Getting Started

This chapter will explain the set-up and connection procedures for your projector, including information pertaining to basic adjustments and interfacing with peripheral equipment.

Powering Up The Projector

Insert the power cord into the AC input socket of your projector, as shown in Figure 1. Connect the other end of the power cord to an AC outlet.

Upon connecting to power, the projector will enter the *Live State** the Lamp Age LED, the Lamp Status LED and the Power On/Standby LED will flash on then off then on again. The fan will turn on and the lamp will light. During this time the projector keypad and the remote control will be inactive. After approximately 12 seconds the remote control and the projector keypad will become active and all projector functions will become accessible.

*For an explanation of the projectors operational states see page A-4 in the appendix.
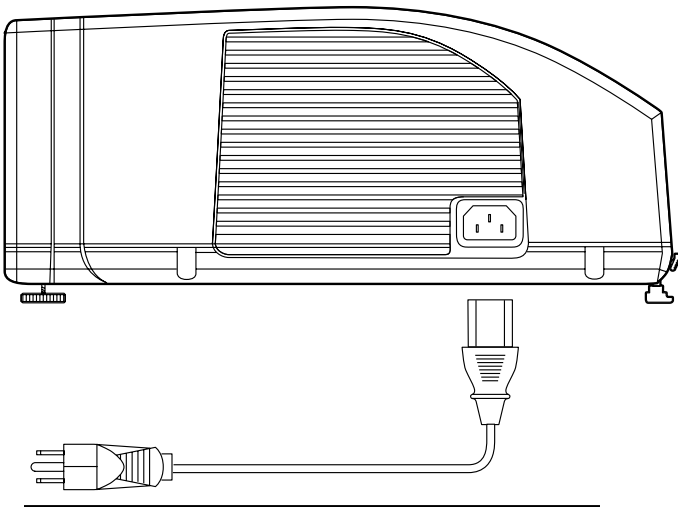

Figure 1: Power Connection

Connecting to an IBM Compatible Desktop PC.

Set the resolution of your computer display to XGA (1024x768) or lower.

Disconnect the PC monitor cable from the computer monitor output connection on your computer.

Connect the supplied 15 pin VGA signal cable to your projector *Computer In* connector as shown in figure 2.

Connect the other end of the cable to the monitor output connection of your computer.

Note: If you wish to view your computer and projected images simultaneously, use the 15-pin HD gender changer to connect the computer monitor cable to the projector *Monitor Out* connector.
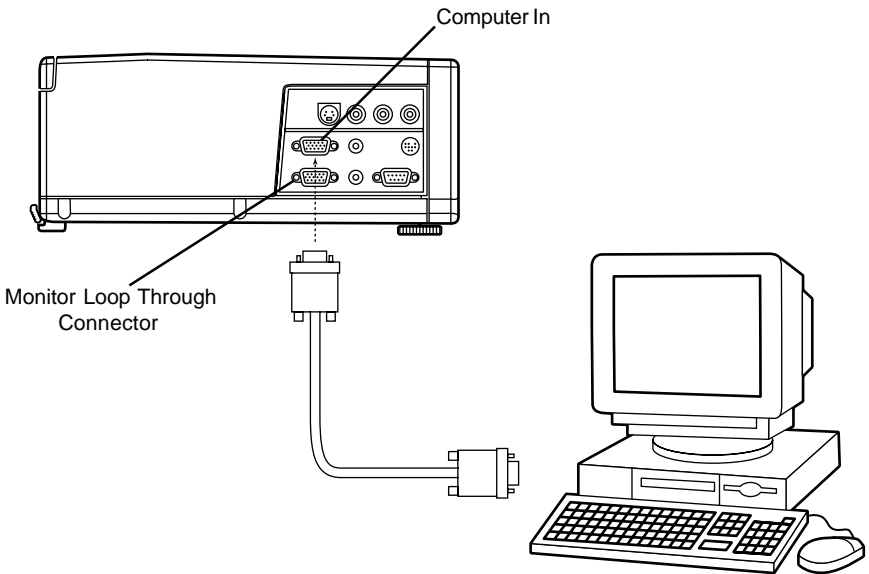

Figure 2: PC Desktop Connection

Connecting to an IBM Compatible Laptop PC

Set the resolution of your laptop display to XGA (1024x768) or lower.

Connect the supplied 15 pin VGA signal cable to your projector *Computer In* as shown in figure 3.

Connect the other end of the cable to the external monitor output connector of your computer.

Activate the laptop's external monitor (VGA) port. This is usually accomplished using the Fn key in conjunction with one of the function keys (Fn+F4 for example).

Note: See page A-15 in the appendix for a list of laptop manufacturers and the methods they use to activate the laptop's external monitor port.
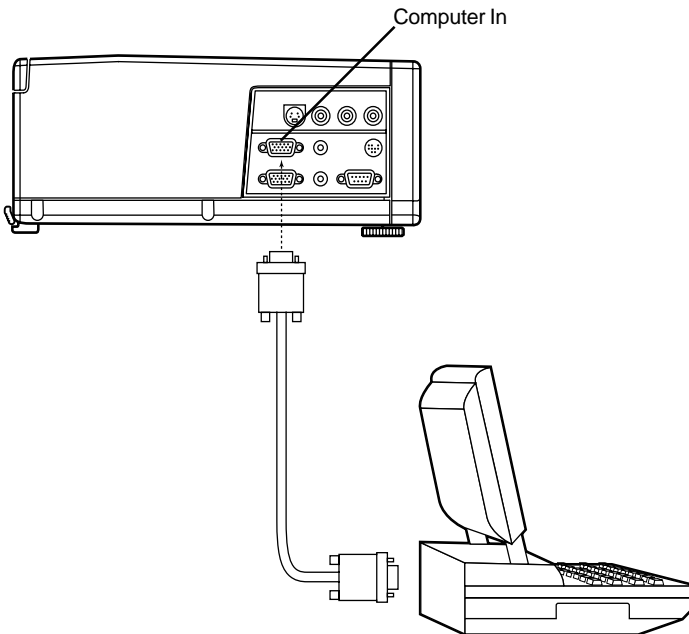
Computer In

Figure 3: PC Laptop Connection

Connecting to a Mac Desktop Computer

If your Mac has a separate VGA output port, connect the supplied 15 pin VGA cable to that output port and connect the other end of the VGA cable to the *Monitor In* connector on the projector.

In the Mac O/S control panel, set the mirroring option to ON and designate the external monitor as the active monitor. For more information on the mirroring function see page A-13 in the appendix.

If your Mac does not have a separate VGA output port, then discon-nect the monitor cable from the computer monitor output connector and connect the Mac adapter (available upon request) to the monitor output connector on the computer as shown in figure 4. Connect the supplied VGA cable to the output side of the Mac adapter. Set the dip switches on the Mac adapter to match the output requirements of your Mac. See page A-11 in the appendix for help in setting the dip switches.

Note: If you wish to view your computer and projected images simulta-neously, you can use the built-in monitor loop-through connec-tion of the projector to connect to your Mac monitor. Connect the Mac loop-through adapter (available upon request) to the projector *Monitor Out* connector. Connect your Mac monitor cable to the output side of the loop-through adapter.
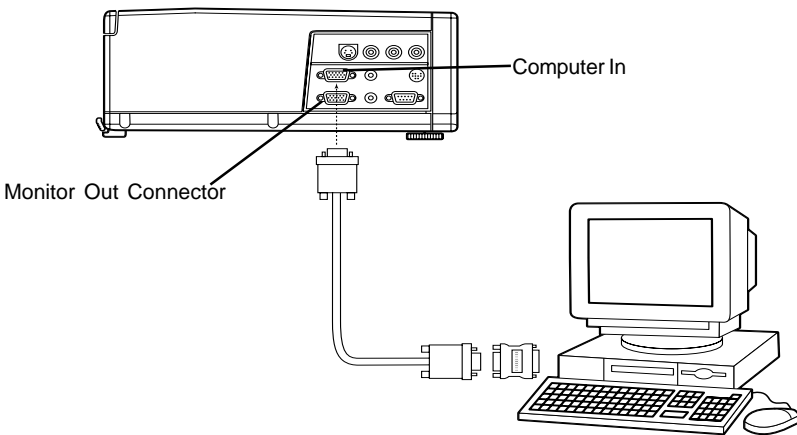

Figure 4: Mac Desktop Connection

Connecting to a Mac Laptop Computer

Connect the Mac adapter (available upon request*) to the laptop external monitor output port. Connect the supplied VGA cable to the output side of the Mac adapter shown in figure 5. Connect the other end of the VGA cable to the L-1020 *Monitor In* connector. Set the dip switches on the Mac adapter to match the output requirements of your Mac. See page A-11 in the appendix for help in setting the dip switches.

Different models of Mac Computers have different requirements for using an external monitor. For more information on connecting to an external monitor or projector see page A13 in the appendix.
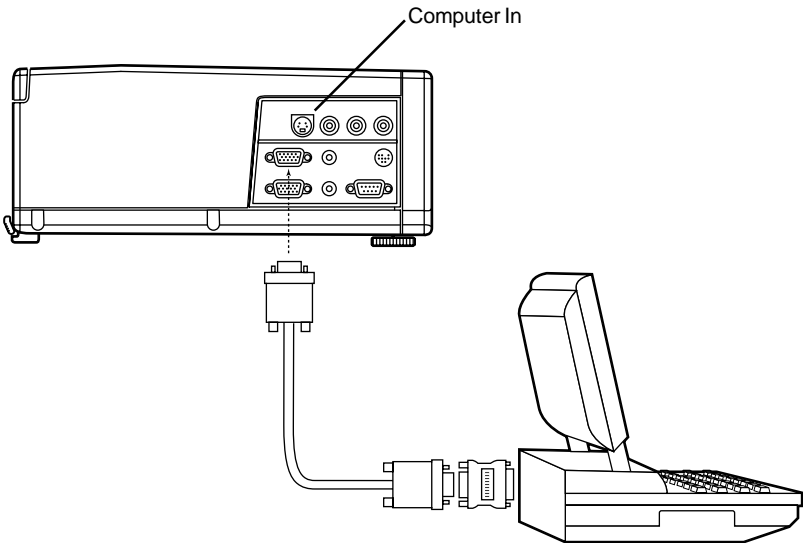
Computer In

Figure 5: Mac Laptop Connection

*To request a Mac adapter, call Lightware technical support at 1-800-445-9396.

Connecting to Computer Audio

There are separate audio input connections for computer and VCR on your Lightware L-1020.

To connect to your computer audio output, plug one end of the supplied stereo-audio cable (3.5mm male connectors on each end) into the audio output jack of your desktop computer or the speaker output jack of your laptop. Connect the other end of the stereo audio cable to the computer *Audio In* jack of the Lightware L-1020 as shown in figure 6.

The L-1020 has the capability of providing an audio signal to powered external speakers via the 3.5mm *Audio Out* jack.
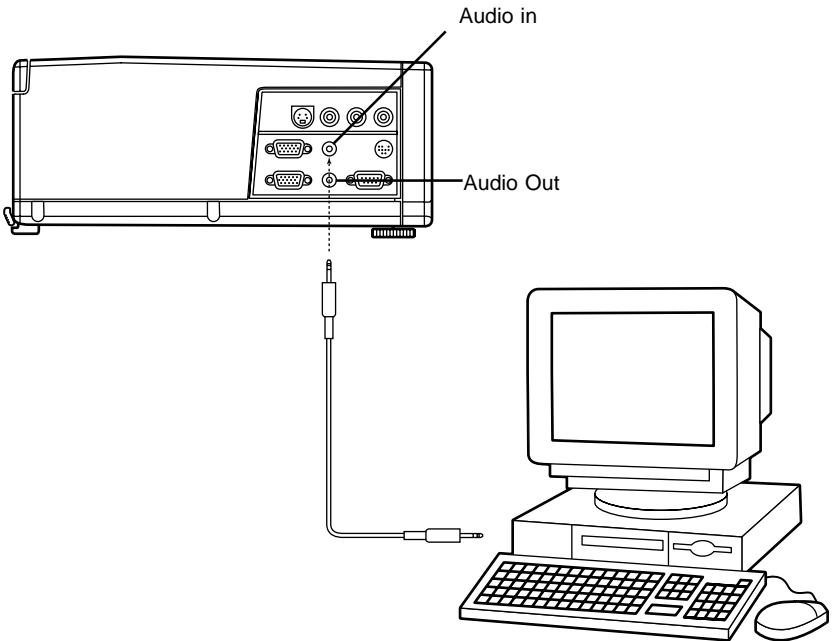
Audio in

Audio Out

Figure 6: Audio Connection

Connecting to a Video Player

The L-1020 accepts both composite video and S-video inputs from a video player as well as stereo audio inputs.

Use the three wire composite video/stereo-audio cable, shipped with your projector, to connect to your video player video and audio outputs as shown in figure 7. The color coded red and white connectors are for audio and the yellow connector is for composite video.

If you are using an S-video source instead of composite, the composite video cable will remain unused, as shown in figure 8.
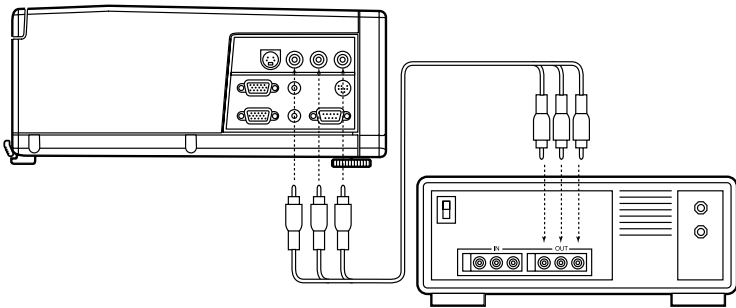
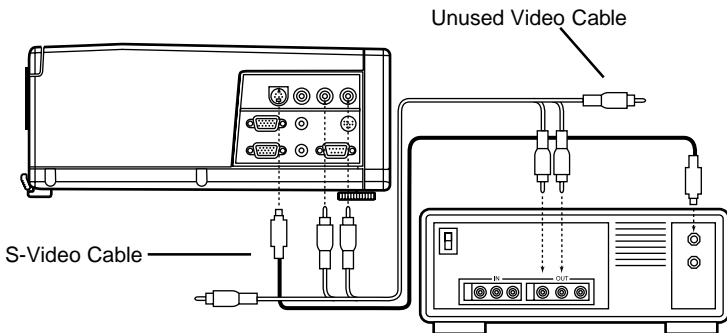*Figure 7: Audio / Video Connections*

Figure 8: S-video Connection

Connecting the Remote Mouse

To control your computer mouse from the projector's remote control, use the following procedure:

1. Turn off your computer.
2. Disconnect the standard mouse from the mouse port on your computer.
3. Connect the remote mouse interface cable between the 9 pin DIN of the projector and the appropriate mouse connector (serial, PS2, ADB) on your computer, as shown in figure 9.
4. Make sure that your projector is connected to power and then power up your computer.

For most applications the above procedure is all that is required. If you are encountering difficulty, please refer to *Configuring Your Remote Mouse* on page A-8 in the appendix.

Note: ADB adapters for Macintosh computers are available upon request at no charge. Contact your dealer or Lightware at 1-800-445-9396.
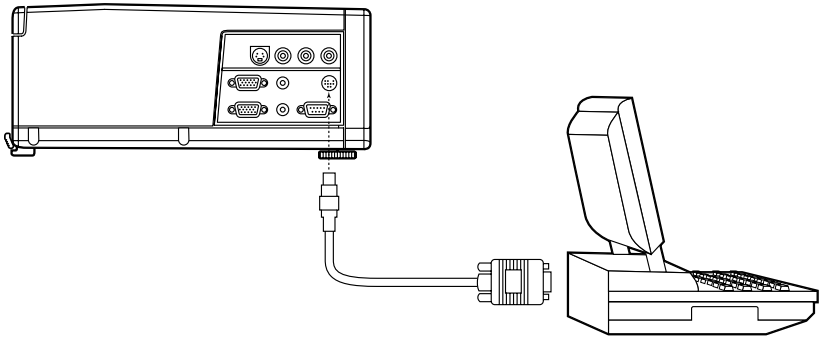

Figure 9: Remote Mouse Connection

Operating the Projector

This chapter describes how to operate your projector. It includes information on how to adjust the projector, use the remote control, and how to access and use the on-screen menus.

Powering up the Projector

Be sure the projector is properly connected to power and the projector is in the *Sleep* state *.

Press the *Power On/Standby* button and the projector will enter the *Live* state * with the lamp on and the fan at high speed. (The lamp takes approximately 30 seconds to reach full brightness.)

The projector uses a group of default settings at startup. These default settings can be modified through choices made in the menus. See page17 *Menus.*

The default settings provide an on-screen Startup logo for the first five seconds and then select the data input source. If no data source is present the projector will select a video player input source. If no input source is detected, the image projected will default to the Startup logo. If no Startup logo was selected in the features menu then the screen will be blank.

Caution: Ultra High Pressure lamps need to be in a stable condition prior to turning them on or off. To protect the lamp and the projector, Lightware has designed protective delays into the power up and power down circuitry. After first turning on the lamp, a 30 second timer prevents prematurely turning it off. After turning off the lamp, a 60 second timer prevents turning it on prematurely. Please do not attempt to bypass these delays.

*for more information on the operational states of the L-1020, see *Operational States* on page A-4 in the appendix.

Tip:
If you are connected to a laptop and are not projecting an image you may have not properly activated the external video output port. See **Laptop External Video Port Activation** *on page A-15 in the appendix.*

Adjusting Focus

To adjust focus, rotate the focus ring, as shown in figure 10, until the image is clear.
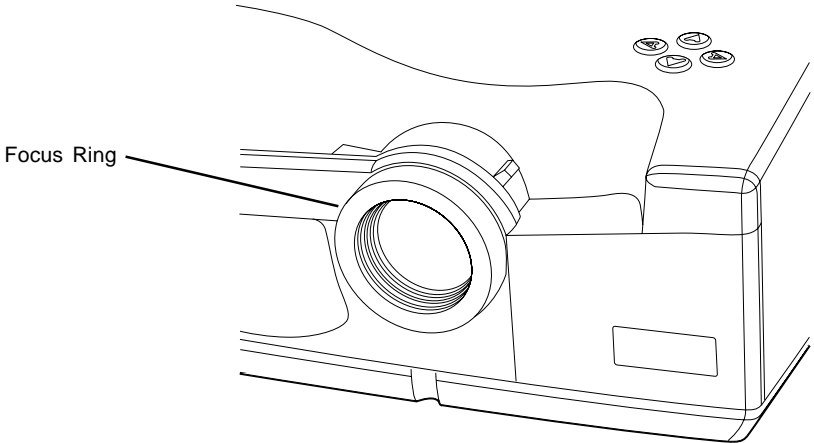
Focus Ring

Figure 10: Focus Adjust

Adjusting Image Size

To adjust the size of the projected image, move the zoom ring tab, shown in figure 11, until the image is the desired size. For a chart showing distance to screen vs image size refer to page A-21 in the appendix**.**

Zoom Ring Tab
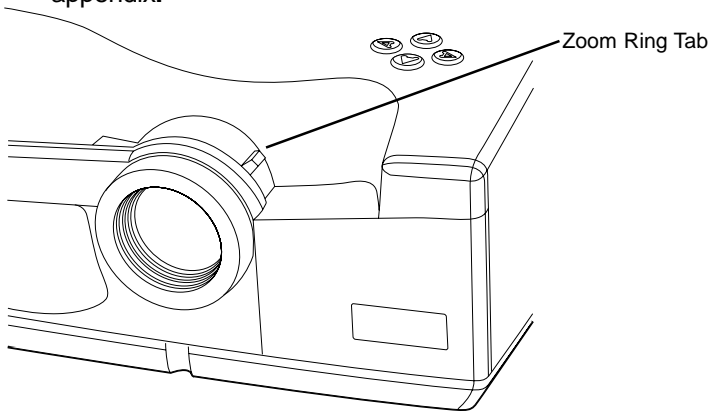
Figure 11: Image Size Adjust

Adjusting Height

To adjust the height of the front of the projector, Lightware has pro-
vided a quick-release elevator foot under the front center of the
projector. To set the appropriate projector height, press the release
mechanism shown in figure 12, and lift the front of the projector. Once
the appropriate height is reached, let go of the release mechanism to
lock the elevator foot in place.

Elevator Foot Release
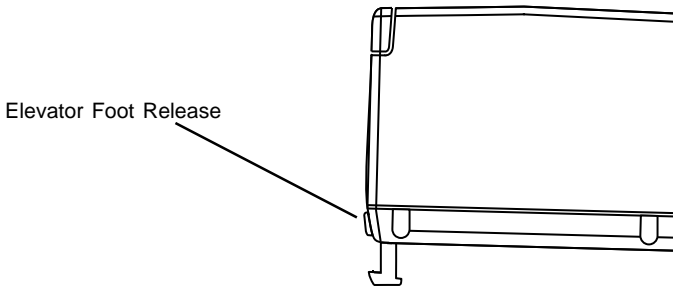
Figure 12: Front Elevator Foot Adjust

Adjusting Level

To adjust the level of the projector, Lightware has provided an adjust-
able elevator foot on each rear corner. To set the level, rotate the foot
of the appropriate rear corner, as shown in figure 13, until the projected
image is level.

Leveling Foot
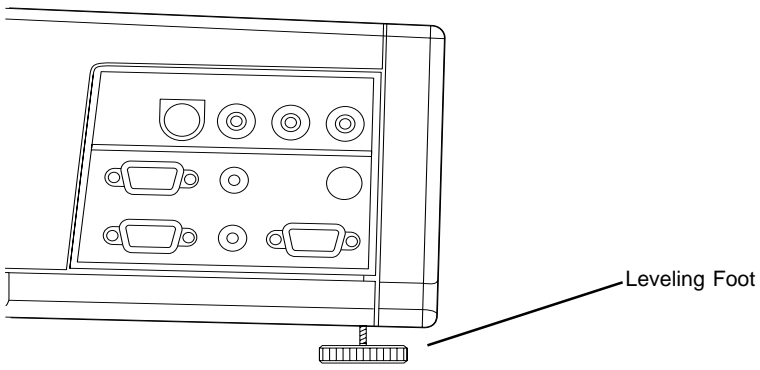
Figure 13: Projector Level Adjust

Remote Control

The wireless remote control is similar to those used for TV's and VCR's. It allows you to set up and adjust the projector image and to conduct interactive presentations.

The projector control buttons on the remote control give you instant access to all projector functions.

The built in joystick and mouse buttons allow remote control of the computer mouse with all of the functionality of your standard computer mouse.

Configuring your remote mouse with appropriate drivers and the use of simultaneous remote mouse and laptop pointer are discussed in *Configuring Your Remote Mouse* on page A-8 in the appendix.

Curtain

On/Standby

Freeze

Zoom Out

Source

Zoom In

4 Directional
Select Keys

Pointer

Audio Controls

On Screen
Menus

Drag & Drop

Computer Mouse
Control

Right Mouse Button &
Remote Backlight

Left Mouse
Button

Figure 14: Remote Control

Remote Functions

The following describes the various projector functions available from the remote control. Those functions also available from the projector keypad are noted.

On/Standby

Press the *On/Standby* button, on the remote control or the projector keypad, to cause the projector to change the fan speed to high and turn the lamp on (*Live** state). If the projector lamp has been on for more than 30 seconds, pressing it again will slow the fan speed to standby and turn off the lamp (*Standby** state). If the 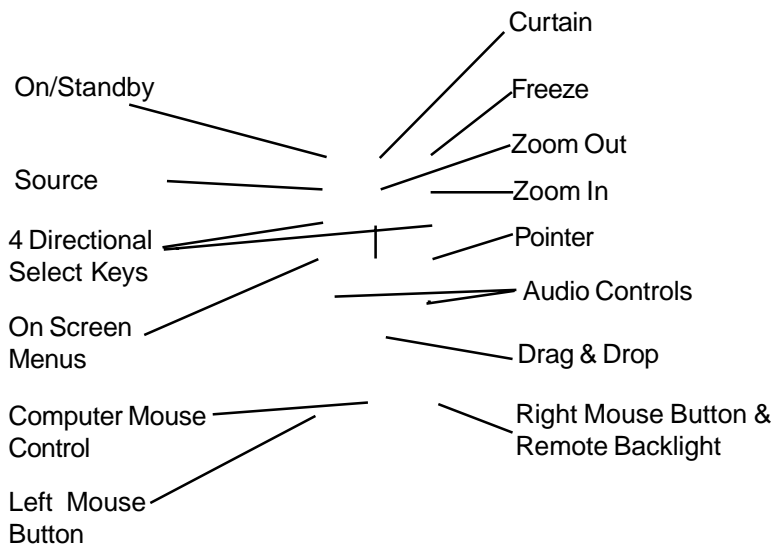lamp has been on for less than 30 seconds the projector will enter the *StandbyPending** state and the *Power On/Standby* button on the projector keypad will flash pending transition to the *Live* state.

*For more information on the operational states of the projector see *Operational States* on page A-4 in the appendix.

Source

Press the *Source* button on the remote control or the projector keypad to toggle the input to the projector through the available input sources i.e. computer, composite video and S-video. If there are no other active input sources connected an error message will appear for 5 seconds indicating the lack of an additional signal source and the source selection will remain where it is.

Directional Select Keys

The *Directional Select Keys* on the remote control or the projector keypad provide the following functions:

- *Menu navigation and selection*
- *Projected image positioning*
- *Pan around a zoomed or cropped image.*
- *Pointer movement*
- *Slide control adjust*
- *Curtain operation*

Remote Functions (continued)

Menu

Press the *Menu* key on the remote control or the projector keypad to activate the on-screen main menu. Pushing it once more will de-activate the on-screen main menu.

Curtain

Press the *Curtain* key on the remote control to overlay a curtain on the entire projected display. You can then reveal portions of the display by using the arrow keys to slide the curtain down, up, right, or left.

Freeze

Press the *Freeze* button on the remote control to freeze the projected image. Press the *Freeze* button again or transition to another source to return the projector to normal display operation.

Tip:

*You can use the **Freeze** button to hold an image on the projected screen while you are making changes to your presentation or checking your notes on your computer screen. Once the adjustments are made, simply press the freeze button again to return to your presentation.*

Zoom

Press the *Zoom In* key on the remote control to cause the display to zoom in on the center of the projected image. Zoom will magnify the image up to 8 times in 19 steps. Continued pressing of the *Zoom Out* key will return the display to the normal size.

While in the zoom mode use the *Directional Keys* to move the zoom window around the full screen.

Pointer

Press the *Pointer* key on the remote control to produce an arrow shaped pointer in the center of the screen. The Directional Select keys are used to move the pointer around the screen.

Audio Controls

Press the **+** key on the remote control to increase the volume of the audio.   Press the **-** key on the remote control to decrease the volume of the audio. Press the *Mute* key to mute the audio.

Remote Backlight

Press and hold the *Right Mouse* button on the remote control for several seconds to activate the backlight for the remote control buttons.

Computer Mouse Control

Use the *Joystick* on the remote control to control the computer mouse in a manner similar to the standard mouse control used on most computers.

Right Mouse Button

The *Right Mouse* button on the remote control functions in a manner similar to the standard right mouse button control on most computers.

Left Mouse Button

The *Left Mouse* button on the remote control functions in a manner similar to the standard left mouse button control on most computers.

Projector Control Panel

Figure 15 shows the layout of the L-1020 keypad controls.

The Lamp Age LED and the Lamp Status LED provide information on the condition of the High Intensity Discharge Lamp.

The lamp conditions indicated by the LED's are as follows:
Lamp Status LED
      Green - No Fault
      Red   - Lamp Failed
Lamp Age LED
      Green - Less than 100% of Lamp Life
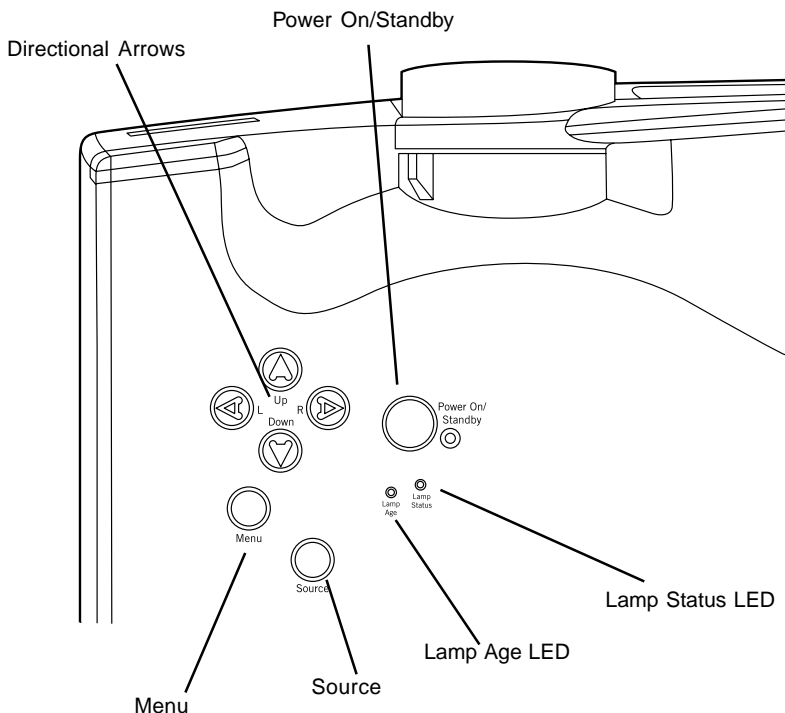   Amber - 100% of Lamp Life
      Red   - 150% of Lamp Life

Power On/Standby

Directional Arrows

Up
Down
L
R
Power On/
Standby

Lamp
Age
Lamp
Status

Menu

Source

Lamp Status LED

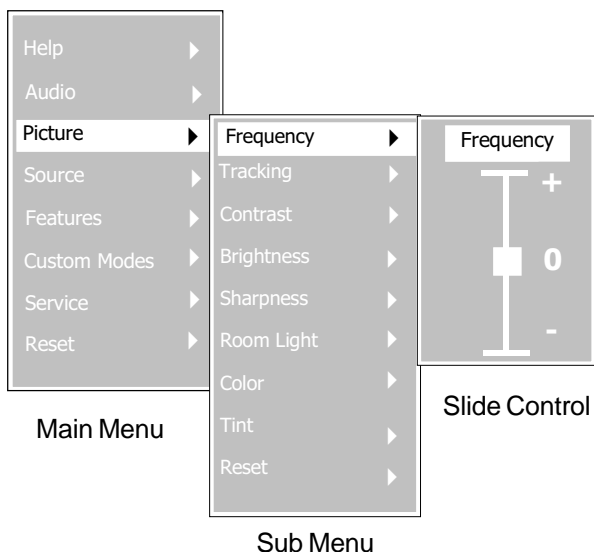Lamp Age LED

Source

Menu

Figure 15: L-1020 Keypad

Menus

Menu Operation

Press the *Menu* button on the remote control or on the projector's control panel to bring up the on-screen main menu and the sub-menu for the highlighted selection. Each main menu item has an associated sub-menu. Press the *Up* or *Down* arrow keys on the remote control to highlight a menu item. Highlighting the menu item brings up the sub-menu for that selection. Use the *Right* arrow key to move to the sub-menu.

The sub-menus provide all of the choices that relate to the main menu selection. Press the *Up* or *Down* keys to highlight your choice and then press the *Right* arrow key to bring up either a slide control that will adjust the level or value of that choice or a second sub-menu that will provide the final selections. A typical example of each is shown below.

Any changes or adjustments made are saved when the projector is powered down. The L-1020 will remember the configuration settings for the last ten signal sources used with the projector and recall those settings whenever one of those devices is detected.

Help	▶				
Audio	▶				
Picture	▶	Frequency	▶	Frequency	
Source	▶	Tracking	▶	+	
Features	▶	Contrast	▶		
Custom Modes	▶	Brightness	▶	▮ 0	
Service	▶	Sharpness	▶		
Reset	▶	Room Light	▶	−	
		Color	▶	Slide Control	
Main Menu		Tint	▶		
		Reset	▶		

Main Menu

Slide Control

Sub Menu

For those menus with a reset function, highlight Reset and use the right arrow to move to the Reset sub-menu. While in the Reset sub-menu press the down arrow to reset the functions in that menu.

Select Reset in the Main menu to reset values in the Main menu as follows:

- Audio - Resets all values in the audio menu.

- Picture - Resets all values in the picture menu.

- Source - Resets to Computer as first choice.

- Features - Resets Compression, Ceiling Mount, Rear Projection, it does not reset Language, Startup Logo and Curtain.

- Custom Modes - Reset clears any saved custom modes.

- Service - No Service menu items are reset.

Audio Menu

To access the Audio menu from the Main menu, use the *Up* or *Down* arrows on the remote control or projector to highlight Audio in the Main menu. Use the *Right* arrow to move to the sub-menu for the selection. In the Audio menu, use the *Up* or *Down* arrows to highlight the function that you wish to select. For Volume, Bass, Treble and Balance a Slide Rule will appear as shown below. For the Stereo Mode, Mute and Reset functions, sub-menus will appear.

Help ▶		
Audio ▶	Volume ▶	Volume
Picture ▶	Bass ▶	**+**
Source ▶	Treble ▶	
Features ▶	Stereo Mode ▶	**3**
Custom Modes ▶	Mute	
Service ▶	Balance	**-**
Reset ▶	Reset	
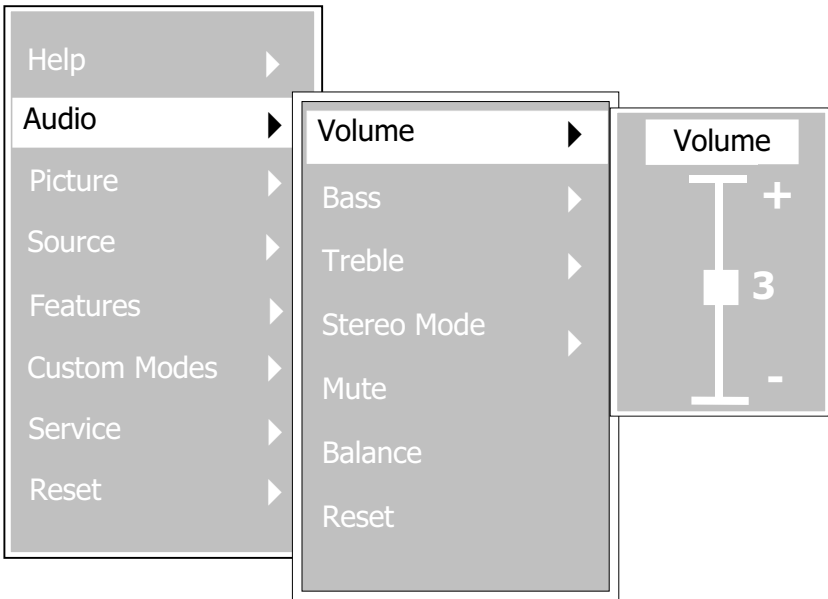
Volume

Choose Volume to produce a Slide Rule control.

- Press the *Up* arrow key to increase the volume level.
- Press the *Down* arrow key to decreas the volume level.

Bass

Choose Bass to produce a Slide Rule control.

● Press the *Up* arrow key to increase the bass level.
● Press the *Down* arrow key to decrease the bass level.

Treble

Choose Treble to produce a Slide Rule control.

● Press the *Up* arrow key to increase the treble level.
● Press the *Down* arrow key to decrease the treble level.

Stereo Mode

Choose Stereo Mode to produce a menu with the following choices. Use the *Up* or *Down* arrow keys to select one of the following.

● Mono: Mixes contents of right and left channels.
● Linear Stereo: Normal stereo without any extra processing.
● Pseudo Stereo: Creates "like stereo" effect from mono source.
● Spatial Stereo: Simulates "3D space" feeling from stereo source.

Balance

Choosing Balance will produce a slide-rule that will allow you to adjust the left-right balance between the stereo speakers.

- Use the *Up* arrow to move the sound balance to the right.
- Use the *Down* arrow to move the sound balance to the left.

Mute

Choose Mute to produce a menu with the following choices. Use the *Up* or *Down* arrow keys to make a selection.

- On
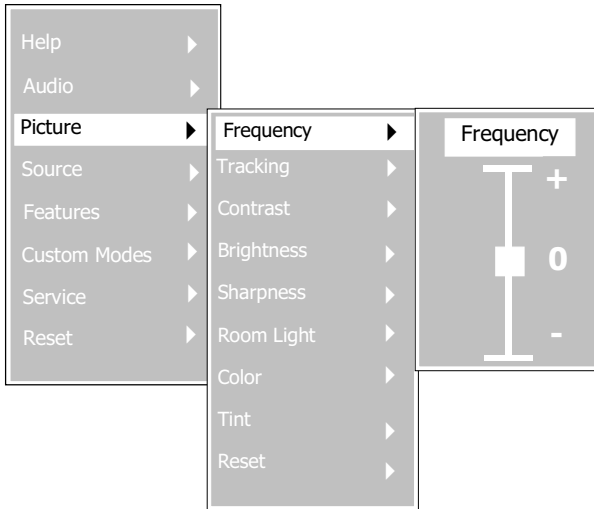- Off (default)

Reset

Choose Reset to produce a menu that will allow you to make the following choices. Pressing the *Down* arrow will activate the reset function which will reset all audio functions to factory default.

- No Reset
- Reset

Picture Menu

The Picture menu provides a series of choices that determine how the projected image will appear on screen.
Select Picture from the main menu to produce the following sub menu.

Help	▶			
Audio	▶			
Picture	▶	Frequency	▶	Frequency
Source	▶	Tracking	▶	+
Features	▶	Contrast	▶	
Custom Modes	▶	Brightness	▶	0
Service	▶	Sharpness	▶	
Reset	▶	Room Light	▶	-
		Color	▶	
		Tint	▶	
		Reset	▶	

Frequency (Data Only)

The L-1020 is automatically set to the optimum frequency based on the detected data input signals. In some cases however manual frequency adjustment may be required.

The Frequency adjustment acts as a horizontal size control matching the clock frequency of the projector to that of the computer. A misadjusted frequency will cause evenly spaced dark vertical lines or distortions to appear on the projected image. Use the slide rule control to adjust the frequency until the lines spread apart and finally disappear.
After you have completed the Frequency adjustment, continue on to the Tracking adjustment described below.

Select Frequency to produce a Slide Rule control.

● Press the *Up* arrow key to increase frequency.
● Press the *Down* arrow key to decrease frequency.

Tip:

For Windows 95 users the best screen to use when adjusting **frequency** *is the Windows shut down screen. To access this screen, click on the* **Start** *button on the task bar and click on* **shut down.** *When the frequency adjustment is completed, click on* **no** *and return to your active screen.*

Tracking (Data Only)

The L-1020 is automatically set to the optimum tracking value based on the detected data input signals. In some cases however manual tracking adjustment may be required.

The Tracking adjustment is used to remove the last indications of noise or shaded areas that remain on the screen after completing the Frequency adjustment. No Tracking adjustment should be made until the Frequency adjustment is checked. It may be necessary to adjust the Frequency and Tracking a few times to correctly match the projector to the computer.

Select Tracking to produce a slide rule control.

- Press the *Up* arrow key to increase tracking level.
- Press the *Down* arrow key to decrease the tracking level.

Contrast

Select Contrast to produce a slide rule control.

- Press the *Up* arrow key to increase the contrast level.
- Press the *Down* arrow key to decrease the contrast level.

Brightness

Select Brightness to produce a slide rule control.

- Press the *Up* arrow key to increase the brightness level.
- Press the *Down* arrow key to decrease the brightness level.

Sharpness (Video Only)

Select Sharpness to produce a slide rule control.

- Press the *Up* arrow key to increase the sharpness level.
- Press the *Down* arrow key to decrease the sharpness level.

Room Light

Room Light allows you to compensate for differences in room lighting conditions. Each Room Light value sets the optimum levels of brightness, contrast and color saturation to compensate for different lighting conditions.

Select Room Light to produce the menu choices shown below.

Press the *Up* or *Down* arrow key to make your selection.

- Dark Room
- Normal
- Bright Room

Color (Video Only)

Select Color to produce a slide rule control.

- Press the *Up* arrow key to increase the color level.
- Press the *Down* arrow key to decrease the color level.

Tint (Video Only)

Select Tint to produce a slide rule control.

- Press the *Up* arrow key to make the tint more red.
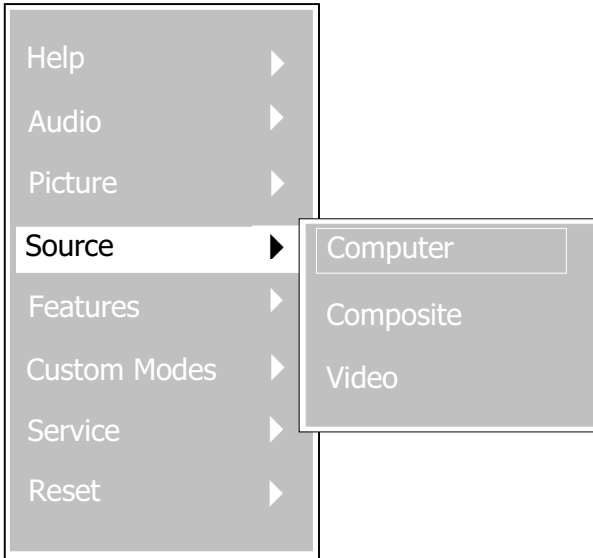- Press the *Down* arrow key to make the tint more green.

Reset

Choose Reset to reset all picture functions to factory default.

- No Reset
- Reset

Source menu

The Source menu allows you to choose between a computer source or one of two separate video player sources.
Choose Source to produce a menu to choose among Computer, Composite Video or S-Video. Use the *Up* or *Down* arrow keys to make the selection.

Help	▶	
Audio	▶	
Picture	▶	
Source	▶	Computer
Features	▶	Composite
Custom Modes	▶	Video
Service	▶	
Reset	▶	

Note: If a computer or video source is not detected a screen will appear with the message that either the TV/VCR or Computer Source was not detected.

Features Menu

Select the Features option, from the Main menu to preset your style preferences for the projected display.

Help	▶		
Audio	▶		
Picture	▶		
Source	▶		
Features	▶	Language	▶
Custom Modes	▶	Startup Logo	▶
Service	▶	Curtain Style	▶
Reset	▶	PAL-M	▶
		Compression	▶
		Ceiling Mount	▶
		Rear Projection	▶
		Reset	▶
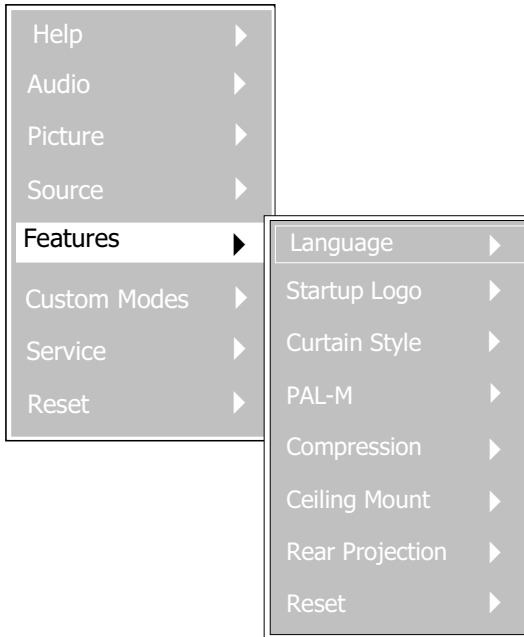
Language

Select Language to view the on-screen menus in one of the six following languages: English, French, German, Spanish, Italian or Chinese.

Press the *Up* or *Down* arrow key to select the language.

Startup Logo

Select Startup Logo to produce a menu to choose the logo that will be projected during startup.

Use the *Up* or *Down* arrow keys to make your selection.

- Default Logo
- Custom Logo
- Off

Note: Instructions for loading custom logos into the projector memory are on page A-3 in the appendix.

Curtain Style

Select Curtain Style to choose what the curtain will look like. The choices are listed below.

Use the up and down arrow keys to make a selection.

- Red
- Green
- Blue
- Yellow
- Cyan
- Magenta
- Black
- White
- Logo (Startup Logo)

PAL-M

The default setting for PAL-M is disabled. To enable PAL-M choose Enable from the sub menu. The menu choices are shown below.

- Enable
- Disable

Compression

Select Compression to produce a menu to set the default mode for image resolutions SXGA and above. The menu choices are shown below. Enable will configure an SXGA image to fit the XGA screen. Disable provides a 1024x768 window of the SXGA screen.

Use the arrow keys to move around the SXGA screen.

- Enable
- Disable

Ceiling Mount

Select Ceiling Mount to vertically reverse the projected image for upside down ceiling mount of the projector. Selecting Ceiling Mount will produce the following choices.

Use the *Up* or *Down* arrow keys to make a selection.

- Off
- On

Rear Projection

Select Rear Projection to horizontally reverse the pro-jected image for rear projection.
Selecting Rear Projection will produce the choices shown below.

Use the *Up* or *Down* arrow keys to make a selection.

- Off
- On

Reset

Select Reset to access the reset function. Press the *Down* arrow to activate the reset function which will reset all Features functions to factory default.

- No Reset
- Reset

Custom Modes Menu

The L-1020 can be used with many different video sources in many different environments. Custom Modes allows the user to save four different user configurations. The parameters that will be saved as a custom mode are as follows:

Frequency	Tracking
Vertical Position	Horizontal Position
Contrast	Brightness
Room Light	Zoom Setting
Tint	Color
Sharpness	

To save a Custom Mode for an input device, select Custom Modes in the Main menu. Use the *Right* arrow key to move to the sub-menu. Use the *Up* or *Down* arrow keys to highlight the mode number under which the mode will be saved. Use the *Right* arrow key to move to the next sub-menu. Highlight Set to Current to save the present configuration.

The saved Custom Mode is saved with and takes priority over the ten saved modes whenever that device is detected.
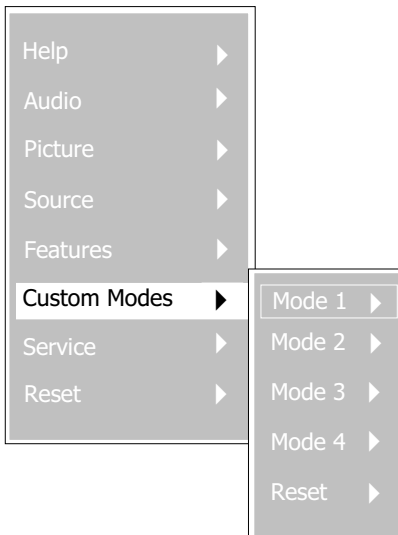
Mode 1

Select Mode 1 to display a sub-menu that lists the following options:

- Active
- Inactive
- Set to Current

Mode 2

Select Mode 2 to display a sub-menu that lists the following options:

- Active
- Inactive
- Set to Current

Mode 3

Select Mode 3 to display a sub-menu that lists the following options:

- Active
- Inactive
- Set to Current

Mode 4

Select Mode 4 to display a sub-menu that lists the following options:
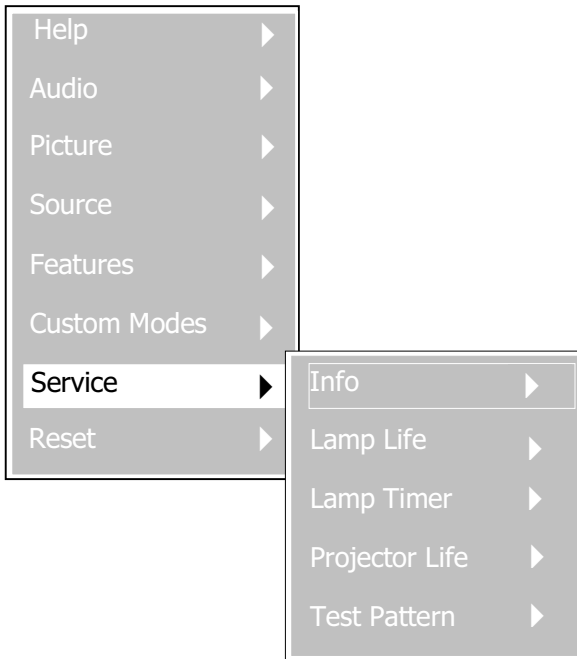
- Active
- Inactive
- Set to Current

Reset

Select Reset to access the reset function. Press the *Down* arrow to activate the reset function which will reset all Custom Modes functions to Inactive.

- No Reset
- Reset

Service Menu

Choose Service from the Main menu to provide information on projector life, lamp life software version and some useful test patterns.

Use the *Up* or *Down* arrow keys to highlight Service in the Main menu. This will produce the sub-menu shown below. Use the *Right* arrow key to move to that menu. Use the *Up* or *Down* arrow keys to make selections in the sub menu.

Help ▶	
Audio ▶	
Picture ▶	
Source ▶	
Features ▶	
Custom Modes ▶	
Service ▶	Info ▶
Reset ▶	Lamp Life ▶
	Lamp Timer ▶
	Projector Life ▶
	Test Pattern ▶

Info

Select Info to display information on the version number of the embedded projector firmware.

Lamp Life

Select Lamp Life to display the number of hours left in the life of the High Intensity Discharge lamp.

LampTimer

Select Lamp Timer to access a menu that will reset the lamp life timer after installing a new High Intensity Discharge lamp. Press the *Down* arrow to activate the Reset function which will reset the lamp timer to zero.

- No Reset
- Reset

Projector Life

Select Projector Life to provide information on total projector usage.

Test Pattern

Test Pattern provides a selection of patterns that will help evaluate the condition of the projector. Selecting Test Pattern will provide a menu with the following choices. Use the *Up* or *Down* arrows to make a selection.

- Pattern 1
- Pattern 2
- Pattern 3
- Solid Red
- Solid Green
- Solid Blue
- Solid White
- Solid Black
- Ramp Red
- Ramp Green
- Ramp Blue
- Ramp Grey
- Cycle Color
- Off

Reset

Choosing Reset mode will produce a menu that will allow you to make the following choices. Pressing the *Down* arrow will activate the Reset function which will reset all of the functions of the service menu to factory default.

- No Reset
- Reset