E SERIES

ENTASYS 200

VERSATILE TWO-WAY COLUMN POINT SOURCE SYSTEMS

Application Guide

Part 1: System Information

ENT206

INTRODUCTION AND FEATURES
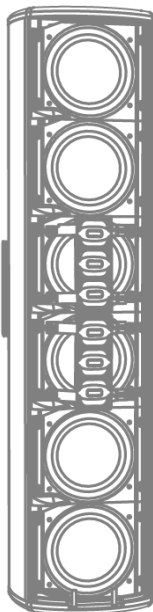
ENTASYS 200 column loudspeakers are innovative products offering entirely new possibilities for solving difficult acoustical problems with ease, both indoors and outdoors. Available in four sizes, the ENTASYS 200 models have been expertly engineered to serve the wide range of applications routinely encountered by professional sound contractors. Possessing advanced features, highly-focused dispersion patterns, weather resistant construction, and most importantly sonic excellence, ENTASYS 200 columns make installations not only fast and simple, but as functionally effective as possible.

The modern, unobtrusive appearance of ENTASYS 200 columns means they will blend into virtually any room décor without calling undue attention to the technology behind the sound. All models can be ordered in either medium-gloss black or medium-gloss white finishes. They may also be field-painted to match a specific color scheme or room finishes.

Each ENTASYS 200 model includes an appropriately-sized mounting bracket, a built-in 70V/100V autoformer for constant voltage applications, and an integral safety rigging point. Accessories include a universal mounting kit for use with third-party mounting brackets, and a stand adapter kit with an attachable tripod-stand mount that serves double duty as a handle for portable usage.

QUICK PRODUCT OVERVIEW

The ENTASYS 200 family begins with two small column loudspeakers, the ENT203 and ENT206. Powerful and unobtrusive, these models are intended for use as foreground and background music, fill loudspeakers, 'delay' support of larger systems, and as the primary PA in small environments.

The two larger models, the ENT212 and ENT220, are designed for use in medium to medium-large spaces. Highly effective when used as the main system, they can also be matched up with conventional point source loudspeakers, such as the I SERIES and V SERIES models. Their very narrow vertical dispersion precisely directs sound to specific room regions, thereby complementing the inherently broader dispersion of trapezoidal full-range loudspeakers.

The ENTASYS 200 models provide a modern solution to the age old problem of directing sound where it is needed - and nowhere else. By reducing room reflections, musical clarity and speech intelligibility are greatly improved.

TECHNOLOGY AND DESIGN

The ENTASYS 200 models are point source loudspeakers that use vertically stacked low and high frequency drivers to create medium to high pattern control. Like a line source, the length of each array has been carefully engineered to behave like a point source and provide coherent sound across a wide bandwidth. ENTASYS 200 was designed to combine low frequency point source and high frequency line source technologies in an aesthetically pleasing compact vertical form. Since they function as point sources, the ENTASYS 200 models produce more dynamic range and more dB per watt while utilizing far less power. Their frequency response does not appreciably change with distance, so within the optimized coverage area all listeners receive the same sound experience.

WHY COLUMN LOUDSPEAKERS?

Because different jobs require different tools, Community offers a broad palette of choices in the E SERIES family of column loudspeakers. Column loudspeakers offer unique aesthetic and performance alternatives to more traditional loudspeaker options.

- ENTASYS FR (full range) and ENTASYS LF (low frequency) models offer true line source performance in a scalable fashion.
- ENTASYS 200 systems (ENT 203, ENT206, ENT 212 and ENT 220) provide point source performance in a column format.

For more about the difference between ENTASYS FR/LF and ENTASYS 200, refer to "Which E SERIES System" later in this guide.

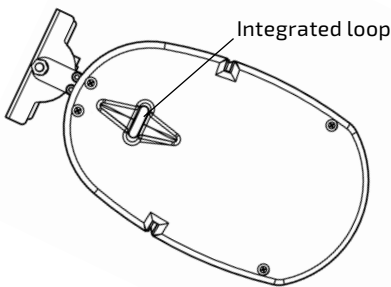EASE model of uniform coverage from two ENT220s in a typical gymnasium
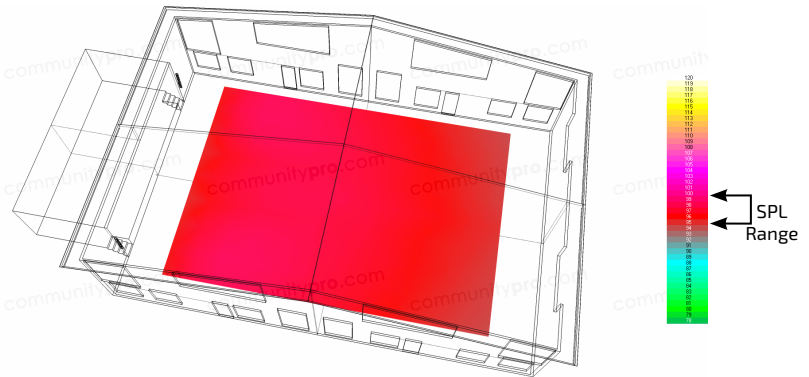
MECHANICAL INSTALLATION

ENTASYS 200 loudspeakers are easy to install and aim, as a result of the purpose-built mounting brackets and hardware that are supplied with every unit. Detailed installation instructions are included in each shipping carton, and are also available on the Community website (communitypro.com). The contractor needs only to provide appropriate fasteners to attach the brackets to the wall surfaces.

A rigging safety point is integrated into the top of each column, and a separate safety bracket is supplied for attachment to a wire rope safety line.

Note: The safety line itself is NOT supplied. Wire rope, shackles, compression fittings, and a compression tool can be purchased at any major rigging hardware supplier. All suspension components must be overhead load rated. Please refer to the ENTASYS 200 Installation/Operation Manual for additional details and safe mounting precautions. When installing any suspended loudspeaker, the safety and integrity of the mechanical installation should always be the highest priority!

Integral rigging point on top of ENTASYS 200 cabinet

ACOUSTICAL COVERAGE PATTERNS

ENTASYS 200 columns provide exceptional sonic quality and outstanding speech intelligibility when deployed as part of a professionally designed sound system. They offer tightly defined vertical directivity, while at the same time a wide and uniform horizontal coverage pattern. When optimally positioned and aimed, the narrow vertical dispersion keeps sonic energy away from floors and ceilings, thereby increasing the useful operating distance and reducing harmful room excitation. The wide horizontal pattern means that fewer ENTASYS 200 columns - in many cases only a single pair - are often enough to provide full and even coverage for a wide variety of applications, even in fairly large rooms.

dSPEC Networked DSP Loudspeaker Controller

DIGITAL SIGNAL PROCESSING

ENTASYS 200 column loudspeakers are single-amplified; this means they do not require multiple amplifier channels as bi-amplified loudspeakers do. However, equalization filters for system optimization and room compensation plus high pass filters are still needed. For this task, Community's dSPEC Networked DSP Loudspeaker Controller is the perfect partner to an ENTASYS 200 installation. A dSPEC controller provides numerous capabilities that make it easy to 'dial-in' the desired sonic signature that best suits the installation requirements, while 'dialing-out' feedback, harmful room resonance, and other unwanted artifacts.

dSPEC provides intelligent driver protection, digital delay, and built-in presets that immediately assign optimal factory DSP settings to the ENTASYS 200 columns (and other Community loudspeakers too), merely by selecting the proper model from a menu. An extensive bank of user-adjustable filters, FIR Acoustic Power Correction, plus a host of other features set dSPEC far apart from generic DSP controllers. A single dSPEC, or multiple networked dSPECs, may be used as the heart of a complex system design employing such features as one-touch wall mount controllers to activate configuration presets; remote volume level controls; instant changes to I/O routing; and much, much more. Detailed specifications and features are available at communitypro.com.

CONSTANT-VOLTAGE DISTRIBUTED SYSTEMS

Whenever a distributed constant-voltage installation is required, ENTASYS 200 loudspeakers are well equipped to handle the task. Each model includes a built-in 70V/100V autoformer, so there's no need to purchase additional components. Constant–voltage systems are recommended whenever the distances between the amplifier and the loudspeakers are considerable. A good rule of thumb is to use the built-in autoformer if the cable length exceeds 100 feet, or if the lengths are shorter but the cable gauge is less than AWG #16.

Because the autoformer is equipped with selectable power taps, multiple ENTASYS 200 columns can be powered by a single amplifier channel, yet set to different power levels as needed. This allows the installer to provide uniform distribution of sound levels for maximally effective room coverage, without needing an undue number of amplifier channels and 'home-run' cables. Community's proprietary autoformers function the same as conventional 70V/100V transformers, but with lower distortion, lower insertion loss, less weight, and superior frequency response.
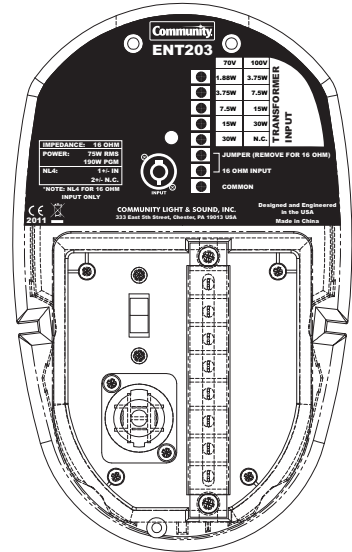
USING ENTASYS 200 COLUMNS WITH SUBWOOFERS

When high-impact, full-range musical reproduction is required, one or more subwoofers should always be included in the design plan. Community manufactures a wide range of subwoofers that are compatible with ENTASYS 200 column loudspeakers. The specific type and number of subwoofers will vary depending on the desired end results; dance clubs and live music venues will require high power low frequency augmentation to satisfy their clientele, while a small house of worship may need only subtle low frequency enhancement.

Whenever subwoofers are utilized, an external signal-level crossover, either analog or DSP based, must be included as part of the system design. The crossover will divide the frequency spectrum between the ENTASYS 200 columns and the subwoofers, thereby allowing the subwoofers to be amplified independently from the ENTASYS 200 columns. A Community dSPEC loudspeaker controller is ideal for this task. Not only does dSPEC provide the required crossover for the subwoofers, but also factory recommended operating parameters for each model of Community subwoofer and for each ENTASYS 200 model (refer to the Digital Signal Processing section - page 3).

Note: A subwoofer should NEVER be connected directly to the same amplifier channel as an ENTASYS 200 column loudspeaker. This is because all ENTASYS 200 columns require a high pass filter, while all subwoofers require a low pass filter and a lower frequency high pass filter. The two cannot be powered by one amplifier channel at the same time.

In addition to providing LF extension for an enhanced sonic experience, the use of one (or more) subwoofers removes the demand to reproduce low frequencies from the ENTASYS 200 columns, thereby permitting greater power handling, which in turn means substantially more output capability. For applications in which music reproduction or music reinforcement is an important element, the use of subwoofers should be considered essential. It's important to place subwoofers in locations near the ENTASYS 200 (within 2.2ft [0.67m]) for coherent summation at the required 200 Hz crossover so that both sources sum acoustically and also to avoid the subwoofer from sounding directional near crossover. To make this possible, Community offers compact subwoofers in the I SERIES and V SERIES lines. The most applicable models are IS6-112, IS6-212, IS8-112, IS8-212, VLF208, VLF208LV, V2-210S, and the V2-212S. For high output systems, consider one of the previous models for mid-bass (80 Hz to 200 Hz) plus large I SERIES or V SERIES subwoofers to operate below 80 Hz.

SYSTEM REQUIREMENTS
amplifiers, connections, environment, and filters

SELECTING AMPLIFIER SIZE

	ENT203	ENT206	ENT212	ENT220
Continuous Ratings (in watts)	75W cont.	150W cont.	325W cont.	500W cont.
Program Ratings (in watts)	190W PGM	375W PGM	800W PGM	1250W PGM

Note: When multiple ENTASYS 200 column loudspeakers are to be powered by a single amplifier channel, amplifier output ratings should be scaled upward appropriately. Please refer to the ENTASYS 200 Installation/Operation Manual *for additional details.*

INPUT CONNECTORS

All ENTASYS 200 models provide an industry-standard NL4-type locking connector and a screw-type barrier strip for connections to the amplifier. Inputs are located on the bottom of each model.

A bottom cover panel is provided to seal the connector area from water and foreign substances when using the barrier strip terminals (**Note:** The cover cannot be installed when an NL4-type connector is mated). The cover plate enhances the weather-resistant properties of the enclosure and is equipped with a knock-out that fits 1/2-inch conduit, as well as appropriately sized grommets and gland-nuts for accommodating large diameter cable. Please refer to the *ENTASYS 200 Installation/ Operation Manual* for detailed information.

USING ENTASYS 200 OUTDOORS

When using ENTASYS 200 loudspeakers outdoors, we strongly recommend connecting the amplifier to the barrier strip input terminals and securing the bottom cover panel. The NL4-type input connector may be used for short-term connections outdoors, but is not recommended for long-term outdoor usage.

Please refer to the *ENTASYS 200 Installation / Operation Manual* for diagrams and additional information about connections to ENTASYS 200 products, and for other guidelines that will make an outdoor installation as durable and long lasting as possible.

REQUIRED HIGH PASS FILTER

The use of an external, active high pass filter that is 'in-circuit' upstream of the power amplifier(s) that drive ENTASYS 200 loudspeakers is always required. The high pass filter will help to protect the woofers from damage due to excessive low frequency excursion. It will also avoid wasting amplifier power by not attempting to reproduce frequencies that are below the loudspeakers' intended operating range. Recommended filter frequencies and filter slopes for each ENTASYS 200 model are available in the *ENTASYS 200 Installation/Operation Manual*.
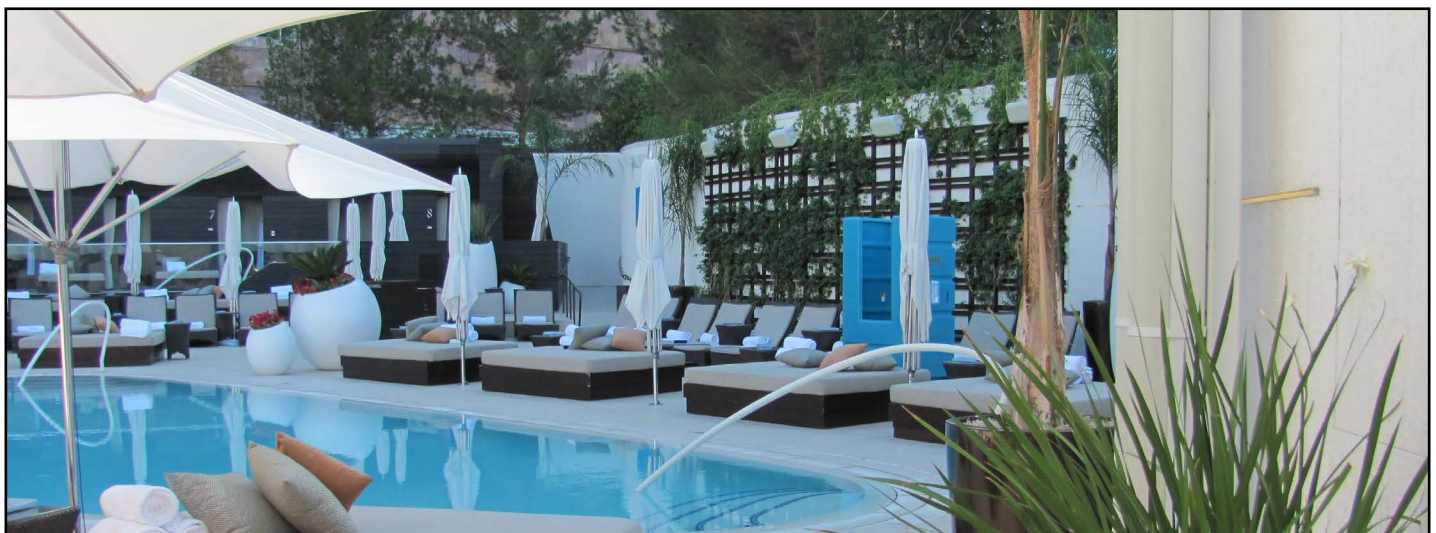
WHICH E SERIES SYSTEM?
coverage and other considerations

COMMUNITY'S TAG TEAM

We are here to help you!

Please contact Community's Technical Applications Group (TAG) for any technical support that you may need. The TAG team can help select the best product for each application and assist in system design, loudspeaker layout, acoustic simulation analysis, and information needed for system commissioning.

Our TAG team can be reached by phone at 610-876-3400 / 800-523-4934, or by email at: TAGTEAM@communitypro.com.

WHEN TO USE ENTASYS FR

A line source/line array system is exceptionally well-suited for use in reverberant spaces because of its high degree of pattern control of where it is imperative that sound must be directed to the audience areas only, and not bounce off other strongly reflective room surfaces. Line arrays are often the "first-choice" for maximizing speech intelligibility, especially in difficult acoustical environments. The same properties that support speech intelligibility also support musicality, particularly in providing clear instrumental tones, well defined attack and decay times, and accurate musical timbre. Consequently, the ENTASYS FR three-way column may be the best choice when both speech and accurate reproduction of acoustic and orchestral instruments are desired. The rich sound, added directivity, and tight pattern control make a column-style line array like the ENTASYS FR the premium option for jazz, folk, and classical performance venues.

Relative to the upper mid and high frequencies, listeners further from a single ENTASYS FR array may notice a lower frequency range drop off. This can be solved by extending the height of the column array with additional FR or LF modules. Taller arrays demonstrate more spectral balance between bass, mid, and high frequencies when compared to shorter arrays. ENTASYS FR will provide a richer wide spectrum experience with less noticeable decrease in frequencies when the configuration is optimized to provide even coverage for the entire audience. Sometimes to accomplish this, the array must be both trimmed relatively high and consist of multiple stacked loudspeakers (ENTASYS FR and LF modules). This can also reduce the number of fill loudspeakers needed to cover the audience.

WHEN TO USE ENTASYS 200

The ENTASYS 200 models solve acoustical challenges and offer affordable solutions. The four models meet coverage expectations; from music reinforcement in small spaces, to music and voice intelligibility in meeting halls or houses of worship, to defined audience coverage in mid to large size theaters and auditoriums. Refer to the ENTASYS 200 Application Guide Part 2 - Case Studies publication for a small representation of the applications that ENTASYS 200 is best suited for.

- When the ceiling height is minimal in relation to the depth of the room, it may not be possible to position a multi-stacked line array, or a point source system sufficiently high enough at the front of the room to provide consistent coverage from the front to the rear, and will require additional numbers of point source loudspeakers further back in the room. Instead, positioning an ENTASYS 200 system at the front of the room provides high pattern control and achieves more consistent SPL levels from the front to the rear of the room. This also reduces the number of fill loudspeakers necessary to provide full coverage of the audience area.

- When there are side seating or narrow balcony areas that need consistent sound, the smaller models (ENT203, ENT206) provide similarly voiced fill in combination with the larger model coverage of the main audience area.

- When budgetary constraints preclude the higher priced three-way system, an ENTASYS 200 system provides a cost-effective rich-sounding full-range alternative.

The ENTASYS 200 models are a versatile and ideal solution for challenging acoustical environments, providing coverage only where needed, especially in moderately high reverberant venues. If it isn't feasible to have a tall multi-column array(s) to cover the audience area, or a small loudspeaker is needed to cover a particularly challenging space, the best option is ENTASYS 200. The ENTASYS 200 columns share coverage characteristics very similar to typical two-way loudspeakers. They are designed to provide an affordable alternative with refined pattern control and consistent sound throughout the coverage area.

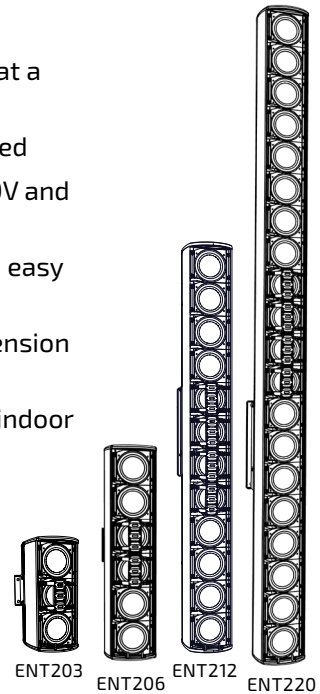# WHICH E SERIES SYSTEM?
comparisons
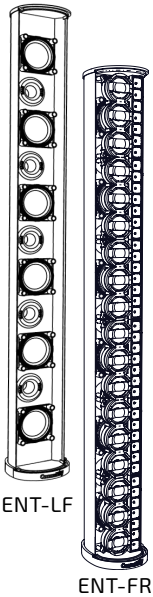
ENTASYS FR/LF

- Maximum power density for size - higher output levels
- Greater degree of beam focusing (especially good for reverberant spaces)
- Wider range of module configurations and LF extension possibilities
- Premium modular column choice for demanding applications and difficult acoustics
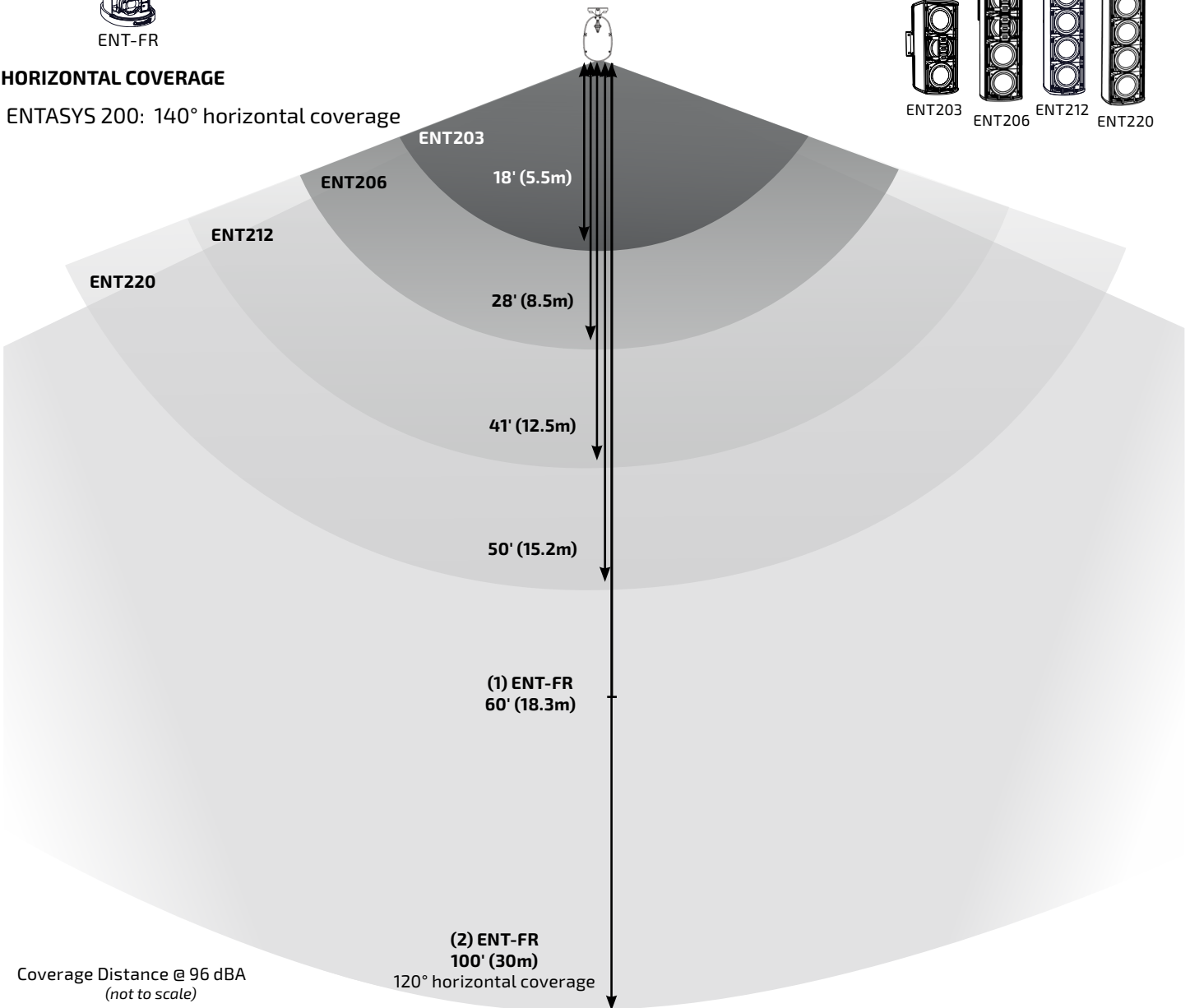- Indoor/outdoor operation

ENT-LF

ENT-FR

ENTASYS 200

- Two-way column format at a lower price point
- Mounting brackets included
- Built-in autoformer for 70V and 100V operation
- Fast and simple to install, easy to commission
- Better low frequency extension than ENTASYS FR
- Durable, can be installed indoor and outdoor

ENT203   ENT206   ENT212   ENT220

HORIZONTAL COVERAGE

ENTASYS 200: 140° horizontal coverage

ENT203

ENT206

ENT212

ENT220

18' (5.5m)

28' (8.5m)

41' (12.5m)

50' (15.2m)

(1) ENT-FR
60' (18.3m)

(2) ENT-FR
100' (30m)
120° horizontal coverage

Coverage Distance @ 96 dBA
(not to scale)

v:8OCT2014

Community™