

# TECHNICAL SPECIFICATIONS

## Orchestra Hall

1111 Nicollet Mall, Minneapolis, MN 55403

### I House (Auditorium)

2,085 total seats

- A. Main floor: 1,180 stationary, theatre-style cushioned seats, with four aisles; 42 moveable cushioned chairs
- B. Tiers only: 938 seating on tiers is “horseshoe-shaped,” with boxes on the right and left sides and a section in the “rear”
  - 1. Tier 1: 164 moveable cushioned chairs arranged in boxes along sides, and 139 stationary, theatre-style seats in “rear”
  - 2. Tier 2: 144 moveable cushioned chairs arranged in boxes along sides, and 139 stationary, theatre-style seats in “rear”
  - 3. Tier 3: 96 moveable cushioned chairs arranged in boxes along sides, and 181 stationary, theatre-style seats in “rear”

### II Stage

- A. Level, permanent acoustic shell
- B. Measurements:
  - 1. 104’ from apron to back of house
  - 2. 71’4” wide downstage
  - 3. 45’ wide upstage
  - 4. 44’ from stage floor to stage ceiling (downstage)  
32’6” from stage floor to stage ceiling (upstage)
  - 5. 38’8” deep stage
  - 6. 3’10” from stage floor to auditorium floor
- C. Backdrop – one black velour curtain to cover back wall
- D. Six Rigging Points above the Stage, paired upstage / mid-stage/ and down stage  
Bridling is NOT allowed, please inquire for rigging details. There is not a fly system at Orchestra Hall and all rigging must be reviewed and approved. 1 ton motors in each location.
- E. Risers – The MN Orchestra uses custom wooden risers that can accommodate a variety of set-ups. Risers are 4’ x 6’ at heights of 8”, 16”, and 24”. Chorus risers are also available; 3’ x 8’ at heights of 12” and 24”. Please inquire for various configurations.
- F. Chairs and stands:
  - 1. 110 straight-back orchestra chairs (including cello chairs)
  - 2. 110 Wenger music stands
  - 3. 125 music stand lights
- G. Lift – Model AWP-36 – 36 foot lift, 250lbs maximum, single person

### III Electrical

#### A. Lighting system: (located back of House Center)

1. ETC GIO 4k  
Green Hippo Karst media server – ArtNet Control  
Full mapping to Upstage wall, corrects for distortion.  
DMX/sACN/Artnet locations throughout the theater  
House Lights Control by ETC Paradigm System or GIO
2. Stage Dimmers:  
(3) ETC Sensor Dimmer Racks – (216) 2.4kw dimmers total  
61 dimmers permanently wired to Orchestra Stage Lighting  
108 dimmers available for production  
49 dimmers dedicated to House Lighting

All dimmed circuit distribution and fixture inventory have NEMA L5-20 connectors

#### 2. Lighting Instruments (Light plot available upon request).

- a. Tier Two:  
(12) 26° Source Four 575w (2 per side)  
(4) 19° Source Four 750w (2 per side)
- b. Tier Three:  
(24) 19° Source Four 575/750w (12 per side)  
\*\*750w are for conductor and solo special, rest are 575w
- c. Tier Three Front-of-House:  
(12) 5° Source Four 750w (6 per side)
- d. (2) Robert Juliet topaze 1200w Followspots  
Rear of Tier Three House right and left
- e. Up stage wall on floor:  
(7) ColorBlaze TRX 72”
- f. Above stage in ceiling:  
(24) Cygnus (RGBW)  
(4) Vari-Lite 1100 TSD
- g. Lighting winches  
(10) 19° Source Four 750w  
(6) Vari-Lite 1100 TSD

### V VIDEO

#### A. Video System – (located back of house and stage right)

1. (2) Christie Roadster HD18K – 18,000 lumen projectors  
Dual SDI input cards, Network control, DMX shutter control  
SDI distribution amplifiers  
ImagePro HD w/ SDI i/o  
Two HD capable dry patch lines from FOH to backstage  
Two Fiber connections lines from FOH to backstage  
CAT6 dry lines from FOH to Backstage (4 lines)

## IV Sound

### A. General Information:

Orchestra Hall was designed as an ACOUSTIC CONCERT HALL. The side walls are hardwood. The ceiling and back wall are constructed of wire lath and plaster. The house and stage floors are hardwood with a plenum underneath. The room is rectangular in shape yet there are no parallel surfaces. There are no standing waves or dead spots. The walls and ceiling were designed with the aid of a computer. Orchestra Hall is a VERY LIVE room acoustically. Reverberation time (RT-60) is typically 3.5 seconds. MINIMUM MICROPHONE TECHNIQUE works best. Drums rarely, if ever, need to be mic'ed. Brass rarely need to be mic'ed. Excessive levels of drums, percussion, brass, electronic instruments, or MONITORS causing vocals in the PA to be turned up to be heard over the acoustic energy coming from the stage will create a swirling mass of sound with no definition at higher volumes (above 95 dba).

Orchestra Hall in Minneapolis, Carnegie Hall in New York, Symphony Hall in Boston, Kennedy Center in Washington DC and Fisher Hall in New York are similar in same shape and are constructed out of basically the same materials. Expect the same type of room sound. The physical properties that make these acoustic concert halls great can cause problems with definition and clarity (especially vocals) at higher volumes.

### B. Sound Equipment

#### 1. L Acoustics Sound System

- a. (13 per array) Kiva L/C/R Line Arrays, (2 per side) SB15 & 18 Subs (1 per side), (6) 5xt front fill speakers
- b. (6) Electro-voice EVU 2062 for Loge Areas
- c. LA4 Amplifiers w/ Network Manager Control
- d. 8X8 Dolby-Lake processor
- e. Yamaha PM5D, installed rear of Main Floor
- f. 64ch Radial Engineering (48x16) microphone splitter, splits to stage left only.
- g. 12ch backstage Line Level Splitter
- h. 12 return lines to Stage
- i. 36 microphone lines Backstage to FOH, dry lines stage right
- j. Infra-red Hearing Assistance System with (6) Emitters panels and (48) beltpack receivers
- k. 2 channel Clear Com Intercom System.

2. Microphones
  - a. 2 Shure Beta 58
  - b. 2 Shure SM 58
  - c. 2 Shure SM 57
  - d. 1 Shure SM 85
  - e. 2 Countryman FET85 active direct boxes
  - f. 10 tripod boom stands
  - g. 8 straight stands
  - h. 6 desk stands
3. Outboard Processing
  - a. Digital Processing in Console, System Processor, and Amplifiers
4. Monitor System
  - a. 2 Meyer Sound Labs UPA-1A speakers
  - b. 2 Meyer Sound Labs UM-1 wedge speaker
  - c. 2 channels of Meyer Sound Labs M1 processors and QSC 3500 amplifiers (for UPA's or UM-1's)
  - d. 8 Meyer Sound Labs UPM speakers
  - e. 4 channels of Meyer Sound Labs P-1 processors and QSC PLX2502 amplifiers (for UPM's)

## **VIPOWER**

All 120/208V Company Switches include Cam-Lok and Bare Lug Connections

- (1) 400AMP 3-Phase 120/208V – Located Stage Right
- (1) 100AMP 3-Phase 120/208V – Located Stage Right
- (1) 2000AMP 3-Phase 120/208V – Located Stage Left