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VENUEPOLAR[™] LVH-900 REFERENCE GUIDE

Simplified Design for Community LVH-900

VenuePolar[™] is a custom plugin for EASE[®] Focus 3, that extends ease of design to LVH-900 loudspeaker installations, allowing system designers to create larger custom arrays while streamlining the design process. The plugin is included within the LVH GLL (v2.0 or later). Download the latest <u>LVH GLL</u>.

The designer simply enters the acoustic goals they need to achieve for their audience. VenuePolar then quickly calculates the number and type of speakers (AS or AP), frame angle, vertical coverage patterns and splay angles to provide the most uniform coverage within the seating area. Integration with FIRmaker filter optimization makes it easy for LVH-900 to outperform other large format point source loudspeakers or line arrays in any application.



START TAB: Define your desired system performance

Choose Target Audience Areas

- All audience zones and areas are listed
- Those that do not intersect with speaker aiming line are grayed out
- Right-click to check or uncheck all

Select Array Characteristics

- Hover mouse over the blue question marks for a quick tool-tip
- Click 'Web Help' for more details

Click 'Calculate Array'

• Perform calculations of number and types of speakers (AS or AP), frame angle, vertical coverage patterns and splay angles. Select "Restrict to X # of LVH-900" if working within a specific budget.



ARRAY TAB: Shows the Recommended Array Configuration

After the Array is calculated the configuration will appear as a "Recommended Array Configuration." You will see a red "Array not synced" message.

	uero	olar E	Kigging			×
Start	A	rray	Loads			
Reco	mm	ended	Array Co	nfigu	ation	
Fra	ame	Vertica	al Angle [°] = 2	6.00	
	#	Cabi	inet		Angle	
	1	906/	AS 20		0°[20°]	
	2	906/	AS 20		30°[10°]	
	3	906/	AS 20		20°[20°]	
	_					
Ar	ray n	not syr	nced			

A simple press of the VP to EF3 button will automatically send that array configuration to the EASE Focus 3 object properties panel. You will see a green message confirming the match. The change will also be seen in the rest of the EASE Focus 3 panels.

/	uePo	Har Rigging		
Start	A	rray Loads		
Reco	mm	ended Array Confi	guration	
Fra	ame	Vertical Angle [°] =	15.00	
	#	Cabinet	Angle	٦
	1	906/AS 20	0°[20°]	1
	2	906/AS 40	20°[20°]	
		han in the second s	- Institution	
Ar	ray s	ynced from VP to I	EF3	
Ar	ray s	ynced from VP to I	EF3	

LVH FIRMAKER OPTIMIZATION

With the latest GLL, the designer can use AFMG[®]'s FIRmaker engine to fine tune the LVH array to better fit the coverage to the venue and reduce interference between the cabinet patterns.

Once you have an array configuration that you are happy with you can refine it by using FIRmaker optimization. With the array selected, press the Compute FIR Preset button at the bottom of the Object Properties panel.

Number of Cabinets	s per Group:	2 ~
Co	py Setup to Other Line Am	
FIRmaker Optimizat	tion	
	Compute FIR Preset	
Status Slobal Safety	Factor condition fulfilled (1	9:1 >= 10:1).
Status Silobal Safety I	Factor condition fulfilled (1: Show Object List	9:1 >= 10:1).

A new window will pop up and give you options to optimize the array. Name the optimization so you can refer back to it. The default settings are below.

Drannel Configuration			Audience Areas						
FIR Channels	3	~	Area		Audience	Avoid	lgnore		
	-		Center Balcony - Audience	e Area 1	۲	0	0		
			Center Front - Audience A	kea 1	۲	0	0		
			Center Rear - Audience A	ivea 1	۲	0	0		
			Optimization Phonties						
			O High Power	🛞 Balar	ice .	OHer	Unfomity		
			O Strong Avoidance	O Custo	en .				
-	2 5		Level Datibution Over Aud	lence					
to	5 5		Constant SPL	O Type	cal Decay from F	ront to Back.			
Ľ	ů č		O SPL Reduction per D	oubling Datanc		3.0	18		a'
Ö FIR 1 ┿	ຶ ບຶ		Advanced Settings						
G FIR 1 FIR 2 FIR 3			Advanced Settings						
FIR 1		a.A	Advanced Settings					Cert	1.4

EASE Focus 3 will export separate files for each cabinet in the array.

IMPORTANT: You must have a LVH-900 FIRmaker license to be able to export the FIR files. If you don't have a FIRmaker license you can contact VenuePolar@biamp.com to request one.

LOADS TAB: The Rigging Calculator tool calculates cable and fastener forces as a function of the array orientation and cable position.

Single or Double Hang

A Double Hang configuration is the default result shown on the Loads tab with pinpoints chosen to best suspend the array (over the Center of Gravity). If there is a pull back on the array, only a Single Hang option will be shown. With the Single Hang option, the rigging calculator returns the closest valid pinpoint in front of the Center of Gravity (CoG).

KIG	ging Venue Pol	lar		;
start	Array Loa	ads		
Doub	le Hang at Pinp	oints T1 and T1	4	
T' (Te Read info b Total	op) and 'S' (Side) p Web Help and Me efore using these Weight = 872.25	pinpoints require of annual for addition recommendations	lifferent rigging h al rigging conside L	ardware. eration
D Pir	ouble Hang npoint A: T1	 Single Hang Pinpoint B 	T14 ~	Default
D Pir Desir	ouble Hang apoint A: T1 red Safety Factor:	Single Hang Pinpoint B 10 1	T14 ~	Default
D Pir Desii	ouble Hang npoint A: T1 red Safety Factor: Name	 Single Hang Pinpoint B 10 : 1 Front Load 	Back Load	Default Safety Factor
D Pir Desir Ot	npoint A: T1 red Safety Factor: Name LVH-900AF	 Single Hang Pinpoint B 10 : 1 Front Load 479.97 lb 	Back Load 392.28 lb	Default Safety Factor 13:1
Desit Ot 1:	npoint A: T1 red Safety Factor: Name LVH-900AF 906/AP	 Single Hang Pinpoint B 10 : 1 Front Load 479.97 lb 226.86 lb 	Back Load 392.28 lb 209.34 lb	Default Safety Factor 13:1 21:1
Desi	apoint A: T1 red Safety Factor: Name LVH-900AF 906/AP (2nd Cabinet)	 Single Hang Pinpoint B 10 : 1 Front Load 479.97 lb 226.86 lb 93.11 lb 	Back Load 392.28 lb 209.34 lb 174.91 lb	Safety Factor 13:1 21:1 50:1

The rigging tab shows a side view of the array, a representation of the CoG of the array (red dot) and basic dimensions of the array.

If you add a pull back bar to the bottom of the array it will be shown correctly in the Rigging tab, and also be reflected on the Loads tab and in the project report.







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AFTER YOU'RE DONE, CREATE A REPORT

- Select the visual elements you would like to include
- Save the PDF report to your computer
- Generate reports with differing level of detail

The report includes information about the venue, the arrays, and their characteristics including:

- Project information and definitions for each of the audience zones, shape, ear height, etc.
- Sound sources, distribution, and global filters for each array
- Description of the cabinets, splay brackets, rigging frames (types and number)
- Passive filter settings (for the installer to set the jumpers on the attenuation panels)
- Loads, pinpoints, array weights, safety calculations and any associated warnings
- A bill of materials for each array in the project. Use of side pinpoints will cause a PY1-1550 to be added to the bill of materials for every side pinpoint utilized in the array.
- A combined bill of materials for all arrays that were configured with VenuePolar (includes IV6)

The Loads portion of each array's section will show the hanging option (single/ double), the pinpoint, the total array weight and if there is a pull back bar.

Each sound source will list a Bill of Materials (BoM) for that array and then a summary BoM will be located after the last sound source that will list all elements of all VenuePolar enabled arrays (for easy ordering purposes).

Note: The LVH-900 GLLs with VenuePolar must be used in EASE Focus 3 v 3.1.14 or later.

Double H 'T' (Top) Read We	Hang at Pinpoints 1 and 'S' (Side) pin ab Help and Manua andations.	1 and T14 points require d I for additional	fferent rigging hardware. igging consideration info befor	e using these
Total We	light = 874.96 lb			
Weight f	or all riccing and s	uspension purp	in General section is calculate sets.	d incorrectly. Use th
Desired	Safety Factor: 10:	1		
01	5.3 Bill o	f Materials	Current Array Only)	
1:	Type	Model Name	Quantity	
	Frame	LVH-900AF	1	
	Speaker	LVH-906/AP	2	
2:				
2:	Speaker Colors Reaches	LVH-906/AS	1	
2:	Splay Bracket Splay Bracket	LVH-9005P1 LVH-9005P2	1	
2:	Speaker Splay Bracket Splay Bracket	LVH-9005P1 LVH-9005P2	1	
2:	Speaker Splay Bracket Splay Bracket	LVH-9005P1 LVH-9005P2	1	
2:	Speaker Splay Bracket Splay Bracket 7.3 Bill o	LVH-900SP1 LVH-900SP2	1 1 (All VenuePolar Enable	ed Arrays)
2:	Speaker Splay Bracket Splay Bracket 7.3 Bill o Type	EVH-9005P1 EVH-9005P2 f Materials Model Name	1 1 (All VenuePolar Enable Quantity	ed Arrays)
2:	Speaker Splay Bracket Splay Bracket 7.3 Bill o Type Frame	f Materials Model Name	1 1 (All VenuePolar Enable Quantity 2	ed Arrays)
2:	Speaker Splay Bracket Splay Bracket 7.3 Bill o Type Frame Speaker	f Materials Model Name LVH-9005P2	(All VenuePolar Enable Quantity) 2 4	ed Arrays)
2:	Speaker Splay Bracket Splay Bracket 7.3 Bill o Type Frame Speaker Speaker	f Materials Model Name LVH-9005P2	(All VenuePolar Enable Quantity) 2 4 5	ed Arrays)

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