

### A New Concept - Point Source Line Arrays

CF/CFX101LA point source line arrays deliver the performance and pattern control of line arrays with the clarity of point source systems. Designed with portability and versatility in mind, they are equally at home in portable applications and permanent installations. They represent the ideal solution to the sound problems of many small and medium size venues.

In small venues a single cabinet offers 90° horizontal coverage and a narrow 15° vertical pattern, ideal for many small venues. Additional cabinets add vertical coverage in 15° increments. Multiple cabinets can be ground stacked, pole mounted or flown, either with or without matching subwoofers.

Both self-powered and non-powered models are available; RHAON, the Renkus-Heinz Audio Operations Network, is an option. It places total control and supervision of the loudspeaker system on your computer at your fingertips, no matter how far away you are.

### Applications

- Virtually any application where outstanding sonic performance is required and sound level and coverage needs cannot be satisfied with conventional loudspeaker systems.
- Live sound reinforcement in small and medium size venues; auditoriums, night clubs, houses of worship, etc.
- Outdoor events; corporate picnics, political rallies, etc.

### CF/CFX101LA Point Source Line Array Modules



The self-powered CF101LA and the non-powered CFX101LA are the basic building blocks in the Renkus-Heinz CF/CFX family of point source line array systems. Their unique design allows arrays of all sizes to be quickly and easily assembled and safely and securely installed.

### HF Balance Control

An adjustable HF balance control allows adjustment of the HF output of individual modules in multi-module arrays to maintain the natural balance between high and low frequencies and make sure every member of the audience receives the same well balanced sound.



### Intelligent Amplifiers

The intelligent amplifiers integral to the CF101LA are a new kind of electronics system. They combine Class D digital amplification with comprehensive signal processing into a single lightweight unit. Protection, crossovers and parametric EQ are integrated into the signal path.



RHAON empowers you with a new level of control over your loudspeaker system. It adds on-board DSP control of each loudspeakers EQ and level, on-going supervision of critical operating parameters and digital audio distribution - all over a standard Ethernet network.

# Line Array Systems

## CF101LA

Self-Powered

## CFX101LA

Non-Powered

### Modular Point Source Line Arrays



Typical CF101LA/CFX101LA Point Source Line Array

#### • Outstanding Performance

Provide point source clarity with the pattern control and high level performance of line arrays.

#### • Dual 1" HF Drivers and High Power 10" Woofer

With Neodymium magnets deliver smooth, low distortion 126 dB peak SPL performance from 60 Hz to 20 kHz.

#### • Great Versatility

Can be used as a stand-alone loudspeaker or as an array module in a ground stacked, pole mounted or flown point source line array.

#### • Exclusive Tuned Conic Diverter

Provides constant beamwidth / directivity down to 300 Hz.

#### • Tight Pattern Control

Single cabinets provide 90° horizontal and 15° vertical coverage; additional cabinets increase vertical coverage in 15° increments.

#### • Reliable, Easy-To-Use Hardware

Assemble easily, safely stack or fly multi-cabinet arrays and subwoofers.

#### • Flexible Input Configurations

Choose passive inputs, or go self-powered with either the PF1-500 amplifier or the RHAON empowered PF1-500R or PF2-500R bi-amplifier.

**Advanced Audio Technology**

Designed for power, portability and versatility, CF/CFX101LA modular point source line array systems from Renkus-Heinz are the ideal solution for today's small and mid-sized venues, including auditoriums, night clubs, theaters and houses of worship.

With the flexibility to be flown, ground-stacked or pole-mounted, the modular CF/CFX101LA point source line array systems deliver the high level performance and pattern control of a line array, with the clarity of a point source system, in a compact, sleek and affordable design that's equally at home as a portable system or in a permanent installation.

Individual full range cabinets can be used as a stand-alone system, either with or without an associated subwoofer. They can be flown using Metric M10 eye-bolts or pole mounted on a matching subwoofer or standard loudspeaker tripod stand. A multi-angled pole socket allows them to be aimed stright ahead or angled up or down.

Suited equally to fixed installation or portable applications the full range cabinets offer consistent 90° horizontal and tight 15° vertical coverage. Their controlled coverage pattern allows them to outperform larger 12" and 15" loudspeakers in many applications as their output can be directed onto the audience instead of into the walls and ceiling.

Individual full range cabinets can be stacked or arrayed with each cabinet increasing the vertical coverage by 15° degrees. Up to four full-range modules can be ground stacked to provide a 90° by 60° coverage pattern with up to 9 dB more output and tighter vertical pattern control than a conventional single cabinet. Traditional line arrays require two or three times as many cabinets to provide the same range of coverage and control.

The CF/CFX101LA point source line array modules and matching subwoofers have been designed with portability and flexibility in mind. Alone or combined with the matching CF/CFX15S 15" subwoofer, up to 6 full-range CF/CFX101LA modules can be flown, making them the perfect solution for a wide range of installed systems or portable sound needs. The possible combinations and applications are almost endless.

Neodymium magnets on the single 10" low frequency woofer and dual 1" High Frequency compression drivers provide the ideal balance of power and portability, while the revolutionary performance of the Tuned Conic Diverter waveguide ensures the smoothest possible transition between cabinets.

CF101LA and CFX101LA point source line arrays are true point source line array systems offering the benefits of both point source loudspeakers and line arrays.



CF101LA / CFX101LA  
Point Source Line Array Module



CF101LA/CFX101LA Point Source line Array  
with matching subwoofer



Ground Stack  
with dual array modules & single subwoofer



Floor System  
with single array module & subwoofer



Floor System  
with dual array modules & dual subwoofers

**The Tuned Conic Converter**



When it comes to innovation, once again Renkus-Heinz leads the way.

Line arrays rely upon their ability to convert the spherical wavefront of a typical loudspeaker into a planar (flat) wavefront that couples coherently with the output of adjacent modules to create a plane wave. Plane waves diminish less rapidly over distance (3 dB loss for every doubling of distance) than spherical waves that decay 6 dB every time the distance doubles.

Our new Tuned Conic Diverter carefully shapes the curvature of the wavefront within the horn so that it's curvature matches the curvature of the array and couples seamlessly with adjacent modules.

As sound progresses through the horn, it's wavefront is progressively manipulated, passing through a tuned conic diverter, slowing the wavefront's expansion in the center and modifying its curvature to match the shape of the cabinet.

**HF Balance Control**



An adjustable HF balance control panel on each full range module allows you to adjust the high frequency output of each module to compensate for the changes in high frequency coupling that occurs between adjacent modules in multi-module line arrays.

It is invaluable in helping you assure that every member of the audience receives the same well balanced sound, even those seated in the rear of the audience area.

**Safe & Simplified Hardware**



Simple, rugged, integral hardware allows for maximum versatility, maximum safety, and fast setup and teardown.

Metric M10 attachment points allow individual modules to be easily flown with eye bolts.

Multiple full range modules can be ground stacked or pole mounted using the matching subwoofer as a base. Up to 6 modules and two subwoofers can be flown. The array modules and subwoofers are joined together with heavy-duty tie bars and quick-disconnect pins that provide easy assembly along with metal-to-metal reliability.

The matching subwoofers employ the same simple yet sturdy hardware enabling full range array modules to be flown beneath the subwoofer. An associated fly-bar that attaches easily to the subwoofer completes the package.

CF/CFX101LA hardware has been designed to work either way so left and right systems can be setup symmetrically without the need for mirror image cabinets.

**Multi-Angle Pole Sockets**



Multi-angle 35 mm pole sockets allow CF101LA and CFX101LA array modules to be mounted on standard loudspeaker stands or on heavy duty pole mounts attached to an associated CF15S or CFX15S subwoofer.

The multi-angle socket allows the cabinet to be aimed straight ahead or angled up or down depending on the needs of the venue.

**RHAON** Renkus-Heinz Audio Operations Network

RHAON is the first practical system to combine individual loudspeaker control and supervision of self-powered loudspeaker systems with digital audio distribution. RHAON puts you in total control of:

- A powerful DSP inside each loudspeaker on the Ethernet network that includes eight bands of parametric EQ, high and low frequency shelving filters, input level control, muting and up to 340 ms of delay.
- Monitoring of each loudspeakers critical operating parameters such as signal clipping, amplifier output voltage and current and temperature with automatic alert functions.
- Real time digital audio distribution over standard Ethernet networks using proven CobraNet technology to deliver multiple channels of high quality digital audio over a CAT 5 cable.



## TECHNICAL INFORMATION

**Sensitivity**  
**CF101LA-5, -5R & -52R:** 1.0 V for rated power output  
**CFX101LA & LA-8:** 96 dB (1W/1m)

**Max SPL:** 126 dB peak

**Dispersion:** 90° Horizontal, 15° Vertical

**Freq. Response:** 60 Hz to 20 kHz

**HF Drivers:** Two 1" SSDCDXI-1730-8 HF Neodymium drivers;  
 75 W RMS @ 8 Ohms, 150 W pgm each

**LF Driver:** **CF101LA & CFX101LA:** 10" Neodymium woofer, model  
 SSL10-10, 250 W RMS @ 4 Ohms, 500 W pgm  
**CFX101LA-8:** 10" Neodymium woofer, model SSL10-8,  
 250 W RMS @ 8 Ohms, 500 W pgm

**Crossover:** 1700 Hz

**Enclosure:** Multi-ply hardwood, perforated metal grille

**Power**  
**CF101LA-5, -5R & -52R:** 115 V AC or 230 V AC, 50/60 Hz  
**CFX101LA:** 500 W pgm at 4 Ohms  
**CFX101LA-8:** 500 W pgm at 8 Ohms  
**Controls:** Array balancing

**Connectors:** **CFX101LA-8:** Neutrik 4-pin Speakon style connectors,  
 Screw terminals

**Finish:** Black or white  
**Hardware:** Four Metric M10 attachment points  
 Multi-angle pole socket

**Associated Hardware:** RHANG101LA flybar  
 POLE-CF101 mounting pole

**Dimensions:** 13" H x 23 3/4" W x 15" D  
 (33 cm x 60.3 cm x 38.1cm)

**Weight**  
**CF101LA-5 & -5R:** 47 1/2 Lbs. (20.7 Kg) net  
**CF101LA-52R:** 48 1/2 Lbs (22 Kg) net  
**CFX101LA & LA-8:** 42 1/2 Lbs (19.3 Kg) net

**Power:** 500 W RMS @ 4 Ohms  
**Freq. Resp:** +0.0, -5 dB, 20 Hz to 20 kHz  
**THD Distortion:** < 0.02% typical  
**Hum & Noise:** <100 dB (A weighted)  
**Damping:** >100  
**Input:** 10K Ohm balanced differential  
**Sensitivity:** 1.0 V for RPO  
**CMR:** 74 dB

### PF1-500 DIGITAL AMPLIFIER

**Controls:** Gain (screwdriver adjustable)  
**Power Connector:** IEC Power connector  
**Input:** Looping XLR; female in, male out  
 (pin 1 chassis, pin 2 +, pin 3 -)  
**Power:** Switchable, 115 or 230 V AC, 50/60 Hz  
 5 A @ 120 V, 2.5 A @ 240 V  
 Idle current: 400 ma @ 120 V;  
 200 ma @ 240 V  
 Max inrush current: 1 A

### PF1-500R RHAON EMPOWERED AMPLIFIERS

The PF1-500R is identical to the PF1-500 except for the addition of the RHAON Network Interface; additional capabilities include:

**Inputs:** CobraNet: Dual RJ45 connectors; accept  
 Cat 5 copper cable.

AES/EBU: Phoenix connectors;  
 Analog: Phoenix connectors

**Digital Format:** 16, 20 or 24 bit PCM; 48 or 96 kHz sample rate;  
 selectable Network Latency.

**Protection:** Soft & Peak limiting, Excursion Control &  
 Thermal Regulation

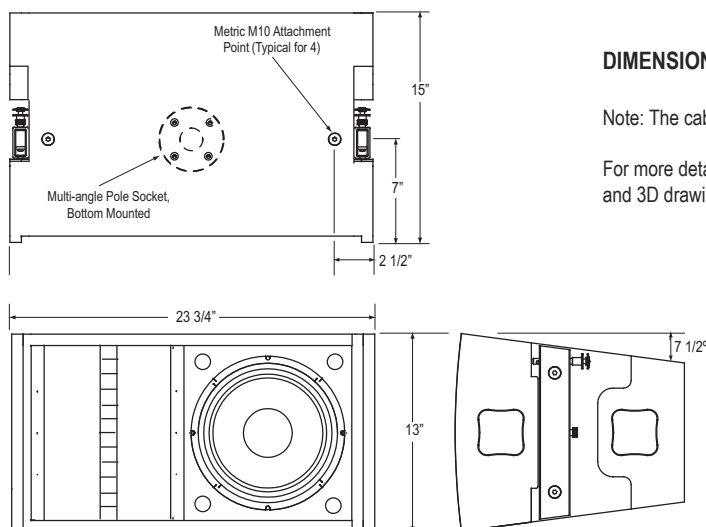
### PF2-500R RHAON EMPOWERED AMPLIFIERS

The PF2-500R is a RHAON empowered 500/200 W RMS bi-amplifier. It is identical to the PF1-500R except for also having a 200 Watt HF amplifier and associated electronic crossover.

**Power:** 6 A @ 120 V, 3 A @ 240 V  
 Idle current: 500 ma @ 120 V; 250 ma  
 @ 240 V. Max inrush current: 1 A

For additional details on the RHAON Audio Operations Network, refer to  
[www.renkus-heinz.com/Rhaon/Index.html](http://www.renkus-heinz.com/Rhaon/Index.html).

Note: All analog inputs and outputs comply with AES Standard 48-2005 on interconnecting, grounding and shielding.



### DIMENSIONAL INFORMATION

Note: The cabinet is shown without its protective metal grille.

For more detailed dimensional information, please refer to the 2D and 3D drawing files on our website, [www.renkus-heinz.com](http://www.renkus-heinz.com).