

DUKANE

Liquid Crystal Projector

Model

28A8040

OPERATING GUIDE

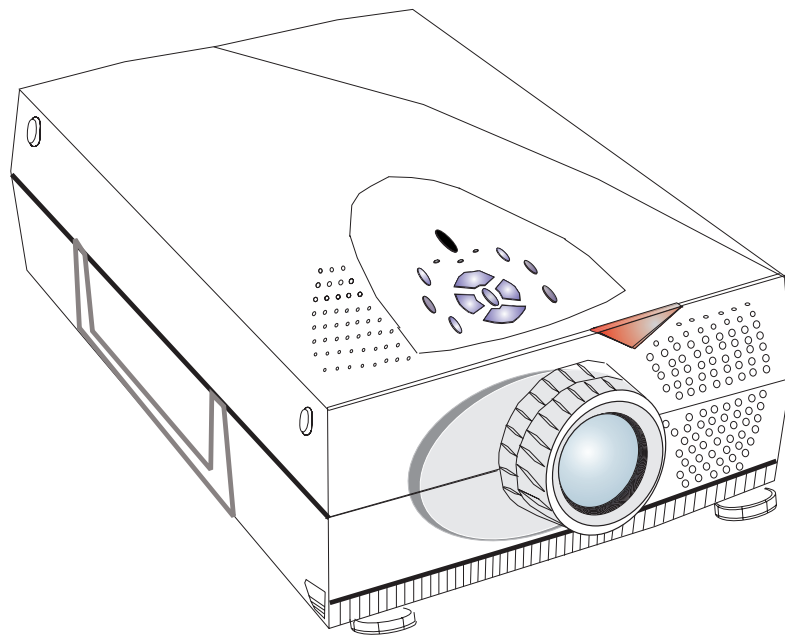


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Usage Notice

-  **Warning-** Do not look into the lens. The bright light may hurt your eyes.
-  **Warning-** To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.
-  **Warning-** Please do not open or disassemble the product as this may cause electric shock.
-  **Warning-** When changing the lamp, please allow unit to cool down and follow all changing instruction.
-  **Warning-** This product will detect the life of the lamp itself. Please be sure to change the lamp when it shows warning messages.
-  **Warning-** After changing a new lamp, please reset the lamp life timer from OSD menu.
-  **Warning-** Before switching off the product, please keep the cooling fan running for a few minutes.

Precautions

Follow all warnings, precautions and maintenance as recommended in this user's manual to maximize the life of your unit.

Do:

- Turn off the product before cleaning.
- Use a soft cloth moistened with mild detergent to clean the display housing.
- Disconnect the power plug from AC outlet if the product is not being used for a long period of time.

Don't:

- Block the slots and openings on the unit provided for ventilation.
- Use abrasive cleaners, waxes or solvents for your cleaning.
- Use under the following conditions:
 - Extremely hot, cold or humid environment.
 - In areas susceptible to excessive dust and dirt.
 - Near any appliance generating a strong magnetic field.
 - Place in direct sunlight.

Introduction

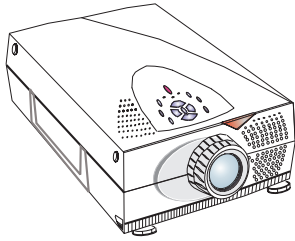
About the Product

This product, designed with a high-powered UHP lamp, is an SVGA data/video portable projection display. The outstanding features of it are listed as follows:

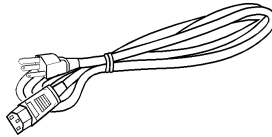
- 8.9 lbs. (4.0 kgs) lightweight compact design
- True SVGA, 800 x 600 addressable pixels
- With XGA compression and VGA resizing
- Mac / NEC PC-98 / FM Towns compatible
- NTSC / PAL / SECAM compatible
- Dual Data Input
- Real plug and play with auto-image function
- User-friendly multilingual on-screen display menu adjustment
- Advanced electronic keystone correction function
- Luxurious carrying case with detachable wheels & handle

Package Overview

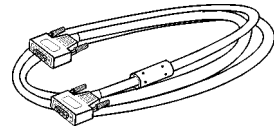
This projection display comes with all the items shown below. Check to make sure your unit is complete. Contact your dealer immediately if anything is missing.



LCD Projection Display



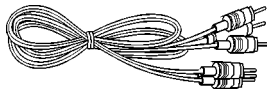
Power Cord



VGA Cable X 2



S-Video Cable



RCA Audio/ Video Cable



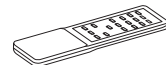
*Audio-in Cable for
Computer*



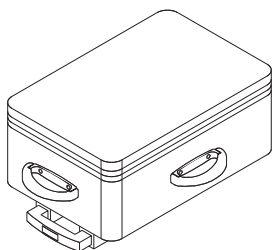
User's Manual



Warranty Card



Remote Control



*Hard Carrying Case
With Detachable Wheels &
Handle*

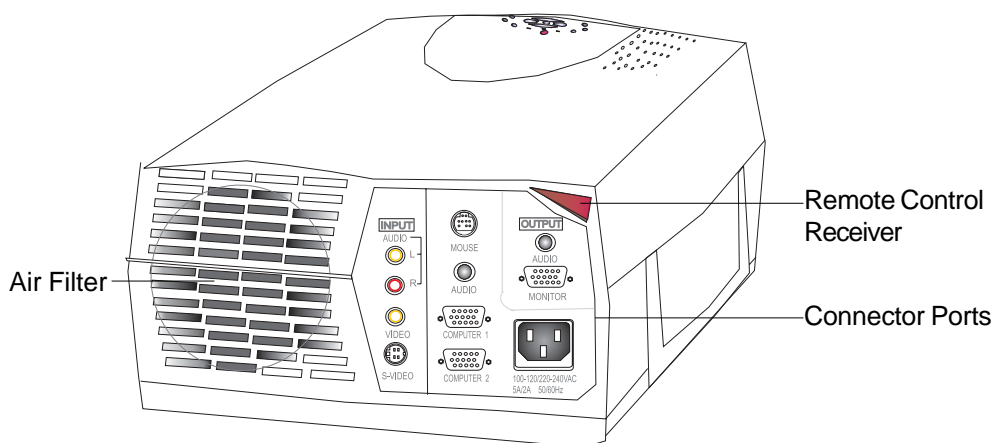
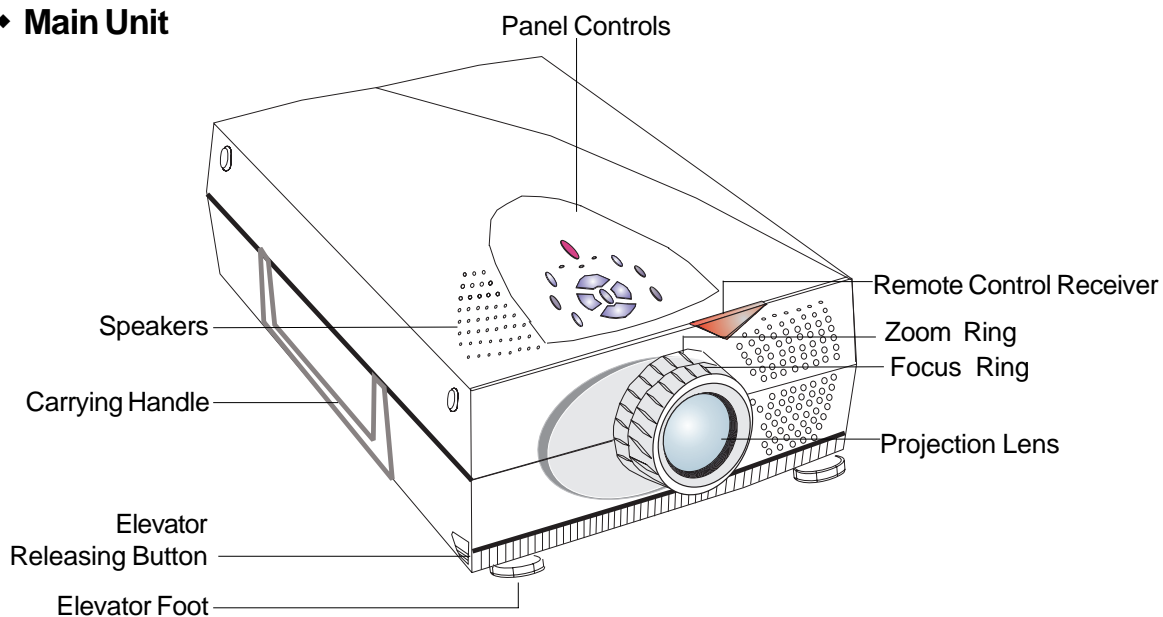


Batteries X 2

Installation

Product Overview

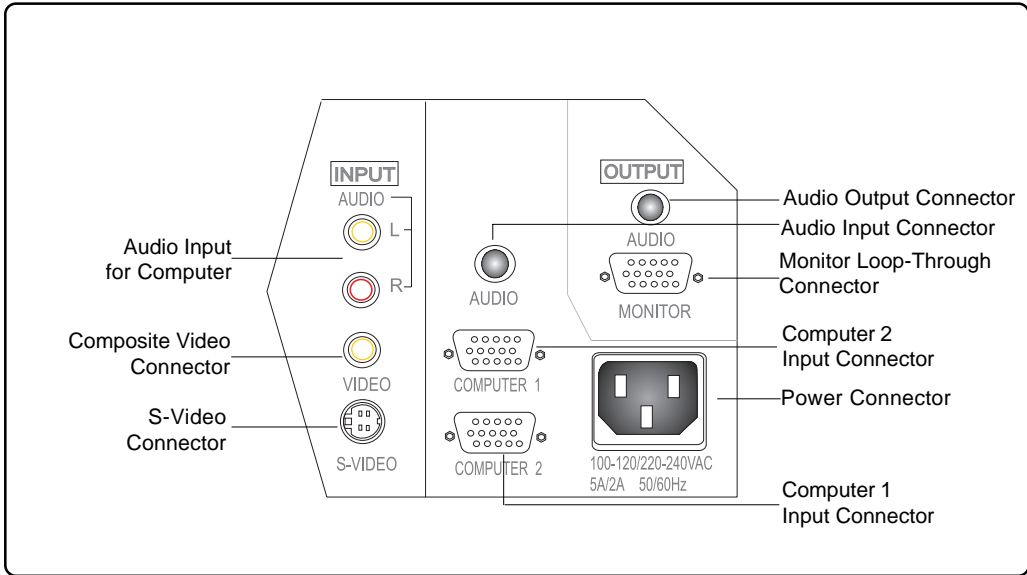
◆ Main Unit



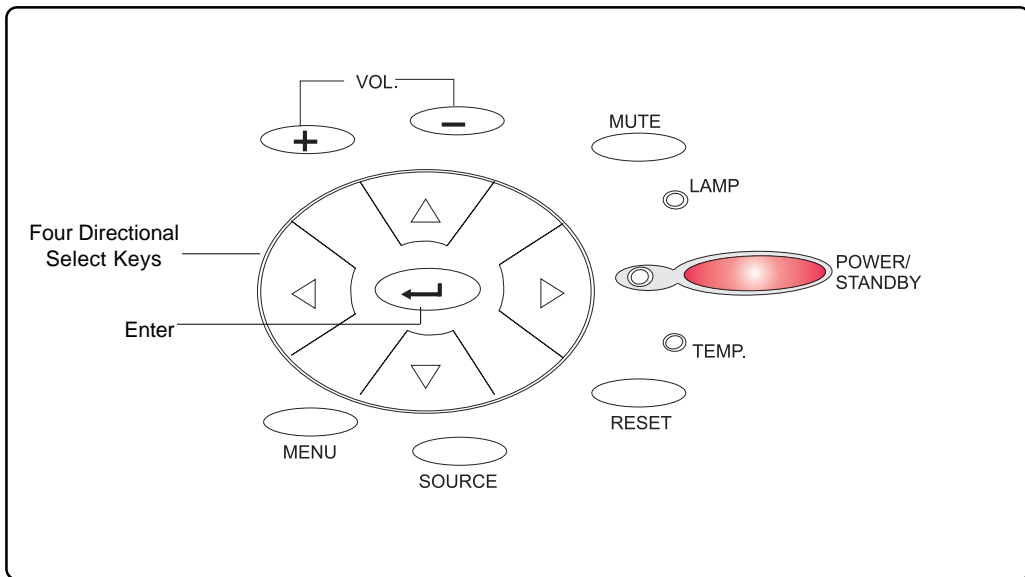
* There are two elevator releasing buttons and elevator feet on both sides.

* There are also two remote control receivers on the front and the rear side.

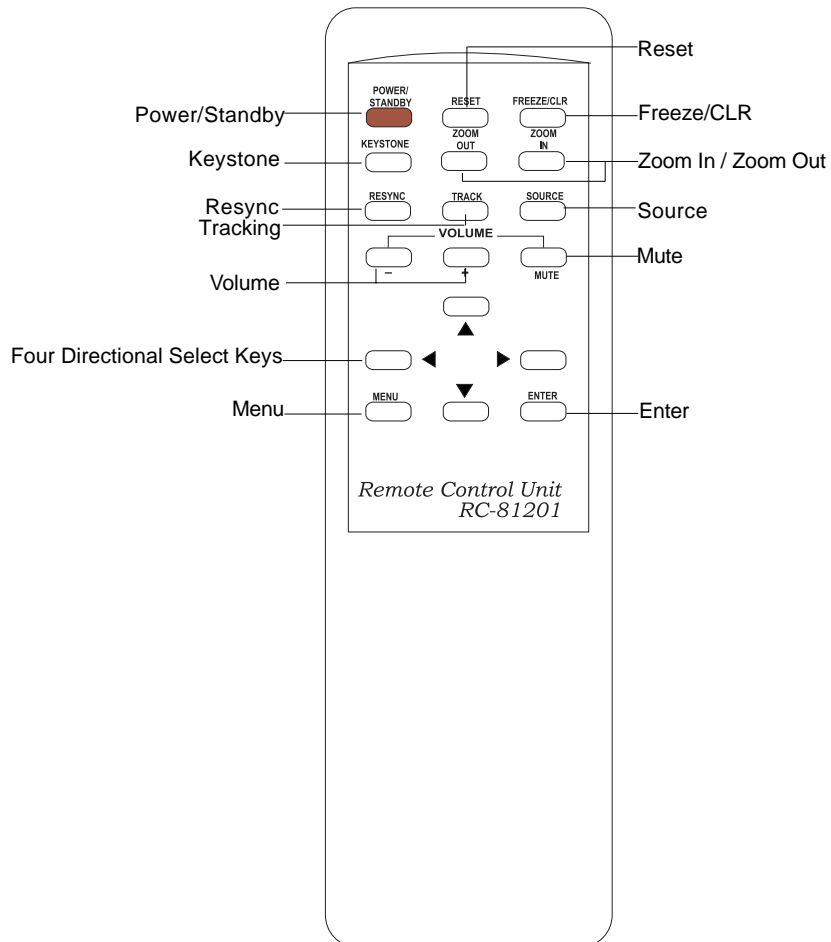
◆ Connection Ports



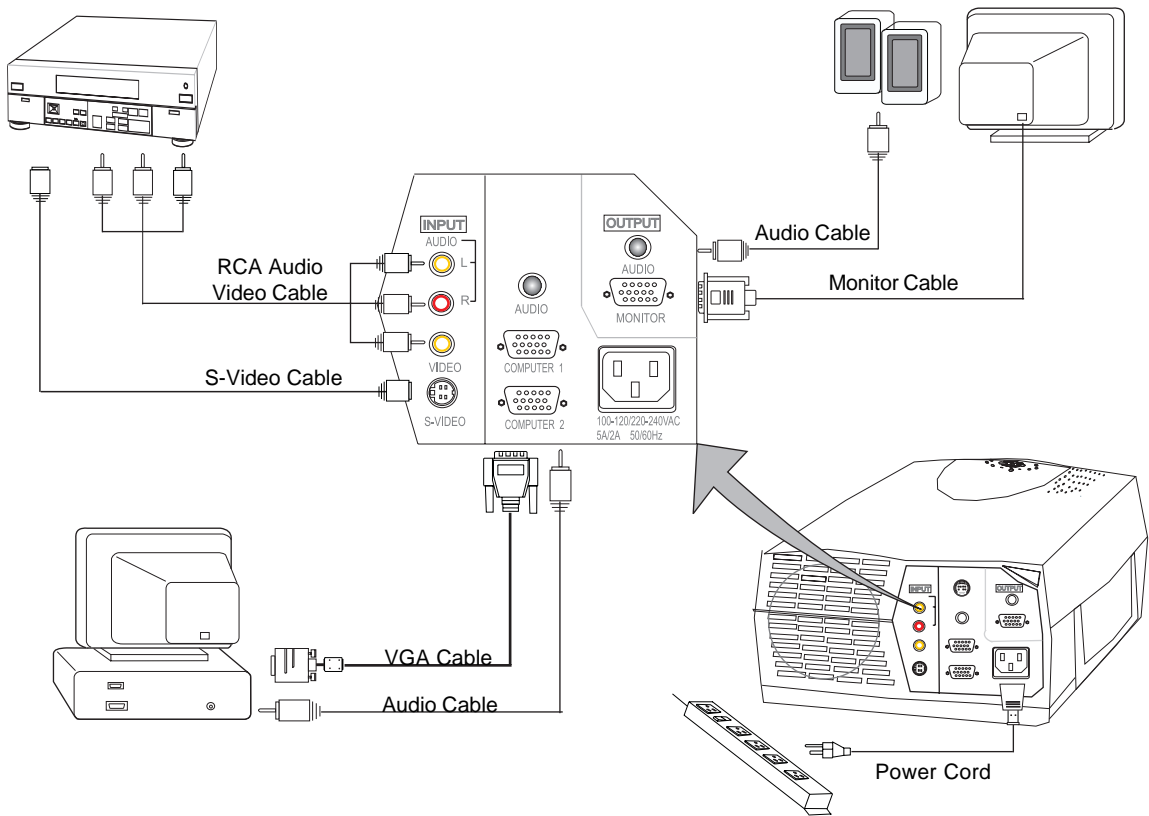
◆ Panel Controls



◆ Remote Control



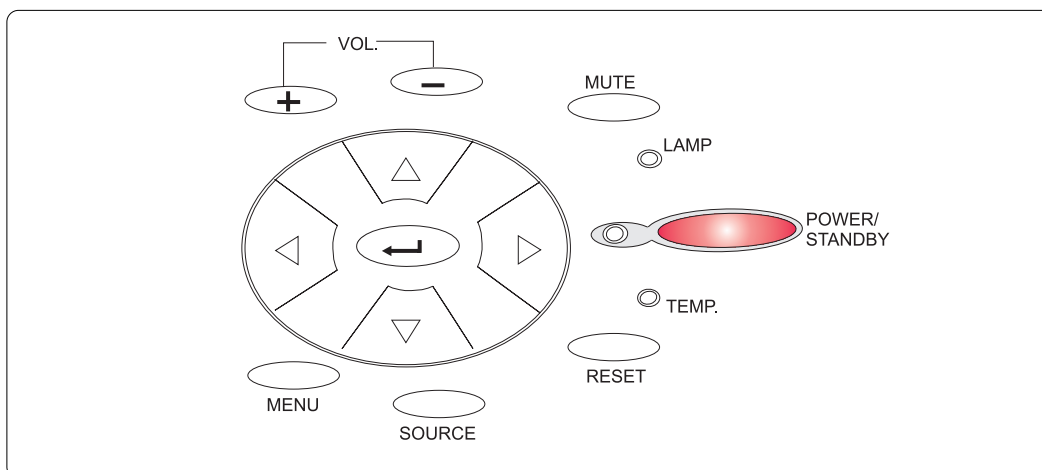
Connecting the Projection Display



Powering On/Off the Projection Display

◆ Powering On the Projection Display.

1. Remove the lens cover
2. Plug the power cord into the back of the projector and plug it into the electrical outlet.
The “POWER/STANDBY” LED indicator will flash green.
3. Turn on the lamp by pressing “ POWER/STANDBY” button.
The startup screen displays and starts 30 seconds countdown for lamp .
The “POWER/STANDBY” LED indicator will lit green and stop flashing.
The “LAMP” LED indicator will flash amber for 30 seconds.
4. Make sure the computer or video signal is well connected. The projector will detect your computer source automatically.
5. If necessary, make adjustments to the image from the projector’s On-Screen Display (OSD) menus.



◆ Powering Off the Projection Display.

Turn off the lamp by pressing “ POWER/STANDBY” button. The confirmation message, “Power off the lamp?” will show up. Please select “Yes” to turn off the lamp. “LAMP” LED indicator will flash amber for about one minute. After the “LAMP” LED indicator stops flashing, you may unplug the power cord.

Warning:

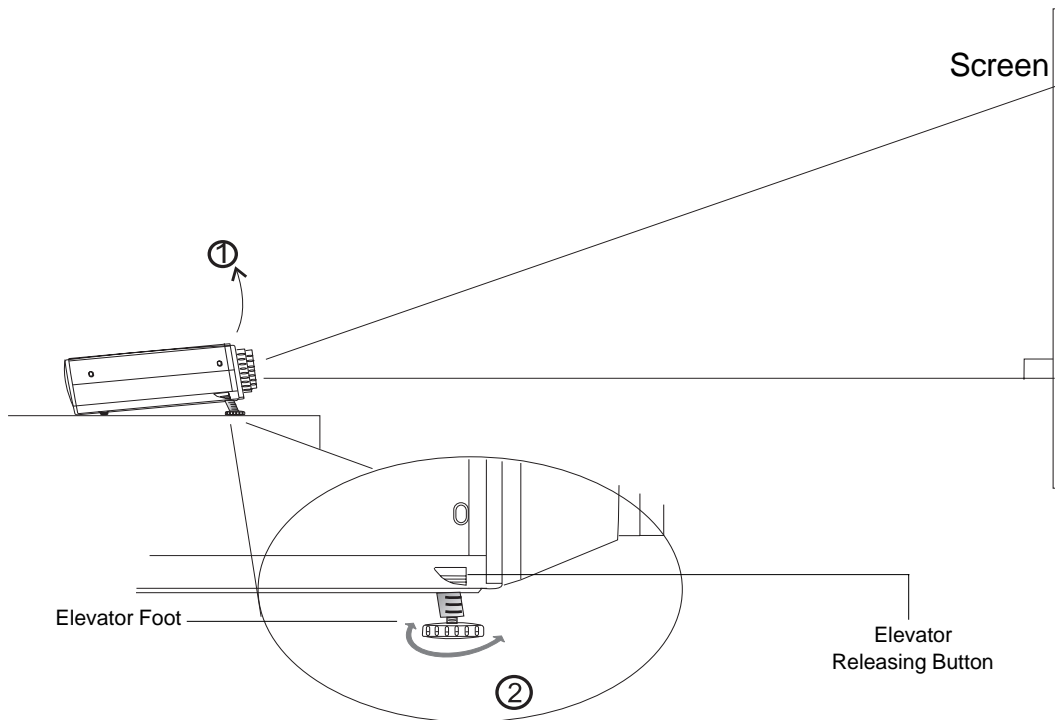
- * When the “LAMP” LED indicator lit amber for a long period of time, please change the lamp module. Please contact your local dealer or distributor for replacement lamp and refer to “ Changing the lamp”(Page 21) in the manual.
- * When the “TEMP” LED indicator lit amber, it indicates the display has been overheated. The display will automatically shut itself down. While the “TEMP” LED indicator turns “off”, the display can be switched on again for your presentation.

Adjusting the image size

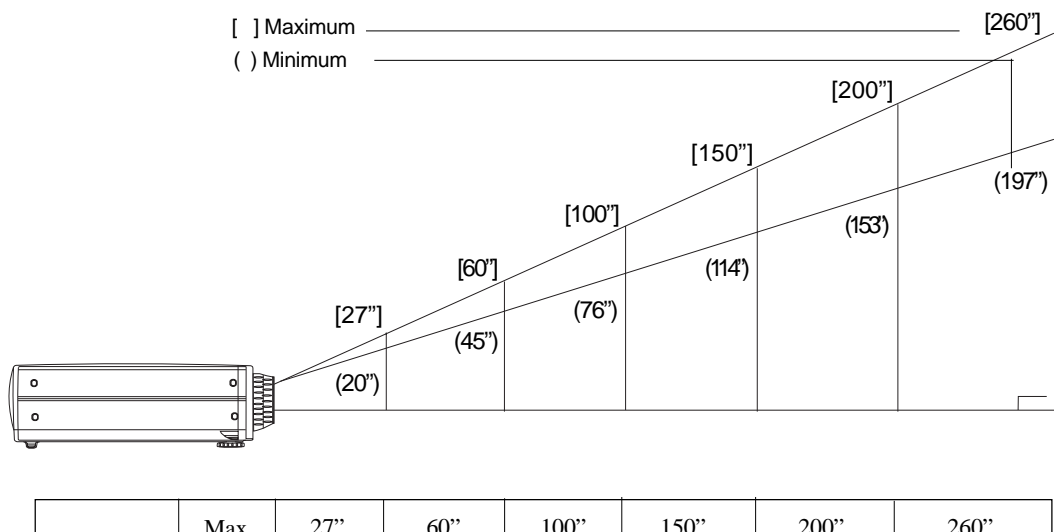
◆ Adjust the height of projected image

- ① Raise the projection display to the desired angle and then press the elevator release buttons to release the elevator foot.
- ② Fine-tune the height by manually turning each foot.

(Refer to the following figures below)



◆ **Adjusting the Image Size**



Screen (inch)	Max.	27"	60"	100"	150"	200"	260"
	Min.	20"	45"	76"	114"	153"	197"
Distance(ft.)		3.8'	8.4'	14'	21'	28'	36'

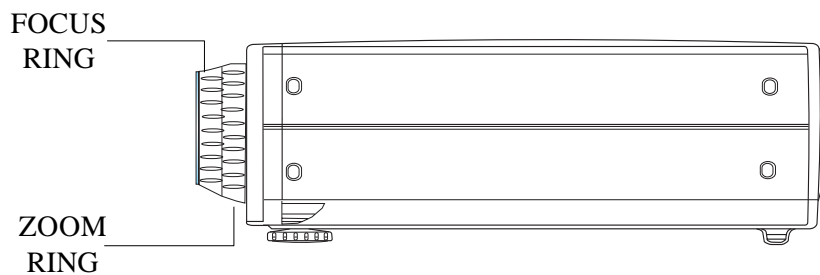
Screen Size (W x H) inch	20"	60"	100"	150"	200"	260"
	16 x 12	49 x 36	80 x 60	120 x 90	160 x 120	208 x 156

*The graph is for user's reference only.

◆ **Focus the image**

You may adjust zoom ring to zoom in/out 1.3 times of the image size.

To focus the image, rotate the focus ring until the image is clear.

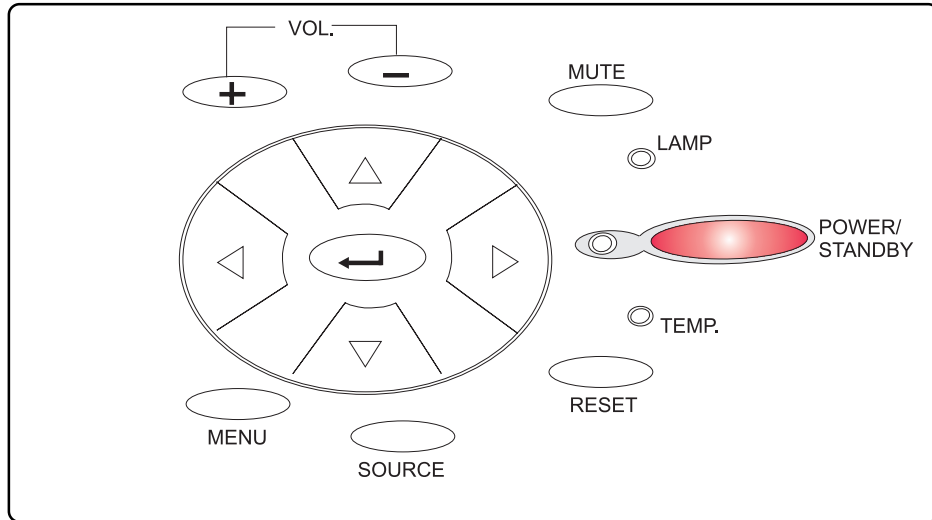


User Controls

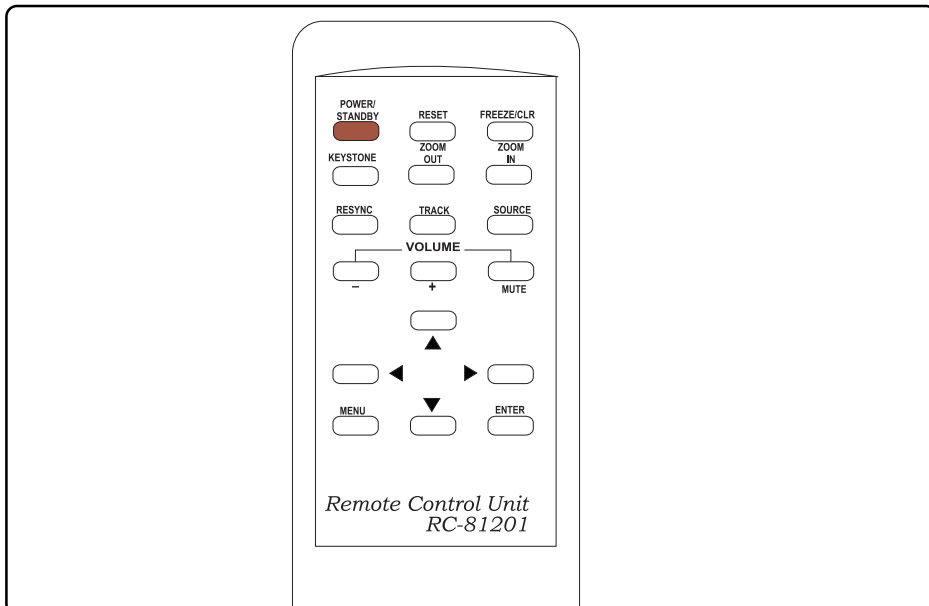
User Control Overview

There are two ways for you to control the functions: panel control and remote control.

◆ Panel Control



◆ Remote Control



Power/Standby

- ▶ Power the lamp on and off when the main power switch is turned on.

Menu

- ▶ Press “Menu” to open the on-screen display (OSD) menus and to switch among different menus. To exit OSD, press the “Freeze/CLR” button or select the “Exit Menu” icon and press “Enter” button. The projector saves any changes you made automatically.

Source

- ▶ Press “Source” to choose between video and computer sources.

Reset

- ▶ When you press “Reset” button, the OSD menus shows message “Reset All Yes/NO ?”. Select “Yes” to confirm or select “No” to cancel. This function will reset all user adjustable parameters to factory default settings.

Enter

- ▶ Press “Enter” for confirming your selection.

Four Directional Select Keys

- ▶ Use “Up” or “Down” to select items. Use “Right” or “Left” to make adjustments for your selection.
- ▶ Use “Up” or “Down” button to change the vertical positioning of the image; and use “Right” or “Left” button to change the horizontal positioning of the image.

Resync

- ▶ Automatically synchronizes the projector to the input source.

Volume

- ▶ To turn up the volume, press “+” button.
- ▶ To turn down the volume, press “-” button.
- ▶ To mute the volume, press “Mute” button.

Freeze/CLR

- ▶ Press “Freeze/CLR” button to still the screen image.
- ▶ When the OSD displayed, press “Freeze/CLR” button to exit the OSD.

Tracking (Computer mode only)

- ▶ Choose “Tracking” item to synchronize the signal timing of the display with that of the graphic card. When you experience an unstable or flickering image, use this function to correct it.

Zoom In (Computer mode only)

- ▶ Press “Zoom In” button to enlarge the projected image.
- ▶ When the “Zoom” icon is displayed, you can use four directional select keys to change the vertical or horizontal positioning of the image.

Zoom Out (Computer mode only)

- ▶ Diminish the zoom in image.
- ▶ When the “Zoom” icon displayed, you can use four directional select keys to change the vertical or horizontal positioning of the image.

Keystone

- ▶ Adjust image distortion caused by tilting the projector.

OSD Menus

How to operate

- ▶ *The Projector has the multilingual On-Screen Display(OSD) menus that allows you to make image adjustments and change a variety of settings. When in computer source, the OSD will be the “Computer OSD”. When in Video source, the OSD will be the “ Video OSD”. The projector will detect the source automatically.*
- ▶ *To open the OSD menus, press the “Menu” button on the Remote Control or Panel Control.*
- ▶ *To select among different menus, press the” Menu” buttn again. Then use “Up” & “Down” keys to select different items and use “Right” & “Left” to adjust your selection.*
- ▶ *To exit the OSD, press the “Freeze/CLR” button or choose the “Exit Menu” and press “Enter” button.*

Language

▶ Language

You can display the multilingual OSD . User “ Up” and “ Down” key to select. The menus redraw immediately.

Display

▶ Brightness

Adjusting the brightness of the image.

- Press the left key to darken the image.
- Press the right key to lighten the image.

▶ Contrast

The contrast controls the degree of difference between the lightest and darkest parts of the picture. Adjusting the contrast to change the amount of black and white in the image.

- Press the left key to decrease the contrast.
- Press the right key to increase the contrast

▶ Keystone Correction

Adjusts image distortion caused by tilting the projector.

▶ Color Temperature

Adjusts the color temperture. The range is from 5000°K to 9300°K . The factory default is 7900°K . With the higher temperature, the screen looks colder; with the lower temperature, the screen looks warmer.

▶ Tint (Video mode only)

The tint adjusts the red-green color balance in the projected image.

- Press the left key to increase the amount of green in the image.
- Press the right key to increase the amount of red in the image.

▶ Color (Video mode only)

The color setting adjusts a video image from black and white to fully saturated color.

- Press the left key to decrease the amount of color in the image.
- Press the right key to increase the amount of color in the image.

Image (Computer mode only)

▶ Tracking

Choose “Tracking” item to synchronize the signal timing of the display with that of the graphic card. When you experience an unstable or flickering image, use this function to correct it.

▶ Frequency

“Frequency” is for changing the display data frequency to match the frequency of your computer’s graphic card. When you experience a vertical flickering bar, use this function to make an adjustment.

▶ Auto-Image

The projector automatically adjusts tracking, frequency and vertical and horizontal position for most computers.

** The image options are available only for computer sources. The projector can set these options automatically for video sources.*

Audio

▶ Volume

- Press the left button to decrease the volume.
- Press the right button to increase the volume.

▶ Bass

The Bass setting controls the lower frequencies of your audio source.

- Press the left button to decrease the bass.
- Press the right button to increase the bass.

▶ Treble

The treble setting controls the higher frequencies of your audio source.

- Press the left button to decrease the volume.
- Press the right button to increase the volume.

▶ Mute

- Choose the left icon to make the volume function ineffective.
- Choose the right icon to make the volume function effective.

▶ Mono / Stereo / Stereo-enhance

- Mono: Mono sound effect.
- Stereo: Stereo sound effect.
- Stereo-enhance: Stereo-enhance sound effect.

Projection

▶ Front-Desktop

The factory default setting.

▶ Rear-Desktop

When you select this function, the projector reverses the image so you can project behind a translucent screen.

▶ Front-Ceiling

When you select this function, the projector turns the image upside down for ceiling-mounted projection.

▶ Rear-Ceiling

When you select this function, the projector reverses and turns the image upside down at the same time. You can project from behind a translucent screen with ceiling-mounted projection.

Lamp

▶ **Lamp Warning**

Choose this function to show or hide the warning message when the lamp changing warning message displayed.

▶ **Lamp Reset**

Reset the lamp setting only when the lamp changing is done.

Exit Menu

▶ **Exit Menu**

When you like to close the OSD menus, choose this item and select “YES” to exit menu.

▶ **Reset All**

Choose “Yes” to retrun the display parameters of the current mode to its factory default settings.

Appendices

Troubleshooting

If you are experiencing trouble with the projection display, refer to the following. If the problem persists, please contact your local dealer or our service center.

Problem: No image appears on screen.

- ▶ Ensure all the cables and power connections are correctly and securely connected as described in the “Installation” section.
- ▶ If the projector is plugged into a power strip, make sure the power strip is turned on.
- ▶ Ensure the pins of connectors are not crooked or broken.
- ▶ Check if the projection lamp has been securely installed. Please refer to the “Changing the lamp” section.
- ▶ Make sure you have removed the lens cap and the projector is switched on.

Problem: Partial, scrolling or incorrectly displayed image.

- ▶ Press the “Resync” button on the Remote Control.
- ▶ If you are using a PC:
If the resolution of your computer is higher than 800 x 600. Follow the steps outlined below to reset the resolution.

For Windows 3.x:

1. In the Windows Program Manager, click the “Windows Setup” icon in the Main group.
2. Verify that your display resolution setting is less than or equal to 800x 600.

For Windows 95:

1. Open “My Computer” icon, the “Control Panel” folder, and then double click the “Display” icon.
2. Select the “Setting” tab.
3. In the “Desktop Area” you will find the resolution setting. Verify that the resolution setting is less than or equal to 800 x 600 resolution.

If the projection display is still not projecting the whole image, you will need to also change the monitor display you are using. Refer to the following steps.

4. Follow above steps 1~2. Click on the “Advanced Properties ” button.
 5. Select the “Change” button under the “Monitor” tab .
 6. Click on “ Show all devices ”. Then select “ Standard monitor types ” under the “ Manufactures ” box; choose the resolution mode you need under the “ Models” box.
 7. Verify that the resolution setting of the monitor display is less than or equal to 800 x 600.
- ▶ If you are using a Notebook PC:
 1. You are required to implement above steps of resolution setting of computer first.
 2. Switch the Notebook PC display to the “external display only” or “CRT only” mode.
 - ▶ If you are experiencing difficulty in changing resolutions or your monitor freezes, restart all the equipment and the projection display.

Problem: The screen of the Notebook or PowerBook computer is not displaying your presentation.

- ▶ If you are using Notebook PC:

Some Notebook PCs may deactivate their own computers’ screens when a second display device is in use. Each of them has different way to be reactivated. Refer to your computer’s documentation for detailed information.
- ▶ If you are using an Apple PowerBook:

In Control Panels, open the PowerBook Display to select Video Mirroring “On”.

Problem: Image is unstable or flickering

- ▶ Use “Tracking” to correct it.
- ▶ Change the monitor color setting from your computer.

Problem: Image has vertical flickering bar

- ▶ Use “Frequency” to make an adjustment.
- ▶ Check and reconfigure the display mode of your graphic card to make it compatible with the product.

Problem: Image is out of focus

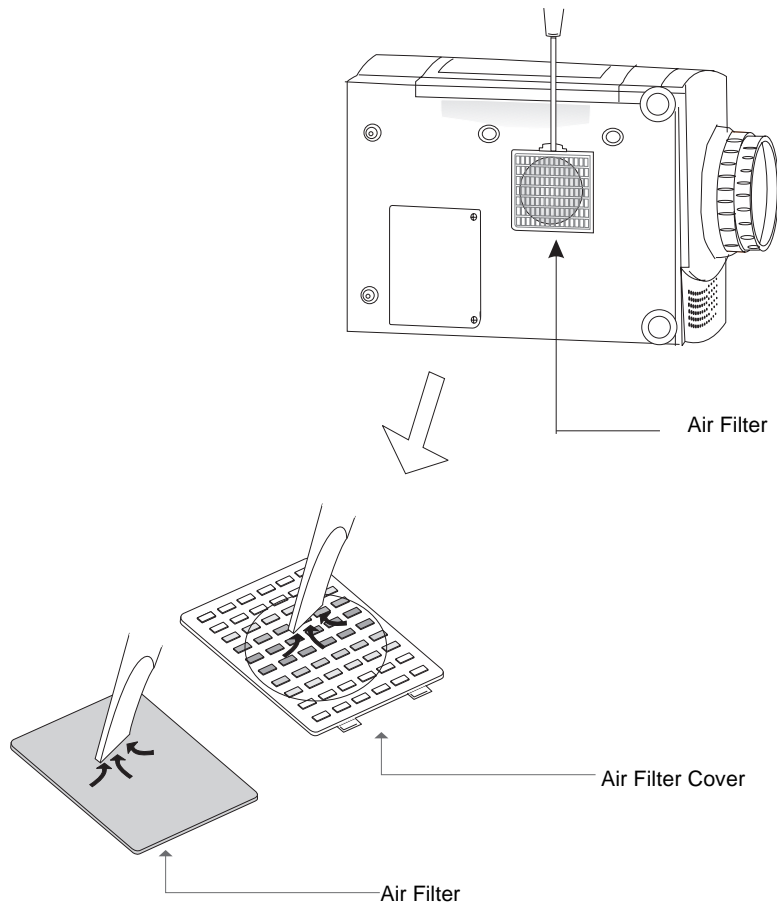
- ▶ Adjust the Focus Ring on the projector lens.
- ▶ Make sure the projection screen is between the required distance (1.2m - 11m) from the projector.

Maintenance

◆ Cleaning the Air Filter

▶ Cleaning Procedure:

1. Turn off the power.
2. Remove the air filter cover.
3. Remove the air filter from the filter cover.
4. Clean the air filter with a vacuum cleaner.
5. Place the air filter back in position. Make sure the air filter is fully inserted.



⚠ Do not clean the filter with water. Doing so may damage the air filter.
Do not operate the projection display with air filter removed.

◆ Changing the lamp

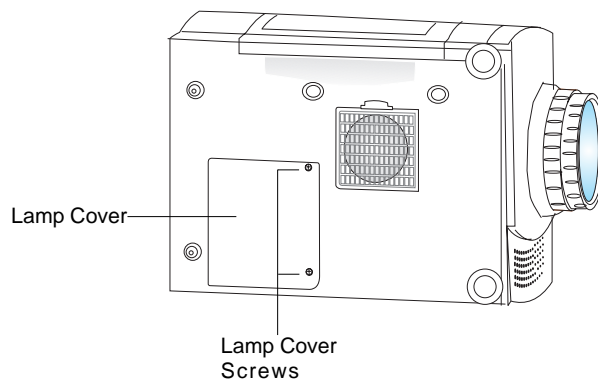
The projection display will detect the lamp life itself. It will show you a warning message when the lamp is used over working hours. When you see this message, change the lamp as soon as possible.

Make sure the projection display has been cooled for at least 60 minutes before changing the lamp.

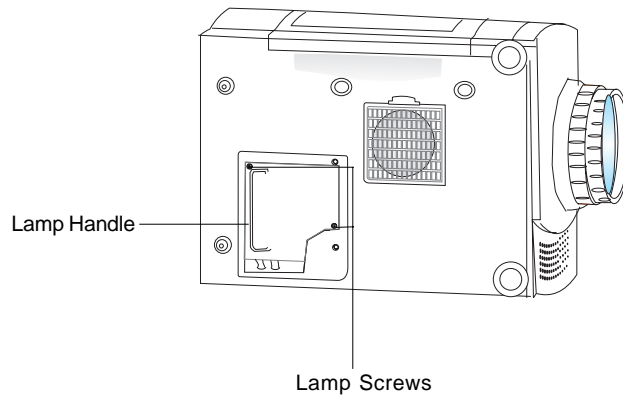
⚠ Warning: Lamp compartment is hot! Allow it to cool before changing lamps!

▶ Lamp Changing Procedure:

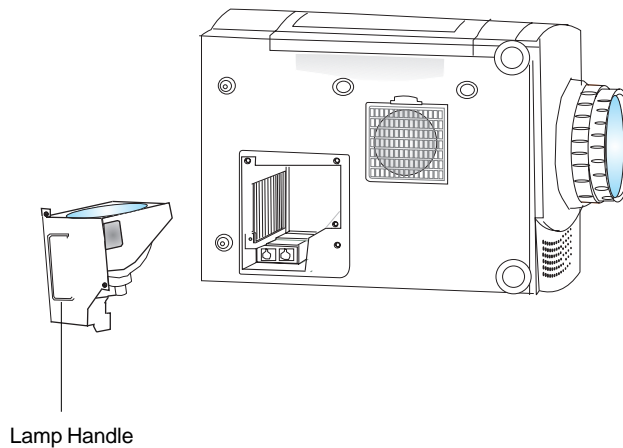
1. Turn off the power and allow the projection display to cool down.
2. Disconnect the power cord.
3. Unscrew the 2 screws of the lamp cover and remove the cover.



4. Unscrew the 2 screws of the lamp module and pull out the lamp module by the handle.



5. Replace the new lamp module by the handle and tighten the screws.



6. Place the lamp cover back in position and lock the 2 screws.
7. Remember to reset the lamp life timer from OSD menus.

Specifications

LCD panel	<ul style="list-style-type: none"> - active matrix TFT color LCD - 0.9" poly-silicon panels x 3 - tr=12ms, tf=30ms response time - 350:1 contrast ratio
Lamp	<ul style="list-style-type: none"> - 150-watt UHP lamp
Number of Pixels	<ul style="list-style-type: none"> - 800 pixels (H) X 600 lines (V)
Displayable Color	<ul style="list-style-type: none"> - 16.7M colors
Projection Lens	<ul style="list-style-type: none"> - F2.0~2.3, f 38~50mm w/ 1.3 X zoom & focus
Image Size	<ul style="list-style-type: none"> - adjustable 20" to 260"
Projection Distance	<ul style="list-style-type: none"> - 3.8 ft. to 36 ft. / 1.2 m to 11 m
Computer Compatibility	<ul style="list-style-type: none"> - VESA VGA 640 x 350, 70/85Hz - VESA VGA 640 x 480, 60/72/75/85Hz - VESA VGA 720 x 400, 70/85Hz - VESA SVGA 800 x 600, 56/60/72/75/85Hz - XGA 1024 x 768 Compressed , 60/70/75/85Hz - Apple Macintosh LC 13" 640 x 480, 67Hz - Apple Macintosh II 13" 640 x 480, 67Hz - Apple Macintosh 16" 832 x 624, 75Hz - Apple Macintosh 19" 1024 x 768, 75Hz Compressed - NEC PC-98 series 640 x 400, 57Hz 640 x 480, 60/70Hz - FM TOWNS 640 x 480, 55/60 Hz
Video Compatibility	<ul style="list-style-type: none"> - NTSC / PAL / SECAM compatible - composite video & s-video capability
H. Frequency	<ul style="list-style-type: none"> - 15kHz~69kHz horizontal scan
V. Frequency	<ul style="list-style-type: none"> - 50Hz~85Hz vertical refresh
Multimedia Audio	<ul style="list-style-type: none"> - internal speakers with 3 watt x 1 output - built-in amplifier with 3 watt x 1 output
Power Supply	<ul style="list-style-type: none"> - auto switch - input AC 100-240V, 50-60Hz
I/O Connectors	<ul style="list-style-type: none"> - power: AC power input socket - computer input: HDB 15-pin female connector x 2 - computer output: HDB 15-pin female connector - video input: composite video RCA jack x 1 / S-Video jack x 1 - audio input: 2 pairs of L/R RCA jacks - audio output: 1 pair of L/R RCA jacks
Weight	<ul style="list-style-type: none"> - 8.9 lbs / 4.0 kgs
Dimensions (W x H x D)	<ul style="list-style-type: none"> - 8.8 x 4.3 x 14.1" / 224 x 109 x 359 mm
Environmental	<ul style="list-style-type: none"> - operating temperature: 10^o~40^oC/50^o~104^oF humidity: 80% maximum storage temperature: -20^o~60^oC/ -4^o~140^oF humidity: 80% maximum
Safety Regulation	<ul style="list-style-type: none"> - FCC, CE, VCCI, BSMI, UL, CUL, TUV

Compatibility Modes

Mode	Resolution	H.Frequency (kHz)	V.Frequency (Hz)
IBM & VESA VGA	640 x 350	31.5	70
IBM & VESA VGA	640 x 350	37.9	85
IBM & VESA VGA	640 x 480	31.5	70
IBM & VESA VGA	640 x 480	37.9	85
IBM & VESA VGA	720 x 400	31.5	70
IBM & VESA VGA	720 x 400	37.9	85
IBM & VESA VGA	640 x 480	31.5	60
IBM & VESA VGA	640 x 480	37.9	72
IBM & VESA VGA	640 x 480	37.5	75
IBM & VESA VGA	640 x 480	43.3	85
VESA SVGA	800 x 600	35.2	56
VESA SVGA	800 x 600	37.9	60
VESA SVGA	800 x 600	48.1	72
VESA SVGA	800 x 600	46.9	75
VESA SVGA	800 x 600	53.7	85
*VESA XGA	1024 x 768	48.4	60
*VESA XGA	1024 x 768	56.5	70
*VESA XGA	1024 x 768	60	75
* VESA XGA	1024 x 768	68.9	85
Apple Macintosh LC 13"	640 x 480	34.98	66.66
Apple Macintosh II 13"	640 x 480	35.00	66.68
Apple Macintosh 16"	832 x 624	49.72	74.55
* Apple Macintosh 19"	1024 x 768	60.24	75
PC98	640 x 400	24.83	56.42
PC98	640 x 480	31.5	70
PC98	640 x 480	31.5	60
FM Towns	640 x 480	24.37	55.37
FM Towns	640 x 480	31.5	60

*: Compressed

LEGAL INFORMATION

FIVE-YEAR LIMITED WARRANTY

This Dukane LCD projector is warranted to the original purchaser for a period of five (5) years from the original purchase date - in normal use and service - against defects in material and workmanship. DUKANE CORPORATION EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

During the warranty period, Dukane Corporation will repair or replace (at the manufacturer's option) any such defective parts (except for the lamp, which is subject to whatever warranties the manufacturer may provide) without charge to the purchaser for parts or labor when the product is returned, prepaid and insured, with proof-of-purchase date. This remedy is void if the product has been damaged by accident, unreasonable use, neglect, improper service or other causes not arising out of defects in material or workmanship.

Dukane Corporation disclaims all liability for incidental or consequential damage of any kind, including all damages arising out of any interruptions in operation of the product and all damages to software.

No person, firm, or representative is authorized to assume any obligation or to make any warranty on behalf of the Dukane Corporation other than as stated above.

**THIS LIMITED WARRANTY IS VALID FOR U.S.A AND CANADA.
FOR OTHER LOCATIONS, LOCAL WARRANTIES APPLY.**

LAMP REPLACEMENT SERVICE & REPAIR POLICY & PROCEDURE

For service and parts, contact the Dukane AV Service Department at 1 (800) 676-2487 within the USA or 1 (630) 584-2300 worldwide. If you would like to send a facsimile (FAX), dial 1 (630) 584-5156 worldwide.

When requesting warranty service, please have the sales receipt available along with the model name and serial number.

If it becomes necessary to return the projector, use the original packing material and box (if retained) or pack securely. Dukane Corporation will not be liable for any pick-up or delivery charges or any expenses incurred for service calls or service supplied by anyone other than the Dukane AV Service Department.

Audio Visual Products

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Part # 401-554-00