# Everbach Acoustics Consulting

212 Dogwood Lane, Wallingford, Pennsylvania 19086 E. Carr Everbach, ASA Fellow Tel 610-328-8079 FAX 610-328-8082 e-mail ceverba1@swarthmore.edu

August 1, 2023

Ms. Kate Donnelly Director of Facilities Westtown School 975 Westtown Road West Chester, PA 19382

Re: Noise Propagation Survey, Oak Lane Projects at Westtown School

Dear Ms. Donnelly:

I write here to certify that I have performed experiments and made measurements, described below, that show that the Public Address (PA) system proposed for the Oak Lane Projects will meet Westtown Township noise ordinance requirements.

On Saturday, July 22, 2023, I set up audio equipment on the site of the proposed illuminated playing field, at the estimated positions (Figure 1) of the speakers of the proposed PA system design (Appendix B). In Figure 1, the red arrows indicate the orientations of the speakers, which were QSC K-12.2 powered loudspeakers on stands raised to heights approximating those of the proposed system. These were connected to a Mackie 1402VLZ4 mixer, which supplied the signal shown in Figure 2 to each speaker via cables laid across the existing field. The signal consisted of speech, white noise bursts, a 440 Hz tone and a 1000 Hz tone, and a sliding "chirp signal" from 500 Hz to 3000 Hz, each 10 seconds long and separated by 10-second periods of silence (for measuring background noise). The signal was set on continuous repeat and the entire system was powered by a gasoline generator (since there is no electrical service at the current field location).

My student assistant monitored the system as I drove and walked to the two measurement locations, L1 and L2, shown on Figure 3. These represent the nearest neighbor's property line and that of complainant neighbors in a previous noise propagation study. At each location, I used a calibrated Brüel & Kjaer 2270 sound level meter to measure the A-weighted sound level during several repetitions of the signal pattern in Figure 2, noting the background noise levels before and after, we well as in the 10-second silences between white noise bursts (hiss), speech, and tones. By cellphone, I asked my student assistant to reduce the signal output on the Mackie mixer by 5 decibel steps until the noise signals were just barely audible to me and there was

no change in the A-weighted noise levels measured relative to background. Typically, the background noise level at sites L1 and L2 fell in the mid-to-upper 40-dB(A) range but passing motorcycles on Westtown Road produced average noise levels in the high 50 dB(A) range. Noise from a brush mower in the fields of the former Pete's Farm produced even higher background noise levels, but I waited until the mower had stopped before commencing measurements. The weather at the time was sunny with temperatures in the high 80°F range, and an occasional light breeze (I used a Brüel & Kjaer windscreen on the meter microphone and the meter was set to compensate for its insertion loss, as per the ANSI standards listed below in Appendix A).

The result of this study was that a setting was found for the amplification that allowed the signal to meet all Westtown Township noise standards and still provide adequate acoustic coverage of the field and associated grandstands. In particular, § 170-1506 (A)(2)Environmental performance standards. states that "No use shall be permitted that [will] result in noise or vibration exceeding the average intensity of noise or vibration occurring from other causes at the boundary line." The "other causes" in this statute would presumably include background noise sources such as the mowing of lawns or traffic noise along public roadways such as Westtown Road. Furthermore, § 116-2 (A) Particular conduct prohibited. states: "... the following are hereby declared to constitute disturbing the peace: The operation of radios, record players or other electrical or mechanical instruments, or singing, shouting or playing musical instruments in a manner and at a time which is generally considered inappropriate and which unnecessarily disturbs the peace and guiet of the immediate neighborhood." We take it that barely audible sounds from the proposed PA system that do not rise above the average background noise would satisfy this requirement. Finally, 170-1514 Outdoor Lighting requires a distributed system such as the proposed PA system and so meets this requirement.

It should be noted that the audio system employed in this study is not identical to the proposed PA system, but is substantially equivalent, and indeed the powered QSC K12.2 loudspeakers I used provide 10 decibels of extra amplification for the same signal as the proposed Community® R2 and R5 loudspeakers (Appendix C). Therefore, the audio system employed in this study was at least as powerful as the proposed system, and in either case a mixer setting was found that met the above Westtown Township ordinances and still provided adequate acoustic coverage of the field and observation areas. It is trivial to note that the amplification of any system can be "turned down" sufficiently to meet requirements and this procedure will be employed again once the proposed PA system and field renovations are complete. A simulation using EASE™ software conducted by JD Sound and Video considering the proposed PA system is included in Appendix D, and matches my measurements using the temporary audio system.

In summary, I have conducted outdoor noise propagation measurements of amplified signal (voice, white noise, and tones) on the Oak Lane fields at Westtown School, and have confirmed that a setting was found that produces a barely audible signal at

neighboring properties with negligible increase in A-weighted noise level over background noise. To my best Engineering certainty, the proposed PA system will be capable of providing adequate acoustic signal on the illuminated playing field while complying with Westtown Township noise ordinances.

Please do not hesitate to contact me if you have questions.

anfink

Sincerely,

E. Carr Everbach

Consultant in Acoustics since 1986

Appendix A: Applicable American National Standards Institute standards adhered to in the conduct of this work.

ANSI S1.4-1983 (R2006) Specification for Sound Level Meters

ANSI S1.40-2006 Specifications and Verification Procedures for Sound Calibrators

ANSI S1.43-1997 (R2007) Specifications for Integrating-Averaging Sound Level Meters

ANSI S1.11-1966 Specification for Octave, Half-Octave, and Third-Octave Band Filter Sets

ANSI S1.11-2004 Specification for Octave-Band and Fractional-Octave-Band Analog and Digital Filters

ANSI S12.9-2005 Quantities and Procedures for Description and Measurement of Environmental Sound

ANSI S12.9-2005/Part 4: Quantities and Procedures for Description and Measurment of Environmental Sound – Part 4: Noise Assessment and Prediction of Long-term Community Response

ANSI S12.9-2007/Part 5: Sound Level Descriptors for Determination of Compatible Land Use

ANSI S1.17-2004/Part 1 Microphone Windscreens – Part 1: Measurements and Specification of Insertion Loss in Still or Slightly Moving Air

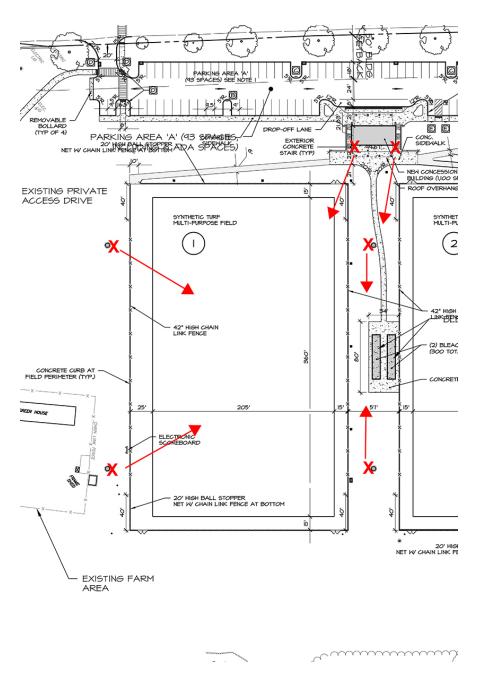
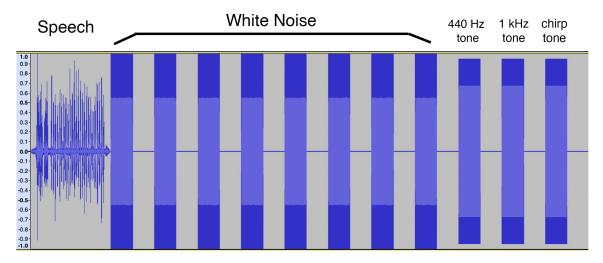


Figure 1: Placement and facing direction of loudspeakers in the audio propagation study



Ten-second bursts followed by ten-second silences

Figure 2: Audio signal used in the study (4 minutes, 10 seconds, repeating)

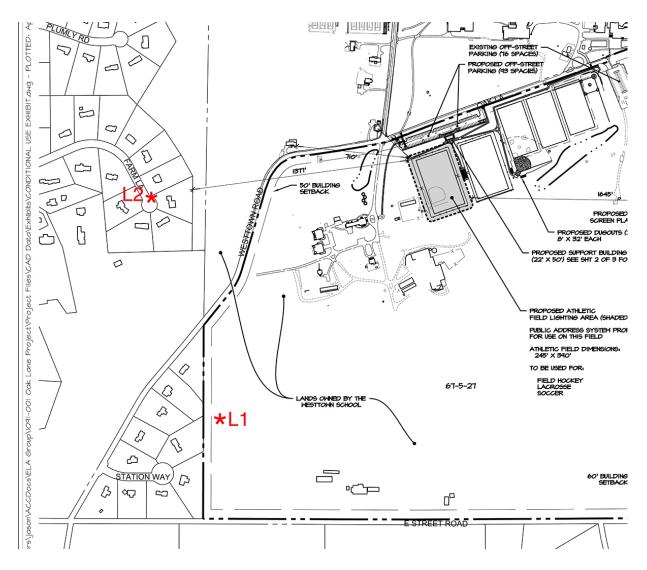


Figure 3: Acoustic Monitoring Locations during broadcast of audio test signals

#### **SPECIFICATIONS**

Loudspeaker Type:	2-way, horn loaded coaxial, weather-resistant		
Operating Range:	85 Hz to 16 kHz 125 Hz to 10 kHz (±4 dB)		
Max Input Ratings:	200W continuous, 500W program 40 volts RMS, 89 volts momentary peak		
Recommended Power Amplifier:	420W/ to 600W/ @ 8 ohms		
Sensitivity (1W/1m):	101 dB SPL (125 Hz to 10 kHz 1/3 octave bands) 102 dB SPL (250 Hz to 4 kHz speech range)		
Maximum Output:	124 dB SPL / 131 dB SPL (peak)		
Nominal Impedance:	8 ohms		
Minimum Impedance:	4.2 ohms @ 9.7 kHz		
Nominal –6dB Beamwidth:	90° H (+1° / -46°, 1.6 kHz to 12.5 kHz) 40° V (+16° / +1°, 1.6 kHz to 12.5 kHz)		
Axial Q / DI:	18.1 / 12.6, 1.6 kHz to 10 kHz		
Crossover Frequency:	2 kHz		
Recommended Signal Processing:	90 Hz high pass filter		
Drivers:	LF (1) 12" Ferrofluid-cooled HF (1) 1" exit, titanium free, Ferrofluid-cooled		
Driver Protection:	DYNA-TECH		
Input Connection:	: 12 foot (4 m) SJOW #16 gauge		
Controls:	None		
Enclosure:	Rotomolded LLDPE, light grey		
Mounting/Rigging Provisions:	(5) 3/8-16 rigging points		
Grille:	3-layer WeatherStop™, light grey (Zinc-rich epoxy dual-layer powder coated perforated steel grille, foam, woven poly mesh)		
Environmental Performance:			
Required Accessories:	24 dB/Oct high pass filter		
Supplied Accessories:	(1) Yoke bracket, light grey (1) Aiming strap		
Optional Accessories:	PMB Series pole mount brackets		
Dimensions—Height: Width: Depth:	16 inches (406.4 mm) 16 inches (406.4 mm) 15.94 inches (404.88 mm)		
Weight:	35 lbs (15.9 kg)		
Shipping Weight:	40 lbs ( 18.14 kg)		



Sensitivity: Free field pink noise measurement at 40 ft (12.2 m) at 60% power; extrapolated to 1 meter and an input of 2.83 volts RMS.



#### **APPLICATIONS**

- Fill speaker for stadia, athletic fields, arenas and race tracks
- · Convention centers
- · Outdoor background music / paging systems
- · Theme and amusement parks
- · Fairgrounds, rodeos, air shows
- · Malls, cruise ships, skating rinks
- Swimming pools
- · Portable sound systems

#### **FEATURES**

- · Weather-resistant, rotomolded UV enclosure
- · Weather-treated drivers and crossovers
- Corrosion-resistant zinc-rich epoxy dual-layer powder coated steel grille and yoke
- Pattern control down to 630 Hz
- High efficiency
- Integral mounting points
- · High power passive crossover
- · DYNA-TECH protection circuitry

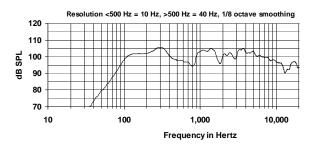
#### **DESCRIPTION**

The R.5-94Z two-way, full-range loudspeaker system is engineered to provide quality full-range sound projection in a variety of outdoor and indoor applications. Its wide range, smooth frequency response and high efficiency ensure both high fidelity music reproduction and superb projection of clear intelligible speech with very low distortion. Five-year limited product warranty; fifteen-year enclosure warranty.

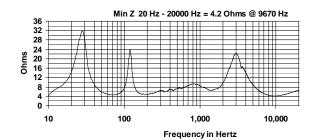
<sup>2.</sup> Watts: All wattage figures are calculated using the rated nominal impedance.



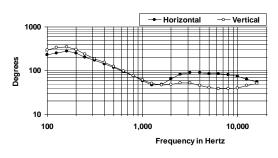
#### FREQUENCY RESPONSE



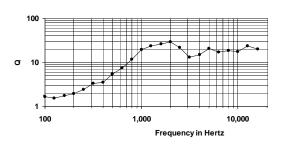
#### **IMPEDANCE**



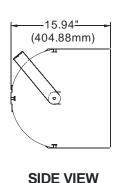
#### **BEAMWIDTH**

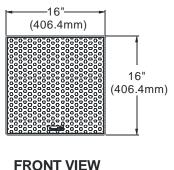


#### **AXIAL Q**



#### **DIMENSIONS**







# 10.197" [259] 10.197" [259] 10.00" [406.4] 10.00" [254] 10.00" [50.8] 1.000" [50.8] 1.000" [25.4] 1.000" [25.4]

**R.5 YOKE** 

REAR VIEW

#### ARCHITECTURAL SPECIFICATIONS

The loudspeaker system shall be a horn-loaded, two-way, coaxial design consisting of one 12" Ferrofluid-cooled driver and one 1" exit, titanium free, Ferrofluid-cooled compression driver mounted on a horn inside the cabinet. The drivers shall be connected to a passive crossover network with a crossover frequency at 2 kHz with driver protection using DYNA-TECH protection circuitry. The cabinet shall be a rotomolded linear low density polyethylene enclosure providing weather and UV resistance with a three-layer weather resistant grille. The steel grille shall be powder coated with a proprietary zinc-rich epoxy dual-layer powder coating process in light grey to color match the enclosure. The system shall have an IEC529 IP rating of IP55W with a minimum 5-degree downward aiming angle. The input connection shall be one 12' (4m) SJOW #16 gauge cable with stripped ends. The enclosure shall incorporate five 3/8-16 rigging points for multiple mounting options. In addition, the loudspeaker will be supplied with one zinc-rich epoxy dual-layer powder coated steel yoke bracket. The loudspeaker system shall have an amplitude response of 85 Hz to 16 kHz (+/- 4 dB), an input capacity of 40V RMS, 102 dB SPL sensitivity @ 2.83V / 1 meter between 250 Hz to 4 kHz at a nominal 8 ohm impedance. The nominal dispersion shall be 90° x 40° over a frequency range of 1.6 kHz to 12.5 kHz. The dimensions of the enclosure are defined as 16" x 16" x 16" (HWD) at a weight of 35 lbs.

Community strives to improve its products on a continual basis. Specifications are therefore subject to change without notice.



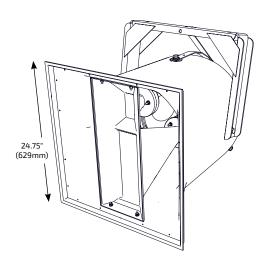
#### **R SERIES**

Voice and Music

# R2-94Z

HIGH OUTPUT FULL-RANGE 80° x 40° WEATHER-RESISTANT LOUDSPEAKER





#### **APPLICATIONS**

MAIN PA ELEMENT

Athletic Fields · Arenas · Stadiums · Racetracks Theme and Amusement Parks · Fairgrounds Convention Centers · Factories and Warehouses Air Shows · Rodeos · Electronic Carillons Multipurpose Outdoor and Indoor Venues

#### DESCRIPTION

The R2-94Z full-range loudspeaker system is engineered to provide quality, long throw full-range sound projection in a variety of outdoor and indoor applications. Its wide, smooth frequency response and high efficiency ensures high-fidelity music reproduction along with superb projection of clear, intelligible speech at very low distortion.

The R2-94Z is an all horn loaded triaxial design using precision waveguides manufactured by Community of hand-laminated fiberglass. The outer enclosure forms a double wall construction with the internal bass horn, providing a completely weather-sealed chamber for the LF drivers. The mid/high frequency horn assembly is mounted in the mouth of the bass horn. A high quality passive crossover with dynamic driver protection is included. The result is a loudspeaker system that is extremely strong, non-resonant, weather-resistant, and easy to install.

#### **FEATURES**

- $\bullet \ \ \text{High-fidelity}, \text{high efficiency}, \text{full-range reproduction of music and speech}$
- · Application-specific coverage pattern
- 100% weather-resistant and corrosion-resistant construction
- · Included weather-resistant mounting yoke
- Five-year product warranty / Fifteen-year enclosure warranty

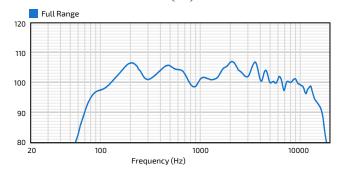
Tive year product warranty / Titteen year enclosure warranty					
TECHNICAL SPECIFICATIONS <sup>1</sup>					
Operating Mode	Passive				
Operating Environment	Indoor / Continuous outdoor direct exposure				
Operating Range <sup>2</sup>	70 Hz to 15 kHz	z			
Nominal Beamwidth (H x V)	80°x 40°				
Transducers	LF – 2 x 12" (305mm) weather-treated, Ferrofluid-cooled MF – 1 x M200 2" exit, non-metallic diaphragm, Ferrofluid-cooled HF – 1 x 1" exit, titanium diaphragm				
Continuous Power Handling³  @ Nominal Impedance	40V	400W @ 4 ohms (1600W peak)			
Nominal Sensitivity <sup>4</sup>	@ 1W 103 dB	@ 2.83V 106 dB			
Nominal Maximum SPL <sup>5</sup> (Whole Space)	Peak 135 dB	Continuous 129 dB			
Equalized Sensitivity <sup>6</sup>	e 1W 103 dB	@ 2.83V 106 dB			
Equalized Maximum SPL <sup>7</sup>	Peak 135 dB	Continuous 129 dB			
Recommended Amplifiers	400W - 800W @ 4 ohms, (40V - 57V)				
PHYSICAL					
Input Connection	12' (3.6m) SJOW #16 cable				
Mounting Points	(5) 1/2"-13 threaded rigging points, Steel zinc-rich epoxy dual-layer powder-coated mounting yoke; Aluminum aiming straps to secure angle				
Environmental	IP55 per IEC 60529, conforms with MIL-STD-810G				
Dimensions H x W x D	24.75" x 24.75" x 30.75" (629 x 629 x 781 mm)				
Weight	73 lbs (33.1 kg) loudspeaker only 96 lbs (43.5 kg) loudspeaker and yoke				
Finish	Refer to the Technical Drawing (page 3)				
OPTIONS					
Required Accessory	70 Hz High pass filter				
Accessories	TRC400: External 400W transformer (70V/100V/140V)				
Configure-to-Order (CTO)	Custom color: Exterior grade paint finish, customer defined RAL# Custom cable length and gauge				

 $Community\ strives\ to\ improve\ its\ products\ on\ a\ continual\ basis.\ Specifications\ are\ therefore\ subject\ to\ change\ without\ notice.$ 

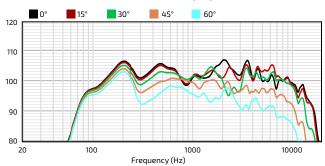
HIGH OUTPUT FULL-RANGE 80° x 40° WEATHER-RESISTANT LOUDSPEAKER

# **Community**°

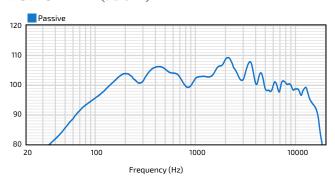
#### **AXIAL PROCESSED RESPONSE (dB)**8



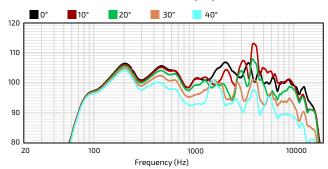
#### HORIZONTAL OFF-AXIS RESPONSE (dB)<sup>10</sup>



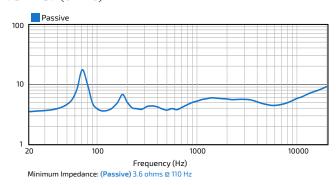
#### **AXIAL SENSITIVITY** (dB SPL)<sup>9</sup>



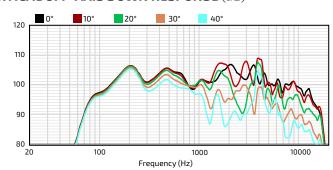
#### **VERTICAL OFF-AXIS UP RESPONSE** (dB)<sup>10</sup>



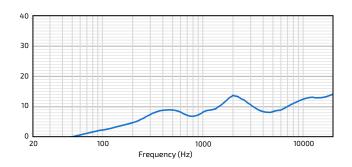
#### IMPEDANCE (Ohms)



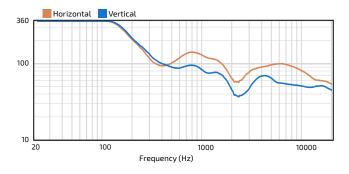
**VERTICAL OFF-AXIS DOWN RESPONSE** (dB)<sup>10</sup>



#### **DIRECTIVITY INDEX** (dB)<sup>11</sup>



#### BEAMWIDTH (Degrees)12



R2-94Z

HIGH OUTPUT FULL-RANGE 80° x 40° WEATHER-RESISTANT LOUDSPEAKER

# **Community**°

#### **TECHNICAL DRAWING / DIMENSIONS / FINISH**

#### H x W x D

24.75" x 24.75" x 30.75" (629 x 629 x 781 mm)

#### **Unit Weight**

73 lbs (33.1 kg) loudspeaker only 96 lbs (43.5 kg) loudspeaker with yoke

#### **Shipping Weight**

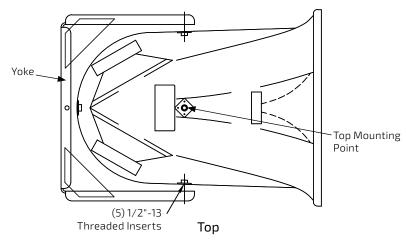
124 lbs (56 kg)

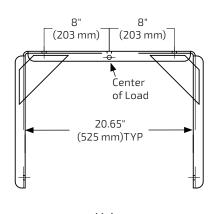
#### Grille:

3-layer Weather-Stop™ with polyester mesh, foam, zinc-rich epoxy dual-layer powder-coated perforated marine-grade aluminum color-matched to enclosure

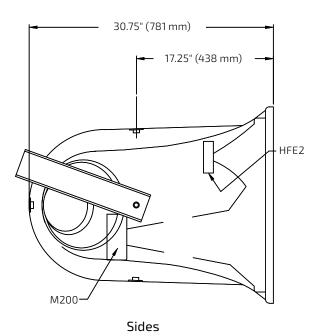
#### Enclosure / Finish

Hand-laminated multilayer fiberglass with paintable light grey gel-coat (RAL# 7038)

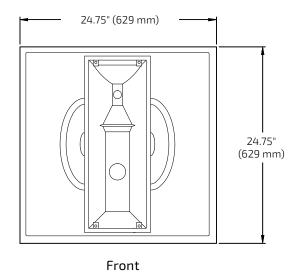




Yoke



Note: Cabinets are hand-laminated and measurements vary slightly due to the thickness of the fiberglass. Dimensions shown should not be used to fabricate hanging fixtures. Mounting points are approximate.



#### ARCHITECTURAL SPECIFICATIONS

The loudspeaker system shall be a horn-loaded, three-way, full-range triaxial design with two 12" Ferrofluid-cooled woofers treated with moisture repellent on a bass horn and one 2" exit Ferrofluid-cooled midrange compression driver with a nonmetallic diaphragm and one 1" exit HF driver with a titanium diaphragm mounted on respective fiberglass horns built within the bass horn. Drivers shall be connected to an integral crossover with crossover frequencies of 600 Hz and 3.5 kHz and integral multi-stage, self-resetting, over-current protection circuitry using a combination of a fast-acting relay, solid state thermal limiting circuit and high positive current coefficient resistors. The input connection shall be one 16-2 12-foot (4m) SJOW Cable with stripped ends. The loudspeaker enclosure shall be an integral double-wall weather-sealed light grey fiberglass bell with a three-layer weather-resistant grille. The marine-grade aluminum grille shall be powder coated with a proprietary zinc-rich epoxy dual-layer powder coating process in light grey to color match the enclosure. The system shall have an IEC 60529 IP rating of IP55W (with a minimum 5° downward aiming angle). There shall be five 1/2"-13 threaded mounting points. The system shall have an amplitude response of 70 Hz to 15 kHz, input capability of 40V RMS, 103 dB sensitivity at 1W/Im and 4 ohms nominal impedance. The nominal dispersion shall be 80°H x 40°V from 1250 Hz to 10 kHz. The loudspeaker shall be 24.75 in. (629 mm) H x 24.75 in. (629 mm) W x 30.75 in. (781 mm) D and weigh 96 lbs. (43.5 kg) with the yoke.



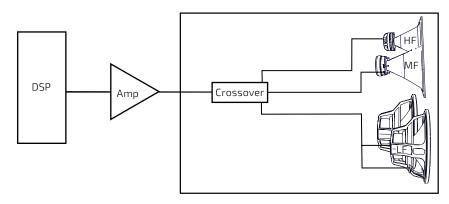
#### R SERIES

Voice and Music

# R2-94Z

HIGH OUTPUT FULL-RANGE 80° x 40° WEATHER-RESISTANT LOUDSPEAKER

#### **CONNECTION DIAGRAM**



Two-way single amp

#### **NOTES**

- 1. PERFORMANCE SPECIFICATIONS All measurements are taken indoor using a time-windowed and processed signal to eliminate room effects, approximating an anechoic environment, a distance of 6.0 m. All acoustic specifications are rounded to the nearest whole number. An external DSP with settings provided by Community Professional Loudspeakers is required to achieve the specified performance; further performance gains can be realized using Community's dSPEC226 loudspeaker processor with FIR power response optimization.
- 2. OPERATING RANGE The frequency range in which the on-axis processed response remains within 10dB of the average SPL.
- 3. CONTINUOUS POWER HANDLING Maximum continuous input voltage (and the equivalent power rating, in watts, at the stated nominal impedance) that the system can withstand, without damage, for a period of 2 hours using an EIA-426-B defined spectrum; with recommended signal processing and protection filters.
- 4. NOMINAL SENSITIVITY Averaged SPL over the operating range with an input voltage that would produce 1 Watt at the nominal impedance and the averaged SPL over the operating range with a fixed input voltage of 2.83V, respectively; swept sine wave axial measurements with no external processing applied in whole space, except where indicated.

- NOMINAL MAXIMUM SPL Calculated based on nominal / peak power handling, respectively, and nominal sensitivity; exclusive of power compression.
- 6. EQUALIZED SENSITIVITY The respective SPL levels produced when an EIA-426-B signal is applied to the equalized loudspeaker system at a level which produces a total power of 1 Watt, in sum, to the loudspeaker subsections and also at a level which produces a total voltage, in sum, of 2.83V to the loudspeaker subsections, respectively; each referenced to a distance of 1 meter.
- 7. EQUALIZED MAXIMUM SPL The SPL produced when an EIA-426-B signal is applied to the equalized loudspeaker system, at a level which drives at least one subsection to its rated continuous input voltage limit, referenced to a distance of 1 meter. The peak SPL represents the 2:1 (6dB) crest factor of the EIA-426-B test signal.
- 8. AXIAL PROCESSED RESPONSE The on-axis variation in acoustic output level with frequency of the complete loudspeaker system with recommended signal processing applied.

  1/6 octave Gaussian smoothing applied.
- AXIAL SENSITIVITY The on-axis variation in acoustic output level with frequency for a 1 Watt swept sine wave, referenced to 1 meter with no signal processing. 1/6 octave Gaussian smoothing applied.

- 10. HORIZONTAL / VERTICAL OFF-AXIS RESPONSES The loudspeaker's magnitude response at various angles off-axis, with recommended signal processing applied in the operating mode which utilizes the largest number of individually amplified pass bands. 1/6 octave Gaussian smoothing applied.
- 11. DIRECTIVITY INDEX The ratio of the on-axis SPL squared to the mean squared SPL at the same distance for all points within the measurement sphere for each given frequency; expressed in dB. 1/6 octave Gaussian smoothing applied.
- 12. BEAMWIDTH The angle between the -6dB points in the polar response of the loudspeaker when driven in the operating mode which utilizes the largest number of individually amplified pass bands. 1/6 octave Gaussian 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 spec sheets. For a detailed analysis of this loudspeaker's performance please download the GLL file and/ or the CLF file from our website: communitypro.com

Community Professional Loudspeakers
333 Fast Fifth Street Chester PA 19013-4511 L

333 East Fifth Street, Chester, PA 19013-4511 USA Phone (610) 876-3400 • Fax (610) 874-0190 www.communitypro.com • info@communitypro.com **CAUTION:** Installation of loudspeakers should only be performed by trained and qualified personnel. It is strongly recommended that a licensed and certified professional structural engineer approve the mounting design.

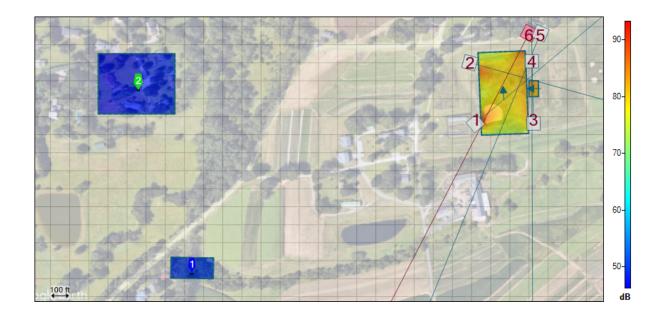
# 1 Project Information

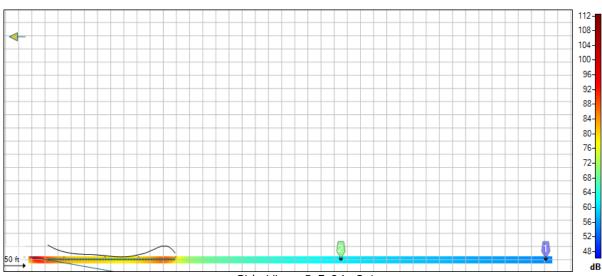
Project Title: Westtown School
Date: Monday, July 31, 2023
Author: Joe DiSabatino
Company: JD Sound and Video
Notes: Mounting height of 10'

Temperature: 68.0°F

Pressure: Standard (1010 hPa) Humidity: Standard (60%)

Mapping: Broadband - A-Weighted





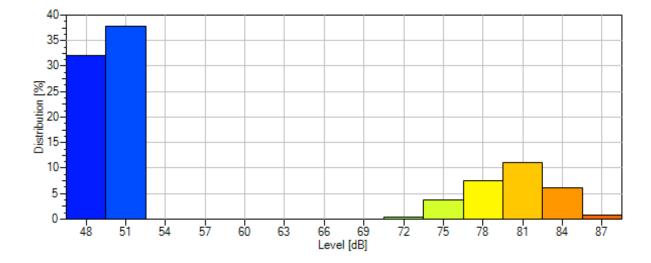
## **2 Sound Sources**

	Label	Type	System	X [ft]	Y [ft]	Z [ft]	Hor [°]	Ver [°]	Rot [°]
1	R.5-94z	Loudspeaker	R.5-94z	-1379.59	950.00	10.00	40.1	-7.0	0.0
2	R.5-94z 1	Loudspeaker	R.5-94z	-1409.24	1266.59	10.00	-15.4	-7.0	0.0
3	R.5-94z 2	Loudspeaker	R.5-94z	-1076.48	950.00	10.00	91.3	-7.0	0.0
4	R.5-94z 2 1	Loudspeaker	R.5-94z	-1085.44	1274.55	10.00	-89.8	-7.0	0.0
5	R.5-94z 2 1	Loudspeaker	R.5-94z	-1040.00	1420.00	10.00	-112.4	-10.0	0.0
6	R.5-94z 2 1	Loudspeaker	R.5-94z	-1100.00	1420.00	10.00	-117.3	-10.0	0.0

## 3 Distribution

Average:  $58.5 \text{ dB} \pm 14.3$ 

Average - Std. Dev.: 44.1 dB Average + Std. Dev.: 72.8 dB



# 4 Sound Source - R.5-94z

System: R.5-94z

Company: Community Professional

Loudspeakers

Label: R.5-94z

Position: X=-1379.59 ft

Y=950.00 ft

Z=10.00 ft

Orientation: Ver=-7.0°

Hor=40.1° Rot=0.0°

Filter Status: Active
Gain: -10.0 dB
Delay: 0.000 ms
Polarity: Normal

Status

# 5 Sound Source - R.5-94z 1

System: R.5-94z

Company: Community Professional

Loudspeakers

Label: R.5-94z 1 Position: X=-1409.24 ft

Y=1266.59 ft

Z=10.00 ft

Orientation: Ver=-7.0°

Hor=-15.4° Rot=0.0°

Filter Status: Active
Gain: -10.0 dB
Delay: 0.000 ms
Polarity: Normal

Status

# 6 Sound Source - R.5-94z 2

System: R.5-94z

Company: Community Professional

Loudspeakers

Label: R.5-94z 2 Position: X=-1076.48 ft

Y=950.00 ft

Z=10.00 ft

Orientation: Ver=-7.0°

Hor=91.3° Rot=0.0°

Filter Status: Active
Gain: -10.0 dB
Delay: 0.000 ms
Polarity: Normal

Status

# 7 Sound Source - R.5-94z 2 1

System: R.5-94z

Company: Community Professional

Loudspeakers

Label: R.5-94z 2 1 Position: X=-1085.44 ft

Y=1274.55 ft

Z=10.00 ft

Orientation: Ver=-7.0°

Hor=-89.8° Rot=0.0°

Filter Status: Active
Gain: -10.0 dB
Delay: 0.000 ms
Polarity: Normal

Status

# 8 Sound Source - R.5-94z 2 1

System: R.5-94z

Company: Community Professional

Loudspeakers R.5-94z 2 1

Label: R.5-94z 2 1 Position: X=-1040.00 ft

Y=1420.00 ft Z=10.00 ft

Orientation: Ver=-10.0°

Hor=-112.4° Rot=0.0°

Filter Status: Active
Gain: -10.0 dB
Delay: 0.000 ms
Polarity: Normal

Status

### 9 Sound Source - R.5-94z 2 1

System: R.5-94z

Company: Community Professional

Loudspeakers R.5-94z 2 1

Label: R.5-94z 2 1 Position: X=-1100.00 ftY=1420.00 ft

Z=10.00 ft

Orientation: Ver=-10.0°

Hor=-117.3° Rot=0.0°

Filter Status: Active
Gain: -10.0 dB
Delay: 0.000 ms
Polarity: Normal

Status

Label: Audience Zone Shape: Rectangle

Label Length Ear Height
Audience Area 1 458.84 ft 3.94 ft (Sitting)

Label: Audience Zone 1 Shape: Rectangle

Label Length Ear Height
Audience Area 1 400.00 ft 3.94 ft (Sitting)

Label: Audience Zone 2 Shape: Rectangle

Label	Length	Ear Height
Audience Area 1	115.37 ft	3.94 ft (Sitting)

Label: Audience Zone 3
Shape: Rectangle

Label	Length	Ear Height
Audience Area 1	50.09 ft	3.94 ft (Sitting)



# **14 Receivers**

