Leprecon®

LP-3000 Users Manual

LP-3000 Users Manual
Version 330

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Introduction

Congratulations on your purchase of the LP-3000 Console. The LP-3000 was designed to fill the need for an entertainment console with strong moving light capabilities. The LP-3000 was specifically engineered to control both conventional and moving lights gracefully.

About This Manual

The *LP-3000 Users Manual* is intended to familiarize the operator with the features of the LP-3000 and provide detailed instructions about its use. The manual is divided into three sections.

- *Getting Started:* In this section we introduce the LP-3000 and quickly get you up and running. We also provide important information to help you configure the LP-3000 and we describe the various tools and techniques that you will use routinely—with both the conventional and moving light controllers.
- *Conventional Light Controller:* After you familiarize yourself with the LP-3000, you will be ready to learn about the conventional light controller. In this section we walk you through the procedures that you will use—from the most commonly used techniques to specialized techniques that apply to unique programming situations.
- *Moving Light Controller:* Finally, we describe the procedures that you will use to operate the moving light controller. It is important that you are fully familiar with the LP-3000 prior to using the moving light controller. A thorough study of the *Getting Started* section is required and some experience with the conventional light controller is recommended.

After the major sections of the manual, you'll find several appendices.

- Appendix A contains important maintenance information.
- Appendix B describes the instruments in the LP-3000 instrument library.
- Appendix C provides step-by-step instructions about adding a moving light fixture into the LP-3000 library.
- Appendix D describes control features—features of some lights that enable you to reset, douse, etc. from the LP-3000 console.

- Appendix E provides you with step-by-step instructions about how you can import labels and user-defined devices from other LP-3000 shows created in version 330 or higher.

LP-3000 Features

Depending upon the width of your LP-3000, you'll find the following features.

	48/96 Wide	72/144 Wide
Channels	48 or 96	72 or 144
Simultaneous Moving Light Playbacks	18	18
Moving Light Autopatch	✓	✓
Custom Color Palette	✓	✓
Color Changer Control	✓	✓
DMX Output Channels	1024 upgradeable to 2048	2048
Proportional Dimmer Patch	✓	✓
Color LCD Graphics Screen 9.5"	✓	✓
Preset Faders with LCD Titles	18 Submasters with 20 Pages Each	
Blind Edit	✓	✓
Conventional Chase Memory	360 Programmable (18 Playbacks x 20 Pages) with 25 Steps Each.	
Cue Stack	500 Cues	500 Cues
Go, Back and Hold Buttons	✓	✓
Time Fades (Separate In/Out)	✓	✓
Add/Solo Buttons	✓	✓
Built-in 3.5" Disk Drive	✓	✓
Weight	80 lbs.	110 lbs.
Height, Width, Depth (in inches)	10 x 48.5 x 29	10 x 60.75 x 29

Section One:
Getting Started

Chapter One:
Manual Console Operation

Power Up and Down Sequences

The LP-3000 is a computer-based lighting console. The internal computer is a conventional PC, with Microsoft® Windows® 95 software providing the user interface. For this reason, the Power Up and Down sequences are critical to correct operation. Unexpected power loss can damage the current show file. The use of an uninterruptable power supply (UPS) is strongly recommended to prevent sudden power loss while the console is running. Also, the UPS system filters electrical noise and spikes that could upset the LP-3000. A UPS system designed for use with desktop PCs that has a capacity of 200 watts or more is acceptable for use with the LP-3000.

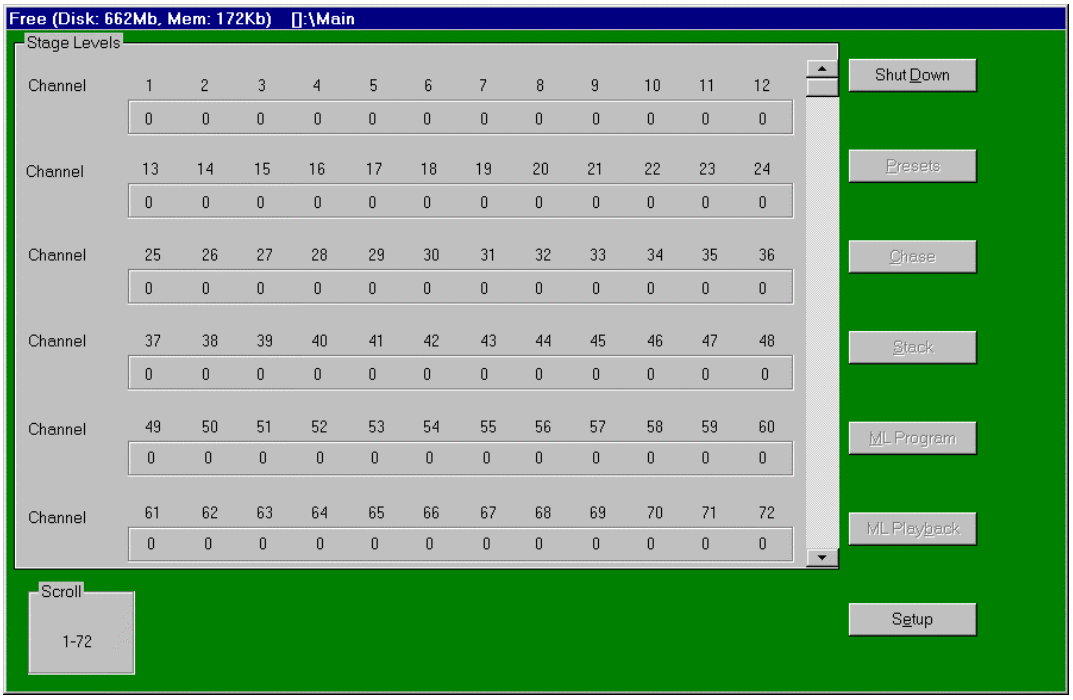
Make sure that the power source used to power the LP-3000 is reliable and, if possible, do not share the circuit with other equipment.

To Power Up the LP-3000

1. Move the power switch to the **On** position.

   The power switch is located on the back of the console above the power cord jack.

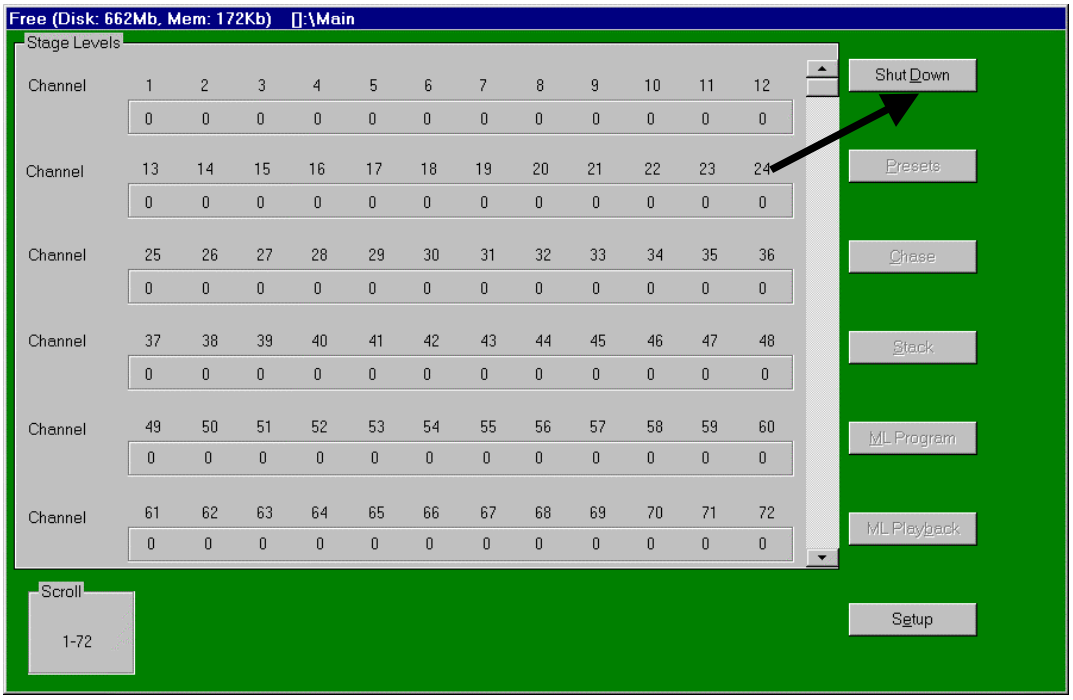
   After turning on the power switch, wait for the LP-3000 **Stage View (Main)** screen to be displayed before attempting to use the console.



This will ensure that all parts of the show file are completely loaded.

To Power Down the LP-3000

1. Click **Shut Down** on the **Stage View** screen.



Clicking **Shut Down** generates the following message:

2. Click **Shutdown** to shut down the LP-3000.

   If you want to restart the LP-3000 rather than shut it down, click **Reboot**.

   If you have changed your mind, click **Cancel**.

3. Move the power switch to the Off position.

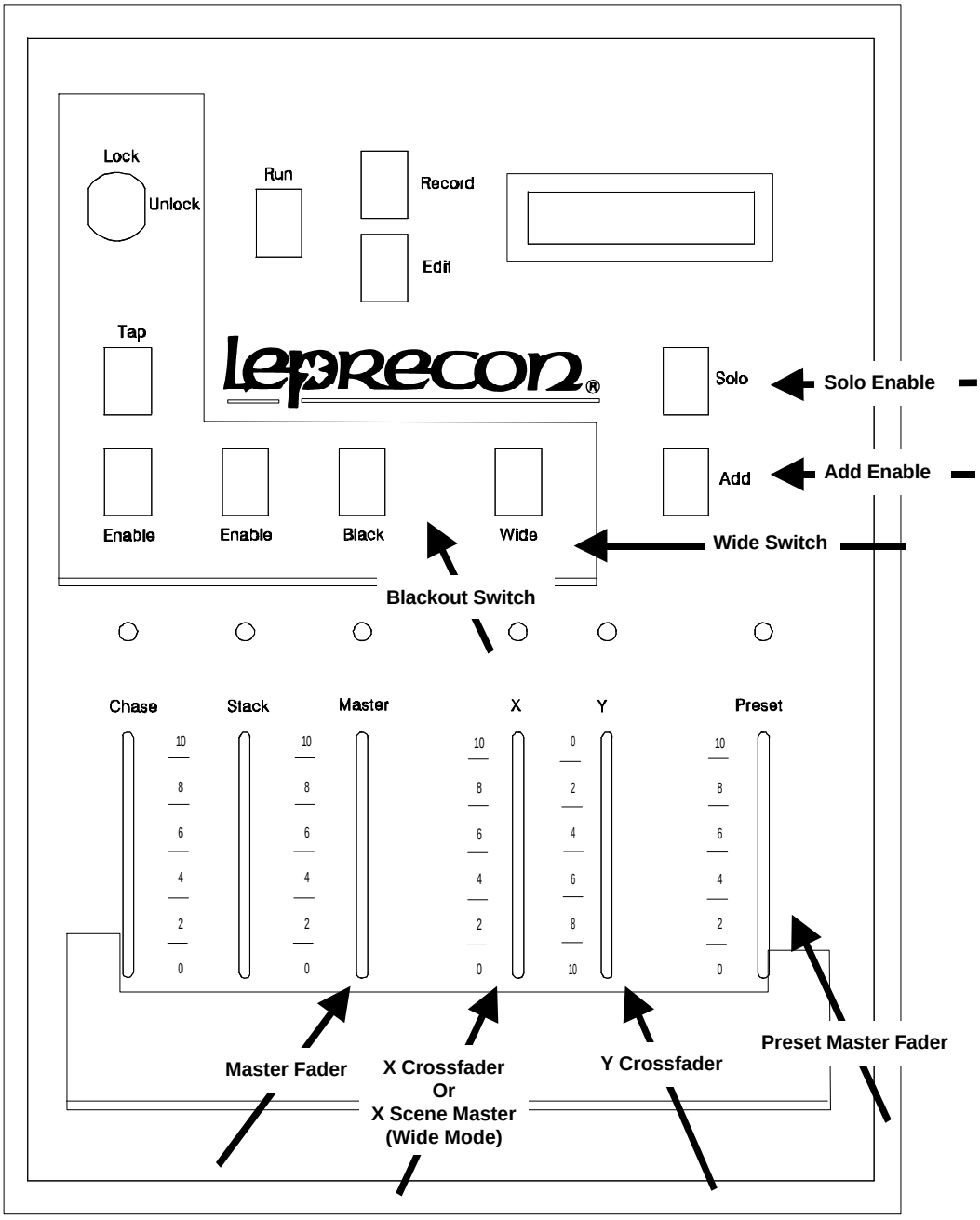
IMPORTANT: YOU MUST SHUT DOWN THE LP-3000 PROGRAM BEFORE TURNING OFF THE POWER SWITCH.

LP-3000 Controls for Manual Operation

There are two modes of manual operation of the LP-3000.

- In **Two-Scene Preset** mode, the LP-3000 provides two rows of faders (X and Y). While the scene on row X is visible, you set up the next scene on row Y. On cue, you fade the Y scene up and the X scene down. Then with the scene on row Y visible, you set up the next scene on row X. You alternate fading from scene to scene in this fashion to create a show.
- In **Wide** mode, the LP-3000 functions as a single-scene console. The X and Y rows of faders act as one bank, doubling the manual channel capacity.

The following controls are the ones you will use when you operate the LP-3000 manually.



LP-3000 Master Panel

X and Y Manual Scene Faders

The manual dimmer control of the LP-3000 is provided by two rows of faders that fill the upper half of the console. The first row of faders is labeled *X*. The second row of faders is labeled *Y*.

In Two-Scene Preset mode, a single console channel is controlled by one fader from each row (called a fader "pair"). A console channel may be patched to one or more dimmer channels.

In Wide mode, each fader corresponds to one console channel.

X and Y Crossfaders

The **X** and **Y Crossfaders** control the transition between the X and Y scenes; the green LED above each crossfader indicates the proportional levels.

The two crossfaders operate in *opposite* directions; when the **X Crossfader** is fully up, it is at 100%. When the **Y Crossfader** is fully *down*, it is at 100%. This allows both faders to be moved together to crossfade smoothly between the two scenes.

Wide Switch

The **Wide** switch is used to convert the LP-3000 to a single scene console, effectively doubling the manual channel capacity. This switch affects only the manual scenes. An LED in the **Wide** switch is lit when the LP-3000 is in Wide mode.

During Wide mode operation, the **X Crossfader** becomes the **X Scene Master**. It controls all manual scene faders. The **Y Crossfader** LED turns red to indicate that it is not being used. Pressing the **Wide** switch toggles between Wide mode and normal Two-Scene Preset mode.

Master Fader

The **Master** fader is used to adjust the level for the console's entire output. If this fader is down, nothing will be output from the X and Y manual scene faders. The intensity of the LED above the **Master** fader indicates the fader's position.

Solo and Add "Bump" Buttons

On the LP-3000, pressing and holding an **Add** button has the same effect as bringing up the fader. The selected channel is added to the current scene on stage. When you release the button, the channel is removed from the scene.

Pressing and holding a **Solo** button temporarily blacks out the rest of the console and leaves only the selected channel up. Releasing the button restores normal operation.

X and Y manual scene faders have only one button—called a **Bump** button. Whether the **Bump** button is a **Solo** button or an **Add** button is determined by the status of the **Add** and **Solo Enable** switches, located on the master panel. The following table summarizes the bump modes in the manual scene faders:

Add Mode	Solo Mode	Manual Scene Fader Bump Button Action
Off	Off	Off
Enabled	Off	Add
Off	Enabled	Solo
Enabled	Enabled	Solo

LEDs in the **Add Enable** and **Solo Enable** switches indicate which mode is enabled (if any).

Important notes about **Bump** buttons:

1. **Solo** and **Add** buttons operate independently of the **Master** fader level.
2. The manual scene fader **Bump** buttons are unaffected by the Wide mode control. In other words, the **Bump** buttons control only one channel each, even in Two-Scene preset mode.
3. The Add and Solo levels can be adjusted via the front panel display. See ***Options*** beginning on page 41 for information regarding setting these levels. The default level is 100%.

Blackout Switch

The **Blackout** switch has the same effect as bringing down the **Master** fader and is handy for blacking out the entire stage suddenly. The **Blackout** switch affects only those functions that are controlled by the **Master** fader; it will not affect channels that are bumped. **Blackout** is a toggle switch; pressing it once blacks out the board and pressing it a second time returns the board to normal operation. An LED in the **Blackout** switch indicates its status. When **Blackout** is active this LED flashes.

Output LED Indicators

Levels being sent to the stage from the LP-3000 are indicated by the green LEDs in the **Bump** switches located below each manual scene fader. The LEDs are not affected by the **Wide** switch. In other words, the LEDs reflect the intensity for only one channel each, even in Two-Scene preset mode.

In addition to showing output status, the LEDs are used to preview the contents of a preset before bringing it up on stage.

The LEDs are also used while editing scenes to represent relative levels of the channels as the edit is being performed. Details on these features are included in ***Chapter 4: Presets*** beginning on page 47.

To Operate the LP-3000 as a Manual Console

1. Set all X and Y channel faders to zero.
2. Verify that the **Preset Master** fader is also set to zero.

   Although the Preset Master is not used for manual console operation, if it is not set to zero, it could adversely affect your scenes.
3. Set both **X** and **Y Crossfaders** fully downward (Y scene position).
4. Bring the **Master** fader up to full.

   No stage lights will be on.
5. Set the values for the first scene using the X faders (top row).
6. Push the **X** and **Y Crossfaders** fully upward (the X position).

   The X scene will light the stage.

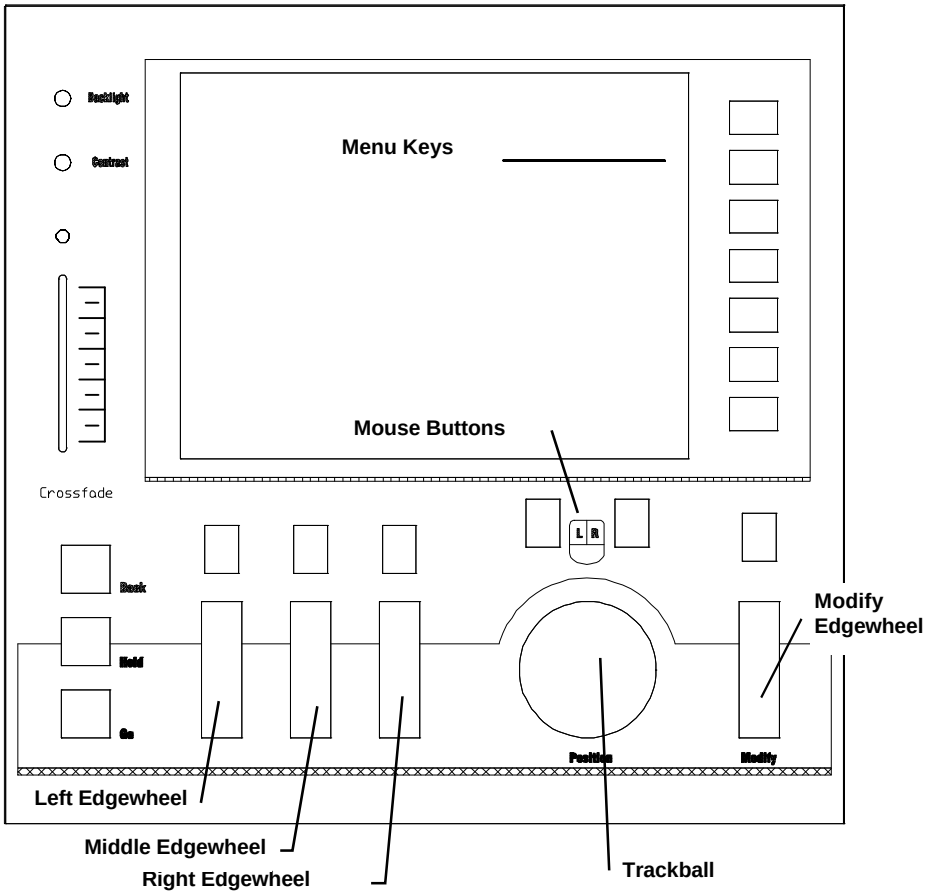
7. Set up the next scene on the inactive Y faders (lower row).
8. Switch to the Y scene by moving the **X** and **Y Crossfaders** fully downward (Y position.)
9. Continue to set up subsequent scenes in this manner by alternating between the X and the Y faders.

Chapter Two:
LP-3000 Show Basics

The LP-3000 has a computer on-board. The computer and its software enable you to automate many aspects of a conventional or moving light show.

The LP-3000 computer is accessed through the front panel display screen. In some cases the same operation can be performed either with faders or with the display and its associated controls.

The Controls



- Quick access to functions is available via a row of menu keys to the right of the display.

- The trackball acts as a mouse control for the on-screen cursor. The two buttons above the trackball are used as mouse buttons; the left button is used to click on selected items.
- Menu functions shown on the left side of the screen can be accessed by either the associated key or by pointing with the trackball and clicking with the mouse buttons.
- Edgewheels provide an alternative to selecting items with the mouse.

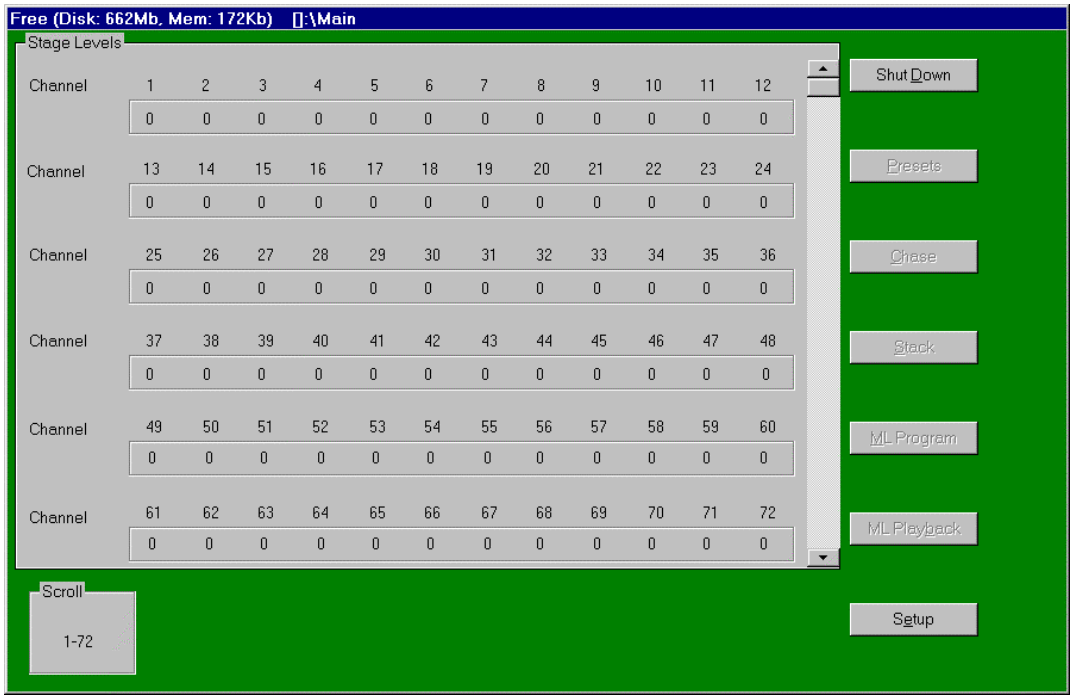
Conventions Used in this Manual

The LP-3000 provides several ways to execute a task. In this manual, we have used the following conventions:

- Where instructions state that you use an edgewheel to scroll through a list, you can also click on the **Up** and **Down** arrows to do the same thing. In some cases, you can use the trackball to point to an item in a list and then select it with the left mouse button.
- Where instructions state that you click a menu button, you can do so either by pressing the button or by using the trackball to point to the on-screen representation of the button and then clicking it with the left mouse button.
- In most cases, you can click **OK** by pressing a menu button, by pressing the ENTER key on the keyboard, or by using the trackball to point to the on-screen representation of the button and then clicking it with the left mouse button.
- In most cases, you can click **Cancel** by pressing a menu button, by pressing the ESCAPE key on the keyboard, or by using the trackball to point to the on-screen representation of the button and then clicking it with the left mouse button.
- On some screens, **Next** and **Back** buttons are provided. These move the cursor from field to field. Usually the TAB key and SHIFT+TAB combination of keys are equivalent to these buttons. A **Select** edgewheel may also be provided to accomplish the same task.

The Stage View Screen

The **Stage View (Main)** screen is the main menu display of the LP-3000 system. In this screen, the output levels of all board channels are shown and will change in real time to mimic the status of the dimmers. This screen is for display only—no changes to the information shown in this screen can be made from here.



In the LP-3000 display screens, labels are placed on the display to indicate functions performed by buttons and edgewheels. In the **Stage View (Main)** screen, the edgewheel labeled **Scroll** is used to move the display through the range of board channels. With each click of the edgewheel, one line of display information is moved on the screen. The position of the display in the range of available data is indicated by the position of the scroll bar. In addition, scroll bars can be moved directly with the mouse.

Shows

All of the user-defined data of the LP-3000—such as preset scenes, chases, and patch tables—are saved as a computer file called the *Show* file. Show files are PC compatible and the LP-3000 automatically saves them to the internal hard drive. You can create and maintain many shows, but only one show can be open at a time. The files can also be copied to floppy for backup and for portability between boards.

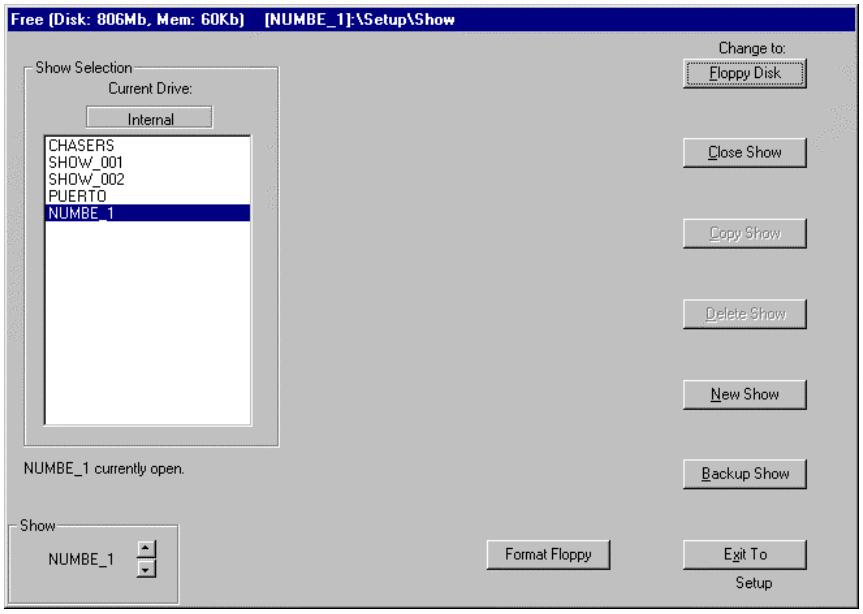
Many LP-3000 features are available only when a show is open. In subsequent chapters, we assume that you have opened a show prior to beginning any procedure.

If you are new to the LP-3000, we recommend that you begin by creating a new show.

To View the Show Screen

1. From the **Main** screen, click **Setup** and then **Show**.

The LP-3000 displays the **Show** screen.



This screen displays the name of the show that is currently open, the active drive—internal or floppy disk—and lists all the shows that are saved on the drive. In the example shown above, the internal drive is displayed.

To Create a New Show

The button labeled **New Show** will create another show on the hard drive and automatically open this new show. This new show will be empty; all presets, chases, and stacks will contain zero values for channel levels.

1. From the **Main** screen, click **Setup**, **Show** and then **New Show**.

   The LP-3000 displays the **New Show** dialog box.

2. Under **Enter show name** enter a name for the new show.

   When naming new shows, some rules must be followed to create a valid DOS file name.

   - Show names can contain 8 characters or less.
   - Show names cannot contain spaces.
   - Show names cannot contain punctuation marks or special characters.
   - Show names *can* contain the underscore character.

   User-entered show names that are not valid will be converted to valid file names.

   If you do not enter a name, the LP-3000 assigns the show a default name: SHOW_001, SHOW_002 and so forth.

3. Click **OK**.

   If a show was already open, the LP-3000 asks you to confirm closing that show before it creates the new one.

4. Click **Yes**.

5. Click **OK**.

   The LP-3000 displays the **Show** screen.

To Open an Existing Show

1. From the **Main** screen, click **Setup** and then **Show**.

   The LP-3000 displays the **Show** screen.

2. Using the **Show** edgewheel, select the show that you want to open.

3. Click **Open Show**.

   NOTE: This button will not be available if you select the show that is currently open.

   The LP-3000 opens the show.

To Close a Show

1. From the **Main** screen, click **Setup** and then **Show**.

   The LP-3000 displays the **Show** screen.

2. Using the **Show** edgewheel, select the show that is currently open.

3. Click **Close Show**.

   NOTE: The **Close Show** button is available only when the show that is currently open is selected in the **Show Selection** list.

To Copy a Show

There may be instances where it is convenient to use an old show as the starting point for a new show. For example, you may plan to use the same lights and even the same cues—changing only the focus positions—as the ones in a show that you created previously. When this is the case, we recommend that you make a copy of the old show and make your changes to the copy.

1. From the **Main** screen, click **Setup** and then **Show**.

   The LP-3000 displays the **Show** screen.

2. Using the **Show** edgewheel, select the show that you want to copy.

3. Click **Copy Show**.

   The LP-3000 displays the **Copy Show** dialog box.

4. Enter a name for the copy.

5. Click **OK**.

To Backup a Show

It is recommended that you back up your show to a floppy disk frequently. This gives you protection against unexpected power loss and other problems causing lost show data. The LP-3000 requires a 3½-inch disk for show backup.

1. From the **Main** screen, click **Setup** and then **Show**.

   The LP-3000 displays the **Show** screen.

2. If the show that you want to back up is open, using the **Show** edgewheel, select the show and then click **Close Show**.

   The LP-3000 cannot transfer an open show to a floppy disk. Therefore, it is necessary to first close the show before it can be backed up to a floppy disk. Once the backup is complete, you can re-open the show and continue working on it.

3. Using the **Show** edgewheel, select the show that you want to back up.

4. Insert a floppy disk into the disk drive.

5. Click **Backup Show**.

   The LP-3000 backs up the selected show.

Backing up a show will not be successful if any of the following errors are detected:

- The disk is bad.
- There is insufficient space on the disk to store the entire show.
- The disk is not formatted.
- The disk is write-protected.

Check for and handle the error and then repeat the backup procedure.

To Load a Show from a Disk

1. From the **Main** screen, click **Setup** and then **Show**.

   The LP-3000 displays the **Show** screen.

2. Click **Change to Floppy Disk**.

3. Using the **Show** edgewheel, select the show that you want to load.

4. Click **Load from Disk**.

   If you already have a show of the same name on the LP-3000, you are prompted to confirm overwriting the show. Click **Yes** to proceed.

5. Click **Change to Internal Disk**.

To Format a Floppy Disk

Backing up a show will fail if the disk is not formatted or if it is too full to store the entire show.

You can format a disk from the LP-3000. You can also erase all the files that are on a disk. Note that there is no way to selectively erase floppy disk files from the LP-3000. If you want to do so, use a personal computer.

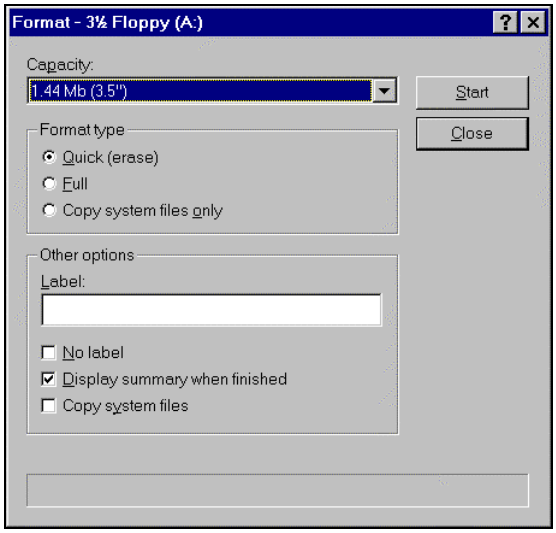
1. From the **Main** screen, click **Setup** and then **Show**.

   The LP-3000 displays the **Show** screen.

2. Insert a floppy disk into the disk drive.

3. Click **Format Floppy**.

   The LP-3000 displays the **Format** dialog box.



4. Do one or more of the following:

To	Do
Display a summary of formatting results.	Under **Other options**, select **Display summary when finished**.
Erase a floppy disk.	Under **Format type**, select **Quick (erase)**. Click **Start**.
Format a floppy disk.	Under **Format type**, select **Full**. Click **Start**.

5. When disk formatting is complete, click **Close**.

NOTE: It is not possible to accidentally format the internal hard drive of the LP-3000.

Chapter Three:
System Tools

The LP-3000's system tools include features that enable you to configure the console for a specific lighting system and to load, save and erase shows. The system tools are available from the **Setup** screen and the following functions are available.

Menu Item	Function
Show	Used to save and load LP-3000 show files.
Preset Titles	Sets the LCD titles above the preset playbacks.
DMX Lines	Assigns dimmers and moving lights to 1 of 4 lines.
Dimmer Patch	Assigns dimmers to board channels.
Options	Used to set preferences, including bump levels.
Erase	Clears stored show data.

DMX Line Assignment

Before controlling fixtures with the LP-3000, you must first configure the system with the correct number and type of fixtures. This configuration process will determine the DMX assignments for moving lights and dimmers and allow you to give names to the fixtures for easier reference during programming.

About DMX Line Assignments

DMX line assignment locates a fixture on a specific DMX line at a specific DMX address.

A fixture assignment consists of a DMX line and a start address.

- Up to four DMX lines can be driven from the LP-3000. The four DMX lines are Line A, Line B, Line C and Line D.
- Each DMX line has 512 channels, any one of which may be used as the start address for a fixture.

Various fixtures require different numbers of channels. For example, the Martin 218 requires nine channels whereas the Cyberlight requires twenty channels. The number of attributes that a fixture has determines the number of channels it requires.

If you were to assign a start address of 1 to the Cyberlight, the next available start address would be 21. If you were to assign a start address of 1 to the Martin 218, the next available start address would be 10.

To help manage large systems, the LP-3000 maintains a list of the fixtures that you assign to your system. The LP-3000 assists you in making DMX line assignments by keeping track of the number of channels required for each fixture and by suggesting start addresses that will accommodate the requirements of new fixtures as you add them. As equipment is added, the LP-3000 will help you find available space for additional addresses required.

Some fixtures can only be assigned to specific channels. For example, the Cyberlight can only function if assigned to channel 1, 21, 41, 61 and so forth. Consult the manufacturer's literature to determine if such restrictions are relevant to your fixtures.

The LP-3000 Instrument Library

The LP-3000 ships with a standard library of fixtures. If you have fixtures that are not included in the LP-3000 library, you will have to add them into the library before you can make DMX line assignments for them. Please refer to ***Appendix C: Creating and Editing Moving Light Fixtures*** beginning on page 157 for complete details.

Many fixtures support more than one DMX mode. For example, the MAC 500 has four DMX modes.

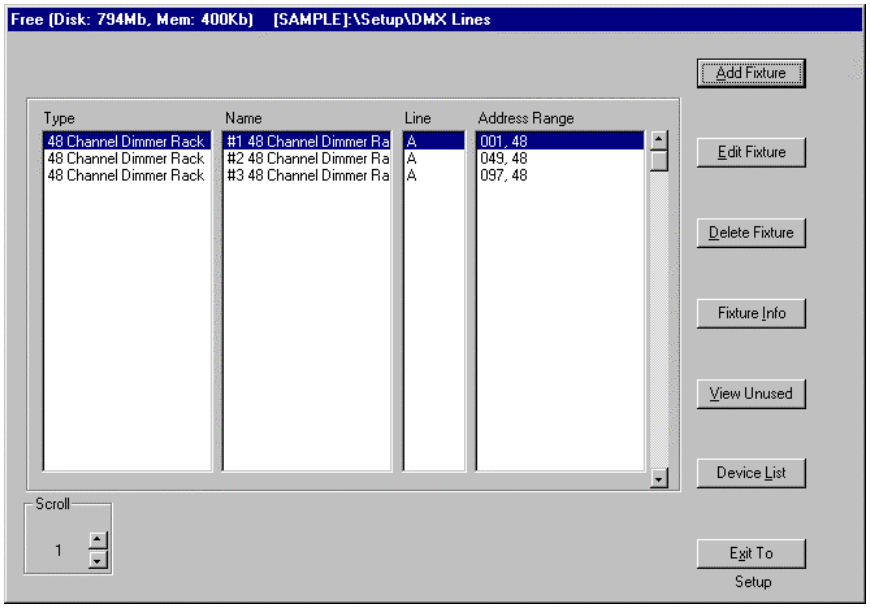
- In Mode 1, only 12 channels are required. The least sophisticated pan and tilt controls are supported.
- In Mode 2, 14 channels are required. The most sophisticated pan and tilt controls are supported.
- In Mode 3, 14 channels are required. Only the least sophisticated pan and tilt controls are supported—but unlike Mode 1 and Mode 2, Vector features are supported.
- In Mode 4, 16 channels are required. The most sophisticated pan and tilt controls *and* Vector features are supported.

When the LP-3000 supports more than one DMX mode for an instrument, the DMX modes are included in the instrument names—MAC 500 Mode 1, MAC 500 Mode 2 and so forth. For complete information regarding supported fixtures, see ***Appendix B: Instrument Library*** beginning on page 165.

To Install a Conventional Fixture into the System

1. From the **Main** screen, click **Setup** and then **DMX Lines**.

   The LP-3000 displays the **DMX Lines** screen.



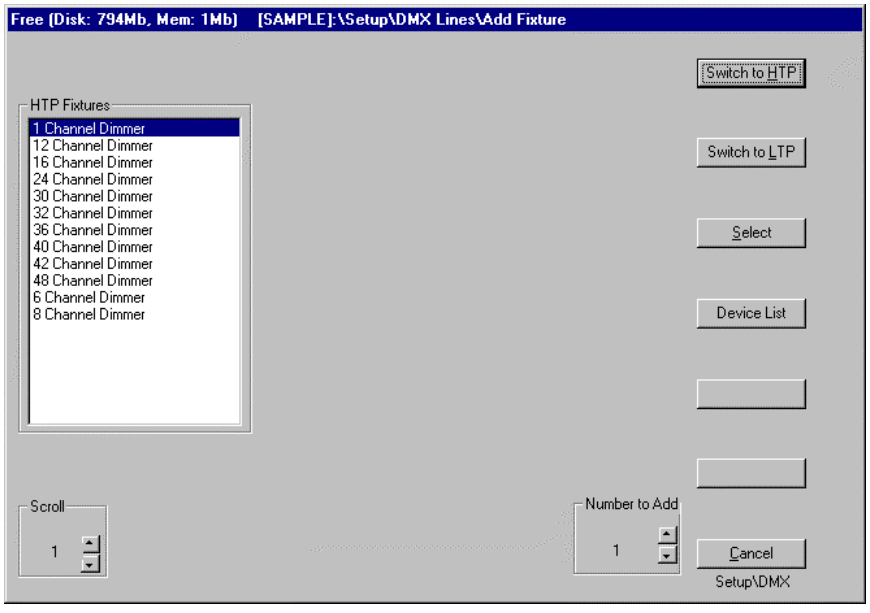
2. Click **Add Fixture**.

   The LP-3000 displays the **Add Fixture** screen.

3. If necessary, click **Switch to HTP**.

   Conventional lights are referred to as “Highest Takes Precedence” devices or “HTP”.

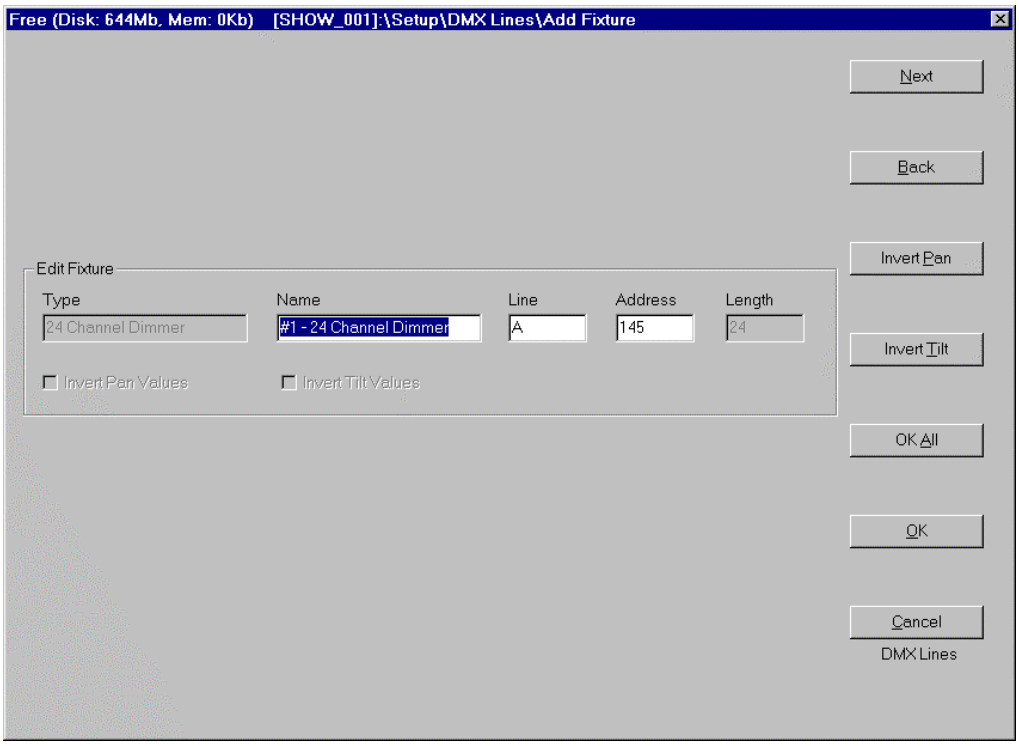
   The LP-3000 displays a list of the HTP fixtures that have been installed in the LP-3000 fixture library.



4. Use the **Scroll** edgewheel to select a fixture from the **Fixtures** list.

5. Use the **Number to Add** edgewheel to select the number of fixtures to add.
6. Click **Select**.

   The LP-3000 displays the default assignment for the first fixture.



   The LP-3000 places new HTP fixtures on DMX Line A starting with the first available address. Three 48-channel dimmers are assigned to a show by default. So the first available HTP address is 145.

   For each fixture placed in the system, you have the opportunity to pick a name, DMX line assignment and DMX start address for the fixture.

7. To override the default selections, move to the desired field (**Name**, **Line** or **Address**) with the **Next** and **Back** buttons.
8. Using the LP-3000 keyboard, enter the desired values.

   You can give each fixture in the system a **Name** that will help you identify it during programming and playback. You can change the name now or, if you accept the default name, you can update it later.

   Line values can be **A**, **B**, **C** or **D**.

   Start address values are between 1 and 512. If you select a start address that is already in use or does not provide sufficient space for the fixture (resulting in overlapping channel assignments), the LP-3000 displays a message informing you that the address is unavailable.
9. When you are satisfied with your selections, click **OK** or **OK All**.

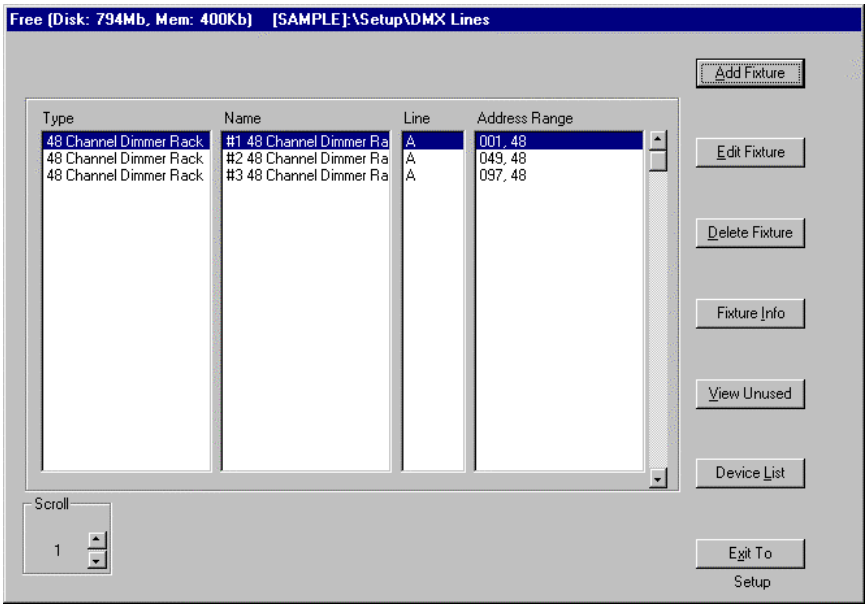
Clicking **OK** saves the current line assignment information. If you selected more than one fixture, the LP-3000 displays defaults for the next fixture. Repeat steps 7 and 8 for each fixture.

Clicking **OK All** also saves the current line assignment information. However, if you selected more than one fixture, the LP-3000 assigns and saves default settings for all of the remaining fixtures.

To Install a Moving Light Fixture into the System

1. From the **Main** screen, click **Setup** and then **DMX Lines**.

   The LP-3000 displays the **DMX Lines** screen.



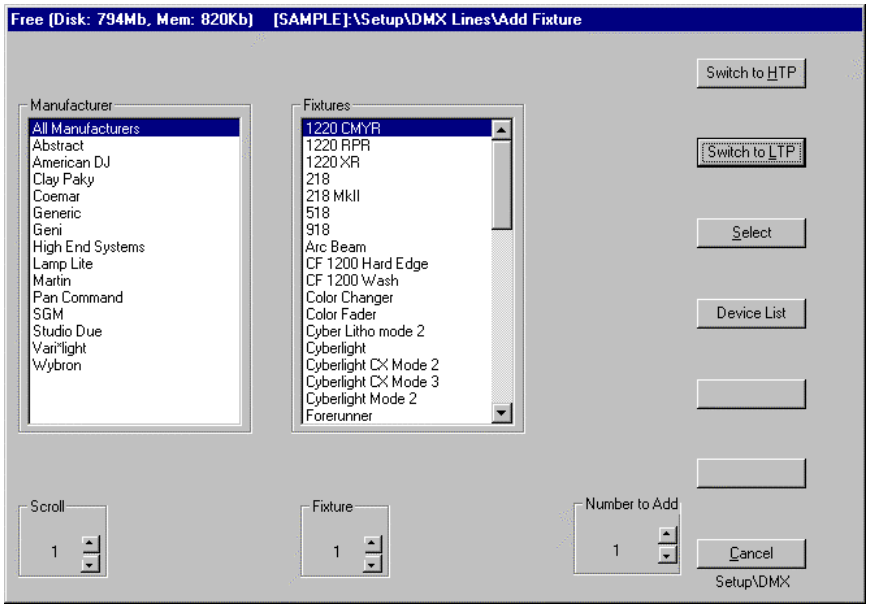
2. Click **Add Fixture**.

   The LP-3000 displays the **Add Fixture** screen.

3. If necessary, click **Switch to LTP**.

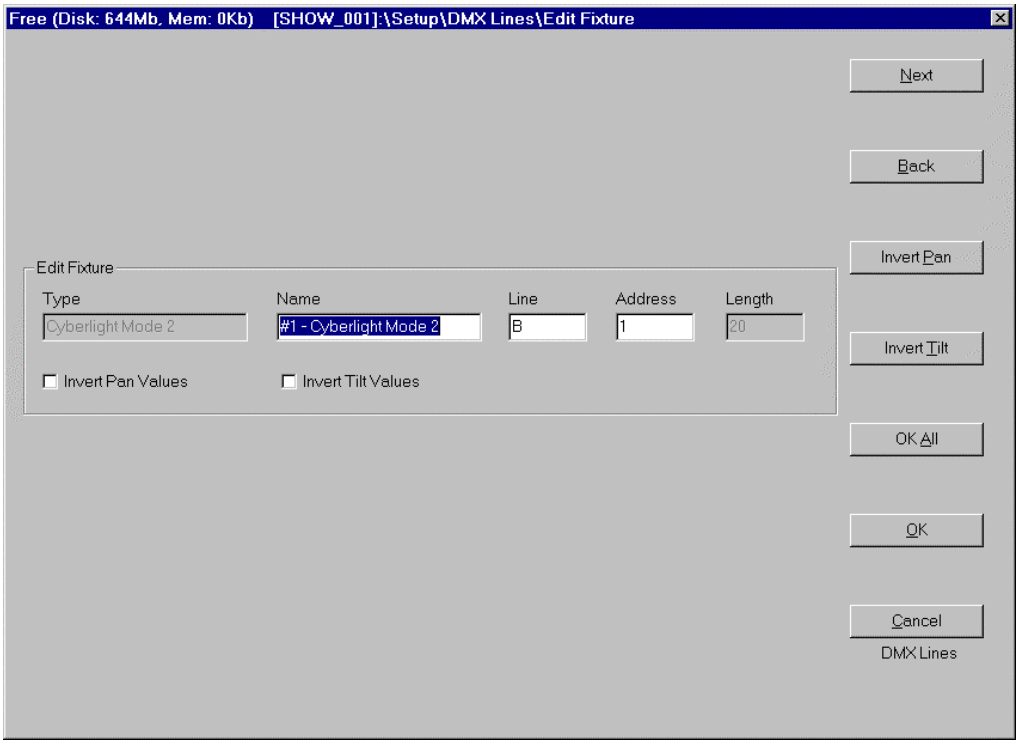
   Moving lights are referred to as “Last Takes Precedence” devices or “LTP”.

   The LP-3000 displays a list of the LTP fixtures that have been installed in the LP-3000 fixture library.



4. Use the **Scroll** edgewheel to select a manufacturer from the **Manufacturer** list.
5. Use the **Fixture** edgewheel to select a fixture from the **Fixtures** list.
6. Use the **Number to Add** edgewheel to select the number of fixtures to add.
7. Click **Select**.

   The LP-3000 displays the default assignment for the first fixture.



The LP-3000 places new LPT fixtures on DMX Line B starting with the first available address (address 1 if this is the first moving light that you are assigning to a DMX line).

For each fixture placed in the system, you have the opportunity to pick a name, DMX line assignment and DMX start address for the fixture.

7. To override the default selections, move to the desired field (**Name**, **Line** or **Start Address**) with the **Next** and **Back** buttons.

8. Using the LP-3000 keyboard, enter the desired values.

   You can give each fixture in the system a **Name** that will help you identify it during programming and playback. You can change the name now or, if you accept the default name, you can update it later.

   Line values can be **A**, **B**, **C** or **D**.

   Start address values are between 1 and 512. If you select a start address that is already in use or does not provide sufficient space for the fixture (resulting in overlapping channel assignments), the LP-3000 displays a message informing you that the address is unavailable.

9. If desired, select **Invert Pan** or **Invert Tilt** for the light.

   These options reverse the values of the pan and tilt, making it easier to create focus positions for groups of lights. For example, let us say that the DMX value 0 for the pan moves the light to the extreme right and that the DMX value 255 moves the light to the extreme left. Selecting **Invert Pan** causes the value of 0 to move the light to the extreme left and 255 to move the light to the extreme right.

   This can be quite convenient when creating focus positions for groups of lights that are hung differently—such as lights that are hung from rigging and lights that are on the ground.

10. When you are satisfied with your selections, click **OK** or **OK All**.

    Clicking **OK** saves the current line assignment information. If you selected more than one fixture, the LP-3000 displays defaults for the next fixture. Repeat steps 7 through 9 for each fixture.

    Clicking **OK All** also saves the current line assignment information. However, if you selected more than one fixture, the LP-3000 assigns and saves default settings for all of the remaining fixtures.

To Edit a Fixture

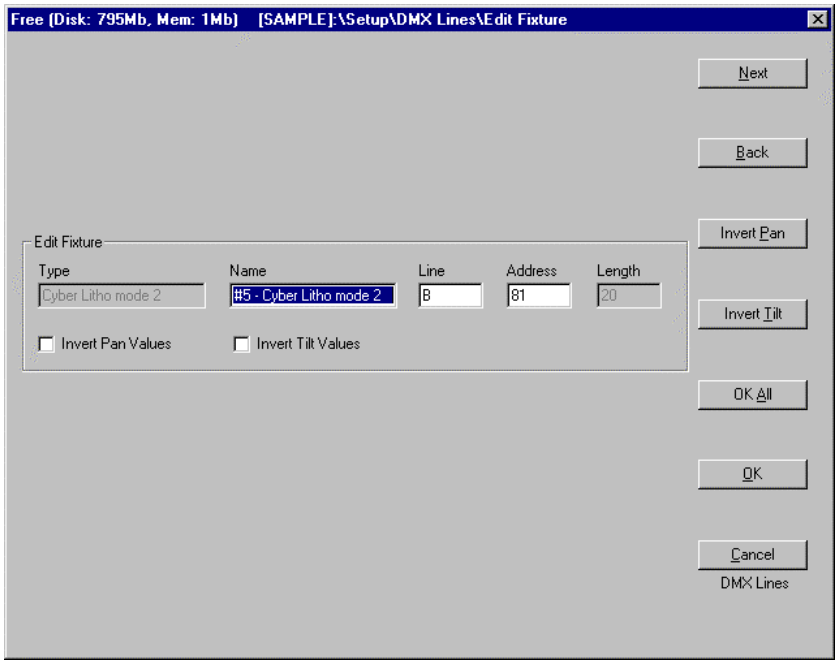
1. From the **Main** screen, click **Setup** and then **DMX Lines**.

   The LP-3000 displays the **DMX Lines** screen.

2. Use the **Scroll** edgewheel to select a fixture from the **Fixtures** list.

3. Click **Edit Fixture**.

   The LP-3000 displays the DMX line assignment information for the fixture.



4. Using the **Next** and **Back** buttons, move to the field you want to edit.
5. Using the LP-3000 keyboard, enter the desired values.
6. When you are done, click **OK**.

To Delete a Fixture

1. From the **Main** screen, click **Setup** and then **DMX Lines**.

   The LP-3000 displays the **DMX Lines** screen.
2. Using the **Scroll** edgewheel, select a fixture from the **Fixtures** list.
3. Click **Delete Fixture**.

   The LP-3000 requests that you confirm deleting the fixture.
4. Click **OK**.

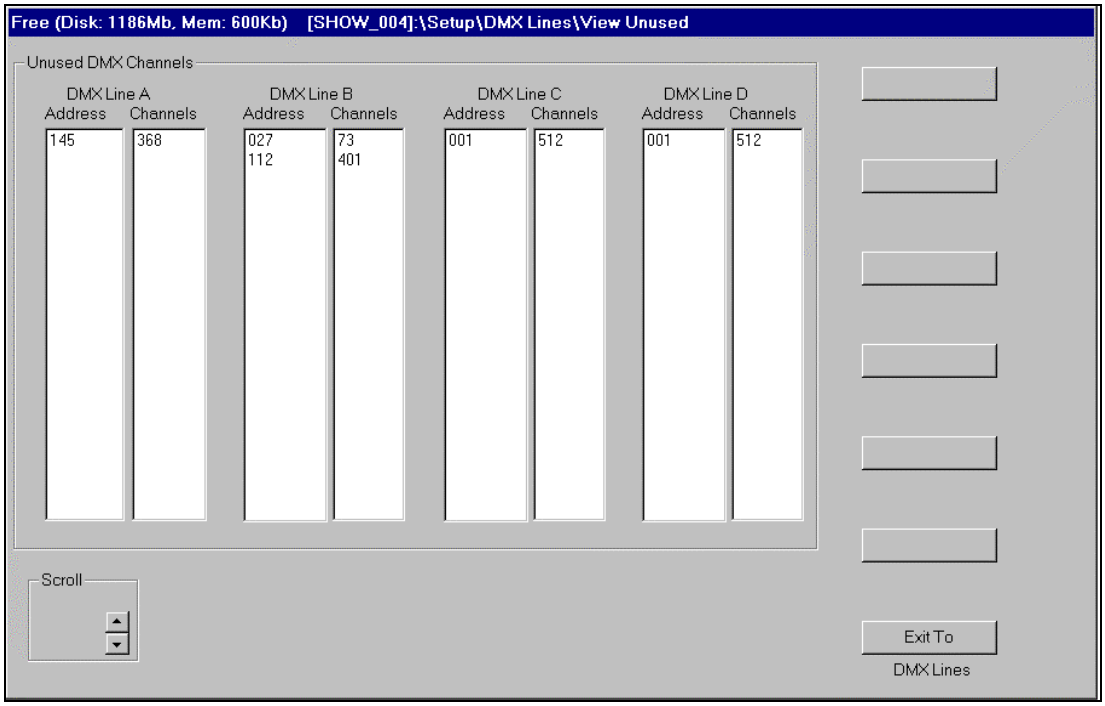
To View Unused Assignments

When the time comes to add more fixtures to the system, the LP-3000 can report on the space available in the system.

1. From the **Main** screen, click **Setup** and then **DMX Lines**.

   The LP-3000 displays the **DMX Lines** screen.
2. Click **View Unused**.

   The LP-3000 displays the **View Unused** screen.



This screen enables you to see the “holes” in the DMX map that would accommodate new fixtures.

To View Fixture Information

Information about fixtures—such as moving light switch positions—is often available in the LP-3000 Instrument Library. You use the **Fixture Info** command to view this information.

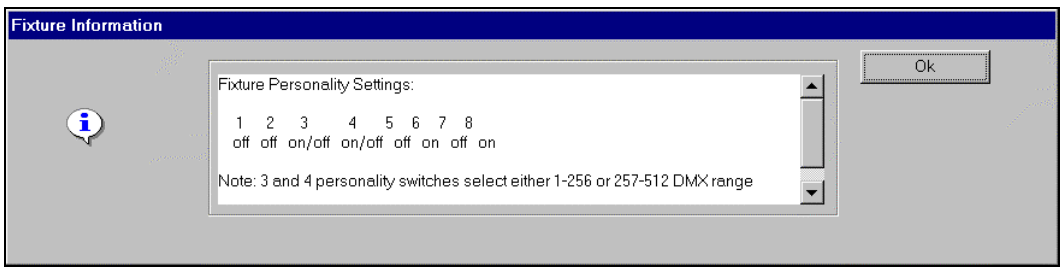
1. From the **Main** screen, click **Setup** and then **DMX Lines**.

   The LP-3000 displays the **DMX Lines** screen.

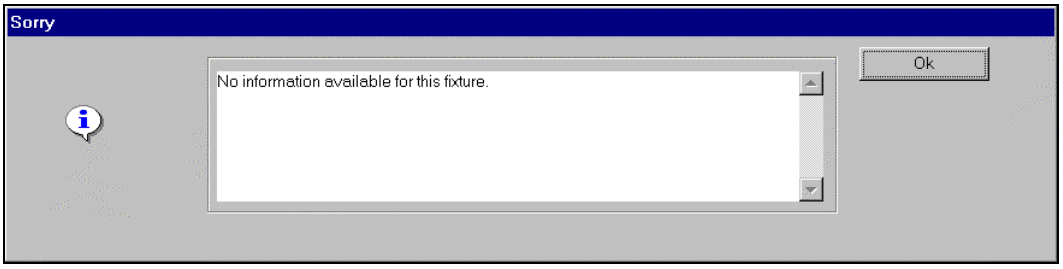
2. Using the **Scroll** edgewheel, select a fixture from the **Fixtures** list.

3. Click **Fixture Info**.

   The LP-3000 displays information for the fixture if it is available in the Instrument Library.



If there is no information for the fixture, the LP-3000 displays a message.



Dimmer Patch

Dimmer Patch is the system used to interconnect conventional lights to board channels. In the past, actual patch cords were used to connect board channels to conventional lights using telephone-style patch bays. The LP-3000 allows you to assign conventional lights to board channels using software controls. Up to twenty custom patches plus the standard 1:1 default patch are available in the board. Patching a DMX channel to a board channel also enters a value for proportional patching.

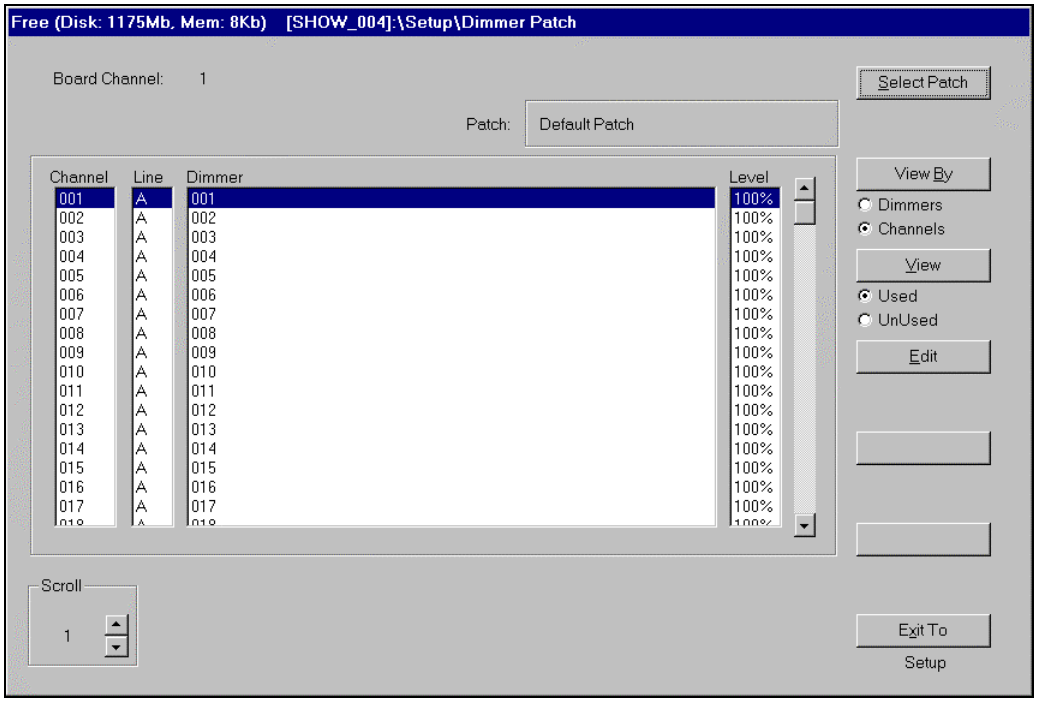
The most common use of Dimmer Patch is to connect several conventional light channels to a single board channel. Another common use is to allow the operator to build a logical layout of the dimmers on the control board regardless of the dimmer circuit that is used. For example, all lighting from the left side of the stage might be assigned to board control channels 1 through 6, even if they were physically wired to dimmer circuits 101 through 106.

NOTE: Before a conventional light can be patched to LP-3000 board channels, it must be given a line assignment.

To View Patch Data

1. From the **Main** screen, click **Setup** and then **Dimmer Patch**.

   The LP-3000 displays the **Dimmer Patch** screen.



The **Dimmer Patch** screen shows the name of the active patch in the display box in the upper right corner of the screen. The vertical columns contain the board channel, DMX line assignment and dimmers patched to each line.

Two very important controls are present in this screen—**View By** and **View**.

View By gives you the ability to view the patch information either by dimmer circuits or by board channel.

- If **View By** is in the **Channels** position (default), the list will display in increasing board channel numbers. Each board channel lists the dimmers that it controls and the patch level.
- If **View By** is in the **Dimmers** position, the list will be organized by increasing dimmer number and each dimmer will show only one channel value.

You can set **View** to **Used** or **Unused**.

- Select **Used** to re-patch dimmers or channels that are already assigned.
- Change to **Unused** to see board channels or dimmers that are currently free.

At the bottom of the panel, the **Scroll** edgewheel is used to scroll through the list of board channels.

To Select a Patch

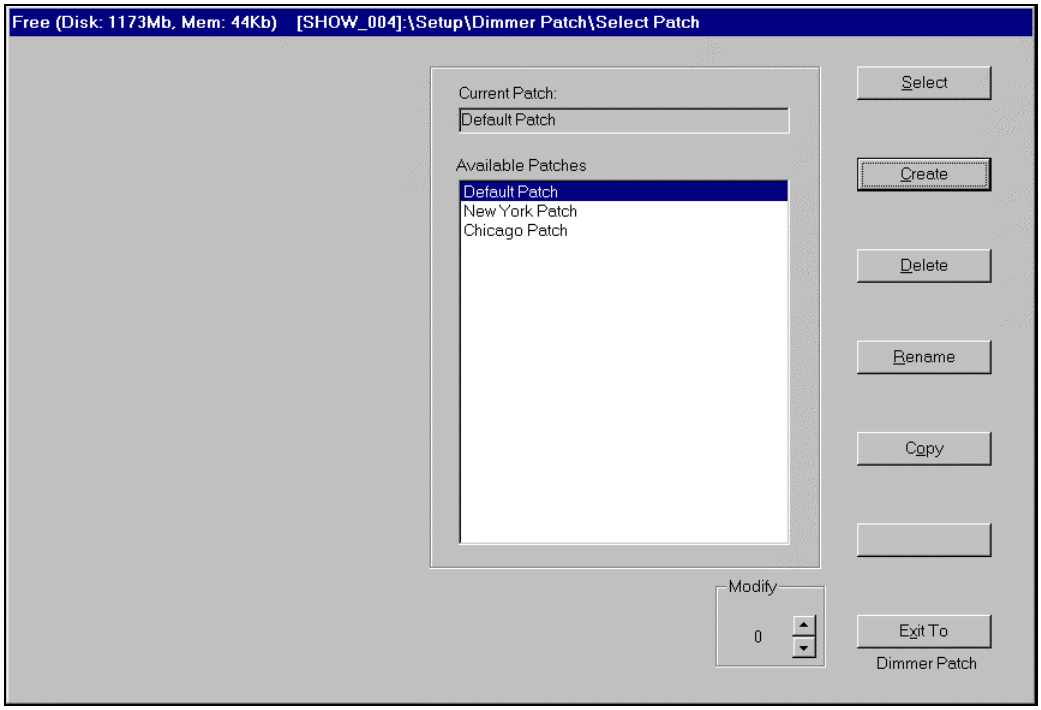
The **Select Patch** button is used to select from the 20 patches available in the LP-3000.

1. From the **Main** screen, click **Setup** and then **Dimmer Patch**.

The LP-3000 displays the **Dimmer Patch** screen.

2. Click **Select Patch**.

   The LP-3000 displays the **Select Patch** screen.



3. Use the **Modify** edgewheel to scroll through the list of patches.
4. Click **Select** to load the patch.

Once a patch is selected, it is immediately applied to the LP-3000 DMX outputs.

To Create a New Patch

Use the **Create** button to build a new patch table.

1. From the **Main** screen, click **Setup** and then **Dimmer Patch**.

   The LP-3000 displays the **Dimmer Patch** screen.

2. Click **Select Patch**.

   The LP-3000 displays the **Select Patch** screen.

3. Click **Create**.

   The LP-3000 displays the **New Patch** dialog box.

4. Enter a name for the patch or accept the default name and click **OK**.

   Default names follow the pattern PATCH_001, PATCH_002 and so forth.

   The LP-3000 loads the new patch.

To Build a Custom Patch—First Step

1. From the **Main** screen, click **Setup** and then **Dimmer Patch**.

   The LP-3000 displays the **Dimmer Patch** screen.

2. Select **View By Dimmers** or **View By Channels**.

   View By Channels is used to patch multiple dimmers to a board channel.

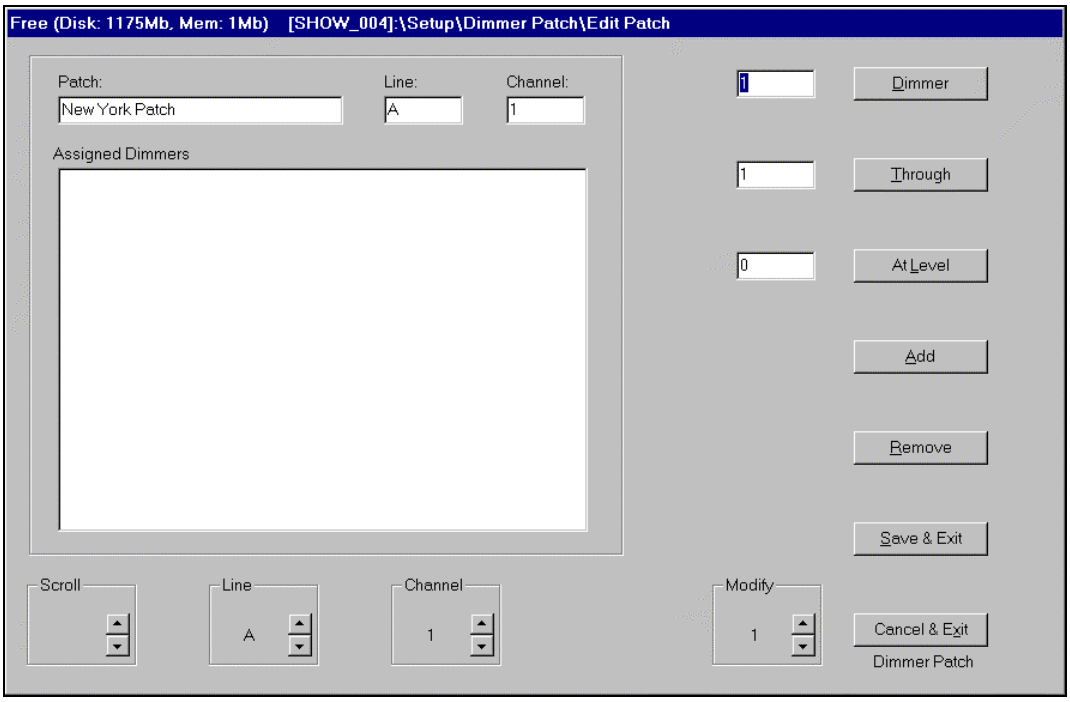
   The **View By Dimmers** option gives you a very fast way to patch one dimmer at a time.

3. Select a patch.

4. Click **Edit**.

To Build a Custom Patch by Channel

When choosing **View by Channels** and clicking the **Edit** button, the LP-3000 displays the **Edit Patch** screen.



1. Click **Dimmer** and select the first dimmer for patching.

   Use the **Modify** edgewheel to set the dimmer number.

2. Click **Through** and select the last dimmer in the dimmer block.

   Use the **Modify** edgewheel to set the dimmer number.

3. Click **At Level** and use the **Modify** edgewheel to adjust the patch level.

4. Use the **Channel** edgewheel to change the channel number at any time—either before or after the dimmers are chosen.

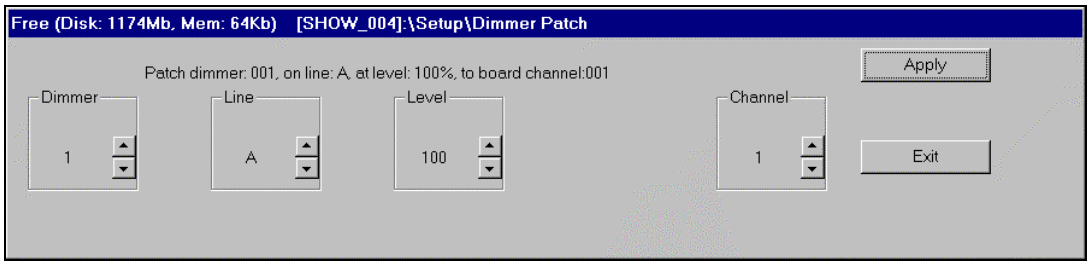
5. Use the **Line** edgewheel to change the line number at any time—either before or after the dimmers are chosen.
6. When you have finished editing the patch, click **Add**.
7. Repeat steps 1 through 6 for each dimmer you want to patch.
8. When you are done creating the custom patch, click **Save & Exit** to keep the result and close the **Edit Patch** screen.

   To discard the changes, click **Cancel & Exit**. The patch will remain unchanged.

To Build a Custom Patch by Dimmer

The editing screen changes when you are viewing the patch **by Dimmer**. Editing by dimmer is a very fast way to set a few dimmers individually.

When choosing **View by Dimmers** and clicking the **Edit** button, the LP-3000 displays the **Dimmer Patch** dialog.



1. Use the **Dimmer** edgewheel to select a dimmer
2. Use the **Line** edgewheel to select a line for the fixture.
3. Use the **Level** edgewheel to set the level for the dimmer.
4. Use the **Channel** edgewheel to change channels.
5. Click **Apply** to update the patch.
6. Repeat steps 1 through 5 for each dimmer you want to patch.
7. Click **Exit** when you are finished.

To Copy a Patch

The patches in the LP-3000 can be copied. This allows a custom patch to be duplicated and then modified.

1. From the **Main** screen, click **Setup** and then **Dimmer Patch**.

   The LP-3000 displays the **Dimmer Patch** screen.
2. Click **Select Patch**.
3. Using the **Modify** edgewheel, select a patch to copy.
4. Click **Copy**.

The LP-3000 displays the **Copy Patch** dialog box.

5. Accept the default name or use the keyboard to enter a new name.

   Default names follow the pattern PATCH_001, PATCH_002 and so forth.

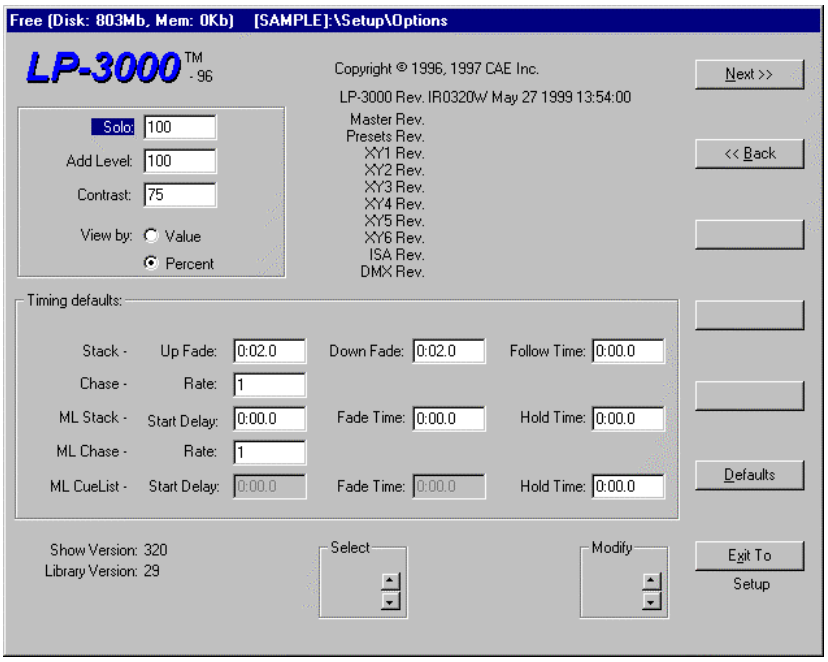
6. Click **OK**.

Options

Several controls for the LP-3000 are located on the **Options** screen.

1. From the **Main** screen, click **Setup** and then **Options**.

   The LP-3000 displays the **Options** screen.



- Default Add and Solo levels for the **Bump** buttons are located on the left side of the screen.
- The LCD contrast control for the master and preset panels is located just below.
- The **View by** radio buttons below the contrast set the **Stage View (Main)** screen display for percentage or DMX values.
- If questions arise regarding the features or operation of the LP-3000, the software revision numbers shown at the top of the screen and the **Show Version** and **Library Version** displayed in the lower left corner of the screen will give Leprecon Technical Support valuable information about your board. Please have this information available when requesting technical assistance.

- **Timing defaults** are displayed in the lower portion of the screen.

2. Use the **Next** and **Back** buttons to move the selection highlight from one area of the screen to another.

   The **Select** edgewheel also moves the highlight around the screen.

3. Use the **Modify** edgewheel to change a highlighted value.

To	Do
Adjust the default values for conventional stacks.	Position the cursor in the **Up Fade**, **Down Fade** or **Follow Time** box for **Stack**. Using the **Modify** edgewheel, change the value.
Adjust the default conventional chase rate.	Position the cursor in the **Rate** box for **Chase**. Using the **Modify** edgewheel, change the value.
Adjust the default values for moving light stacks.	Position the cursor in the **Start Delay** or **Fade Time** box for **ML Stack**. Using the **Modify** edgewheel, change the value. Note that hold time for moving light stacks is not enabled in the current version of the LP-3000.
Adjust the default moving light chase rate.	Position the cursor in the **Rate** box for **ML Chase**. Using the **Modify** edgewheel, change the value.
Adjust the default values for moving light cue lists.	Position the cursor in the **Hold Time** box for **ML CueList**. Using the **Modify** edgewheel, change the value. See ***To Change Default Cue List Start Delay or Fade Time*** beginning on page 42 for information about changing the default Start Delay and Fade Time.

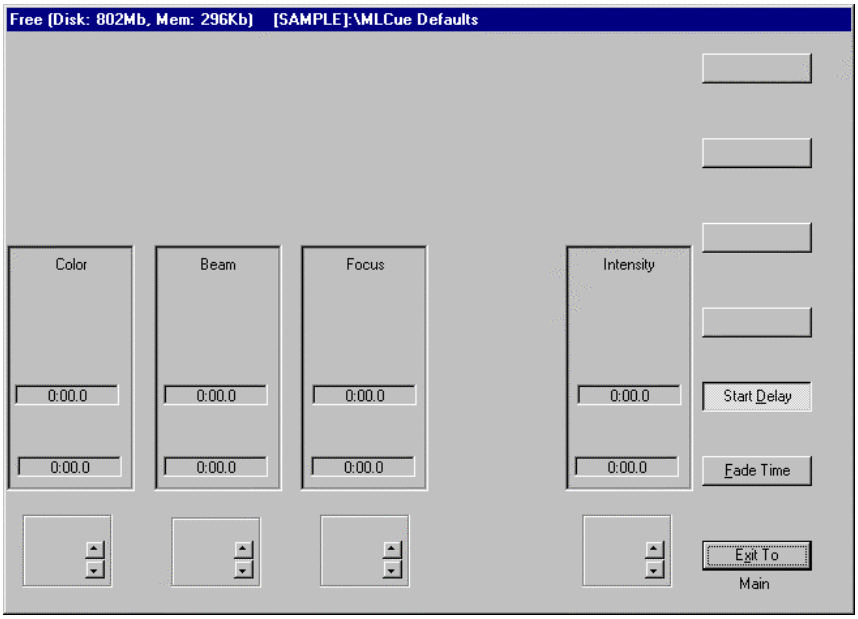
To Change Default Cue List Start Delay or Fade Time

1. From the **Main** screen, click **Setup** and then **Options**.

   The LP-3000 displays the **Options** screen.

2. Click **Defaults**.

   The LP-3000 displays the **ML Cue Defaults** screen.

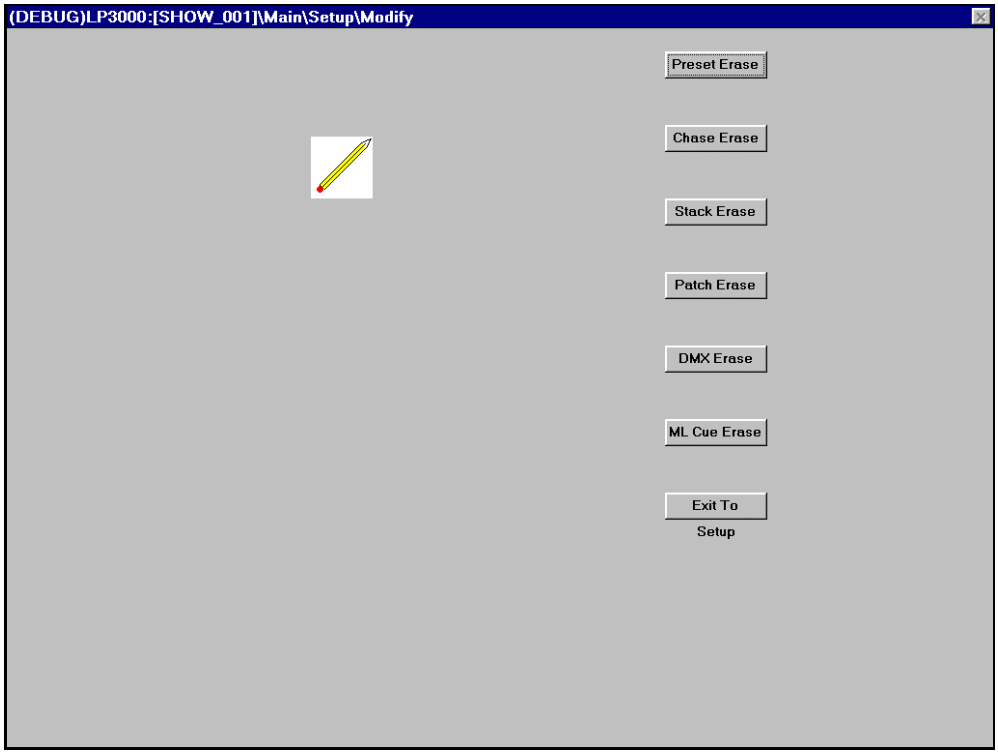


You can set the Start Delays and Fade Times for color, beam and focus independently. The Start Delay and Fade Time for intensity are not enabled—they will be available in a future release.

3. Click the **Start Delay** or **Fade Time** button.
4. Using the **Color**, **Beam** or **Focus** encoder, change the default value.
5. When you are done, click **Exit to Main**.

Erasing Show Components

From the **Setup** screen, clicking the **Erase** button will display the LP-3000 **Erase** screen:



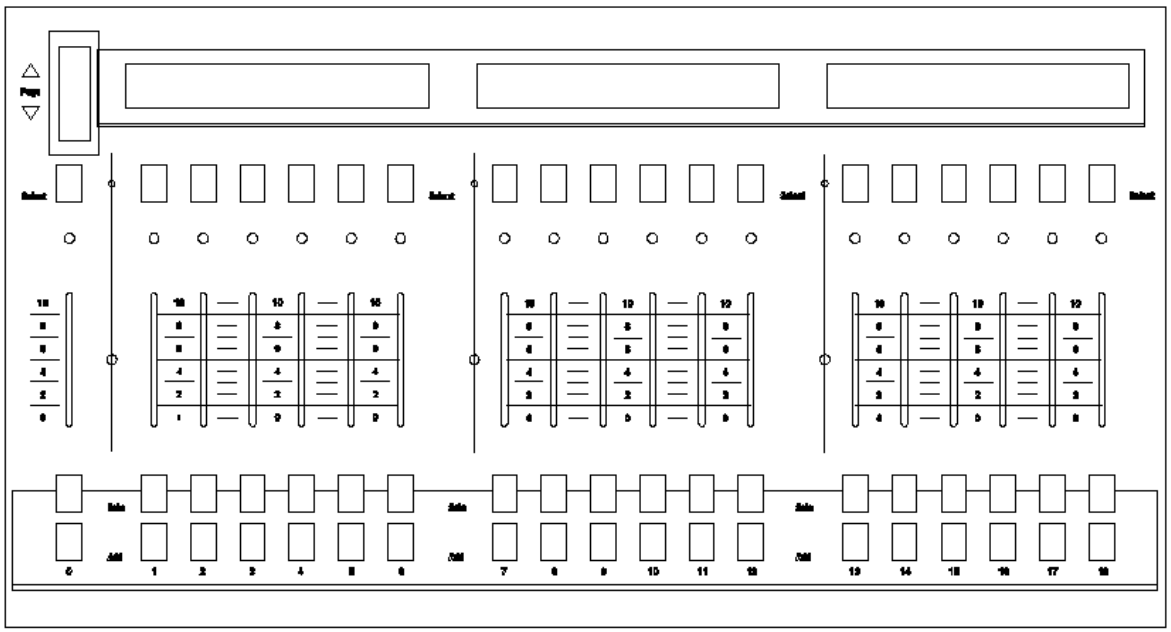
Button	Function
Preset Erase	Erasing presets returns all channel levels in each scene to zero intensity. The preset erase clears all pages of memory and loads default titles for all presets.
Chase Erase	Erasing chases discards all chase patterns and steps.
Stack Erase	Erasing stacks will discard all stacks and their cues.
Patch Erase	Deletes all custom patches.
DMX Erase	Resets line assignments.
ML Cue Erase	Erasing cues discards all cue information.

NOTE: There is no way to recover information after erasing.

Section Two:
Conventional Light Controller

Chapter Four:
Presets

Introduction to Presets



LP-3000 Preset Panel

There are 18 faders in the lower section of the console. This section of the console is called the *Preset Panel*. The LP-3000 stores in memory a complete stage scene, called a “preset”, for each of the 18 faders. These presets operate in a “pile-on” mode, allowing multiple presets to be up at any one time. **Solo** and **Add Bump** buttons and an LED indicator are provided for each preset playback. The preset playbacks of the LP-3000 have two **Bump** buttons. The preset **Add** and **Solo** buttons are directly enabled by the **Add Enable** and **Solo Enable** switches.

The **Preset Master** fader, located on the master panel to the right of the **X** and **Y Crossfaders**, controls the output level of all presets. An LED directly above it indicates the level of the **Preset Master** fader.

The **Page Roller** located to the left of the preset **Title Displays** selects any of twenty pages of playbacks that will be active when the console is in Run mode. The

current page is indicated on the mode display screen. For each of the memory pages, a different scene can be recorded to each fader; therefore each preset playback can call up twenty different scenes. The LP-3000 thus holds 360 presets in memory.

When the **Page Roller** is moved to a new page, only the preset playbacks that are at zero level will be loaded with new scenes. Any fader that is not at zero will be in "page hold" and will retain its current preset assignment until the fader is returned to zero. Faders that are holding presets from a previous page will be identified by the level LED glowing red. As soon as the fader is moved to zero, the preset for the currently selected page is automatically loaded and the LED will return to its normal green color.

The first preset playback, labeled "0", is identical on all pages. When Preset 0 is recorded, the same scene will be played back on all 20 **Page** rollers for Preset 0. This preset will produce an identical scene regardless of the **Page** roller, so re-recording Preset 0 on any page will overwrite the scene. This can be used to quickly access a frequently used scene.

Basic Preset Techniques

To Record Presets into Memory

Recording presets on the LP-3000 is very straightforward.

Presets on the LP-3000 are recorded from the console's current output. The level of all lights—whether they are controlled from the X scene, the Y scene or another preset—will be recorded as the new preset. In general, what you see on stage is what you will get as the newly recorded preset. Presets recorded in Wide mode will play back in Wide mode, regardless of which mode is active at playback time.

1. Move the key switch to the *Unlock* position.

   Recording presets, as with any operation that alters memory, requires that the key switch be in the *Unlock* position.

2. Set the **Page** roller to the desired page.

3. Press the **Record** button, located to the right of the key switch.

   If the key switch is locked when you press the **Record** button, the following message will be displayed on the master panel display:

   Cannot Record
   Key Locked

   This message is canceled by setting the key switch to the Unlock position and pressing **Record** again.

   If the key switch is unlocked, the LP-3000 goes into Record mode, indicated by a message on the mode display:

Record Mode Page 1

Record mode is also indicated by flashing yellow LEDs in the row of numbered preset **Select** buttons.

4. Raise the **Preset Master** fader to the desired level.
5. Set up the scene, using any combination of X and Y channel faders and other presets.
6. When the new scene is correct, press the gray **Select** button over the preset playback that you want to program with the new scene.

   The **Mode** display will then verify which preset has just been recorded.

Recorded Pg 01, Preset 01

7. To leave the record mode of the LP3000, press the **Run** button.
8. Return the key switch to the *Lock* position after all preset recording has been completed.

Preset playbacks which are in “page hold”, marked by red LEDs, can also be recorded; but the new scene will be stored in place of the preset which is currently active, not the preset location indicated by the **Page** roller. In other words, if the **Page Roller** is on page 5 and preset 1 is brought up, the roller is moved to page 6. At that point, the LED over preset playback 1 turns red. Pressing the Select button for Preset 1 records the on-stage scene into preset 1 of page 5, not page 6.

Preset 0 does not change when a new page is selected. Therefore, it can be recorded at any time.

To Play Back Presets

1. Put the LP-3000 in Run mode by pressing the **Run** button to the right of the key switch.
2. Set the **Page** roller to the desired page.
3. Raise the **Preset Master** to the desired level.
4. Raise the **Preset Playback** fader to the desired level.

To Preview Presets

You can preview any preset entered in the LP-3000 instantly whenever the board is in Run mode.

1. Put the LP-3000 in Run mode by pressing the **Run** button to the right of the key switch.

2. Hold the **Run** button while pressing the **Select** button above a preset playback.

   The LP-3000 displays a message on the **Mode** display such as “PREVIEW PRESET 10”. The relative levels of the stage lights are indicated on the output LEDs above the channel faders.

3. To preview another preset, press another numbered **Select** button.

4. To cancel Preview mode, press the **Run** button.

   Otherwise, the preview automatically will be canceled after approximately ten seconds.

To Edit Presets with Faders

The LP-3000 allows for easy hands-on editing of a previously recorded preset. When the console is in Edit mode, you can quickly modify an existing preset, even while presets are being run.

1. Move the key switch to the *Unlocked* position.

2. Press the **Edit** button to put the LP-3000 in Edit mode.

   The LED in the **Edit** button will light and the mode display will show:

Edit Mode
Page 01

3. Press the preset **Select** button above the playback fader to be edited.

   Alternatively, you can move a preset playback up past half intensity (if no other faders are up). If a single preset playback is up when Edit mode is entered, that preset will automatically be selected for editing. The display will then show:

Active Edit
Pg 1, Preset 1

4. Change the channel levels using the manual scene faders.

   After a preset is selected for editing, the channel indicator LEDs will no longer display the actual output of the board but instead will show the contents of the preset being edited. If the preset playback is up while editing is being done, the changes that you make will appear on stage as the channel faders are moved.

   While the LP-3000 is in Edit mode, the board is automatically switched into Wide mode. This allows fader access to all board channels. After the edit is concluded the board will return to its original state.

   To change the level of any channel in the preset, the manual scene fader must be moved past the value stored in memory; this will transfer control to the fader. For example, if the level of the channel were set at 80 percent

within the preset, in order to edit that level you would first have to move the channel fader through the 80 percent position to “grab” manual control of the channel. Then you could set it at the desired new level. Any number of channels in the selected preset may be edited in a single session.

Channels that are up on stage when an edit is initiated will be unaffected, although the output LEDs will be switched to display the contents of the preset being edited.

5. When finished, press the **Run** button and return the key switch to the *Locked* position.

   When a preset edit is completed, the scene is saved to memory for later recall. Pressing the **Run** button next to the key switch saves the new preset and returns the console to playback operation.

6. To remain in Edit mode and edit a series of presets, simply press a second preset select switch.

   This will automatically save the first edit and start the edit process for the newly selected preset.

7. To cancel an edit and discard any changes made to the preset, simply turn the key switch to the *Locked* position. The message:

   Edit Discarded

   will remain on the display for about four seconds and then the LP-3000 will return to Run mode.

Manual Fader Re-Capture

If a channel that is active on the manual scene is used to edit a channel, the level of the fader will be frozen at its level when the edit is initiated. After editing with the fader, this level will still be held when the edit is concluded. Since the fader was used for editing, it may no longer match the actual output value. LP-3000 indicates this by flashing the channel output LED. To restore normal operation of the fader, match the fader position to the stored value. When this match occurs, the LED stops flashing, the channel is captured, and the channel once again responds to fader movement.

Live and Blind Edits

The LP-3000 has the ability to edit presets as described in a “live” or “blind” situation.

If the preset being edited is up on stage, the effects of the edit will be seen on stage as the adjustments are made.

For a blind edit, use the preset **Select** switch to pick a preset that is not currently being used.

In a blind edit, no changes are visible on stage, but the output LEDs reflect the intensity of the individual channels as adjustments are made.

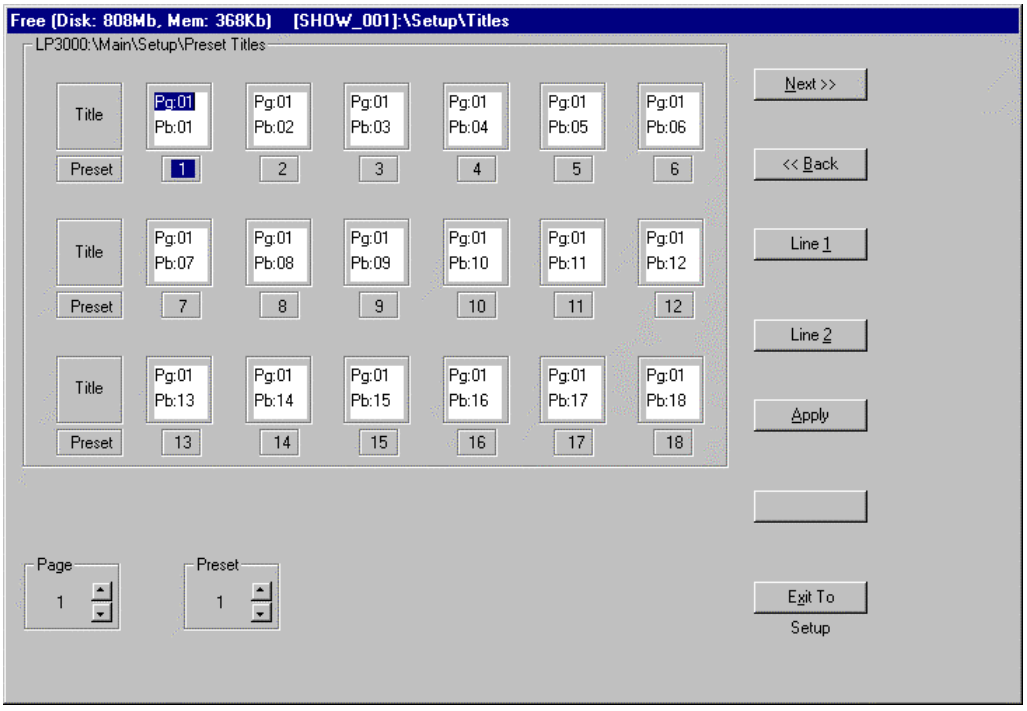
Entering Preset Titles

Each preset in the LP-3000 can be assigned a two-line, five-character title that will be displayed on the LCD above the fader. The titles are unique for each page and automatically update as the page is changed.

To Enter a Preset Title

1. From the **Main** screen, click **Setup** and then **Preset Titles**.

   The LP-3000 displays the **Titles** screen.



2. Using the **Page** edgewheel, select the page for which you want to enter a title.
3. Using the **Preset** edgewheel, select the preset for which you want to enter a title.
4. Click the **Next** and **Back** buttons to move from preset to preset.
5. Click the **Line 1** and **Line 2** buttons to move between the first and second lines of a title.
6. Using the keyboard, enter a title of up to five characters.
7. Click **Apply** to see the changes on the preset panel immediately.

8. Repeat steps 2 through 6 for each title that you want to enter.
9. When you are done, click **Exit to Setup**.

   Even if you do not click **Apply**, the LP-3000 saves and applies all titles when you click **Exit to Setup**.

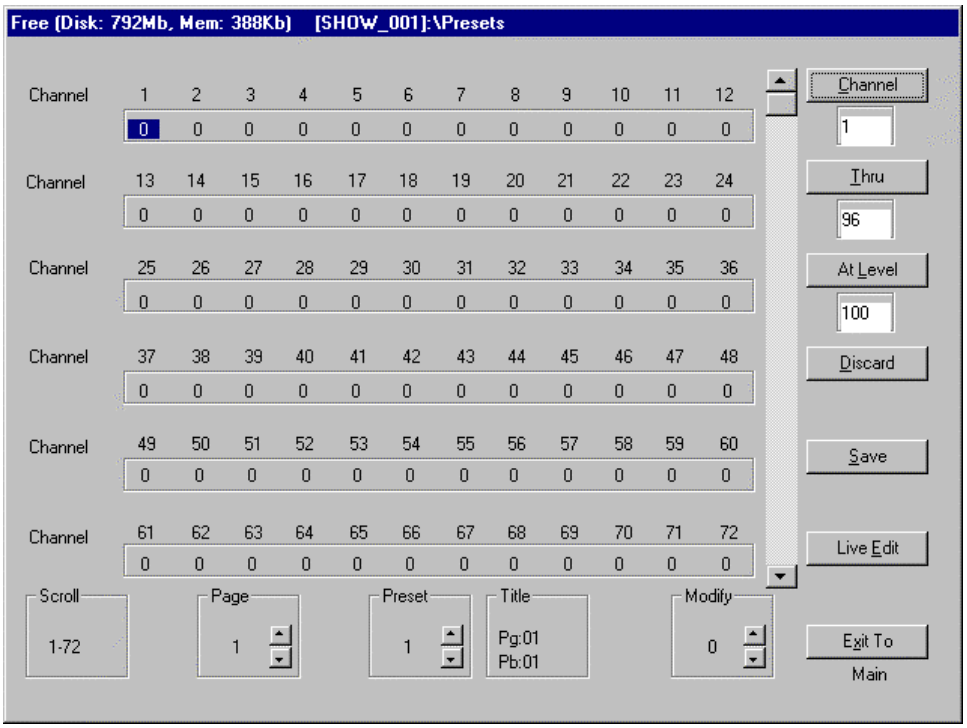
Using the Front Panel Display Screen to View and Edit Preset Scenes

Preset scenes that have been built with the preset panel faders can be viewed and edited with the front panel display screen of the LP-3000.

To View Preset Scenes

1. From the **Main** screen, click **Presets**.

   The LP-3000 displays the **Presets** screen.



   The LP-3000 displays level information for 72 dimmer channels, one page and one preset.
2. Use the **Scroll** edgewheel to scroll through the dimmer channels.
3. Use the **Page** edgewheel to scroll from page 0 to 20.
4. Use the **Preset** edgewheel to scroll from preset 0 to 18.

Next to the **Preset** edgewheel display, the LP-3000 displays the title associated with the preset from the preset panel LCDs.

To Edit Presets

You can change the levels of dimmer channels using the front panel display screen.

Prior to editing a preset using the front panel display screen, display the desired page and preset information as described above.

By default, preset editing is done in “Blind” mode. The changes that you make to channel levels cannot be seen on stage.

1. If you want to see the changes on stage, switch from “Blind” mode to “Live” mode by clicking the **Live Edit** button.

   “Blind” mode only shows levels on the LEDs.

   The button text changes from **Live Edit** to **Blind Edit**. Click **Blind Edit** to return to “Blind” mode.

2. Click **Channel**.

   The LP-3000 highlights the background of the **Channel** display box.

3. Using the **Modify** edgewheel, select the first channel for editing.

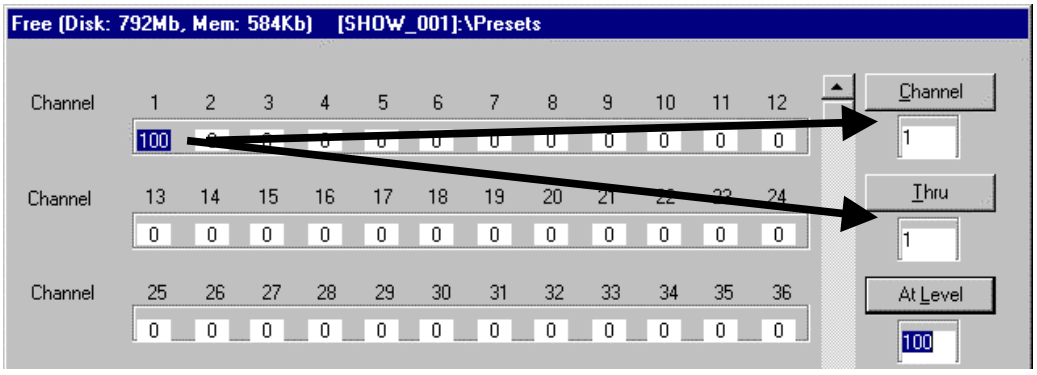
4. Click **Thru**.

5. Using the **Modify** edgewheel, select the last channel for editing.

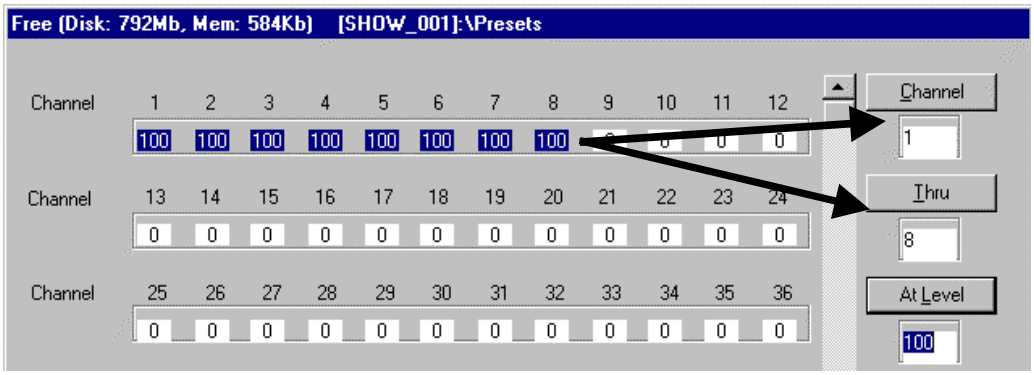
6. Click **At Level**.

   The LP-3000 highlights the range of channels that you have selected for editing.

   Single channel selected for editing:



Several channels selected for editing:



7. Using the **Modify** edgewheel, adjust the level for the channel or channels.
8. When the level is correct, click **At Level** a second time.

   This restores the marked block to a normal background and allows more channels to be selected.
9. Repeat steps 2 through 8 for all channels that you want to edit.
10. Click **Save** to save the changes.
11. Click **Discard** to delete the changes and restore the settings to their original values.
12. When you are done, click **Exit to Main**.

Chapter Five:
Chases

The chaser section of the LP-3000 is used to build simple endless loops of scenes—called *chases*. Chases can consist of up to 25 steps, and up to 360 chases can be saved. Up to eighteen chases can be run at the same time.

All chases are assigned to preset playbacks. This allows a chase to be combined with a conventional look, or a chase alone can be started by bringing up the playback.

The LP-3000 provides three distinct methods for programming chases.

- The simplest method is **creating chases with playbacks**, which uses the **Bump** buttons of the preset playbacks to store the chase.
- You can also use the **Chase Builder** screen, which uses the LP-3000 screen controls to assist in building the chase.
- Finally, you can use the **Step Editor** if you need to create a chase in off-line programming mode.

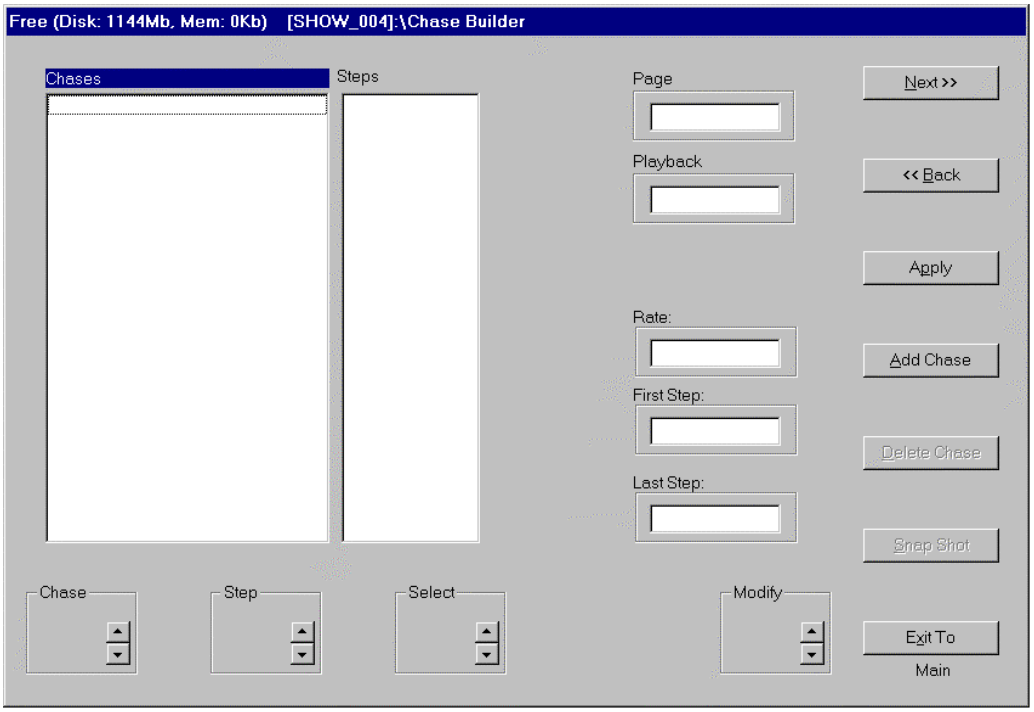
Creating Chases with Playbacks

The fastest method of programming a chase uses the **Add** and **Solo** buttons of the playback to store a chase.

To Create a Chase on a Playback

1. From the **Main** screen, click **Chase**.

   The LP-3000 displays the **Chase Builder** screen.



2. Move the key switch to the *Unlock* position.
3. Set the **Page** roller to the desired page.
4. Press the **Record** button, located to the right of the key switch.
5. Set the first step.

   Use the manual scene faders or preset scene faders to set the level for the chase step.
6. Save the first step.

   Press the **Solo** button of a playback to save the look as the first step of the chase.

   CAUTION: Pressing **Solo** erases all steps of any chase previously recorded on that playback.
7. Add more steps.

   Use the faders to set the next chase step. Press the **Add** button of the playback to save it. The **Chase** screen display will verify that the step has been saved.

   Continue adding steps in this manner until the chase is complete.
8. Press the **Run** button on the Master panel of the LP-3000 to end recording.

To Play Back a Chase

1. From the **Main** screen, click **Chase**.

The LP-3000 displays the **Chase Builder** screen.

2. Ensure that the LP-3000 is in Run mode.

   If it is not, press the **Run** button on the Master panel of the LP-3000.

3. Move the preset scene playback fader from 0 to 1 on the fader scale.

4. Set the intensity of the chase by adjusting the **Chase Level** fader on the Master panel of the LP-3000.

5. Move the preset scene playback fader to 0 to stop the chase.

To Set the Chase Rate

You can set the rate of a chase on a playback using the **Tap** button located on the Master panel above the **Chase Level** fader.

1. With the chase running and the **Chase Builder** screen displayed, put the LP-3000 in Run mode.

   Press the **Run** button, located to the right of the key switch.

2. Press and hold the **Select** button of the playback.

3. Tap the **Tap** button to establish the chase rate.

   The LP-3000 establishes the chase rate after just a few taps and then averages any changes to the rate as you tap.

4. When you are done, release the **Select** button.

To Store the Chase Rate

1. With the chase running and the **Chase Builder** screen displayed, put the LP-3000 in Record mode.

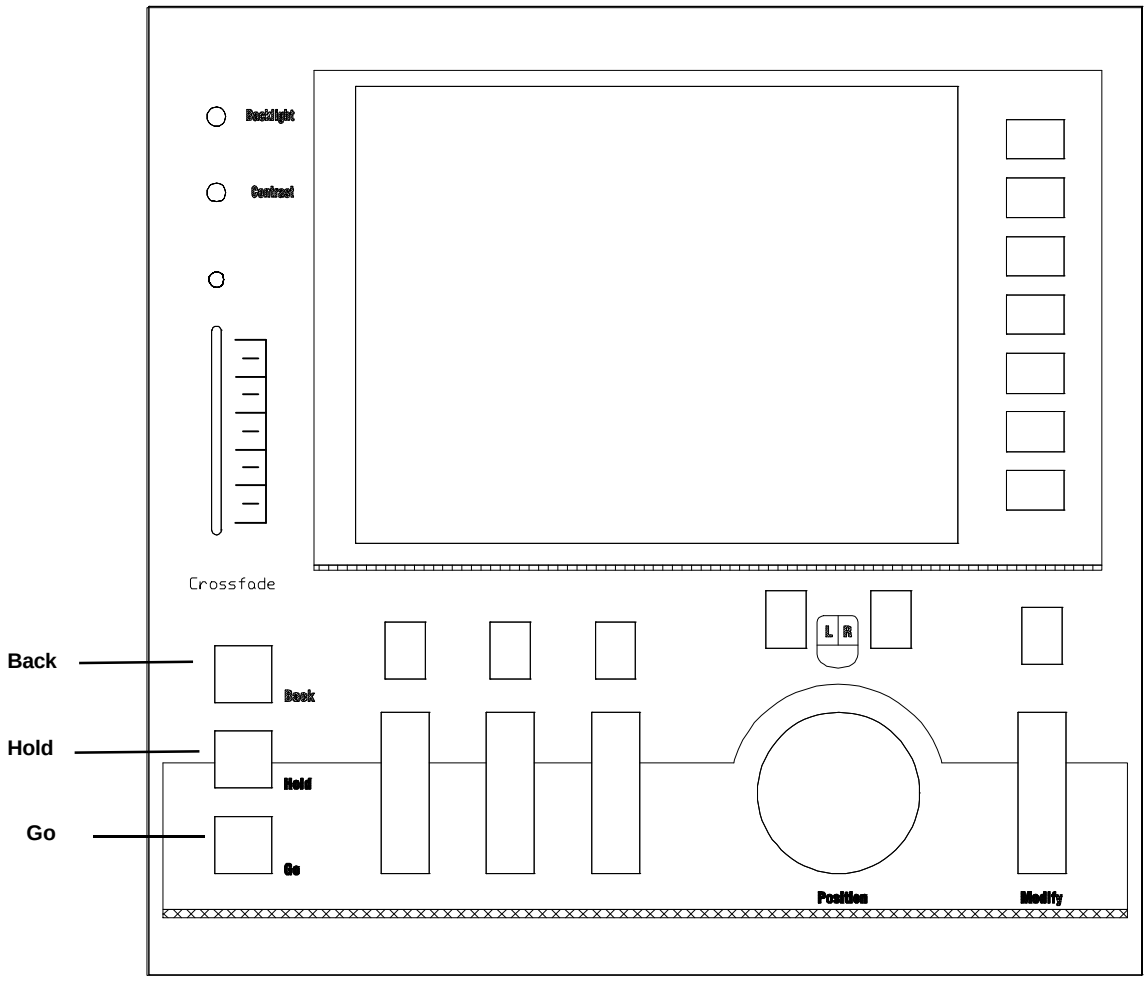
   Press the **Record** button, located to the right of the key switch.

2. Press the **Add** button of the playback.

   This stores the current chase rate in memory. The next time the playback is used, the chase will return at the stored rate.

Run Controls

You can use the three display panel switches labeled Go, Hold and Back to control chases.



1. With the chase running, press and hold the **Chase Enable** button.

   This button is located on the Master panel above the **Chase Level** fader.

2. Do one of the following:

To	Do
Stop a chase momentarily.	Press the **Hold** button. The LED in the **Hold** button blinks to indicate that the chase is on hold. Press the **Hold** button again to re-start the chase.
Reverse a running chase.	Press the **Back** button.
Play a chase forward one step at a time.	Press the **Hold** button. Then press the **Go** button to play the next step.
Play a chase backwards one step at a time.	Press the **Hold** button. Then press the **Back** button to play the previous step.

To Edit a Chase on a Playback

Recording a chase to a playback is a convenient way to use the preset scene playback faders to set a conventional chase pattern. The LP-3000 also supports editing of a chase assigned to a playback using the manual scene faders. The following steps outline the process of editing an existing chase pattern.

1. From the **Main** screen, click **Chase**.

   The LP-3000 displays the **Chase Builder** screen.

2. Put the LP-3000 in Edit mode by pressing the **Edit** button on the Master panel.

3. Press the **Chase Enable** button on the Master panel.

4. Select the chase to be edited by pressing the **Solo** button for the playback.

   When you press the **Solo** button, the LP-3000 displays the first chase step on the output LEDs.

5. Press the **Add** button to move to the chase step that you want to edit.

   The chase advances one step each time you press the **Add** button.

6. Using the manual scene faders, adjust the channel levels.

7. When you are finished, press the **Run** button on the Master panel.

   This ends the edit and saves the changes.

Changes to a chase can be performed live or blind. If the preset scene playback and **Chase Level** faders are up during the edit, the results will be seen on stage. If either the **Chase Level** fader or preset scene playback fader is down, the chase edit will be blind.

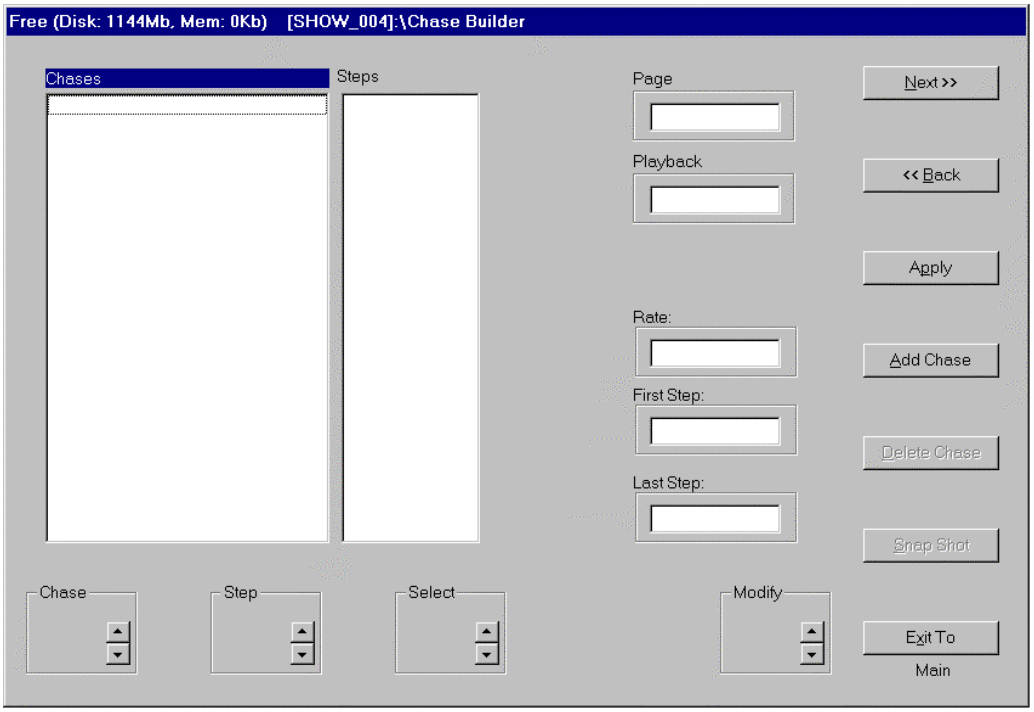
Creating a Chase with the Chase Builder

The second method of creating a chase also uses the manual faders to set channel levels, but uses screen controls to create and name the chase steps. Once the chase has been created, it can be assigned to a fader for playback.

To Create a New Chase

1. From the **Main** screen, click **Chase**.

   The LP-3000 displays the **Chase Builder** screen.



2. Using the **Select** edgewheel, activate the **Chase** column.
3. Click **Add Chase**.

   NOTE: If the **Chase** column is not active, you will not see the **Add Chase** button.

   The LP-3000 displays the **New Chase** dialog box.
4. Enter a name for the chase or accept the default and click **OK**.

   Default names follow the pattern CHASE_001, CHASE_002 and so forth.

To Add Steps to a Chase Using Faders

1. From the **Main** screen, click **Chase**.

   The LP-3000 displays the **Chase Builder** screen.
2. Using the **Chase** edgewheel, select the chase to which you want to add steps.
3. Using the **Select** edgewheel, activate either the **Chase** or **Step** column.
4. Using the manual scene faders or preset playback faders, set levels for the step.
5. Click **Snapshot**.

   The LP-3000 “records” the levels of the faders and creates a new step in the chase.
6. Repeat steps 4 and 5 until all steps are recorded.

To Assign the Chase to a Playback

Chases that have been created with the chase builder as described are assigned to pages and presets in the **Chase Builder** screen. Then they can be played back.

1. From the **Main** screen, click **Chase**.

   The LP-3000 displays the **Chase Builder** screen.

2. Using the **Chase** edgewheel, select the chase that you want to assign to a playback.

3. Using the **Select** edgewheel, move the cursor to the **Page** field.

4. Using the **Modify** edgewheel, select a page.

   The page can be set to a value from 1 to 20.

5. Using the **Select** edgewheel, move the cursor to the **Playback** field.

6. Using the **Modify** edgewheel, select a playback.

   The preset playback can be set to a value from 1 to 18.

7. Click **Apply**.

8. To play back the chase, raise the level of the preset playback fader from 0 to 1.

   You may have to select the correct page first.

Creating a Chase with the Step Editor

The third method for recording a chase is appropriate when programming off-line or when the channel levels are known in advance, such as when you are working from a written cue sheet.

A new chase is created in the main chase screen and steps are added using the **Add Step** button as described below.

To Add Steps to a Chase Manually (Off-line Mode)

1. From the **Main** screen, click **Chase**.

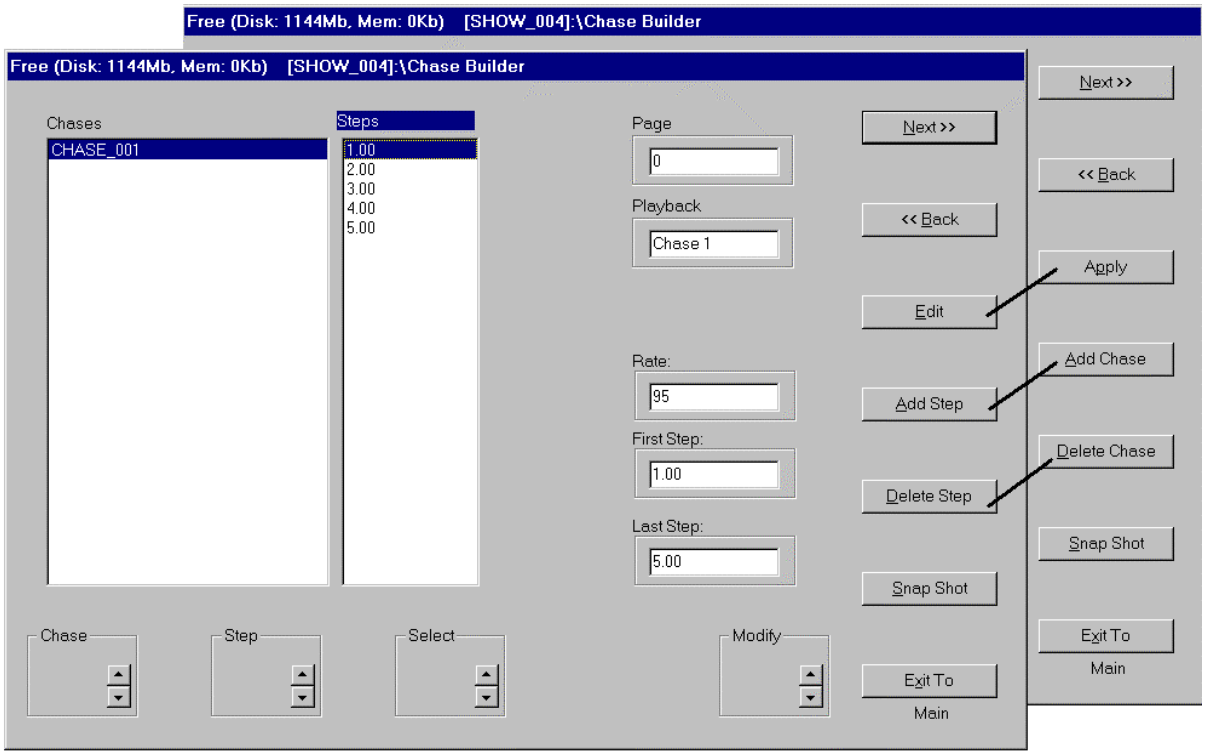
   The LP-3000 displays the **Chase Builder** screen.

2. Using the **Chase** edgewheel, select the chase to which you want to add steps.

   If you want to create a new chase, follow the procedure ***To Create a New Chase*** beginning on page 61. Then select the new chase.

3. Using the **Select** edgewheel, activate the **Step** column.

   The text on the menu buttons changes, indicating that you are ready to work with steps.



4. Click **Add Step**.

   The LP-3000 displays the **New Step** dialog box.

   As an alternative to clicking **Add Step**, you can click **Snapshot**. This adds a step to the chase using the default names 1.00, 2.00 and so forth.

5. Enter a number for the step or accept the default and click **OK**.

   Step numbers include two decimal places. This makes it easy to insert a step between two existing steps. For instance, if you wanted to insert a new step between steps 2.00 and 3.00, you could give it the number 2.50.

6. Repeat steps 4 and 5 for each step you want to add to the chase.

To Assign Levels to Steps Manually (Off-line Mode)

1. From the **Main** screen, click **Chase**.

   The LP-3000 displays the **Chase Builder** screen.

2. Using the **Chase** edgewheel, select the chase for which you want to assign step levels.

   The LP-3000 displays a list of all the steps that are part of the chase.

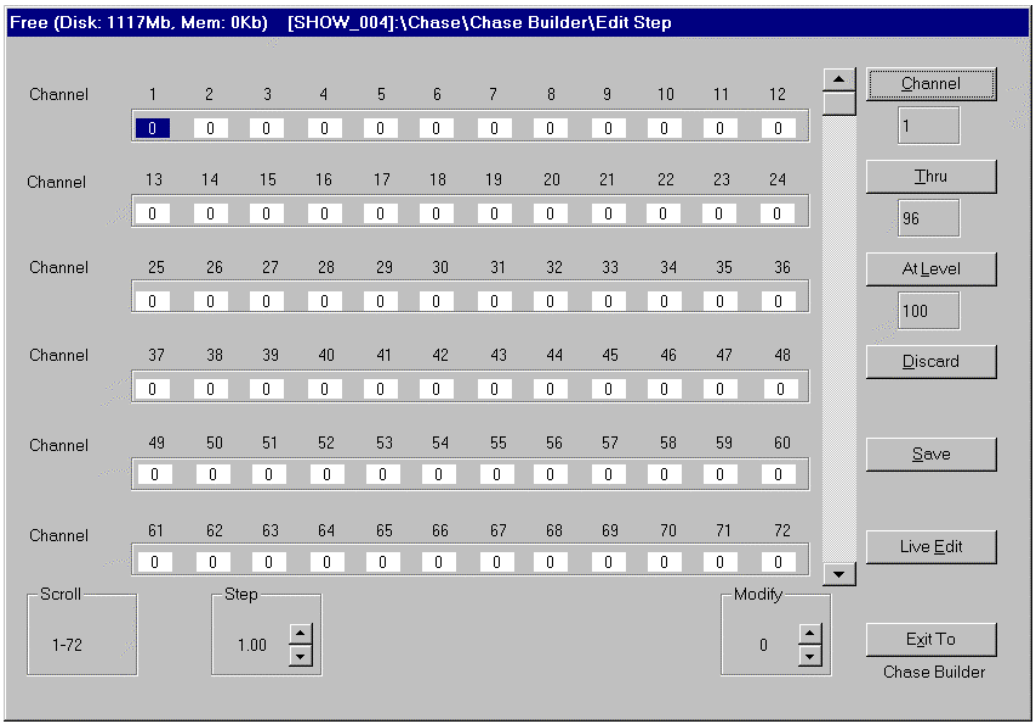
3. Using the **Select** edgewheel, activate the **Step** column.

   The text on the menu buttons changes, indicating that you are ready to work with steps.

4. Using the **Step** edgewheel, select a step.

5. Click **Edit**.

   The LP-3000 displays the **Edit Step** screen.



   The LP-3000 displays level information for 72 dimmer channels. Use the **Scroll** edgewheel to scroll through the dimmer channels.

6. If you want to see the changes on stage, switch from “Blind” mode to “Live” mode by clicking the **Live Edit** button.

   “Blind” mode only shows levels on the LEDs.

   The button text changes from **Live Edit** to **Blind Edit**. Click **Blind Edit** to return to “Blind” mode.

7. Click **Channel**.

   The LP-3000 highlights the background of the **Channel** display box.

8. Using the **Modify** edgewheel, select the first channel for editing.

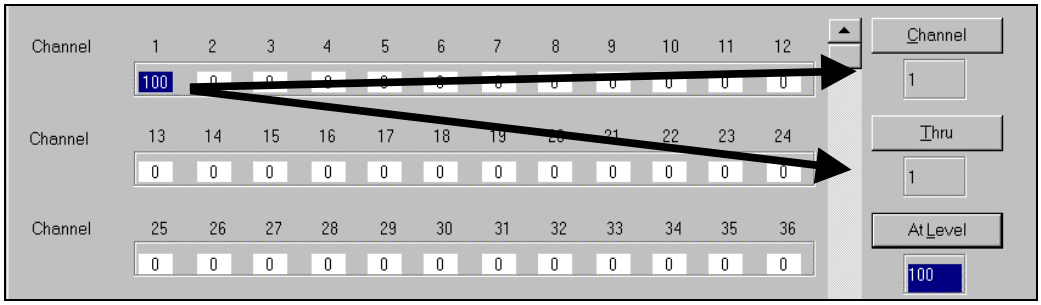
9. Click **Thru**.

10. Using the **Modify** edgewheel, select the last channel for editing.

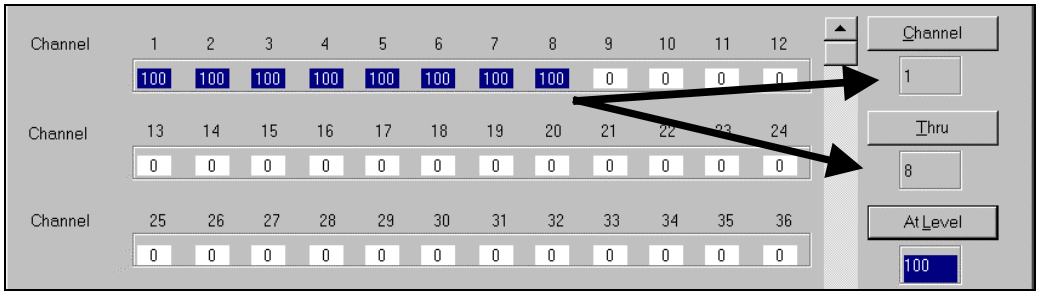
11. Click **At Level**.

    The LP-3000 highlights the range of channels that you have selected for editing.

    Single channel selected for editing:



Several channels selected for editing:



12. Using the **Modify** edgewheel, adjust the level for the channel or channels.
13. When the level is correct, click **At Level** a second time.

    This restores the marked block to a normal background and allows more channels to be selected.
14. Repeat steps 7 through 13 for all channels that you want to edit.
15. Click **Save** to save the changes.
16. Click **Discard** to delete the changes and restore the settings to their original values.
17. If desired, select another step and set levels for it.
18. When you are done, click **Exit to Main**.

To Play Back a Step Editor Chase

Playing back a chase that was created in Step Edit mode is identical to playing back a chase that was built using the Chase Builder in its conventional fashion.

For details, see ***To Assign the Chase to a Playback*** beginning on page 63.

Editing Chases

Regardless of which method you used to create your chase, the LP-3000 provides common editing features that enable you to:

- Change the number of steps in a chase.

- Delete a step.
- Delete a chase.

To Shorten a Chase

1. From the **Main** screen, click **Chase**.

   The LP-3000 displays the **Chase Builder** screen.

2. Using the **Chase** edgewheel, select a chase.
3. To change the step that occurs first in the chase, position the cursor in the **First Step** box and enter a different step.
4. If the chase is currently running, to view the change, click **Apply**.

To Delete a Step

1. From the **Main** screen, click **Chase**.

   The LP-3000 displays the **Chase Builder** screen.

2. Using the **Chase** edgewheel, select the chase from which you want to delete a step.
3. Using the **Select** edgewheel, activate the **Step** column.
4. Using the **Step** edgewheel, select a step.
5. Click **Delete Step**.

   The LP-3000 deletes the step from the chase.

To Delete a Chase

1. From the **Main** screen, click **Chase**.

   The LP-3000 displays the **Chase Builder** screen.

2. Using the **Chase** edgewheel, select the chase that you want to delete.
3. Click **Delete Chase**.

   The LP-3000 deletes the chase.

Chapter Six:
Cue Stacks

The Cue Stack feature of the LP-3000 offers automated cue-to-cue fades triggered by the operator in a sequential order.

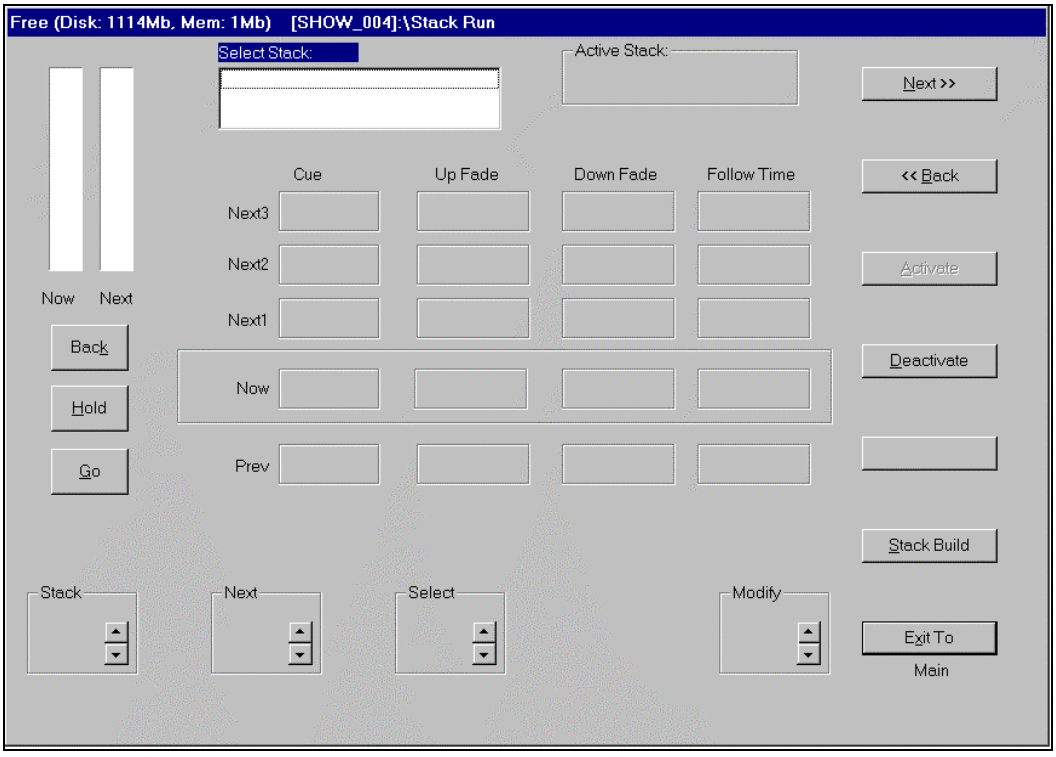
There are two ways to create a cue stack: on-line mode and off-line mode.

In both modes, the first step is to create a new cue stack.

To Create a New Stack

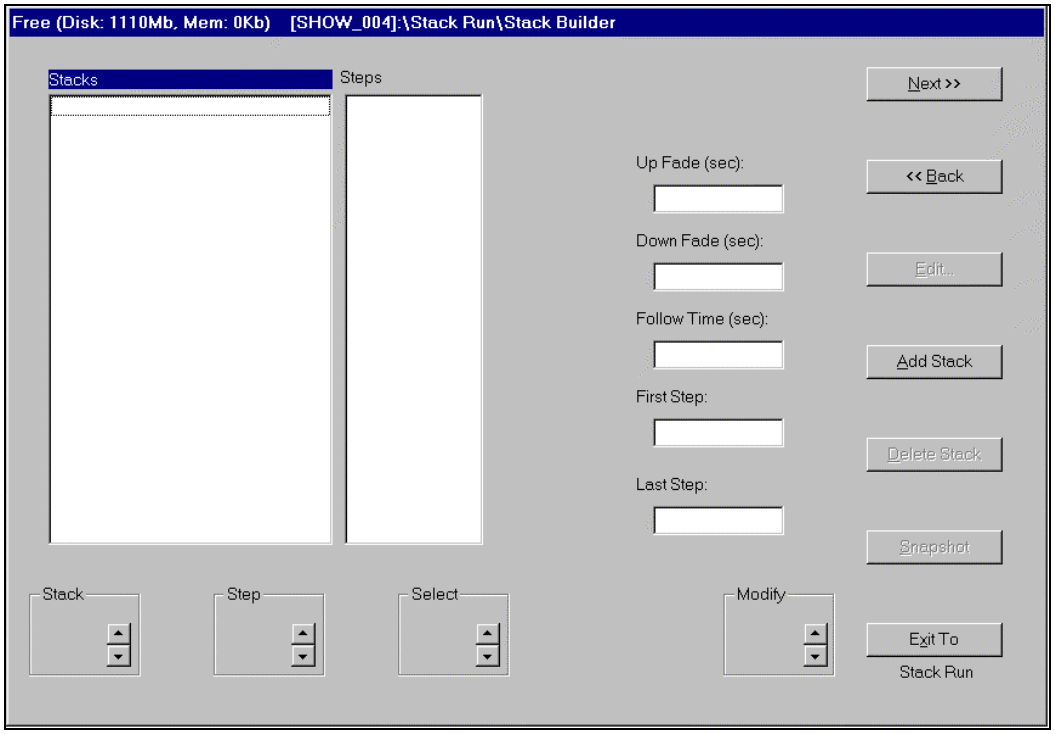
1. From the **Main** screen, click **Stack**.

   The LP-3000 displays the **Stack Run** screen.



2. Click **Stack Build**.

   The LP-3000 displays the **Stack Builder** screen.



The **Stacks** list shows the stacks that have been created in the LP-3000.

3. Using the **Select** edgewheel, activate the **Stacks** column.
4. Click **Add Stack**.

   If the **Stacks** column is not active, this button will be disabled.

   The LP-3000 displays the **New Stack** dialog box.
5. Enter a name for the new stack or accept the default.

   Default names follow the pattern STACK_001, STACK_002 and so forth.
6. Click **OK**

   The LP-3000 creates the new stack.

Adding Cues to a Stack

To Add Cues to a Stack in On-line Mode

1. From the **Main** screen, click **Stack**.

   The LP-3000 displays the **Stack Run** screen.
2. Click **Stack Build**.

   The LP-3000 displays the **Stack Builder** screen.
3. Using the **Stack** edgewheel, select the stack to which you want to add cues.

4. Using the **Select** edgewheel, activate either the **Stacks** column or the **Steps** column.
5. Using the manual scene faders or preset playback faders, set levels for the step.
6. Click **Snapshot**.

   The LP-3000 "records" the levels of the faders and creates a new step in the stack.
7. Repeat steps 5 and 6 until all steps are recorded.

To Add Cues to a Stack in Off-line Mode

1. From the **Main** screen, click **Stack**.

   The LP-3000 displays the **Stack Run** screen.
2. Click **Stack Build**.

   The LP-3000 displays the **Stack Builder** screen.
3. Using the **Stack** edgewheel, select the stack to which you want to add cues.
4. Using the **Select** edgewheel, activate the **Steps** column.
5. Click **Add Step**.

   The LP-3000 displays the **New Step** dialog box.
6. Enter a number for the step or accept the default and click **OK**.

   Step numbers include two decimal places. This makes it easy to insert a step between two existing steps. For instance, if you wanted to insert a new step between steps 2.00 and 3.00, you could give it the number 2.50.
7. Repeat steps 5 and 6 until all steps are recorded.

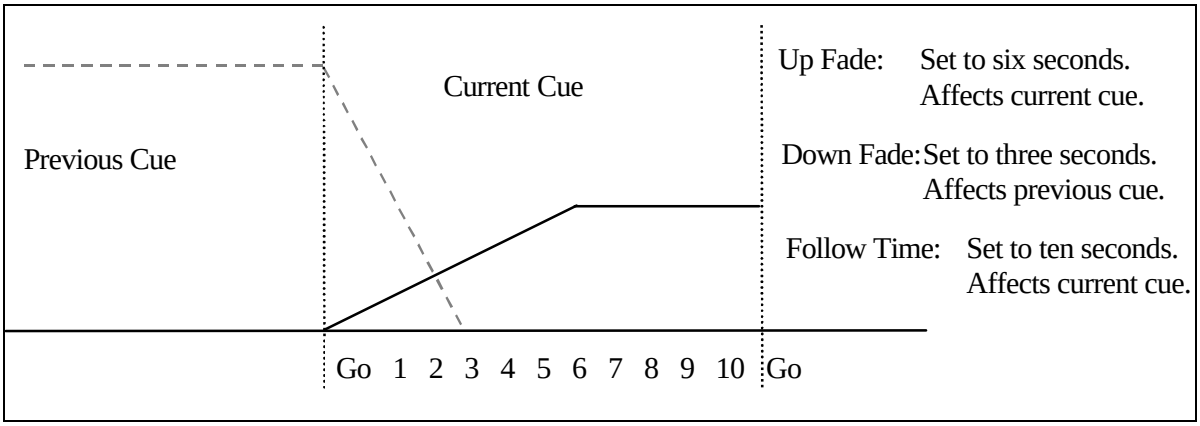
To Set Fade Times

The **Stack Build** screen also is used to set fade times for the stack scenes.

Fade times are important aspects of a crossfade stack.

- **Up Fade**—time for the new cue to fade in.
- **Down Fade**—time for the old cue to fade out.
- **Follow Time**—time until the next cue.

The following illustration shows an Up Fade of six seconds, a Down Fade of three seconds and a Follow Time of ten seconds.



1. From the **Main** screen, click **Stack**.

   The LP-3000 displays the **Stack Run** screen.

2. Click **Stack Build**.

   The LP-3000 displays the **Stack Builder** screen.

3. Using the **Stack** edgewheel, select the stack for which you want to set fade times.

4. Using the **Step** edgewheel, select the step for which you want to set fade times.

5. Using the **Select** edgewheel, activate the display window for one of the Fade Times.

6. Use the **Modify** edgewheel to enter a new time value.

   The times for several cues can be set by leaving the display window for one of the times—such as **Up Fade** time—active and changing the step number by using the **Step** edgewheel.

7. Repeat steps 4 through 6 for all steps in the stack.

To Assign Levels to Steps Manually (Off-line Mode)

1. From the **Main** screen, click **Stack**.

   The LP-3000 displays the **Stack Run** screen.

2. Click **Stack Build**.

   The LP-3000 displays the **Stack Builder** screen.

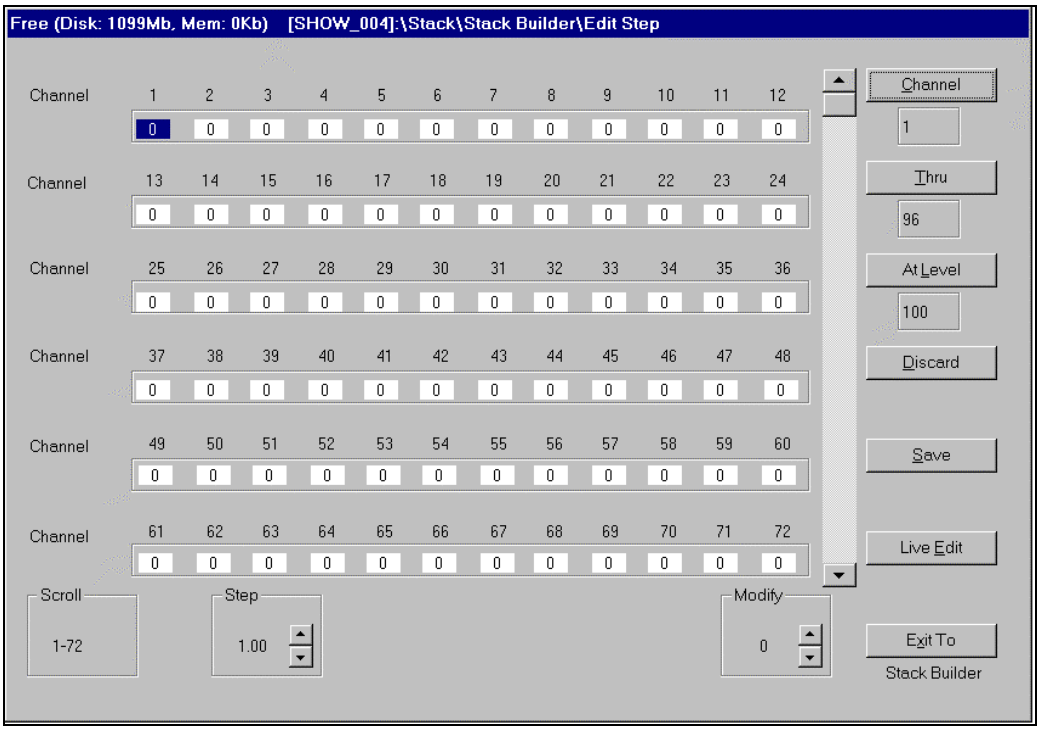
3. Using the **Stack** edgewheel, select the stack for which you want to set step levels.

4. Using the **Select** edgewheel, activate the **Steps** column.

5. Using the **Step** edgewheel, select the step for which you want to set levels.

6. Click **Edit**.

   The LP-3000 displays the **Edit Step** screen.



   The LP-3000 displays level information for 72 dimmer channels. Use the **Scroll** edgewheel to scroll through the dimmer channels.

7. If you want to see the changes on stage, switch from “Blind” mode to “Live” mode by clicking the **Live Edit** button.

   “Blind” mode only shows levels on the LEDs.

   The button text changes from **Live Edit** to **Blind Edit**. Click **Blind Edit** to return to “Blind” mode.

8. Click **Channel**.

   The LP-3000 highlights the background of the **Channel** display box.

9. Using the **Modify** edgewheel, select the first channel for editing.

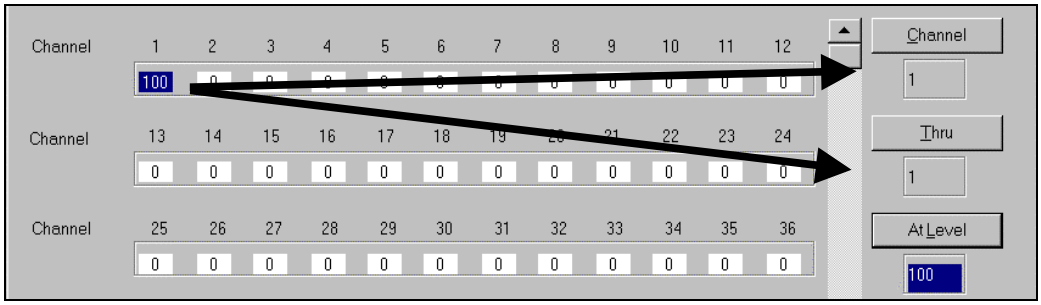
10. Click **Thru**.

11. Using the **Modify** edgewheel, select the last channel for editing.

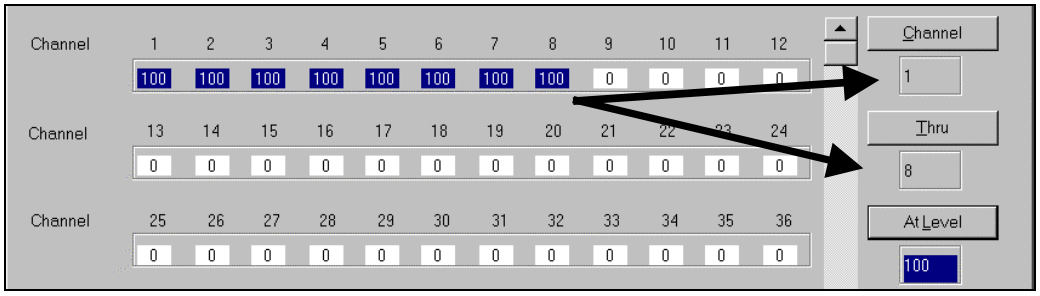
12. Click **At Level**.

    The LP-3000 highlights the range of channels that you have selected for editing.

    Single channel selected for editing:



Several channels selected for editing:



13. Using the **Modify** edgewheel, adjust the level for the channel or channels.
14. When the level is correct, click **At Level** a second time.

    This restores the marked block to a normal background and allows more channels to be selected.
15. Repeat steps 8 through 14 for all channels that you want to edit.
16. Click **Save** to save the changes.
17. Click **Discard** to delete the changes and restore the settings to their original values.
18. If desired, select another step and set levels for it.
19. When you are done, click **Exit to Stack Builder**.

Playing Back Cue Stacks

The **Stack Run** screen contains all controls that are used to play back stored cue stacks.

The **Stack Master** fader—located on the master control panel—controls the levels of the stack cues. No output will be seen on stage unless this fader is up.

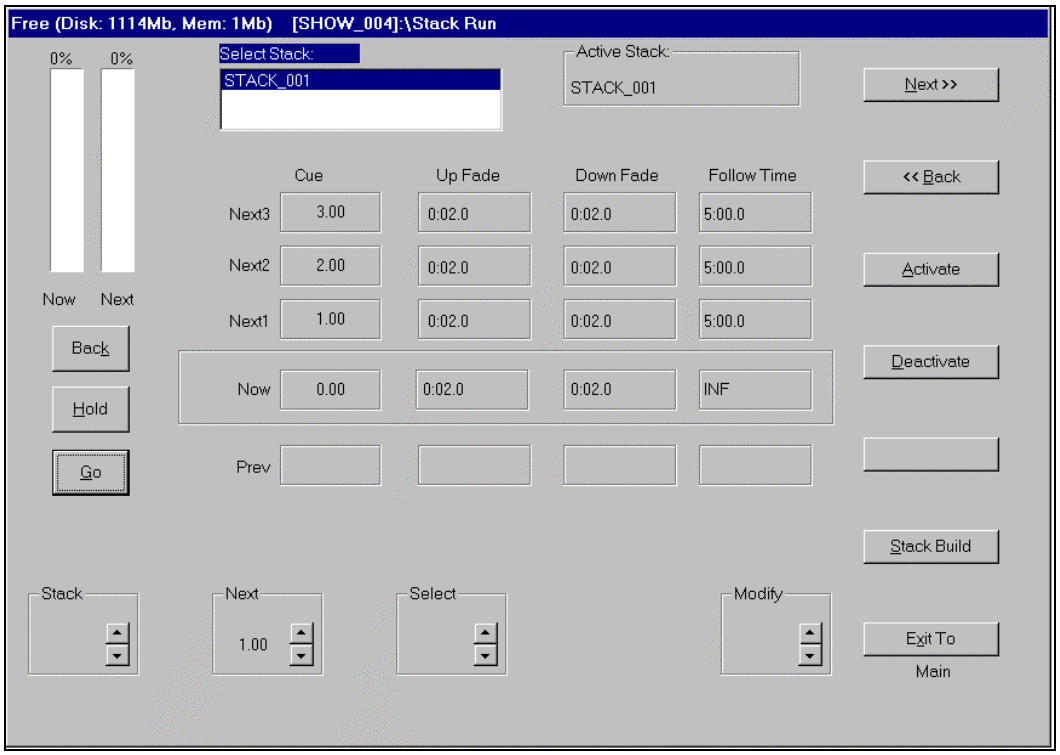
To Play Back a Crossfade Stack

1. From the **Main** screen, click **Stack**.

   The LP-3000 displays the **Stack Run** screen.

2. Using the **Stack** edgewheel, select a stack to play back.
3. Click **Activate**.

   The LP-3000 loads the stack.



   The area in the center of the screen contains the playback list, which shows **Now** (the current scene on stage) as well as the next three cues to be executed.

   For each cue, the fade times are shown. If automatic sequence cues have been built, a countdown value will be displayed in the **Follow Time** field. These cues will automatically execute without pressing the **Go** button after the wait time has elapsed. Please note that the follow time is expressed as the time from the beginning of the current cue fade to the beginning of the following cue. This allows fade times to be altered without requiring the follow time to be adjusted.

   In the upper left corner of the playback list are two gauges that display the status of fades that are in progress. The gauges also have a percentage field above them to indicate fade completion.

   Below the gauges are the images of the display panel **Back**, **Hold** and **Go** buttons. You can use the display panel buttons or click with the mouse on the screen images with the same result.

4. Press **Go** to start the fade from *now* to *next* at the defined fade rates.
5. Press **Hold** to freeze the fade at its current status.

This will be maintained until the **Hold** button is pressed again.

6. Press **Back** during a fade to stop and then reverse the fade at the defined rates.

   After a fade is complete, pressing **Back** will fade from *now* to the previous cue. This back operation will only return to the previous cue; it does not work backwards through the entire stack.

7. Click **Deactivate** to unload a stack.

Manual Crossfades

You can have complete control over the fade by using the display panel fader.

1. Instead of pressing **Go**, move the fader from one end of its travel to the other.

   The LED above the fader will be fully on when the fader is “armed” (completely at one end of its travel and ready to begin the fade).

   As the fader is moved, the brightness of the LED decreases as the fade nears completion.

   At the end of the fade the LED is again at full brightness.

   The **Stack Run** screen gauges are updated as the fader is moved, just as they would be for a timed fade.

Playback Order

When using the LP-3000 Stack, cues execute in sequential order; starting with the lowest cue number that was created. The operator can skip cues or execute out of the normal order by changing the cue selected as Next assignment.

1. To change the *next* cue in the playback, press and hold the **Next** button above the **Next** edgewheel.
2. While holding the button down, rotate the edgewheel until the correct step number is shown in the window above the edgewheel.
3. Release the button to accept the value.

Editing Stacks

Regardless of which method you used to create your stack, the LP-3000 provides common editing features that enable you to:

- Delete a step.
- Delete a stack.

To Delete a Step

1. From the **Main** screen, click **Stack**.

The LP-3000 displays the **Stack Run** screen.

2. Click **Stack Build**.

   The LP-3000 displays the **Stack Builder** screen.

3. Using the **Stack** edgewheel, select the stack from which you want to delete a step.

   The LP-3000 displays a list of all the steps that are part of the stack.

4. Using the **Select** edgewheel, activate the **Steps** column.

   The text on the menu buttons changes, indicating that you are ready to work with steps.

5. Using the **Step** edgewheel, select a step.

6. Click **Delete Step**.

   The LP-3000 deletes the step from the stack.

To Delete a Stack

1. From the **Main** screen, click **Stack**.

   The LP-3000 displays the **Stack Run** screen.

2. Click **Stack Build**.

   The LP-3000 displays the **Stack Builder** screen.

3. Using the **Select** edgewheel, activate the **Stacks** column.

4. Using the **Stack** edgewheel, select the stack that you want to delete.

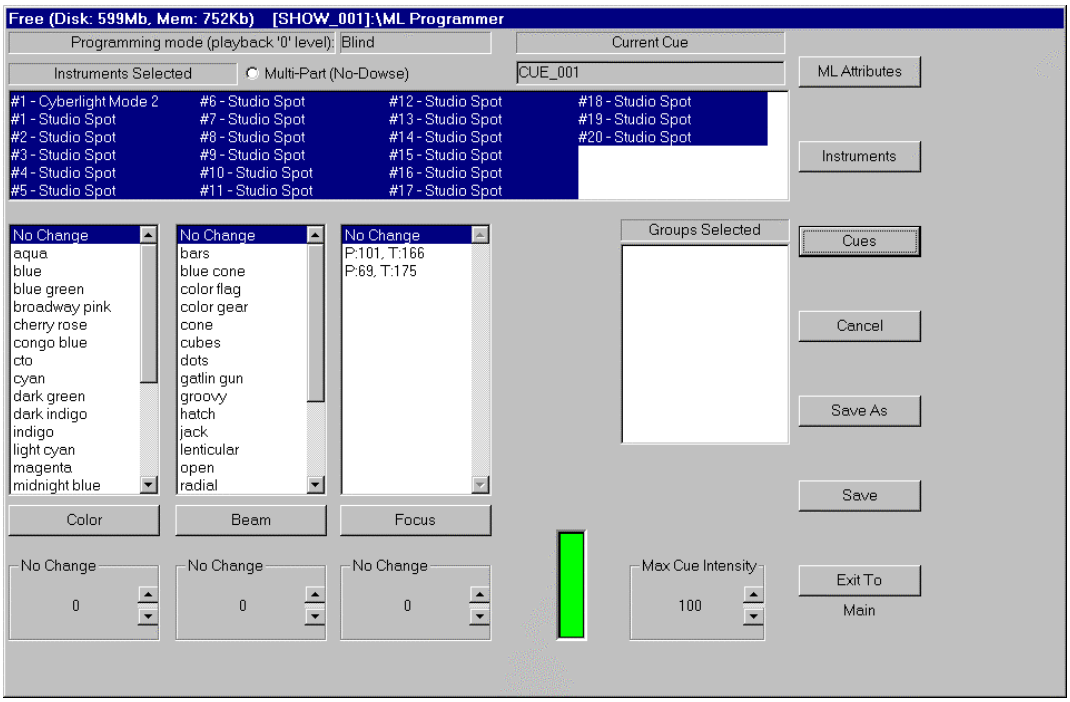
5. Click **Delete Stack**.

   The LP-3000 deletes the stack.

Section Three:
Moving Light Controller

Chapter Seven:
Moving Light Controller—Overview

The LP-3000 Moving Light Control software adds comprehensive moving light control features to the LP-3000. By using DMX as a control protocol, the LP-3000 is able to access the features of a wide range of instruments from different manufacturers. The following section will help get you acquainted with the features of the LP-3000 Moving Light Controller.



LP-3000 Programmer Screen

Moving Light Definitions

The basic premise has been accepted that only four properties of a beam of light can be changed. These properties are called:

- Color—The color of the light, whether controlled by a single color wheel or a group of color mixing wheels.
- Beam—The shape of the beam as modified by passing it through a variety of modifiers (shutter, iris, gobo).

- Intensity—The brightness of the beam, usually controlled by a mechanical dimmer in a moving light.
- Focus—The position of the beam and sharpness or definition of the beam edge.

All effects produced by modern moving lights are based on these four properties. The following list details the elements that are present in most moving lights.

Color (Color Property)

Color effects in a moving light are generally produced by placing a color media in the path of the beam. Dichroic filters are the media of choice. Usually a disc with several filters is placed so that rotating the disc will move one of the filters into position. Some fixtures have the ability to spin the color wheel continuously for an entertaining effect.

Color Mixing (Color Property)

Some advanced instruments use the combination of three-color media to produce a wide range of colors. Usually referred to as CYM or color mixing, three channels are used to set the relative saturation of the component colors. This also allows fading from one color to another without the abrupt change that is characteristic of a rotating color wheel.

Gobo (Beam Property)

A gobo is a cut out pattern that is inserted into the beam so as to project a pattern on the stage. Scholars have traced the term “gobo” to the Italian term for an idiot, translated as “dim bulb”. We are unsure of the significance of this fact. Suffice to say that the gobo has been around about as long as instruments with lenses.

As with color wheels, gobo wheels are positioned in the light beam and can be rotated to the proper position on cue. Some gobo sizes are standardized which allows custom gobo patterns to be fabricated and inserted into the gobo wheel for specific effects.

Shutter (Beam Property)

To produce a fast blackout, a mechanical shutter is used that blocks all light output very quickly. Opening and closing the shutter rapidly is used as a strobe effect.

Iris (Beam Property)

The iris of a Moving Light is identical to any other iris—a clever multi-leaf element that produces a variable sized round aperture. As the iris size changes, the intensity of the remaining beam remains constant.

Rotating and Indexed Gobos (Beam Property)

Another special effect is the ability to rotate a gobo pattern. This is not to be confused with spinning the entire wheel. Still another stepper motor is used to rotate the individual gobo in its position on the gobo wheel. Usually another control channel is used to set the rate and direction of the rotation. An associated effect allows the gobo to be precisely oriented, or indexed. This is important when the pattern is projected, such as a corporate logo.

Effects: Prisms and Frost (Beam Property)

The number of elements that can be introduced into the optic path is limited only by the imagination of instrument designers and the budgets of the users. Besides the standards of gobo and color, several popular instruments incorporate another general-purpose wheel for effects. These can include prisms to split the beam, color correction filters and diffusion media or “frost”. The exact features that are loaded in an effects wheel can vary widely.

Zoom and Focus (Beam Property)

Because Moving Lights are used for their static properties as well as their ability to move, manufacturers have added motor controls to the optics. The results are the ability to control the “sharpness” or definition of the beam edge (focus) and the size of the projected beam (zoom). Controlling the beam size with the iris maintains the intensity as the area of coverage changes. Zooming the fixture concentrates the light into a larger or smaller area with a corresponding change in illumination.

Dimmer (Intensity Property)

The high-performance Moving Lights of today usually utilize discharge lamps as a light source. These arc lamps are compact, efficient and have a high color temperature. On the down side, they require a large and heavy ballast and cannot be dimmed electrically. As a result, the dimming system usually consists of a mechanical element such as a disk with progressively narrower slots.

Mirror (Focus Property)

The positioning of the mirror is responsible for the “focus” or position of the beam. Generally, stepper motors are used to set the mirror position, with an XY axis for pan and tilt. Some instruments use a single 8-bit value for mirror position; other instruments use a 16-bit value. This information is significant only for ensuring that the LP-3000 set-up for an instrument is correct.

Because of the limitations in the pan and tilt mechanisms, the area that a moving mirror can light is restricted.

Instruments such as the Vari*lite and Studio color, on the other hand, are moving head or true moving lights. These instruments are less restricted in their range of movement but use all of the features of the LP-3000 Moving Light Controller software as a moving mirror instrument would.

No Change

On the LP-3000, there is an important feature known as *No Change*. This is referred to as *Transparency* in some moving light controllers.

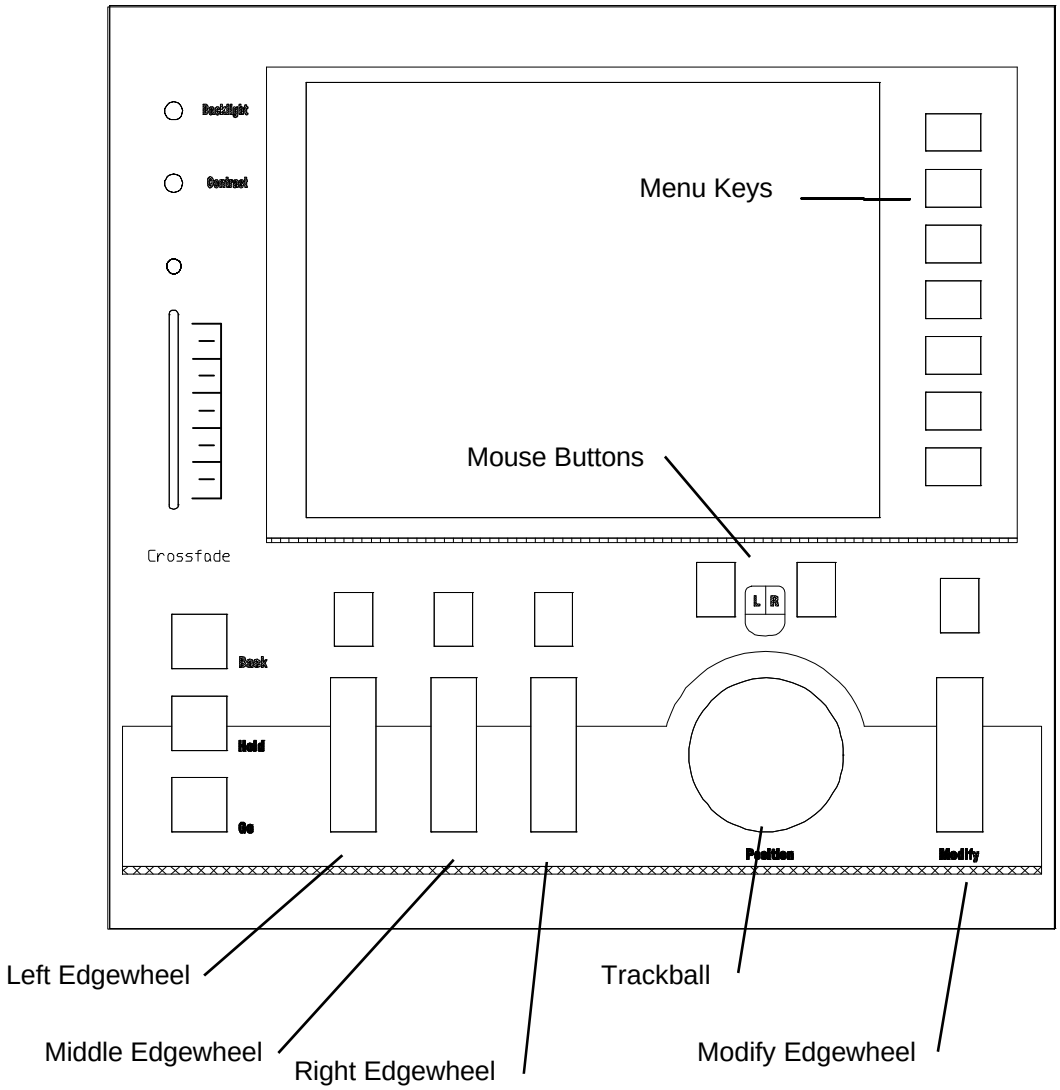
Moving light programming requires that each light in a cue be assigned values for the four properties described above—beam, color, focus and intensity.

In some cases, you may want the light to have the same color, for example, as the cue that precedes it. If you know that the sequence of cues will always be CUE_001 to CUE_002, then it is safe to hardcode the colors for the two cues so that they will be identical.

However, if CUE_002 may be preceded by a various cues, you can set the color to **No Change**. With this setting, the color for CUE_002 will be the same as whatever cue precedes it. The will be “no change” from the color in the previous cue.

No Change applies to color, beam and focus. It does not apply to intensity.

Panel Layout



Chapter Eight:
Moving Light Cue Programming

The process of creating a Moving Light cue consists of the following steps:

1. Selecting fixtures.

   In the selection process, you select individual fixtures and user- created groups of fixtures for recording or editing.

2. Creating focus positions for the fixtures.

3. Setting Moving Light properties.

   Use the **Programming** screen to set the color, beam, focus and intensity for the selected fixtures.

4. Saving the cue.

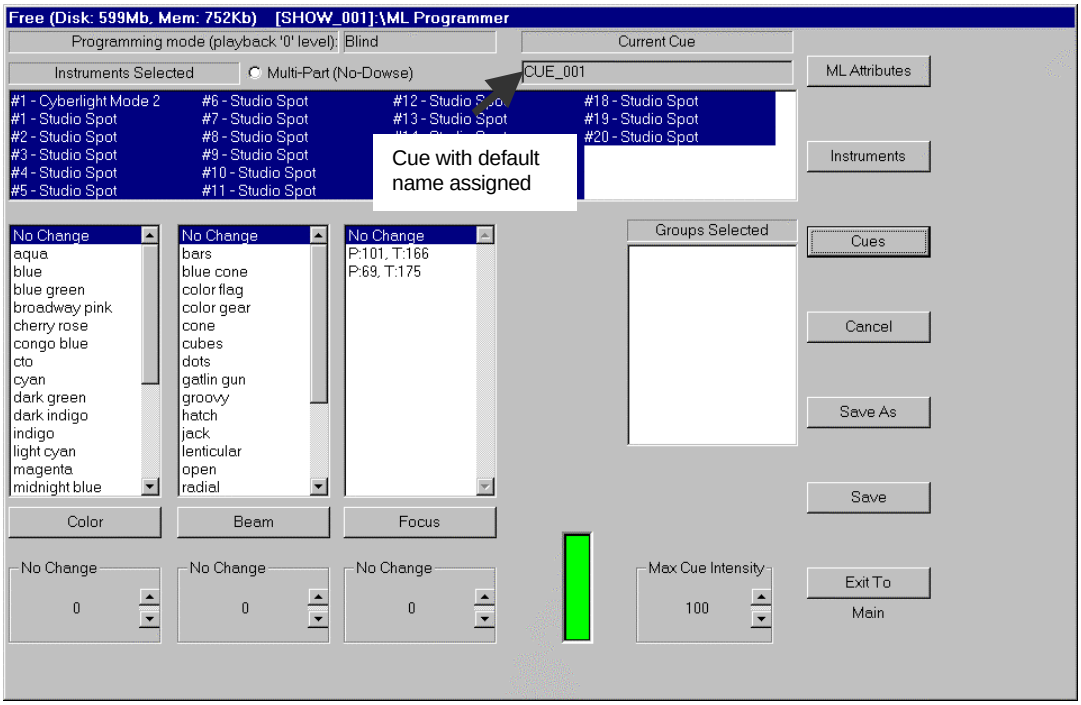
   Once the look is right, save the new cue.

Getting Started

Before you can work with moving lights, you must create a new show and assign lights to it *or* open an existing show. For details, please see ***To Create a New Show*** beginning on page 22, ***To Install a Conventional Fixture into the*** System beginning on page 28, or ***To Open an Existing Show*** beginning on page 23.

1. From the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.



The LP-3000 automatically creates a new cue as a starting point for programming. Cues are assigned default names: Cue_001, Cue_002 and so forth.

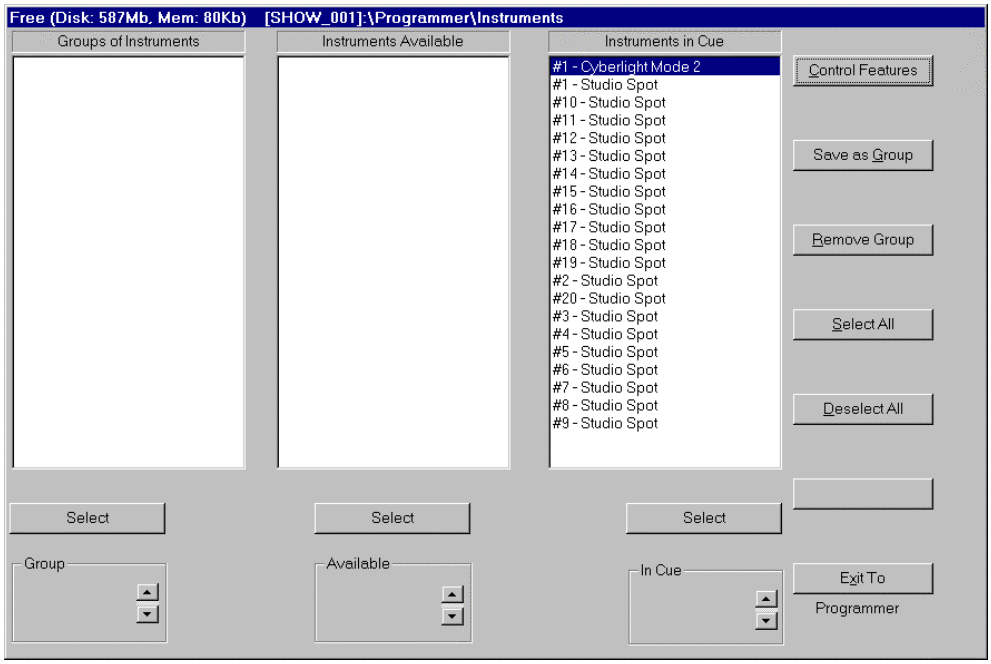
Also, a default instrument selection is made, with all instruments currently in the show assigned to the new cue.

Selecting Fixtures

When entering the **Programmer** screen for the first time, all available instruments are assigned to the cue. You can easily change this.

1. Click **Instruments**.

   The LP-3000 displays the **Instruments** screen.



The **Instruments** screen consists of three sections:

The **Instruments Available** section displays all fixtures that are in the show but not yet assigned to the cue.

The **Instruments in Cue** section displays all fixtures that are assigned to the cue.

The **Groups of Instruments** section displays fixtures that have been grouped together because they are frequently used as a set.

If this is a new show, all instruments are in the cue.

2. Select the instruments for the cue.

To:	Do:
Move one instrument from the **Instruments in Cue** list to the **Instruments Available** list.	Use the **In Cue** edgewheel to select an instrument. Click the **In Cue Select** button. The LP-3000 moves the instrument from the **Instruments in Cue** list to the **Instruments Available** list.
Move one instrument from the **Instruments Available** list to the **Instruments in Cue** list.	Use the **Available** edgewheel to select an instrument. Click the **Available Select** button. The LP-3000 moves the instrument from the **Instruments Available** list to the **Instruments in Cue** list.

To:	Do:
Move all instruments from the **Instruments in Cue** list to the **Instruments Available** list.	Click **Deselect All**.
Move all instruments from the **Instruments Available** list to the **Instruments in Cue** list.	Click **Select All**.

4. When you are done, click **Exit to Programmer**.

Instrument Groups

One way to streamline cue programming is to program fixtures as a group. For example, you may have a group of lights for the drummer, a group of lights for the right side of the stage and a group of lights for the left side of the stage.

To simplify programming, groups should consist of instruments of the same type.

To Create an Instrument Group

1. From the **ML Programmer** screen, click **Instruments**.

   The LP-3000 displays the **Instruments** screen.

2. Move only the instruments that should be included in the group to the **Instruments in Cue** list.

3. Click **Save as Group**.

   The LP-3000 displays the **New Group** dialog box.

4. Use the keyboard to enter a name for the group or accept the default. Default names follow the pattern Group_001, Group_002 and so forth.

5. Click **OK**.

   The new group appears in the **Groups of Instruments** list.

To Edit an Instrument Group

1. From the **ML Programmer** screen, click **Instruments**.

   The LP-3000 displays the **Instruments** screen.

2. Do one of the following:

To:	Do:
Include a group in a cue.	Use the **Group** edgewheel to select a group from the **Group** list. Click the **Group Select** button. The LP-3000 displays the names of the individual instruments from the group in the **Instruments in Cue** list.
Remove one member of a group from a cue.	Follow the procedure for removing individual instruments from a cue.
Remove a group from a cue.	Follow the procedure for removing individual instruments from a cue. Repeat for each instrument in the group.
Delete an unwanted group.	Use the **Group** edgewheel to select a group from the **Group** list. Click **Remove Group**. This action is permanent and cannot be undone.

NOTE: To use a group in playback mode, the instruments in the group must be included in the **Instruments in Cue** list.

Live Mode versus Blind Mode

Preset 0 controls the output of the **Programmer** screen. With **Preset 0** at 0%, changes are not visible on stage as a cue is built. This is referred to as a “blind” cue. With **Preset 0** at any position greater than 0%, the effect of changes in label selections is visible on stage as the cue is built. This is referred to as a “live” cue.

To switch between live and blind mode, adjust **Preset 0** (located at the far left of the preset playbacks) to the correct level for “live” or “blind” programming.

To:	Do:
Build a “blind” cue.	Adjust **Preset 0** to 0%.
Build a “live” cue.	Adjust **Preset 0** above 0%.

The LP-3000 displays the **Programming Mode** (live or blind) at the top of the **Programmer** screen and many others.

Setting Cue Properties

After you have selected the instruments and groups for the cue, you are ready to set the properties for each fixture in the cue.

Fixtures have a library of labels for each property. A label may represent the value of one attribute or the values of several attributes that—combined together—control the appearance of a property.

For example, the Intellabeam 8 Channel has eight attributes. Each attribute has a range of values, usually from 0 to 255.

Attribute	Property Affected
Color Wheel 1	Color
Shutter	Beam
Gobo Wheel 1	Beam
Iris	Beam
Speed	Beam
Pan	Focus
Tilt	Focus
Dimmer	Intensity

The Color property is controlled by one attribute—Color Wheel 1. The label for the attribute value “Color Wheel 1=79” is “Pink”.

The Beam property is controlled by four attributes—Shutter, Gobo Wheel 1, Iris and Speed. The label for the attribute values “Gobo Wheel 1=119” and “Iris=128” might be “Half Open Star”.

You are not limited to using the stock labels that are supplied with the LP-3000. You can create custom labels, as described in ***Chapter Twelve: Creating New Labels*** beginning on page 119.

There are two methods by which you can set fixture properties for a cue:

- Label Programming—Select stock or custom labels for each property in the cue.
- Attribute Programming—define cue properties by setting DMX values for each attribute.

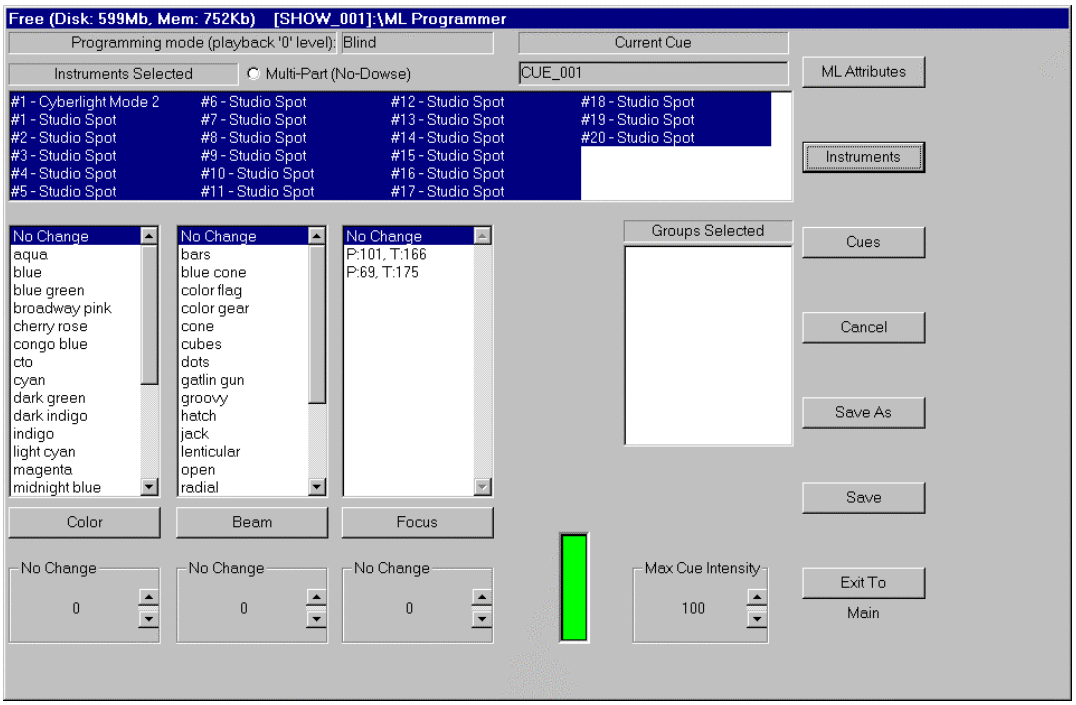
Label Programming is faster and easier to record and edit with than Attribute Programming. We recommend that you use Label Programming while you are becoming familiar with the LP-3000.

Attribute Programming provides finer control over cue properties. Once familiar with Label Programming, you will find Attribute Programming to be quite simple to learn and very powerful. Please see ***Chapter 11: Attribute Programming*** beginning on page 115 for complete details.

To Set Cue Properties by Label

1. If you are not at the **Programmer** screen, from the **Main** screen, click **ML Program**.

The LP-3000 displays the **Programmer** screen.



The **Instruments Selected** section of the screen displays the instruments that are assigned to the cue.

In the main section of the **Programming** screen, the LP-3000 displays three lists, one each for **Color** labels, **Beam** labels and **Focus** labels. The lists display all custom and stock labels in the library for the selected instrument or instruments.

NOTE: When one instrument—or several instruments of the same type—are selected, the lists display labels for that instrument type only. When two or more instrument types are selected, the lists display all labels for all the selected instrument types.

The **Groups Selected** section shows all the groups that are assigned to the cue.

In the lower right corner of the screen, the LP-3000 displays the **Max Cue Intensity** controller.

2. Using the mouse, select a fixture or group to program.

   If you select a group, under **Instruments Selected**, the LP-3000 automatically selects only those instruments that are part of the group.

3. Using the edgewheels, select the desired labels for each property of the cue: **Color**, **Beam** and **Focus**.

If you have not yet created any Focus labels, you will need to do so now. Please see **To Create a Focus Label** beginning on page 124 for complete details.

For Color, Beam and Focus, you can select the option **No Change**. This means that the cue will not change the previous setting for the property during playback.

4. Using the **Max Cue Intensity** edgewheel, set the intensity for the instruments.

5. When you are done, click **Save As**.

   The LP-3000 displays the **New Cue** dialog box. Enter a name for the cue or accept the default. Default names follow the pattern CUE_001, CUE_002 and so forth. Click **OK**.

   For an alternate way to save cues, see ***Saving the Cue to a Playback*** beginning on page 93 for more details.

6. If you have not programmed all the instruments in the cue:

   a. Deselect the instrument or group that you just programmed.

   b. Select the next instrument or group.

   c. Repeat steps 3 through 4 above.

   d. Click **Save**.

Save As Cue

You will see the following behavior when you select **Save as Cue**.

1. With a single instrument selected, the selected instrument's settings will be saved. All other instruments will be saved as **NC** (no change).

2. With all instruments selected (of the same type), all instruments will be saved with the same settings.

3. With some—but not all—instruments selected, the selected instruments will be saved with identical settings. The instruments that are not selected will be saved as **NC** (no change).

4. With several instrument types selected, the programmer will save the selected settings where applicable and will change everything else to **NC** (no change). For example, you select instruments of Type 1 and Type 2 and set the color to Green. Only the Type 1 instruments support the color Green. The color for Type 1 instruments will be set to Green and the color for Type 2 instruments will be set to **NC** (no change). For this reason, we recommend that only one instrument type be programmed at a time.

Saving the Cue to a Playback

Moving Light cues can be directly assigned to faders for playback. The process is similar to other areas of the LP-3000; 20 pages of 18 playbacks are used to process Moving Light cues as well as conventional looks.

Each playback fader can store a single Moving Light cue or a sequence of cues—called a cuelist. Once stored to a fader, the cues in the cuelist can be played back one at a time or converted to a Moving Light chase or stack.

To Save the Cue to a Playback

With the **Programmer** screen displaying the cue you just created:

1. Move the key switch to the *Unlock* position.
2. Press the **Record** button, located to the right of the key switch.
3. Use the **Page** edgewheel to select the desired page.

   The **Page** edgewheel is located to the left of the **Preset Title** displays.
4. Create a look for one instrument or group.
5. Press the **Solo** button of the desired playback to save the look as the first step of the Moving Light sequence or “cue list”.

   CAUTION: Pressing the **Solo** button erases all steps of any Moving Light cuelist assigned to the Preset Playback for that page.

   The LP-3000 saves the cue to the playback and automatically assigns it a name that reflects its page, playback and step number. For example, a cue named:

   pg01_pb01_s01

   has been recorded to Page 1, Playback 1, Step 1.
6. If desired, deselect the instrument or group, select a different instrument or group, create a look and press **Save**.
7. Set additional steps.

   Continue to select instruments and set properties using either label programming or attribute programming.

   Press the **Add** button of the playback to save each additional step. The LP-3000 automatically assigns a name to each new cue, such as:

   Pg01_pb01_s02
8. Press the **Run** button, located to the right of the key switch, to stop recording.

To Check the Cue

When you have finished programming a Moving Light cue, you can check it immediately.

1. Adjust **Preset 0** down to the zero level position.
2. Bring up the playback to which you just assigned the cue.

   The LP-3000 displays the first step in the cuelist.
3. Press the **Preset Select** button for the playback to view the next step in the cuelist.
4. Continue to press the **Preset Select** button for the playback until you have viewed all steps in the cuelist.

Chapter Nine:
Moving Light Cue Playback

Whether your Moving Light show consists of one cue assigned to one playback or many cues assigned to many playbacks, you use the same basic procedure to run the show. This procedure is called *playback* and is described in this chapter.

The LP-3000 provides three ways to play back a Moving Light show:

- Cuelists: A cuelist is a series of steps assigned to the same page and playback. Each step in a cuelist has default start delay and fade times and an infinite hold time. These can be adjusted from the **Options** screen. You usually play back each step in the cue by pressing the **Select** button for the playback. Alternatively, you can program the cuelist to play back automatically by setting the hold time, start delay and fade time for each step in the cuelist.
- Chases: A chase is also a series of steps assigned to the same page and playback. A chase automatically executes its steps at a fixed rate (expressed in beats per minute), looping continuously until the playback is returned to the zero level position. When you convert a cuelist to a chase, default or programmed start delay, fade and hold times are ignored.
- Stacks: A stack has characteristics of both a cuelist and a chase. You play back a stack by pressing the **Select** button to move from step to step—just as you would with a cuelist. However, a stack loops back to Step 1—just like a chase—so that it can be played back as many times as desired. When you convert a cuelist to a stack, default or programmed start delay, fade and hold times are ignored. Special moving light stack defaults—available from the **Options** screen—are available for setting the desired start delay and fade times.

Cue and Cuelist Playback

In ***Chapter Eight: Moving Light Cue Programming***, we describe the basic techniques used when programming a single cue or a series of cues (cuelist).

While you program, you will undoubtedly test each cue to ensure that you have achieved the look you desired. After you have programmed several cues or cuelists, you may want to test them as a series of events. Finally, you are ready to rehearse or run your show. No matter which stage you are in, you use the same procedure to play back your cues and cuelists.

To Play Back a Cue or Cuelist

NOTE: Before you can play back a show, you must have programmed at least one cue.

1. Ensure that the LP-3000 is in Run mode. If it is not, press the **Run** button, located to the right of the key switch.
2. If necessary, adjust **Preset 0** down to the zero level position.
3. Bring up the playback to which the cue or cuelist is assigned.

   All attributes except intensity will begin to change to their new position when the fader reaches 10%. The intensity is controlled directly by the position of the playback fader.
4. If several cues are recorded to a playback as a cuelist, press the **Select** button above the playback to initiate the next cue.

   Bringing up the playback fader starts the fade into the first cue. Pressing the **Select** button above the playback advances the cuelist to the next cue. In this way, a single playback can control many Moving Light cues.

   At any time, returning the fader to zero will bring down the intensity of the cue to zero. Bringing the fader back up from zero will output the first cue in the list.

Because the LP-3000 Moving Light Controller supports tracking, the order in which the playbacks are used determines the final look on stage. All 18 playbacks may be used at the same time.

Because a Moving Light cue can have one or more properties set to **No Change**, the look of each cue is frequently dependent upon the playback order. A cue with the Color property set to **No Change**, for example, will be green if the preceding cue is green, red if the preceding cue is red and so forth.

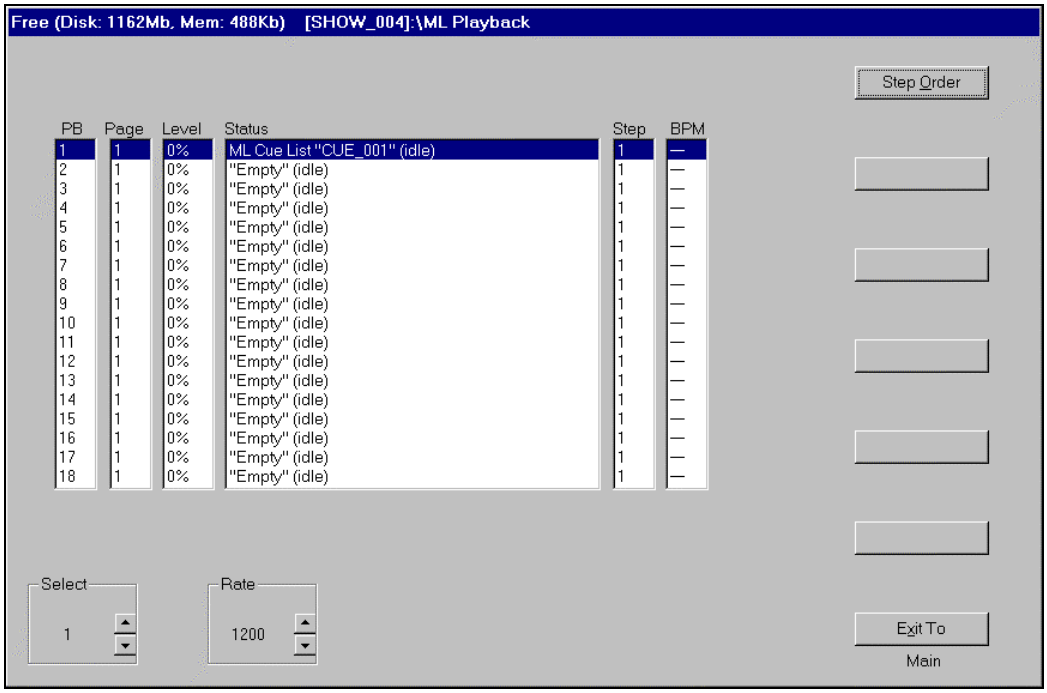
Viewing the Playback Status

The LP-3000 provides a display screen to show the status of the playbacks.

To View the Playback Status

1. From the Main screen, click **ML Playback**.

   The LP-3000 displays the **Playback** screen.



The **Playback** screen shows each page, each playback, any Moving Light cues that are assigned and the active step of each cue.

It also displays the levels of the active steps (expressed in percentages) and the rate of any chases you have set (expressed in BPM or beats per minute).

Changing Cue Order

You can easily change the order of the Moving Light cues assigned to a playback.

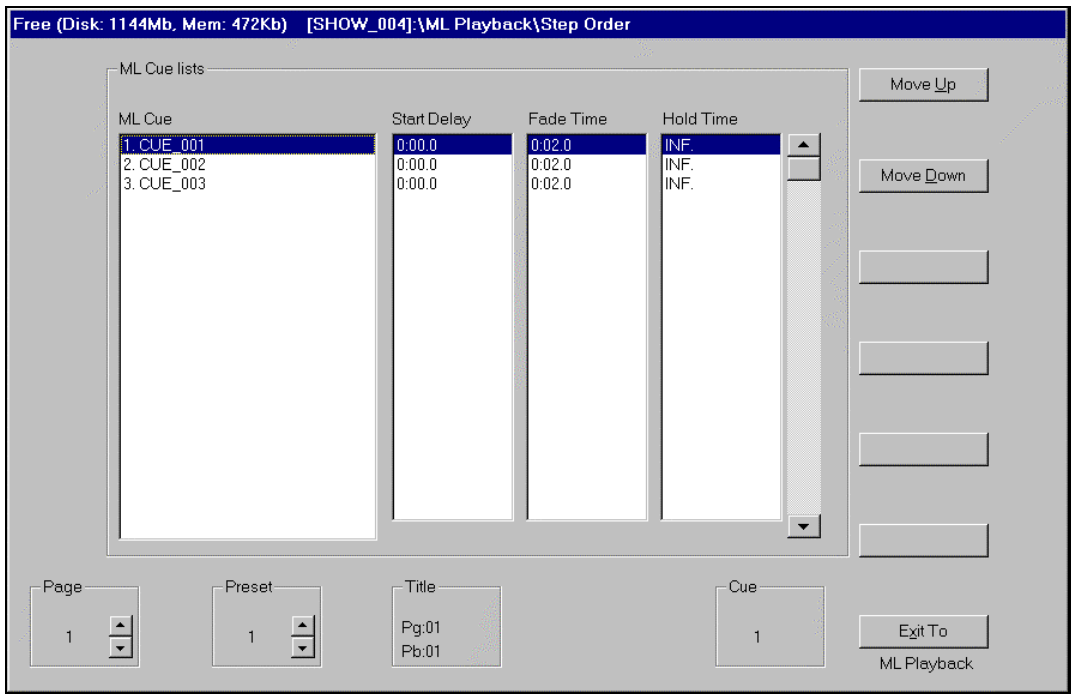
To Change the Cue Order

1. If you do not have the **Playback** screen displayed, from the **Main** screen, click **ML Playback**.

   The LP-3000 displays the **Playback** screen.

2. Click **Step Order**.

   The LP-3000 displays the **Step Order** screen.



3. Using the **Page** edgewheel, select the desired page.
4. Using the **Preset** edgewheel, select the desired playback.

   After you select the desired page and playback, the LP-3000 displays the list of associated cues, their start delays, fade times and hold times.
5. Do one or more of the following:

To:	Do:
Select a cue from the list.	Use the **Cue** edgewheel.
Move a cue to a higher position on the list.	Click **Move Up** until the cue is in the desired position.
Move a cue to a lower position on the list.	Click **Move Down** until the cue is in the desired position.

6. When you are done, click **Exit to ML Playback**.

Converting a Moving Light Cuelist to a Chase

A unique feature of the LP-3000 will convert a Moving Light cuelist to a Moving Light chase with a single button. This feature saves you from having to enter time values for each step of a chase.

To Convert a Cuelist to a Chase

1. Use the procedures described in ***Chapter Eight: Moving Light Cue Programming*** to create a Moving Light cuelist.
2. From the **Main** screen, click **ML Playback**.
3. Scroll until the cuelist is visible on the screen.
4. Play back the cuelist by bringing up its playback fader.
5. Go to Run mode by pressing the **Run** button on the master panel.
6. Press and hold the **Chase Enable** button on the Master panel. While holding the button, press the **Select** button above the playback.

   The LP-3000 automatically converts the cuelist to a chase for playback. The LP-3000 sequences through all programmed steps and then loops from the last step back to the first.
7. To adjust the chase rate, hold down the playback **Select** button and tap the **Tap** button located on the master panel above the **Chase Level** fader.

   Faster tapping results in a faster chase. Slower tapping produces a slower chase.
8. To save the chase rate, keep the chase running and put the LP-3000 in Record mode.
9. Go to the Moving Light **Programming** screen and press the **Add** button of the playback.

   The rate set with the **Tap** button is a temporary change unless it is saved.

To Convert a Moving Light Chase back to a Cuelist

1. From the **Main** screen, click **ML Playback**.
2. Scroll until the chase is visible on the screen.
3. Go to Run mode by pressing the **Run** button on the master panel.
4. Play back the chase.
5. Press and hold the **Chase Enable** button on the Master panel. While holding the button, press the **Select** button above the playback.

   The LP-3000 automatically converts the chase back to a cuelist.

Converting a Moving Light Cuelist to a Stack Loop

Another unique feature of the LP-3000 will convert a Moving Light cuelist to a Moving Light stack that will loop from the last step back to the first. This feature provides a rolling cuelist that moves to the next step each time the **Select** button for the playback is pressed.

To Convert a Cuelist to a Stack Loop

1. Use the procedures described in ***Chapter Eight: Moving Light Cue Programming*** to create a Moving Light cuelist.
2. From the **Main** screen, click **ML Playback**.
3. Scroll until the cuelist is visible on the screen.
4. Play back the cuelist by bringing up its playback fader.
5. Go to Run Mode by pressing the **Run** button on the master panel.
6. Press and hold the **Stack Enable** button on the Master panel. While holding the button, press the **Select** button above the playback.

   The LP-3000 automatically converts the sequence to a looping stack for playback. Each time you press the playback **Select** button, the cue stack advances one step and finally loops from the last step back to the first step.
7. Save as a stack loop.

   Put the LP-3000 in Record mode. Then go to the Moving Light **Programming** screen. Press the **Add** button of the playback. The LP-3000 saves the cuelist as a looping stack.

To Convert a Moving Light Stack back to a Cuelist

1. From the **Main** screen, click **ML Playback**.
2. Scroll until the stack is visible on the screen.
3. Go to Run mode by pressing the **Run** button on the master panel.
4. Play back the stack.
5. Press and hold the **Stack Enable** button on the Master panel. While holding the button, press the **Select** button above the playback.

   The LP-3000 automatically converts the stack back to a cuelist.

Overriding a Look

While playing back a cuelist, chase or stack, you may have reason to override the look that is currently displayed. Unexpected circumstances on stage are the most common reason why you would want to override the current look.

To Override a Look

1. While the current cuelist, chase or stack is executing, create the cue with which you will override the look.

   Do this by programming a new cue in “blind” mode (with Preset 0 down).

   You do not need to save the cue or assign it to a Preset.
2. At the point when you want to override the look, bring up Preset 0.

3. Bring down Preset 0 to return to the cuelist, chase or stack that was running previously.

Chapter Ten:
Advanced Moving Light Cue Programming

In this chapter we describe programming techniques for LP-3000 users who are already familiar with basic Moving Light features and functionality.

Included in this chapter are step-by-step procedures for:

- Programming **multi-part cues** in which different fixture types can be programmed at the same time.
- **Editing** Moving Light cues that were created previously.
- Programming cues in **off-line mode**.

Multi-Part Cues

If you want to include different types of fixtures in a cue, you will find it more convenient to program each fixture type separately.

If you select different types of instruments at the same time, the LP-3000 displays all labels that apply to any attributes of the selected fixture types. For example, if a PAL1200 and an Intellabeam are selected, Shutter labels will be listed in the beam attributes, even though they cannot be applied to the Intellabeams. When the cue is saved, only those labels that are appropriate are applied to each fixture. Others are saved as “No Change”.

To simplify cue programming, a single cue could be built by first selecting and programming one instrument or group, saving this part, then selecting and programming the instrument or group, saving that part, and so forth. The result would be saved as a single cue.

“Multi-part” programming enables you to program in this fashion and still see all lights—whether they are selected or not.

To Create a Multi-Part Cue

1. Use the **Instruments** screen to pick all of the instruments that will be in the cue.

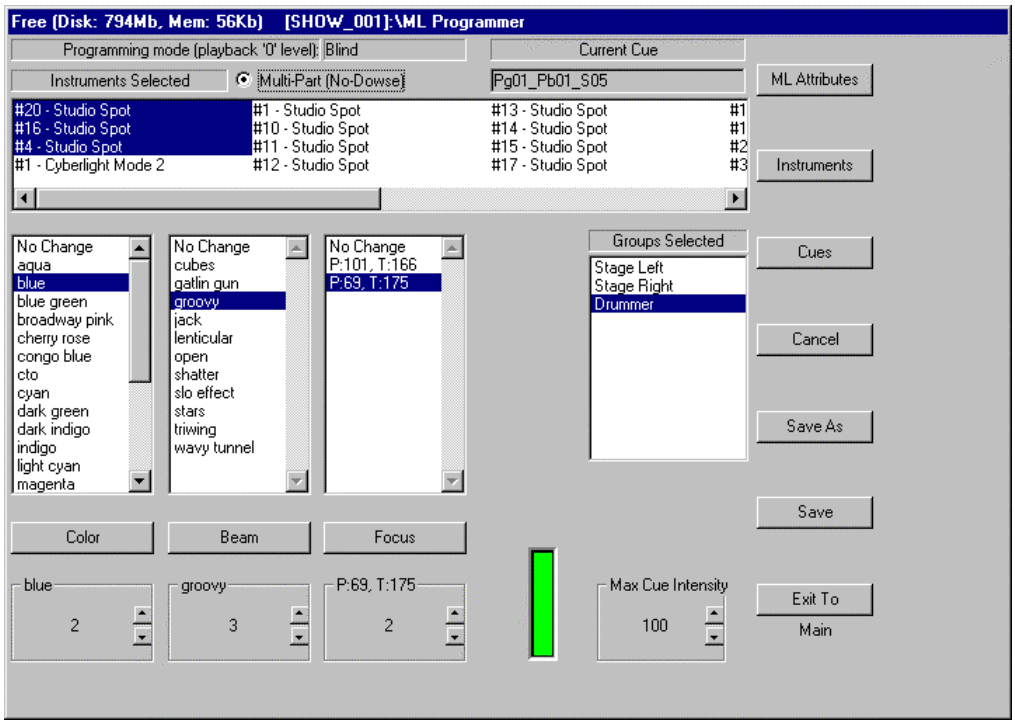
   See ***Selecting Fixtures*** beginning on page 86 for complete details on selecting the instruments for a cue.

2. Click **Exit to Programmer**.

   The LP-3000 displays the **Programmer** screen.

3. Select **Multi-Part (No-Dowse)**.

   This option enables you to program a cue in phases or “parts”. Unlike single part cue programming, when you program in multi-part mode, all instruments that are assigned to the cue stay lit, even if they are deselected.



4. Use the mouse to make your first instrument or group selection.

5. Use the edgewheels to select the labels for the selected instrument or group.

   See ***To Set Cue Properties by Label*** beginning on page 90 for complete details.

6. Save the first cue part as you would normally.

7. Using the mouse, change the instrument selection.

8. Again, use the edgewheels to select the labels for the selected instrument or group.

9. Click **Save** (at the right of the screen).

   Because **Multi-Part (No-Dowse)** is selected, the LP-3000 *adds* these instrument properties to the cue—instead of replacing or overwriting the cue.

10. Repeat steps 7 through 9 until you are done with the cue.

    Be sure to deselect **Multi-Part (No-Dowse)** when you are done with your multi-part programming.

Editing Moving Light Cues

Moving Light cues built on the LP-3000 can be edited at any time.

Editing Moving Light cues includes:

- Adding a new cue to a show.
- Deleting a cue from a show.
- Editing the labels or attribute values of a cue.
- Renaming a cue.
- Adding a cue to insert in a cue list.

Fast Cue Editing

1. Move the key switch to the *Unlock* position.
2. Press the **Edit** button, located to the right of the key switch.
3. If you are not at the **Programmer** screen, from the **Main** screen, click **ML Program**.
4. Use the **Page** edgewheel to select the desired page.
5. Press the **Solo** button of the desired playback to load the first cue assigned to it.
6. If more than one cue is assigned to the playback (a cuelist), press the **Add** button until the correct cue step is loaded in the **Programming** screen.

   The **Cue List** will show the name of the cue that is loaded.
7. Edit the cue by selecting different labels or attribute values.

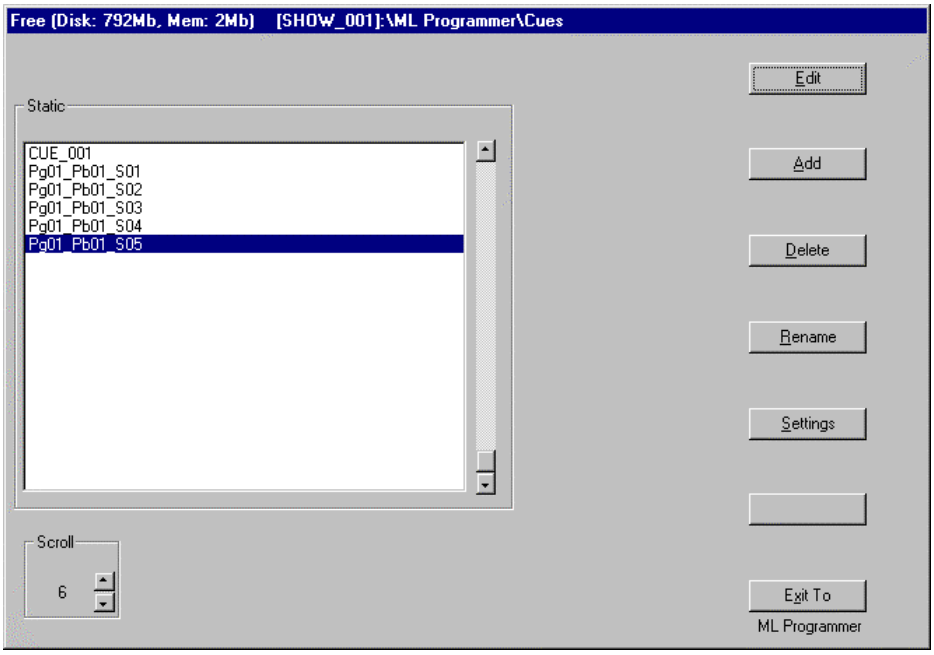
   See ***To Set Cue Properties by Label*** beginning on page 90 for more details.
8. When you are done editing the cue, click **Save** to save the new settings.

To Select a Cue for Editing

1. If you are not at the **Programmer** screen, from the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.
2. Click **Cues**.

   The LP-3000 displays the **Cues** screen.



3. Using the **Scroll** edgewheel, select the cue that you want to add, delete, edit or rename.

   If Playback 0 is up, as you scroll through the list of cues, they are displayed in the lights.

4. With the cue selected, click **Add**, **Delete**, **Edit** or **Rename**.

To Add a New Cue to a Show

1. Open the **Cue List**.

   Follow the first two steps of the procedure ***To Select a Cue for Editing*** beginning on page 105.

2. Click **Add**.

   The LP-3000 displays the **New Cue** dialog box.

3. Under **Cue**, enter a name for the new cue.

   If you do not enter a name, the LP-3000 assigns a default name to the cue. Default names follow the pattern CUE_001, CUE_002 and so forth.

4. Click **OK** to add the new cue.

   If you do not want to add the cue, click **Cancel**.

To Delete a Cue from a Show

1. Open the **Cue List** and select the cue that you want to delete.

   Follow the first three steps of the procedure ***To Select a Cue for Editing*** beginning on page 105.

2. Click **Delete**.

   The LP-3000 deletes the cue from the show.

   CAUTION: This action cannot be undone.

To Edit a Cue

1. Open the **Cue List** and select the cue that you want to edit.

   Follow the first three steps of the procedure ***To Select a Cue for Editing*** beginning on page 105.

2. Click **Edit**.

   The LP-3000 displays the **Programmer** screen.

3. Edit the cue by selecting different labels or attribute values.

4. When you are done editing the cue, click **Save** to save the new settings.

To Rename a Cue

1. Open the **Cue List** and select the cue that you want to rename.

   Follow the first three steps of the procedure ***To Select a Cue for Editing*** beginning on page 105.

2. Click **Rename**.

   The LP-3000 displays the **Rename Cue** dialog box.

3. Under **Cue**, enter a new name for the cue.

4. Click **OK** to rename the cue.

   If you do not want to rename the cue, click **Cancel**.

To Add a Cue to Insert in a Cuelist

1. If you are not at the **Programmer** screen, from the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.

2. If desired, click **ML Attributes**.

   The LP-3000 displays the **Programmer** screen for attributes.

3. Program a cue as you normally would and add it to the cue list by pressing the **Add** button for the playback.

   The cue is automatically added to the end of the cuelist.

4. Change the position of the cue in the cuelist.

   Follow the procedure given in ***Changing Cue Order*** beginning on page 97.

Programming Cues in Off-line Mode

There are several instances in which it is more convenient to program in off-line mode:

- When you have a list of cues and their properties.
- When the LP-3000 is unavailable, such as when you're traveling.

The procedures for programming cues in off-line mode are similar to those used when programming on the LP-3000. The differences are highlighted in this section.

To Program a New Cue

1. Program a cue as you normally would.
2. When you are done, click **Save As**.

   The LP-3000 displays the **New Cue** dialog box.
3. Accept the default name or enter the name of your choice.

   Default names follow the pattern CUE_001, CUE_002 and so forth.
4. Click **OK** or press the ENTER key on the keyboard.

   The LP-3000 saves the cue and all of its properties. You can leave the properties as they are or edit them and save the cue.

To Create a Cuelist

The LP-3000 allows you to program cuelists that are not immediately tied to playbacks.

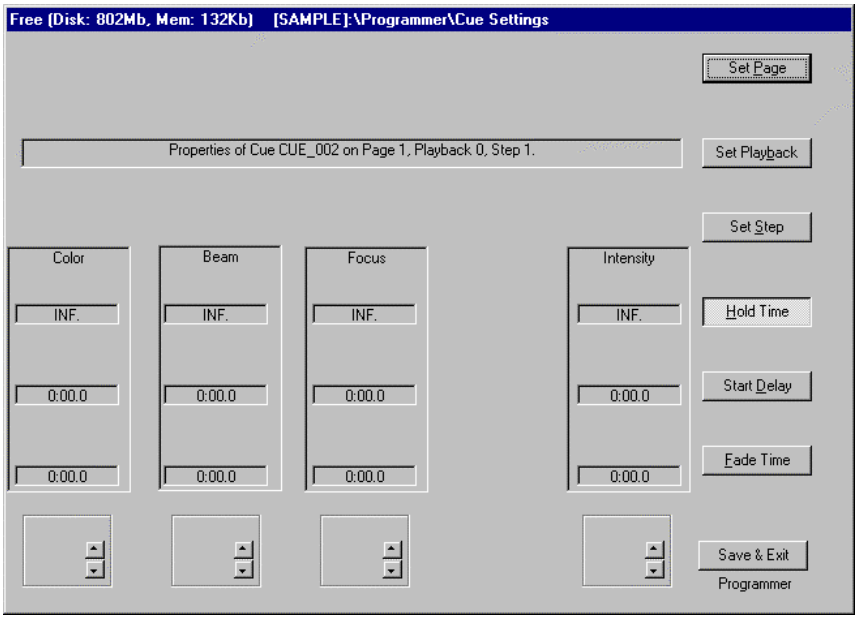
1. If you are not at the **Programmer** screen, from the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.
2. If desired, click **ML Attributes**.

   The LP-3000 displays the **Programmer** screen for attributes.
3. Click **Cues**.

   The LP-3000 displays the **Cue Settings** screen.
4. Using the **Scroll** edgewheel, select the first cue for the cuelist.
5. Click **Settings**.

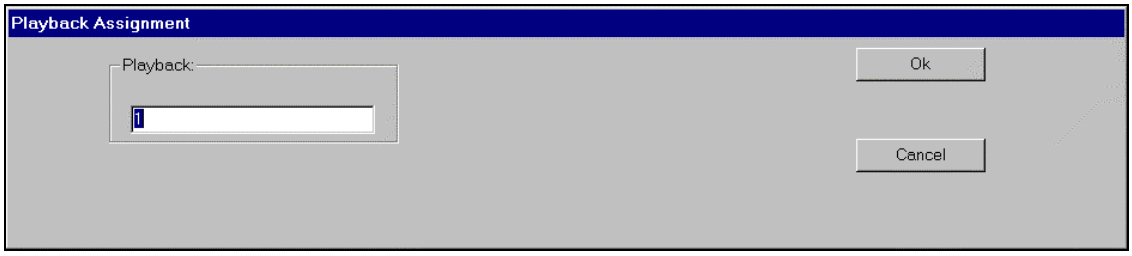
   The LP-3000 displays the **Cue Settings** screen and shows the properties of the cue that you selected in step 4.



NOTE: Hold Time, Start Delay and Fade Time are discussed in the next section, ***Hold, Start Delay and Fade Times*** beginning on page 110.

6. To assign the cue to a page, click **Set Page**, enter a page number and click **OK**.

7. To assign the cue to a playback, click **Set Playback**, enter a playback number and click **OK**.



8. To assign the cue to a step, click **Set Step**, enter a step number and click **OK**.

9. Click **Save and Exit to Programmer**.

10. Repeat steps 4 through 9 for all cues that you want to assign to the cuelist.

    NOTE: For each additional step that you add to the cuelist, the LP-3000 will ask if you wish to re-circulate from the new step back to the first step. If you click **Yes**, you create a chase that cycles from step 1 through this step and back to step 1. If you click **No**, the LP-3000 continues to program the steps in sequence. Using the re-circulate feature is a way to create a chase in off-line mode programming.

Hold, Start Delay and Fade Times

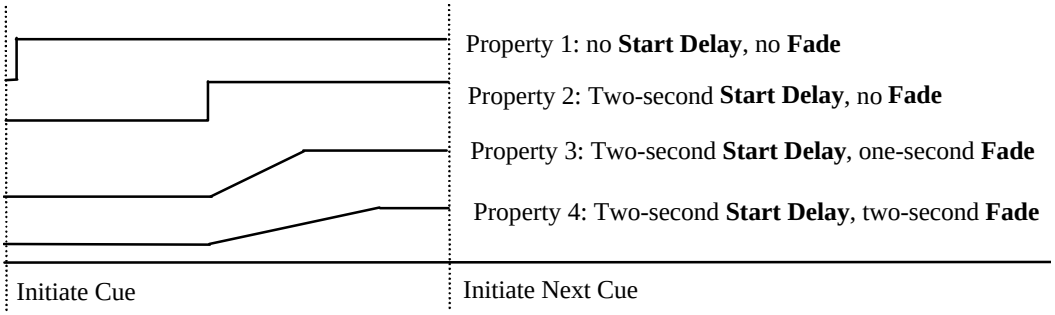
Recording Moving Light cues directly to playbacks and using the automatic chase and stack features are very quick and powerful techniques for creating simple sequences.

The LP-3000 also allows you to manually set the timing and playback values for cues.

Timing and playback values consist of three elements:

- **Start Delay** time is the duration from the start of the cue until the property of the light responds. For example, you might want to move the beam at the beginning of the cue and delay the color change by three seconds. You would set a three-second Start Delay on the Color property.
- **Hold Time** is the total time of the cue. For cuelists that you intend to advance manually, the Hold Time is set to Infinite. For cuelists that you intend to run automatically, the Hold Time is set for each cue.
- **Fade Time** is the duration during which the property of the light will change from one state to another. The Fade Time starts at the beginning of the cue.

To illustrate Start Delay and Fade times, consider the following illustration:



Property 1 has zero Start Delay and zero Fade Time. If Property 1 were Beam, the shape of the beam would change immediately from its previous setting to the new setting upon initiating the cue.

Property 2 has a two-second Start Delay and zero Fade Time. If Property 2 were Color, the cue would be initiated and then two seconds later the color would immediately change from its previous setting to the new setting.

Property 3 has a two-second Start Delay and a one-second Fade Time. If Property 3 were Intensity, the cue would be initiated and then two seconds later, the intensity would begin to change from its previous setting to the new setting. The transition (fade) to the new intensity would take one second.

Property 4 has a two-second Start Delay and a two-second Fade Time. If Property 4 were Focus, the cue would be initiated and then two seconds later, the focus would begin to change from its previous position to the new position. The transition (fade) to the new position would take two seconds.

Thus, we would see:

- An instant change in the shape of the beam.
- Two seconds later, an instant change in the color.
- Beginning with the color change, a gradual change in intensity.
- Beginning with the color change, an even more gradual change in position.

Automated versus Manual Initiation of Cues

By default, the Hold Time for a cue is set to **Infinite**. An infinite Hold Time setting means that Start Delays and Fade Times will be executed and then the look of the cue will hold infinitely long—in other words, until you initiate the next cue. This is *manual initiation* of cues.

If you set Hold Times for cues that have values other than **Infinite**—such as five seconds or two minutes—you are creating a cuelist that is automated.

Hold Time settings cannot be set independently as described above for Start Delay and Fade Time. One Hold Time governs all properties of the cue.

Using the scenario above, let us explore what would occur if you set a Hold Time of ten seconds.

The changes would take place as described over a period of four seconds. (The longest change takes place in Property 4, which has a Start Delay time of two seconds and a Fade Time of two seconds). The look would then hold for an additional six seconds before initiating the next cue. This gives the total 10-second Hold Time.

Again using the scenario above, let us explore what would occur if you set a Hold Time of only three seconds.

The changes would take place as described with one difference: the LP-3000 would not be able to fully execute the fade for Property 4. At the end of three seconds, the LP-3000 would simply begin to execute the next cue—regardless of the fact that the current cue would not be complete.

To Assign Hold, Start Delay and Fade Times

The basic procedure for programming cues to playbacks is described in ***To Create a Cuelist*** beginning on page 108.

We describe the procedures for manually setting the timing and playback values for cues in this section.

1. If you are not at the **Programmer** screen, from the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.

2. If desired, click **ML Attributes**.

   The LP-3000 displays the **Programmer** screen for attributes.

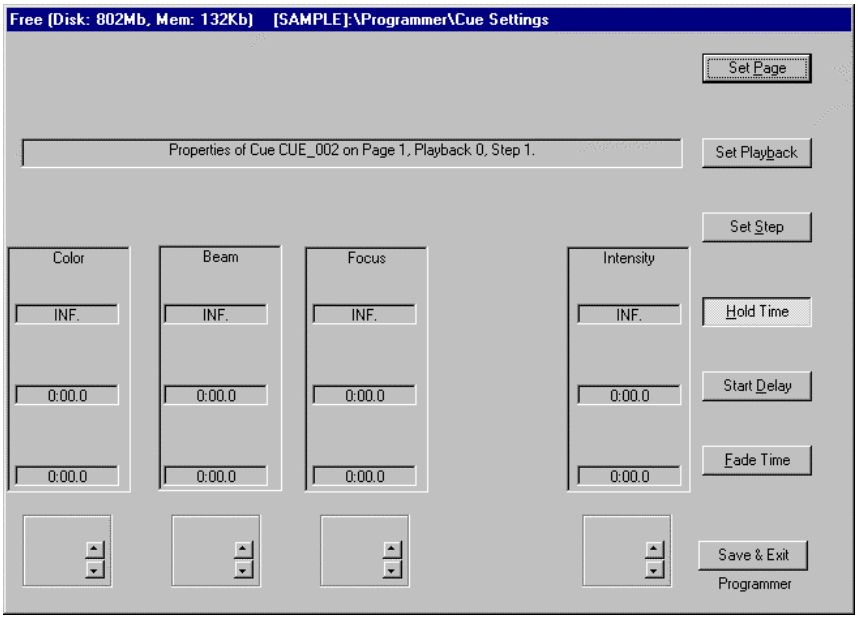
3. Click **Cues**.

   The LP-3000 displays the **Cue Settings** screen.

4. Using the **Scroll** edgewheel, select the first cue for the cuelist.

5. Click **Settings**.

   The LP-3000 displays the **Cue Settings** screen and shows the properties of the cue that you selected in step 4.



By default, **Hold Time** is set to INF. (Infinite) and **Fade Time** is set to two seconds. These values may be different if you changed them in the **Options** screen. For more information please see ***Options*** beginning on page 41.

Times are displayed showing minutes, seconds and tenths of a second (0:00.0 or 2:30.5).

6. Do one or more of the following:

To:	Do:
Set the Hold Time for all properties.	Click **Hold Time**. Using the edgewheel for any property, change the value. Reminder: Hold Time values cannot be set independently. The Hold Time value for all properties is always the same.
Set the Start Delay for a property.	Click **Start Delay**. Using the edgewheel for the property, change the value. Reminder: Start Delay values *can* be set independently for each property.
Set the Fade Time for a property.	Click **Fade Time**. Using the edgewheel for the property, change the value. Reminder: Fade Time values *can* be set independently for each property. The Fade Time value should be equal to or shorter than the Hold Time value if you want the cue to fade in completely.

7. When you are done setting the timing and playback values for the cue, click **Save & Exit to Programmer**.

   The LP-3000 displays the Programmer screen.

8. Repeat steps 3 through 7 for all cues until the cuelist is completely programmed.

NOTE: Start Delay and Fade Time for intensity will not be implemented until a later release.

Chapter Eleven:
Attribute Programming

To Set Cue Properties by Attribute

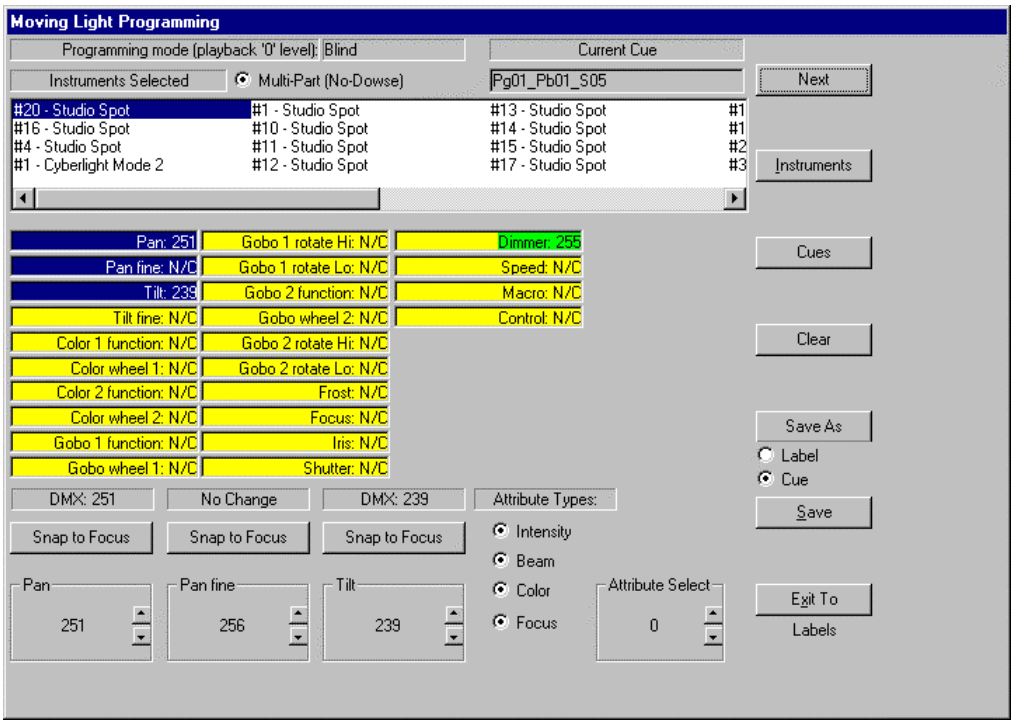
Attribute Programming provides more control over the look of a scene.

1. From the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.

2. Click **ML Attributes**.

   The LP-3000 displays the **Programmer** screen for attributes.



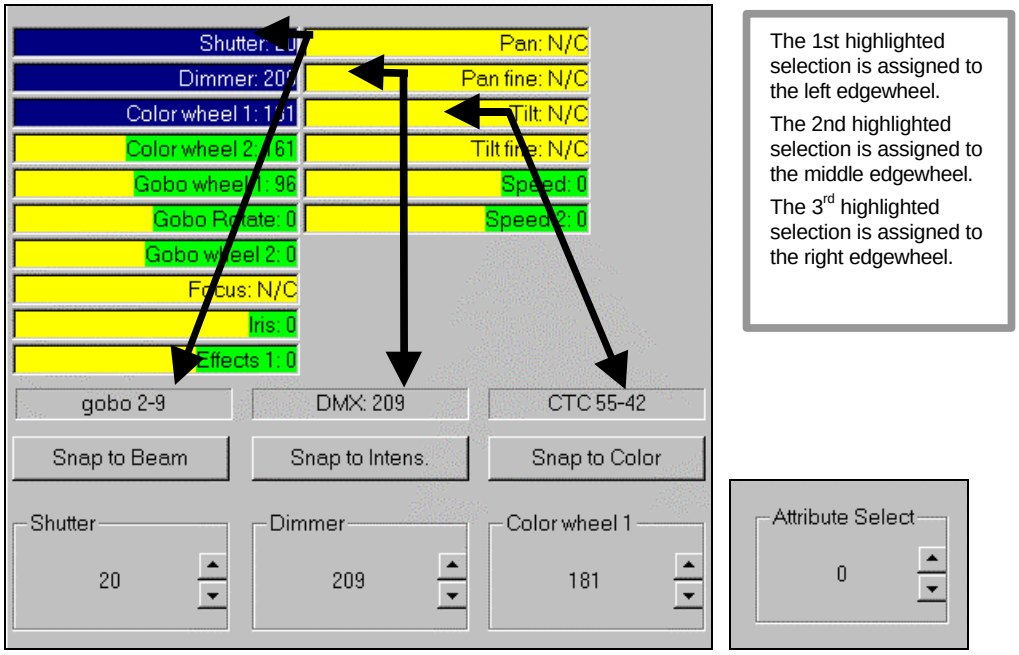
   The **Instruments Selected** section of the screen displays the instruments that are assigned to the cue. The first instrument in the cue is automatically selected.

   In the main section of the **Programming** screen, the LP-3000 displays the attributes of the selected instrument.

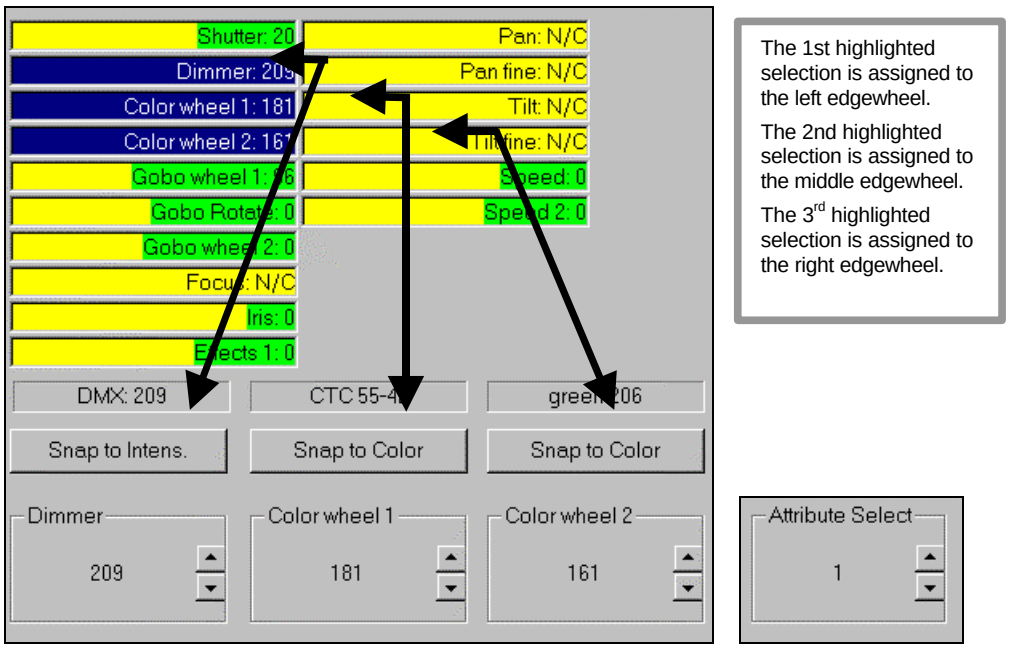
3. Using the **Next** button, select one fixture.

4. Using the **Attribute Select** edgewheel, select the group of attributes that the remaining edgewheels will control.

   With **Attribute Select** set to **0**, the edgewheels control the first three attributes as shown below.



   With **Attribute Select** set to **1**, the edgewheels control the second, third and fourth attributes as shown below.



You can also assign attributes to edgewheels by pointing to the first attribute you want to assign and clicking the left mouse button.

5. Using the edgewheels, select the DMX value for each attribute.

   Values range from 0 to 256.

   For most attributes, you can select the option **No Change**. This means that the cue will not change the previous setting for the property during playback. To select **No Change**, set the attribute to its highest value.

6. To aid you in making your selection, press and hold the edgewheel's **Selector** button to activate the **Snap To** function. Then use the edgewheel to snap from label to label for the instrument.

   This is a method by which you can rapidly move from pre-defined label to pre-defined label rather than working your way through the full range of DMX values.

   Note that the **Snap To** function is not available in off-line mode.

7. When you are done, click **Save** or **Save As**.

   For an alternate way to save cues, please see ***Saving the Cue to a Playback*** beginning on page 93.

8. If you have more than one instrument in the cue:

   a. Press the **Next** button.

   b. Repeat steps 5 through 7 above.

   c. Click **Save**.

Chapter Twelve: Creating New Labels

The LP-3000 Moving Light Controller includes a library of labels for many common Moving Light fixtures.

You can easily add new labels for use with label programming.

You can also edit labels—factory presets or those you have created. This feature is very powerful when used to adjust focus positions, some of which change on a daily basis. Using focus labels allows all cues to be adjusted for changes in the stage setup with a single edit.

Creating Labels

In many cases, each property of a Moving Light is controlled by only one attribute. For example, color is controlled by an attribute called *Color Wheel 1* and beam is controlled by an attribute called *Iris*.

Some of the more sophisticated instruments use multiple attributes to control a single property.

For example, some fixtures employ color mixing, which allows three basic colors to be mixed to produce a wide spectrum of color. Similarly, the more complex fixtures—such as the Intellabeam 13 Channel and the Martin Pal1200—contain many beam attributes. Among the beam attributes are:

- Gobo
- Iris
- Shutter (including PAL shapes)
- Zoom

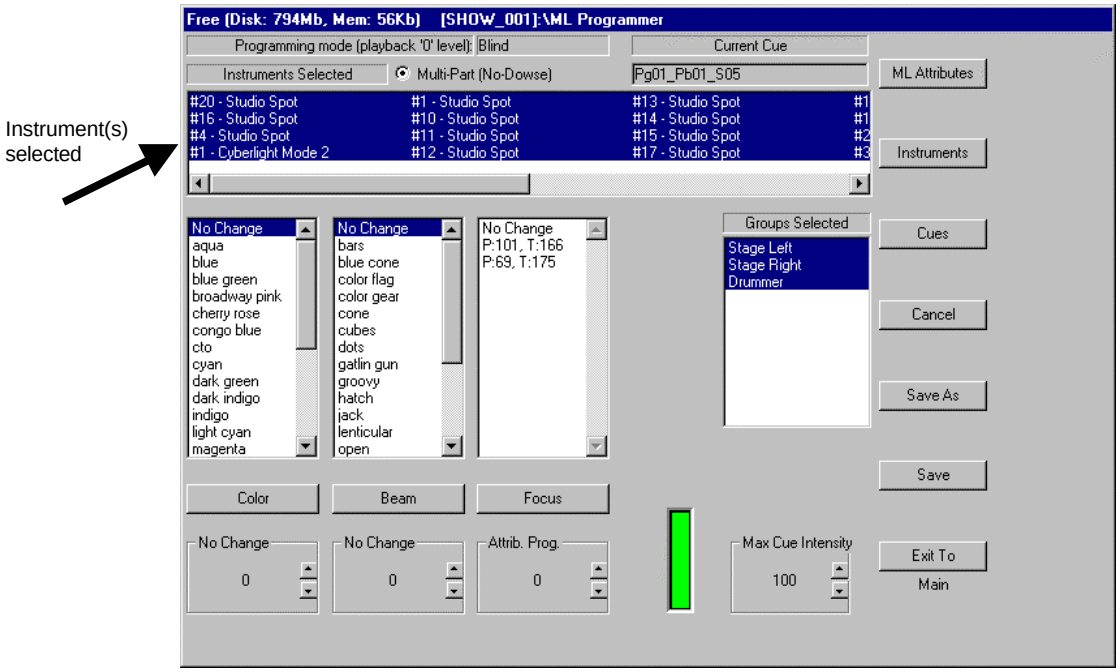
As a result, several attributes may be present when you are creating a new label for a property of a fixture.

To Create a Color or Beam Label

1. From the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.

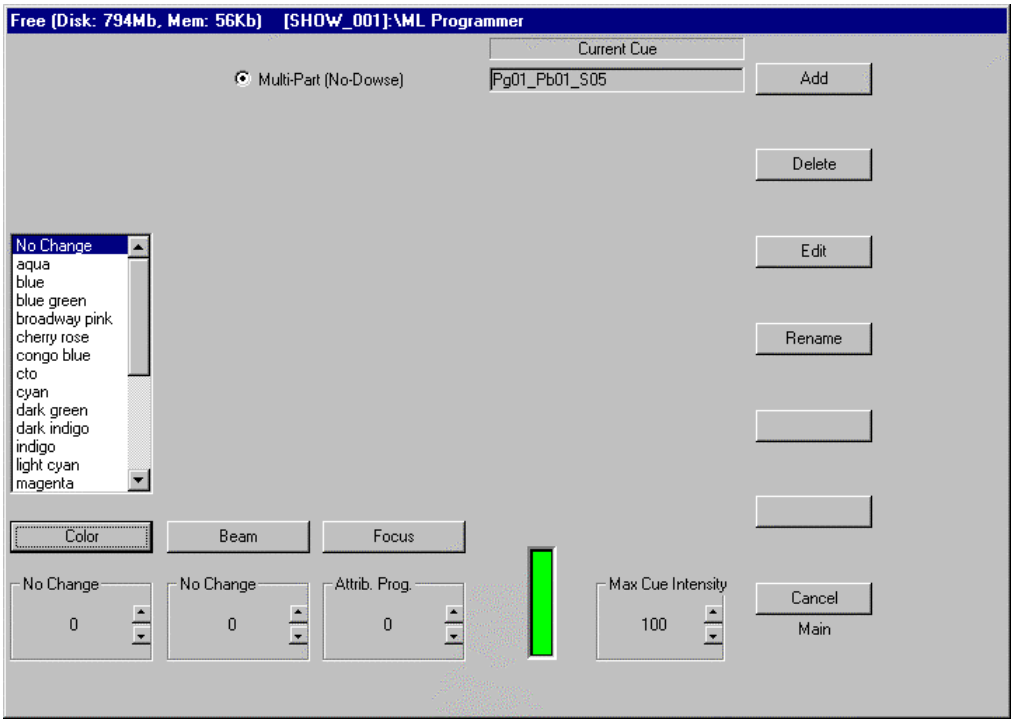
2. Under **Instruments Selected**, select the instrument(s) for which you want to create a new color or beam label.



3. Click **Color** or **Beam**.

   The button that you click determines which property you will be creating a new label for.

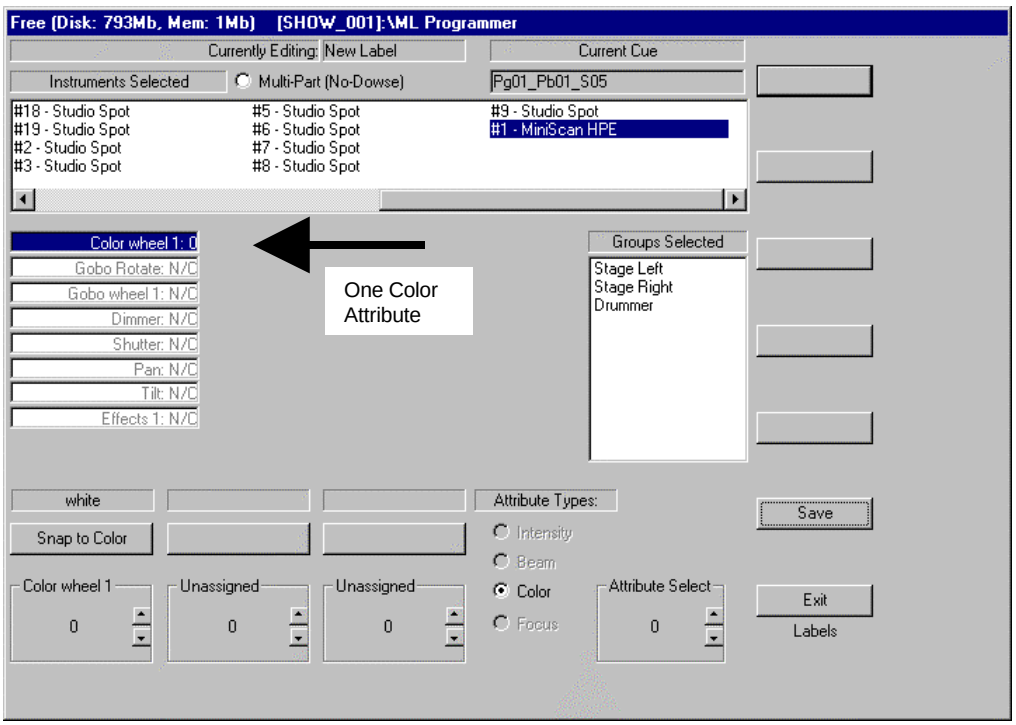
   The appearance of the **Programmer** screen changes. In the example below, **Color** was clicked.



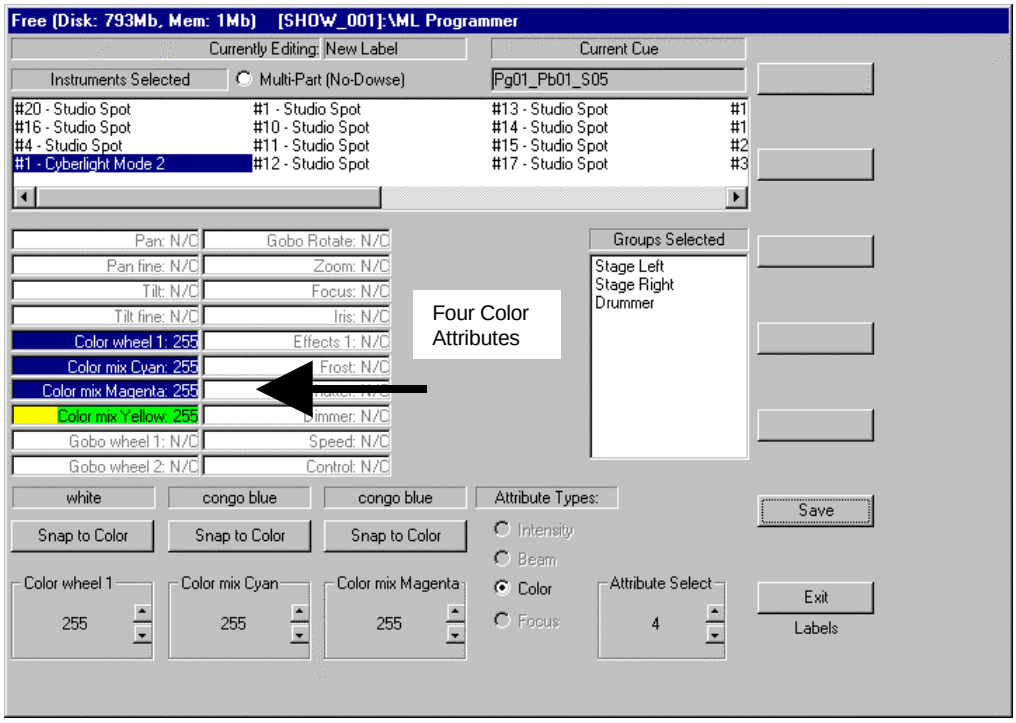
4. Click **Add**.

The LP-3000 displays the **Label Editing** screen. The appearance of this screen will vary according to the fixture for which you are adding a label.

For simple fixtures, only one attribute of the fixture controls the color or beam. In the example below, only one attribute is available for creating a new color label. It is called *Color Wheel 1*.



In more sophisticated fixtures, several attributes control the color or beam. In the example below, five attributes are available for creating a new color label. They are *Color Modifier*, *Color wheel 1*, *Color mix Cyan*, *Color mix Magenta* and *Color mix Yellow*.



5. If necessary, change the instrument selection so that only one *type* of instrument is selected.

   You can only display attributes for one type of instrument at a time. Therefore, it is important not to attempt to create a label for two or more different instrument types.

6. If there are more than three attributes that control the property, using the **Attribute Select** edgewheel, select the group of attributes that the remaining edgewheels will control.

   With **Attribute Select** set to **0**, the edgewheels control the first three attributes; with **Attribute Select** set to **1**, the edgewheels control the second, third and fourth attributes; and so forth.

7. Using the edgewheels, select the attribute value for each attribute.

   Values range from 0 to 256.

   For most attributes, you can select the option **No Change**. This means that the cue will not change the previous setting for the property. To select **No Change**, set the attribute to its highest possible value.

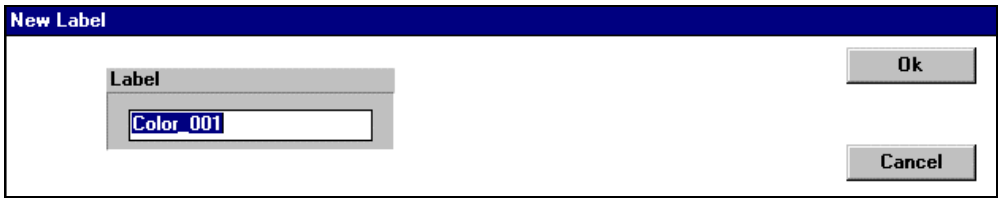
8. To aid you in making your selection, press and hold the edgewheel's **Selector** button to activate the **Snap To** function. Then use the edgewheel to snap from label to label for the instrument.

   This is a method by which you can rapidly move from pre-defined label to pre-defined label rather than working your way through the full range of DMX values.

Note that the **Snap To** function is not available in off-line mode.

9. When you have selected the new DMX values for each attribute that controls the color or beam, click **Save**.

   The LP-3000 displays the **New Label** dialog box.



10. Enter a name for the new label or accept the default and click **OK**.

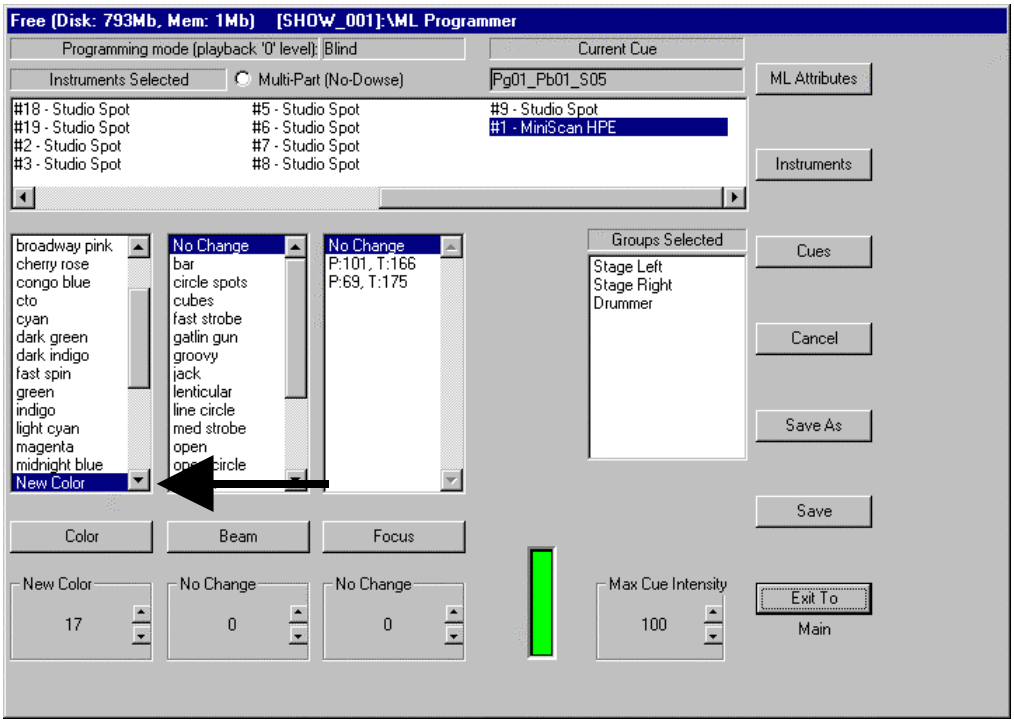
    Default names follow the pattern Color_001, Color_002 or Beam_002, Beam_002 and so forth.

11. If desired, select that next instrument type and repeat steps 6 through 10.

    You can give the same name to labels for different instrument types.

12. When you are done, click **Exit Labels**.

    The LP-3000 displays the **Programmer** screen and your new label.



To Create a Focus Label

New focus positions for instruments connected to the LP-3000 are a snap to create. As mentioned, editing focus labels is an easy way to accommodate changes in the stage setup or position of the instruments.

Before setting a new focus position, you will want to set the instruments to a clearly visible pattern and a high intensity value in the programming screen. Open beam presets are available for the instruments that include gobo and iris attributes.

Remember that you can select **Invert Pan** and **Invert Tilt** when creating or modifying DMX line assignment. Enabling or disabling these options may make it easier to create focus labels. For more information, please see ***To Install a Moving Light Fixture into the System*** beginning on page 31.

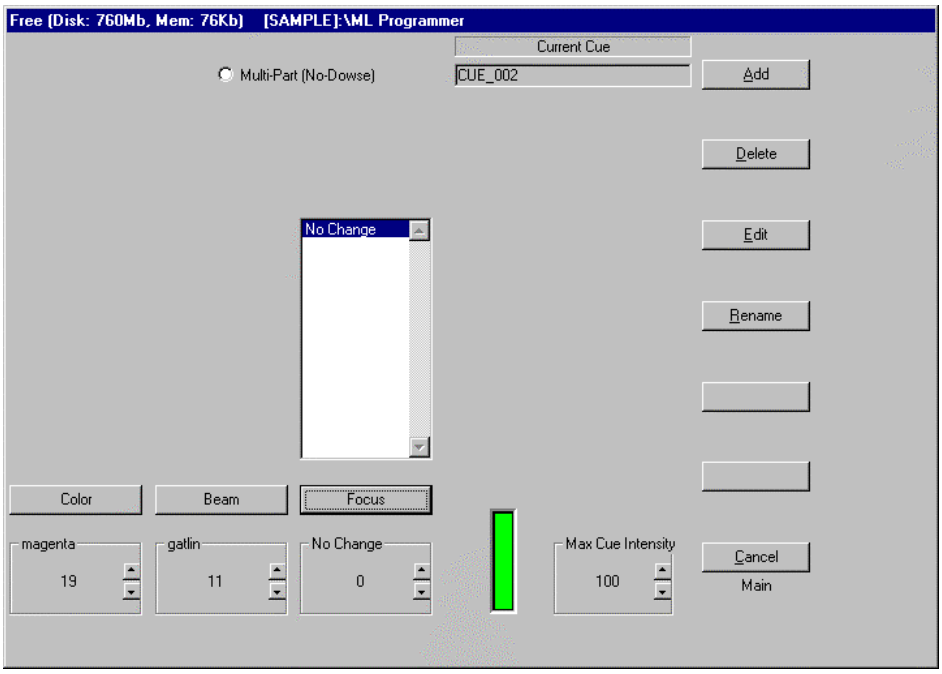
1. From the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.

2. Under **Instruments Selected**, select the instrument or instruments for which you want to create new focus labels.

3. Click **Focus**.

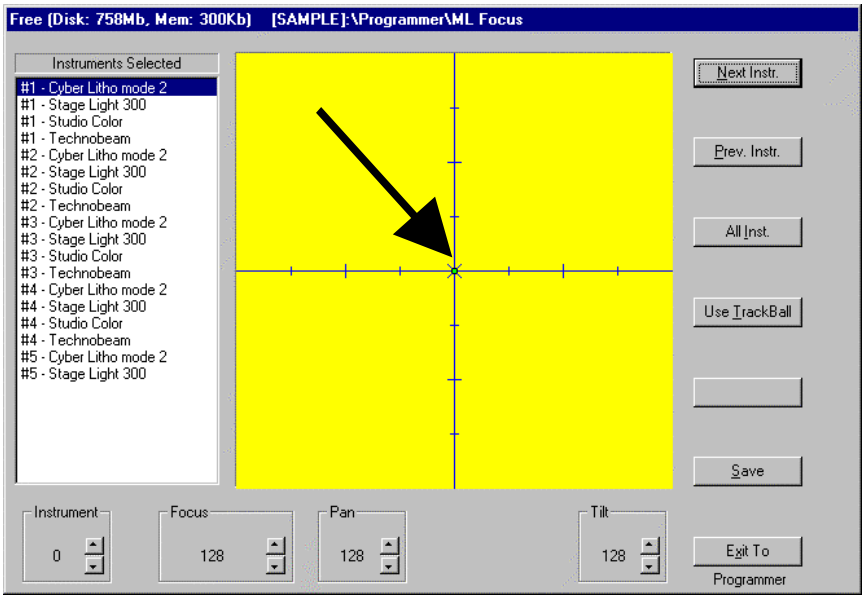
   The appearance of the **Programmer** screen changes.



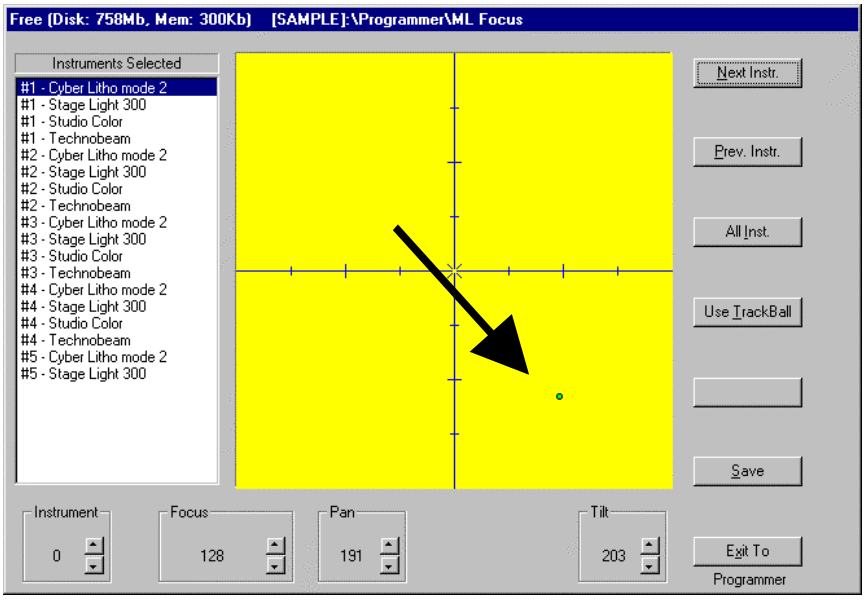
4. Click **Add**.

   The LP-3000 displays the **ML Focus** screen.

   By default, the focus is set to the default value for the instrument and the pan and tilt are set to the center.



5. Use the **Pan** and **Tilt** edgewheels to point the fixture to the correct position.



You can also use the trackball to set pan and tilt. Click **Use Trackball**. Point to the desired location on the "stage". When you are done, click **Use Encoders** or **Save**.

If you are working in offline mode, press the ENTER key on the keyboard.

6. Use the **Focus** edgewheel to set the beam edge of instruments that support this feature.

7. When correctly focused, click **Save**.

The LP-3000 displays the **Focus Label** dialog box. By default, the LP-3000 assigns a name to the focus label that reflects the position of the pan and tilt such as *P:179, T:184*.

8. Accept the default name or enter a new name and click **OK**.
9. Click **Exit** to return to the **Programming** screen.

   Your new label will be available on the edgewheel.

Frequently it is advantageous to set several instruments to the same focus and give this focus a common name. To do this:

1. Complete steps 1 through 6 above.
2. Instead of clicking **Save** after the first instrument is focused, use the **Next Instrument** and **Previous Instrument** buttons or the edgewheel labeled **Instrument** to select the next instrument.
3. Focus the instrument.
4. Repeat steps 2 and 3 for all instruments.
5. Click **Save** to give all instrument positions defined in this session a common name.

You may also want to set all instruments to the same focus value. To do this:

1. From the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.
2. Under **Instruments Selected**, select all instruments for which you want to create the same new focus label.
3. Click **Focus**.

   The appearance of the **Programmer** screen changes.
4. Click **All Inst.** (**All Inst./Single Inst.** toggle button).
5. Set **Focus**, **Pan** and **Tilt** as usual.

   Detailed instructions are provided in ***To Create a Focus Label*** beginning on page 124.
6. Click **Save** to give all instruments the same position and name.

Editing Labels

After you have created labels, you can easily make changes to their attribute values. You can also make changes to factory preset labels, if desired. The significant fact is that the cues using the labels that you edit are automatically updated to the new values.

You can also delete and rename labels.

To Edit a Label

1. From the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.

2. Under **Instruments Selected**, select the instrument for which you want to edit a label.

3. Select the specific label that you want to edit.

4. Click the appropriate property button.

   If you selected a color label, click **Color**.

   If you selected a beam label, click **Beam**.

   If you selected a focus label, click **Focus**.

5. Click **Edit**.

   The LP-3000 displays the **Label Editing** screen for the property.

6. Change the attribute values of the label.

   Use the procedures given in ***To Create a Color or Beam Label*** beginning on page 119 or ***To Create a Focus Label*** beginning on page 124.

7. When you are done, click **Save** or **Save As**.

   If you click **Save**, the changes are saved to the same label name.

   If you click **Save As**, the **New Label** dialog box appears. Give the label a new name and click **OK**.

To Rename a Label

1. From the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.

2. Under **Instruments Selected**, select the instrument for which you want to rename a label.

3. Select the specific label that you want to rename.

4. Click the appropriate property button.

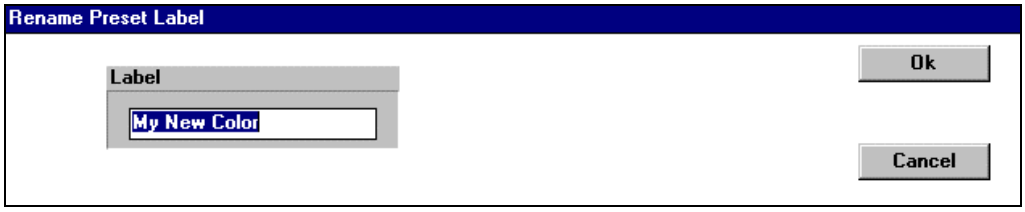
   If you selected a color label, click **Color**.

   If you selected a beam label, click **Beam**.

   If you selected a focus label, click **Focus**.

5. Click **Rename**.

   The LP-3000 displays the Rename Preset Label dialog box.



6. Enter a new name for the label and click **OK**.

To Delete a Label

1. From the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.

2. Under **Instruments Selected**, select the instrument for which you want to delete a label.

3. Select the specific label that you want to delete.

4. Click the appropriate property button.

   If you selected a color label, click **Color**.

   If you selected a beam label, click **Beam**.

   If you selected a focus label, click **Focus**.

5. Click **Delete**.

   The LP-3000 deletes the label.

   CAUTION: This action cannot be undone.

Creating Labels During Attribute Programming

There may be occasions when you are programming cues by attribute and find that you have created a look that deserves to be saved as a label. When this is the case you can easily save the look as one or several new labels. Note that you can only create labels for color and beam properties when you use this procedure.

To Create a Label during Attribute Programming

1. From the **Main** screen, click **ML Program**.

   The LP-3000 displays the **Programmer** screen.

2. Click ML Attributes.

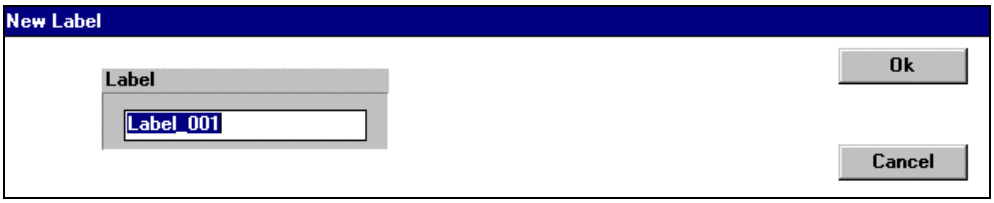
   The LP-3000 displays the **Programmer** screen for attributes.

3. Program a cue as you normally would.

4. Under the **Save As** button, click **Label**.

5. Click **Save As**.

The LP-3000 displays the **New Label** dialog box.



6. Enter a name for the new label or accept the default name.

   Default names follow the pattern Label_001, Label_002 and so forth.

7. Click **OK**.

The LP-3000 uses the following logic to determine which properties the label is for:

- If you modified only attributes that affect color, the label is only for color.
- If you modified only attributes that affect beam, the label is only for beam.
- If you modified attributes that affect both properties, you will create both a color and a beam label.

Appendices

Appendix A:
Maintenance and Repair

Handling

It is a good idea to invest in a properly designed flight case. Your Leprecon dealer can provide case, and several popular case manufacturers have specifications for Leprecon consoles. The case should be sturdy enough to resist punctures, and contain at least one inch of foam padding around the console.

Extreme Temperatures

Touring gear is often exposed to extreme temperatures. It is a good idea to allow the console to reach room temperature before turning it on. Very cold weather will cause condensation to form when the console is brought into a warm room. In this case, allow the board to warm up before turning it on; this will allow the moisture from condensation to evaporate before power is applied. In extreme heat, it is best to keep the console shaded from direct sunlight, and under cover when not in use.

Fuse Location and Replacement

The LP-3000 uses a 5x20 mm miniature fuse of a 2-amp rating. The fuse is located within the AC inlet on the back of the console. To change the fuse, remove the power cord and pry out the small fuse drawer located in the lower part of the inlet. Do not replace the fuse with one of a higher rating!

Warranty Information

CAE will repair any defects in materials or workmanship on the LP-3000 for a period of one year from the date of sale. The equipment must be returned postpaid to the factory, and CAE will pay return shipping charges. CAE is not responsible for incidental damages, or for damage as a result of misuse or abuse. It is the responsibility of the owner to determine the suitability of the console for any specific application. Any return to the factory must be authorized by our service department. Do not return any equipment without first calling for an authorization number. The CAE service department may be reached at (810) 231-9373 during business hours, or a message may be left after hours. Our fax number is (810) 231-1631. You can also visit our web site at WWW.CAEINC.COM.

Appendix B:
Instrument Library Version 29

The following instruments are supported by the LP-3000 software.

This information is correct as of June 1999, and is subject to change. For updates to the instrument library, contact your Leprecon dealer.

Abstract

Arc Beam

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Tilt	0	255	Focus	128
3	Color wheel 1	0	255	Color	0
4	Gobo wheel 1	0	255	Beam	0

American DJ

Snap Shot Strobe

Channel	Attribute	Min	Max	Group	Default
1	Brightness	0	255	Beam	0
2	Duration	0	255	Beam	0
3	Rate	0	255	Beam	0

Clay Paky

Golden Scan 2

Channel	Attribute	Min	Max	Group	Default
1	Iris	0	255	Beam	255
2	Color wheel 1	0	255	Color	0
3	Gobo wheel 1	0	255	Beam	0
4	Dimmer	0	127	Intensity	127
5	Pan	0	255	Focus	128
6	Tilt	0	255	Focus	128

Golden Scan 3

Channel	Attribute	Min	Max	Group	Default
1	Iris	0	63	Beam	63
1	Gobo Rotate	64	255	Beam	63
2	Color wheel 1	0	255	Color	0
3	Gobo wheel 1	0	255	Beam	0
4	Dimmer	0	127	Intensity	127
5	Pan	0	255	Focus	128
6	Tilt	0	255	Focus	128

Golden Scan HPE

Channel	Attribute	Min	Max	Group	Default
1	Iris	0	255	Beam	255
2	Color wheel 1	0	255	Color	0
3	Color wheel 2	0	255	Color	0
4	Dimmer	0	127	Intensity	127
5	Pan	0	255	Focus	128
6	Tilt	0	255	Focus	128
7	Effects 1	0	255	Beam	0
8	Effects 2	0	255	Beam	0
9	Focus	0	255	Focus	128
10	Gobo wheel 1	0	255	Beam	0
11	Gobo wheel 2	0	255	Beam	0
12	Gobo Rotate	0	255	Beam	0

MiniScan HPE

Channel	Attribute	Min	Max	Group	Default
1	Color wheel 1	0	255	Color	0
2	Gobo Rotate	0	255	Beam	0
3	Gobo wheel 1	0	255	Beam	0
4	Dimmer	0	127	Intensity	127
5	Pan	0	255	Focus	128
6	Tilt	0	255	Focus	128
7	Effects 1	0	255	Beam	0

Stage Color 300

Channel	Attribute	Min	Max	Group	Default
1	Color mix Cyan	0	255	Color	255
2	Color mix	0	255	Color	255
3	Color mix Yellow	0	255	Color	255
4	Shutter	0	255	Beam	255
5	Pan	0	255	Focus	128

6	Tilt	0	255	Focus	128
7	Dimmer	0	255	Intensity	255
8	Frost	0	255	Beam	0
9	Pan fine	0	255	Focus	0
10	Tilt fine	0	255	Focus	0

Stage Color 1200

Channel	Attribute	Min	Max	Group	Default
1	Color mix Cyan	0	255	Color	255
2	Color mix	0	255	Color	255
3	Color mix Yellow	0	255	Color	255
4	Shutter	0	255	Beam	255
5	Pan	0	255	Focus	128
6	Tilt	0	255	Focus	128
7	Color wheel 1	0	255	Color	0
8	Beam Shape 1	0	255	Beam	0
9	Frost	0	255	Beam	0
10	Color Modifier	0	255	Color	0
11	Dimmer	0	255	Intensity	255
12	Control	0	255	Beam	255
13	Pan fine	0	255	Focus	128
14	Tilt fine	0	255	Focus	128

Stage Light 300

Channel	Attribute	Min	Max	Group	Default
1	Color wheel 1	0	255	Color	0
2	Gobo Rotate	0	255	Beam	0
3	Gobo wheel 1	0	255	Beam	0
4	Shutter	128	255	Beam	127
4	Dimmer	0	127	Intensity	127
5	Pan	0	255	Focus	128
6	Tilt	0	255	Focus	128
7	Effects 1	0	255	Beam	0
8	Focus	0	255	Focus	128
9	Pan fine	0	255	Focus	128
10	Tilt fine	0	255	Focus	128

Stage Zoom

Channel	Attribute	Min	Max	Group	Default
1	Iris	0	255	Beam	255
2	Color wheel 1	0	255	Color	0
3	Frost	0	255	Beam	0
4	Dimmer	0	255	Intensity	255
5	Pan	0	255	Focus	128

6	Tilt	0	255	Focus	128
7	Zoom	0	255	Beam	128
8	Focus	0	255	Focus	128
9	Effects 1	0	255	Beam	0
10	Effects Rotate	0	255	Beam	0
11	Gobo wheel 1	0	255	Beam	0
12	Gobo wheel 2	0	255	Beam	0
13	Gobo Rotate	0	255	Beam	0
14	Color mix Cyan	0	255	Color	255
15	Color mix	0	255	Color	255
16	Color mix Yellow	0	255	Color	255
17	Control	0	255	Beam	255
18	Pan fine	0	255	Focus	128
19	Tilt fine	0	255	Focus	128

Coemar

CF 1200 Hard Edge

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128
5	Dimmer	0	255	Intensity	255
6	Shutter	0	255	Beam	255
7	Iris	0	255	Beam	0
8	Zoom	0	255	Beam	128
9	Focus	0	255	Focus	128
10	Gobo wheel 1	0	255	Beam	0
11	Gobo 1 function	0	255	Beam	0
12	Gobo 1 Rotate	0	255	Beam	0
13	Gobo wheel 2	0	255	Beam	0
14	Effects 1	0	255	Beam	0
15	Effects Rotate	0	255	Beam	0
16	Color wheel 1	0	255	Color	0
17	Color mix Cyan	0	255	Color	0
18	Color mix	0	255	Color	0
19	Color mix Yellow	0	255	Color	0
20	Control	0	255	Beam	255

CF 1200 Wash

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128

Channel	Attribute	Min	Max	Group	Default
2	Pan fine	0	255	Focus	0
3	Tilt	0	255	Focus	0
4	Tilt fine	0	255	Focus	0
5	Dimmer	0	255	Intensity	255
6	Shutter	0	255	Beam	255
7	Zoom	0	255	Beam	128
8	Effects 1	0	255	Beam	0
9	Color wheel 1	0	255	Color	0
10	Color mix Cyan	0	255	Color	0
11	Color mix	0	255	Color	0
12	Color mix Yellow	0	255	Color	0
13	Control	0	255	Beam	255

Nat MM 1200 + 2500

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128
5	Dimmer	0	255	Intensity	255
6	Shutter	0	255	Beam	80
7	Iris	0	255	Beam	0
8	Zoom	0	255	Beam	128
9	Focus	0	255	Focus	128
10	Gobo wheel 1	0	255	Beam	0
11	Gobo Rotate	0	255	Beam	0
12	Gobo wheel 2	0	255	Beam	0
13	Gobo 2 Rotate	0	255	Beam	0
14	Effects 1	0	255	Beam	0
15	Effects Rotate	0	255	Beam	0
16	Color wheel 1	0	255	Color	0
17	Color mix Cyan	0	255	Color	0
18	Color mix	0	255	Color	0
19	Color mix Yellow	0	255	Color	0
20	Control	0	255	Beam	255

Generic

Color Changer

Channel	Attribute	Min	Max	Group	Default
1	Color wheel 1	0	255	Color	0

Geni

Stratus 5X

Channel	Attribute	Min	Max	Group	Default
1	Dimmer	0	128	Intensity	128
2	Color wheel 1	0	255	Color	0
3	Gobo wheel 1	0	255	Beam	0
4	Gobo Rotate	0	255	Beam	0
5	Pan	0	255	Focus	128
6	Tilt	0	255	Focus	128

High End Systems

Cyberlight

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128
5	Color wheel 1	0	255	Color	255
6	Color mix Cyan	0	255	Color	255
7	Color mix Magenta	0	255	Color	255
8	Color mix Yellow	0	255	Color	255
9	Gobo wheel 1	0	255	Beam	0
10	Gobo wheel 2	0	255	Beam	0
11	Gobo Rotate	0	255	Beam	0
12	Zoom	0	255	Beam	0
13	Focus	0	255	Focus	128
14	Iris	0	255	Beam	255
15	Effects 1	0	255	Beam	0
16	Frost	0	255	Beam	255
17	Shutter	0	255	Beam	255
18	Dimmer	0	255	Intensity	255
19	Speed	0	255	Beam	255
20	Control	0	255	Beam	0

Cyberlight CX Mode 2

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128

Channel	Attribute	Min	Max	Group	Default
5	Color wheel 1	0	255	Color	255
6	Unassigned	0	0	Beam	0
7	Unassigned	0	0	Beam	0
8	Unassigned	0	0	Beam	0
9	Gobo wheel 1	0	255	Beam	0
10	Gobo wheel 2	0	255	Beam	0
11	Gobo Rotate	0	255	Beam	0
12	Unassigned	0	0	Beam	0
13	Focus	0	255	Focus	128
14	Iris	0	255	Beam	255
15	Effects 1	0	255	Beam	0
16	Unassigned	0	0	Beam	0
17	Shutter	0	255	Beam	255
18	Dimmer	0	255	Intensity	255
19	Speed	0	255	Beam	255
20	Control	0	255	Beam	0

Cyberlight CX Mode 3

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128
5	Color wheel 1	0	255	Color	255
6	Gobo wheel 1	0	255	Beam	255
7	Gobo wheel 2	0	255	Beam	255
8	Gobo Rotate	0	255	Beam	0
9	Focus	0	255	Focus	0
10	Iris	0	255	Beam	0
11	Effects 1	0	255	Beam	0
12	Shutter	0	255	Beam	0
13	Dimmer	0	255	Intensity	255
14	Speed	0	255	Beam	250
15	Control	0	255	Beam	0

Cyberlight Mode 2

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128
5	Color wheel 1	0	255	Color	255
6	Color mix Cyan	0	255	Color	255

Channel	Attribute	Min	Max	Group	Default
7	Color mix Magenta	0	255	Color	255
8	Color mix Yellow	0	255	Color	255
9	Gobo wheel 1	0	255	Beam	0
10	Gobo wheel 2	0	255	Beam	0
11	Gobo Rotate	0	255	Beam	0
12	Zoom	0	255	Beam	0
13	Focus	0	255	Focus	128
14	Iris	0	255	Beam	255
15	Effects 1	0	255	Beam	0
16	Frost	0	255	Beam	255
17	Shutter	0	255	Beam	255
18	Dimmer	0	255	Intensity	255
19	Speed	0	255	Beam	255
20	Control	0	255	Beam	0

Cyber Litho Mode 2

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128
5	Color wheel 1	0	255	Color	255
6	Color mix Cyan	0	255	Color	255
7	Color mix Magenta	0	255	Color	255
8	Color mix Yellow	0	255	Color	255
9	Gobo wheel 1	0	255	Beam	0
10	Gobo wheel 2	0	255	Beam	0
11	Gobo Rotate	0	255	Beam	0
12	Zoom	0	255	Beam	0
13	Focus	0	255	Focus	128
14	Iris	0	255	Beam	255
15	Effects 1	0	255	Beam	0
16	Frost	0	255	Beam	255
17	Shutter	0	255	Beam	255
18	Dimmer	0	255	Intensity	255
19	Speed	0	255	Beam	255
20	Control	0	255	Beam	0

IntellaBeam 8 Channel

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Tilt	0	255	Focus	128
3	Color wheel 1	0	255	Color	0

Channel	Attribute	Min	Max	Group	Default
4	Gobo wheel 1	0	255	Beam	0
5	Shutter	0	255	Beam	255
6	Dimmer	0	255	Intensity	255
7	Iris	0	255	Beam	255
8	Speed	0	255	Beam	250

I-Beam 8 ch. Hi res.

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Tilt	0	255	Focus	128
3	Color wheel 1	0	255	Color	255
4	Gobo wheel 1	0	255	Beam	255
5	Shutter	0	255	Beam	255
6	Dimmer	0	255	Intensity	255
7	Iris	0	255	Beam	255
8	Speed	0	255	Beam	250

IntellaBeam 13 chan.

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128
5	Color wheel 1	0	255	Color	0
6	Color 1 Spin	0	255	Color	15
7	Gobo wheel 1	0	255	Beam	10
8	Gobo 1 Spin	0	255	Beam	15
9	Shutter	0	255	Beam	32
10	Dimmer	0	255	Intensity	255
11	Iris	0	255	Beam	255
12	Speed	0	255	Beam	240
13	Control	0	255	Beam	0

Studio Color

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128
5	Color Modifier	0	255	Color	0
6	Color wheel 1	0	255	Color	0
7	Color mix Cyan	0	255	Color	255
8	Color mix Magenta	0	255	Color	255

Channel	Attribute	Min	Max	Group	Default
9	Color mix Yellow	0	255	Color	255
10	Effects 1	0	255	Beam	0
11	Effects 2	0	255	Beam	0
12	Shutter	0	255	Beam	255
13	Dimmer	0	255	Intensity	255
14	Speed	0	255	Beam	255
15	Control	0	255	Beam	0
16	Checksum	0	255	Beam	0

Studio Color 250

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128
5	Color 1 function	0	255	Color	0
6	Color mix Cyan	0	255	Color	0
7	Color mix Magenta	0	255	Color	0
8	Color mix Yellow	0	255	Color	0
9	Beam Shape 1	0	255	Beam	0
10	Focus	0	255	Focus	128
11	Shutter	0	255	Beam	255
12	Dimmer	0	255	Intensity	0
13	Speed	0	255	Beam	0
14	Macro	0	255	Beam	0
15	Control	0	255	Beam	0

Studio Spot

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128
5	Color 1 function	0	255	Color	0
6	Color wheel 1	0	255	Color	0
7	Color 2 function	0	255	Color	0
8	Color wheel 2	0	255	Color	0
9	Gobo 1 function	0	255	Beam	0
10	Gobo wheel 1	0	255	Beam	0
11	Gobo 1 rotate Hi	0	255	Beam	0
12	Gobo 1 rotate Lo	0	255	Beam	0
13	Gobo 2 function	0	255	Beam	0
14	Gobo wheel 2	0	255	Beam	0

Channel	Attribute	Min	Max	Group	Default
15	Gobo 2 rotate Hi	0	255	Beam	0
16	Gobo 2 rotate Lo	0	255	Beam	0
17	Frost	0	255	Beam	0
18	Focus	0	255	Focus	0
19	Iris	0	255	Beam	255
20	Shutter	0	255	Beam	255
21	Dimmer	0	255	Intensity	255
22	Speed	0	255	Beam	0
23	Macro	0	255	Beam	0
24	Control	0	255	Beam	0

Studio Spot 250

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128
5	Color 1 function	0	255	Color	0
6	Color wheel 1	0	255	Color	0
7	Gobo 1 function	0	255	Beam	0
8	Gobo wheel 1	0	255	Beam	0
9	Gobo Rotate	0	255	Beam	0
10	Effects 1	0	255	Beam	0
11	Effects Rotate	0	255	Beam	0
12	Focus	0	255	Focus	128
13	Iris	0	255	Beam	255
14	Shutter	0	255	Beam	255
15	Dimmer	0	255	Intensity	0
16	Speed	0	255	Beam	0
17	Macro	0	255	Beam	0
18	Control	0	255	Beam	0

Technobeam

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Pan fine	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Tilt fine	0	255	Focus	128
5	Color wheel 1 Spin	0	255	Color	0
6	Color wheel 1	0	255	Color	0
7	Litho functions	0	255	Beam	0
8	Litho Wheel	0	255	Beam	0
9	Litho Rotation	0	255	Beam	0

Channel	Attribute	Min	Max	Group	Default
10	Litho Fine	0	255	Beam	0
11	Effects 1	0	255	Beam	0
12	Effects spin	0	255	Beam	0
13	Focus	0	255	Focus	0
14	Shutter	0	255	Beam	255
15	Dimmer	0	255	Intensity	255
16	Speed	0	255	Beam	0
17	Laser	0	255	Beam	0
18	Control	0	255	Beam	0

Trackspot

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Tilt	0	255	Focus	128
3	Color wheel 1	0	255	Color	0
4	Gobo wheel 1	0	255	Beam	0
5	Shutter	0	255	Beam	255
6	Dimmer	0	255	Intensity	255
7	Speed	0	255	Beam	240

Lamp Lite

Patend 575

Channel	Attribute	Min	Max	Group	Default
1	Pan fine	0	255	Focus	128
2	Pan	0	255	Focus	128
3	Tilt fine	0	255	Focus	128
4	Tilt	0	255	Focus	128
5	Speed	0	255	beam	255
6	Speed 2	0	255	beam	255
7	Effects 1	0	255	Beam	0
8	Color wheel 1	0	255	color	0
9	Gobo wheel 1	0	255	beam	0
10	Shutter	128	255	Beam	127
10	Dimmer	0	127	Intensity	127
11	Gobo Rotate	0	255	beam	0
12	Iris	0	255	beam	0
13	Focus	0	255	Focus	0

Patend 1200

Channel	Attribute	Min	Max	Group	Default

Channel	Attribute	Min	Max	Group	Default
1	Pan fine	0	255	Focus	128
2	Pan	0	255	Focus	128
3	Tilt fine	0	255	Focus	128
4	Tilt	0	255	Focus	128
5	Speed	0	255	beam	255
6	Speed 2	0	255	beam	255
7	Tilt Spin (VLM)	0	255	beam	0
8	Color wheel 1	0	255	color	0
9	Gobo wheel 1	0	255	beam	0
10	Shutter	0	255	Beam	255
11	Gobo Rotate	0	255	beam	0
12	Iris	0	255	beam	0
13	Focus	0	255	Focus	0
14	Gobo wheel 2	0	255	beam	0
15	Gobo 2 rotate	0	255	beam	0
16	Effects 1	0	255	Beam	0
17	Dimmer	0	255	Intensity	255

Martin

1220 CMYR

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	0
2	Dimmer	0	255	Intensity	255
3	Color wheel 1	0	255	Color	0
4	Color wheel 2	0	255	Color	0
5	Color mix Cyan	0	255	Color	0
6	Color mix Magenta	0	255	Color	0
7	Color mix Yellow	0	255	Color	0
8	Gobo wheel 1	0	255	Beam	0
9	Gobo wheel 2	0	255	Beam	0
10	Gobo Rotate	0	255	Beam	255
11	Focus	0	255	Focus	128
12	Iris	0	255	Beam	0
13	Effects 1	0	255	Beam	0
14	Pan	0	255	Focus	128
15	Pan fine	0	255	Focus	128
16	Tilt	0	255	Focus	128
17	Tilt fine	0	255	Focus	128
18	Speed	0	255	Beam	0
19	Control	0	255	Beam	0

1220 RPR

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	0
2	Dimmer	0	255	Intensity	255
3	Color wheel 1	0	255	Color	0
4	Color wheel 2	0	255	Color	0
5	Gobo wheel 1	0	255	Beam	0
6	Gobo wheel 2	0	255	Beam	0
7	Gobo Rotate	0	255	Beam	255
8	Focus	0	255	Focus	128
9	Iris	0	255	Beam	0
10	Effects 1	0	255	Beam	0
11	Effects Rotate	0	255	Beam	255
12	Pan	0	255	Focus	128
13	Pan fine	0	255	Focus	128
14	Tilt	0	255	Focus	128
15	Tilt fine	0	255	Focus	128
16	Speed	0	255	Beam	0
17	Control	0	255	Beam	0

1220 XR

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	0
2	Dimmer	0	255	Intensity	255
3	Color wheel 1	0	255	Color	0
4	Gobo wheel 1	0	255	Beam	0
5	Gobo wheel 2	0	255	Beam	0
6	Gobo Rotate	0	255	Beam	255
7	Focus	0	255	Focus	128
8	Iris	0	255	Beam	0
9	Effects 1	0	255	Beam	0
10	Pan	0	255	Focus	128
11	Pan fine	0	255	Focus	128
12	Tilt	0	255	Focus	128
13	Tilt fine	0	255	Focus	128
14	Speed	0	255	Beam	0
15	Control	0	255	Beam	0

218

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	37
2	Dimmer	0	255	Intensity	255
3	Color wheel 1	0	255	Color	0
4	Gobo wheel 1	0	255	Beam	0

Channel	Attribute	Min	Max	Group	Default
5	Pan	0	255	Focus	128
6	Pan fine	0	255	Focus	128
7	Tilt	0	255	Focus	128
8	Tilt fine	0	255	Focus	128
9	Speed	0	255	Beam	0

218 MkII

Channel	Attribute	Min	Max	Group	Default	Mode
1	Shutter	0	255	Beam	50	Mode 1
2	Dimmer	0	255	Intensity	255	Mode 1
3	Color wheel 1	0	255	Color	0	Mode 1
4	Gobo wheel 1	0	255	Beam	0	Mode 1
5	Pan	0	255	Focus	128	Mode 1
6	Tilt	0	255	Focus	128	Mode 1

518

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	0
2	Dimmer	0	255	Intensity	255
3	Color wheel 1	0	255	Color	0
4	Gobo wheel 1	0	255	Beam	0
5	Effects 1	0	255	Beam	0
6	Pan	0	255	Focus	128
7	Pan fine	0	255	Focus	128
8	Tilt	0	255	Focus	128
9	Tilt fine	0	255	Focus	128

918

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	20
2	Dimmer	0	255	Intensity	255
3	Color wheel 1	0	255	Color	0
4	Color wheel 2	0	255	Color	0
5	Gobo wheel 1	0	255	Beam	0
6	Gobo Rotate	0	255	Beam	0
7	Gobo wheel 2	0	255	Beam	0
8	Focus	0	255	Focus	0
9	Iris	0	255	Beam	0
10	Effects 1	0	255	Beam	0
11	Pan	0	255	Focus	128
12	Pan fine	0	255	Focus	128
13	Tilt	0	255	Focus	128
14	Tilt fine	0	255	Focus	128

MAC 250

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	20
2	Dimmer	0	255	Intensity	255
3	Color wheel 1	0	255	Color	0
4	Gobo wheel 1	0	255	Beam	0
5	Gobo Rotate	0	255	Beam	0
6	Focus	0	255	Focus	128
7	Effects 1	0	255	Beam	0
8	Pan	0	255	Focus	128
9	Pan fine	0	255	Focus	128
10	Tilt	0	255	Focus	128
11	Tilt fine	0	255	Focus	128
12	Speed	0	255	Beam	0
13	Speed 2	0	255	Beam	0

MAC 300

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	20
2	Dimmer	0	255	Intensity	255
3	Color mix Cyan	0	255	Color	0
4	Color mix	0	255	Color	0
5	Color mix Yellow	0	255	Color	0
6	Color wheel 1	0	255	Color	0
7	Frost	0	255	Beam	0
8	Pan	0	255	Focus	128
9	Pan fine	0	255	Focus	128
10	Tilt	0	255	Focus	128
11	Tilt fine	0	255	Focus	128
12	Speed	0	255	Beam	0
13	Speed 2	0	255	Beam	0

MAC 500

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	20
2	Dimmer	0	255	Intensity	255
3	Color wheel 1	0	255	Color	183
4	Color wheel 2	0	255	Color	183
5	Gobo wheel 1	0	255	Beam	0
6	Gobo Rotate	0	255	Beam	0
7	Gobo wheel 2	0	255	Beam	0
8	Focus	0	255	Focus	128
9	Iris	0	255	Beam	0

Channel	Attribute	Min	Max	Group	Default
10	Effects 1	0	255	Beam	0
11	Pan	0	255	Focus	128
12	Pan fine	0	255	Focus	128
13	Tilt	0	255	Focus	128
14	Tilt fine	0	255	Focus	128
15	Speed	0	255	Beam	0
16	Speed 2	0	255	Beam	0

MAC 600

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	20
2	Dimmer	0	255	Intensity	255
3	Color mix Cyan	0	255	Color	0
4	Color mix Magenta	0	255	Color	0
5	Color mix Yellow	0	255	Color	0
6	Color wheel 1	0	255	Color	183
7	Beam Shape 1	0	255	Beam	0
8	Beam Shape 2	0	255	Beam	0
9	Pan	0	255	Focus	128
10	Pan fine	0	255	Focus	128
11	Tilt	0	255	Focus	128
12	Tilt fine	0	255	Focus	128
13	Speed	0	255	Beam	0
14	Speed 2	0	255	Beam	0

PAL1200

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	0
2	Dimmer	0	255	Intensity	255
3	Shape 1a	0	255	Beam	0
4	Shape 1b	0	255	Beam	0
5	Shape 2a	0	255	Beam	0
6	Shape 2b	0	255	Beam	0
7	Shape 3a	0	255	Beam	0
8	Shape 3b	0	255	Beam	0
9	Shape 4a	0	255	Beam	0
10	Shape 4b	0	255	Beam	0
11	Shape rotate	0	255	Beam	128
12	Color mix Cyan	0	255	Color	0
13	Color mix Magenta	0	255	Color	0
14	Color mix Yellow	0	255	Color	0
15	Color wheel 1	0	255	Color	0
16	Gobo wheel 1	0	255	Beam	0

Channel	Attribute	Min	Max	Group	Default
17	Gobo Rotate	0	255	Beam	127
18	Focus	0	255	Focus	128
19	Zoom	0	255	Beam	0
20	Frost	0	255	Beam	0
21	Pan	0	255	Focus	128
22	Pan fine	0	255	Focus	128
23	Tilt	0	255	Focus	128
24	Tilt fine	0	255	Focus	128
25	Speed	0	255	Beam	0
26	Control	0	255	Beam	0

PAL1200E

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	0
2	Dimmer	0	255	Intensity	255
3	Color mix Cyan	0	255	Color	0
4	Color mix Magenta	0	255	Color	0
5	Color mix Yellow	0	255	Color	0
6	Color wheel 1	0	255	Color	0
7	Gobo wheel 1	0	255	Beam	0
8	Gobo Rotate	0	255	Beam	112
9	Effects 1	0	255	Beam	0
10	Effects Rotate	0	255	Beam	112
11	Focus	0	255	Focus	128
12	Zoom	0	255	Beam	0
13	Iris	0	255	Beam	0
14	Frost	0	255	Beam	0
15	Pan	0	255	Focus	128
16	Pan fine	0	255	Focus	128
17	Tilt	0	255	Focus	128
18	Tilt fine	0	255	Focus	128
19	Speed	0	255	Beam	0
20	Speed 2	0	255	Beam	0

Robocolor Pro 400

Channel	Attribute	Min	Max	Group	Default
1	Shutter	0	255	Beam	255
2	Dimmer	0	255	Intensity	255
3	Color wheel 1	0	255	Color	0
4	Color wheel 2	0	255	Color	0
5	Gobo wheel 1	0	255	Beam	0

Pan Command

Color Fader

Channel	Attribute	Min	Max	Group	Default
1	Color mix Yellow	0	255	Color	0
2	Color mix Magenta	0	255	Color	0
3	Color mix Cyan	0	255	Color	0

SGM

Newton 1200

Channel	Attribute	Min	Max	Group	Default
1	Iris	0	255	Beam	0
2	Color wheel 1	0	255	Color	0
3	Shutter	0	255	Beam	0
4	Dimmer	0	255	Intensity	0
5	Color Modifier	0	255	Color	0

Studio Due

Stratos Hi-Res

Channel	Attribute	Min	Max	Group	Default
1	Iris	0	255	Beam	0
2	Color wheel 1	0	255	Color	21
3	Gobo wheel 1	0	255	Beam	10
4	Shutter	0	255	Beam	0
5	Pan	0	255	Focus	128
6	Pan fine	0	255	Focus	128
7	Tilt	0	255	Focus	128
8	Tilt fine	0	255	Focus	128
9	Dimmer	0	255	Intensity	255
10	Speed	0	255	Beam	255
11	Focus	0	255	Focus	0
12	Color wheel 2	0	255	Color	14
13	Gobo wheel 2	0	255	Beam	10
14	Gobo Rotate	0	255	Beam	128

Vari*light

VL Mirror

Channel	Attribute	Min	Max	Group	Default
1	Pan	0	255	Focus	128
2	Tilt	0	255	Focus	128
3	Tilt Spin (VLM)	0	255	Beam	0
4	Tilt Spin Rev	0	255	Beam	0

VL5

Channel	Attribute	Min	Max	Group	Default
1	Dimmer	0	255	Intensity	255
2	Pan	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Color mix Cyan	0	255	Color	0
5	Color mix Yellow	0	255	Color	0
6	Color mix Magenta	0	255	Color	0
7	Frost	0	255	Beam	0

VL5A

Channel	Attribute	Min	Max	Group	Default
1	Dimmer	0	255	Intensity	255
2	Pan	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Color mix Cyan	0	255	Color	0
5	Color mix Yellow	0	255	Color	0
6	Color mix Magenta	0	255	Color	0
7	Frost	0	255	Beam	0

VL6

Channel	Attribute	Min	Max	Group	Default
1	Dimmer	0	255	Intensity	255
2	Pan	0	255	Focus	128
3	Tilt	0	255	Focus	128
4	Gobo wheel 1	0	255	Beam	0
5	Color wheel 1	0	255	Color	0
6	Iris	0	255	Beam	255
7	Focus	0	255	Focus	128

Wybron

Forerunner

Channel	Attribute	Min	Max	Group	Default
1	Color wheel 1	0	255	Color	0

Appendix C:
Creating and Editing Moving Light Devices

Devices

Devices that are not included in the LP-3000 library can be added at any time. You will need information from the manufacturer that specifies the DMX channel assignments for the attributes of the devices.

To Create a New Conventional Device

1. From the **Main** screen, click **Setup, DMX Lines** and then **Device List**.

   The LP-3000 displays the **Device List** screen.

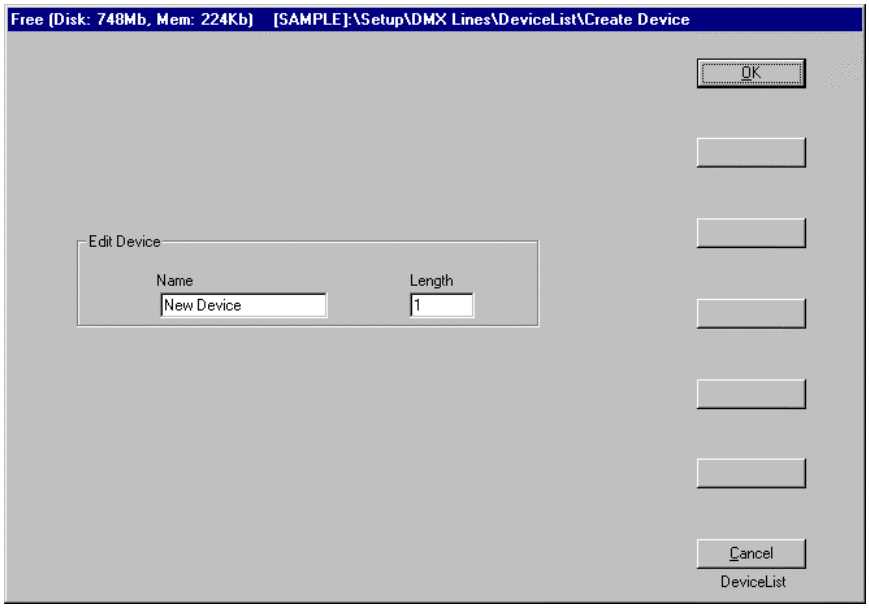
2. If necessary, click **Switch to HTP**.

   Conventional lights are referred to as “Highest Takes Precedence” devices or “HTP”.

   The LP-3000 displays a list of the default HTP instruments that have been loaded into the show.

3. Click **Create Device**.

   The LP-3000 displays the **Create Device** screen.



4. In the **Name** box, enter a name for the new device.
5. Press the **TAB** key.
6. In the **Length** box, enter the number of DMX channels required by the device.
7. When you are done, click **OK**.

To Create a New Moving Light Device

1. From the **Main** screen, click **Setup, DMX Lines** and then **Device List**.

   The LP-3000 displays the **Device List** screen.

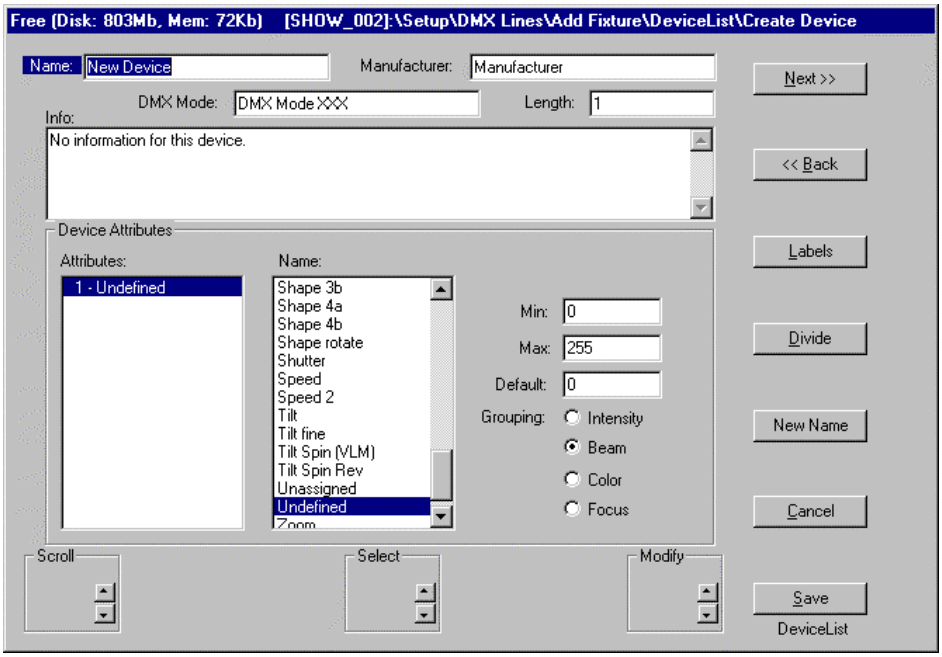
2. If necessary, click **Switch to LTP**.

   Moving lights are referred to as “Last Takes Precedence” devices or “LTP”.

   The LP-3000 displays a list of the LTP instruments that have been loaded into the show.

3. Click **Create Device**.

   The LP-3000 displays the **Create Device** screen.



4. Enter information into the first four fields on the screen.

   Use the **Select** edgewheel to move from field to field.

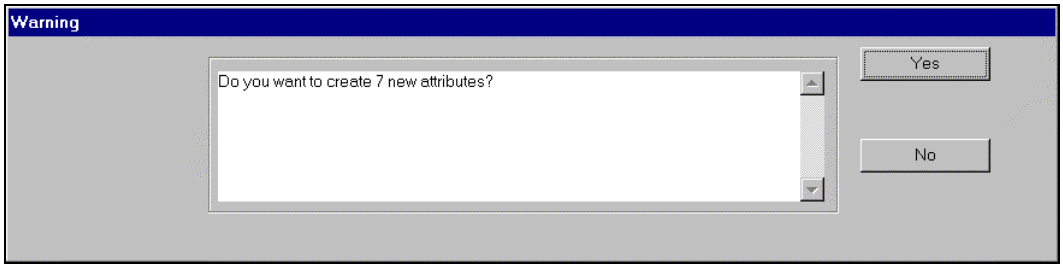
   Name: Enter a name for the device. This name will appear in the **Programming** screen and **Instrument** lists.

   Manufacturer: Enter the name of the device's manufacturer.

   DMX Mode: This is an informational field in which you can enter data about the DMX mode of the device.

   Length: The number of channels that the device requires.

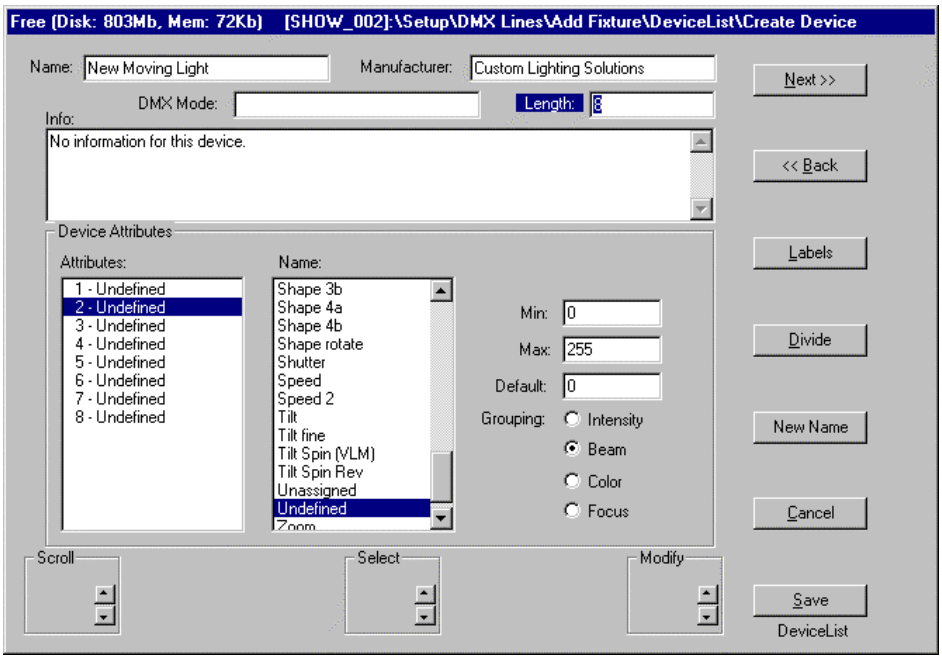
5. After entering a number in the **Length** field and moving to a new field, the LP-3000 displays a warning dialog box to confirm the addition of the new attributes.



Note that the LP-3000 will always ask you to confirm creating one attribute fewer than the number you entered in the **Length** field. This is because an undefined attribute is automatically created when you first open the **Create Device** screen.

6. Click **Yes** to continue.

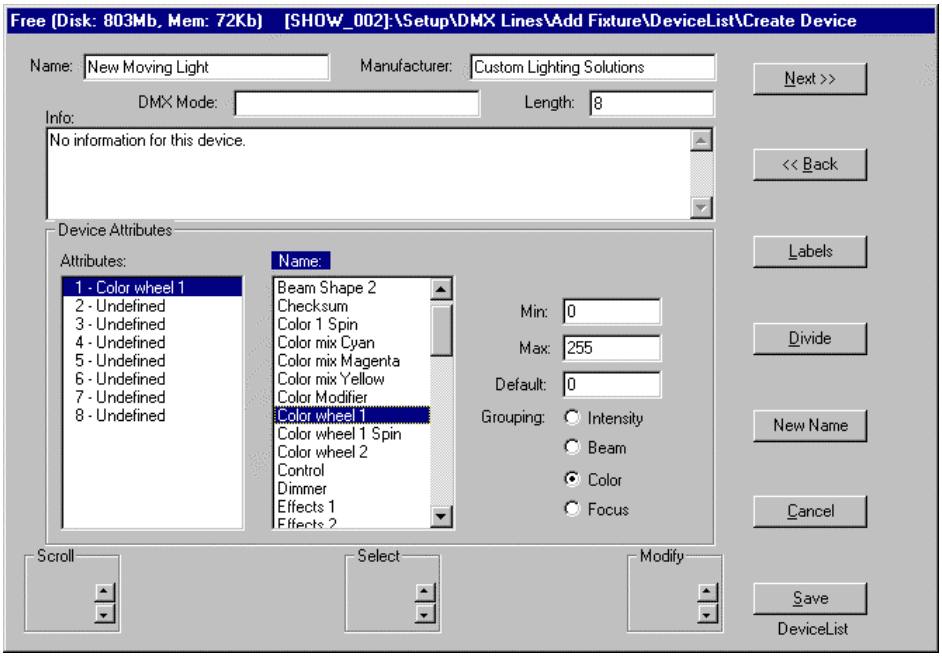
   The LP-3000 adds the undefined attributes to the **Attributes** list.



   If you click **No**, the LP-3000 automatically changes the number in the **Length** field back to **1**. Simply enter the desired number in the field and click **Next**.

7. Use the following technique to assign names to each attribute of the new device:

   Using the **Select** edgewheel, activate the **Name** list. Then, use the **Scroll** edgewheel to select an attribute from the **Attribute** list and then the **Modify** edgewheel to select a name from the **Name** list. Do this for all attributes in this list.

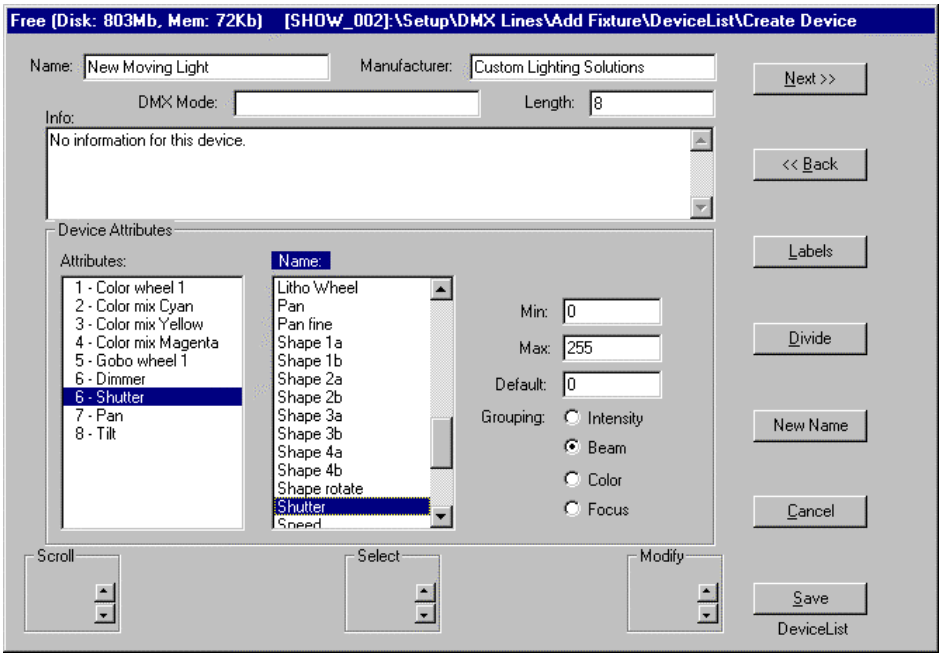


8. To create a new name for an attribute, activate the **Name** list. Then click **New Name**. Enter a name for the attribute in the **New Attribute Name** dialog box and click **OK**. The name is added to the **Name** list.

   We recommend that you use the attributes from the **Name** list as much as possible to ensure that the names you choose are identical to those used for other fixtures in the library. This is essential to getting consistent looks from different instruments.

9. To divide an attribute channel between two attributes, select the channel that you want to divide and click **Divide**. The LP-3000 repeats the channel number. Assign the divided channel the appropriate attributes.

   There are several lights that have two attributes on the same channel.



10. Adjust any **Min** and **Max** DMX values that do not match the defaults.

    The default minimum value is 0. The default maximum value is 255. These values are usually correct. One exception is the case where an instrument has split attributes—two attributes assigned to the same channel.

11. Adjust any **Default** values that are incorrect.

    This is the value that is selected by default for cue programming.

12. For any attributes that you created or divided, assign the correct **Grouping**.

    The attribute names that appear in the **Name** list are automatically assigned to the correct grouping.

    You will only need to assign the grouping to the ones you have added.

    Pan and tilt are always Focus attributes. Dimmer is always an Intensity attribute. Color and color mix are Color attributes. Most others—such as gobo, iris and shutter—are Beam attributes.

13. If you want to add your own comments about the fixture, move to the **Info** field and enter your comments.

14. If you want to add attribute labels to the instrument, please go directly to the procedure ***To Add Attribute Labels to an Instrument*** beginning on page 163.

15. When the instrument definition is complete, click **Save** to store the instrument in the library.

NOTE: If you want to use the instrument in your show, add it to the show by following the procedure ***To Install a Moving Light Fixture into the System*** beginning on page 31.

To Edit an Instrument

1. From the **Main** screen, click **Setup, DMX Lines** and then **Device List**.

   The LP-3000 displays the **Device List** screen.

2. If necessary, click **Switch to LTP** or **Switch to HTP**.

3. Using the **Scroll** edgewheel, select the device that you want to edit.

4. Click **Edit Device**.

   The LP-3000 displays the **Edit Fixture** screen.

5. Use the techniques described in ***To Create a New Conventional Device*** beginning on page 157 or ***To Create a New Moving Light Device*** beginning on page 158 to make changes to the current settings for the instrument.

6. When you are done, click **Save**.

To Delete an Instrument

1. From the **Main** screen, click **Setup**, **DMX Lines** and **Device List**.

   The LP-3000 displays the **Device List** screen.

2. If necessary, click **Switch to LTP** or **Switch to HTP**.

3. Using the **Scroll** edgewheel, select the device that you want to edit.

4. Click **Delete Device**.

   The LP-3000 deletes the device.

   CAUTION: This cannot be undone.

Attribute Labels

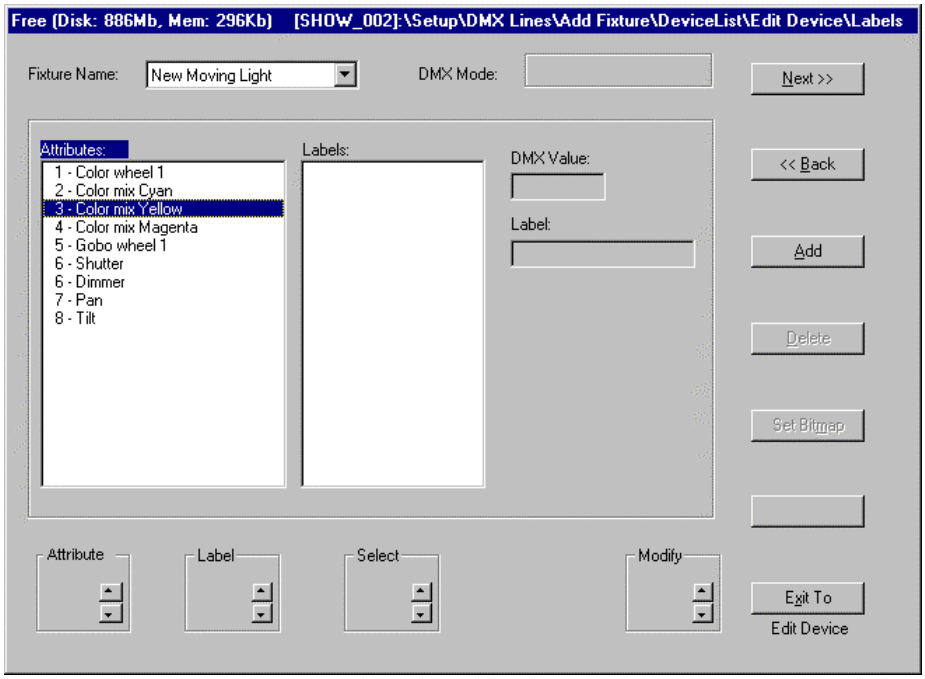
You can use the **Label** screen to add labels for any user-created device.

We recommend that you use this screen *only* if your device has a single attribute. Examples of single-attribute devices are a color changer or a fog machine. For devices with more than one attribute, we strongly recommend that you follow the procedure ***Creating Labels*** beginning on page 119.

To Add Attribute Labels to an Instrument

1. Prior to clicking **Save** when you create an instrument, click **Labels**.

   The LP-3000 displays the **Labels** screen.



You can also reach this screen by following the procedure ***To Edit an Instrument*** beginning on page 163. With the **Edit Fixture** screen displayed, click **Labels** to open the **Labels** screen.

2. Use the **Attribute** edgewheel to select an attribute from the list.

   Do not add labels for dimmer, pan, tilt or focus attributes. These cannot be used by the LP-3000.

3. Click **Add**.

   The LP-3000 adds an untitled label to the attribute.

4. In the **DMX Value** field, enter the DMX value for the label.

5. In the **Label** field, enter the name for the label.

6. Repeat steps 2 through 6 for all labels that you want to add to the instrument.

7. If you make a mistake, select the label and click **Delete**.

8. When you are done, click **Exit To Edit Device**.

NOTE: The **Set Bitmap** button is reserved for a feature that will be available in an upcoming release.

To Edit Attribute Labels for an Instrument

You can edit attribute labels for an instrument using the procedure given above or the procedure for “live” editing given in ***Editing Labels*** which begins on page 126.

Appendix D:
Control Features

Some Moving Light devices have attributes that enable the user to send control signals that spark, reset and douse lights from the LP-3000 console. These attributes are called *control features*.

Control features are only available in shows created using the LP-3000 version 330 and higher.

When to use Control Features

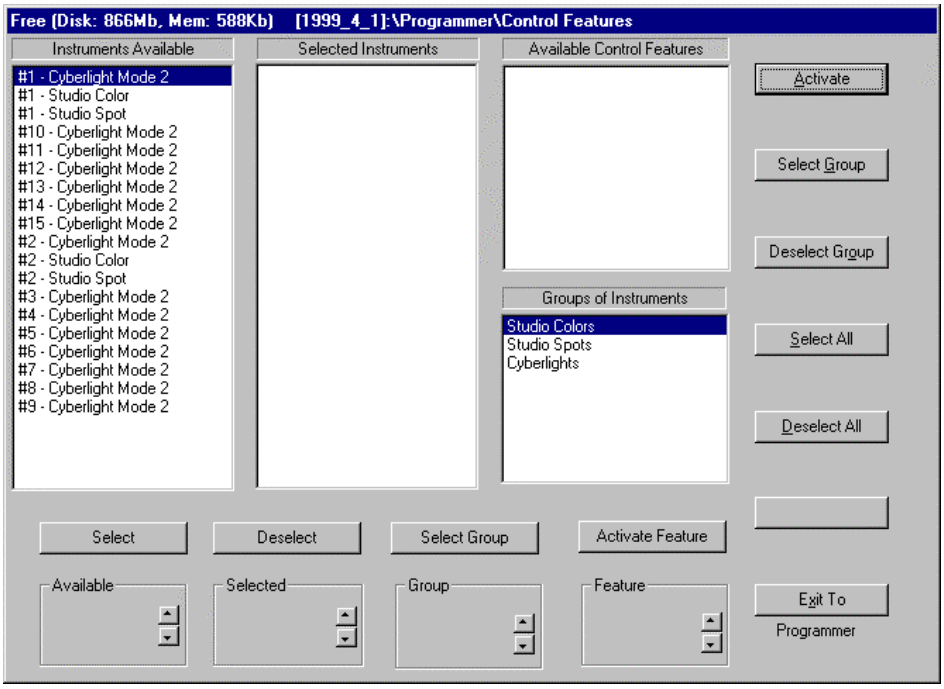
Feature	When to Use
Lamp On	Some fixtures do not start up automatically. Use the Lamp On feature to strike the lamp.
Lamp Off	Some fixtures do not shut off automatically. Use the Lamp Off feature to douse the lamp. You can also use this feature if an instrument needs to be shut down during a show due to a mechanical problem.
Home	Resets the fixture. Use if an instrument is behaving erratically due to a technical difficulty.

How to use Control Features

Control features are only available for instruments that have DMX line assignments in the show that is currently open.

1. From the **Main** screen, click **ML Program**, **Instruments** and then **Control Features**.

   The LP-3000 displays the **Control Features** screen.



2. Select one or more instruments to which a control feature will be applied.

   There are several selection methods available.

To	Do
Select a single instrument.	Use the **Available** encoder to highlight the instrument in the **Instruments Available** list. Then click **Select**.
Select several instruments.	Repeat the procedure for selecting a single instrument until all desired instruments are selected.
Select a group of instruments.	Use the **Select Group** encoder to highlight the group in the **Groups of Instruments** list. Then click **Select Group**.
Select all instruments.	Click **Select All**.

   Notice that if you select instruments of different types, only the control features that they have in common will be displayed in the **Available Control Features** list. For example, the Studio Color has the control features *Home* and *Lamp Off*. The Cyberlight Mode 2 has the control feature *Home*. With instruments of both types selected, only the control feature *Home* appears in the **Available Control Features** list.

3. Using the **Activate Feature** edgewheel, select a control feature.

4. Click **Activate Feature** or **Activate**.

   The control feature is loaded and sent.

   NOTE: If you are playing back a cue, the control feature overrides the cue values for the selected instruments.

5. When you are done, click **Exit To Programmer**.

Instruments that Have Control Features

Control features are only available for instruments that have DMX line assignments in the show that is currently open.

Instrument Name	Control Features
218 MkII	Home
518	Home, Lamp On, Lamp Off
918	Home, Lamp On, Lamp Off
Cyber Litho mode 2	Home
Cyberlight	Home
Cyberlight Mode 2	Home
Mac 250	Home, Lamp On, Lamp Off
Mac 300	Home, Lamp On, Lamp Off
Mac 500	Home, Lamp On, Lamp Off
MAC 600	Home, Lamp On, Lamp Off
Studio Color	Home, Lamp Off
Studio Spot	Home, Lamp Off
Technobeam	Home, Lamp On, Lamp Off

Appendix E:
Importing Labels and Devices from Other Shows

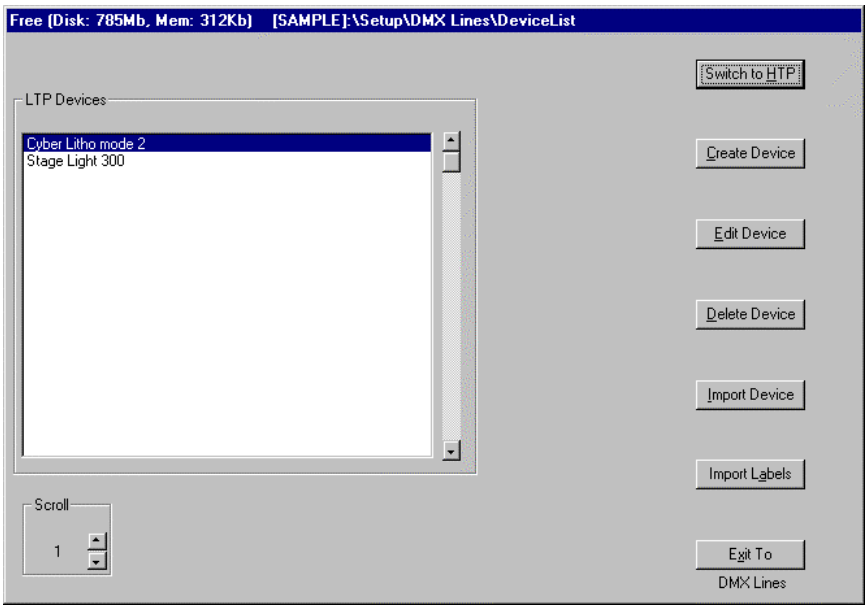
New in LP-3000 version 330 is a powerful feature that enables you to import the user-created labels and devices from an old show into a new show.

Importing Labels

We strongly recommend that you import labels immediately after you add moving light fixtures into the show—and before you start to create cues. When you import labels for a device, the LP-3000 overwrites all existing user-created labels for the device in the destination show.

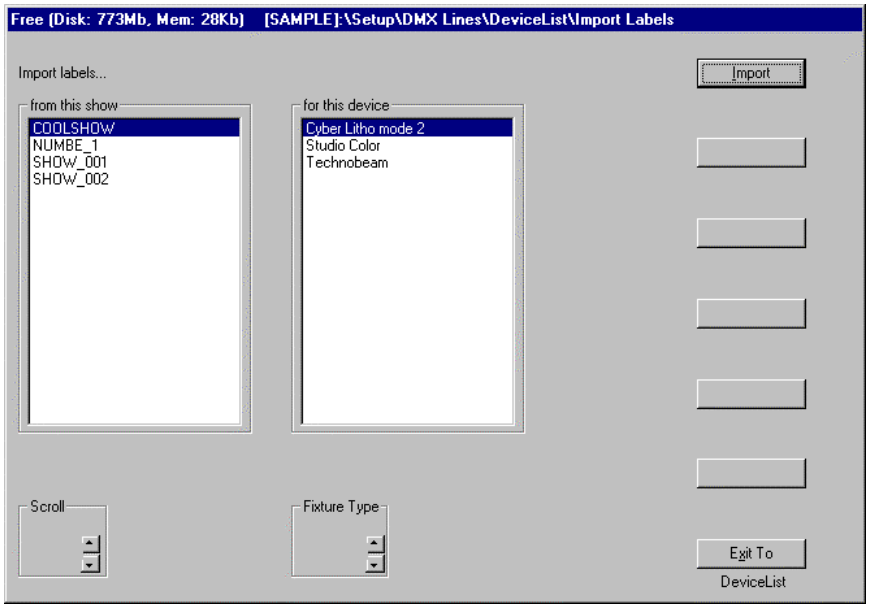
1. From the **Main** screen, click **Setup**, **DMX Lines** and then **Device List**.

   The LP-3000 displays the **Device List** screen.



2. Click **Import Labels**.

   The LP-3000 displays the **Import Labels** screen.



3. Using the **Scroll** edgewheel, select the show from which you want to import labels.

   The shows that are listed in the **from this show** box are all version 330 or higher shows that are currently on the LP-3000. If you want to import labels from a show that is on a floppy disk, you must copy the show from the floppy disk to the LP-3000 hard disk.

4. Using the **Fixture Type** edgewheel, select the device for which you want to copy labels.

   The **for this device** box displays a list of devices in the old show that meet two criteria: (1) the device is also in the new show and (2) the device has user-created labels.

5. Click **Import**.

   The LP-3000 imports the labels from the selected show and device into your new show.

Importing a Device

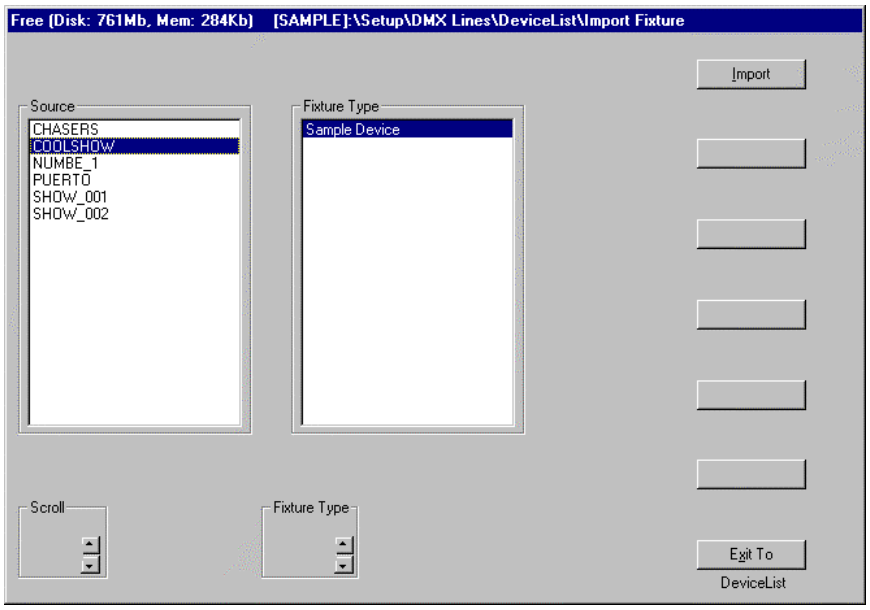
The LP-3000 includes an extensive library of moving light devices. Nonetheless, it is possible that you use a device that isn't included in the library. You can "create" the device by following the procedure To Create a New Moving Light Device beginning on page 158. Once the device is created, you can import it into new shows so that you do not have to create it time and time again.

1. From the **Main** screen, click **Setup**, **DMX Lines** and then **Device List**.

   The LP-3000 displays the **Device List** screen.

2. Click **Import Device**.

The LP-3000 displays the **Import Fixture** screen.



3. Using the **Scroll** edgewheel, select the show from which you want to import the device.

   The **Source** box lists all shows that are currently on the LP-3000. If you want to import a device from a show that is on a floppy disk, you must copy the show from the floppy disk to the LP-3000 hard disk.

4. Using the **Fixture Type** edgewheel, select the device that you want to import.

   The **Fixture Type** box displays only the user-created devices that are part of the selected show.

5. Click **Import**.

   The LP-3000 imports the device from the selected show into your new show.

   To include the device in your show, you must now give it a DMX line assignment. Please see ***DMX Line Assignment*** beginning on page 27 for complete details.

Glossary

Active Attribute: An important difference between cues for Moving Lights and conventional instruments is that it is necessary to enable only some of the attributes in a specific cue. This means that a cue can consist of only certain attributes, with all other attributes left in a “no change” condition. Attributes that are to be updated in a cue are referred to as “Active” attributes in that cue.

Attribute: Each adjustable feature of the instruments is referred to as an attribute. Iris, Color Wheel 1, Gobo Wheel 1 and Pan Fine are all examples of attributes. In some cases, an instrument attribute will be completely controlled by a single DMX channel. In some cases, more than one channel may be interpreted to determine the status of an attribute—as is the case with color mixing. Finally, a single control channel may contain information for two different attributes; this is the case with some Clay-Paky fixtures that combine Iris and Gobo rotation on a single channel to minimize the control channel requirements.

Beam: The shape of the beam as modified by passing it through a variety of modifiers (shutter, iris, gobo).

Board Channel: Lowest level of independent control in the board. A single board channel may be used to control several dimmer channels.

Bump Button: A switch used to quickly bring a board control to 100%. Pressing a **Bump** button is an alternative to flinging a fader to full. The LP-3000 has a **Bump** button for each board channel, located below the fader.

Channel: See *Board Channel* and *Dimmer Channel*.

Chase: A repeating pattern of scenes typified by moving marquee lights around the outdoor signs on the theatre itself.

Color: A property of a Moving Light. In some fixtures, color is determined by a palette of colors on a wheel. In other fixtures, color is determined by a mixture of colors on (usually) three filters.

Color (Color Property): Color effects in a Moving Light are generally produced by placing a color media in the path of the beam. Dichroic filters are the media of choice. Usually a disc with several filters is placed so that rotating the disc will move one of the filters into position. Some fixtures have the ability to spin the color wheel continuously for an entertaining effect.

Color Mixing (Color Property): Some advanced instruments use the combination of three-color media to produce a wide range of colors. Usually referred to as CYM or color mixing, three channels are used to set the relative saturation of the component colors. This also allows fading from one color to another without the abrupt change that is characteristic of a rotating color wheel.

Crossfade: The action of changing from one scene to another. The intent is a smooth transition from one look to another over a fixed time. The term “dipless” describes an algorithm that does not disturb the level of dimmers with identical settings in the current and upcoming scenes. Each scene in the chase is called a “step” and the number of steps is determined at the time the chase is programmed. The “rate” of a chase refers to the time the steps are active before being replaced with the next step.

Cue: See *Scene*.

Dimmer (Intensity Property): The high-performance Moving Lights of today usually utilize discharge lamps as a light source. These arc lamps are compact, efficient and have a high color temperature. On the down side, they require a large and heavy ballast and cannot be dimmed electrically. As a result, the dimming system usually consists of a mechanical element such as a disk with progressively narrower slots.

Dimmer: A solid state electronic device that controls power delivered to stage instruments. Usually operates by AC power to incandescent lamps. Typically dimmer channels are built with 10 amp (1Kw) or 20 amp (2Kw) capacity.

Dimmer Channel: The control of a single dimmer. Dimmers have only one attribute—level. Usually dimmers are controlled via a digital industry standard protocol called DMX512.

Dipless Crossfade: See *Crossfade*.

DMX Mode: For some moving light fixtures, you can select between several modes of operation. A DMX mode requiring fewer channels will support fewer features or offer control that is less fine. A DMX mode requiring more channels will support more features or offer finer control.

Effects (Beam Property): The number of elements that can be introduced into the optic path is limited only by the imagination of instrument designers and the budgets of the users. Besides the standards of gobo and color, several popular instruments incorporate another general-purpose wheel for effects. These can include prisms to split the beam, color correction filters and diffusion media or “frost”. The exact features that are loaded in an effects wheel can vary widely.

Fader: A potentiometer that is used to set the level of a board channel.

Fixture: See *Moving Light* and *Dimmer*.

Focus: The position of the beam and sharpness or definition of the beam edge.

Frost (Beam Property): The number of elements that can be introduced into the optic path is limited only by the imagination of instrument designers and the budgets of the users. Besides the standards of gobo and color, several popular instruments incorporate another general-purpose wheel for effects. Such effects can include diffusion media or “frost”.

Gobo (Beam Property): A gobo is a cut out pattern that is inserted into the beam so as to project a pattern on the stage. The gobo has been around about as long as instruments with lenses. As with color wheels, gobo wheels are positioned in the light beam and can be rotated to the proper position on cue. Some gobo sizes are standardized which allows custom gobo patterns to be fabricated and inserted into the gobo wheel for specific effects.

Group: A group is a convenient functional set of instruments. An instrument can be a member of multiple groups. The user creates groups to set cues for multiple instruments at one time. A group can consist of instruments of different personalities and manufacturer types.

Handle: See *Fader*.

Highest Takes Precedence: A method of playing back several preset scenes at one time. The level for each channel is determined by finding the highest level for each channel present in all of the active (piled-on) scenes. Example:

Recorded Channel Value	Preset Playback Position	Result
50%	75%	37.5% (75% of 50)
25%	90%	22.5% (90% of 25)
30%	100%	30.0% (30% of 100)

The output value for the channel with these scenes piled on as shown would be 37.5%.

HTP: See *Highest Takes Precedence*.

Indexed Gobo (Beam Property): An effect that allows the gobo to be precisely oriented or *indexed*. This is important when a pattern is projected, such as a corporate logo.

Instrument: See *Moving Light* and *Dimmer*.

Intensity: The brightness of the beam, usually controlled by a mechanical dimmer in a moving light.

Iris (Beam Property): The iris of an moving light is identical to any other iris—a clever multi-leaf element that produces a variable sized round aperture. As the iris size changes, the intensity of the remaining beam remains constant.

Label: A name applied to a specific attribute value or a combination of attribute values. This allows the user to pick attribute values by names—not by numbers.

Last Takes Precedence (LTP): The method of determining output when several cues are executed simultaneously. In dealing with dimmer cues, the highest channel level takes precedence (HTP). With Moving Light cues, the last cue executed takes precedence over the previous cues.

LTP: See *Last Takes Precedence*.

Mirror (Focus Property): The positioning of the mirror is responsible for the “focus” or position of the beam. Generally, stepper motors are used to set the mirror position, with an XY axis for pan and tilt. Some instruments use a single 8-bit value for mirror position; other instruments use a 16-bit value. This information is significant only for ensuring that the LP-3000 set-up for an instrument is correct. Because of the limitations in the pan and tilt mechanisms, the area that a moving mirror can light is restricted. Instruments such as the Vari*lite and Studio color, on the other hand, are moving head or true moving lights. These instruments are less restricted in their range of movement but use all of the features of the LP-3000 Moving Light Controller software as a moving mirror instrument would.

Moving Light: A special class of light fixtures that have programmable properties. Unlike conventional lights (dimmers) that have only the property *level*, moving lights have four properties—color, beam, focus and intensity.

Moving Light Cue: A Moving Light cue (ML cue) is a specific static look on stage. A cue is the product of specific settings for each of the attributes for all instruments in the system.

No Change: In moving light programming, a label or attribute setting specifying that the cue should not change from the value or values in the last cue. In the following example, the color for CUE_002 would be red because the preceding cue has the color red.

CUE_001 RED

CUE_002 NO CHANGE

CUE_003 BLUE

If the setting for the color in CUE_001 were changed to blue, the color in CUE_002 would also change to blue.

Also known as *transparency*.

Personality: The mapping of parameters to DMX channels is accomplished by an instrument database that is factory defined and is extensible by the user. The response of the instrument to DMX data is determined by its personality, which is stored in the LP-3000 database.

Pile-On: See *Highest Takes Precedence*.

Playback: The faders on the LP-3000 that control entire scenes of conventional instruments as well as chases and ML chases are called playbacks. Their function is to bring scenes back from memory on demand. In the LP-3000, all 18 playbacks can be used at the same time.

Preset: See *Scene*.

Preset Scene: See *Scene*.

Prism (Beam Property): The number of elements that can be introduced into the optic path is limited only by the imagination of instrument designers and the budgets of the users. Besides the standards of gobo and color, several popular instruments incorporate another general-purpose wheel for effects. Such effects can include prisms to split the beam.

Rotating Gobo (Beam Property): Another special effect is the ability to rotate a gobo pattern. This is not to be confused with spinning the entire wheel. Still another stepper motor is used to rotate the individual gobo in its position on the gobo wheel. Usually another control channel is used to set the rate and direction of the rotation.

Scene: Historically, a bank of faders—one fader for each board channel. When referring to memory boards, usually means a stored pattern that contains the level for each board channel. Scenes are the basic looks that a designer produces on stage.

Sequence: A sequence is a chain of moving light cues, executed in order with a single event trigger.

Shutter (Beam Property): To produce a fast blackout, a mechanical shutter is used that blocks all light output very quickly. Opening and closing the shutter rapidly is used as a strobe effect.

Split Dipless Crossfade: See *Crossfade*.

Submaster: See *Scene*.

Timed Fade: A pre-programmed event that performs a crossfade from one scene to another. Usually this is triggered by the board operator with a switch that invariably is called a **Go** button. Timed fades in the LP-3000 are performed in the **Stack** section.

Xfade: See *Crossfade*.

Zoom and Focus (Beam Property): As Moving Lights are used for their static properties as well as their ability to move, manufacturers have added motor controls to the optics. The results are the ability to control the “sharpness” or definition of the beam edge (focus) and the size of the projected beam (zoom). Controlling the beam size with the iris maintains the intensity as the area of coverage changes. Zooming the fixture concentrates the light into a larger or smaller area with a corresponding change in illumination.

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