

The RBN1202 pro-ribbon driver features Alcons’ patented “Real-90” dispersion in the non-coupling plane. The resulting very wide sweet-spot offers superb depth and width up to and beyond 20kHz, for a larger audience area.



Absolute maximum ‘gain-before-feedback’

The light weight of the moving-mass offers an unprecedented fast transient response. In combination with the flat frequency response, this enables an absolute maximum “gain-before-feedback”.

Ultimate reliability

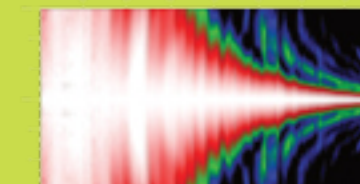
In practice, the “fragile-presumed” pro-ribbon driver proves to be much more reliable than a compression driver, as a result from the light weight moving mass and high peak power handling; No break-up occurs, even at the highest frequencies.

Fully scalable experience

Alcons’ pro-ribbon technology brings HiFi at concert SPLs with identical voicing in any application, for any size audience; From the smallest studio to even the largest stadium concert.

Unmatched throw and wind stability

The “all natural”, fully coherent wavefront in the vertical plane, significantly eliminates destructive interferences, resulting in an unmatched throw-efficiency and wind stability.



LR24 'under the hood'



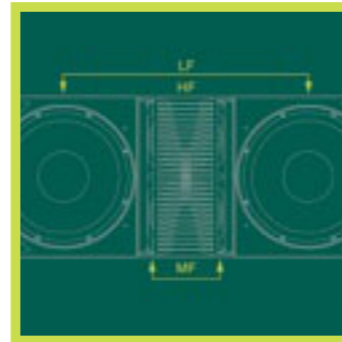
Patented 12" pro-ribbon Neo HF driver with 12" voice-coil and 2500W peak power handling.



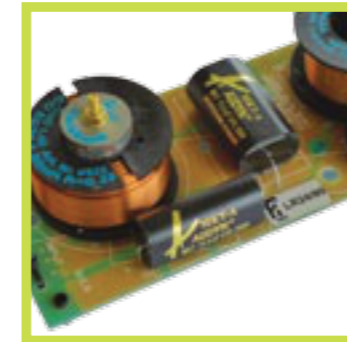
Double 6.5" high efficiency Neo MF drivers, coaxially mounted behind the pro-ribbon HF.



Double 12" Neo LF drivers with dual voice-coils, extended excursion and ultra-low distortion.



Acoustically and electronically symmetrical component configuration.



Bi-amped for simpler infrastructure and economical powering while guaranteeing maximum output.



SIS™ pre-wiring ensures dynamic cable compensation between LR24 and amplifier/controller.



Patent-pending flying system facilitates both compressed and non compressed suspension.



Easy-to-operate transportation and rigging system, WLL of 24 cabinets under 10:1 safety.

LR24 system and peripherals

An integrated system approach, not just assembled parts

LR24

Line-array module



LR24 is a 3-way, bi-amped mid-sized line-array module. It contains the RBN1202rsr pro-ribbon transducer for mid and high frequencies, double 6.5" for the mids and dual 12" for the low/mid frequencies. The system is available with 90-degree or 120-degree horizontal dispersion.

PRRGL24

Transport options



The LR24 is transported with 4 units on the PRRGL24 pre-rig dolly frame, facilitating curved or straight stacks. The dolly frame also enables a ground-stack configuration; With the optional detachable legs the tilt-angle can be adjusted. Many more transport options / flightcases are available.

The LR24 is part of a complete, application-configurable package; a synergetic toolbox of line-array modules, different stacked or flown subwoofer principles, dedicated power and processing platform with ALControl™ remote-control, power-, signal- and transport logistics and high-resolution ARC™ 3D-simulation software.

BC543

Cardioid subwoofer



The BC543 self-contained cardioid subwoofer, with 3x 18" very high-output carbon-cone woofers, offers selectable cardioid low-frequency pattern control and excellent rear rejection (up to 42dB), in combination with the dedicated drive processing in the Sentinel.

LR28B

Flyable subwoofer



The LR28B flyable subwoofer features two new generation, ultra-low distortion 18" woofers. It can be used as single subwoofer or in multiples; In end-fire or cardioid array configurations; All (!) functionality is possible in stacked or flown configurations bringing ultimate deployment versatility.

Sentinel 10

Amplified loudspeaker controller



The Sentinel is the "engine" for the LR24 system; A 4-in/4-out dedicated DSP drive processor, with 192kHz capable AES3 inputs, touch screen and multi-color encoder control and 4 audiophile amplifier stages totaling more than 10kW of output power. Signal Integrity Sensing™ dynamic cable-length compensation, auto-redundant power supplies, modular amp/SMPS design.

AST3

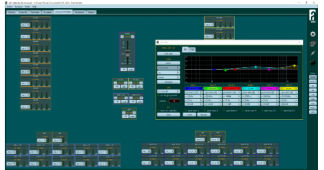
Touring rack



The AST3 (Armored Sentinel Transporter) flyable touring rack contains everything required to drive the LR24 system to its fullest capacities. It contains three Sentinel10 amplified loudspeaker controllers, together with the 1HE input/network signal distribution panel (XLR, EtherCon), the 2HE output signal distribution panel (CaCom, NL8) and a three-phase power distro unit.

ALControl™

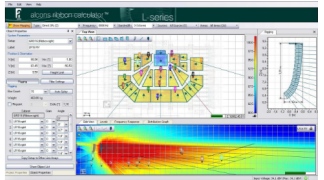
Remote-control software



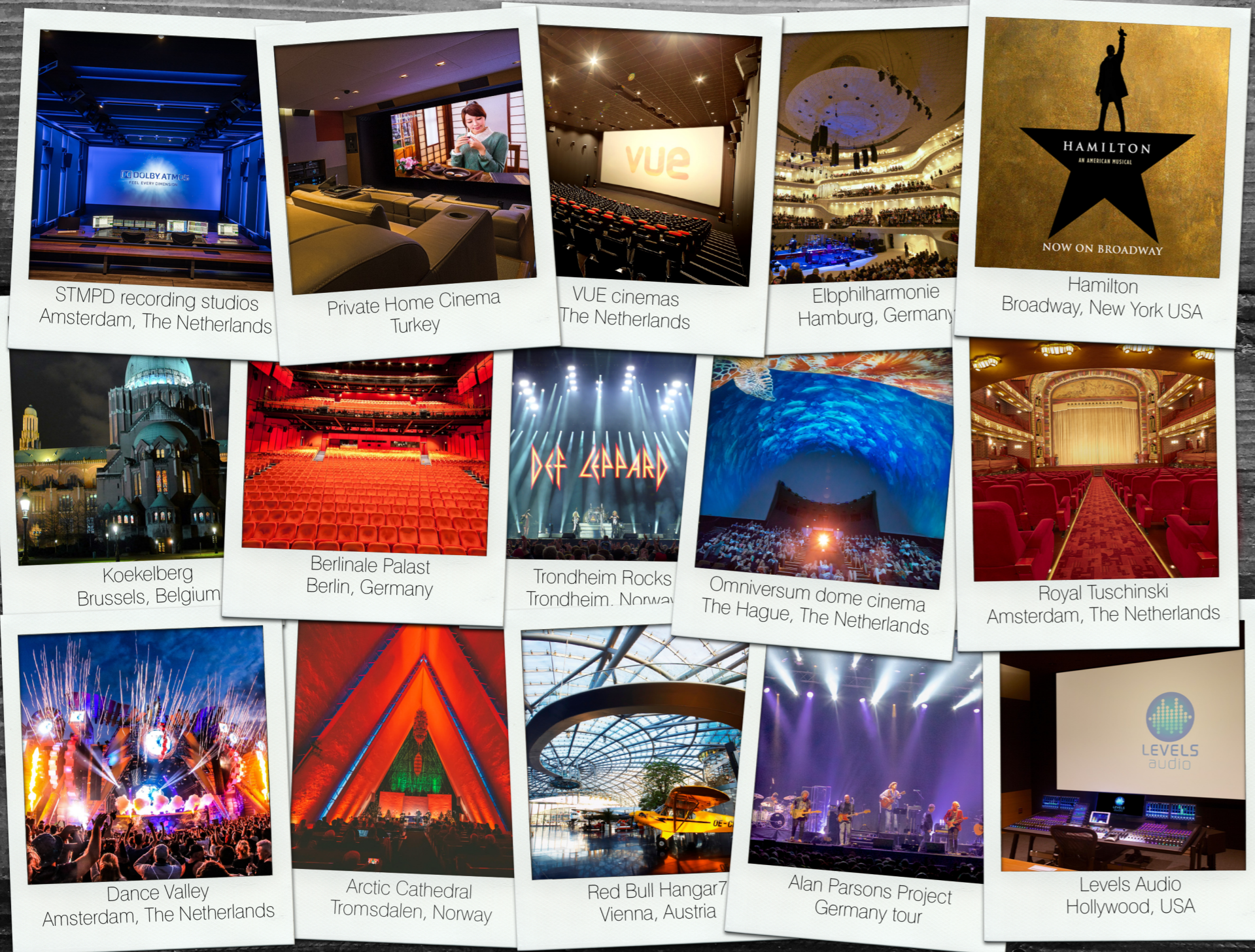
ALControl™ is Alcons' proprietary ALC software program, to control and monitor individual or multiples of Sentinel amplified loudspeaker controllers, that can be accessed from anywhere within a network. Features include off-line, pre-production configuration, auto-detect, extensive monitoring and control options and auto-update.

ARC™

Simulation software



ARC™ (Alcons Ribbon Calculator) is the GLL-based simulation software for the Alcons array systems. Based on actual system measurement output data, the high measurement resolution (up to 1-degree accuracy) offers horizontal + vertical modelling, turning the LR24 into a true precision tool.



Alcons Audio

Experience of the original sound source, as it was intended

Alcons Audio is one of Europe's leading developers and manufacturers of professional sound systems.

Ever since its founding in 2002, the company has been striving for the best possible sound reproduction of any type of source material and in any size of application. Or as Alcons Audio likes to put it: "create a 1:1 reproduction of the original sound source, as the creator intended it to sound. Anywhere."

As such, Alcons Audio solutions feel equally at home in a 2 seat studio or home-theater, a 20 seat screening room, a 200 seat cinema, 2,000 seat Broadway show or even a 20,000 seat and beyond stadium hard-rock concert.

Thousands of users rely daily on the fully scalable Alcons signature sound as benchmark for their productions, maximizing the experience.

The list of Alcons Ambassadors reflects this wide range of applications; Studio's such as Martin Garrix STMPD Amsterdam, Levels Audio Hollywood, EIKON group or Factory Post London; Screening rooms such as NBC Universal Pictures, Walt Disney, Google/YouTube; Cinemas as VUE cinemas, Tuschinski Amsterdam, Berlinale FilmFestival, but also Broadway and West-End musical blockbusters, such as Hamilton the musical, Tina the musical or 8-time Tony Award winning Hadestown and technical masterpiece Soldier of Orange (10+ years running!), Elbphilharmonie concert hall Hamburg Germany, Houses of Worship as Koekelberg basilica Brussels, Norway's Arctic Cathedral, Hope Church in Las Vegas and

artists such as Alison Krauss, Alan Parsons, kd Lang or festivals as Dance Valley Amsterdam or Trondheim Rocks with Iron Maiden, Kiss, Def Leppard, Volbeat to name a few.

Uniquely utilizing the exact same high resolution technologies from recording to mastering to playback and large-scale delivery, the systems offer one single, cross-application audio reference for any type of source material and for any size of audience.

Throughout the complete workflow, from creation to performance:
One reference. One experience.



Quality,
a way of
thinking

Alcons Audio

Quality, not a chosen strategy, but a way of thinking

The LR24 is handmade with pride in The Netherlands, combining the latest production techniques and technologies with traditional craftsmanship.

As each Alcons product, the L-series speaker designs had to pass a rigorous 1.000 (!) hour durability test (10x industry standard), resembling years of non-stop, day-to-day hard usage in professional applications. The L-series speakers are backed by a 6 year warranty.

The manufacturing tolerance on the pro-ribbon transducers is less than 1 dB, which makes any two RBN pro-ribbon transducers a “matched pair”; A requirement typically only found in high-end studio monitoring.

From the wood shop, to the electronics and transducer departments and Quality Control, “good enough” is not the benchmark, when “excellent” is just barely satisfying for the Alcons Audio team. The Alcons Audio team continuously strives for obtaining the most natural possible sound reproduction at any SPL with utmost day-to-day consistency and reliability.

This is achieved through a tameless curiosity combined with a fearless drive to develop and implement unconventional solutions.

But for Alcons Audio, quality goes beyond making a great sounding product; Understanding the day-to-day challenges of this industry, the experienced Alcons Audio team sees the successful deployment of Alcons systems as their personal challenge and responsibility.

Moreover, all three company share-holders are active in the daily operations; Not having to rely on external financing enables the company to maintain focus on a long term presence in the pro-audio market.



From left to right Dr. Phil de Haan, Tom Back and Maurice Laarhoven



Partnering in exceeding expectations

The Ribbon Network

Like its larger sibling LR28 and smaller sibling LR18, the LR24 is inventory of "The Ribbon Network"; Alcons Audio's international network for dry-hire cooperation of Alcons systems.

Today's rental market place requires much more than "getting the job done"; Rental company client's expectations have risen to very high standards, sometimes over-asking the rental companies capabilities (requiring irresponsible investments).

The Ribbon Network offers its members the (international) support to exceed client's expectations in increasingly competitive marketplaces. This is realized by direct factory-support, coordinating dry- (or "wet") hire cooperation between members, joint product development and other initiatives.

With a fast-growing number of members worldwide, The Ribbon Network is capable of offering the recognized Alcons sound quality for any type and size of sound reinforcement

application. A very high system integration through identical equipment in combination with the TRN member's expertise, guarantees member's clients the best sound reproduction possible.

Every owner of an Alcons line-array system is member of The Ribbon Network and has therefore access to the distinct advantages of the network.

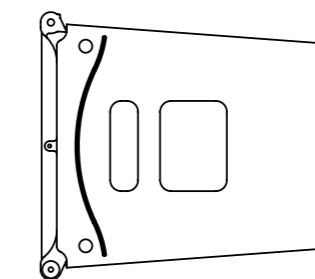
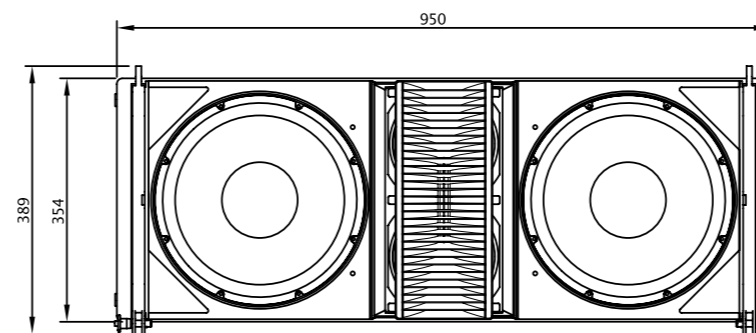
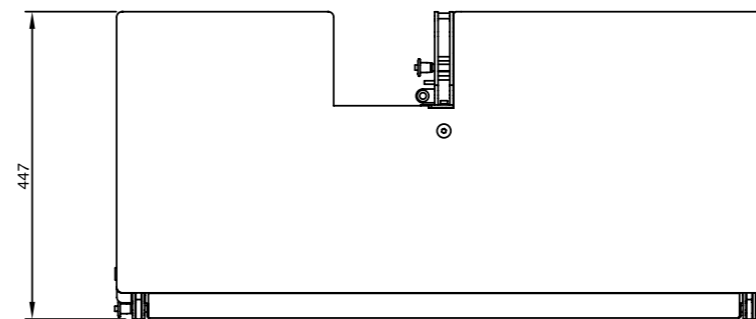
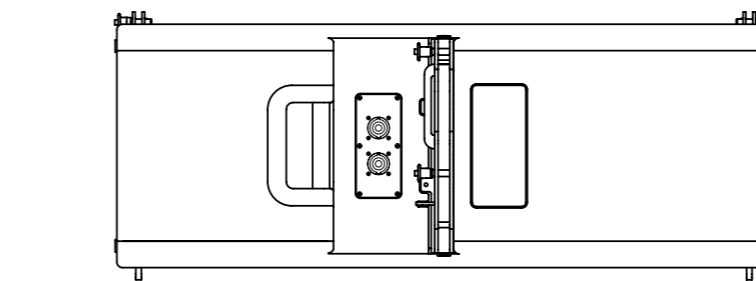




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solutions®

LR24 specifications

Dimensional drawing



Technical specifications

Frequency response	58 Hz - 20.000 Hz (+/- 3 dB)
	46 Hz - (+/- 10 dB)
Sensitivity nominal	109 dB (90°) / 108 dB (120°) (200 Hz-10 kHz)
Nominal impedance	LF 8 ohms, MHF 8 ohms
Recommended drive	Sentinel10, max. 2 pcs. per channel (4 ohms)
Nominal SPL peak	142 dB (90°) / 141 dB (120°) (Sentinel10 200 Hz - 10 kHz)
Dispersion H x V (array)	90° / 120° x depending on array length
Dispersion H x V (single)	90° / 120° x 8° (@ 10 kHz)

Physical specifications

System	3-way, full range	
Filtering	2-way active, 2-way passive	
Drivers LF	2x AW12.352ND-16 12", vented	
Drivers MF	2x AM65ND-16 6.5", sealed	
Drivers HF	1x RBN1202rs 12" pro-ribbon driver	
Connectors	2x Speakon NL8 input/link	
Physical dimensions	mm	inches
Height	354	13.9
Width	950	37.4
Depth	447	17.6
Weight (approx.)	45 kg	99,2 lb
Warranty	6 years limited	

Due to Alcons Audio's continuous R&D, all specifications are subject to change without prior notice.



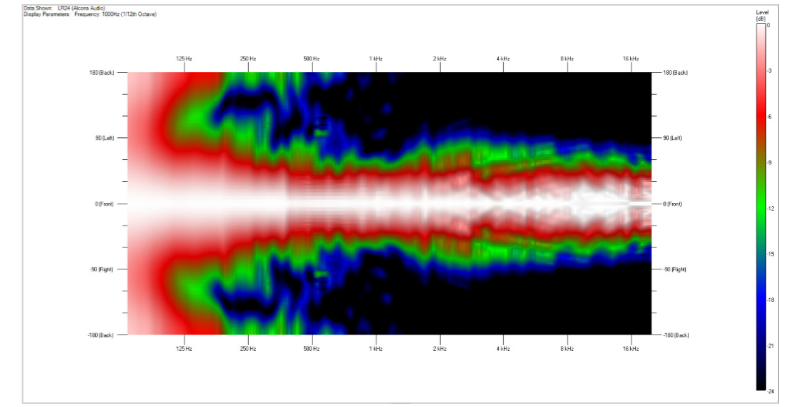
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solutions®

LR24 specifications

These graphs show the directivity of the LR24 in the horizontal and vertical plane (“isobarics”):

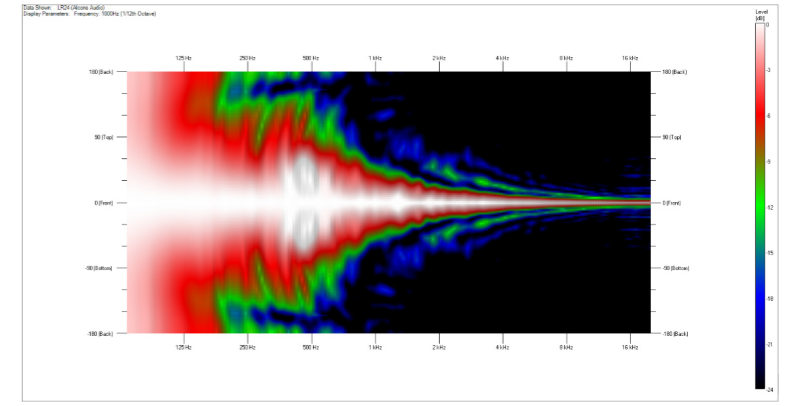
LR24 HORIZONTAL DIRECTIVITY

The constant horizontal directivity of the electronically and acoustically symmetric 3-way system, with a perfect off-axis frequency response. This not only guarantees audiences to get the same experience, regardless of position, but also offers a consistent reflected diffuse-field, resulting in a very coherent room sound response, both direct and reflected.



LR24 VERTICAL DIRECTIVITY

The vertical directivity shows a fully coherent wavefront up to the highest frequencies: This unique “perfect needle pin” cylindrical behavior prevents spilling energy above (ceiling) and below (on-stage) the array. The resulting lack of destructive inter-cabinet interference also results in an unsurpassed throw efficiency and remarkable wind stability.





Scalable
solution
in any
application

System configuration examples

Small

16x LR24
8x BC543
3x Touring rack AST3 (9x ALC S10)

Large

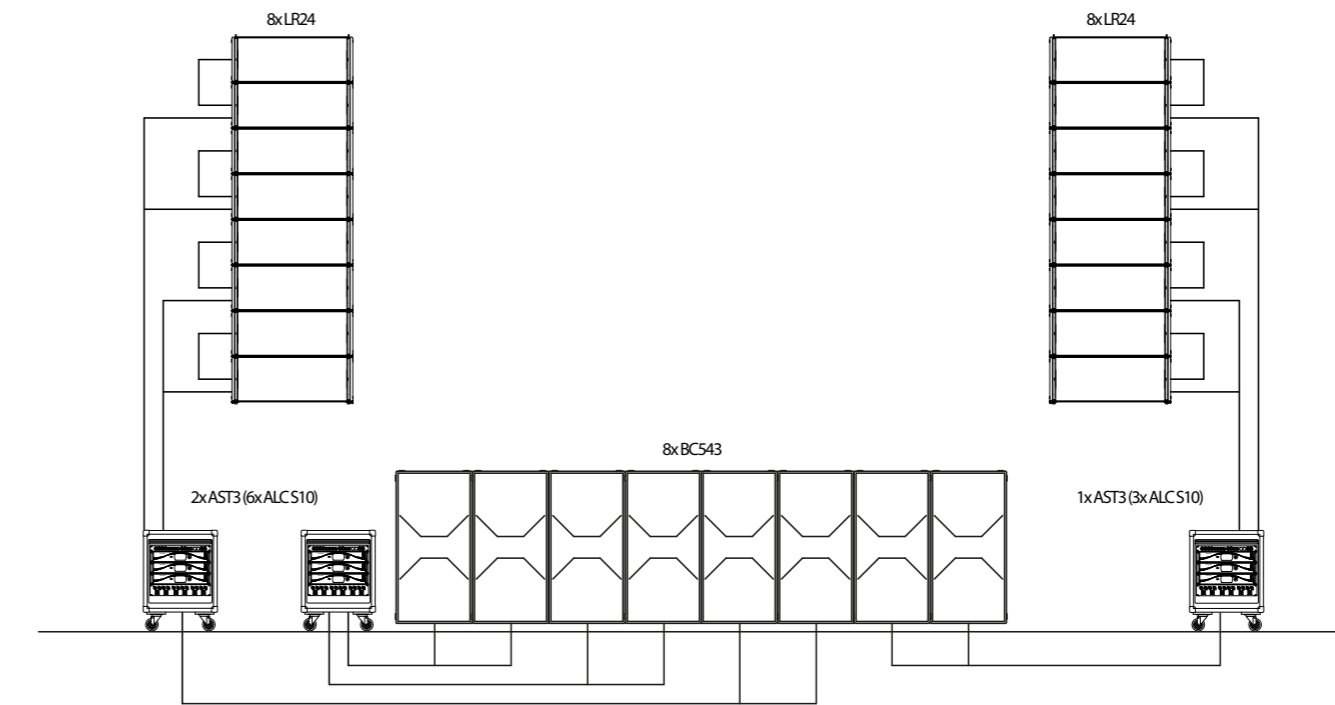
36x LR24
18x BC543
6x Touring rack AST3 (18x ALC S10)

Medium

24x LR24
12x BC543
4x Touring rack AST3 (12x ALC S10)

X-large

48x LR24
24x BC543
8x Touring rack AST3 (24x ALC S10)



More information on www.LR24.info

Alcons Audio HQ

A: De Corantijn 69
1689 AN, Zwaag
The Netherlands
T: + 31 (0) 229 28 30 90
F: + 31 (0) 229 28 30 99
E: info@alconsaudio.com

Alcons Audio USA

A: PO Box 1410
Felton, CA 95018
United States of America
T: +1 (949) 439-8203
E: info@alconsaudio.us

Alcons Audio Germany

A: Stargarderstraße 2
30900 Wedemark
Germany
T: +49 (0) 5130 586811
F: +49 (0) 5130 586822
E: info@alconsaudio.de