

**City of Portsmouth, Portsmouth, NH
School Department Sound System Installation
Services for Portsmouth High School
RFP#15-19**

INVITATION

Sealed proposals, plainly marked "RFP#15-19 Sound System Installation Services for Portsmouth High School", will be accepted at the office of the Business Administrator, Portsmouth School Department, 1 Junkins Avenue, Suite 402, Portsmouth, NH 03801, until Friday September 7, 2018 at 1:00 p.m.

The Portsmouth School Department seeks a qualified sound system installer to procure and install a sound system upgrade for the Portsmouth High School Auditorium.

Request for proposal forms may be obtained from the Business Administrator at the above address or at <http://www.cityofportsmouth.com/finance/purchasing.htm>.

A pre-proposal meeting shall be held on August 28, 2018 @ 2:00 p.m. at the Portsmouth High School Auditorium, 50 Andrew Jarvis Drive, Portsmouth, NH 03801.

Any addenda to this RFP, including written answers to questions, will be posted on the City of Portsmouth website at <http://www.cityofportsmouth.com/finance/purchasing.htm> under the appropriate project heading. Addenda and updates will NOT be sent directly to contractors. Check the web site daily for addenda and updates after the release date. Proposers should print out, sign and return addenda with their proposal; failure to do so may result in disqualification.

The City of Portsmouth reserves the right to reject any or all proposals, to waive technical or legal deficiencies, to accept any proposal and to negotiate the terms of any final contract that may be in the best interest of the City.

City of Portsmouth, Portsmouth, NH
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SECTION I - GENERAL INFORMATION

- A. **Installation Services:** The City is requesting proposals from qualified sound system installers to procure and install an upgraded sound system for the Portsmouth High School community and the Performing Arts Program. Installers must have a demonstrated ability to perform the type of work described in the project work scope.

- B. **Questions:** Questions regarding this RFP should be directed to Ken Linchey, at klinchey@sau52.org.

- C. **Reservation of Rights:** The City of Portsmouth reserves the right to reject any or all proposals, to waive technical or legal deficiencies, to accept any proposal and to negotiate the terms of any final contract that may be in the best interest of the City. The City further reserves the right to make inquiries regarding the qualifications and reputation of the proposer. By submitting a proposal, contractor agrees to hold harmless the City and its employees and agents from any and all claims, actions, and damages arising from such investigation. Proposer may be requested to execute releases.

- D. **Withdrawal:** A proposer is permitted to withdraw a proposal unopened after it has been deposited if such request is received in writing prior to the time specified for opening the proposal.

SECTION II - PROJECT WORK SCOPE AND REQUIREMENTS

The Portsmouth School Department currently has inadequate equipment, which is routinely failing and out of date. The Department seeks a new, upgraded system and has worked with Performing Arts staff and others to identify what it believes to be an auditorium sound system that will meet the needs of the Portsmouth High School community. The proposed specifications for that system and installation are attached.

As outlined below in the submittal section, the School Department invites qualified proposers to review carefully the specifications attached and to submit proposals for completing the work. Proposals may include suggested modifications to the proposed specifications however deviations from the attached specifications must be clearly noted. The City shall have sole discretion to determine system specifications.

City of Portsmouth, Portsmouth, NH
School Department Sound System Installation
Services for Portsmouth High School
RFP#15-19

Installers must be authorized by the manufacturer to install the system components proposed. It is the intention of the School Department to acquire a high quality system that can be readily operated by trained personnel. Contractor will be responsible for training.

Selected installer will be responsible for removing all existing equipment and acquiring all permits.

The selection process is expected to take approximately 15 days from the opening of proposals. The School Department seeks to have a new sound system installed no later than October 31, 2018.

SECTION III - SUBMITTAL REQUIREMENTS

Proposals must be submitted in a sealed envelope and shall be addressed to the City at the address and to the attention of the official as outlined in the invitation. All proposals must be submitted prior to the specified date and time. Any proposals received after the specified date and time will not be considered and will not be opened. Proposals delivered via facsimile, e-mail, or any format other than within a sealed envelope shall not be considered.

Proposals shall include in the following order:

- 1) Cover letter introducing the company and providing a summary of company resources, experience and expertise;
- 2) Scope of Work to be provided specifically identifying the following:
 - A. Installation Services to be provided
 - B. Description of sound system components to be procured indicating specifically any deviation or variation from that proposed in the attached specifications.
 - C. Description of training to be provided (please note training must include times after school hours).
- 3) Price Proposal;
- 4) Proposed Schedule of Work; and
- 5) At least three (3) references where the Contractor has provided similar services (contact name, address, phone/email); and

**City of Portsmouth, Portsmouth, NH
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SECTION IV – SELECTION

The City may select up to three installers to interview. Selection shall be based on: (1) Installer’s qualifications, experience and resources (2) scope of work proposed (3) schedule (4) references and background checks and (5) price.

SECTION V - CONTRACT

The highest ranked company will be invited to negotiate a contract with the School Department and which will include a final scope of work, schedule and fee. If the parties cannot agree on contract terms and scope, the City may end negotiations and proceed to next highest ranked proposer or exercise any of its reserved rights.

As part of the contract, installer can anticipate the following provisions:

Contractor will indemnify the City against all suits, claims, judgments, awards, loss, cost or expense (including without limitation attorneys’ fees) arising in any way out of the Contractor's negligence or breach of its obligations or warranties under this Contract. Contractor will defend all such actions with counsel satisfactory to City at its own expense, including attorney's fees, and will satisfy any judgment rendered against City in such action.

The Contractor shall secure and maintain, until acceptance of the work, insurance with limits not less than those described below:

Commercial General Liability:
Bodily injury or Property Damage - \$1,000,000/\$2,000,000
Per occurrence and general aggregate

Including contractual liability and product and completed operations

Automobile and Truck Liability:
Bodily Injury or Property Damage - \$1,000,000/\$2,000,000
Per occurrence and general aggregate

Workers Compensation Insurance coverage for all people employed by the contractor to perform work on this project sufficient to meet the requirements of the most current laws of the State of New Hampshire.

AUDITORIUM SOUND SYSTEM REPLACEMENT

Auditorium Sound System Replacement

PART 1 - General

1.1 PROJECT SCOPE

- 1) The PHS auditorium sound upgrade is to meet the needs of our school community and Performing Arts Programs. Currently we have inadequate equipment, which is constantly failing and out of date. It shall be the sole responsibility of the awarded contractor to remove all existing equipment and provide a NEW fully functional system as described herein.
- 2) Contractor will be responsible to acquire all necessary permits to complete this project.
- 3) Contractor to verify and ensure that any additional structural load will not impact existing building structure. Awarding contractor will be responsible to hire structural engineer to verify.
- 4) Comply with all NFPA 101 Fire, Electrical, Building, and local codes
- 5) Contractor will responsible to provide its own dumpsters for demo materials
- 6) Installer to be approved by the manufacturer.
- 7) Provide four (4) visits to site outside normal occupancy hours for training purposes without additional cost.
- 8) Submit three (3) complete packages of written reports, specification submittal's, and drawings to owner once work is 100% complete.

PART 2 - Execution

2.1 PROJECT SUMMARY

- 1) Owner reserves the right to keep any and all equipment deemed salvageable to be reuse in other schools.
- 2) Awarding contractor will be responsible for all aspects and relocation of which may include electrical, HVAC, Fire protection, carpentry, and painting to complete sound system installation.
- 3) Contractor will provide all necessary equipment to allow complete installation.
- 4) Comply with NFPA 70, "National Electrical Code".
- 5) Any and all material to be used will be certified asbestos free by the manufacturer.

AUDITORIUM SOUND SYSTEM REPLACEMENT

- 6) Asbestos contaminated material does exist within auditorium perimeter. See attached document 3.3. Any disturbance will be completed by a certified contractor which the awarding contractor will be required to hire. This scope of work will need prior approval by the Facilities Director.
- 7) Owner representative must present prior to performing any demo work and/or temporary removal of auditorium seating.
- 8) Remove all rubbish and debris from the site daily. The premises shall be maintained as clean as practical, consistent with the neatness required for the owner's normal operations.
- 9) Manufacturer's Field Service: Engage factory-authorized service representative to inspect, test and adjust field assembled components and equipment installation, including connections, and to assist in field testing.

PART 3

3.1 ELECTRICAL SUMMARY

- 10) Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- 11) Install exposed cables parallel and perpendicular to surfaces or exposed structural members, and follow surface contours. Secure and support cables by straps, staples, or similar fittings so designed and installed to avoid damage to cables. Secure cable at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, or fittings.
- 12) Conceal conductors and cables in accessible ceilings, walls, and floors where possible.
- 13) Separation of Wires: Separate speaker-microphone, line-level, speaker-level, and power wiring runs. Install in separate raceways or, where exposed or in same enclosure, separate conductors at least 12 inches for speaker microphones and adjacent parallel power and telephone wiring. Separate other intercommunication equipment conductors as recommended by equipment manufacturer.
- 14) Splices, Taps, and Terminations: Arrange on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures. Wall-Mounting Outlets: Flush mounted where possible.
- 15) Identification of Conductors and Cables: Color-code conductors and apply wire and cable marking tape to designate wires and cables so they identify media in coordination with system wiring diagrams.
- 16) Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.

AUDITORIUM SOUND SYSTEM REPLACEMENT

PART 4

3.2 INSTALLATION SUMMARY

- 1) Contractor will ensure that his pricing will include all aspect for a complete sound system installation.
- 2) Complete installation and startup according to manufacturer's written specifications.
- 3) Verify that electrical wiring installation complies with manufacturer's submittal and installation requirements.
- 4) Coordinate layout and installation of system components and suspension system with existing construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.
- 5) Master Electrician to complete all electrical terminations in electrical panels.
- 6) Factory-authorized service representative to inspect, test and adjust field assembled components and equipment installation, including connections, and to assist in field testing. Report results in writing. Schedule testing seven days prior to owner's representative and owner's representative will be present.

PART 3 - MATERIAL LIST

3.1 TECHNICAL SPECIFICATION

- 1) The following lists include materials needed to meet the needs of current PHS programs which can be expandable for the future.
- 2) Material and Quantity List
 1. 20 Neutrik NC3FXX
 2. 16 Neutrik NC3MXX
 3. 43 Cat5 sheild connect
 4. 7500 11X6-521NH Cat-5 24gauge 4pair shielded
 5. 12050 WESTPENN 77291GY 22 gauge plenum signal cable
 6. 1500 WESTPENN 25227B 12/2 plenum speaker cable
 7. 7 single gang box
 8. 8 double gang box
 9. 4 5 gang box
 10. 16 1/2" wire rope
 11. 24 1/2" shackle

AUDITORIUM SOUND SYSTEM REPLACEMENT

3.1 Material and Quantity Continued

12. 16 3/8" sleeve anchor
13. 16 1/2" I-bolt/nut/washer
14. 60ft Unistrut P1001
15. 380ft Conduit 3/4
16. 1 Mid Atlantic LBP-2A Lacing Bar 10 pack
17. 3 Mid Atlantic 29853 Hook and Loop 25ft
18. 9 Mid Atlantic 43035 Zip tie 11in 100
19. 1 Mid Atlantic UNI-1-C Universal Connector Panel
20. 16 Neutrik NC3FDS1B Panel Mount

3) PHS TIELINE SYSTEM

1. WALLCAT Cat5 tie line double gang
2. 5 CAT Stagebox Cat box female 4 chn subsnake
3. 5 CAT Tails cat 5 XLR3-M break out
4. 3 Supercat Sheilded 50ft cat 5 ethercon
5. 2 Supercat Sheilded 25ft cat 5 ethercon
6. 1 WFFD12X2.5KIT Door for cutom panel

4) PHS COM

1. 1 BS-210 4 chan wireless com complete
2. 4 beltpack, 4 headset, 8 batt, 4 cases
3. 1 XLR 10ft XLR

5) PHS BACKSTAGE

1. 1 DBX ZonePro1260M zone system processor
2. 5 DBX ZC8-EU mute/volume/input selector
3. 1 DBX ZC-BOB cat 5 distro fro zone pro
4. 2 DB-J1 XLR input
5. 2 DB-CIJ3 RCA / mini input
6. 1 Behringer NU4 6000 4 chan amplifier
7. 2 EAW SMS5 speaker w mounting bracket white?
8. 3 Bogen CSD2X2L/U ceiling tile speaker
9. 1 Rapco LTIGLBLOX Computer 1/8" > XLR interface

AUDITORIUM SOUND SYSTEM REPLACEMENT

3.1 Material and Quantity Continued

6) PHS MONITORS

1. 6 Turbosound iQ12 self powered speaker
2. 6 TurbosoundTSPC121 covers for iQ12
3. 3 Turbosound iQ12WB hanging bracket for iQ12 2 pack
4. 2 EC12-75 Powercon / Signal 75ft
5. 4 EC12-50 Powercon / Signal 50ft
6. 2 EC12-25 Powercon / Signal 25ft
7. 4 NAC3MM-1 Powercon Coupler
8. 2 Onstage SS-7323B Speaker Bracket
9. 6 CTC-50G Load Rated Coupler for hanging

7) PHS CONSOLE SOUNDCRAFT

1. 1 Soundcraft Vi1 Digital Console 48x16 5044496
2. 1 E947.350000 Compact Stagebox 32x16
3. 1 G-PROR-6U-19 6 sp rack
4. 2 Onstage SMS4500-P Monitor Stand
5. 1 RS2409SP Cat5 Madi Card
6. 4 SUPERCAT Ethercon 25ft
7. 2 KRK RP4G3 Studio Monitor
8. 2 EVLMCN-10 Signal Monitors

8) PHS PA BOSE

1. 6 ShowMatch SM5 Array Loudspeaker Line array speaker
2. 4 PM8500N Amplifier amplifier
3. 4 ESPLink 8-Channel Input Card input card for amplifier
4. 3 SM5WG55 Waveguide for SM5 sm5 wave guide
5. 2 ShowMatch SM10 Array Loudspeaker Line array speaker
6. 2 ShowMatch SM20 Array Loudspeaker Line array speaker
7. 2 ShowMatch T-Bar Array Frame array frame
8. 2 Frame Multipoint Bracket ShowMatch Array Frame Multipoint Bracket
9. 2 SM20WG12 Waveguide for SM20 sm20 wave guide
10. 1 RoomMatch Dual-18 Subwoofer subwoofer
11. 1 'ControlSpace® CC-64 'ControlSpace® CC-64 Control Center
12. 1 'ControlSpace CC-PS1 Universal Power Supply 'ControlSpace CC-PS1 UPS
13. 1 ControlSpace ESP-880 Processor ControlSpace ESP-880 Processor
14. 28 Nuetrik CN-NL4
15. 3150 WP 25248B Speaker cable 12/4
16. 1 RMAFSM subwoofer array frame
17. 1 Middle Atlantic FEB5 5u Blank Panel

AUDITORIUM SOUND SYSTEM REPLACEMENT

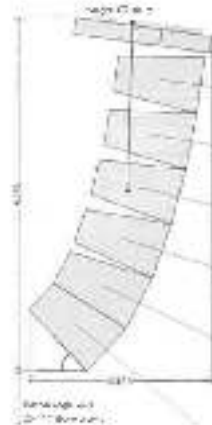
3.2 Technical Sound Data

1) 5 Sound source – HDL20-A 1

RAE Package - Version 2.1.0

5 Sound Source - HDL20-A 1

System: HDL20-A
 Company: RCF
 Label: HDL20-A 1
 Position: X= 3.73 ft
 Y= -28.36 ft
 Z= 25.45 ft
 Orientation: Az= 0.3°
 Elev= 0.2°
 Weight: 477.40 lbs
 Setup: 7 Year
 Box Count: 0
 Pinpoint Name: Test Pinpoint
 Pinpoint Number: 18-95
 Remaining Vertical Angle: -1.4°
 Bottom Angle: 18.7°
 Above Ground: 20.77 ft



Box	Box Type (Frame)	Gain	Rotation Angle	Y-mir. Angle
Box 1	HDL20-A	0.0 dB	0°	-0.2°
Box 2	HDL20-A	0.0 dB	2°	-1.02°
Box 3	HDL20-A	0.0 dB	4°	-1.82°
Box 4	HDL20-A	0.0 dB	6°	-2.62°
Box 5	HDL20-A	0.0 dB	8°	-3.42°
Box 6	HDL20-A	0.0 dB	15°	-4.22°

Box	Box Type (Frame)	Input Configuration	Input Types
Box 1	HDL20-A	Cardioid 2-0 Per	Function 2-0 Per: FloorDef
Box 2	HDL20-A	Cardioid 2-0 Per	Function 2-0 Per: FloorDef
Box 3	HDL20-A	Cardioid 2-0 Per	Function 2-0 Per: FloorDef
Box 4	HDL20-A	Cardioid 2-0 Per	Function 2-0 Per: FloorDef
Box 5	HDL20-A	Cardioid 2-0 Per	Function 2-0 Per: FloorDef
Box 6	HDL20-A	Cardioid 2-0 Per	Function 2-0 Per: FloorDef

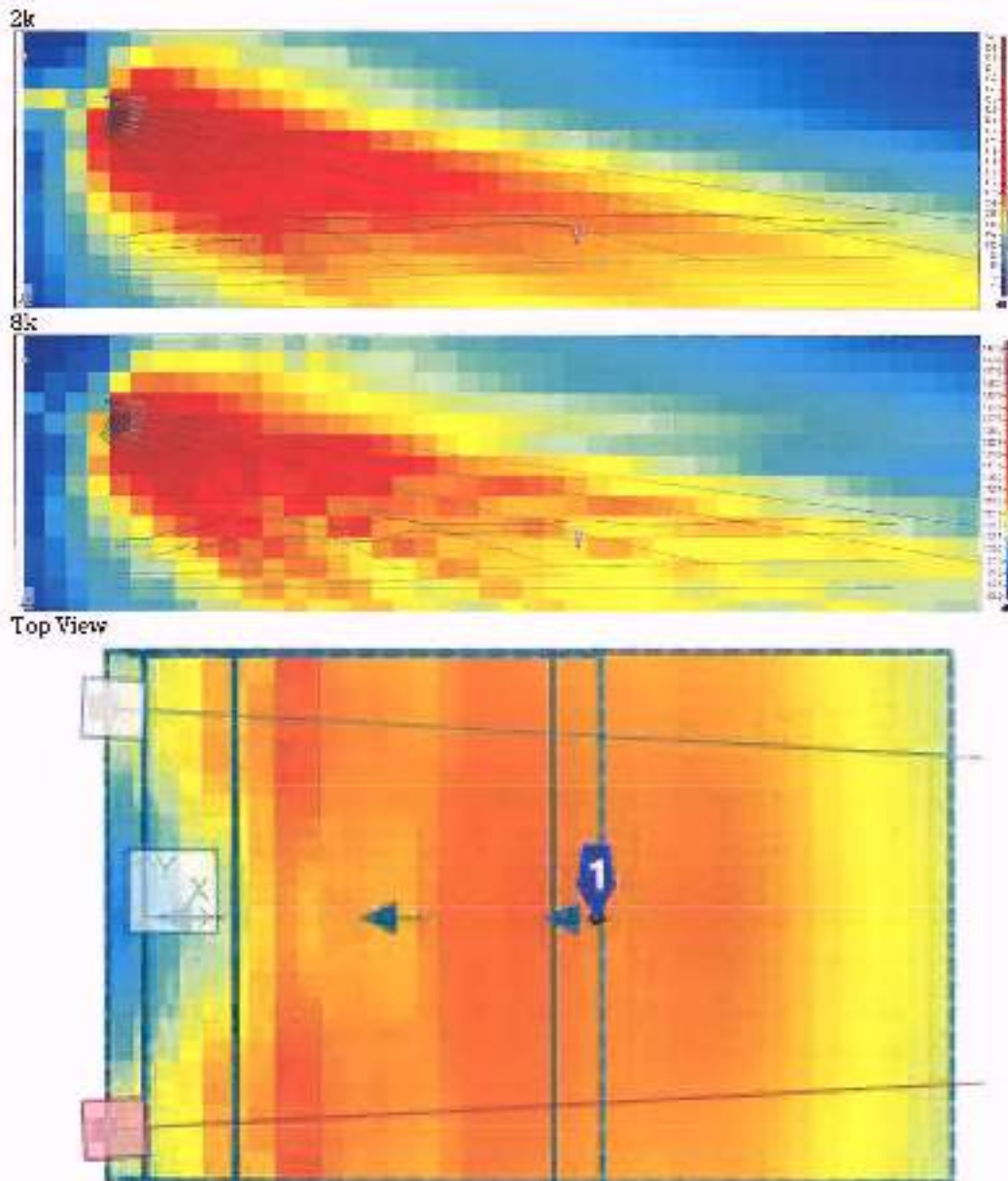
Floor Stat. 5: Active
 Gain: 0.0 dB
 Delay: 0.000 ms
 Polarity: Normal

Status
 No Messages

5/26/19 - P45Auditorium_RCF_HDL20A_10-0000_06.r30

AUDITORIUM SOUND SYSTEM REPLACEMENT

2) 5 Sound Source - View



WHD Control and Production Services, LLC
453-943-2277
www.whtcp.com

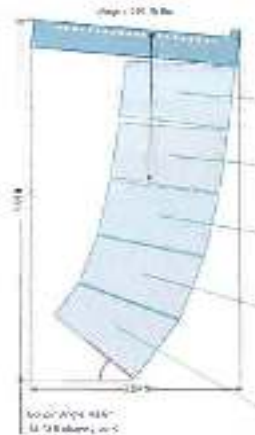
AUDITORIUM SOUND SYSTEM REPLACEMENT

3) Array Loud speakers 1

EASE Focals - Version 3.1.3

5 Sound Source - ShowMatch™ DeltaQ™ Array Loudspeakers 1

System: ShowMatch™ DeltaQ™
 Array Loudspeakers
 Company: Bose Professional
 Label: ShowMatch™ DeltaQ™
 Array Loudspeakers
 Position: X=5.05 ft
 Y=-30.00 ft
 Z=17.54 ft
 Orientation: Hor=2.0°
 Ver=-6.1°
 Weight: 420.75 lbs
 Setup: SMAF/Sides
 Box Count: 5
 Pinpoint Model: Best Pinpoint
 Pinpoint Number: 5
 Remaining Vertical: -0.9°
 Angle:
 Bottom Angle: 45.0°
 Above Ground: 12.72 ft



	Box Type (Frame)	Gain	Rigging Angle	Aiming Angle
Box 1	SM5/100	0.0 dB	Grid	-6.1°
Box 2	SM5/100	0.0 dB	1°	-7.1°
Box 3	SM5/100	0.0 dB	4°	-11.1°
Box 4	SM10/100	0.0 dB	7.5°	-16.6°
Box 5	SM20/120	0.0 dB	16°	-33.6°

	Box Type (Frame)	Input Configuration	Input Types
Box 1	SM5/100	Input	Input: Array_05Hz
Box 2	SM5/100	Input	Input: Array_05Hz
Box 3	SM5/100	Input	Input: Array_05Hz
Box 4	SM10/100	Input	Input: Array_05Hz
Box 5	SM20/120	Input	Input: Array_05Hz

Filter Status: Active
 Gain: 0.0 dB
 Delay: 0.000 ms
 Polarity: Normal

Status
 No messages

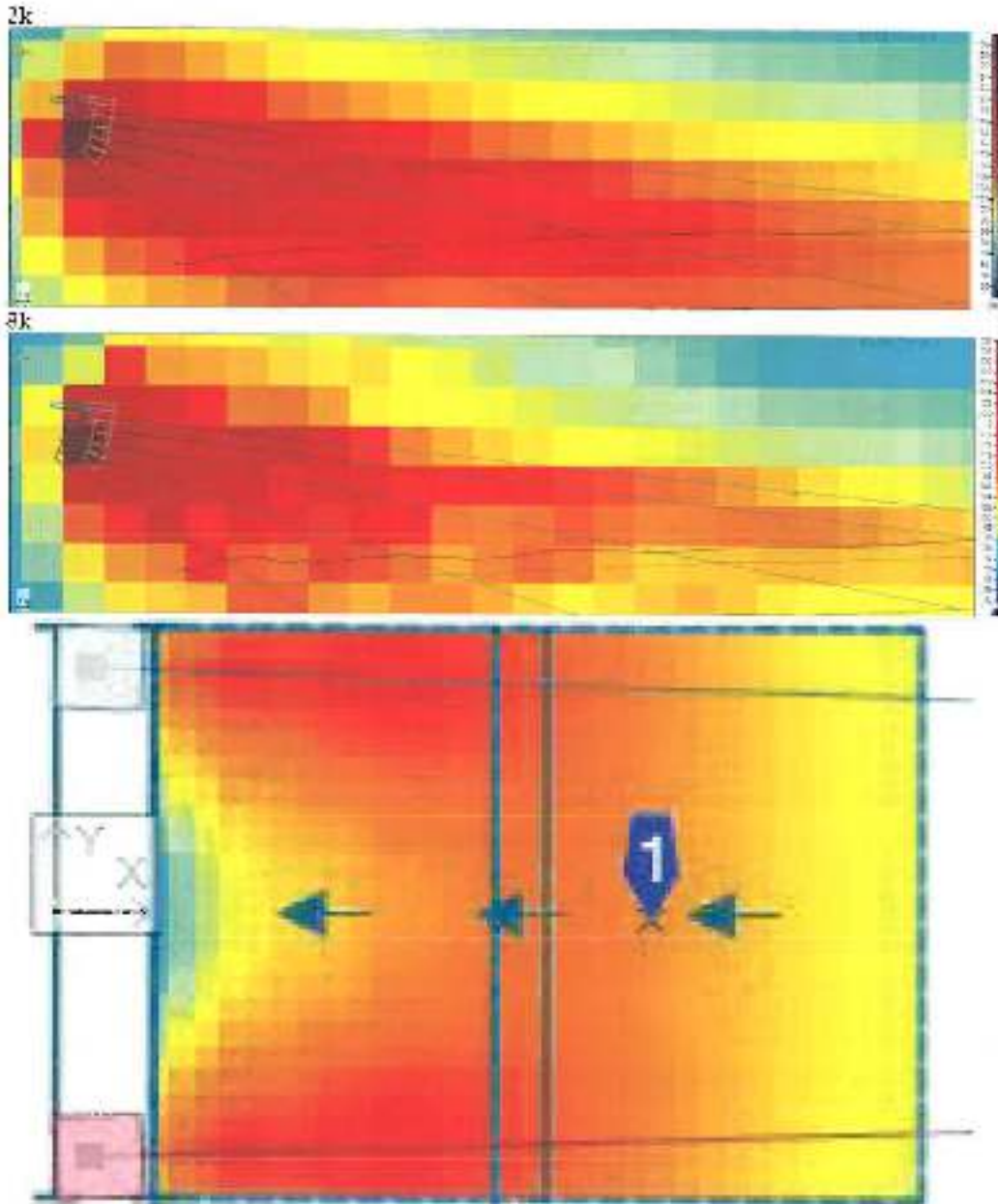
5/26/18 - PHEAuditorium_Base_Modeler/Design 5box.fc3

4

WHB Concert and Production Services, LLC
 833-942-2277
 www.whbcp.com

AUDITORIUM SOUND SYSTEM REPLACEMENT

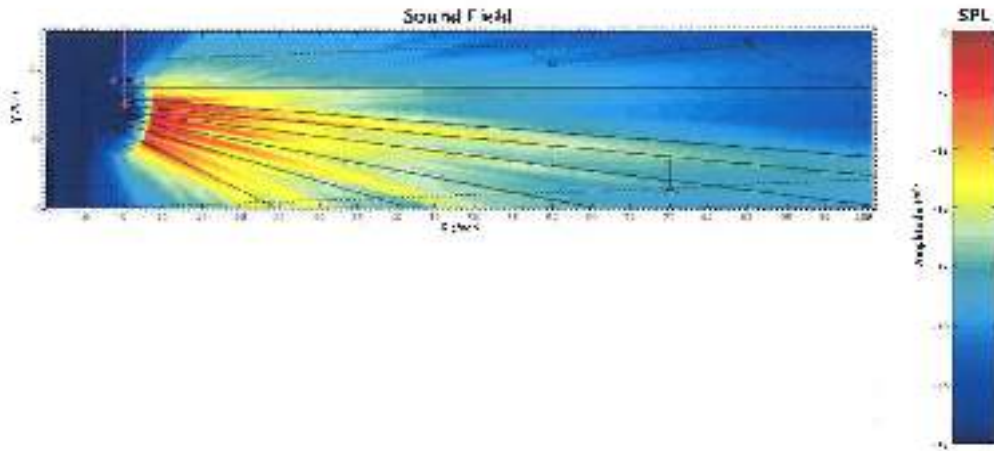
4) Array Loud Speaker -1 View



VME Control and Production Services, L.C.
551-943-2927
www.vchicago.com

AUDITORIUM SOUND SYSTEM REPLACEMENT

5) Loud speaker System Label



1000 Broadway, Suite 1000
 New York, NY 10018
 Tel: 212 512 2000
 www.meyersound.com

1000 Broadway, Suite 1000
 New York, NY 10018
 Tel: 212 512 2000
 www.meyersound.com

Loudspeaker System Label: Flown Loudspeaker System 1

Loudspeaker System Notes:

SYSTEM ORIENTATION	ARRAY ELEVATION	POWER/RATE (RMS)	REFERENCE POINT POSITION	ROTATION ABOUT REFERENCE POINT	DISTANCE TO SOURCE
FLY	4.2°	600	3.00, 10.00, 1	0°	15.5

ID	ELEMENT MODEL	SPL @ 1M	POW @ 1M	ARRAY ANGLE	TOTAL ANGLE	Z @ 1M	CH	PROCESSOR LABEL
-	NO-LEAD WEIGHT (SEE MANUAL)	-	-	-	-	0"	-	-
1	330-LFC (SEE LAMP & LEDDIP00 MANUAL)	120	2	0°	0°	13	1	Main Zone 1
1	LEO75-50E	120	10	0°	0°	13	1	Main Zone 1
2	LEO75-50E	120	10	0°	0°	13	1	Main Zone 1
3	LEO75-50E	120	10	0°	0°	13	2	Main Zone 2
4	LEO75-50E	120	10	0°	0°	13	2	Main Zone 2
5	LEO75-50E	120	10	0°	0°	13	2	Main Zone 2
6	LEO75-50E	120	10	0°	0°	13	2	Main Zone 2

ARRAY BROW	ARRAY DEPTH	ABSOLUTE COG POSITION	RELATIVE COG POSITION	SECTOR OF ARRAY	SCAN ANGLE (DEG)	FRONT RIGGING (DEG)	TOTAL WEIGHT
TOP 1	3.221	(0.75, 10.00, 1)	(-1.20, 0.00, 0)	Main Zone 1	0.00, 0.00	0.00, 0.00	0.00 lb

WHB Design and Production Services, LLC
 615-942-2277
 www.whbdesign.com

AUDITORIUM SOUND SYSTEM REPLACEMENT

6) PHS PIT 03

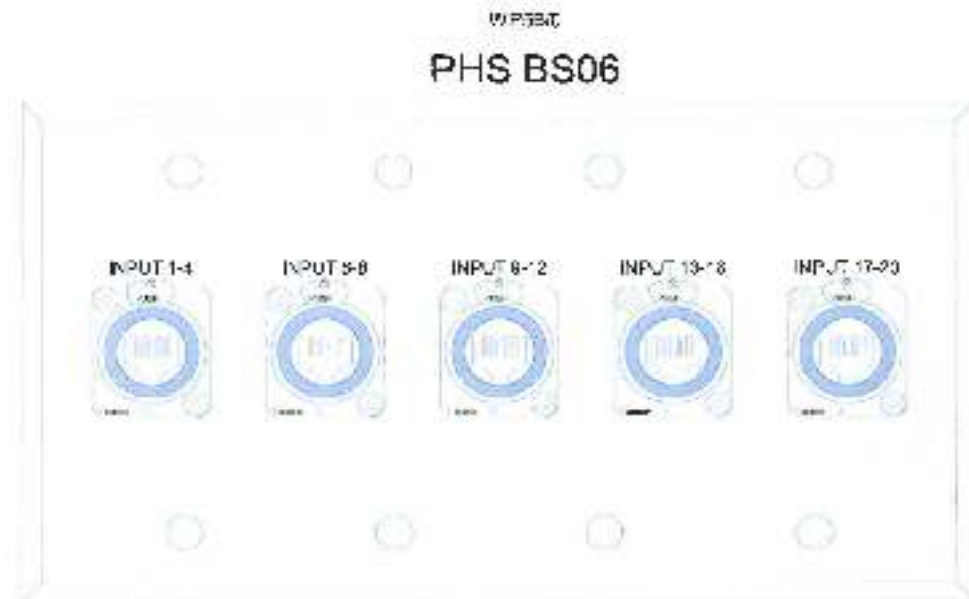
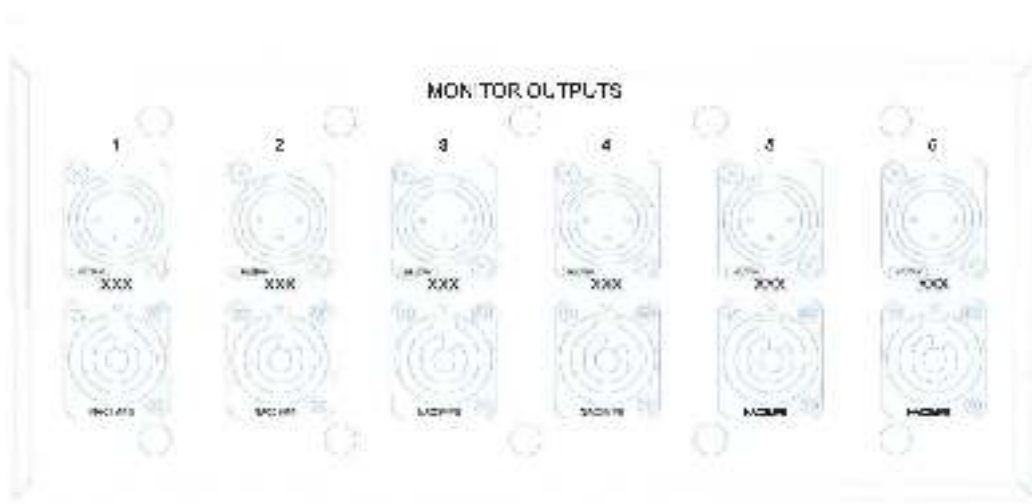


WFF12025
PHS PIT 03

WFB Consultant and Production Services, LLC
803-942-2277
www.wfbcsps.com

AUDITORIUM SOUND SYSTEM REPLACEMENT

7) PHS BS06, PHS BS05



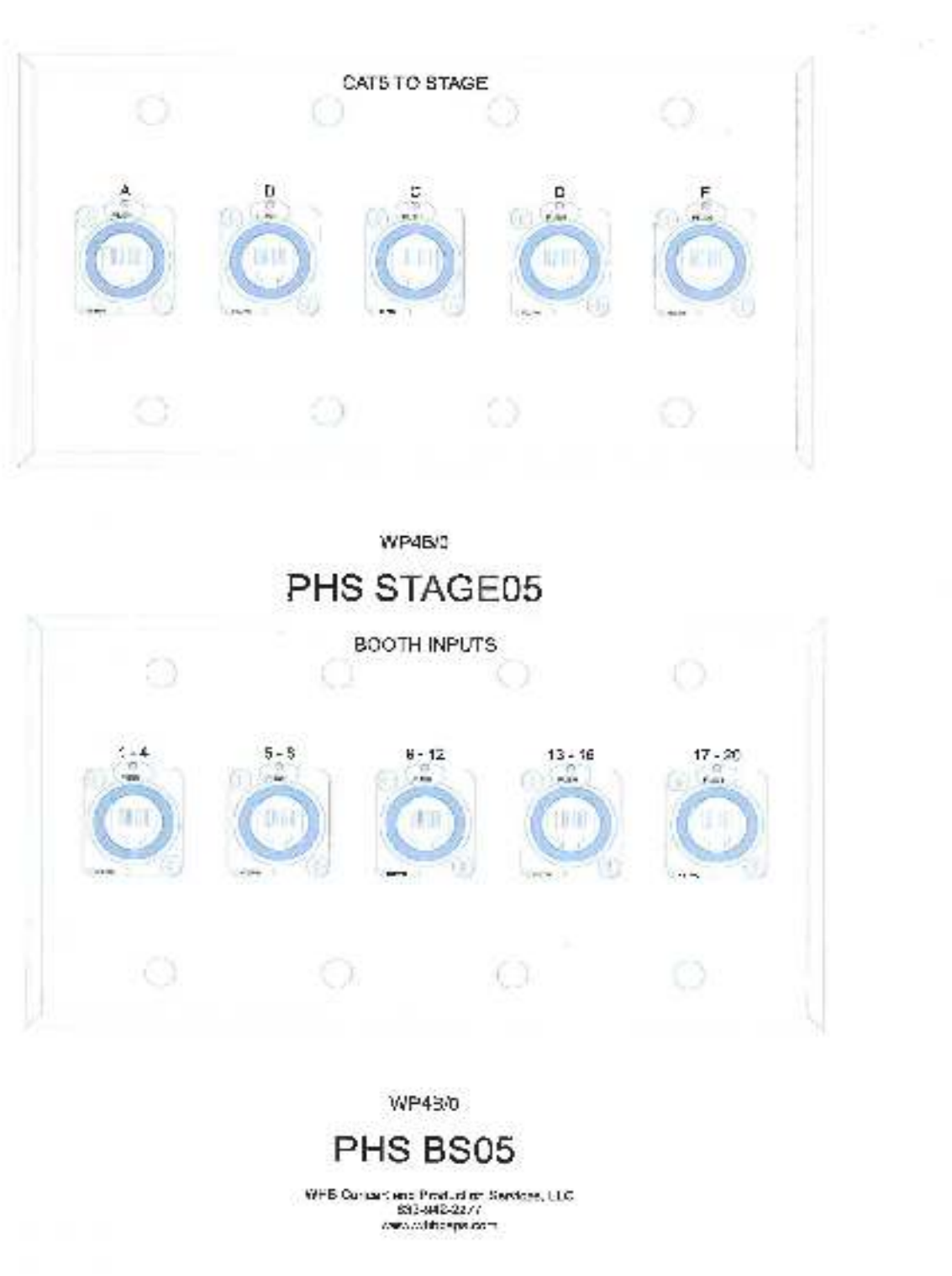
WP4B/D

PHS BS05

WMB Control and Production Services LLC
883-048-2277
www.wfscpa.com

AUDITORIUM SOUND SYSTEM REPLACEMENT

8) PHS STAGE 05, PHS BS05



AUDITORIUM SOUND SYSTEM REPLACEMENT

9) PHSCOM04



WP2B/D
PHSCOM04



H/D
PHSAMP10

FOR BOSE SYSTEM ONLY

WHB Concert and Production Services, LLC
833 642 2277
www.whbcpss.com

10) HDL 20-A DATA SHEET

DATA SHEET



HDL 20-A

ACTIVE LINE ARRAY MODULE

DESCRIPTION

The careful acoustic design, no-compromise transducers and a unique, composite cabinet design make the HDL 20-A the preferred choice of many professionals. Perfect in live sound reinforcement and reliable installed situations.

The HDL 20-A is the ideal choice when the only performance is needed and a fast and easy set up is a must. The system is powered from a 1400 Watt Peak Power 2-way digital amplifier, sound is processed from a powerful DSP. The processing includes cluster and HF projection correction and special new presets for indoor and high curving situations. The system features state of the art RCF transducers, two powerful 10" for a solid bass reproduction and a large format 3" voice coil compression driver to deliver clarity and high definition with an honored dynamic.



FEATURES

- 1400 Watt Peak power - 700 Watt RMS
- 155 dB max SPL
- 33 Hz - 20 kHz frequency response
- 2x 10" Woofers
- 1x 3" Compression Driver
- DSP controlled input section with selectable presets
- Tour grade safe and solid variable mechanics
- Composite PP and osira structurally woodeer reinforced

AUDITORIUM SOUND SYSTEM REPLACEMENT

11) HDL 20-A TECHNICAL DATA

DATA SHEET



TECHNICAL SPECIFICATIONS

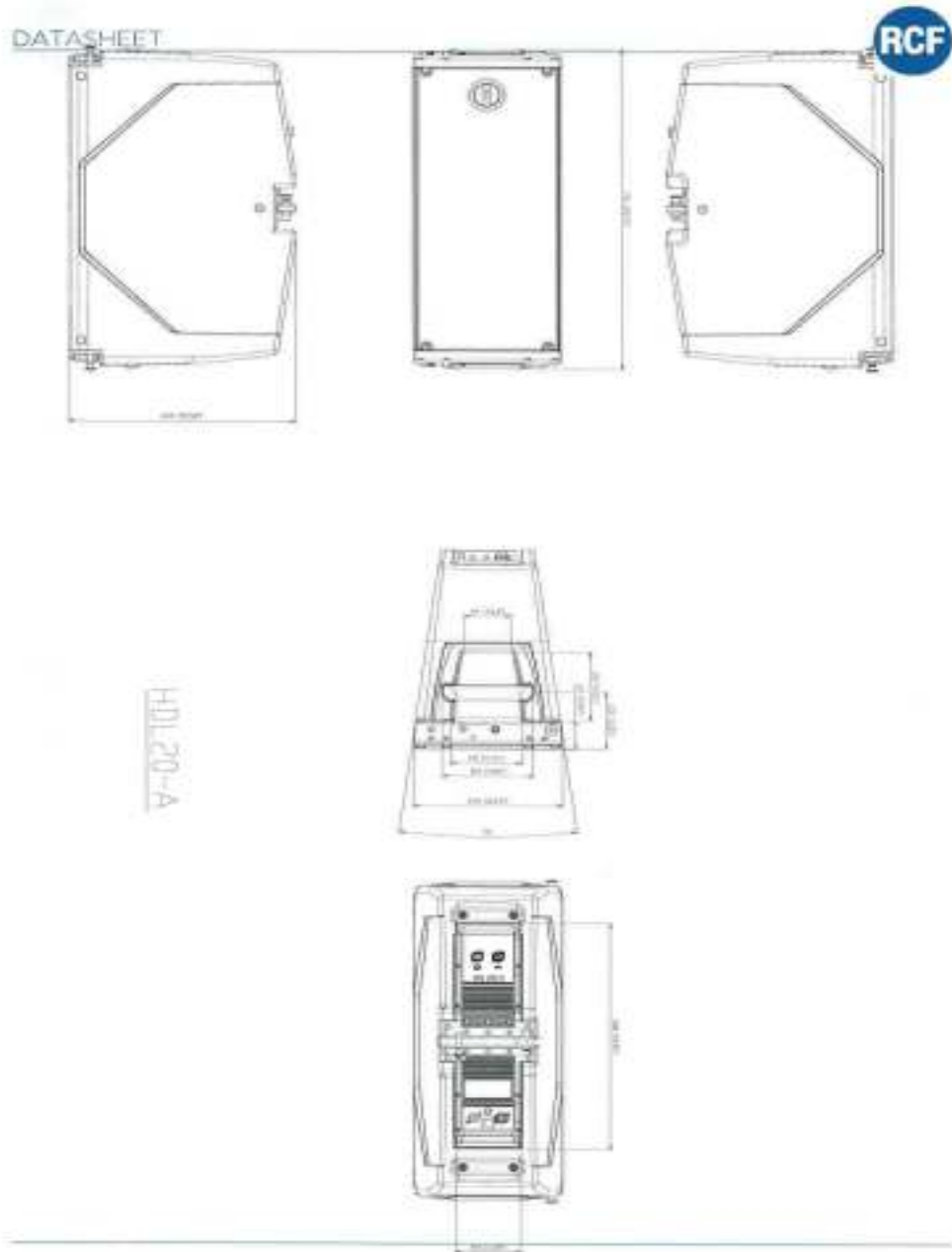
Apparatus specifications	Frequency response Max SPL @ 1m Horizontal coverage angle Vertical coverage angle	100 Hz - 20000 Hz 135 dB 100° 7.5°
Transducers	Compression Driver Woofer	200, 300 W @ 2x100, 250 W @
Input/Output section	Input signal Input connectors Output connector(s) Input sensitivity	Line level XLR XLR 2 dBu/4 nBu
Processor section	Crossover frequencies Protection Limiter Compressor	80 Hz Thermal, RMS Soft Limiter Compressor High Pass Filter
Power section	Max Power High frequencies Low frequencies Distortion Compressor	1500 W Peak / 700 W RMS 100 W Peak / 50 W RMS 1000 W Peak / 500 W RMS Distortion Newman IN/OUT
Standard compliance	CE marking	Yes
Physical specifications	Cabinet Case Material Hardware Handles Finish Color	FR Composite Rigging hardware 2 x 4 x 2 Lock Steel Black
Size	Height Width Depth Weight	294 mm / 11.6 inches 705 mm / 27.76 inches 446 mm / 17.52 inches 9.07 kg / 20.01 lbs
Shipping information	Package Height Package Width Package Depth Package Weight	372 mm / 14.6 inches 860 mm / 33.5 inches 500 mm / 19.6 inches 25.2 kg / 55.5 lbs

RCF s.p.a. - Via S. Giovanni Lupatoto, 20 - 36010 Susegana (VI) - Italy - Tel. +39 0445 93111

Whib Concert and Production Services, LLC
888-842-2277
www.whibsp.com

AUDITORIUM SOUND SYSTEM REPLACEMENT

12) HDL 20-A TECHNICAL DATA CONTINUED



WHB Concert and Production Services, LLC
833-942-2277
www.whbcaps.com

AUDITORIUM SOUND SYSTEM REPLACEMENT

13) HDL 18-AS

DATASHEET



HDL 18-AS

ACTIVE FLYABLE HIGH POWER SUBWOOFER

DESCRIPTION

The HDL18-AS is a compact, flyable high power subwoofer, designed to integrate seamlessly into a HDL 20-A flown array. The bass reflex design guarantees a deep, linear power response while the 4" voice coil vented design woofer offers the minimum of power compression. The system provides integrated mechanics compatible with the HDL 20-A array module.



FEATURES

- 2000 Watt Peak power - 1000 Watt RMS
- 135 dB max SPL
- 30 Hz - 140 Hz frequency response
- 1 x 18" Woofer
- DSP controlled input section with selectable presets
- Tour grade safe and solid variable mechanics, compatible with HDL 20-A
- Designed to compliment the HDL 20-A speaker system
- Baltic birch tour grade cabinet

WHB Concert and Production Services, LLC
833-942-2277
www.whbcaps.com

AUDITORIUM SOUND SYSTEM REPLACEMENT

14) HDL 18-DS DATA SHEET

DATASHEET



TECHNICAL SPECIFICATIONS

Acoustical specifications	Frequency Response: Max SPL @ 1m:	30 Hz - 140 Hz 135 dB
Transducers	Woofer:	10", 4.0" x 1"
Input/Output section	Input signal: Input connectors: Output connectors: Input sensitivity:	bal/unbal XLR XLR -2 dBu/+4 dBu
Processor section	Hi-Pass Frequencies: Low-Pass Frequencies: Protections: Limiter: Controls:	30Hz, 40Hz 90Hz, 140Hz Thermal, RMS Soft Limiter Volume, EQ shape, Xover
Power section	Total Power: Low frequencies: Cooling: Connections:	2000 W Peak, 1000 W RMS 2000 W Peak, 1000 W RMS Convection/Forced Powercon IN/OUT
Standard compliance	CE marking:	Yes
Physical specifications	Cabinet/Case Material: Hardware: Handles: Grille: Color:	Baltic birch plywood Rigging Pyware, M20 insert 2 side Steel Black
Size	Height: Width: Depth: Weight:	512 mm / 20.16 inches 700 mm / 27.56 inches 620 mm / 24.41 inches 53 kg / 116.84 lbs
Shipping information	Package Height: Package Width: Package Depth: Package Weight:	639 mm / 25.16 inches 814 mm / 32.06 inches 734 mm / 28.9 inches 60.2 kg / 132.72 lbs

PART NUMBER

- **T3040010**
HDL 18-AS
T15V
EAN 8024530009991

- **T3040009**
HDL 18-AS
220-240V
EAN 8024530009984

RCF products are continuously improved. All specifications are therefore subject to change without notice.

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AUDITORIUM SOUND SYSTEM REPLACEMENT

15) SHOW MATCH SM5 - DELTAQ ARRAY LOUD SPEAKER

TECHNICAL DATA

ShowMatch™ SM5 DeltaQ™ array loudspeaker



Product Overview

Bose Professional ShowMatch™ DeltaQ™ SM5 full-range array modules provide 5° nominal vertical coverage with included field-changeable waveguides offering choice of 70° or 100° horizontal coverage and optional accessory 55° waveguides. Replace single waveguide panel to form horizontal asymmetrical patterns. The 2-way module requires external power amplifiers (2-channel) and DSP to provide full-range response from 59 - 18,000 Hz with peak array output up to 145 dB.

Key Features

- **DeltaQ™ technology** - defines the next-generation in loudspeaker array design with selectable coverage patterns that more precisely direct sound to audience areas for improved sound quality and vocal clarity with fewer boxes versus line arrays.
- **Replaceable waveguides** - ships with 70° waveguides. Installed with 100° panels included to allow coverage change. Largest-in-class size provides better coverage and vocal clarity. Change single panel for asymmetrical patterns. Optional 55° waveguides for SM5.
- **Compact, portable enclosure** - Versatile design allows both fixed install and portable applications, from small clubs and houses of worship to the largest performing arts centers and AV productions.
- **Total sound output level** - 4x Bose SM525 compression drivers, improved with more HF output, and 2x 8-inch neodymium high-power woofers allow peak array output up to 145 dB SPL.
- **3-point "quick pin" rigging** - Fast, easy setup with up to 24 full-range modules and 10:1 design factor.
- **Removable side guards** - provide rigging guard and hand holds for portable applications. Easily removed for permanent installs to reduce width and improve sight lines.
- **Rigging overlap angle adjustment** - only on SM5 modules, coverage overlap or "spile" can be adjusted from 0 to 5°, in 1° increments, to provide long throw distance and high SPL.

Technical Specifications

SINGLE MODULE PERFORMANCE				
Frequency Response (±1/-3 dB) ¹	69 - 18,000 Hz			
Frequency Range (±0 dB)	59 - 18,000 Hz			
Recommended High-Pass Protection Filter	70 Hz with minimum 12-dB / octave filter			
Nominal Coverage Pattern	30° H x 5° V (Includes waveguides for 100° H x 5° V)			
Recommended Coverage	70 Hz (acoustic), required active 3-way crossover in DSP			
	Bose extended-frequency test ²		AES Transducer test ³	
	Low Frequency	High Frequency	Low Frequency	High Frequency
Power Handling, long-term continuous	650 W	300 W	600 W	125 W
Power Handling, peak	1000 W	400 W	1000 W	500 W
Sensitivity (SPL/1W @1m) ⁴	94 dB	107 dB	94 dB	107 dB
Calculated Maximum SPL @ 1% ⁵	121 dB	127 dB	122 dB	128 dB
Calculated Maximum SPL @ 11% ⁶	127 dB	133 dB	128 dB	134 dB
TRANSDUCERS				
Low Frequency	2 x Bose SM5 neodymium 8-inch woofers (3-inch voice coil)			
High Frequency	4 x Bose SM525 patented HF neodymium compression driver (2-inch voice coil)			
Motor/Impedance	8 ohms ± 5 ohms O.P./HF			
PHYSICAL				
Enclosure Material	18-gauge steel plywood			
Finish	Two-part acrylic polyurethane coating, black			
Grill	18-gauge (1.5 mm) perforated steel, powder-coated finish, black			
Environmental	IP64			
Connections	2 x Preset 1/4" NL4 wired parallel			
Suspension / Mounting	Integrated 3-point quick pin rigging			
Dimensions (H x W x D)	10.6" x 12.2" x 8.4" (270 x 700 x 467 mm) / W: 29.8" (757 mm) side guards removed			
Net Weight	67.6 lbs (30.6 kg)			
Rigging Weight	77 lbs (34.9 kg)			
Accessories	Frame frames, bolthead bar, waveguides, ground stick bracket, three quick pins			

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1 OF 2

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AUDITORIUM SOUND SYSTEM REPLACEMENT

16) SHOWMATCH SM5 – DELTAQ ARRAY TECHNICAL DATA

TECHNICAL DATA

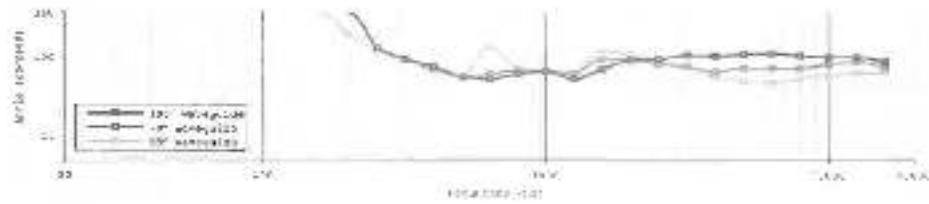
ShowMatch™ SM5
DeltaQ™ array loudspeaker



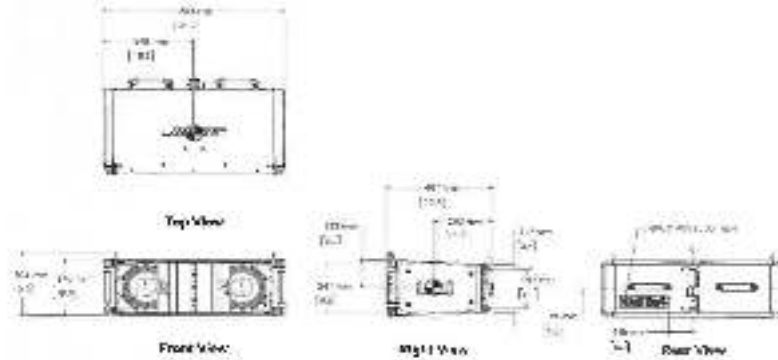
Frequency Response



Beamwidth (Horizontal -6 dB)



Dimensions



Footnote
 1. The data shown here is for the ShowMatch SM5 DeltaQ array loudspeaker only. All other data is for the ShowMatch SM5 DeltaQ array loudspeaker only.
 2. The data shown here is for the ShowMatch SM5 DeltaQ array loudspeaker only. All other data is for the ShowMatch SM5 DeltaQ array loudspeaker only.
 3. The data shown here is for the ShowMatch SM5 DeltaQ array loudspeaker only. All other data is for the ShowMatch SM5 DeltaQ array loudspeaker only.
 4. The data shown here is for the ShowMatch SM5 DeltaQ array loudspeaker only. All other data is for the ShowMatch SM5 DeltaQ array loudspeaker only.
 5. The data shown here is for the ShowMatch SM5 DeltaQ array loudspeaker only. All other data is for the ShowMatch SM5 DeltaQ array loudspeaker only.

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2 OF 7

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AUDITORIUM SOUND SYSTEM REPLACEMENT

17) SHOWMATCH S10 - DELTAQ ARRAY LOUDSPEAKER

TECHNICAL DATA

ShowMatch™ SM10 DeltaQ™ array loudspeaker



Product Overview

Bose Professional ShowMatch™ DeltaQ™ S10 full-range array modules provide 60° nominal vertical coverage with included field-changeable waveguides offering choice of 70° or 100° for optimal coverage. Replace single waveguide panel to form horizontal asymmetrical patterns. The 2-way design requires external power amp with 2x channels and DSP to provide full range response from 28 – 18,000 Hz with peak array output up to 145 dB.

Key Features

- **DeltaQ™ technology** – defines the next generation of loudspeaker array design with selectable coverage patterns that more precisely direct sound to audience areas for improved sound quality and vocal clarity with fewer holes versus line arrays.
- **Removable waveguides** – ships with 100° waveguide, installed with 70° panels included to allow coverage change. Longest line arrays provide better coverage and vocal clarity. Change single panel for asymmetrical patterns.
- **Compact, portable enclosure** – Versatile design allows both fixed, install and portable applications, from small clubs and houses of worship to the largest performing arts centers and live productions.
- **Full-range output level** – 4x Bose EMS5 compression drivers, improved with more dB output, and 2x 6-inch neodymium high-power woofers allow 6000 watts output up to 145 dB SPL.
- **3-pole “quick pin” rigging** – fast, easy setup with up to 24 full-range modules and 101 design factor.
- **Removable side guards** – provide rigging guard and hand holds for portable applications. Easily removed for permanent installs to reduce weight and improve sight lines.

Technical Specifications

RATED NOMINAL PERFORMANCE	
Frequency Range (Hz)	28 – 18,000 Hz
Frequency Range (dB)	28 – 18,000 Hz
Recommended Input/Max. Power (W)	6000 W (1000 W @ 100 Hz) (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Recommended Coverage Pattern	70° (100° or 100°) (100° or 100°)
Recommended Coverage	70° (100° or 100°) (100° or 100°)
Power Handling (into nominal load)	6000 W (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Power Handling (peak)	145 dB (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Sensitivity (SPL) @ 1 m/1 W	118 dB (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Impedance (Nominal)	16 Ω (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Dimensions (H x W x D)	127 H x 122 W x 54 D (1000 W @ 100 Hz) (1000 W @ 100 Hz)
TRANSDUCERS	
Low Frequency	2x 6" Bose EMS5 extended 1" neodymium compression driver (1000 W @ 100 Hz)
High Frequency	4x Bose EMS5 extended 1" neodymium compression driver (1000 W @ 100 Hz)
Horizontal Coverage	70° (100° or 100°)
PHYSICAL	
Finish (Standard)	Black (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Color	Two-part spray polyurethane coating black (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Weight (Net)	100 lbs (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Connections	2x Neutrik NL4 wired parallel (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Mounting / Hoisting	101 design factor (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Dimensions (H x W x D)	127 H x 122 W x 54 D (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Net Weight	100 lbs (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Shipping Weight	100 lbs (1000 W @ 100 Hz) (1000 W @ 100 Hz)
Accessories	101 design factor (1000 W @ 100 Hz) (1000 W @ 100 Hz)

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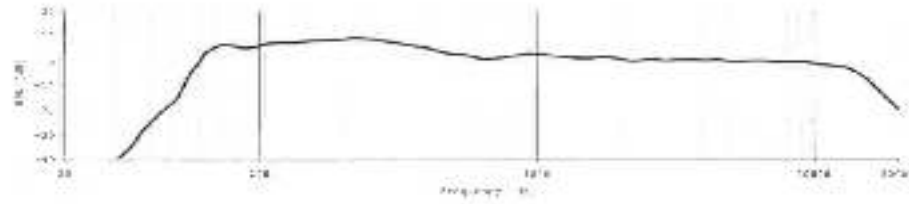
18) SHOWMATCH SM10 – DELTAQ ARRAY LOUDSPEAKER

TECHNICAL DATA

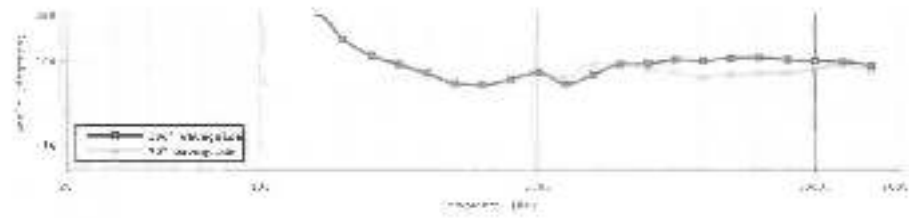
ShowMatch™ SM10
DeltaQ™ array loudspeaker



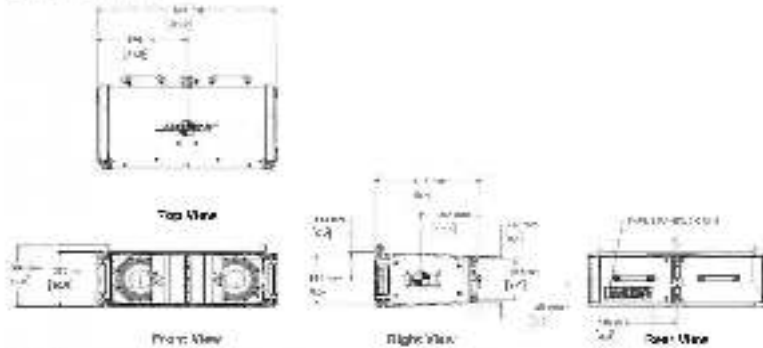
Frequency Response



Beamwidth (Horizontal -5 dB)



Dimensions



- Notes:
- (1) Frequency response is per ANSI S3.1-1997 and is based on a 1000 Hz reference tone.
 - (2) 1/2" (12.7 mm) diameter 1/4" (6.35 mm) deep ports, rear panel, bass reflex port, 20" (508 mm) diameter.
 - (3) 1/2" (12.7 mm) diameter 1/4" (6.35 mm) deep ports, front panel, 20" (508 mm) diameter.
 - (4) 1/2" (12.7 mm) diameter 1/4" (6.35 mm) deep ports, rear panel, 20" (508 mm) diameter.
 - (5) 1/2" (12.7 mm) diameter 1/4" (6.35 mm) deep ports, front panel, 20" (508 mm) diameter.
 - (6) 1/2" (12.7 mm) diameter 1/4" (6.35 mm) deep ports, rear panel, 20" (508 mm) diameter.
 - (7) 1/2" (12.7 mm) diameter 1/4" (6.35 mm) deep ports, front panel, 20" (508 mm) diameter.

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19) SHOWMATCH SM20 – DELTAQ ARRAY LOUDSPEAKER

TECHNICAL DATA

ShowMatch™ SM20 DeltaQ™ array loudspeaker



Product Overview

Bose Professional ShowMatch™ DeltaQ™ SM20 full-range array modules provide 20° nominal vertical coverage with included field-changeable waveguides offering choice of 70° or 100° horizontal coverage and optional accessory 120° waveguides. Replace single waveguide panel to form horizontal asymmetrical patterns. The 2-way module requires external power amplifiers (2-channel) and DSP to provide full-range response from 59 – 18,000 Hz with peak array output up to 145 dB.

Key Features

- **DeltaQ™ technology** – defines the next-generation in loudspeaker array design with selectable coverage patterns that more precisely direct sound to audience areas for improved sound quality and vocal clarity with fewer boxes versus line arrays.
- **Replaceable waveguides** – ships with 100° waveguides. Installed with 70° panels included to allow coverage change. Largest-in-class size provides better coverage and vocal clarity. Change single panel for asymmetrical patterns. Optional 120° waveguides for SM20.
- **Compact, portable enclosure** – Versatile design allows both fixed install and portable applications, from small clubs and houses of worship to the largest performing arts centers and AV productions.
- **Four-sound output level** – 4x Bose EM925 compression drivers. Improved with more HF output, and 2x 8-inch neodymium high-power woofers allow peak array output up to 145 dB SPL.
- **3-point "quick pin" rigging** – Fast, easy setup with up to 24 full-range modules and 10:1 design factor.
- **Removable side guards** – provide rigging guard and bend holds for portable applications. Easily removed for permanent installs to reduce width and improve sight lines.

Technical Specifications

SINGLE MODULE PERFORMANCE				
Frequency Response (1 / -3 dB) (2)	68 - 18,000 Hz			
Frequency Range (-10 dB)	58 - 18,000 Hz			
Recommended High-Pass Protection Filter	30 Hz with minimum Q=18 / octave filter			
Nominal Coverage Pattern	100° H x 20° V (includes waveguides for 70° H x 20° V)			
Recommended Crossover	750 Hz (optional requires active 2-way crossover or DSP)			
	Bose extended-Music test™		AES Transfer test™	
	Low Frequency	High Frequency	Low Frequency	High Frequency
Power Handling, long-term continuous	450 W	150 W	600 W	125 W
Power Handling, peak	900 W	300 W	1400 W	250 W
Sensitivity, SPL/1W @ 1 m (2)	95 dB	95 dB	94 dB	93 dB
Calculated Maximum SPL @ 1 m (2)	121 dB	128 dB	122 dB	124 dB
Calculated Maximum SPL @ 1 m, peak	127 dB	131 dB	128 dB	133 dB
TRANSDUCERS				
Low Frequency	2 x Bose SM8 neodymium 8-inch woofers (3-inch voice coil)			
High Frequency	4 x Bose EM925 extended-HF neodymium compression driver (3-inch voice coil)			
Nominal Impedance	8 ohms + 8 ohms (L/RHF)			
PHYSICAL				
Enclosure Material	Baltic Birch plywood			
Finish	Two-part spray polyurethane coating, black			
Grid	18-gauge (1.5 mm) perforated steel, powder-coated finish, black			
Environmental	IP64			
Connectors	2 x Neutrik® NL4 wind pencil			
Suspension / Mounting	Integrated 3-point quick-pin rigging			
Dimensions (H x W x D)	11.9" x 21.2" x 8.7" (303 x 793 x 466 mm) / W: 29.8" (767 mm) side guards removed			
Net Weight	84.0 lbs (29.0 kg)			
Shipping Weight	78 lbs (34.0 kg)			
Accessories	rigging frames, pullback bar, waveguides, ground slack bracket, short quick pins			

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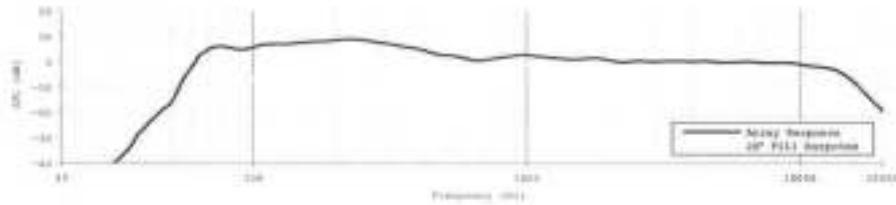
20) SHOW MATCH SM20 – DELTAQ ARRAY LOUDSPEAKER

TECHNICAL DATA

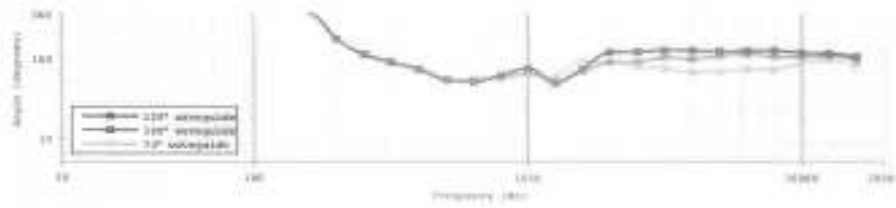
ShowMatch™ SM20
DeltaQ™ array loudspeaker



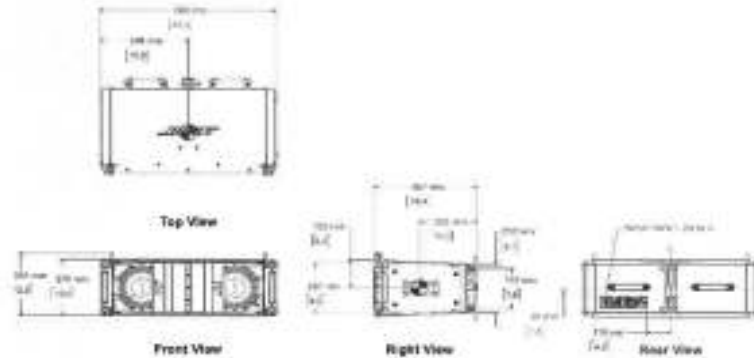
Frequency Response



Beamwidth (Horizontal -6 dB)



Dimensions



¹Reference
 (1) Frequency response and range measured on axis in an anechoic environment, with manufacturer's standard profile.
 (2) Sensitivity measured with matched boundary conditions, recommended loadings and 92 dB reference to 1 kHz.
 (3) Maximum SPL calculated from sensitivity and power handling specifications, exclusive of power compression.
 (4) Rose stem (metallic) for using pole mount bracket is 1/2" dia. x 1/8" dia. x 1/8" dia. 300 mm. 5/8" power diameter.
 (5) RMS average constant power handling (CPH) peak (see 60-0000) via bandpass, 4-8 kHz (100 Hz), 3-4 Hz duration.

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AUDITORIUM SOUND SYSTEM REPLACEMENT

21) SHOW MATCH SMS118 – DELTAQ ARRAY SUBWOOFER

TECHNICAL DATA

ShowMatch™ SMS118 DeltaQ™ array subwoofer



Product Overview

Bose ShowMatch™ SMS118 subwoofer is designed primarily to integrate with DeltaQ™ array loudspeakers and extend low-frequency response down to 29 Hz. The SMS118 enclosure width and integrated rigging allows fast integration in arrays with ShowMatch full-range modules using optional array frames and accessories. The portable-rated Baltic birch enclosure may also be used for ground-stack applications and includes an integrated mounting-pole adapter for use with other mid/high loudspeakers.

Key Features

- **DeltaQ™ technology** – defines the next-generation in loudspeaker array design with selectable coverage patterns that more precisely direct sound to audience areas for improved sound quality and vocal clarity with fewer boxes versus line arrays.
- **ShowMatch™ companion 1x 18" subwoofer** – for low-frequency extension down to 29 Hz with mixed mid/high and subwoofer ShowMatch arrays.
- **Bose LF18 neodymium 18-inch, high-excursion, 4.5-inch voice coil, transducer** provides maximum performance (same transducer as in Bose SMS218).
- **Integrated 4-point "quick pin" rigging** – allows arrays of up to 18 subwoofers with 10:1 design factor.
- **Front-grill mounted NL4 input, plus rear NL4 inputs** – allow easy setup for "reversed-box" cardioid arrays.
- **Integrated pole-esp adapter** – allows use with other mid/high loudspeakers and accessory mounting poles.
- **Removable side guards** – provide rigging guard for portable applications. Easily removed for permanent installs to reduce width and improve sight lines.

Technical Specifications

SINGLE MODULE PERFORMANCE				
Frequency Response (1/120 dB)	22 - 250 Hz			
Frequency Range (100 dB)	28 - 300 Hz			
Recommended High-Pass Protection Filter	30 Hz with minimum 12-dB / octave filter			
Horizontal Coverage Pattern	array with cardioid array configurations			
Recommended Coverage	80-100 Hz (requires active crossover in DSP)			
	Bose extended-frequency test™		AES standard test™	
	Array (free field)	Ground Stack (half space)	Array (free field)	Ground Stack (half space)
Power Handling, 1-imp term continuous	350 W	360 W	1250 W	1250 W
Power Handling, peak	3700 W	3000 W	3000 W	5000 W
Sensitivity (SPL, 1 W @ 1 m) (Q)	92 dB	96 dB	92 dB	96 dB
Calculated Maximum SPL, @ 1 m (Q)	121 dB	127 dB	123 dB	129 dB
Calculated Maximum SPL, @ 1 m, peak	127 dB	133 dB	129 dB	135 dB
TRANSDUCERS				
Low Frequency	1x Bose LF18 neodymium 18-inch, high-excursion woofer (4.5-inch voice coil)			
Nominal Impedance	4 ohms			
PHYSICAL				
Enclosure Material	Baltic birch plywood			
Finish	Two-part epoxy polyurethane coating, black			
DRH	18-gauge (1.5 mm) perforated steel, powder-coated finish, black			
Environmental	IP54			
Connectors	3 x Neutrik® NL4 on rear, 1x NL4 front-grill mounted, all wired parallel			
Suspension / Mounting	4-point "quick pin" rigging, 4x M10 top and 4x M10 bottom inserts, M10 pole eye			
Dimensions (H x W x D)	32.2" x 30.7" x 30.7" (820 x 780 x 778 mm) / W/O side guards removed			
Net Weight	186.5 lbs (84.9 kg)			
Shipping Weight	193 lbs (87.5 kg)			
Accessories	rigging frames, ground stack bracket, short quick pins			

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AUDITORIUM SOUND SYSTEM REPLACEMENT

22) SHOWMATCH SMS18 – DELTAQ ARRAY SUBWOOFER

TECHNICAL DATA

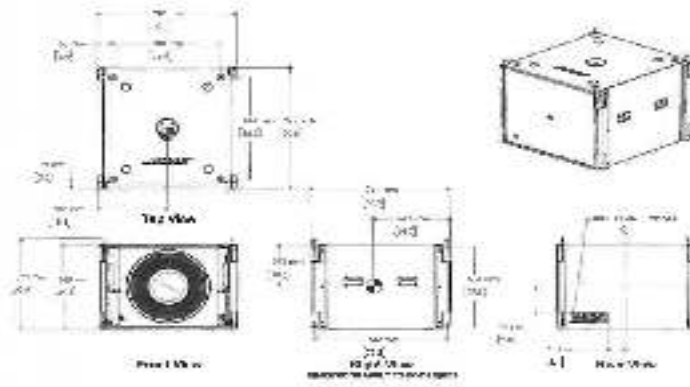
ShowMatch™ SMS18 DeltaQ™ array subwoofer



Frequency Response



Mechanical Diagrams



- 1. All dimensions are in inches (mm).
- 2. For the most accurate fit, always check the subwoofer's dimensions against the site's specifications.
- 3. Make sure the subwoofer is properly secured to the structure and that the mounting holes are properly aligned.
- 4. Cap screws and nuts should be used to secure the subwoofer to the structure. Use the correct size and type of hardware.
- 5. All electrical components should be properly grounded and protected from moisture and other environmental factors.

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AUDITORIUM SOUND SYSTEM REPLACEMENT

23) DATASHHET – Leopard compact linear line array loudspeaker

DATASHEET

LINE ARRAY

LEOPARD™ Compact Linear Line Array Loudspeaker



The LEOPARD compact linear line array loudspeaker reproduces audio intelligibly with maximum power, superior intelligibility, and extremely low distortion. Building on Meyer Sound's award-winning LEO™ family of loudspeakers, LEOPARD delivers the same advantages of high-powered design, great response, and

superior frequency response while providing power, controllability, and operating temperature. The award-winning LEOPARD is available in a variety of sizes to meet your requirements.



power, fractional control, and a separate line LEO™ and LEO™.

LEOPARD is a compact linear line array loudspeaker providing excellent phase coherence and constant coverage in a light, compact cabinet. Building on Meyer Sound's award-winning LEO™ family of loudspeakers, LEOPARD systems reproduce any sound source with clarity over a wide dynamic range. Superior phase coherence and consistent SPL. LEOPARD loudspeakers are optimized for use in both indoor and outdoor applications.

For an increasingly compact, LEOPARD is available with Meyer Sound's LEO™ family of line array control elements which can be flown as part of LEOPARD arrays without requiring additional weight. The 500 LFC (line array LEO™) is the advantage of a smaller power source, which is available in a variety of sizes.

In addition to creating a line array system, LEOPARD can also be used as a replacement for LEO™ in an LEO™ system.

LEOPARD systems can be driven by Meyer Sound's 500 LFC (line array) processor, which provides a wide range of signal processing for array components. To guarantee uniform performance, LEOPARD systems include an optional Meyer Sound's LEO™ software. LEOPARD is a compact linear line array loudspeaker with Meyer Sound's LEO™ portable monitoring system, which provides comprehensive monitoring of your system's performance.

LEOPARD includes Meyer Sound's LEO™ rigging kit, which includes a wide range of rigging options. Rigging options include the LEO™ LEO™ 500 LFC (line array) processor, LEO™ LEO™ 500 LFC (line array) processor, and LEO™ LEO™ 500 LFC (line array) processor.



FEATURES & BENEFITS

- Compact cabinet with dual 12-inch drivers and 12-inch horn power-tweeter
- High peak power output with exceptional linearity and excellent reproduction of many applications, including live performance

- Self-powered for simple line array installation
- Flexible rigging and transport options
- Integrates easily with Meyer Sound's LEO™ 500 LFC and LEO™ LEO™ 500 LFC line array processors

SOLUTIONS

- Best for replacement touring and live installations
- Club, theater, houses of worship, corporate AV, and dance clubs
- Compatible with Meyer Sound's LEO™ LEO™ 500 LFC and LEO™ LEO™ 500 LFC line array processors

LEOPARD ACCESSORIES

LEOPARD is available in a variety of sizes. The LEO™ LEO™ 500 LFC (line array) processor is available in a variety of sizes to meet your requirements.



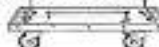
LEOPARD is available in a variety of sizes. The LEO™ LEO™ 500 LFC (line array) processor is available in a variety of sizes to meet your requirements.



LEOPARD is available in a variety of sizes. The LEO™ LEO™ 500 LFC (line array) processor is available in a variety of sizes to meet your requirements.



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LEOPARD is available in a variety of sizes. The LEO™ LEO™ 500 LFC (line array) processor is available in a variety of sizes to meet your requirements.

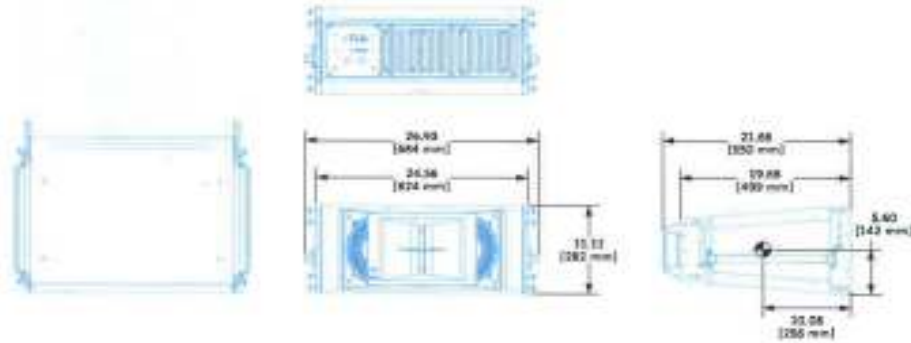


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AUDITORIUM SOUND SYSTEM REPLACEMENT

24) LEOPARD SPECIFICATIONS

LEOPARD SPECIFICATIONS		
ACOUSTICAL	Operating Frequency Range: Power Response	50 Hz – 18 kHz 91 Hz – 18 kHz 120 degrees
DRIVERS	Low Frequency Mid Frequency	Two 8-inch long-excursion cone drivers One 3-inch compression driver coupled to a constant-directionally horn through a patented RHM® waveguide
INPUTS	Connections	XLR 3-pin or 5-pin female input with main loop output
AMPLIFIER	Type	3-channel, open-loop, class D
AC POWER	Inputs/Outputs Input and Output Power Consumption (Rated, Max)	powerCON 20 input with loop output 100-240 V AC, 50-60 Hz 80 V AC (min-max, no full-on), optional fuse-protection above 240 V AC 3.0 A rms (334 W AC), 1.8 A rms (200 V AC), 3.4 A rms (200 V AC)
RMS WEIGHT		Equipped with 3-rail, isolated-pair network, supporting all amplifier operating parameters to load capacitor
PHYSICAL	Dimensions Depth Finish Protection Surface Mounting Load Rating	26.93 inches H x 11.31 inches W x 21.66 inches D (684 mm x 287 mm x 550 mm) 7.5 lbs (3.4 kg) Multi-gly handcoat with black textured finish Two-clamped steel with anodized steel mesh Ball ramps with captive Quidel Link 30.5 to 33-degree (slay angles), quick-release pins, and detachable side and rear handles MD-LEOPARD302 multi-compress and Fly 20 LEOPARD30 (3:1 safety factor) or 20 LEOPARD30 (1:1 safety factor), with some restrictions
		<p>LEOPARD – 04 SPECIFICATIONS</p> <p>Copyright © 2003 Reyer Sound Laboratories Inc. All rights reserved.</p> <p>WHB Concert and Production Services, LLC 333 San Pablo Avenue Berkeley, CA 94702</p> <p>TEL: 415-842-2277 info@whbcaps.com www.whbcaps.com</p>



ARCHITECT SPECIFICATIONS

The loudspeaker shall be a compact, self-powered, linear, low-distortion, line array loudspeaker. Its construction shall include two 8-inch long-excursion cone drivers and one 3-inch compression driver coupled to a constant-directionally horn through a patented RHM waveguide.

The loudspeaker shall incorporate internal processing and a 3-channel, open-loop, class D amplifier. Processing shall include equalization, phase correction, driver protection, and signal division. Performance specifications for a typical production unit shall be as follows, measured at 1/3-octave resolution: operating frequency range, 50 Hz to 18 kHz; phase response, 91 Hz – 18 kHz 120 degrees. Audio connectors shall be XLR 3-pin, female and male, accommodating balanced audio, and RHM, accommodating both balanced audio and RHM.

The internal power supply shall perform IEC filtering, soft current turn-on, and surge suppression. Power requirements shall be nominal 100, 115, or 120 V AC (line current) at 50-60 Hz, 5A, and DC operating voltage range shall be 100-240 V AC at 80-60 Hz AC power connectors for input and loop output shall be powerCON 20. Maximum long-term continuous current draw shall be 3.0 A rms at 120 V AC, 1.8 A rms at 200 V AC and 3.4 A rms at 100 V AC. The loudspeaker shall include an RHM remote monitoring system module.

Components shall be mounted in an optimally lined, vented enclosure constructed of multi-gly handcoat with a black textured finish. The enclosure shall include endbrakes with captive Quidel Links for locking units in vertical arrays at slay angles from 0.5 to 33 degrees. The front protective grille shall be powder-coated, two-clamped steel with black mesh (dimensions shall be 26.93 inches wide x 11.31 inches high x 21.66 inches deep (684 mm x 287 mm x 550 mm), weight shall be 7.5 lbs (3.4 kg).

The loudspeaker shall be the Reyer Sound LEOPARD.

AUDITORIUM SOUND SYSTEM REPLACEMENT

25) DATASHHET - 900 – LFC Compact low-frequency control element

DATASHEET

LF

900-LFC Compact Low-Frequency Control Element



Whisper Sound's 900-LFC compact low-frequency control element represents low-frequency control configurations designed with maximum low distortion. The 900-LFC uses the same basic line-up as Whisper Sound's 1200-LFC low-frequency control element, but is a smaller, lighter cabinet, making it ideal for building

flexible systems for applications with 900-LFC. The 900-LFC integrates easily with other major brand components, including JBL, Meyer, L-Acoustics, and others.

1000-Watt and 1000-Hz low-frequency control element. The 900-LFC is a compact low-frequency control element, which provides multi-point, adjustable, and positionable for array components. To guarantee optimum performance, systems with 900-LFC should be designed by Whisper Sound's 1000-Watt and 1000-Hz low-frequency control element with WHI Whisper Sound's RMS™ remote monitoring system, which includes diagnostics consisting of system parameters from a Mac® or Windows® computer.

The 900-LFC is available with or without Whisper Sound's CycloDrive™ driving lines, equipped with the optional MPF-500 (see page 11) for 900-LFC, engine "CycloDrive™" allows it to be flown from the MG-1200W02-200 multi-bus system. The 900-LFC can also be flown from any other multi-bus system, with variable tilt angles from 0 to 12 degrees. The MG-1200W02-200 grid can also be used for mounting the 900-LFC.

Ball suspension of the 900-LFC can be requested in detail with the optional MPF-500 main frame.



flexible systems for building applications with 900-LFC.

A newly designed case to make the 900-LFC significantly more efficient while reducing significantly lowering distortion while reducing distortion. The amount and the control display are controlled by the 900-LFC.



FEATURES & BENEFITS

- Compact cabinet with a 1-foot wide and 10-inch high power input and output.
- Light power input and output, and 10-inch high.
- Low distortion, low distortion, and low distortion.

- Self-powered for simplified setup and removal.
- Adjustable and positionable for array components.
- Adjustable tilt angles from 0 to 12 degrees.
- Adjustable tilt angles from 0 to 12 degrees.

SOLUTIONS

- Portable low-frequency control element for building applications at fixed installation of low distortion.
- Low distortion, low distortion, and low distortion.
- Adjustable tilt angles from 0 to 12 degrees.

900-LFC ACCESSORIES

MPF-500 (see page 11) for 900-LFC, engine "CycloDrive™" allows it to be flown from the MG-1200W02-200 multi-bus system.



MPF-500 (see page 11) for 900-LFC, engine "CycloDrive™" allows it to be flown from the MG-1200W02-200 multi-bus system.



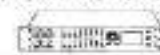
MG-1200W02-200 (see page 11) for 900-LFC, engine "CycloDrive™" allows it to be flown from the MG-1200W02-200 multi-bus system.



MG-1200W02-200 (see page 11) for 900-LFC, engine "CycloDrive™" allows it to be flown from the MG-1200W02-200 multi-bus system.



MG-1200W02-200 (see page 11) for 900-LFC, engine "CycloDrive™" allows it to be flown from the MG-1200W02-200 multi-bus system.



MG-1200W02-200 (see page 11) for 900-LFC, engine "CycloDrive™" allows it to be flown from the MG-1200W02-200 multi-bus system.



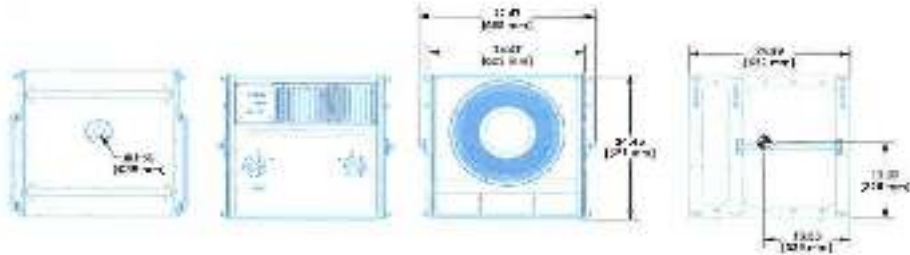
WHI Concert and Production Services, LLC
833 B42 2277
www.whi3ps.com

AUDITORIUM SOUND SYSTEM REPLACEMENT

26) 900-LFC Specification sheet

900-LFC SPECIFICATIONS

ADULT CAP.	17000 sq. ft. (1590 sq. m.)	NOTES: 1. See drawing for details and dimensions. 2. All dimensions are nominal unless otherwise specified. 3. All dimensions are in millimeters unless otherwise specified. 4. All dimensions are in feet and inches unless otherwise specified.
ADULT SEAT	17000 sq. ft. (1590 sq. m.)	
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ADULT SEAT	17000 sq. ft. (1590 sq. m.)	



ARCHITECT SPECIFICATIONS

The subgrantee shall be a single, unipolar, low impedance, constant impedance speaker system capable of being driven by a constant power amplifier. The subgrantee shall be a single, unipolar, low impedance, constant impedance speaker system capable of being driven by a constant power amplifier. The subgrantee shall be a single, unipolar, low impedance, constant impedance speaker system capable of being driven by a constant power amplifier.

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3.3 Asbestos Documentation

School Administrative Unit No. 52
 Portsmouth High School
 90 Andrew Jarvis Drive
 Portsmouth, New Hampshire

Room No.	ACM Description	TPM Category	Approximate Quantity	EPA Assessment	Resp. Action	6-Month Inspect. Changes Y/N
* Stage Area, Walls of Interior Stairwell on Sides of Stage	* Asbestos - Ceiling Walls	Misc.	300 lbs.	S	-	N
* Auditorium, Sound Booth	* Pipe and/or tubing Insulation	Misc.	60 LB	S	2)	N
* Auditorium, Sound Room	Carpet	Misc.	240 lbs	S	1)	N
* Auditorium, Scene Room	Two floor Tiles Mosaic					

Sampled April 2008 - No Fishers Record

Notes: 1) Final Test, 2) - Square Feet
 * Stairwell - the shared staircase walls. Has been removed as of 7/16/18

6-Month Inspector: Stephen McNeilson #41 000204 Date: April 2008