

## MINI LIGHT PALETTE II

### SPECIFICATIONS

#### GENERAL DESCRIPTION

The MLP/2 lighting control console shall be a micro-processor based lighting control system, specifically designed and constructed for the control of television and theatrical dimming systems. The operative data processing program shall be a non-volatile read-only-memory. All major electronic components shall be plug-in and housed within the control console in an easily accessible manner.

The lighting control console shall be engineered to provide instantaneous and explicit operation, incorporating two integral color displays to inform the operator of lighting and console status at all times.

The console operation shall not depend upon the use of peripheral storage/retrieval devices such as cassette or disk drives. Such equipment shall be for library storage of the RAM only. In case of power failure, the RAM shall also be maintained by a battery backup power supply.

The console shall be constructed of code gauge steel, finished in dark brown with a plated bronze control panel. The front edge of the console shall be padded and the end panels shall be of solid walnut. The overall dimensions of the control console shall not exceed 29" wide by 14" high by 26" deep, or 95 pounds in weight.

#### STANDARD FEATURES

The MLP/2 Memory Control Console, designed to control up to 384 2.4Kw dimmer and/or non-dim modules, shall be comprised of:

- 2 - Integral high speed, dynamic color CRT's for display of and access to, all console functions.
- 1 - Sensor for automatic dim/brightness intensity adjustment of displays.
- 3 - Keypads controlling all functions of set-up, intensity setting and recording, cue sheet composition, playback, library storage/retrieval, and print out.
- 1 - WHEEL for intensity control of a channel, group of channels or an entire cue without need for any matching action, and to modify the speed of any or all timed fades proportionally.

- 1 - GO button for starting cues, each of which may contain up to three parts.
- 1 - Cue STOP/BACK button.
- 1 - Split handle crossfader for timed or manual "lead-lag" dipless crossfades.
- 2 - Single handle crossfaders, timed or manual.
- 10 - Overlapping submasters, operator selectable as split or pile on.
- 10 - Submaster bump buttons.
- 1 - 5-1/4" disk drive for memory storage and recall.
- 2 - Keyswitches for system on-off and normal-backup operation.
- 1 - Memory Back-up System composed of a separate power supply, micro-processor and memory card for dimmer control on the 10 submasters and two crossfaders.

### OPERATING FUNCTIONS

The system shall provide at least, but shall not be limited to, the following functions:

#### 1. SETUP

The setup display shall provide the facilities of:

- a) Activating the Designer's Remote Console and Remote Control Module, executing print routines, establishing the number of dimmers and control channels the console will address and display the percentage of remaining cue capacity.
- b) Access to the backup assignment display.
- c) "Memory to disk" and "Disk to memory" transfers.
- d) Clearing the systems memory.
- e) Disk initialization procedures and system diagnostics routines.
- f) Selection of split or pile on submaster operation.
- g) Access to the interactive patch display which allows the assignment of dimmers to control channels through electronic matrixing on a one-to-one basis or any combination with the construction of dimmer lists. It shall be possible to assign proportional maximum levels to dimmers via the patch table.

#### 2. LEVEL SETTING, CUE AND GROUP RECORDING

- a) A channel, several channels (using "thru" and "and") or a group of channels may be called up and set digitally or with the level wheel.

- b) Levels can be recorded into any cue, cue part or group.
- c) Any channel or group of channels can be adjusted proportionally with level wheel. Channels shall retain proportional differences after reaching FULL or 0.
- d) All level setting operations may be done "live" via the stage mode or "blind" using the various preview modes. Levels from previous cues may provide the initial levels for subsequent cues when adding cues blind.
- e) Changes made to cues and groups in preview shall be immediately recorded. These shall not affect stage output.
- f) Direct dimmer control shall be provided, regardless of the activity of its assigned channel.

### 3. CUE SHEET COMPOSITION

- a) Cues may be written in any order.
- b) Up to nine cues can be inserted between any whole number.
- c) Each cue may contain up to three parts and an automatic "follow on" command.
- d) Each part may contain applicable portions of the following information:
  - 1. Fade time up to 998 seconds (separate Up and Down for split fades.)
  - 2. Delay time up to 998 seconds (separate UP and Down for split fades.)
  - 3. Designation as Manual rather than time fade.
- e) A cue with all part, time and delay, and follow-on information may be copied as a new cue.

### 4. PLAYBACK

- a) One button starts entire cue, comprising up to three parts.
- b) Up to three cues can be run simultaneously.
- c) Running time fades and delays are counted down on the CRT, showing remaining seconds for each fade and delay.
- d) The cue can be stopped, continued or reversed at any time.
- e) Overall speed of the cue may be adjusted proportionally by the wheel.
- f) Any or all of the fades can be stopped and converted to manual operation at any time, or have its speed adjusted while running.
- g) Cues may be played back out of sequence at any time in a specified time.

- h) A channel or group of channels may be stopped, held out of a running cue and controlled independently without affected recorded levels.
- i) Dimmers may be substituted by means of the electronic matrix at any time.
- j) A cue may be previewed blind and modified at any time.
- k) Non-moving channels will "track through" without requiring duplication into each cue.

## 5. SPECIAL EFFECTS

A special effect is defined as a series of lighting steps, executed repeatedly, for a specified length of time, with a specified amount of time between each step. The execution of an effect may be initiated at any place in the cue sheet and up to 99 effects may be recorded. The same effect may be called any number of times from any place in the cue sheet and up to three (3) effects may run simultaneously.

The effect steps of up to 80 and other attributes are defined in the EFFECT display. Channel "on state" and "off state" levels may be set, and any combination of effect attributes may be specified.

If no attributes are set, the step list is considered "positive" and executed in order from step 1 through the last step specified. At the completion of the last step specified, the step list is executed again. This continues until the effect times out or is terminated manually.

Other chase attributes, if selected, affect the execution as follows:

NEGATIVE - At the beginning of each execution of the step list, all channels in the effect are turned on. Each step will turn off the channels specified in that step and turn on the channels in the previous step.

ALTERNATE - Each pass through the step list alternates the chase output from positive to negative.

REVERSE - Causes the step list to be executed in reverse order, beginning with the last step specified.

BOUNCE - Each pass through the step list alternates the chase output from forward to reverse.

BUILD - Prevents channels from the previous step from returning to "off state." Each channel turned on remains on until the entire step list is executed. If the list is being executed in a negative sense, each channel turned off remains off until the entire step list is executed.

RANDOM - All steps in the effect are executed, but in a random order.

## 6. SUBMASTERS

100 recorded groups, addressed in multiples of ten, may be played back on ten submasters. It shall also be possible to individually assign or adjust channel levels via the keypad.

- a) It shall be possible to select either split or all pile on control.
- b) Temporary modifications may be made to groups loaded onto the submasters with the keypad.
- c) When new group banks are loaded, an active submaster shall maintain it's first assignment until returned to zero. It shall then automatically reload. The submaster display will provide "group pending" information.
- d) Momentary flash buttons shall be provided for proportional on/off operation of the submaster output stores.

## 7. DIAGNOSTICS

There shall be a self-test diagnostic program provided as standard in the MLP/2. The diagnostic program shall test memory, disk, and video operation.

- a) Memory Test: All locations in memory are sequentially written and read with various test patterns. If all reads match writes, the memory test has passed.
- b) Disk Test: All locations on the diskette are written with test data, then read. If all reads match writes, the disk test has passed. In addition to read/write errors, the following conditions can cause the disk test to fail: disk drive door open, no disk inserted, or diskette write-protected.
- c) Video Test: The purpose of the video test is to allow the operator to verify that all dot positions are visible and that all character positions can be written and are legible. Two test patterns are provided. The first tests dot positions (pixels); the second tests potential focus blue caused by incorrect adjustment of

brightness and contrast controls.

## 8. BACKUP SYSTEMS

- a) STANDARD:  
A backup system is included in the basic console. Dimmers may be assigned to the 10 submasters and Faders 1 and 2. When backup is activated, these 12 controls drive their assigned dimmers through separate electronics completely independent of the primary system electronics. A default dimmer-to-manual fader assignment shall be provided.
- b) FULL BACKUP: (Optional)  
This shall consist of a complete duplicate complement of electronics, including a power supply and disk drive. It shall be built into the console and interwired so that it tracks the playback operation of the main console and can be switched on line at any time in the event of a problem with the primary electronics.

## PERIPHERAL EQUIPMENT

Optional peripheral equipment may be added to an existing system at any time. All wiring provisions for future additions are to be furnished in the system on its initial delivery.

- a) Hard Copy High Speed Printer  
Provides a printed record of cue level information, the complete cue sheet, patch, submaster assignments and effects. It shall be a 150 cps dual direction, impact printer using standard edge perforated, fan folded paper.
- b) Designer's Remote Console  
This self-contained portable console is designed to allow direct access to most of the functions of the main console from a remote location. Channels and dimmers may be addressed, levels set, cues written and rehearsed, modifications made and information recorded. It includes the following:
- 3 - Command keypads
  - 2 - High speed, green phosphor CRT's
  - 1 - Level/Rate wheel
  - 1 - Go Button
  - 1 - Stop/Back Button
  - 1 - Set of 25' control cables with plugs

The console shall not exceed 14" h x 29"w x 26"d. The designers remote shall plug directly into the main console or into a remote receptacle station as required.

c) Remote Control Module

This shall be a hand-held module which provides direct dimmer address from remote locations. It also provides the ability to address and activate recorded cues. The Remote control module contains the following:

1 - 24 way keypad controlling dimmer, channel, group and cue address, level setting, Go, Stop, and Go To functions.

1 - 6' control cable with plug

1 - 25' extension cable with plugs

The module shall not exceed 6"h x 4-1/2"w x 1" d.

d) Remote Stop/Go Unit

Provides the capability of activating pre-recorded cues or stopping the action from a remote location.

e) Remote Monitors

Allows the set-up display CRT and/or the cue sheet display to be viewed from a remote location.

AUXILIARY CONTROL MODULE(Optional)

A module shall be provided to allow control of the houselight dimmers, take control and panic functions as required.

POWER REQUIREMENTS

The standard control system shall operate on 120 volts, 60Hz, 2 wire and ground AC power. 220/240 volt, 50 Hz is also available. The console shall be provided with one 6' power cord, 25' data control cable and overtemperature cable.