OWNER'S OPERATING MANUAL

CinemaWall™

CW-43MC
CW-50MC

with WideVision™

Flat Panel Display Monitor

RUNCO

THE WORLD'S FINEST HOME THEATER PRODUCTS™

CONTENTS

INTRODUCTION

Congratulations on your purchase of the CW-43MC/CW-50MC Plasma display! Your CW-43MC/CW-50MC will provide you with many years of enjoyment no other plasma can match. It is compatible with current NTSC and PAL systems, as well as DTV standards. And since the display is the 16:9 aspect ratio, DVD widescreen movies and Digital Television will look the way they were meant to look- in the widescreen format. Plasma technology is proving to be the most flexible and reliable type of display device currently available. The CW-43MC/CW-50MC is considered a fixed-pixel device, like an LCD or DLP™ projector. LCD and DLP™ projectors require a light bulb to create the light, and the light is then reflected off of the tiny DMD™ mirrors in a DLP™, or passed through LCD panels in LCD projectors. The plasma, however, uses micro gas-filled cells to create the pixel images, which generate their own light. This is very advantageous, as this allows the plasma display to be used in any type of situation, from dark theaters to light-filled rooms. And it also makes the plasma the most maintenance-free type of display device - no bulbs or CRTs to change, ever!

This manual will explain how to use your CW-43MC/CW-50MC plasma display, as well as its features, benefits and other important information. Please ensure you read this manual carefully before using your CW-43MC/CW-50MC, especially the safety precautions!

Features and Benefits

- 1024 x 768 (CW-43MC) and 1280 x 768 (CW-50MC) HDTV resolution with 16:9 aspect ratio
- Designed for custom automation control with RS-232C and IR interfaces
- Accepts all DTV formats
- Multiple aspect ratio control
- Less than 4 1/2 inches thin
- Digital 480P, 720P, 1080i input via DVI w/HDCP
- Advanced VivixII™ modular controller with orthogonal processing

High Altitude Operation

Due to the design of all plasma glass panels made by every manufacturer, and the interaction between ambient air pressure and the plasma gases contained inside of the panel, reliable operation of your plasma display cannot be assured during operation at certain high altitude locations.

We have found this plasma monitor to be reliable at altitudes of up to 5000 MSL (mean sea level). At elevations higher than this, each panel may react differently, depending upon the altitude, air pressure, humidity and other meteorological factors.

For this reason, Runco International makes no warrants or claims as to the reliable operation of this plasma display monitor product at altitudes greater than 5000 feet above sea level.

If you are planning to operate a plasma monitor at a location above 5000 feet, please contact Runco technical support for further information.

WARNINGS AND SAFETY PRECAUTIONS

CAUTION:

To turn off main power, be sure to remove the plugs from power outlets. The power outlet socket should be installed as near to the equipment as possible, and should be easily accessible.

REMARQUE:

Pour mettre l'appareil hors circut, s'assurer de retirer la fiche de la prise d'alimentation. La prise d'alimentation doit être installé aussi proche que possible de l'appareil et doit être facile d' accès.

WARNING

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO DO NOT USE THIS UNIT'S POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS, UNLESS THE PRONGS CAN BE FULLY INSERTED. REFRAIN FROM OPENING THE CABINET AS THERE ARE HIGH-VOLTAGE COMPONENTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

AVERTISSEMENT

POUR EVITER UN FEU OU UN RISQUE D'ELECTROCUTION NE PAS EXPOSER CET ENSEMBLE A LA PLUIE OU A L'HUMIDITE; DE MEME, NE PAS BRANCHER LA PRISE POLAIRE AVEC UNE RALLONGE A MOINS QUE LES DENTS DE LA PREMIERE NE S'Y INSERENT PLEINEMENT.

EVITER D'OUVRIR LE COFFRET CAR IL Y A, A L'INTERIEUR, DES COMPOSANTS SOUMIS A UNE HAUTE-TENSION; POUR LES REPARATIONS, S'ADRESSER A UN PERSONNEL QUALIFIE.

WARNING

This equipment has been tested and found to comply with the limits for a Class 'B' digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the Installation Manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case, the user will be required to correct the interference at his own expense.

DOC compliance Notice
This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

DOC avis de conformation
Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le Matériel D'interférence du Canada.

SAFETY TIPS

Please read and follow the safety precautions listed below to ensure the equipment is free from damage, and to ensure that no injury will occur as a result of improper use.

· Do not insert any object, especially metal or liquids, into the Plasma display.

· Do not place any objects containing water or any other liquid on top of the Plasma display.

· Do not place the units in direct sunlight, near heaters or in extremely dusty or humid locations.

· Do not install this system outdoors or otherwise exposed to the elements.

· Do not place heavy objects on top of the Plasma display.

· If the power cord is damaged or frayed in any way, electrical shock and/or fire may result. Do not place objects on the power cord, and keep the cord away from heat-emitting devices. Should the power cord become damaged in any way, please contact your Runco Dealer for a replacement cord.

· Do not remove the cover of the Plasma display for any reason. If any problems arise with the unit, please contact a Runco Dealer or Runco International for service. Removing the covers will void the warranty.

LIMITED WARRANTY

Congratulations on your purchase of a Runco International video product and welcome to the Runco family! We believe Runco produces "The World's Finest Home Theater Products". With proper installation, setup and care, you should enjoy many years of unparalleled video performance.

This is a LIMITED WARRANTY as defined in the Magnuson-Moss Warranty Act. Please read it carefully and retain it with your other important documents.

WHAT IS COVERED UNDER THE TERMS OF THIS LIMITED WARRANTY:
SERVICE LABOR: Runco will pay for service labor by a Runco Authorized Service Center when needed as a result of a manufacturing defect for a period of three (3) years from the effective date of delivery to the end user (excluding the plasma glass panel).

PARTS: (Not including plasma glass panel) Runco will provide new or rebuilt replacement parts for the parts that fail due to defects in materials or workmanship for a period of three (3) years from the effective date of delivery to the end user. Such replacement parts are then subsequently warranted for the remaining portion (if any) of the original warranty period.

PLASMA GLASS PANEL: Runco will pay for service labor by a Runco Authorized Service Center when needed as a result of a manufacturing defect for a period of one (1) year from the effective date of delivery to the end user. In addition, Runco will provide new or rebuilt replacement parts for the parts that fail due to defects in materials or workmanship for a period of one (1) year from the effective date of delivery to the end user. Such replacement parts are then subsequently warranted for the remaining portion (if any) of the original warranty period.

WHAT IS NOT COVERED UNDER THE TERMS OF THIS LIMITED WARRANTY:
Image burn-in on plasma display panels are specifically excluded from coverage under this Limited Warranty. Image burn-in is the result of misuse of the product and therefore cannot be repaired under the terms of this Limited Warranty.

TO AVOID IMAGE BURN-IN:
Please ensure that still images are left on your plasma display panel for no more than a few minutes. Also ensure that images displayed in the 4:3 aspect ratio mode (black or gray stripes, but no picture information is present on the left and right edges of the screen) are used as infrequently as possible. This will prevent permanent image burns on your plasma display panel, which can be seen permanently under certain conditions once burn-in has occurred.

The types of images to avoid include video games, still images and computer screens with stationary tool bars and icons. (This is why computers are equipped with screen savers – to prevent still images from burning into the monitor's phosphors after being displayed continuously for an extended period of time).

Normal viewing material such as television/satellite broadcasts, videotape or DVDs (not put into pause for extended periods of time) will not cause damage to your display under normal conditions. Many DVD players are also equipped with screen savers for this reason.

IMPORTANT: RUNCO IS NOT RESPONSIBLE FOR IMAGE BURNS ON ANY DISPLAY. PLEASE EXERCISE CAUTION WHEN USING A 4:3 IMAGE ON A 16:9 SCREEN.

This Limited Warranty only covers failure due to defects in materials and workmanship that occur during normal use and does not cover normal maintenance. This Limited Warranty does not cover cabinets or any appearance items; failure resulting from accident, misuse, abuse, neglect, mishandling, misapplication, faulty or improper installation or setup adjustments; improper maintenance, alteration, improper use of any input signal; damage due to lightning or power line surges, spikes and brownouts; damage that occurs during shipping or transit; or damage that is attributed to acts of God. In the case of remote control units, damage resulting from leaking, old, damaged or improper batteries is also excluded from coverage under this Limited Warranty.

CAUTION: THIS LIMITED WARRANTY ONLY COVERS RUNCO PRODUCTS PURCHASED FROM RUNCO AUTHORIZED DEALERS. ALL OTHER PRODUCTS ARE SPECIFICALLY EXCLUDED FROM COVERAGE UNDER THIS LIMITED WARRANTY. MOREOVER, DAMAGE RESULTING DIRECTLY OR INDIRECTLY FROM IMPROPER INSTALLATION OR SETUP IS SPECIFICALLY EXCLUDED FROM COVERAGE UNDER THIS LIMITED WARRANTY.

RIGHTS, LIMITS AND EXCLUSIONS:
Runco limits its obligations under any implied warranties under state laws to a period not to exceed the warranty period. There are no express warranties. Runco also excludes any obligation on its part for incidental or consequential damages related to the failure of this product to function properly. Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages. So the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

EFFECTIVE WARRANTY DATE:
This warranty begins on the effective date of delivery to the end user. For your convenience, keep the original bill of sale as evidence of the purchase date.

IMPORTANT: WARRANTY REGISTRATION:
Please fill out and mail your warranty registration card. It is imperative that Runco knows how to reach you promptly if we should discover a safety problem or product update for which you must be notified.

CONTACT A RUNCO AUTHORIZED SERVICE CENTER TO OBTAIN SERVICE:
Repairs made under the terms of this Limited Warranty covering your Runco video product will be performed at the location of the product, during usual working hours, providing location of product is within normal operating distance from a Runco Authorized Service Center. In some instances it may be necessary for the product to be returned to the Runco factory for repairs. If, solely in Runco's judgment, location of product to be repaired is beyond normal operating distance of the closest Runco Authorized Service Center, or the repair requires the unit be returned to the Runco factory, it is the owner's responsibility to arrange for shipment of the product for repair. These arrangements must be made through the selling Runco Dealer. If this is not possible, contact Runco directly for a Return Authorization number and shipping instructions. Runco will return product transportation prepaid in the United States, unless no product defect is discovered. In that instance, shipping costs will be the responsibility of the owner.

ADDITIONAL INFORMATION:
To locate the name and address of the nearest Runco authorized service location, or for additional information about this Limited Warranty, please call or write:

RUNCO INTERNATIONAL
Attn: Customer Service Department
2900 Faber Street
Union City, CA 94587
Ph (510) 324-7777
Fax (510) 324-9300
Toll Free 1-800-23-RUNCO

General Overview

The Runco CW-43MC and CW-50MC are standalone flat panel plasma displays with outboard VivixII™ video processing. With 1024 x 768 native resolution for the CW-43MC and 1280 x 768 native resolution for the CW-50MC, both are capable of imaging native HDTV. The CW-43MC and CW-50MC include a DVI digital input as well as standard analog inputs.

QUICK SETUP Instructions

1. Install the Plasma display. This could be either table mount or wall mount configurations.

2. Connect the video interconnections between the output of any media source (such as DVD players or satellite receivers, or a DTV or computer source) and the input of the plasma display.

3. Plug in AC power to the Plasma display, and turn the plasma on.

4. Select the desired source on the remote control and the source should now be displayed on the plasma. If it is not, please check the wiring.

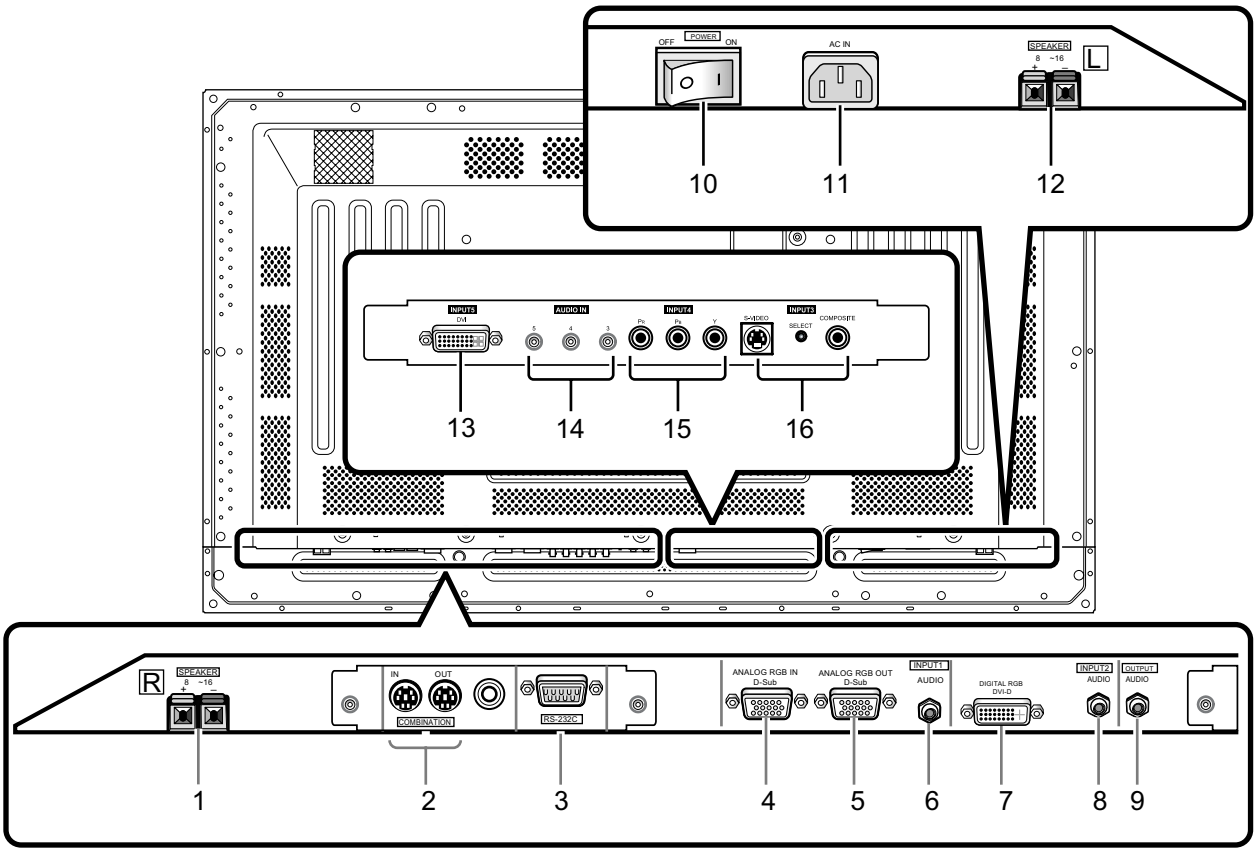
5. Clear the screen of any OSD menus.

6. From the remote, to access the INSTALLER ADJUST menu use a small paper clip or thin pen and press the 'SVC' button through the pin hole. (see Page 12 for more instructions)

7. Use the arrow ▲ UP and ▼ DOWN keys to select the adjustments options within each menu
   - Press "SET" to select the adjustment option
   - Press "SET" again to return to the INSTALLER ADJUST menu

     NOTE: pressing the 'MENU' button will return back to the user mode, if nothing is done the plasma will return to the user mode within 3 minutes.
   - Press the 'Menu' button to save the settings and then return to the user mode.

INPUTS AND CONTROLS



1 SPEAKER (R) terminal

For connection of an external right speaker. Connect a speaker whose impedance is 8 -16 Ω.

2 COMBINATION IN/OUT

Used when a number of sets are controlled collectively. Use a mini DIN 6 pin cable (straight, fully connected).

3 RS-232C

This is used for serial integration with automation systems.

4 ANALOG RGB IN (INPUT1) (mini D-sub 15 pin)

For connection of components that have RGB or component output jacks such as a personal computer, DVD player, or external RGB decoder. (break out cable will be needed for BNC type connection)

5 ANALOG RGB OUT (INPUT1) (mini D-sub 15 pin)

Use the ANALOG RGB OUT (INPUT1) terminal to output the video signal to an external monitor or other component.

NOTE: The video signal will not be output from the ANALOG RGB OUT (INPUT1) terminal when the main power of this display is off or in standby mode.

6 AUDIO (INPUT1) (Stereo mini jack)

Use to obtain sound when INPUT1 is selected. Connect this jack to the audio output connector of the device connected to the plasma display's INPUT1.

7 DIGITAL RGB (INPUT2) (DVI-D jack-non HDCP)
Use to connect a computer resolution only. (VESA standard)

8 AUDIO (INPUT2) (Stereo mini jack)
Used to obtain sound when INPUT1, INPUT2 is selected. Connect this jack to the audio output connector of the device connected to the plasma display's INPUT1 or INPUT2.

9 AUDIO (OUTPUT) (Stereo mini jack)
Used to output the audio of the selected source component connected to the plasma display to an AV amplifier or similar component output can be set to variable or fixed.

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10 MAIN POWER switch
Used to switch the main power or the main unit on and off.

11 AC IN
A power cable is furnished with the main unit. Connect one end of the power cable to this connector and the other end to a standard AC power source.

12 SPEAKER (L) terminal
For connection of an external left speaker. Connect a speaker that has an impedance of 8 -16 Ω.

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13 INPUT5 (DVI Jack-HDCP COMPLIANT)
The DVI input will process digital video 480p, 720p and 1080i signals (computer rates are not recommended).

14 AUDIO IN 3, 4 and 5
1/8" Mini stereo jack used for external audio input. Used for Audio Inputs when desired with a video source connected to video input 3, 4 and 5.

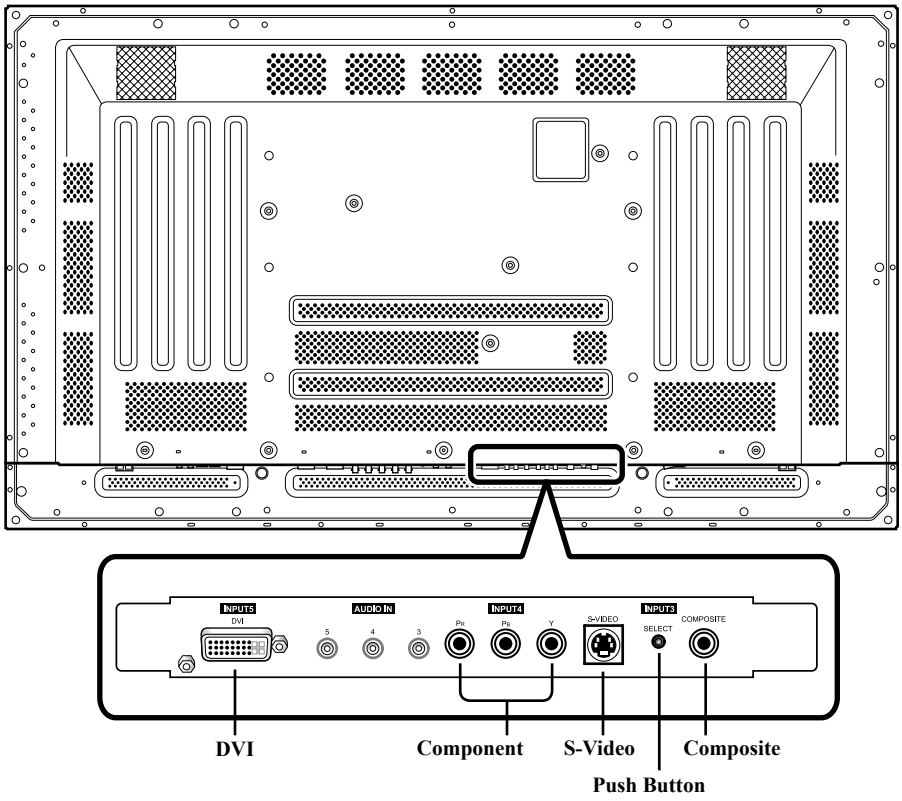
15 INPUT4
Interlaced component (480i) input.

16 INPUT3 (S-Video / Composite Video Input)
Selectable with center push button.

CONNECTING THE PLASMA DISPLAY

Modular Controller Card - Input Connections

Plasma Rear View



INPUT 5

DVI SOURCE INPUT (WITH HDCP DECRYPTION): (Digital 480P, 720P, 1080i): Input for set top box or PC with DVI digital output.

INPUT 4

COMPONENT INPUT: Component video is the best type of signal that can be used. The most common sources that use component outputs are DVD players, and it is highly recommended that component be used when possible. Component video goes one step beyond S-Video in picture quality; chroma (color) information is more resolved and the overall picture appears more well-defined.

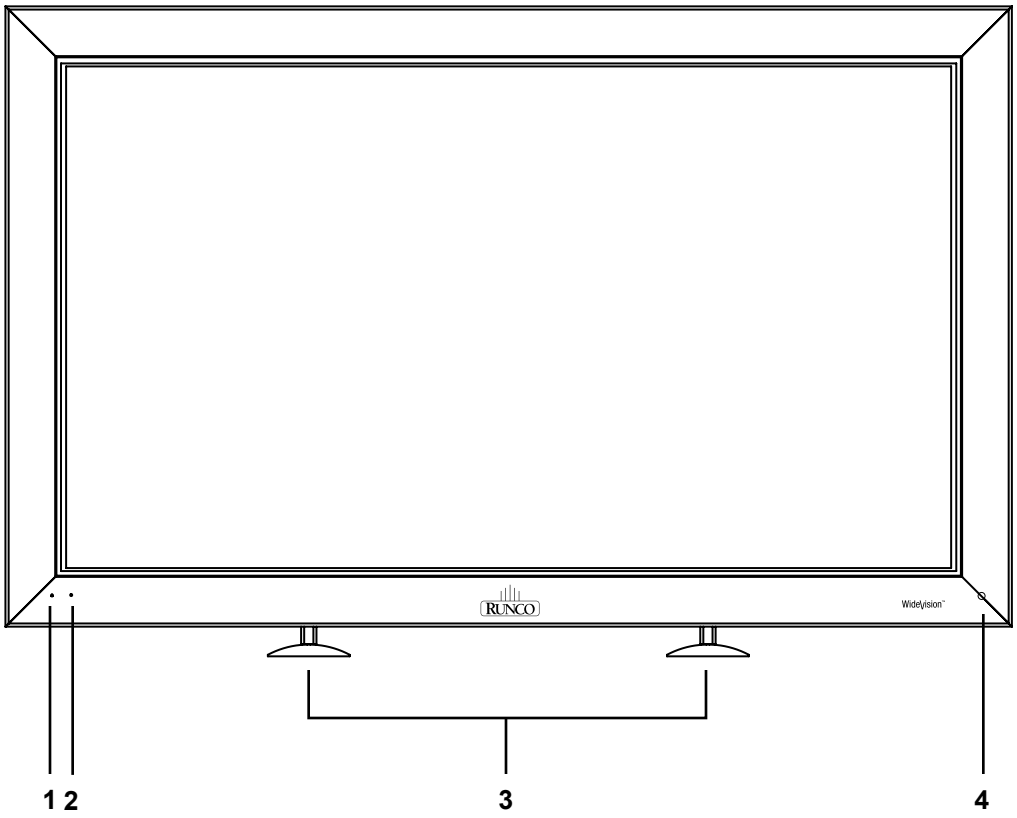
INPUT 3

S-VIDEO INPUT: S-Video is the second-best type of signal that can be used, but is MUCH better than Composite video. Using such sources as Satellite receivers, high-quality VCRs and DVD players (with no component output) will produce a MUCH cleaner and sharper signal than composite.

S-VIDEO/COMPOSITE SELECTION PUSH BUTTON: This push button toggles between S-Video and Composite Video when using Input 3. Both S-Video and Composite Video cannot be active simultaneously.

COMPOSITE VIDEO INPUT: Composite video is the most common type of signal used, but is also the lowest in picture quality. Many sources have outputs that are limited to composite video, such as some VCR's and camcorders; others such as Laser Disc players actually produce slightly better results when using composite video.

FRONT PANEL



1. STANDBY Indicator
This indicator is red during standby mode. The flashing pattern is also used to indicate error messages.

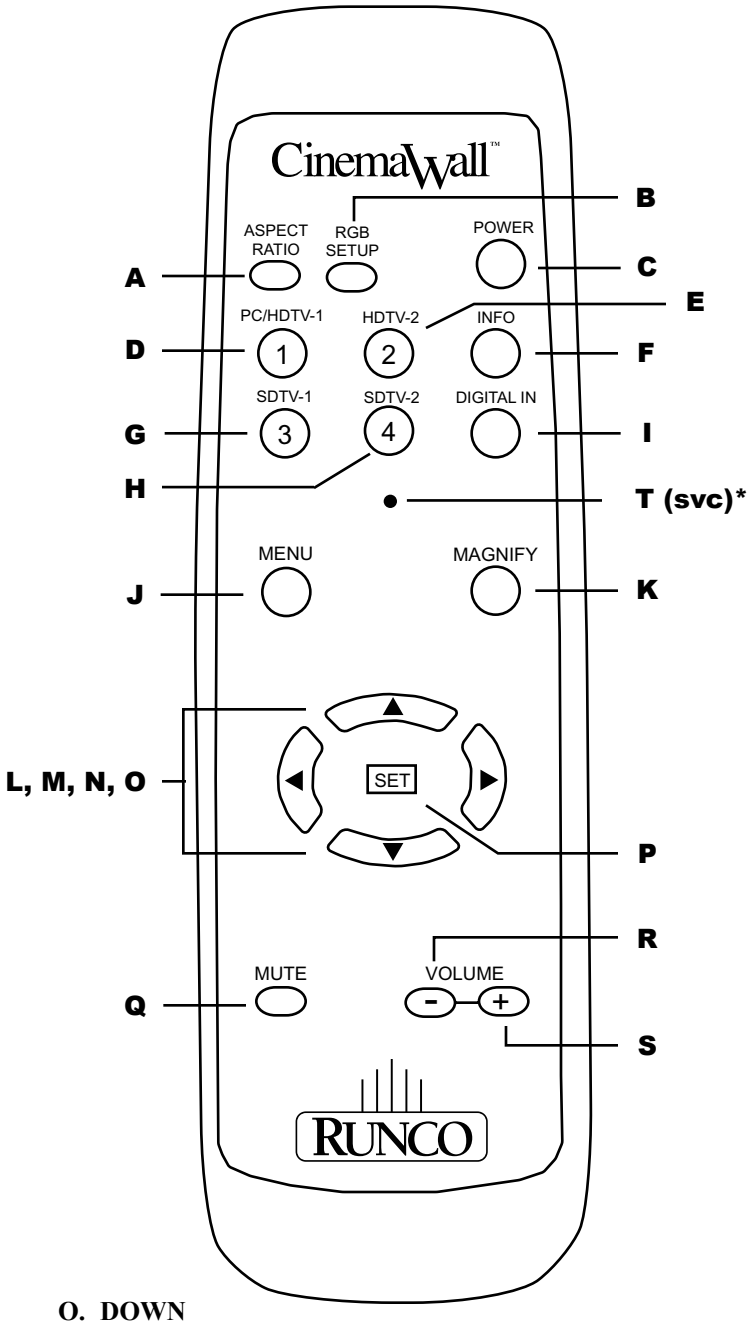
2. ON Indicator
Lights green when the plasma display is operating. When flashing, the indicator is used to indicate error messages. The indicator flashes green once every one second when the (AUTO POWER OFF) function is operating.

3. Display Stand
Optional accessory for tabletop mount.

4. Remote Control Sensor
Receives the IR (infra-red) commands from the remote control.

REMOTE CONTROL DESCRIPTION

Plasma Remote Control



A. ASPECT RATIO
Press to change the aspect ratio or geometry of the image. Different resolutions will allow for different aspect ratios.

B. RGB SETUP
When entering a computer-type (VESA) signal, press this to automatically center and resize the image.

C. POWER
Press this to cycle the monitor between on and standby.

D. PC/HDTV-1
Selects the 15-pin D-sub input for computer-type (VESA) signals or HDTV signals.

E. HDTV-2
Selects the computer DVI input. (Input2)

F. INFO
While video is being displayed, this will bring up timing information and input signal.

G. SDTV-1
Selects the first standard definition input, either S-Video or Composite video based on the toggle button, on Modular Controller card.

H. SDTV-2
Selects the second standard definition input, for interlaced component video input.

I. DIGITAL IN
Selects the digital video from the DVI input. (Input5)

J. MENU
Activate or de-activate the menu.

K. MAGNIFY
Zooms in on the image, particularly useful for computer-type (VESA) images.

L. UP
Scrolls the highlight bar in the menu up.

M. LEFT
Used for scrolling left, particularly during adjustment menus.

N. RIGHT
Used for scrolling right, particularly during adjustment menus.

O. DOWN
Scrolls the highlight bar in the menu down.

P. SET
Use for entering a sub-menu when selected by high light.

Q. MUTE
Used to mute the sound system.

R. VOLUME -
Used to reduce the volume of the sound system.

S. VOLUME +
Used to reduce the volume of the sound system.

T. INSTALLER ADJUST - svc (pin hole)*
Used to access the INSTALLER ADJUST MENU.

MENUS for VIDEO NTSC, PAL or DIGITAL 480P and HDTV

OSD Menus for Video NTSC, PAL or Digital 480p & HDTV

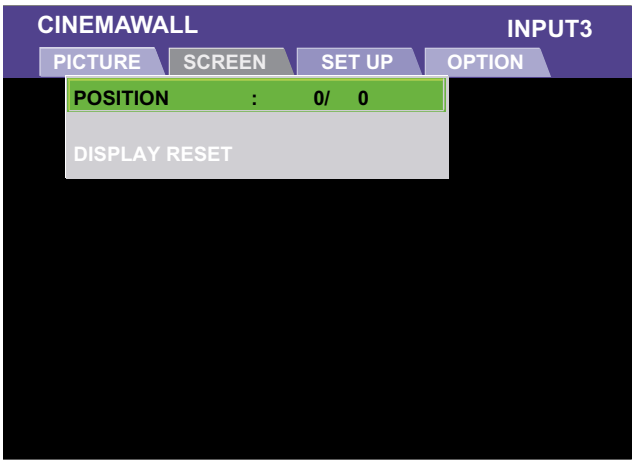
These menus will appear only when displayed for video.

1. PICTURE Tab

The PICTURE menu allows for adjustment of picture that are unique per input and stored automatically.

- **CONTRAST** is used to set the white level.
- **BRIGHTNESS.** is used to set the black level.
- **COLOR** is used to set color saturation levels.
- **TINT** allows for balance between red and green levels.
- **SHARPNESS** is used to enhance high frequency response in the video signal.

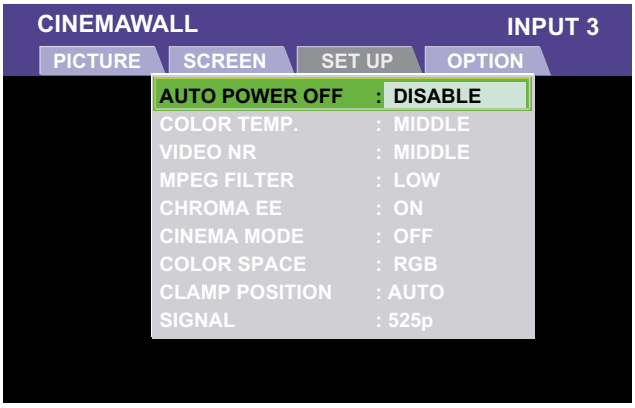
Highlight FACTORY and press SET button for factory default settings. For current input only.



2. SCREEN Tab

The SCREEN menu offers adjustments to the position of the plasma:

- **POSITION** is used to control movement of the picture in the Horizontal direction (H), and the Vertical direction (V).
- **DISPLAY RESET** causes all the mode settings to be returned to the factory set default.



3. SET UP Tab

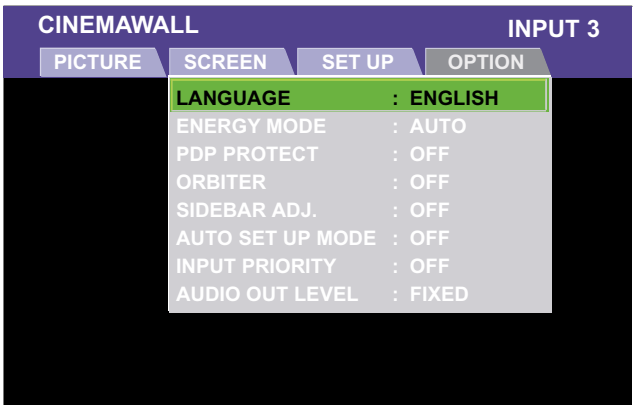
The SET UP menu has adjustment for the initial set up of the plasma:

- **AUTO POWER OFF** allows for different light outputs depending on the situation and environment. Normally set to disable.
- **COLOR TEMP.** sets the preset white balance of the picture.
- **VIDEO NR** eliminates the artificial noise in the video.
- **MPEG FILTER** is set for providing noise free video images when watching a DTV channel or a DVD.
- **CHROMA EE** is usually set to OFF.
- **CINEMA MODE** detects film-based sources and regenerates them for higher picture quality.
- **COLOR SPACE** is choosing the appropriate color signal.
- **CLAMP POSITION** detection of the sync signal, usually set to AUTO.
- **SIGNAL** displays the frequency and rate of the source.

MENUS for VIDEO NTSC, PAL or DIGITAL 480P and HDTV

OSD Menus for Video NTSC, PAL or Digital 480p & HDTV

This menu will appear only when displayed for video.

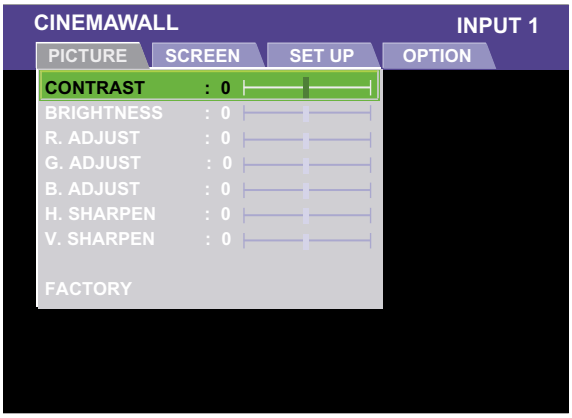


4. **OPTION Tab**
   The OPTION menu has selection for optional functionality of the panel:

   • **LANGUAGE** allows selection of the desired language and what language will be set in the memory.
   • **ENERGY MODE** is a selection for intensifying or deintensifying the picture depending on light conditions.
   • **PDP PROTECT** allows for automatic switching of the displayed image at regular intervals.
   • **ORBITER** prevents burn-in on static images by continually shifting the image.
   • **SIDEBAR ADJ.** is used specifically for masking in 4x3 or NTSC signals.
   • **AUTO SET UP MODE** is usually set to OFF.
   • **INPUT PRIORITY** allows for priority to be selected on a particular input when the unit is powered on/off.
   • **AUDIO OUT LEVEL** sets audio output volume to fixed or variable output.

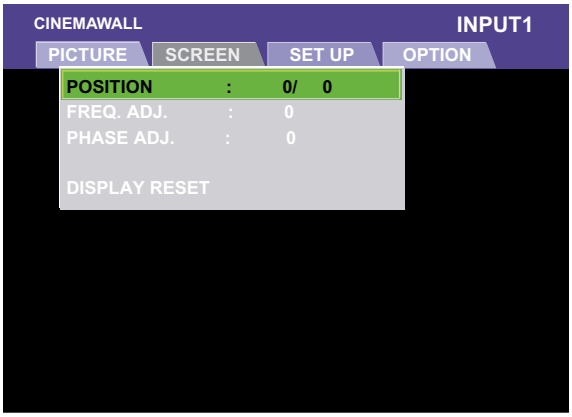
OSD Menus for PC/HDTV-I D-Sub Input

These menus will appear only when displayed for computer.

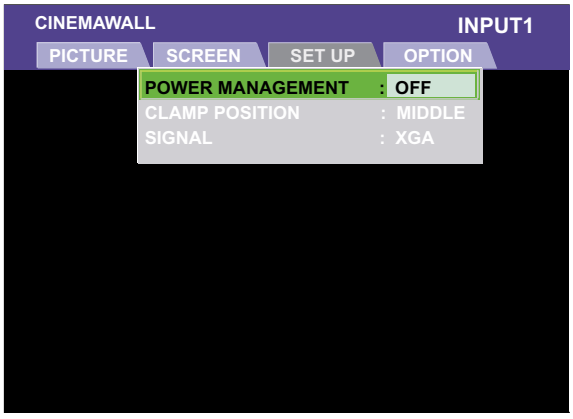


1. **PICTURE Tab**
   The Picture menu lists adjustments for computer input to the plasma:

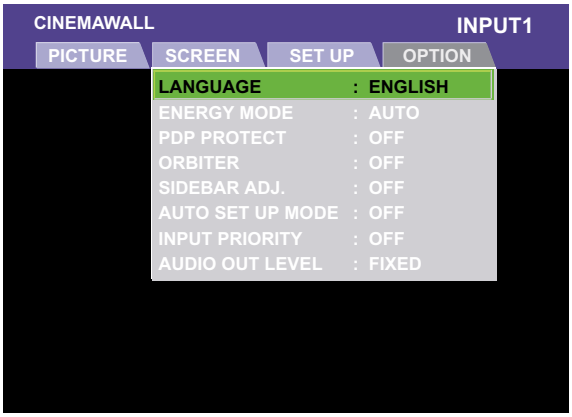
   • **CONTRAST** is used to set the white level.
   • **BRIGHTNESS** is used to set the black level.
   • **R., G., B. ADJUST** can be adjusted to set color balance.
   • **H. and V. SHARPEN** option allows for adjustment to improve the detail in the horizontal and vertical direction independently.
   • **FACTORY** set the back to the default settings.



2. **SCREEN Tab**
   • **POSITION** option allows for position shift of the image.
   • **FREQ. ADJ.** adjusts the frequency to adjust for the plasma.
   • **PHASE ADJ.** adjusts the image of the picture to match the screen.
   • **DISPLAY RESET** defaults to the factory settings for the current input Only.



3. **SET UP Tab**
   • **POWER MANAGEMENT** shuts-down the plasma panel when there is no source present.
   • **CLAMP POSITION** normally, leave this setting at [AUTO] (supported on Input1 only).
   • **SIGNAL** specifies the output to the display.



4. **OPTION Tab**
   • **LANGUAGE** allows selection of the desired language and what language will be set in the memory.
   • **ENERGY MODE** selects for an intensified picture depending on ambient light conditions.
   • **PDP PROTECT** switches the displayed image at regular intervals.
   • **ORBITER** prevents burn-in on static images.
   • **SIDEBAR ADJ.** for masking in 4x3 or NTSC signals.
   • **AUTO SET UP MODE** a is universal set up mode.
   • **INPUT PRIORITY** allows priority selection of an input.
   • **AUDIO OUT LEVEL** is for audio output.

INSTALLER MENUS for VIDEO NTSC, PAL or DIGITAL 480P and HDTV

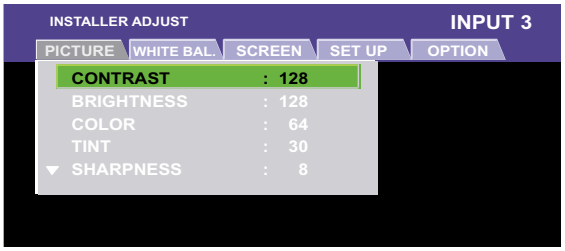
INSTALLER ADJUST Menus for Video NTSC, PAL or Digital 480p & HDTV

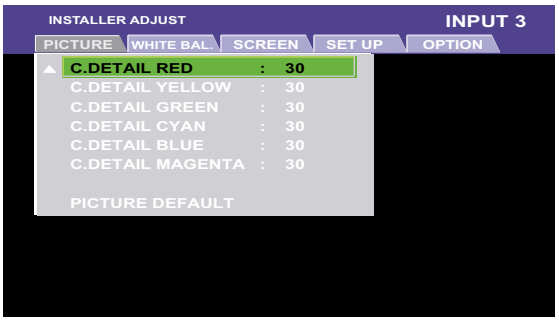
These menus will appear only when displayed for video.

Gaining access to the INSTALLER ADJUST Menu is done by pressing the installer adjust button below SDTV-2 button (number 4) using a small paperclip (with no menu present). Press menu at any time to exit INSTALLER ADJUST mode. The adjustments are stored automatically. (see page 12)

1. PICTURE Tab

Make initial picture adjustments for each input independently. Refer to the PICTURE description in the OSD for Video NTSC, PAL Digital 480p and HDTV or PC/HDTV-I, D-Sub Input Menus for guidance.





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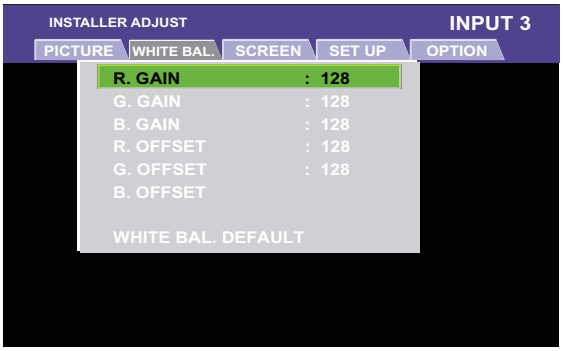
2. WHITE BAL. Tab

White balance is global for all presets and allows for configuration of R, B, G levels GAIN and OFFSET. Choose the middle color temp from the main menu and adjust in this menu for proper 6500K color temperature. The other presets in the user menu will be offset by approximately 1000K higher or lower depending if the preset is cooler or warmer.



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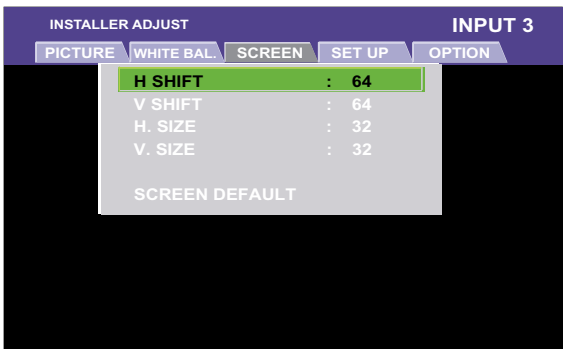
3. SCREEN Tab

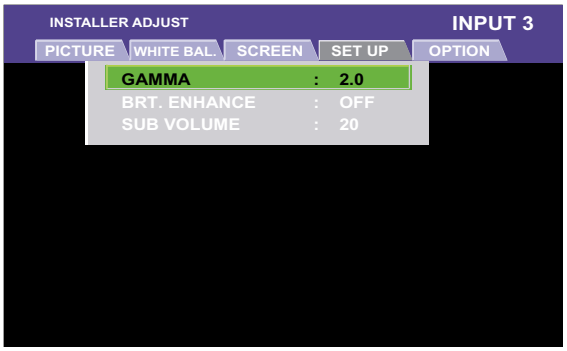
Adjust positioning of image horizontal and vertical position for each input if necessary. Screen Default will set back the factory settings for the current input only.



INSTALLER ADJUST Menus for Video NTSC, PAL or ATSC

These menus will appear only when displayed for video.

4. SETUP Tab



- **GAMMA** is the relationship between pixel value and displayed intensity.
- **BRT. ENHANCE** is used to enhance the black levels.
- **SUB VOLUME** is used to configure sub-woofer levels.

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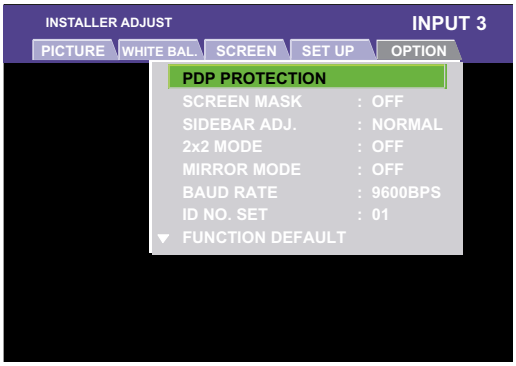
5. OPTION Tab



- **PDP PROTECTION** allows for automatic switching of the displayed image at regular intervals.
- **SCREEN MASK** is used for masking of source material such as 16x9 or 4x3.
- **SIDEBAR ADJ.** is used specifically for masking in 4x3 or NTSC signals
- **2x2 MODE** is used for video wall applications. Up to 4 plasmas can be linked in a 2x2 configuration with no external processing.
- **MIRROR MODE** allows for a reflected image to be shown from the plasma panel.
- **BAUD RATE** is the RS-232 port connectivity rate.
- **ID. NO. SET** is used for RS-232C daisy chaining of the plasma.
- **FUNCTION DEFAULT** defaults to the factory settings for all the functions within the input.

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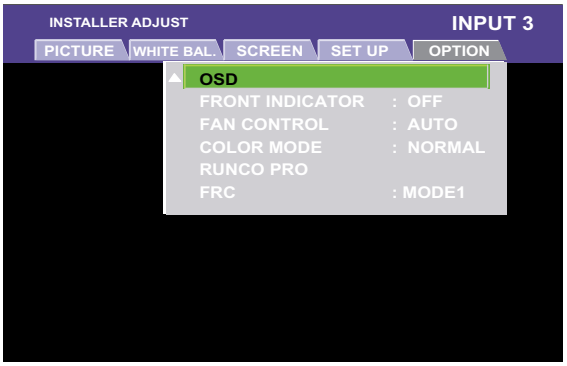
6. OPTION Tab (continued)



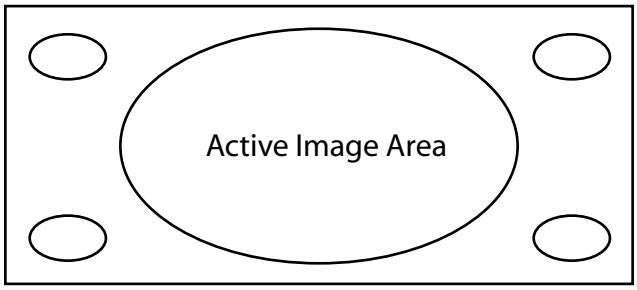
- **OSD** specifies if the On Screen Display is ON or OFF.
- **FRONT INDICATOR** allows for naming of the display.
- **FAN CONTROL** should be set to AUTO for lowest fan noise.
- **COLOR MODE** is used to select between NORMAL and ISF mode. Once in ISF, values selected in WHITE BAL. will be saved as settings in ISF. Once NORMAL is chosen setting are defaulted.
- **RUNCO PRO** is for adjusting the underscan, setting markers, enable or disable of color and specifying the signal type.
- **FRC** is usually set to Mode1.

ASPECT RATIOS

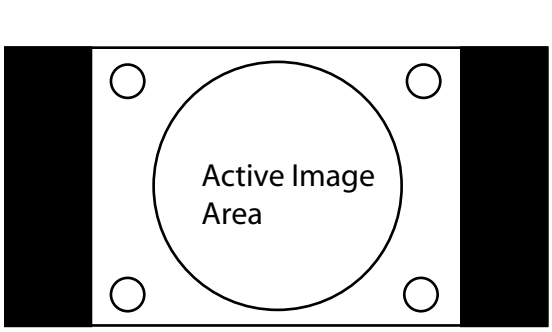
There are four aspect ratios available that can be selected for video signal inputs.

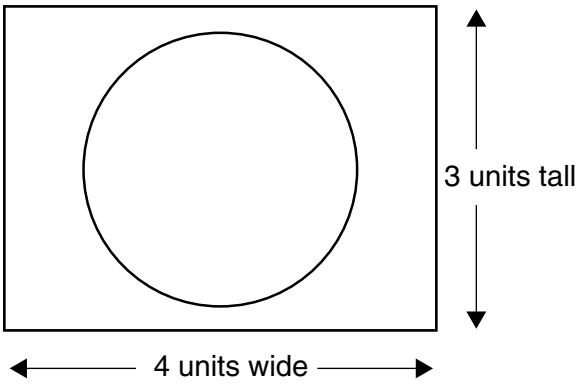
16:9 Screens:

- ANAMORPHIC: The image is compressed vertically, but anamorphic software will appear properly proportioned. This is best suited for use with 16:9 DVD's.



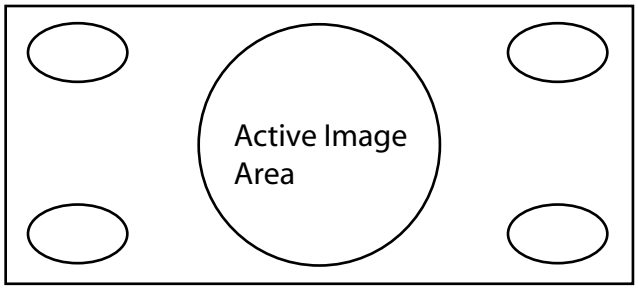
- STANDARD 4 x 3: The input signal will be scaled to fit in the center of the 16:9 sceen.





- LETTERBOX: The image in the Letterbox mode will be stretched vertically, and the top and bottom portion 'blanked-off'. This ratio is best suited for DVD, non-anamorphic DVDs and LaserDisc movies.

- VIRTUALWDE: A 4:3 image that is transformed into a 16x9 image to allow the user to watch standard DTV on their widescreen display.

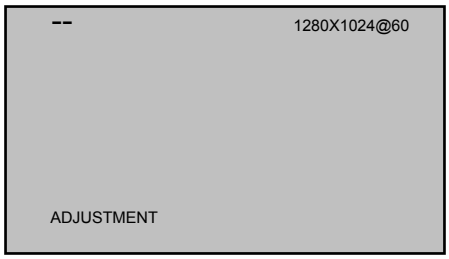


RS-232C ADJUSTMENT MODE

Through the unit's RS-232 terminal, it is possible to use the PC to make various adjustments and settings.

1) About the RS-232C Adjustment Mode
   • Adjustments in the RS-232C adjustment mode:
      - The adjustments are written to the same memory area as for the installer mode.

2) Display screen in the RS-232C adjustment mode:
   • The screen shown below illustrates the set ID number is displayed in the '--' area at the upper left part of the screen.



CAUTION:

1) Always enter ID before using RS-232C adjustment mode. Also, include the ID of the set to be targeted for the set to be controlled or adjusted in the RS-232C command. For details, refer to page 22.

2) There are some RS-232C commands that can be used in normal-operation mode. See page 22.

3) The adjustment data and setting items by RS-232C commands, there are some items that are stored in memory and some that are not. See page 22. Also, when storing values in last memory, the conditions described in Last Memory, must have been satisfied.

4) <DIN>/<DIY> (OSD displays disabled/enabled):
   Regardless of the setting, the following items can be displayed:
   • Menu display (Menu mode and installer adjust mode).
   • Warnings before the Auto Power Off or Power Management comes on.
   • Warning of high temperature inside the set.
   • Display announcing that the FUNCTIONAL LOCK is set; and the FUNCTIONAL LOCK setting display
   • Display call (including holding a button down).

5) RS-232C adjustment mode is automatically canceled:
   • When the {STANDBY/ON} or {MENU} button is pressed.

6) Before entering the RS-232C adjustment mode, be sure to cancel the installer adjust mode.

7) When performing control using the RS-232C commands, not only do these commands control the input signal, but they also control the power. If the power is ON when there is no signal, the display continues to have a weak discharge, that could affect the life of the display.

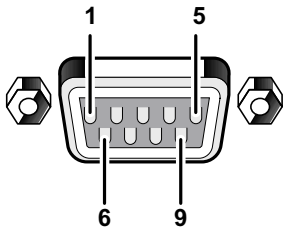
RS-232C ADJUSTMENT MODE

Interface

1) Connector: D-sub 9 pins (male)

2) Pin Layout:

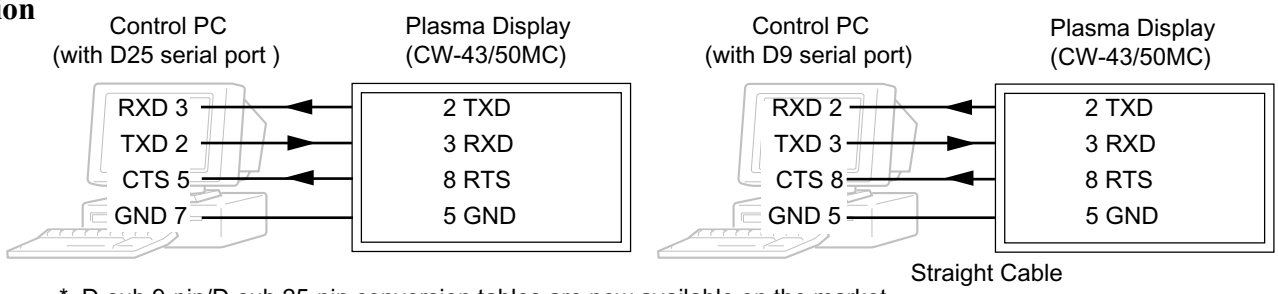
Pin No.	Signal
1	NC (not connected)
2	TxD (Transmit Data)
3	RxD (Receive Data)
4	NC (not connected)
5	GnD
6	NC (not connected)
7	NC (not connected)
8	RTS (Request to Send)
9	NC (not connected)



3) Baud Rate: 9600 bps (standard)
(switchable to 1200, 2400, 4800, 19200, 38400 bps)
NOTE: The baud rate of this display should be set to match the baud rate of the computer. Also, when the RS-232C cable is to be extended over a long distance, a slower baud rate is recommended.

4) Data Format
Start: 1-bit
Data: 8-bit
Parity: 0 (no parity)
Stop: 1-bit

5) Connection



* D-sub 9-pin/D-sub 25-pin conversion tables are now available on the market

NOTE: Computer manufacturers may not use the same pin assignments. In case of communication difficulties, check pin functions not just pin numbers.

Interface

6) Protocol: From computer to plasmas display:

(1) When sending one command at a time:

STX (02 hex)	ID (2 Byte)	COMMAND (3 Byte or 6 Byte)	ETX (03 hex)

(2) When transmitting commands in batches (up to max. 3 commands are possible): (NOTE)

STX (02 hex)	ID (2 Byte)	COMMAND (3 Byte)	ARGUMENT (3 Byte)	ETX (03 hex)

COMMAND: 3 Byte (ASCII)
ARGUMENT: 3 Byte (ASCII)

(3) Echo back

STX (02 hex)	COMMAND (3 Byte or 6 Byte)	ETX (03 hex)

When the recieved command is a numerical direct effect command, numerical data is returned.

STX (02 hex)	COMMAND (3 Byte)	ARGUMENT (3 Byte)	ETX (03 hex)

When the recieved command is non-corresponding command, 'ERR' is returned.

STX (02 hex)	ERR (3 Byte)	ETX (03 hex)

When it is determined that the received command cannot be processed (when PON is received when the power is already ON, etc.) 'XXX' is returned.

STX (02 hex)	ERR (3 Byte)	ETX (03 hex)

RS-232C Commands

How to read this table:

- RS-232C Adjustment Validity: Indicates whether or not the RS-232 adjustment mode can be used.
- Normal Validity: Indicates whether or not the normal-operation mode can be used
- Numerical Direct Validity: When a number (3-digit number) is attached to the end of a command, the command can directly set that adjustment value.

○ or ●: Valid **No Mark**: Invalid **NOTE:** ● = values not stored in the last memory

	Command Name	Full Name	RS-232C Adjustment Validity	Normal Validity	Numerical Direct Validity	Description
A	AJN	-	●			Terminates the RS-232C installer adjustment mode.
	AJY	ADJUST: ON		●		Starts the RS-232C installer adjustment mode.
	AMN	AUDIO MUTING: OFF	●	●		Turns audio mute OFF.
	AMY	AUDIO MUTING: ON	●	●		Turns audio mute ON.
	AST	AUTO SET UP MODE		○		Executes AUTO SETUP.
B	BHI	B GAIN	○		○	Adjusts BLUE GAIN HIGH-LIGHT.
	BLW	B OFFSET	○		○	Adjusts BLUE OFFSET LOW-LIGHT.
	BRA	BAUD RATE: #####-232C	●			Displays the current baud rate.
	BRAS01	BAUD RATE: 1200-232C	○			Sets the UART setting to 232C (1200bps).
	BRAS02	BAUD RATE: 2400-232C	○			Sets the UART setting to 232C (2400bps).
	BRAS03	BAUD RATE: 4800-232C	○			Sets the UART setting to 232C (4800bps).
	BRAS04	BAUD RATE: 9600-232C	○			Sets the UART setting to 232C (9600bps).
	BRAS05	BAUD RATE: 19200-232C	○			Sets the UART setting to 232C (19200bps).
	BRAS06	BAUD RATE: 38400-232C	○			Sets the UART setting to 232C (38400bps).
	BRT	BRIGHTNESS: ***	○		○	Adjusts brightness.
	BSL	B SIDEBAR ADJ. LEVEL	○		○	Adjusts BLUE SIDEBAR ADJUST LEVEL.
C	CFR	FREQ. ADJ.: ***	○		○	Adjusts the clock frequency (PLL frequency).
	CGB	C. DETAIL BLUE: ***	○		○	Adjusts color detail BLUE.
	CGC	C. DETAIL CYAN: ***	○		○	Adjusts color detail CYAN.
	CGG	C. DETAIL GREEN: ***	○		○	Adjusts color detail GREEN.
	CGM	C. DETAIL MAGENTA: ***	○		○	Adjusts color detail MAGENTA.
	CGR	C. DETAIL RED: ***	○		○	Adjusts color detail RED.
	CGY	C. DETAIL YELLOW: ***	○		○	Adjusts color detail YELLOW.
	CLS	COLOR SYSTEM: ######	●			Displays the current color system.
	CLSS01	COLOR SYSTEM: AUTO	○			Sets the color system to AUTO.
	CLSS02	COLOR SYSTEM: NTSC	○			Sets the color system to NTSC.
	CLSS03	COLOR SYSTEM: PAL	○			Sets the color system to PAL.
	CLSS04	COLOR SYSTEM: SECAM	○			Sets the color system to SECAM.
	CLSS05	COLOR SYSTEM: 4.43NTSC	○			Sets the color system to 4.43NTSC.
	CLSS06	COLOR SYSTEM: PAL M	○			Sets the color system to PAL M.
	CLSS07	COLOR SYSTEM: PAL N	○			Sets the color system to PAL N.
	CM1	NORMAL	○	○		Sets the Normal color mode.
	CM2	ISF	○	○		Sets the ISF color mode (retake).
	CNT	CONTRAST: ***	○		○	Adjusts contrast.
	COF	COLOR OFF: ********	●			Displays the current COLOR OFF setting.
	COFS00	COLOR OFF: DISABLE	○			Disables COLOR OFF.
	COFS01	COLOR OFF: ENABLE	○			Enables COLOR OFF.
	COL	COLOR: ***	○		○	
	CPH	PHASE ADJ.: ***	○		○	Adjusts the phase (PLL phase).

	Command Name	Full Name	RS-232C Adjustment Validity	Normal Validity	Numerical Direct Validity	Description
C	CTP	COLOR TEMP: ********	●			Displays the current COLOR TEMP.
	CTPS01	COLOR TEMP.: 1	○			Sets the COLOR TEMP. to LOW (equal to -3000K)
	CTPS02	COLOR TEMP.: 2	○			Sets the COLOR TEMP. to MID-LOW (equal to -2000K)
	CTPS03	COLOR TEMP.: 3	○			Sets the COLOR TEMP. to MIDDLE (±OK, standard)
	CTPS04	COLOR TEMP.: 4	○			Sets the COLOR TEMP. to MID-HIGH (equal to +1000k)
	CTPS05	COLOR TEMP.: 5	○			Sets the COLOR TEMP. to HIGH. (equal to +2000K)
	CTR	CTI: ###	●			Displays the current color transient improvement setting, to make image have clearer color contours.
	CTRS00	CTI: OFF	○			Sets CTI to OFF.
	CTRS01	CTI: ON	○			Sets CTI to ON.
D	DIN		○	○		Turns off the OSD display.
	DIY	OSD: ON	○	○		Turns on the OSD display.
	DNR	VIDEO NR: #####	●			Displays the current DNR setting.
	DNRS00	VIDEO NR: OFF	○			Sets the VIDEO NR to ON.
	DNRS01	VIDEO NR: LOW	○			Sets the VIDEO NR to LOW.
	DNRS02	VIDEO NR: MIDDLE	○			Sets the VIDEO NR to MIDDLE.
	DNRS03	VIDEO NR: HIGH	○			Sets the VIDEO NR to HIGH.
	DOF	-	○	○		Clears the current displayed OSD.
	DPR	DPR	○	○		Resets the still image repeat function.
	DW0	#	○	○		Reduces adjustment value by 10.
	DW n	#	○	○		Reduces adjustment value by n (n =1 to 9)
	DWF	#	○	○		Sets the adjustment value to the minimum value.
E	ENH	H. SHARPEN: ***	○		○	Adjusts H. SHARPEN.
	ENV	V. SHARPEN: ***	○		○	Adjusts V. SHARPEN.
	ESV	ENERGY MODE: ******	●			Displays the current ENERGY MODE setting.
	ESVS00	ENERGY MODE: STANDARD	○			Sets the ENERGY MODE setting to STANDARD.
	ESVS01	ENERGY MODE: MODE1	○			Sets the ENERGY MODE setting to MODE1 (energy saving)
	ESVS02	ENERGY MODE: MODE2	○			Sets the ENERGY MODE setting to MODE2 (energy saving)
	ESVS03	ENERGY MODE: MODE3	○			Sets the ENERGY MODE setting to MODE3 (long life)
	ESVS04	ENERGY MODE: AUTO	○			Sets the ENERGY MODE setting to AUTO.
F	FCA	FAN: AUTO	○			Sets the fan rpm control to AUTO.
	FCL	#######	●			Displays the current FUNCTIONAL LOCK setting.
	FCLS00	LOCK OFF	○			Clears the FUNCTIONAL LOCK.
	FCLS01	BUTTONS LOCK	○			Locks the main-control panel button control.
	FCLS02	IR LOCK	○			Locks the remote-control button control.
	FCLS03	BUTTONS & IR LOCK	○			Locks both main-control panel and remote button control.
	FCLS04	MEMORY LOCK	○			Sets the MEMORY LOCK
	FCM	FAN: MAX	○			Sets the fan rpm control to maximum.
	FDT	FUNCTION DEFAULT	●			Executes FUNCTION DEFAULT.

	Command Name	Full Name	RS-232C Adjustment Validity	Normal Validity	Numerical Direct Validity	Description
F	FMK	SCREEN MASK: #####	●			Displays the current SCREEN MASK setting.
	FMKS00	SCREEN MASK: OFF	○			Sets the SCREEN MASK to OFF.
	FMKS02	SCREEN MASK: INVERSE	○			Sets the SCREEN MASK to INVERSE (negative-positive inversion)
	FMKS03	SCREEN MASK: WHITE	○			Turns ON the WHITE mask.
	FMKS04	SCREEN MASK: RED	○			Turns ON the RED mask.
	FMKS05	SCREEN MASK: GREEN	○			Turns ON the GREEN mask.
	FMKS06	SCREEN MASK: BLUE	○			Turns ON the BLUE mask.
	FMKS07	SCREEN MASK: YELLOW	○			Turns ON the YELLOW mask.
	FRC	FRC: #####	●			Displays the current FRC setting.
	FRCS01	FRC: MODE1	○			Sets FRC to MODE1.
	FRCS02	FRC: MODE2	○			Sets FRC to MODE2
	FRCS03	FRC: MODE3	○			Sets FRC to MODE3
	FRP	FRESH POSITION	○			Initializes the integrator and SCREEN adjustment values.
	FXO	AUDIO LEVEL OUT: FIX	○			Selects fixed audio output.
G	GHI	G. GAIN: ***	○		○	Adjusts the G. GAIN High.
	GLW	G. OFFSET: ***	○		○	Adjusts the G. OFFSET High.
	GPI	(GET PICTURE DATA)	●	●		Gets installer PICTURE data.
	GPS	(GET POSITION DATA)	●	●		Gets installer SCREEN data.
	GRA	GAMMA: ######	●			Displays the current GAMMA setting.
	GRAS01	GAMMA: 2.0	○			Sets the GAMMA to “2.0’
	GRAS02	GAMMA: 1.8	○	○		Sets the GAMMA to “1.8’
	GRAS03	GAMMA: 2.2	○	○		Sets the GAMMA to “2.2’
	GRAS04	GAMMA: DRE MID	○			Sets the GAMMA to “DRE MID’ (dynamic range expander)
	GRAS05	GAMMA: DRE HIGH	○			Sets the GAMMA to ‘DRE HIGH’
	GRAS06	GAMMA: DRE LOW	○			Sets the GAMMA to ‘DRE LOW’
	GRAS07	GAMMA: HIGH CNT.	○			Sets the GAMMA to “HIGH CONTRAST’
	GSL	G. SIDEBAR ADJ. LEVEL: ***	○		○	Adjusts the GREEN SIDEBAR ADJ.
	GSO	(GET STATUS OPTION DATA)	●	●		Gets OPTION data.
	GSS	(GET STATUS SETUP DATA)	●	●		Gets SETUP data.
	GST	(GET STATUS)	●	●		Gets STATUS.
	GWB	(GET WHITE BAL DATA)	●	●		Gets installer adjust WHITE BALANCE data.
H	HPS	H. SHIFT	○		○	Adjusts H. SHARPEN.
	HSI	V. SHIFT	○		○	Adjusts V. SHARPEN.
I	IDC	ID CLEAR	○			Clears the ID.
	DS	ID No. Set: **	○		○	Sets the ID.
	IN1	INPUT1	○	○		Switches the main screen to INPUT1.
	IN2	INPUT2	○	○		Switches the main screen to INPUT2.
	IN3	INPUT3	○	○		Switches the main screen to INPUT3.
	IN4	INPUT4	○	○		Switches the main screen to INPUT4.
	IN5	INPUT5	○	○		Switches the main screen to INPUT5.
	INP	INPUT#	●	●		Displays the current input function for the main screen.
	INPS01	INPUT1	○	○		Switches the main screen to INPUT1.
	INPS02	INPUT2	○	○		Switches the main screen to INPUT2.
	INPS03	INPUT3	○	○		Switches the main screen to INPUT3.
	INPS04	INPUT4	○	○		Switches the main screen to INPUT4.
	INPS05	INPUT5	○	○		Switches the main screen to INPUT5.

	Command Name	Full Name	RS-232C Adjustment Validity	Normal Validity	Numerical Direct Validity	Function
L	LEN	FRONT INDICATOR: OFF	○			Turns OFF the front indicator.
	LEY	FRONT INDICATOR: ON	○			Turns ON the front indicator.
	LNN	LOUDNESS: OFF	○	○		Disables LOUDNESS.
	LNY	LOUDNESS: ON	○	○		Enables LOUDNESS.
M	MCD	COLOR DECODING: ******	●			Displays the current COLOR DECODING
	MCDS01	COLOR DECODING: RGB	○			Sets COLOR DECODING to RGB (VIDEO).
	MCDS02	COLOR DECODING: COMPONENT1	○			Sets COLOR DECODING to COMPONENT1 (Y CbCr).
	MCDS03	COLOR DECODING: COMPONENT2	○			Sets COLOR DECODING to COMPONENT2 (Y CbCr).
	MCN	MASK CONTROL: OFF	○			Turns OFF MASK CONTROL.
	MCY	MASK CONTROL: ON	○			Turns ON MASK CONTROL.
	MGF	############	●	●		Displays the 2 x 2 ON/OFF status.
	MGFS00	2 x 2: OFF	○	○		Turns OFF 2 x 2 (4-screen multi).
	MGFS01	2 x 2 : ON	○	○		Turns ON 2 x 2 (4-screen multi).
	MGP	############	c			Displays the current 2 x 2 seam-consideration/magnification position.
	MGPS01	2 x 2 NORMAL UP LEFT	○			Sets 2 x 2 to upper left (no seam consideration).
	MGPS02	2 x 2 NORMAL DOWN LEFT	○			Sets 2 x 2 to lower left (no seam consideration).
	MGPS03	2 x 2 NORMAL UP RIGHT	○			Sets 2 x 2 to upper right (no seam consideration).
	MGPS04	2 x 2 NORMAL DOWN RIGHT	○			Sets 2 x 2 to lower right (no seam consideration).
	MGPS05	2 x 2 ADJUSTED UP LEFT	○			Sets 2 x 2 to upper left (seam consideration).
	MGPS06	2 x 2 ADJUSTED DOWNLEFT	○			Sets 2 x 2 to lower left (seam consideration).
	MGPS07	2 x 2 ADJUSTED UP RIGHT	○			Sets 2 x 2 to upper right (seam consideration).
	MGPS08	2 x 2 ADJUSTED DOWN RIGHT	○			Sets 2 x 2 to lower right (seam consideration).
	MIR	MIRROR MODE: ###	●			Displays the current MIRROR MODE setting.
	MIRS00	MIRROR MODE: OFF	○			Turns the MIRROR MODE OFF (normal display).
	MIRS01	MIRROR MODE: X	○			Sets the MIRROR MODE to left-right reversal.
	MIRS02	MIRROR MODE: Y	○			Sets the MIRROR MODE to up-down reversal.
	MIRS03	MIRROR MODE: XY	○			Sets the MIRROR MODE to up-down, left-right reversal.
	MNR	MPEG NR: ######	●			Displays the current MPEG NR setting.
	MNRS00	MPEG NR: OFF	○			Turns MPEG NR OFF.
	MNRS01	MPEG NR: LOW	○			Sets MPEG NR to LOW.
	MNRS02	MPEG NR: MIDDLE	○			Sets MPEG NR to MIDDLE.
	MNRS03	MPEG NR: HIGH	○			Sets MPEG NR to HIGH.
	MSC	############	●	●		Displays 2-screen display operation ON/OFF.
	MSCS00	MULTISCREEN: OFF	○			Turns 2-screen display operation OFF.
	MSCS01	MULTISCREEN: ON	○			Turns 2-screen display operation ON.
	MST	############	●			Displays the current 2-screen operation type.
	MSTS01	2SCREEN	○			Sets 2-screen operation to 2 SCREEN.
	MSTS02	PinP DOWN RIGHT	○			Sets 2-screen operation to PinP (lower right).
	MSTS03	PinP UP RIGHT	○			Sets 2-screen operation to PinP (upper right).
	MSTS04	PinP UP LEFT	○			Sets 2-screen operation to PinP (upper left).
	MSTS05	PinP DOWN LEFT	○			Sets 2-screen operation to PinP (lower left).
	MSTS06	PoutP	○			Sets 2-screen operation to PoutP.
	MTN	VIDEO MUTING: OFF	●			Turns OFF video muting.
	MTY	VIDEO MUTING: ON	●			Turns ON video muting.
O	OMN	ORBITER: OFF	○			Turns ORBITER OFF.
	OMY	ORBITER: ON	○			Turns ORBITER ON.

	Command Name	Full Name	RS-232C Adjustment Validity	Normal Validity	Numerical Direct Validity	Function
P	PLN	BRT. ENHANCE: OFF	○			Turns the center brightness enhancement OFF.
	PLY	BRT. ENHANCE: ON	○			Turns the center brightness enhancement ON.
	POF	-	○	○		Power OFF.
	PON	-		○		Power ON.
	PUC	CINEMAMODE: ######	●			Displays the current CINEMAMODE setting.
	PUCS00	CINEMAMODE: OFF	○			Turns CINEMAMODE OFF.
	PUCS01	CINEMAMODE: STANDARD	○			Sets CINEMAMODE to STANDARD.
	PUCS02	CINEMAMODE: ADVANCE	○			Sets CINEMAMODE to ADVANCED.
R	RHI	R. GAIN: ***	○		○	Adjusts R. HIGH.
	RLW	R. OFFSET: ***	○		○	Adjusts R. LOW.
	RSL	R SIDEBAR ADJ. LEVEL: ***	○		○	Adjusts the RED side mask.
S	SFT	SIGNAL FORMAT: ####	●			Displays the current SIGNAL FORMAT.
	SFTS01	SIGNAL FORMAT: VGA or XGA or SXGA or 720PC	○			Sets the SIGNAL FORMAT to PC FORMAT 1 (VGA or XGA or SXGA or 720PC).
	SFTS02	SIGNAL FORMAT: WVGA or WXGA or SXGA+	○			Sets the SIGNAL FORMAT to PC FORMAT 2 (WVGA or WXGA or SXGA+).
	SFTS03	SIGNAL FORMAT: VIDEO 525p or VIDEO 750p	○			Sets the SIGNAL FORMAT to VIDEO 525p or VIDEO 750p.
	SFTS04	SIGNAL FORMAT: PC AUTO	○			Sets the SIGNAL FORMAT to PC AUTO.
	SHP	SHARPNESS: ***	○	○		Adjusts the SHARPNESS.
	SIM	SIDEBAR ADJ. MODE: ######	●			Displays the current side mask setting.
	SIM01	SIDEBAR ADJ. MODE: NORMAL	○			Sets the sidebar adjustment setting to normal.
	SIM02	SIDEBAR ADJ.: OVERLAY1	○			Sets the sidebar adjustment setting to OVERLAY1.
	SIM03	SIDEBAR ADJ.: OVERLAY2	○			Sets the sidebar adjustment setting to OVERLAY2.
	SLN	-		○		Turns the STILL setting to OFF.
	SLY	STILL		○		Turns the STILL setting to ON.
	SSI	########	●	●		Displays the current sub screen input finction.
	SSIS01	INPUT1(SUB)	○	○		Switches the sub screen to INPUT1.
	SSIS02	INPUT2(SUB)	○	○		Switches the sub screen to INPUT2.
	SSIS03	INPUT3(SUB)	○	○		Switches the sub screen to INPUT3.
	SSIS04	INPUT4(SUB)	○	○		Switches the sub screen to INPUT4.
	SSIS05	INPUT5(SUB)	○	○		Switches the sub screen to INPUT5.
	STD	STANDARD W/B	○			Returns the integrator PICTURE and WHITE BALACE to the factory settings.
	SVL	SUB VOLUME: ***	○		○	Adjusts the sub volume.
	SZM	########	●	●		Displays the current screen size setting.
	SZMS00	PIX by PIX or PARTIAL	○	○		Sets the scree size to PIX by PIX or PARTIAL.
	SZMS01	STD (4:3)	○	○		Sets the screen size to Standard 4:3.
	SZMS02	ANAMPHC 16:9	○	○		Sets the screen size to Anamorphic 16:9
	SZMS03	LETTERBOX	○	○		Sets the screen size to LETTERBOX.
	SZMS04	CINEMA	○	○		Sets the screen size to CINEMA.
	SZMS05	VIRTUALWIDE	○	○		Sets the screen size to VIRTUALWIDE.
	SZMS08	FULL1035i	○	○		Sets the screen size to FULL1035i.
	SZMS09	UNDERSCAN	○			Sets the screen size to UNDERSCAN.
T	TNT	TINT: ***	○		○	Adjusts the TINT.

*** NOTE:** Make sure to use commands for adjusting sub-volume (SV1~5) after first switching to the prescribed input using the input switching commands (IN1~5).

	Command Name	Full Name	RS-232C Adjustment Validity	Normal Validity	Numerical Direct Validity	Function
U	UPO	#	○	○		Adds 10 to the adjustment value.
	UPn	#	○	○		Adds n to the adjustment value (n = 1 to 9).
	UPF	#	○	○		Sets the adjustment value to maximum.
	USC	UNDERSCAN: ***	○			Displays the current UNDERSCAN setting.
	USCS00	UNDERSCAN: OFF	○			Turns the UNDERSCAN setting OFF.
	USCS01	UNDERSCAN: ON	○			Turns the UNDERSCAN setting ON.
V	VOL	VOLUME: ***	○	○	○	Adjusts the audio volume.
	VPS	V. POSITION: ***	○		○	Adjusts the V POSITION.
	VRO	AUDIO OUT VARIABLE	○			Selects variable audio output.
	VSI	V. SIZE	○		○	Adjusts V. SIZE.

GET Commands

What are GET Commands?

- They are commands for outputting TXD such as adjustment data from the internal microcomputer of the plasma display to a PC.
- Adjustment data, etc., is output in ASCII code.
  NOTE: Command names are given inside brackets < >.
- Data output format

STX (o2hex)	Data	Data	....	Checksum	ETX (03hex)

NOTE:

1) GET commands will be invalid when no ID NO. Set is assigned to the set.
2) GET commands will be invalid when wildcard (*) is used in the ID No. Set when sending the command.

1) <GST> (GET STATUS)

Order	Data Contents	Size	Remarks
1	Display data	3byte	See below
2	Power data	3byte	See below (The third character is sub input)
3	Input function data (main)	3byte	Input data when GST is received (INPUT1 to 5 is displayed as IN1 to 5)
4	Input function data (sub)	3byte	Sub input data when GST is received Note 3 (INPUT1 to 5 is displayed as IN1 to 5)
5	Screen size data	1byte	See below
6	2-screen display	1byte	0: OFF (1 screen) 1: 2-SCREEN 2: PinP (lower right) 3: PinP (upper right) 4: PinP (upper left) 5: PinP (lower left) 6: PoutP
7	FUNCTIONAL LOCK data	1byte	0: LOCK OFF 1: BUTTONS LOCK 2: IR LOCK 3: IR & BUTTONS LOCK 4: MEMORY LOCK
8	Dummy Data	3byte	(3-digit number)
9	Temperature data 2	3byte	(Internal temperature: Reference value) ^{o}C Note 1
10	Temperature data 3	3byte	(Internal temperature: Reference value) ^{o}C Note 1
11	Serial	15byte	
12	Dummy data	3byte	(3-digit number)
13	Dummy data	3byte	
14	HOURMETER	5byte	Display the time.
15	Checksum	2byte	

Display data	First character	Generation data: 4 (fixed)
	Second character	Inch data: 4 (43 inches), 5 (50 inch)
	Third character	Destination data: M (fixed)
Power Data	First character	Power state & signal state
	Second character	PN (POWER ON & normal signal input) PL (POWER ON & no input) PO (POWER ON & OUT OF RANGE signal input) SN (Normal standby) SW (Standby by AUTO POWER OFF) SS (Standby by SD or PD)
	Third character	Sub input signal state during multi-screen display N (Normal signal input) L (No input) O (OUT OF RANGE signal input)
Screen size data	First character	(0) Pix by Pix or Letterbox, (1) STD (4:3), (2) ANAMPHC 16:9, (3) Letterbox (1080i), (4) Cinema, (5) Virtualwide, (8) Letterbox (1035i), (9) Underscan

NOTE 1) During standby and immediately after POWER ON, the proper value is not output. In this case, wait a moment after POWER ON, then get the data. The temperature data is output as a reference (the values are not guaranteed values). Normally, refer to temperature data 3.
NOTE 2) During standby and during 1-screen display, dummy data (symbol) is output.
NOTE 3) During standby and during 1-screen display the values stored in memory for the product are output.

2) <GPI> (GET PICTURE DATA: Gets installer/Picture data.)

Order	Data Contents	Size	Remarks
1	CONTRAST	3byte	#
2	BRIGHTNESS	3byte	#
3	C. DETAIL R (RED)	3byte	#
4	C. DETAIL Y (YELLOW)	3byte	#
5	C. DETAIL G (GREEN)	3byte	#
6	C. DETAIL C (CYAN)	3byte	#
7	C. DETAIL B (BLUE)	3byte	#
8	C. DETAIL M (MAGENTA)	3byte	#
9	H SHARPEN	3byte	Outputs dummy data for video signal. #
10	V SHARPEN	3byte	Outputs dummy data for video signal. #
11	COLOR	3byte	Outputs dummy data for PC signal. #
12	TINT	3byte	Outputs dummy data for PC signal. #
13	SHARPNESS	3byte	Outputs dummy data for PC signal. #
14	Input function data (main)	3byte	
15	Screen size data	1byte	
16	Check sum	2byte	

• 7 and 8 output the same contents as GST items 3 and 5.
• When the type of # signal is not set, dummy data is output.

3) <GWB> (GET WHITE BAL. DATA: Gets installer/WHITE BAL. data.)

Order	Data	Size	Remarks
1	R. GAIN	3byte	#
2	G. GAIN	3byte	#
3	B. GAIN	3byte	#
4	R. OFFSET	3byte	#
5	G. OFFSET	3byte	#
6	B. OFFSET	3byte	#
7	Input function data (main)	3byte	
8	Screen size data	1byte	
9	Check sum	2byte	

• 7 and 8 output the same contents as GST items 3 and 5.
• When the type of # signal is not set, dummy data is output.

4) <GPS> (GET POSITION DATA: Gets installer/SCREEN data.)

Order	Data	Size	Remarks
1	H SHIFT	3byte	#
2	V SHIFT	3byte	#
3	H. SIZE	3byte	#
4	V. SIZE	3byte	#
5	FREQ. ADJ.	3byte	Outputs dummy data for PC digital and Video signal. #
6	PHASE ADJ.	3byte	Outputs dummy data for PC digital and Video signal. #
7	Input function data (main)	3byte	
8	Screen size data	1byte	
9	Check sum	2byte	

• 7 and 8 output the same contents as GST items 3 and 5.
• When the type of # signal is not set, dummy data is output.

5) <GSS> (GET STATUS SETUP: Gets menu and installer SETUP data.)

Order	Data	Size	Output	Remarks
1	GAMMA	1byte	1: GAMMA 2.0 2: GAMMA 1.8 3: GAMMA 2.2 4: DRE MID 5: DRE HIGH 6: DRE LOW 7: HIGH CNT.	#
2	BRT. ENHANCE	1byte	0:OFF 1: ON	#
3	SUB VOLUME	2byte	00 to 20	
4	COLOR TEMP.	1byte	1: LOW 2: MID LOW 3: MIDDLE 4: MID HIGH 5: HIGH	#
5	VIDEO NR	1byte	0: OFF 2: LOW 3: MIDDLE 4: HIGH	#
6	MPEG NR	1byte	0: OFF 2: LOW 3: MIDDLE 4: HIGH	#
7	CTI	1byte	0: OFF 1: ON	# (color transient improvement)
8	CINEMAMODE	1byte	0: OFF 1: STANDARD 2: ADVANCE	#
9	COLOR DECODING	1byte	1: RGB 1: COMPONENT1 2: COMPONENT2	#
10	COLOR SYSTEM	1byte	1: AUTO 2: NTSC 3: PAL 4: SECAM 5: 4.43NTSC 6: PAL M 7: PAL N	#
11	SIGNAL FORMAT	3byte		# See below
12	Dummy data	3byte		
13	Input function data (main)	3byte		
14	Screen size data	1byte		
15	Check sum	2byte		

SIGNAL FORMAT	S01	VGA or XGA or SXGA or 720-PC (720-PC can be selected only when a video card is mounted.)
	S02	WVGA or WXGA or SXGA+
	S03	535p or 750p (Either one can be selected only when a video card is mounted.) or PC AUTO
	***	Dummy data is output for signals other than those above.

• 13 and 14 output the same contents as GST items 3 and 5.

• Dummy data is output for setting data that cannot be output depending on the type of # signal.

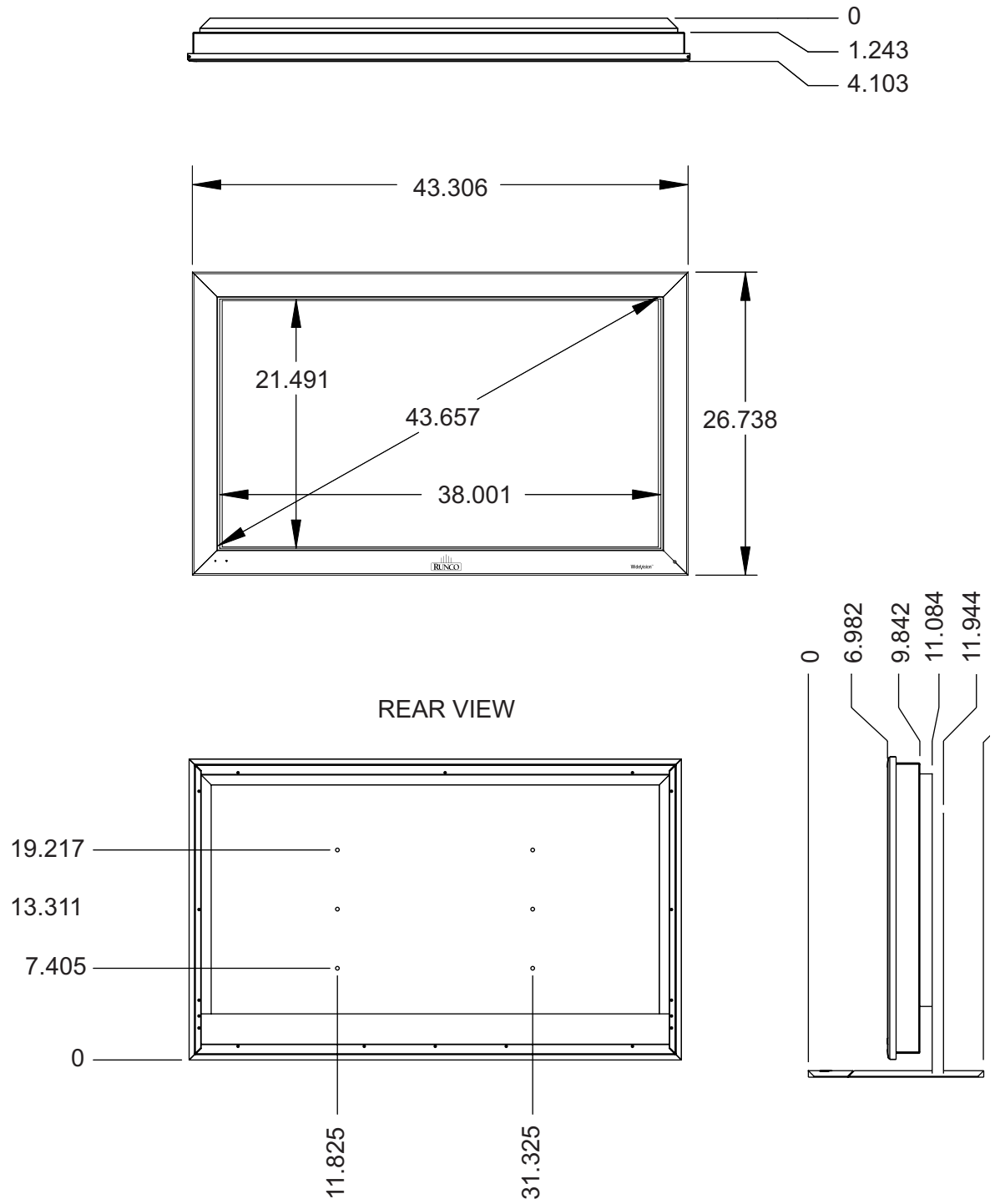
6) <GSO> (GET STATUS OPTION: Gets menu and installer OPTION data.)

Order	Data	Size	Output	Remarks
1	ENERGY MODE	1byte	1: STANDARD 2: MODE 1 3: MODE 2 4: MODE 3 5: AUTO	
2	ORBITER	1byte	0:OFF 1: ON	
3	MASK CONTROL	1byte	0:OFF 1: ON	
4	AUDIO OUT	1byte	1:FIXED 2: VARIABLE	
5	SCREEN MASK	1byte	0: OFF 2: INVERSE 3: WHITE 4: RED 5: GREEN 6: BLUE 7: YELLOW	
6	SIDEBAR ADJ.	1byte	1: NORMAL 2: OVERLAY1 3: OVERLAY2	
7	R. SIDEBAR ADJ. LEVEL	3byte	000 to 255	
8	G. SIDEBAR ADJ. LEVEL	3byte	000 to 255	
9	B. SIDEBAR ADJ. LEVEL	3byte	000 to 255	
10	2 x 2	1byte	0:OFF 1: ON	
11	2 x 2 LAYOUT & TYPE	1byte	1: NORMAL &UP LEFT 2: NORMAL &DOWN LEFT 3: NORMAL &UP RIGHT 4: NORMAL &DOWN RIGHT 5: ADJUSTED &UP LEFT 6: ADJUSTED &DOWN LEFT 7: ADJUSTED &UP RIGHT 8: ADJUSTED & DOWN RIGHT	
12	MIRROR MODE	1byte	0:OFF 1: X 2: Y 3:XY	
13	OSD	1byte	0:OFF 1: ON	
14	FRONT INDICATOR	1byte	0:OFF 1: ON	
15	FAN CONTROL	1byte	1: AUTO 2: MAX	
16	COLOR MODE	1byte	1: NORMAL 2: ISF	
17	RUNCO PRO UNDERSCAN	1byte	0:OFF 1: ON	
18	RUNCO PRO COLOR OFF	1byte	0:DISABLE 1: ENABLE	
19	FRC	1byte	1: MODE1 2: MODE2 3: MODE3	
20	Dummy data	3byte		
21	Input function data (main)	3byte		
22	Sceen size data	1byte		
23	Check sum	2byte		
	Total	34 Byte		

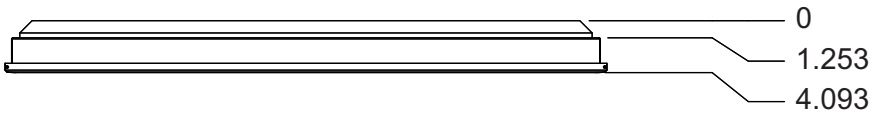
• 21and 22 output the same contents as GST items 3 and 5.

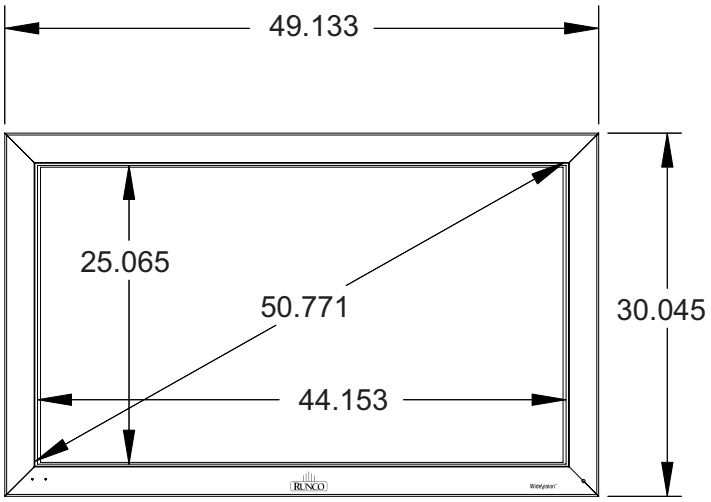
DIMENSIONS

CW-43MC Plasma

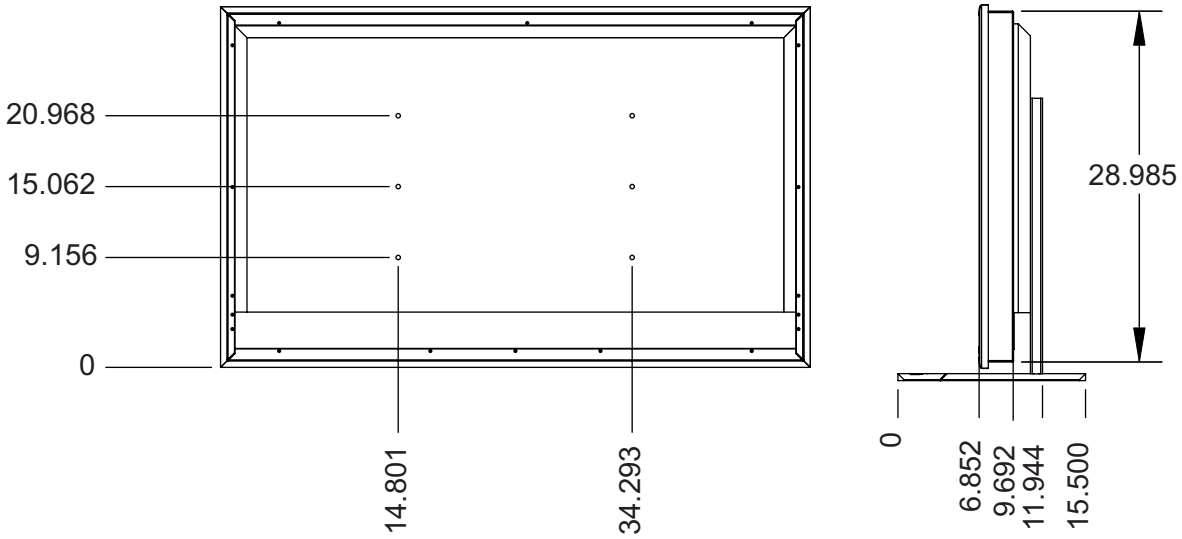


CW-50MC Plasma





REAR VIEW



SPECIFICATIONS

Plasma

	CW-43MC	CW-50MC
Native Resolution:	1024 x 768	1280 x 768
Screen Size:	43 in. (diagonal)	50 in. (diagonal)
Screen Aspect Ratio:	16:9	16:9
Available Aspect Ratios:	4:3, Letterbox, 16:9 Anamorphic, VirtualWide	4:3, Letterbox, 16:9 Anamorphic, VirtualWide
Image Area (W x H):	37 3/8 in. (949.30 mm) x 21 1/8 in. (536.60 mm)	43 1/4 in. (1099 mm) x 24 1/2 in. (622.30 mm)
DTV Compatibility:	480p, 720p, 1080i	480p, 720p, 1080i
Contrast Ratio:	1000:1	1000:1
Data/Graphics Capability:	640 x 400 to 1600 x 1200	640 x 400 to 1600 x 1200
Inputs:	(1) Composite, (1) S-Video (1) RCA Component Video (1) RGB 15 pin, (1) DVI w/HDCP, (1) RS-232C, (1) I/R (5) Stereo Audio - single mini jack	(1) Composite, (1) S-Video (1) RCA Component Video (1) RGB 15 pin, (1) DVI w/HDCP, (1) RS-232C, (1) I/R (5) Stereo Audio - single mini jack
Power Requirements:	100 -120 VAC, 50/60 Hz 220V AC (Preset at the factory only)	100 -120 VAC, 50/60 Hz 220V AC (Preset at the factory only)
Power Consumption:	380W	480W
Operating Environments:	32˚ - 104˚F (0˚ - 40˚C), 20-80% Humidity (non-condensing)	32˚ - 104˚F (0˚ - 40˚C), 20-80% Humidity (non-condensing)
Dimensions	Width: 43 3/8 in. (1102 mm) Depth: 4 in. (101.60 mm) Height: 26 3/4 in. (679.40 mm) Weight: 80 lbs. (36.3 kg)	Width: 49 1/4 in. (1251 mm) Depth: 4 3/32 in. (104 mm) Height: 30 1/8 in. (765.20 mm) Weight: 96 lbs. (44.0 kg)
Regulatory Approvals:	FCC	FCC
Limited Warranty:	(3) Three years parts and labor (not including the plasma glass panel) from the date of delivery to the end user. (1) One year parts and labor on the plasma glass panel from the date of delivery to the end user.	(3) Three years parts and labor (not including the plasma glass panel) from the date of delivery to the end user. (1) One year parts and labor on the plasma glass panel from the date of delivery to the end user.

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