

460 NORTH SHORE DRIVE CLEAR LAKE, IOWA 50428

**Sound:**

**Speakers & Amplifiers:**

McCauley "In Line" 4 way line array system consisting of:

**Surf Ballroom Technical Production  
Capabilities**

12	N90	IN.LINE Line Array Dual 8"x1" 90 degree
4	N120	IN.LINE Line Array Dual 8"x1" 120 degree
8	NS1	IN.LINE Line Array Dual 15" Low/Sub degree
8	AC288	Installation Dual 18" Subwoofer
2	PRO4801	Crest Audio PRO Series 4801 for Highs
2	PRO8002	Crest Audio PRO Series 8002 for Mids
4	PRO9001	Crest Audio PRO Series 9001 for Lows and Subs

**Specification:**

The system is comprised of two clusters hung in a left/right configuration. Each array consists of six IN.LINE™ **N90** Line array cell's and two IN.LINE™ **N120** cell's with low frequencies being reproduced by four IN.LINE™ **NS1** Low Frequency Modules. The LF arrays and Mid-High arrays are hung side by side, with one of each array on Stage Left and Stage Right. Four **NB24** IN.LINE™ rigging frames are necessary for suspension of the clusters, with the IN.LINE™ **NS1** Low Frequency Modules being flown next to the N90 cells to minimize the height of the arrays.

This system has been designed to create consistent and even SPL at all areas of the room and at all frequencies. The McCauley IN.LINE™ system has been chosen due to its seamless vertical coverage pattern and uniform tonality created by the array at all listening positions. The effective use of linear array coupling principles eliminates any destructive interference between cells within the array, yielding a single planar wave source of acoustical energy. The directivity of the linear array design limits SPL in unwanted areas of the room, greatly reducing and virtually eliminating unwanted reflections that lower speech intelligibility. The flexibility of the rigging hardware allows for a customized configuration specific to the venue. Calculations of sound pressure levels have been completed with loudspeakers at optimum locations in the room. These calculations were completed using EASE 4.0. The current design yields a +/- 3.5db (typical) variation in **direct** SPL within the main seating area and with very low spillage onto the stage located at the front of the room.

**F.O.H.:**

**Console:**

Midas Legend 3000 w/ 48 mono input channels. (L3/48/IP)

**Outboard & Processing:**

1	DBX 480R	Equalization & Loudspeaker Management System (Remote)
1	DBX 482	Equalization & Loudspeaker Management System 4x8
1	1960	Drawmer 2-Ch Mic Pre / Tube Compressor
1	DL251	Drawmer 2-Ch Spectral Compressor
1	DL241	Drawmer 2-Ch Auto Compressor
1	DL441	Drawmer Quad Auto Compressor/Limiter
2	DS501	Drawmer 2-Ch Power Gate
1	MX40	Drawmer 4-Ch Punch Gate
1	PCM81	Lexicon PCM81 Digital Effects Processor
1	D-Two	TC Electronics D-Two Digital Multitap Delay
1	SPX990	Yamaha SPX990 Digital Effects Processor
2	REV500	Yamaha REV500 Digital Reverb Processor
1	DN-C 550 R	Denon professional CD player/recorder

**Monitors:**

**Console:**

Soundcraft MH 3000 (48 mono inputs capable of 12 mixes.)

**Speakers, Amplifiers & Processing:**

1	DBX 480R	Equalization & Loudspeaker Management System (Remote)
3	DBX 482	Equalization & Loudspeaker Management System 4x8
9	SM72	Stage Monitor 12" x 2"
1	SA155-2	Drum Monitor Dual 15" x 2"
5	PRO4801	Crest Audio PRO Series 4801 for Highs
5	PRO7001	Crest Audio PRO Series 7001 for Lows

**Microphones:**

10	Beta 58A	Shure Beta 58A
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3	Beta 98D/S	Shure Beta 98D/S
2	SM81-LC	Shure SM81-LC
4	Pro 37-R	Audio Technica Pro 37-R
2	MD421	Sennheiser MD421II
5	E604	Sennheiser E604
2	D112	AKG D112
6/2	SF-NDR40/SFADB	SF-NDR40 Signal Flex passive DI box/active DI box

2		Countryman active DI box
2	KMS105	Neumann KMS105 Vocal Microphone
2	ULXS24/Beta58	Shure ULXS Beta 58 UHF Wireless Microphone

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**Miscellaneous:**

Various microphone stands and cabling sufficient for normal production requirements.

**Lighting:**

Downstage – (30) 1KW PAR64 on 30' of trussing.

Upstage – (24) 1KW PAR64 on 20' of trussing.

Dimmers – Colortran I Series Quad Module. 48 channels on 12 rack mounts w/ 4 channels of 2.4KW each .

Console – NSI 7532

Followspots – (1) Comet 1K

(1) Times Square QF1000

**Backline:**

A modest amount of backline equipment is available if needed and cleared through Surf Ballroom management. Please ask for a separate list of backline equipment if it is required.