**DATA SHEET**

**Community L SERIES**

**Beamforming Venue Horn™**

**LVH-909/AP**

90° HORIZONTAL DISPERSION, ACTIVE PLUS, 20°, 80°, 100° VERTICAL DISPERSION, ARRAYABLE, HIGH OUTPUT LOUDSPEAKER

**FEATURES**
- Designed with individual driver control for extraordinary performance in large venues
- Large format, horn-loaded triaxial array maintains pattern control to 200 Hz
- Maximize long-throw SPL level or extend vertical coverage pattern
- Colinear manifold for HF and MF beamforming
- Indoor or Outdoor weather-resistant models
- EN54-24 and ISO 7240-24 certification

**APPLICATIONS**
- Stadiums · Houses of Worship · Arenas
- Theaters · Ice Rinks · Auditoriums
- Large Multipurpose Outdoor and Indoor Venues

**DESCRIPTION**
Biamp’s Community L SERIES LVH-900/AP Beamforming Venue Horn, combined with the Community Amplified Loudspeaker Controllers (ALCs), precisely tailors the directivity of each loudspeaker, or array of loudspeakers, to meet the sound requirements in any application.

Designed for exceptional performance in large venues, each 90° Active Plus array consists of two LVH-900/AP loudspeakers with a total of eight 12-inch LF drivers, six Community M200 midrange compression drivers and eight 1.5-inch HF compression drivers.

Using patent pending techniques, the triaxial drivers in each cabinet are integrated to create half of the desired vertical coverage pattern. Using advanced FIR techniques, the output from the two loudspeakers are seamlessly integrated into one coherent wavefront filling the entire 72 x 31-inch face of the array, providing pattern control to below 200 Hz. An LVH-909/AP array offers 90 degrees of fixed horizontal dispersion, three presets for vertical dispersion beamforming and has specialized input panels for dual cabinet long-throw configurations. The LVH-900 Active-Plus (AP) models allow DSP settings and control of individual drivers to provide uniform sound to the audience areas.

Typical applications include music and speech reinforcement for large houses of worship, stadiums, theatres, and much more. Possessing advanced features, highly-focused dispersion patterns, weather-resistant construction, and most importantly sonic excellence, LVH-900 loudspeakers make installations not only fast and simple, but as functionally effective as possible.

**TECHNICAL SPECIFICATIONS**

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<th>Operating Mode</th>
<th>Multi-Amplifier with FIR DSP Beamforming</th>
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<td>Operating Environment</td>
<td>Indoor or Outdoor Direct Exposure</td>
</tr>
<tr>
<td>Operating Range (-10dB)²</td>
<td>48 Hz to 20 kHz</td>
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</tbody>
</table>
| Nominal Beamwidth | Horizontal: 90°  
Vertical: 100°, 80°, 20° Symmetrical (user selectable presets) |
| Transducers | LF: 4 x 12” (300 mm) with 3” (75 mm) CCAW voice coil, inherently weather-resistant cone in cast aluminum chassis  
MF: 3 x M200, 2” (51 mm) exit, ketone polymer diaphragm, compression driver  
HF: 4 x 1.5” (38 mm) CCAW voice coil, 1” (25 mm) exit, ketone polymer diaphragm, compact neodymium compression driver |
| Nominal Continuous Power Handling² | LF1, LF2, LF3, LF4 (each)  
MF1, MF2, MF3 (each)  
HF1, HF2, HF3, HF4 (each)  
87 V (950 W, 8 Ω)  
26 V (130 W, 8 Ω)  
23 V (65 W, 8 Ω) |
| Nominal Maximum SPL (Processed)⁴ | 20° pattern: 139 dB continuous   
80° pattern: 134 dB continuous   
100° pattern: 140 dB continuous |
| Rated Continuous Voltage⁶ | LF: 50.1 V (34 dBV)  
MF: 20.0 V (26 dBV)  
HF: 15.3 V (24 dBV) |
| Rated Maximum SPL (Processed)⁶ | 20° pattern: 136 dB continuous   
80° pattern: 132 dB continuous   
100° pattern: 143 dB continuous |
| Recommended Amplifiers | LF: 4 Channels (2) ALC-1604D (Bridge Mode)  
MF & HF: 7 Channels (2) ALC-404D |
| Crossover Frequencies | 48 Hz to 20 kHz |

**PHYSICAL**

| Input Connection | Lever-actuated wire clamping 4, 6 and 8-position terminal blocks |
| Mounting Points | Indoor or Outdoor  
Outdoor: IP56 per IEC 60529 when used with the input panel and seal cup cover plates; Weather resistant to IEC 60068-2-1 Cold, IEC 60068-2-2 Dry Heat, IEC 60068-2-6 Vibration, IEC 60068-2-30 Damp Heat, cyclic, IEC 60068-2-42 SO2, and IEC 60068-2-78 Damp Heat, steady state |
| Operation Environment | Indoor and Outdoor  
Indoor: 95.3 kg (210 lbs)  
Outdoor: 101.3 kg (223 lbs) |
| Dimensions H x W x D | 948 mm x 797 mm x 775 mm (37.3” x 31.4” x 30.5”) |
| Weight | Indoor: 113.4 kg (250 lbs)  
Outdoor: 131.1 kg (288 lbs) |
| Finish | Refer to the Technical Drawing (page 5) |

**OPTIONS**

| Accessories (full list on page 6) | Splay Bracket: LVH-900SP1 Type 1; LVH-900SP2 Type 2  
Indoor Frames: LVH-900AF Array frame; LVH-900PB Pull-back  
3rd party rigging: Indoor & Outdoor |

**REFERENCES**

(A: 9300 S.W. Gemini Drive Beaverton, OR 97008 USA  
T: +1 503.641.7287  
W: www.biamp.com)
**Community L SERIES**  
**Beamforming Venue Horn**

**LVH-909/AP**

90° HORIZONTAL DISPERSION,  
ACTIVE PLUS, 20°, 80°, 100° VERTICAL DISPERSION,  
ARRAYABLE, HIGH OUTPUT LOUDSPEAKER

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**AXIAL PROCESSED SENSITIVITY** (dB SPL)\(^7\)

![Graph depicting Axial Processed Sensitivity](image)

**HORIZONTAL OFF-AXIS RESPONSE** (dB SPL)\(^8\)

![Graph depicting Horizontal Off-Axis Response](image)

**VERTICAL OFF-AXIS RESPONSE** (dB SPL)\(^8\)

![Graph depicting Vertical Off-Axis Response](image)

**IMPEDANCE** (Ω)

![Graph depicting Impedance](image)

**DIRECTIVITY INDEX** (dB)\(^9\)

![Graph depicting Directivity Index](image)

**BEAMWIDTH** (degrees)\(^10\)

![Graph depicting Beamwidth](image)

**SPECIFICATIONS FOR EN54-24 (LVH-909/AP-20°)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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<tr>
<td>Sensitivity (1 W, 4 m)</td>
<td>89 dB*</td>
</tr>
<tr>
<td>Maximum SPL (4 m)</td>
<td>122 dB*</td>
</tr>
</tbody>
</table>
| Coverage (-6 dB) Horiz/Vert | 500 Hz: 80°/30°*  
1 kHz: 90°/15°*  
2 kHz: 85°/10°*  
4 kHz: 100°/20°* |
| Rated Impedance | 4x HF: 8Ω*; 3x MF: 5Ω*; 4x LF: 8Ω* (each) |

*not independently verified

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\(^7\) Min 65Ω, 65Ω, 65Ω, 65Ω, 65Ω, 65Ω

\(^8\) Min 65Ω, 65Ω, 65Ω, 65Ω, 65Ω, 65Ω

\(^9\) Min 65Ω, 65Ω, 65Ω, 65Ω, 65Ω, 65Ω

\(^10\) Min 65Ω, 65Ω, 65Ω, 65Ω, 65Ω, 65Ω
Community L SERIES  Beamforming Venue Horn
LVH-909/AP
90° HORIZONTAL DISPERSION, 80° DUAL-CAB PATTERN
ACTIVE PLUS, 20°, 80°, 100° VERTICAL DISPERSION,
ARRAYABLE, HIGH OUTPUT LOUDSPEAKER

AXIAL PROCESSED SENSITIVITY (dB SPL)

HORIZONTAL OFF-AXIS RESPONSE (dB SPL)

IMPEDANCE (Ω)

VERTICAL OFF-AXIS RESPONSE (dB SPL)

DIRECTIVITY INDEX (dB)

BEAMWIDTH (degrees)

SPECIFICATIONS FOR EN54-24 (LVH-909/AP-80°)

Sensitivity (1 W, 4 m) 89 dB*
Maximum SPL (4 m) 118 dB*
Coverage (-6 dB) 500 Hz: 95°/80° **
Horiz/Vert 1 kHz: 115°/85° **
2 kHz: 105°/75° **
Rated Impedance 4x HF: 8 Ω*; 3x MF: 5 Ω*;
4x LF: 8 Ω* (each)

*not independently verified

Min Impedance: (LF 1) 6.5 Ω @ 190 Hz,
(LF 2) 6.5 Ω @ 190 Hz, (LF 3) 6.5 Ω @ 200 Hz,
(LF 4) 6.5 Ω @ 200 Hz,
(MF 1) 4.3 Ω @ 2100 Hz,
(MF 2) 4.3 Ω @ 2100 Hz,
(MF 3) 4.3 Ω @ 2100 Hz,
(HF 1) 6.9 Ω @ 5400 Hz,
(HF 2) 6.9 Ω @ 5800 Hz,
(HF 3) 6.9 Ω @ 5800 Hz,
(HF 4) 7.1 Ω @ 5700 Hz.

biamp.
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**Community L SERIES**  
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**LVH-909/AP**

90° HORIZONTAL DISPERSION,  
100° DUAL-CAB PATTERN  
ACTIVE PLUS, 20°, 80°, 100° VERTICAL DISPERSION,  
ARRAYABLE, HIGH OUTPUT LOUDSPEAKER

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**AXIAL PROCESSED SENSITIVITY (dB SPL)**

- On Axis  
- Half-Coverage Average  
- Phase

**HORIZONTAL OFF-AXIS RESPONSE (dB SPL)**

- 0°  
- 10°  
- 20°  
- 30°  
- 40°

**IMPEDANCE (Ω)**

- LF 1  
- LF 2  
- LF 3  
- LF 4  
- MF 1  
- MF 2  
- MF 3  
- HF 1  
- HF 2  
- HF 3  
- HF 4

Min Impedance:  
- LF 1: 6.5 Ω @ 190 Hz,  
- LF 2: 6.5 Ω @ 190 Hz,  
- LF 3: 6.5 Ω @ 190 Hz,  
- LF 4: 6.5 Ω @ 200 Hz,  
- MF 1: 4.3 Ω @ 2100 Hz,  
- MF 2: 4.3 Ω @ 2100 Hz,  
- MF 3: 4.3 Ω @ 2100 Hz,  
- HF 1: 6.9 Ω @ 5400 Hz,  
- HF 2: 6.9 Ω @ 5800 Hz,  
- HF 3: 6.9 Ω @ 5800 Hz,  
- HF 4: 7.1 Ω @ 5700 Hz.

**DIRECTIVITY INDEX (dB)**

- On Axis  
- Half-Coverage Average  
- Phase

**VERTICAL OFF-AXIS RESPONSE (dB SPL)**

- 0°  
- 5°  
- 10°  
- 15°  
- 20°

**SPECIFICATIONS FOR EN54-24 (LVH-909/AP-100°)**

- Sensitivity (1 W, 4 m): 89 dB*
- Maximum SPL (4 m): 117 dB*
- Coverage (-6 dB) 500 Hz: 105°/110°  
  1 kHz: 130°/105°  
  2 kHz: 105°/100°  
  4 kHz: 95°/110°
- Rated Impedance  
  4x HF: 8 Ω*; 3x MF: 5 Ω*; 4x LF: 8 Ω*
  (each)

*not independently verified

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Biamp strives to improve its products on a continual basis. Specifications are therefore subject to change without notice.
**TECHNICAL DRAWING / DIMENSIONS / FINISH**

**H x W x D**
37.3" x 31.4" x 30.5"  
(948 x 797 x 775 mm)

**Unit Weight**
- 250 lbs (113.4 kg) (Indoor)
- 210 lbs (95.3 kg) (Outdoor Weather-resistant)

**Shipping Weight**
- (on a pallet)
  - 307 lbs (139.3 kg) (Indoor)
  - 267 lbs (121 kg) (Outdoor Weather-resistant)

**Enclosure Finish**
- **Indoor**: Powder-coated perforated steel (indoor) grille backed with acoustically transparent woven fabric and coated with Biamp's robust PolyCoat finish on 15mm Baltic Birch plywood enclosure
- **Outdoor (WR)**: Powder-coated marine grade aluminum grille featuring hydrophobically-treated acoustically transparent woven black fabric backing on a 15mm PolyGlas® enclosure coated with Biamp's durable PolyCoat finish, rated for both indoor and outdoor use

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**Notes:**
1. Dimensions are inches [mm]
2. **A** denotes center of gravity (COG)
3. Unless otherwise noted, mounting holes are M10 thread
4. Weight (Indoor) = 250 lbs (113.4 kg)
5. Weight (Outdoor Weather-resistant) = 210 lbs (95.3 kg)
Community L SERIES  Beamforming Venue Horn
LVH-909/AP

90° HORIZONTAL DISPERSION,
ACTIVE PLUS, 20°, 80°, 100° VERTICAL DISPERSION,
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SPLAY BRACKETS / DUAL CABINET CONFIGURATIONS

Achieves the 20° pattern
Type 2 Splay Bracket

Achieves the 80° pattern
Type 1 Splay Bracket
0° hole set - Back Splay

Achieves the 100° pattern
Type 1 Splay Bracket
10° hole set - Front Splay

Cabinet connection points
(Type 1 bracket)

MODELS and ACCESSORIES

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<th>Description</th>
<th>Accessories</th>
<th>Description</th>
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<td>LVH-900AFB</td>
<td>LVH-900 ARRAY FRAME BLK</td>
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<tr>
<td>LVH-909/APW</td>
<td>LVH-900 60DEG ACTIVE-STD WHT</td>
<td>LVH-900AFW</td>
<td>LVH-900 ARRAY FRAME WHT</td>
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<tr>
<td>LVH-909WR/APG</td>
<td>LVH-900WR 60DEG ACTIVE-STD GRY</td>
<td>LVH-900PBB</td>
<td>LVH-900 PULL BACK BAR BLK</td>
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<tr>
<td>LVH-909WR/APB</td>
<td>LVH-900WR 60DEG ACTIVE-STD BLK</td>
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<td>LVH-909WR/APW</td>
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<td>LVH-909/APW</td>
<td>LVH-900 90DEG ACTIVE-STD WHT</td>
<td>LVH-900SP2W</td>
<td>LVH SPLAY PLATE PAIR TYPE2 WHT</td>
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<td>LVH-909WR/APG</td>
<td>LVH-900WR 90DEG ACTIVE-STD GRY</td>
<td>LVH-900SP2G</td>
<td>LVH SPLAY PLATE PAIR TYPE2 GRY</td>
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<td>LVH-909C/AP</td>
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<td>LVH-909WRC/AP</td>
<td>LVH-900WRC 90DEG ACTIVE-STD CTO</td>
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</tbody>
</table>
NOTES

1. TECHNICAL SPECIFICATIONS All measurements are performed using a time-windowed impulse response to eliminate reflections, approximating an anechoic environment, at a distance of at least 6.0 m. All acoustic specifications are rounded to the nearest whole number. An external DSP using settings provided by Biamp is required to achieve the specified performance. Further performance gains can be realized using the FIR loudspeaker optimization presets available in Biamp’s Community Amplified Loudspeaker Controllers (ALCs).

2. OPERATING RANGE The frequency range over which the on-axis equalized/processed response remains within 10 dB of the rated sensitivity, in accordance with IEC 60268-5.

3. NOMINAL CONTINUOUS POWER HANDLING The maximum continuous input voltage at the stated nominal impedance that the system can withstand for a period of 2 hours using an IEC 60268-5 defined spectrum with recommended signal processing and protection filters.

4. NOMINAL MAXIMUM SPL The SPL produced when an IEC 60268-5 signal is applied to the equalized/processed loudspeaker system, at a level which drives at least one subsection to its nominal continuous voltage limit. Referenced to a distance of 1 meter. The peak SPL represents the 2:1 (6 dB) crest factor of the IEC 60268-5 test signal.

5. RATED CONTINUOUS VOLTAGE The maximum continuous input voltage for the system that results in no more than a 3 dB change in the system’s response during operation.

6. RATED MAXIMUM SPL The SPL produced when a typical program material signal is applied to the equalized/processed loudspeaker system, at a level which drives at least one subsection to its rated continuous voltage limit. Referenced to a distance of 1 meter. The peak SPL represents the 4:1 (12 dB) crest factor of the program signal.

7. AXIAL PROCESSED SENSITIVITY The variation in acoustic output level with frequency for a 2.83 V, swept-sine signal using the recommended signal processing. Referenced to 1 meter. The on-axis magnitude and phase responses, as well as the average magnitude response, calculated over one-half of the nominal coverage angles, are shown. The responses have 1/3 octave smoothing applied.

8. HORIZONTAL/VERTICAL OFF-AXIS RESPONSES The loudspeaker’s magnitude response at various off-axis angles using the recommended signal processing in the operating mode which utilizes the largest number of individually amplified pass bands. The responses have 1/3 octave smoothing applied.

9. DIRECTIVITY INDEX The ratio of the on-axis SPL to the mean SPL at the same distance for all points within the measurement sphere for each given frequency; expressed in dB. The responses have 1/3 octave smoothing applied.

10. BEAMWIDTH The included angle between the -6 dB points in the polar response of the loudspeaker when driven in the operating mode which utilizes the largest number of individually amplified pass bands. The responses have 1/3 octave smoothing applied.

Data presented on this spec sheet represents a selection of the basic performance specifications for the model. These specifications are intended to allow the user to perform a fair, straightforward evaluation and comparison with other loudspeaker specifications. For a detailed analysis of this loudspeaker’s performance, please download the GLL file and/or the CLF file from our website: biamp.com. For installation of loudspeakers, the guidelines provided by Biamp should only be performed by trained and certified professional structural engineer. It is strongly recommended that a licensed and certified professional structural engineer approve the mounting design.