ViewSonic®

PJ860   *Office Theater*™

31" to 300" (Viewable)
Super Bright SVGA LCD Projector

دليل المستخدم

User's Guide

Guide de l'utilisateur

Bedienungsanleitung

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FOR YOUR RECORDS

The serial number of this product is on the bottom of the projector. Write the serial number in the space below and keep this guide as a permanent record of your purchase to aid in identification in the event of theft or loss.

Model Name:	**ViewSonic PJ860**
Model Number:	**VPRJ21558-2**
Document Number:	**PJ860-2_UG_181 (Rev. 1C)**
Serial Number:	_____
Purchase Date:	_____

Electronic Warranty Registration

Register your projector at **www.viewsonic.com**. It's fast, easy, and will simplify future support needs.

FOR CUSTOMERS IN THE UNITED KINGDOM

THIS PRODUCT IS SUPPLIED WITH TWO PIN MAINS FOR USE IN MAINLAND EUROPE.
FOR THE U.K. PLEASE REFER TO THE CLASS I EQUIPMENT NOTES BELOW.

The mains lead on this equipment is supplied with a moulded plug incorporating a fuse, the value of which is indicated on the pin face of the plug. Should the fuse need to be replaced, an ASTA or BSI approved BS 1362 fuse of the same rating must be used.

If the fuse cover is detachable, never use the plug without the cover. If a replacement fuse cover is required, ensure it is of the same colour as that visible on the pin face of the plug. Fuse covers are available from your dealer.

DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

Should it be necessary to change the mains plugs, this must be carried out by a competent person, preferably a qualified electrician.

If there is no alternative to cutting off the mains plug, ensure that you first remove the fuse then immediately dispose of the portion remaining, to avoid a possible shock hazard by inadvertent connection to the mains supply.

WARNING: THIS EQUIPMENT MUST BE EARTHED

The wires in the mains lead are coloured in accordance with the code shown in the diagram below:

Green & Yellow to Earth   Brown to Live

Fuse

Blue to Neutral   Cord Clamp
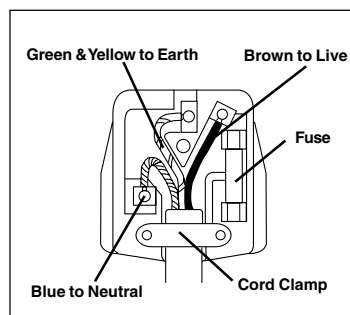
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured Green and Yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol or coloured Green, or Green and Yellow.

The wire coloured Blue must be connected to the terminal marked with the letter N or coloured either BLUE or BLACK. The wire coloured BROWN must be connected to the terminal marked with the letter L or coloured either BROWN or RED.

E
N
G
L
I
S
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Important Safety Precautions

Warning Following these instructions could prevent possible injury or death.

If any of the events listed below occur, switch projector OFF, pull power plug out of power source, and contact ViewSonic® Customer Support (see back cover):

- If there is an abnormal smell or smoke
- If suddenly there is no picture, no sound, or an abnormal sound
- If water or any other liquid enters the projector

To prevent possible electric shock or fire, handle power cord and power plug with care:

- Do not touch the power cord with wet hands.
- TO DISCONNECT THE UNIT FROM THE POWER SOURCE, GRASP THE POWER PLUG, AND PULL. DO NOT PULL THE POWER CORD ITSELF.
- Do not damage the power cord by pulling, bending, heating, or placing heavy objects on it.

To prevent possible electric shock or fire, keep liquids away from projector:

- Do not use the projector near water (such as a shower, sink, etc.).
- Do not put an open container with liquid on or near the projector (such as a vase, open beverage container, etc.).

Do not insert a foreign object into any part of the projector:

- To prevent electric shock or fire, do not insert a metal or flammable object through the ventilation holes, etc.
- If foreign matter enters the projector, switch it OFF and pull the power plug out of the power source.
- Prevent small children from inserting objects into the projector.

Only use recommended power supply:

- Do not use any power source that has a voltage other than what this user's guide specifies. See page 12.

CAUTION:
To prevent possible eye damage:
- **DO NOT look directly at the laser light from the aperture at the front of the Remote Control Unit. (See page 7.)**
- **DO NOT point the laser light at any person's eyes.**

Also, do not look directly into projector lens when lamp is lit:

- Prevent all people, especially small children, from looking into the projector lens when the lamp is lit.

Do not subject projector to physical shock or place projector on unstable surface:

- Do not place the projector in a location where it is likely to be struck or bumped into.
- Avoid placing the projector on a shelf, cabinet, etc. that cannot adequately support its weight, or that is on an inclined floor.
- When the projector is placed on a table with casters, set the caster stoppers to prevent movement.

Caution Following these instructions could prevent personal injury or damage to the projector.

To prevent damage from heat build-up:

- Clean the air filter after every 100 hours of operation. (See page 16.)
- Do not place the projector in direct sunlight or near a source of heat like a furnace, electric heater, etc.
- Do not block ventilation holes (by placing the projector on its side, or on a carpet, bedspread etc.)
- Place the projector at least 10 cm from any wall (allowing space for the ventilation holes).

Do not place projector in a moist or dusty place:

- Do not place the projector in an area containing steam (from a humidifier, etc.), dust, or soot (from a stove, etc).

If projector will not be used for a long time, pull out power plug and close lens cover.

Have inside of projector cleaned at least every two (2) years:

- Contact ViewSonic Customer Service for information about where to have the inside cleaned. Never attempt to open the cabinet to clean the inside of the projector yourself.
- To clean the lens and cabinet, follow the instructions on page 16.

Do not place heavy objects on the projector.

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Getting Started

Congratulations on purchasing a **ViewSonic *PJ860* Office Theater**™ LCD projector!
Save the original box and all packing material for future shipping needs.

Package Contents

- **ViewSonic *PJ860* Office Theater**
- Remote Control Unit/Mouse & Laser Pointer
- 2 AA batteries
- 3 AC power cords (U.S., Europe, and China)
- RGB computer video cable (15-pin mini D-sub connector)
- Video/Audio cable (RCA connectors)
- S-Video cable (RCA connectors)
- Audio (stereo) mini-DIN cable

- PS/2 mouse cable
- Serial (RS232) mouse/computer-control cable
- ADB (Macintosh®) mouse cable
- Macintosh adaptor
- User's guide
- INF and ICM files on CD-ROM*
- Carrying Case

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*IMPORTANT: The supplied **INF file** assures compatibility with Windows operating systems, and the **ICM file** (Image Color Matching) ensures accurate on-screen colors. When using a computer as the signal source, ViewSonic® recommends that you install both of these files.

• Insert the supplied CD-ROM into your system, wait for it to auto-start, select "Monitor Drivers," and follow the on-screen instructions.

Installation

1 Connect signal input cables

With both the PJ860 and the computer powered OFF, connect the appropriate video and audio cables to the computer, VCR, or other input sources.

Macintosh users: Connect the supplied Macintosh adapter to the video cable, then to the PJ860.

2 Connect power cord

Connect the power cord to a properly grounded AC outlet, then to the PJ860.

3 Power-ON projector and all input devices (computer, VCR, etc.)

- Power-ON the PJ860 projector.
- Power-ON all input devices.

3 (continued)

When a PC is one of the input devices (not for Macintosh):

  (1) Install INF and ICM files
  See instructions in the "IMPORTANT" note above.

  (2) Set signal timing of graphics card
  Set the graphics card(s) to 800 x 600 @ 75 Hz (resolution and refresh rate).

4 Install batteries into Remote Control Unit

See instructions below.

To be best prepared for any future customer service needs:

- Write the serial number (see the bottom of the projector) in *"For your Records"* on page 1 of this guide.
- Register the warranty of your projector on the Internet at:

  http://www.viewsonic.com

Inserting Batteries into the Remote Control Unit

1 Remove the compartment cover by sliding it in the direction of the arrow shown below.

2 Insert the batteries (Alkaline type) with the polarities (+,-) facing the direction shown below.
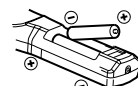
3 Replace the compartment cover.

CAUTION:

- **Only use AA (LRG) type of batteries.**
- **To prevent leakage that may damage the unit, do not combine old and new batteries.**
- **When inserting batteries, be careful to insert them according to the correct polarities (+,-).**
- **If not using the Remote Control Unit for an extended period of time, remove the batteries.**
- **Do not place the Remote Control Unit on any wet surface or close to the cooling fan of the projector.**

Connecting Input/Output Devices

Side Connector Panel

"RGB1" & "RGB2"

RGB input ports (2)
D-sub 15 pin type
(to video output of computers)

NOTE: RGB1 supports Plug & Play; <u>RGB2 does not</u> support Plug & Play.

CONTROL port
(RS232C type) for <u>mouse emulation</u> (PS2 PC mouse, serial PC mouse, or Macintosh® mouse); or for <u>controlling the projector from a computer</u>. See page 13 for more information.

S-VIDEO input port
Mini DIN 4 pin type (used with S-VIDEO output equipment)

VIDEO input port
RCA type (used with Composite VIDEO output equipment)

AUDIO input ports
RCA type, Left/Right (used with either S-VIDEO or Composite VIDEO outputs)

AUDIO input ports (2)
stereo mini type (left port = stereo audio with RGB1; right port = stereo audio with RGB2)

AUDIO output port
stereo mini type (to audio amplifying equipment)

USB input port
(Upstream) The mouse cursor can be controlled by connecting the PJ860 projector to a computer.

RGB output port
D-sub 15 pin (to video input of CRT Display)

Example of System Setup

PJ860 Projector

Laptop Computer

NOTE: Two computers can be connected (using RGB1 and RGB2). Only one VCR should be connected (using either the Composite video or S-video output port).

Desktop Computer

VCR with S-VHS out

Audio amplifying equipment

CRT Display

VCR

ViewSonic *PJ860*

Operation

Projecting a Picture

1. <u>Power ON the projector</u>. Set the MAIN POWER switch to ON (located on the side Connector Panel). The ON indicator lights orange.

2. <u>Press the STANDBY/ON button</u> on the Projector Control Panel or on the Remote Control Unit. (See page 7.)

   The ON indicator blinks green during warm-up and stays green when projector is ready for use.

   NOTE: The power can not be turned on if the STANDBY/ON button is pressed within 60 seconds after the power is turned off.

3. <u>Remove the lens cap</u>.

4. <u>Position the projector</u> the desired distance from the projection screen, then <u>set the projection angle</u> by positioning the foot adjusters. (See *Positioning the Projector* and *Setting the Projection Angle* below.)

5. <u>Power ON all connected input devices</u>. (See page 5.)

6. <u>Select the signal source</u>: press the INPUT button on the projector or one of the INPUT buttons (VIDEO/RGB) on the Remote Control Unit. (See page 7.)

   NOTE: To switch between RGB1 and RGB2, use the INPUT menu (see page 10).

7. Using buttons on the Remote Control Unit or the control panel on top of the projector, <u>adjust the picture size</u> with the ZOOM button, then <u>adjust the focus</u> using the FOCUS button.

Turning Off the Projector

1. <u>Press STANDBY/ON button</u> (on Control Panel or Remote Control Unit) for one (1) second. The ON indicator blinks orange and the projector lamp turns off.

   <u>CAUTION</u>: Always press the STANDBY/ON button before turning OFF the MAIN POWER. This allows the fan to cool down the projector.

2. <u>Wait until the fan stops</u> (about one minute after pressing STANDBY/ON button).

3. <u>Power OFF the projector</u>. Set the MAIN POWER switch to OFF.

4. <u>Place the lens cap over the lens</u>.

Positioning the Projector

The projector must be horizontal to get a distortion-free picture. Place the projector on a table-top or other flat surface. Use the chart below to determine the placement of the projection screen.

Screen Size (inches)	Distance "a" (inches)		Distance "b" (inches)
	Minimum	Maximum	----------------
40	55	73	1
60	85	114	2
80	114	151	2
100	144	191	3
120	176	231	3
150	220	282	4
200	291	386	6

Top View

Screen

Side View

b

a
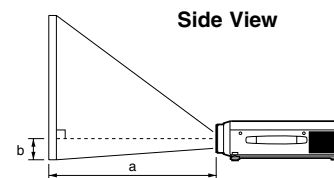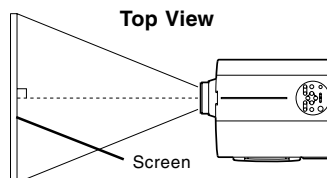
<u>CAUTION</u> **To prevent a build-up of heat that can damage the projector:**
- **Be especially careful not to block ventilation holes when installing the projector.**
- **Only use this projector in the horizontal position (see Side View shown above).**

a = distance from projector to screen

b = distance from center of lens to bottom of screen

(a, b: +/- 10%)

Setting the Projection Angle

1. While firmly grasping the front of the projector with both hands, use your index finger to push --and hold-- the Adjuster Buttons (located on the sides of the projector).

2. While pressing the Adjuster Buttons, tilt the front of the projector up in order to adjust the viewing angle. Then (while still grasping the projector) release the Adjuster Buttons, securely locking the Front Foot Adjusters.

3. To make fine adjustments, turn the base of the Front Adjusters.

Front View

Front Adjusters

Side View

You can make vertical adjustments (0 to 9 degrees) using the **Front Foot Adjusters**.

<u>CAUTION</u>
- **To prevent possible injury or damage to the projector, make sure you are holding onto the projector securely before you unlock the foot adjusters.**
- **Securely lock the Front Adjusters.**
- **Do not use unnecessary force when you move the foot adjusters.**

Controls and Indicators

Projector Control Panel

Remote Control Unit

VIDEO button and **RGB button**
These two buttons are used to select either Video or RGB (computer) as the input source.

NOTE: Same function as INPUT button on Projector Control Panel

MUTE button silences audio output temporarily

STANDBY/ON button powers ON/OFF button. OFF activates Standby Mode

LASER button toggles laser-pointer On/Off. See CAUTION below.

ZOOM button adjusts the size of the projected picture.

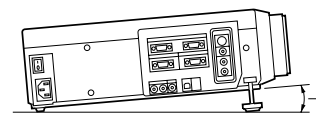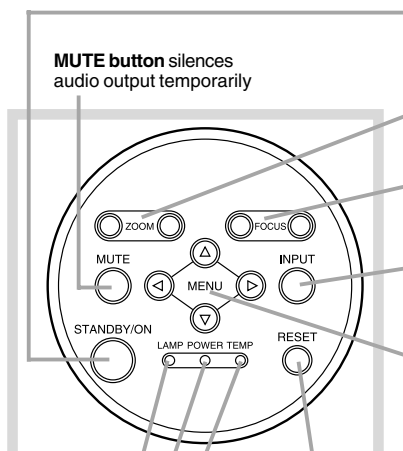**POSITION button** After pressing this button, move the DISK PAD (up/down, left/right) to move screen image (only for RGB signal)

FOCUS button adjusts the sharpness of the projected picture.

DISK PAD
• When a menu screen is displayed, use DISK PAD to select or adjust a menu item.
• When menu is not displayed, and mouse cables are connected, the DISK PAD functions as a mouse. Press center of DISKPAD for left-click mouse function.
• After pressing POSITION button, DISK PAD moves entire screen image.

INPUT button selects input source:

RGB1 ⟶ RGB2 ⟶ VIDEO

MENU buttons used to display on-screen menus and to adjust the selected option.

RESET / "RIGHT " MOUSE button (two functions)
• **RESET button:** when a menu is displayed, returns selected menu option to factory setting.
• **"RIGHT" MOUSE button:** when no menu is displayed

LAMP indicator becomes lit when lamp cannot light

ON indicator blinks in Standby mode; remains lit in Operation mode

RESET button resets selected menu option to factory setting

TEMP indicator becomes lit when temperature inside projector is too high

FREEZE displays a still picture, stopping audio and moving video image

MAGNIFY buttons magnify part of projected picture

OFF button turns OFF the MAGNIFY function (+/-)

BLANK button displays blank screen (white, blue, or black). See page 10.
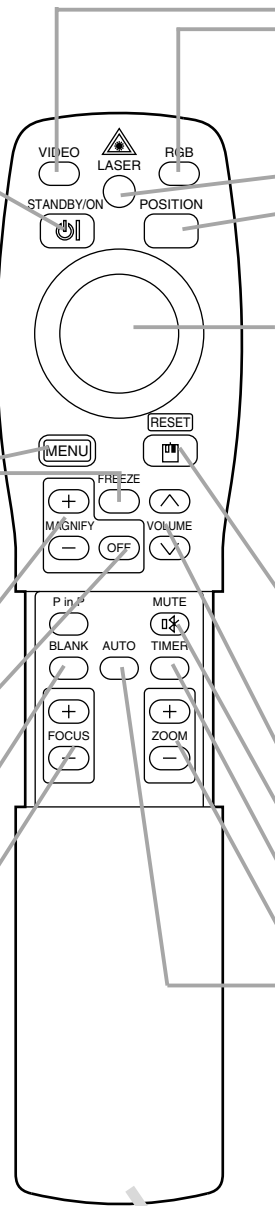
FOCUS button adjusts the sharpness of the projected picture.

VOLUME buttons adjust loudness of audio output

MUTE button silences audio output temporarily

TIMER button activates on-screen countdown timer

ZOOM buttons are used to adjust the size of the screen image

AUTO button automatically adjusts Vertical Position, Horizontal Position, Horizontal Phase, and Horizontal Size.

Remote control sensor (rear)

Speakers

Lens

Lens cap

Cooling fan (intake)

Handle

Cooling fan (exhaust)
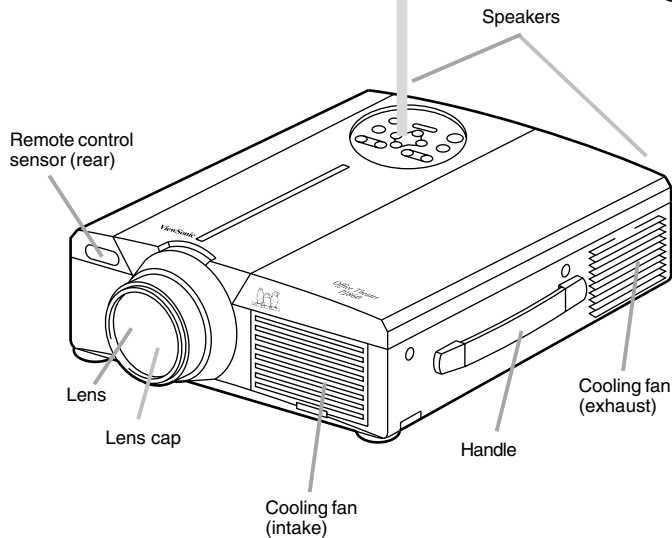
Back View of Remote Control Unit

Battery Compartment
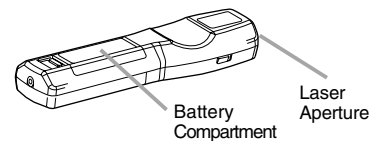
Laser Aperture

CAUTION

To prevent possible eye damage:

• **DO NOT** look directly at the laser light emitted from the Laser Aperture of the Remote Control Unit (see above).

• **DO NOT** point the laser light at any person's eyes.

Adjusting the Projected Image

1   **Display the list of menus.** Press any one of the four MENU buttons on the Projector Control Panel or the MENU ON/OFF button on the Remote Control Unit. The names of the four menus (SETUP, INPUT, IMAGE, OPTION) will display. (See pages 8-10.)

2   **Select the menu.** To select one of the four menus, press the left or right MENU buttons on the Projector Control Panel or the DISK PAD on the Remote Control Unit. The name of the selected menu is highlighted in green.

3   **Select the menu option.** To select a menu option you want to adjust, use the MENU buttons on the Projector Control Panel or use the DISK PAD on the Remote Control Unit. The selected adjustment option is highlighted in green.

Returning to Factory Default Settings

To return all the controls <u>in a given menu</u> to factory settings:

1   Select the menu (follow step 2 above).

2   Press the RESET button (on the projector control panel or Remote Control Unit), and select DEFAULT.
    If you change your mind, select CANCEL.

NOTE: To return a single control (Volume, Brightness, etc.) to the factory setting, <u>select only that menu option</u>, and press RESET. If you change your mind, select CANCEL.

Memory Function

Whenever you power OFF the projector, all picture adjustments made for each input device (VIDEO, RGB1, and RGB2) will be saved separately.

Freeze Function

This function displays a still picture, freezing a moving video image (similar to the "pause" function of a VCR).

1   Press the FREEZE button on the Remote Control Unit.

2   To release the Freeze function, press the FREEZE button again.

NOTE: FREEZE and MAGNIFY can not be used simultaneously.

Magnify Function

This function allows you to magnify a portion of the projected picture.

1   <u>To activate the Magnify function</u>: Press the MAGNIFY button on the Remote Control Unit. The center of the projected picture will double in size.

2   <u>To change magnification</u>: Press the [+] button to increase magnification (maximum, 4 times). Press the [-] button to decrease magnification (minimum, about 1.1 times)

3   <u>To shift the magnified display area</u>: Press the POSITION ON button, then press the DISK PAD up, down, left, or right. The magnified display area shifts accordingly.

4   <u>To return to a normal display</u>: Press the OFF button (below the FREEZE button).

NOTE: The Magnify function is released when an INPUT SELECT button (on projector or Remote Control Unit) or when the timing mode (resolution or refresh rate) of a personal computer is changed while an image is displayed.

SET UP Menu

The SET UP Menu allows you to adjust the picture for each input source separately: RGB1, RGB2, and VIDEO (Composite Video or S-Video).

NOTE: Before using the SET UP Menu, use the INPUT Menu to select one of the input sources, then repeat these steps for each of the other input sources (see next page). Two computers can be connected (using RGB1 and RGB2), and one video source should be connected (using either the Composite video or S-video input port). See page 5 for information about the input ports.

SET UP Menu Options	Adjustments
VOLUME	Decrease -- Increase
BRIGHT (BRIGHTNESS)	Darker -- Brighter
CONTRAST	Lower -- Higher
For VIDEO signal input only	
SHARPNESS	Softer -- Sharper
COLOR (SATURATION)	Lower -- Higher
TINT	Red -- Green
For RGB signal input only	
V POSIT (VERTICAL POSITION)	Moves picture up or down (or use AUTO -- automatic control)
H POSIT (HORIZONTAL POSITION)	Moves picture left or right (or use AUTO)
H PHASE (HORIZONTAL PHASE)	Eliminates Horizontal Noise* (or use AUTO)
H SIZE (HORIZONTAL SIZE)	Widens/narrows horizontal size of picture (or use AUTO)
COLOR BAL R (COLOR BALANCE RED)	Red: Lighter <----> Darker
COLOR BAL B (COLOR BALANCE BLUE)	Blue: Lighter <----> Darker

* "Horizontal noise" appears as horizontal lines on the screen image when Horizontal Phase is not adjusted; when adjusted properly, text characters appear sharp.

VIDEO signal input

RGB signal input

NOTE:
• **TINT cannot be adjusted with PAL/SECAM video signal input.**
• **TINT, COLOR, and SHARPNESS cannot be adjusted with RGB signal input.**
• **V. POSIT, H. POSIT, H. PHASE, and H. SIZE cannot be adjusted with VIDEO signal input.**

AUTO Adjustment function

The AUTO Adjustment function automatically adjusts 4 controls: V. POSIT (Vertical Position), H. POSIT (Horizontal Position), H. PHASE (Horizontal Phase), and H. SIZE (Horizontal Size).

NOTE -- Auto Adjust:
• **May require several seconds to execute**
• **May not operate correctly with some projected images**
• **May cause parts of the projected image to be slightly dark in some cases**
• **Can not execute when the FREEZE or MAGNIFY function is in use, or when the initial on-screen message is "NO INPUT IS DETECTED" or "SYNC IS OUT OF RANGE."**
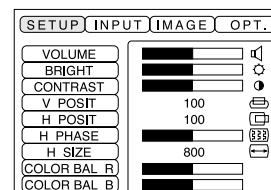
INPUT Menu

The INPUT Menu allows you to select from three possible input sources (RGB1, RGB2, and VIDEO). For VIDEO, the AUTO option will work for most circumstances (N-PAL is not suppported).

INPUT Options	Adjustment Description

RGB (1&2)	Displays the following RGB inputs:
	  fH: horizontal sync frequency
	  fV: vertical syn frequency

VIDEO	Selects signal from VIDEO port (either Composite video or S-Video) NOTE: When the screen is unstable (no color or rolling image), select the mode that matches the input signal.

NOTE: RGB1 is compatible with Plug and Play (DDC1™ and DDC2B™); RGB2 is not.

```
┌─────┬─────┬─────┬─────┐
│SETUP│INPUT│IMAGE│ OPT.│
└─────┴─────┴─────┴─────┘
  ┌──────┐
  │RGB ▶ │      fH:38kHz
  └──────┘
  ┌──────┐      fV:60Hz
  │VIDEO │
  └──────┘
```

RGB options

```
┌─────┬─────┬─────┬─────┐
│SETUP│INPUT│IMAGE│ OPT.│
└─────┴─────┴─────┴─────┘
  ┌──────┐
  │RGB   │     ▶AUTO
  └──────┘      NTSC
  ┌──────┐      PAL
  │VIDEO▶│      SECAM
  └──────┘      NTSC4.43
                M-PAL
                N-PAL
```
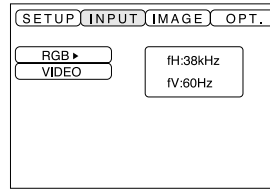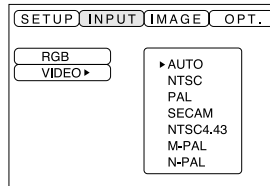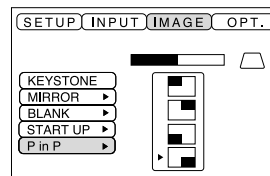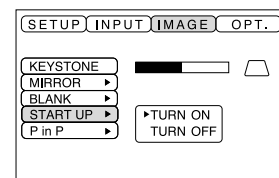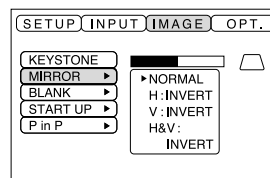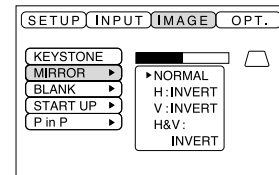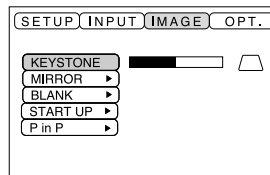
VIDEO options

IMAGE Menu

The IMAGE Menu allows you to select the KEYSTONE, MIRROR, BLANK, START UP and P in P options.

IMAGE Menu Options	Adjustment Description
KEYSTONE	Reduces keystone distortion at top -- or bottom -- of picture (trapezoid shape) caused by raising the front of projector using the adjusters (see page 6).
MIRROR	Inverts picture horizontally and/or vertically NORMAL Returns to factory settings H : INVERT Inverts picture horizontally V : INVERT Inverts picture vertically H&V : INVERT Inverts picture horizontally and vertically
BLANK	Selects background color (white, blue, or black) for the Blank Screen feature. The blank screen will display when VIDEO is the selected input source and no video input signal is detected.
START UP	Allows you to select/de-select the ViewSonic welcome screen at start-up.
P in P	Selects the position of the sub (small) Picture-in-Picture screen image.

```
┌─────┬─────┬─────┬─────┐
│SETUP│INPUT│IMAGE│ OPT.│
└─────┴─────┴─────┴─────┘
  ┌──────────┐
  │KEYSTONE  │  ▐███▌
  ├──────────┤
  │MIRROR  ▶ │
  │BLANK   ▶ │
  │START UP▶ │
  │P in P  ▶ │
  └──────────┘
```

```
┌─────┬─────┬─────┬─────┐
│SETUP│INPUT│IMAGE│ OPT.│
└─────┴─────┴─────┴─────┘
  ┌──────────┐
  │KEYSTONE  │
  ├──────────┤  ▶NORMAL
  │MIRROR  ▶ │   H:INVERT
  │BLANK   ▶ │   V:INVERT
  │START UP▶ │   H&V:
  │P in P  ▶ │      INVERT
  └──────────┘
```

```
┌─────┬─────┬─────┬─────┐
│SETUP│INPUT│IMAGE│ OPT.│
└─────┴─────┴─────┴─────┘
  ┌──────────┐
  │KEYSTONE  │
  ├──────────┤ ▶NORMAL
  │MIRROR  ▶ │  H:INVERT
  │BLANK   ▶ │  V:INVERT
  │START UP▶ │  H&V:
  │P in P  ▶ │     INVERT
  └──────────┘
```

```
┌─────┬─────┬─────┬─────┐
│SETUP│INPUT│IMAGE│ OPT.│
└─────┴─────┴─────┴─────┘
  ┌──────────┐
  │KEYSTONE  │
  │MIRROR  ▶ │
  │BLANK   ▶ │
  ├──────────┤ ▶TURN ON
  │START UP▶ │  TURN OFF
  │P in P  ▶ │
  └──────────┘
```

```
┌─────┬─────┬─────┬─────┐
│SETUP│INPUT│IMAGE│ OPT.│
└─────┴─────┴─────┴─────┘
  ┌──────────┐
  │KEYSTONE  │
  │MIRROR  ▶ │
  │BLANK   ▶ │
  │START UP▶ │
  ├──────────┤
  │P in P  ▶ │ ▶
  └──────────┘
```

NOTE: The source of the "large picture" of the P in P (picture in picture) image is the RGB (computer) signal and the source of the "small picture" is the VIDEO signal.

With P in P activated, the audio source defaults to the audio from the VIDEO source. To switch to the RGB (computer) audio source, push one of the Volume buttons.

No picture is displayed when either no signal is detected or when the signal is out of the signal range.

E N G L I S H

OPT. (OPTION) Menu

The OPT. Menu allows you to adjust the Communication Function* (COM. SPEED and COM. BITS), enabling you to control the projector from a computer. The OPT. Menu also allows you to set the TIMER, select the LANGUAGE for all on-screen displays, activate AUTO OFF and START UP.

OPT. (OPTION) Menu Options	Adjustment Description
COM. SPEED (COMMUNI-CATION)	Selects data speed of transmission: 1200, 2400, 4800, 9600, 19200. (Used for computer control of projector.)

COM. BITS	Selects data transmission format:
	  7N1...7 data bits, No Parity, 1 Stop bit
	  8N1...8 data bits, No Parity, 1 Stop bit
	(Used for computer control of projector.)

TIMER	A countdown timer (up to 99 minutes) you can activate whenever needed. The time remaining displays at bottom of the projected picture.
LANGUAGE	Selects language of On-View menus: English, Français (French), Deutsch (German), Español (Spanish), Italiano (Italian), Norsk (Norwegian), Nederlands (Dutch), Japanese.
AUTO OFF	Automatically shuts off the projector --and puts it in Standby Mode-- after a specified period of time that no input source is detected (up to 99 minutes). **To disable AUTO OFF, set minutes to 0.**
SYNC ON G	Toggles the Sync on Green feature on/off.
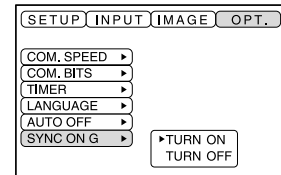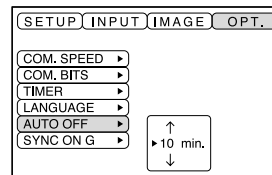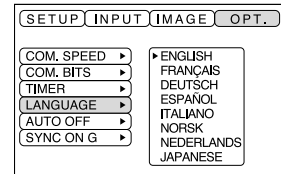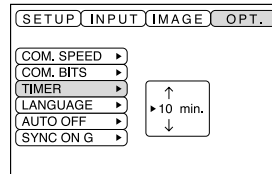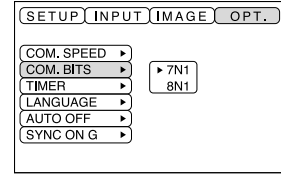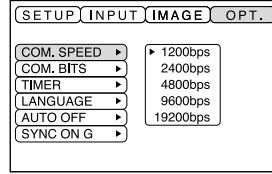
E
N
G
L
I
S
H

IMPORTANT: If AUTO OFF is activated and shuts off the projector lamp, wait at least one (1) minute. Then press--and briefly hold--the STANDBY/ON button. The lamp will turn back on.

* **NOTE: Computer control of the projector (communication function) is an advanced feature that requires specialized software not included with the PJ860. To develop this software you will need various control codes and other supplementary information available from ViewSonic Customer Support. (See page 15.)**

Technical Information

Specifications

LCD	Type	1.3" Polysilicon (x3) Stripe Pixel 800 x 600 TFT Active Matrix
	Pixels	1,440,000 (800 dots x 600 lines x 3 colors)
Lens	Type	Power Focus, Power Zoom (1-1.3X) F1.7 ~ 2.3 (f = 49 - 64 mm)
Display	Image Size	30" - 300" (76.2mm x 7620mm)
	Projection Distance	1.1m - 11m
	Brightness	1700 ANSI Lumens (typical)*, 1360 ANSI Lumens (minimum)
	Contrast Ratio	100:1 (typical - ANSI method), 200:1 (typical - non-ANSI method)
	Aspect Ratio	4:3
	Lamp	190 W Ultra High Pressure compact
	Lamp Life	1500 hours (shutdown)
Audio	Power	2 W (1 W + 1 W) 10%THD
Input Signal	RGB Analog	75 ohms, 0.7 Vp-p X2 H/V Separated, Composite (TTL)
	Video	NTSC 3.58 / PAL-N, PAL-M / SECAM S-Video
		Luminance signal 0.7 Vp-p, 75 ohms termination
		Chrominance signal 0.29 Vp-p (NTSC), 0.30 Vp-p (PAL), 75 ohms termination
	Frequency	f_h: 15.75/15.63, 25-60 kHz f_v: 56-85 Hz
Compatibility	PC	PC compatible (up to 1024 x 768 compressed)
	Macintosh® **	Power Macintosh® (up to 1024 x 768 compressed)
	Video	NTSC 3,58 / PAL-N, PAL-M / SECAM S-Video
Maximum Recommended Resolutions		1024 x 768 @ 75 Hz (Compressed) 800 x 600 @ 60 Hz
Input Ports	RGB	15 pin mini D-sub (x2)
	Video	RCA (x1)
	S-Video	Mini DIN 4-pin (x1)
	Audio	RCA jack (L/R) for Video, Stereo Mini (x2) for RGB
Output Ports	RGB	15 pin mini D-sub (x1)
	Audio	Stereo Mini (x1) for Audio-out
Power	Voltage	AC 100-120/220-240 50 / 60 Hz (Automatic), 3 Wire Grounded
	Consumption	370 Watts
User Controls	Physical/projector	Standby On/Off, Menu (Left, Right, Up, Down), Input, Reset, Mute
Video	Input Bandwidth	82 MHz
Operating Conditions	Temperature	32°F to 95°F (0°C to 35°C)
	Humidity	10% to 85% (no condensation)
Optimum Installation Environment	Temperature	59°F to 82°F (15°C to 28°C)
	Humidity	40% to 75% (no condensation)
Storage Conditions	Temperature	-4°F to +140°F (-20°C to +60°C)
	Humidity	10% to 85% (no condensation)
Dimensions	Physical	292 mm (W) x 124 mm (H) x 395 mm (D) 11.4" (W) x 4.9" (H) x 15.5" (D)
	Packing	385 mm (W) x 370 mm (H) x 532 mm (D) 15.1" (W) x 14.5" (H) x 20.9" (D)
Weight (typical)	Net	5.9 kg (13.0 lb)
	Gross	11.8 kg (26.0 lb)
Regulations		UL, FCC-A, cUL, CE, CB Report, TÜV/GS, EMC report
Power Savings	"On" Green	370 W
	"Stand By" Amber	11 W

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*   Brightness may vary with lamp age and environmental conditions.
**   Macintosh computers require a Macintosh adaptor (supplied with the PJ860 projector).
All products and trademarks are brand names of their respective companies. Specifications are subject to change without notice.

Timing Chart

The following table lists the maximum refresh rates that the **ViewSonic *PJ860*** will operate at a number of standard resolutions (timing presets). While the projector is capable of this level of performance, not all video cards are capable of operating at these signal timings. See your graphics card's user guide to ensure compatibility.

Computer/Signal Timings	Input Resolution H x V	Vertical Frequency (Refresh Rate) (Hz)	Horizontal Frequency (kHz)	Polarity of Synchronizing Signal H/V
Industry 640 x 400 @ 56 Hz	640 x 400	56.4	24.8	
VESA VGA-1 640 x 350 @ 85 Hz	640 x 350	85.1	37.9	-/-
VESA VGA-2 640 x 400 @ 85 Hz	640 x 400	85.1	37.9	-/-
VESA 720 x 400 @ 85 Hz	640 x 480	85.0	37.9	-/-
VESA VGA-3 640 x 480 @ 60 Hz	640 x 480	59.9	31.5	-/-
Mac® 13" 640 x 480 @ 67 Hz	640 x 480	66.7	35.0	-/-
VESA VGA-3 640 x 480 @ 73 Hz	640 x 480	72.8	37.9	-/-
VESA VGA-3 640 x 480 @ 75 Hz	640 x 480	75.0	37.5	-/-
VESA VGA-3 640 x 480 @ 85 Hz	640 x 480	85.0	43.3	-/-
VESA SVGA 800 x 600 @ 56 Hz	800 x 600	56.3	35.2	+/+
VESA SVGA 800 x 600 @ 60 Hz	800 x 600	60.3	37.9	+/+
VESA SVGA 800 x 600 @ 72 Hz	800 x 600	72.2	48.1	+/+
VESA SVGA 800 x 600 @ 75 Hz	800 x 600	75.0	46.9	-/-
VESA SVGA 800 x 600 @ 85 Hz	800 x 600	85.1	53.7	-/-
Mac 16" 832 x 624 @ 75 Hz (partial)	832 x 624	74.6	49.7	+/+
VESA XGA 1024 x 768 @ 60 Hz (compressed)	1024 x 768	60.0	48.4	-/-
VESA XGA 1024 x 768 @ 70 Hz (compressed)	1024 x 768	70.1	56.5	-/-
VESA XGA 1024 x 768 @ 75 Hz (compressed)	1024 x 768	75.0	60.0	-/-

<u>CAUTION</u>: Some input sources may not display properly if they are not compatible with the projector. Some input sources may not display in full size, as shown in Output Resolutions.

Connecting to the RS232 Port

The RS232C Port has two possible uses:

1 *Mouse Emulation* This allows you to use a mouse with one computer at a time, by toggling between one computer connected to RGB1 and another computer connected to RGB2.

<u>NOTE</u>: Depending on which type of mouse you will be using (PS/2, ADB, or Serial) you must use the appropriate connector. (See diagrams below.)

2 *Computer Control Port* This is only used for special applications in which a computer controls the projector (<u>instead</u> of the projector's control buttons or Remote Control Unit).

<u>NOTE</u>: To use this feature you must first develop customized software using various control codes. To find out how to access this supplementary information, contact ViewSonic Customer Support. (See page 15.)

Mouse Emulation

1 With both the projector and the computer powered OFF, connect the projector and the mouse terminal of the computer using the appropriate cable. (See diagrams to the right.)

2 Disconnect the existing mouse.

3 Power ON the projector, then power ON the computer.

NOTE: If mouse emulation will not start, reset the computer and/or check the mouse driver.

(a) PS/2 mouse connector

Mini Din 6pin

(b) ADB (Macintosh) mouse connector

Mini Din 4pin

(c) Serial mouse connector
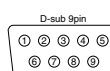
D-sub 9pin

<u>NOTE</u>:
Depending on which type of mouse you will be using (PS/2, ADB, or Serial) you must use the appropriate connector.

Troubleshooting

On-Screen Warning Messages

OnView Message	Recommended Action
"CHANGE THE LAMP" "CALL A MAINTENANCE PERSON"	The lamp unit should be replaced soon. After 200 hours of use power will turn off automatically if you do not replace the lamp unit and reset the lamp time. See page 16.
"CHANGE THE LAMP" "CALL A MAINTENANCE PERSON" "THE POWER WILL TURN OFF AFTER 20 HR."	Replacing the lamp unit is recommended. Call ViewSonic® Customer Service to order a new lamp unit (RLU-190-03A). Power will turn off automatically after 20 hours of use if you do not replace the lamp unit and reset the lamp time. See page 16.
CHANGE THE LAMP (Blinking message)	Replace the lamp unit now. The power will turn off after 10 minutes.
NO INPUT IS DETECTED	No signal input is detected. Check all cable connections to all input devices.
SYNC IS OUT OF RANGE	Check to make sure the input signal (Horizontal and Vertical frequency) is within the range supported by the projector. See page 13.

Problem Solving Chart (Check before contacting Customer Support)

Symptom	Possible Cause	Recommended Action	Page No.
Power cannot be turned on	⬥ Main Power switch is not ON ⬥ Power cord is disconnected ⬥ 60 seconds have not elapsed since the power was turned off ⬥ Inside the projector is too hot	⬥ Turn Main Power Switch ON ⬥ Insert power cord into an AC socket ⬥ After power is turned off, wait at least 60 seconds before turning power on again ⬥ Check to make sure that the ventilation holes are not blocked ⬥ Clean the air filter ⬥ Verify that operating environment of projector is under 35°C	6, 7
No picture or sound	⬥ Input source is not set correctly ⬥ Connections to projector are not correct	⬥ Select correct input source using INPUT button on projector or by accessing the on-screen INPUT menu with the Remote Control Unit ⬥ Verify cable(s) are connected correctly	7, 10 5
Picture without sound	⬥ Connections to projector are not correct ⬥ Volume is set to minimum ⬥ Projector is in Mute mode	⬥ Verify cable(s) are connected correctly ⬥ From the Projector Control Panel, select BRIGHT with the MENU button and then press the [>] button ⬥ Remove the lens cap	5 7 5, 7
Sound without picture	⬥ Connections to projector are not correct ⬥ Brightness is set to minimum ⬥ Lens cap is attached	⬥ Verify cable(s) are connected correctly ⬥ On either projector or Remote Control Unit, press MENU button, select BRIGHT, and increase.	6, 7 5, 9
Colors are pale and color matching is poor	⬥ Color density and color matching are not correctly adjusted	⬥ Adjust the video	9
Picture is dark	⬥ Brightness and Contrast are not adjusted correctly ⬥ The lamp is nearing the end of its service life	⬥ Adjust BRIGHT (Brightness) and CONTRAST ⬥ Replace the lamp unit	9
Picture is blurred	⬥ Focus or H PHASE is out of adjustment	⬥ Adjust focus or H PHASE	7
LAMP Indicator is lit red*	⬥ Lamp is not functioning properly	⬥ Turn Power Switch OFF, wait 20 minutes; then turn power ON again	6
TEMP Indicator is lit red*	⬥ Internal overheating	⬥ Check to see make sure that the ventilation holes are not blocked ⬥ Clean the air filter ⬥ Verify that operating environment of projector is under 35°C or less	6, 7

Control Panel Indicators

ON Indicator	LAMP Indicator	TEMP Indicator	Meaning	Recommended Action
Lights orange	Turns off	Turns off	Standby mode	---------------------
Blinks green	Turns off	Turns off	While warming up	---------------------
Lights green	Turns off	Turns off	During normal operation	---------------------
Blinks orange	Turns off	Turns off	While cooling down	---------------------
Lights red	Lights red	Turns off	Lamp cannot light	Power OFF projector and let it cool down for 20 minutes. If LAMP Indicator is still lit, the lamp may be defective. Replace the Lamp Unit.
Lights red	Blinks red	Turns off	Lamp is not properly installed, or lamp door is open	After the lamp has cooled down (45 min.), insert the Lamp Unit securely and re-attach the lamp cover.
Lights red	Turns off	Turns off	Cooling fan is not working properly	Contact ViewSonic Customer Support.
Blinks red	Blinks red	Blinks red	Cumulative time of lamp use has exceeded 1,500 hours	Replace the Lamp Unit and reset the Lamp Time (see page 16).

Customer Support

Most of your questions can be answered as follows:

1 For the nearest ViewSonic authorized service provider, look up the ViewSonic Web site for your region or country.

2 For other assistance contact your reseller, or ask your reseller to refer you to a service center.

3 For additional assistance see the contact information listed below.

   NOTE: You will be asked to provide a serial number (on the back of the product).

| Country/Region	Web site	T = Telephone F = FAX	Email
United States	viewsonic.com/support	**T:** (800) 688-6688 **F:** (909) 468-1202	service.us @ viewsonic.com
Canada	viewsonic.com/support	**T:** (800) 688-6688 **F:** (909) 468-1202	service.ca @ viewsonic.com
United Kingdom	viewsoniceurope.com	**T:** 0800 833 648 **F:** (01293) 643910	service.eu @ viewsoniceurope.com
Europe, Middle East, Baltic countries, and North Africa	viewsoniceurope.com	Contact your reseller	service.eu @ viewsoniceurope.com
Australia and New Zealand	viewsonic.com.au	**T:** +61 2 9929 3955 **F:** +61 2 9929 8393	service.au @ viewsonic.com
Singapore/India and Southeast Asia	viewsonic.com.sg	**T:** 65 273 4018 **F:** 65 273 1566	service.sg @ viewsonic.com
Other Asia/Pacific countries and Indian Peninsula	viewsonic.com.tw	**T:** 886 2 2246 3456 **F:** 886 2 8242 3668	service.ap @ viewsonic.com
South Africa	viewsonic.com/asia	**T:** 886 2 2246 3456 **F:** 886 2 8242 3668	service.ap @ viewsonic.com

Maintenance

Cleaning Instructions

To ensure that the projector functions properly, follow the recommended cleaning instructions below.

Cleaning the Air Filter

IMPORTANT: Clean the air filter about every 100 hours.

1 Turn OFF the Main Power switch of the projector and <u>disconnect the power cord from the wall outlet</u>.

2 Remove the Front Filter Cover (see diagram to the right).

3 Remove the air filter from the Front Filter Cover (as shown in the illustration to the right) and use a vacuum cleaner to clean the filter.

4 Re-install the air filter, then the Front Filter Cover.

Front Filter Cover
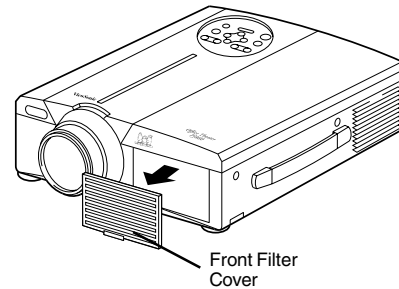
<u>NOTE</u>**: If sufficient dust, etc. collects in the air filter, a protection circuit in the projector will automatically turn off the power. To prevent this from occurring, make sure you clean the air filter every 100 hours.**

Cleaning the Lens

• To clean the lens, use a camera lens cleaning tissue or a camel hair brush.

• Be careful not to scratch the lens with a sharp or hard object.

<u>CAUTION</u>**: Never use any ammonia or alcohol based cleaner on the lens.**

Cleaning the Cabinet

• Use a soft, dry, lint-free cloth to wipe dust, etc. from the cabinet.

• If this is insufficient, use a soft, lint-free cloth moistened with a mild detergent diluted with water. Then wipe the surface with a soft, dry, lint-free cloth.

<u>CAUTION</u>**: Never use any ammonia or alcohol-based cleaner to clean the cabinet.**

Replacing the Lamp Unit

To order a new lamp unit **(Part No. RLU-190-03A)** contact ViewSonic® Customer Support.

1 Make sure the Main Power switch is OFF, then <u>disconnect the power cord from the wall outlet</u>. If the projector has recently been turned on, <u>wait at least 45 minutes for the lamp to cool down</u>.

2 Carefully place the projector onto a flat surface covered with soft material (like a towel). Then loosen the Lamp Cover screw and remove the Lamp Cover (as shown to the right).

3 Loosen the two (2) lamp-unit screws, grasp the Lamp Unit Handle, and gently pull the lamp unit out of the projector.

4 Carefully insert the new lamp unit into the projector and tighten the lamp-unit screws.

5 Re-install the Lamp Cover and tighten the Lamp Cover screw securely. <u>Power-on the projector</u>.

6 Reset the lamp time (within 10 minutes)

• Press RESET (on projector) or TIMER (on Remote Control Unit) <u>and hold for three (3) seconds</u>

• Press RESET (on projector) or MENU ON (on Remote Control Unit)

• Select "0" on the screen using MENU [<] (on projector) or DISKPAD (on Remote Conrol Unit)

Lamp Cover

Screws
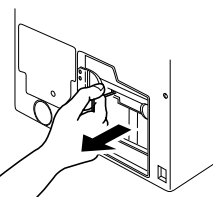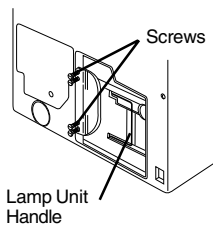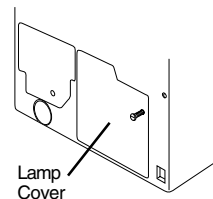
Lamp Unit Handle

Replace the lamp unit if:
• the picture is dark
• "CHANGE THE LAMP" is displayed
• the lamp indicator on the projector remains lit red. (See page 14.)

<u>CAUTION</u>:
HANDLE THE LAMP UNIT CAREFULLY. Dropping the unit could cause the lamp to explode.

Reflector

Front Glass

Lamp Unit
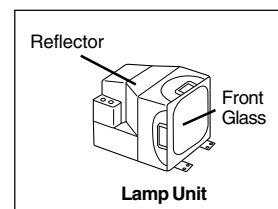
LIMITED WARRANTY
VIEWSONIC *Projector Model PJ860*

What the warranty covers:

ViewSonic® warrants its products to be free from defects in material and workmanship during the warranty period. If a product proves to be defective in material or workmanship during the warranty period, **ViewSonic** will, at its sole option, repair or replace the product with a like product. Replacement product or parts may include remanufactured or refurbished parts or components.

How long the warranty is effective:

ViewSonic projectors are warranted for two (2) years for all parts excluding the lamp, two (2) years for all labor, and ninety (90) days for the lamp from the date of the first consumer purchase.

Who the warranty protects:

This warranty is valid only for the first consumer purchaser.

What the warranty does not cover:

1. Any product on which the serial number has been defaced, modified or removed.

2. Damage, deterioration or malfunction resulting from:

   a. Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
   b. Repair or attempted repair by anyone not authorized by **ViewSonic.**
   c. Any damage of the product due to shipment.
   d. Removal or installation of the product.
   e. Causes external to the product, such as electrical power fluctuations or failure.
   f. Use of supplies or parts not meeting **ViewSonic**'s specifications.
   g. Normal wear and tear.
   h. Any other cause which does not relate to a product defect.

3. Removal, installation, and set-up service charges.

How to get service:

1. For information about receiving service under warranty, contact **ViewSonic Customer Support.** You will need to provide your product's serial number.

2. To obtain service under warranty, you will be required to provide (a) the original dated sales slip, (b) your name, (c) your address, (d) a description of the problem, and (e) the serial number of the product.

3. Take or ship the product freight prepaid in the original container to an authorized **ViewSonic** service center or **ViewSonic.**

4. For additional information or the name of the nearest **ViewSonic** service center, contact **ViewSonic**.

Limitation of implied warranties:

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Exclusion of damages:

VIEWSONIC'S LIABILITY IS LIMITED TO THE COST OF REPAIR OR REPLACEMENT OF THE PRODUCT. **VIEWSONIC** SHALL NOT BE LIABLE FOR:

1. DAMAGE TO OTHER PROPERTY CAUSED BY ANY DEFECTS IN THE PRODUCT, DAMAGES BASED UPON INCONVENIENCE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, LOSS OF PROFITS, LOSS OF BUSINESS OPPORTUNITY, LOSS OF GOODWILL, INTERFERENCE WITH BUSINESS RELATIONSHIPS, OR OTHER COMMERCIAL LOSS, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

2. ANY OTHER DAMAGES, WHETHER INCIDENTAL, CONSEQUENTIAL OR OTHERWISE.

3. ANY CLAIM AGAINST THE CUSTOMER BY ANY OTHER PARTY.

Effect of state law:

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow limitations on implied warranties and/or do not allow the exclusion of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

Sales outside the U.S.A. and Canada:

For warranty information and service on **ViewSonic** products sold outside of the U.S.A. and Canada, contact **ViewSonic** or your local **ViewSonic** dealer.

Projector Warranty (V2.1)   Release Date 12-11-2000

NOTES

ViewSonic® Corporation