



MIRACUBE

Stereoscopic
2D/3D Switchable
LCD Display

User's Manual



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► For safe and efficient use of the product, read the manual thoroughly.



Warning : Neglecting this sign and misusing the product may result in fatality or severe injury.



Caution : Neglecting this sign and misusing the product may result in injury or physical damage.



Prohibited : This sign indicates the actions that should be prohibited.



Compulsory : This sign indicates the actions that must be followed.



Reference : This sign proposes or suggests the ideal ways to use the product.

Longtime use of the product for 3D mode (playing games or watching videos, etc.) may cause dizziness. Frequent rest is recommended while in use. When the dizziness is severe, stop the use of the product immediately.

※ The dizziness may last varying from a person to another.

Polarizing glasses provided for some of the models are to be used for viewing the 3D images only, not to be used for other purposes such as sunglasses.

※ Usage for other purposes may cause physical harm.

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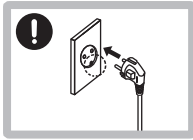
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Precautions

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1. Power

Warning



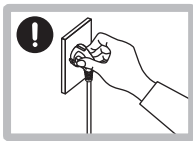
Connect the power plug to an outlet which is GROUNDED. Otherwise electric shock or injury may occur (limited to insulation-type 1 devices).



During thunder and lightning, disconnect the power cable and signal cable from the monitor, otherwise electric shock or fire may occur. Also, disconnect the power plug from the outlet.

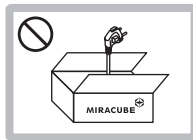


DO NOT touch the power plug with wet hands. Moisture may cause electric shock.

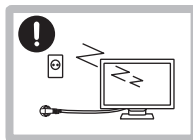


While disconnecting the power cable, hold the plug and do not bend the power cord excessively, or put heavy objects on it.

Caution



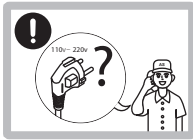
Use the power adaptor provided for the monitor. The adaptors of other companies are manufactured by different standards, which may cause damage to the monitor, fire or electric shock.



In cases where the product is intended not to be used for a long time (left out for going outside from the house), disconnect the power cable from the monitor. Dust may generate heat and cause fire.



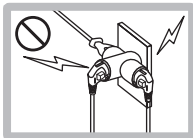
Disconnecting the power cord during the use of the monitor may cause electric shock and damage the monitor.



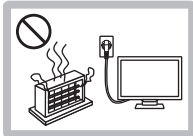
Contact the service center first for the usage of a power other than 110-220V. This product is set to be used at the power of 110-220V / 60Hz when shipped from the plant.

2. Installation

Warning



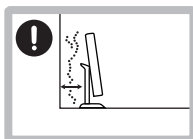
DO NOT use multiple products with a single outlet at the same time. Electric shock or fire may occur.



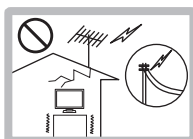
DO NOT install at the locations where excessive heat is produced such as a place with an electric heater. Electric shock, fire, malfunctioning, or deformation may occur.



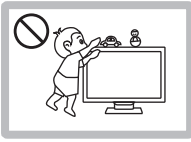
DO NOT put into the monitor the metallic objects (coins, hairpins, chopsticks, wires, etc.), or flammable objects (paper, matchsticks, etc.). Please do not let your children play with the monitor and always supervise their usage of the monitor. Electric shock, fire, or injury may occur. If foreign objects get into the product, turn off the power immediately and contact the service center.



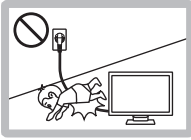
DO NOT block the ventilator of the monitor. The product should be installed in a wide place where it is ventilated well, by no less than 10cm off the wall. The monitor's deformation or even the fire can occur due to the increase in the internal temperature.




Install the product at a place free of electromagnetic interference. High-tension wires, and some specific electric devices emit excessive electromagnetic waves, thereby affecting the performance of the monitor.

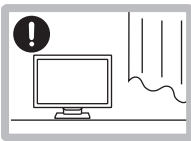


DO NOT place heavy objects on the monitor or climb up on the monitor. Injuries may occur for being dropped down from the monitor: especially for children. Please do not let your children play with the monitor and always supervise their usage of the monitor.



DO NOT leave the power cable or signal cable on the passage way. Falling over the cable may cause electric shock, fire, the damage of product, or injuries.

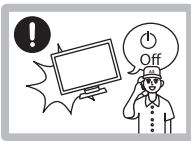
 **Caution**



Place the monitor on a flat and stable space lest it fall down and where there is no sunlight.




Place the monitor in a clean and dry space. If you smell smoke, hear a loud noise, or any strange odor is coming from the monitor, turn off the power and contact the service center.



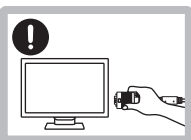
If the monitor is dropped, or its cover case is damaged, turn the power off and contact the service center.

3. Move

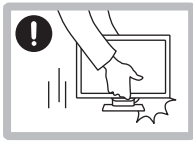
 **Warning**



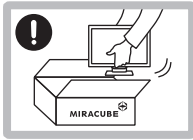
Turn the power off first before moving the product.



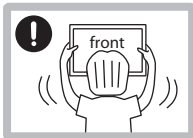
Disconnect all the cables before moving the product.



Ensure that the product is not dropped or bumped in any way while being moved.



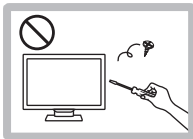
Keep the box in which the product was delivered. It will be of use for moving the product.



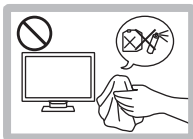
Ensure that the product's panel faces forward, carry by grabbing it with both hands. If the product is dropped, and it is damaged, electric shock or fire may occur. Contact the service center and have the product repaired.

4. Usage

Warning



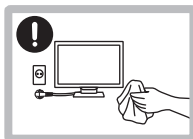
DO NOT disassemble, repair, or remodel the product yourself. Only our trained professionals at the service center can repair the monitor.




When cleaning, DO NOT use flammable sprays directly on the monitor, or wipe it with flammable solutions (paint thinner, benzene, etc.).



DO NOT spray the product with water, or have it wet. Fire, electric shock, or malfunctioning may occur.



Prior to the cleaning of the panel's surface, disconnect the power cord. Wipe the panel lightly with smooth cloth to prevent any scratches. Wet cloth is never to be used.

 **Caution**



DO NOT stab or scratch the panel with a hand or any sharp objects (nail, pencil, pen, etc.). The panel can be scarred, which may cause malfunctioning.



In cases where 3D images are watched for a long time, dizziness or fatigue can be felt. To protect the eyes and reduce the fatigue on muscles, frequent rest is highly recommended.

► **Proper postures for watching the 3D monitor** (watching the videos with 3D mode)



Unit: centimeter (centimeter)

TYPE	Size(inch)	Optimum Distance
Glasses	43.2(17)	60~90
Non-glasses	48(19)	80~90
Glasses	60.96(24)	60~90
Glasses	80.04(31.51)	200~300
Glasses	116.84(46)	200~300

Keep the optimum distance from the monitor, as stated above. Watching too close to the monitor screen may harm your eyesight.

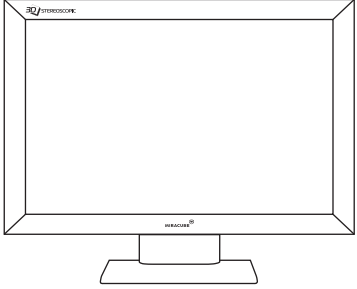
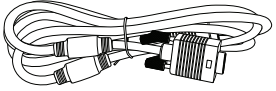
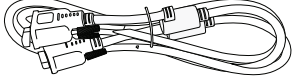
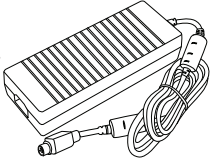
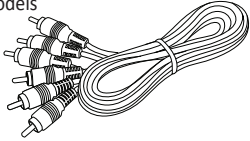
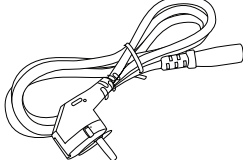



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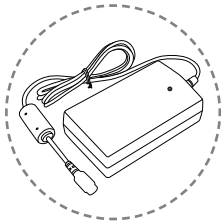
1. Product Components



Check if all the parts and accessories are in the box. If any components are missing from what is stated below, please contact the retail store where the product was purchased. For purchasing additional parts or accessories, contact the service center.

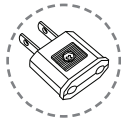
<p>Monitor</p> 	<p>15 Pin D-Sub Cable</p>  <p>DVI Cable</p> 
<p>24V DC Adaptor</p> <p>(For the 32/46 inch monitor, an adaptor is not provided.)</p> 	<p>Component Cable</p> <p>(For M, X, V models only)</p> 
<p>Power Cord</p> 	<p>Polarizing Glasses</p> <p>The type of glasses may vary from a model to another.</p> 
<p>Demonstration CD</p> 	<p>User Manual</p> 

※ For the 17/19 inch monitor, a 12V DC adaptor is provided.



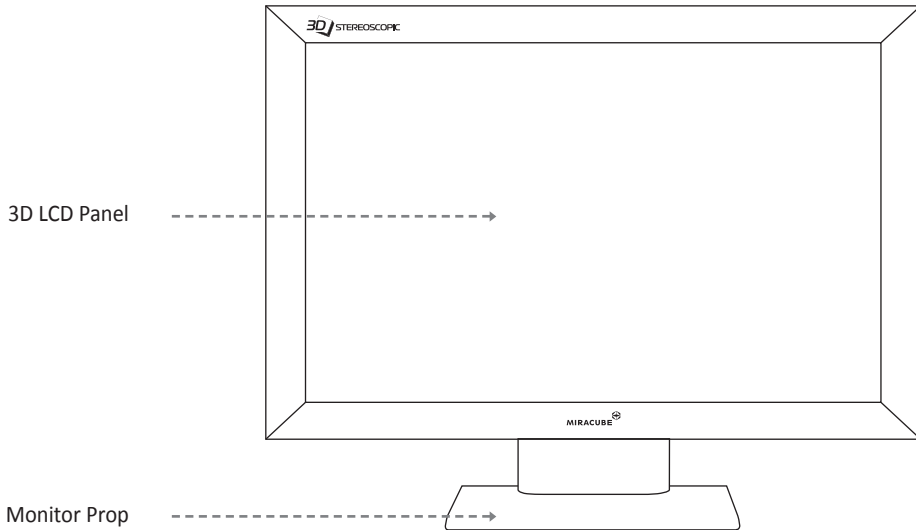
Plug

※ 110V (Model for overseas (Japan, USA, etc.))

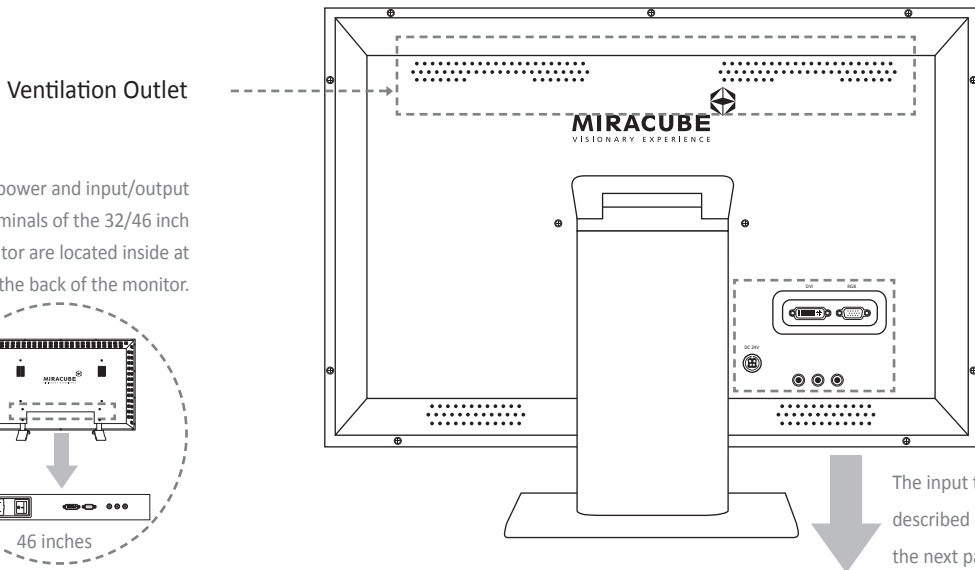


2. Name of Components

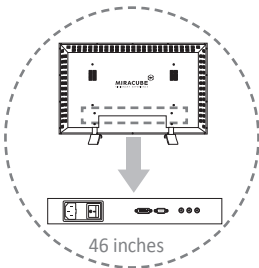
① Front



② Back



※ The power and input/output terminals of the 32/46 inch monitor are located inside at the back of the monitor.

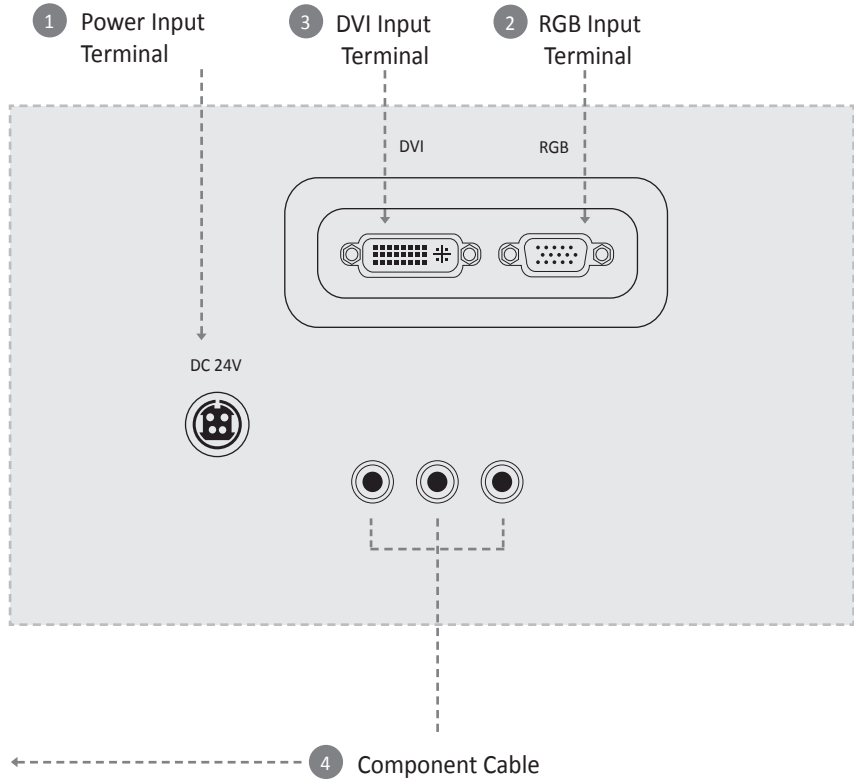
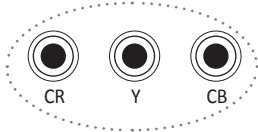


▶ Detailed Description on Input Terminal

※ Ensure that only the provided adaptor is used.

※ The 32 inch monitor and 46 inch monitor have different location for the power and input/output terminals.

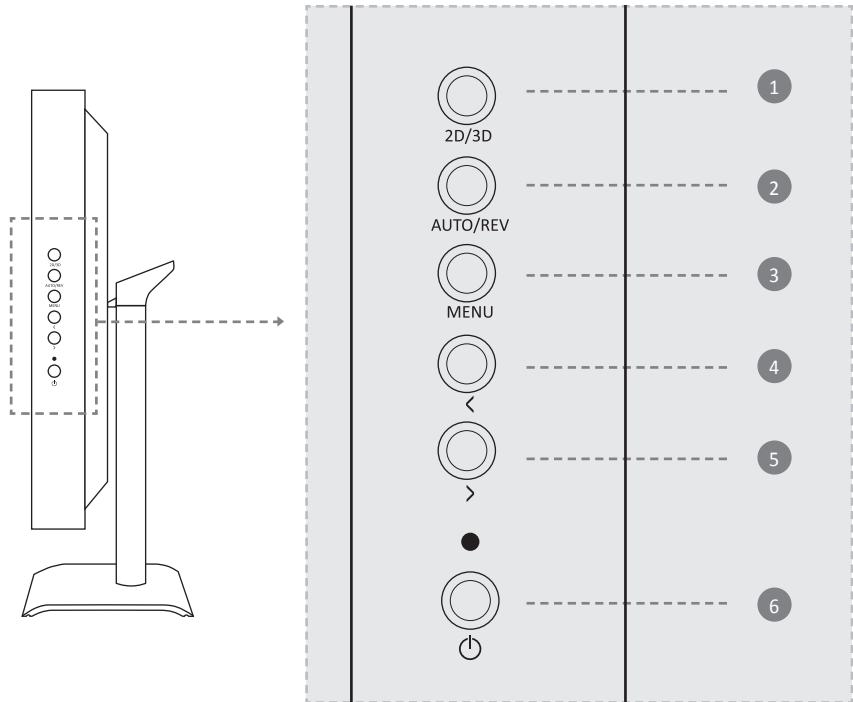
※ The input terminal for the component cable is provided only for M, X and V models.



- 1 DC 24V Power Input Terminal
- 2 Analog RGB Video Signal Input Terminal (DSUB Cable Connection)
- 3 DVI (Digital Video Input) Signal Input Terminal (DVI Cable Connection)
- 4 Component (Y / Cb / Cr) Signal Input (Cable is sold separately.)

③ Side

▶ Detailed Description on Buttons

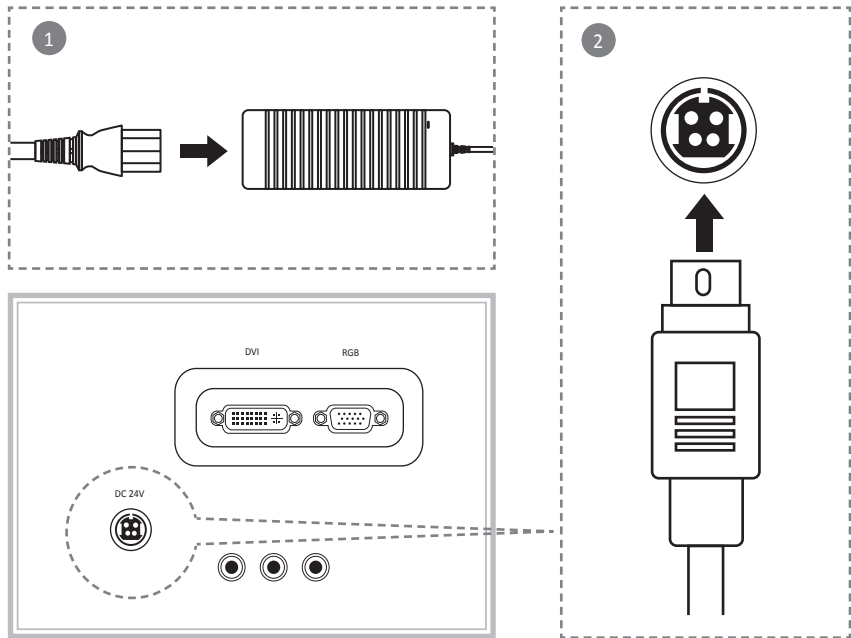


- ① 2D/3D screen conversion / Enter at OSD menu
- ② Auto button on the 2D screen / Reverse button on the 3D screen
- ③ Entering OSD menu or moving to other menus
- ④ Configuration value to decrease at OSD menu (Confirming the current input signal information)
- ⑤ Configuration value to increase at OSD menu (Selecting the input channel)
- ⑥ Turning on/off the power of the monitor

3. Product Connection and Usage

① Power Connection

※ The power code is connected to the 32/46 inch monitor with no adaptor



- 1 Connect the power cord to the DC power device (DC 24V adaptor).
- 2 Connect the plug of the DC power device to the power input terminal at the back of the monitor.



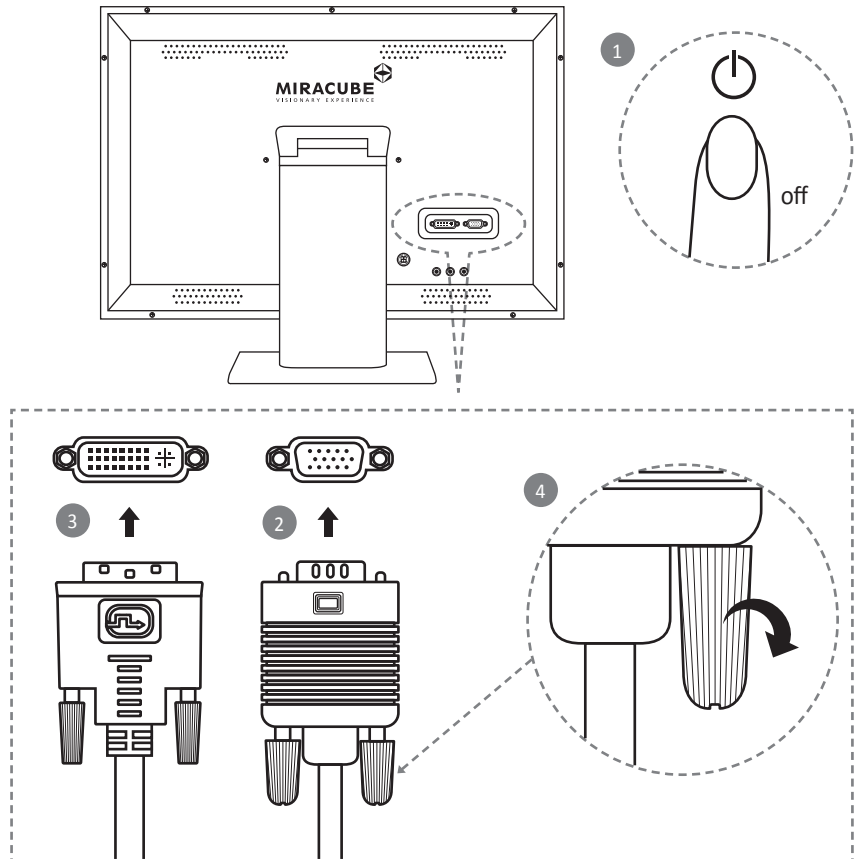
Only use the adaptor provided together with the computer, or compatible adaptors. The use of incompatible adaptors may damage the computer.

② PC and Monitor Connection

■ Monitor Backside

※ If the D-SUB and DVI cables are connected to a single computer at the same time, the screen may fail to display the image with some types of the video cards used.

※ The connecting of the DVI cable is available only for those graphic cards which are able to output the DVI (digital).



- ① First turn off the power of the computer and peripheral devices.
- ② Connection with the analog RGB cable : Connect the RGB input terminal at the bottom of the monitor to the RGB output terminal of the PC graphic card with the 15 pin D-SUB cable.
- ③ Connection with the DVI cable : In order to use the monitor by receiving the signal from the DVI terminal (available only with the graphic cards that support this function), connect the DVI input terminal at the bottom of the monitor to the DVI output terminal of the PC graphic card.
- ④ After the connecting, tighten both the screws at each end of cable to be fixed.

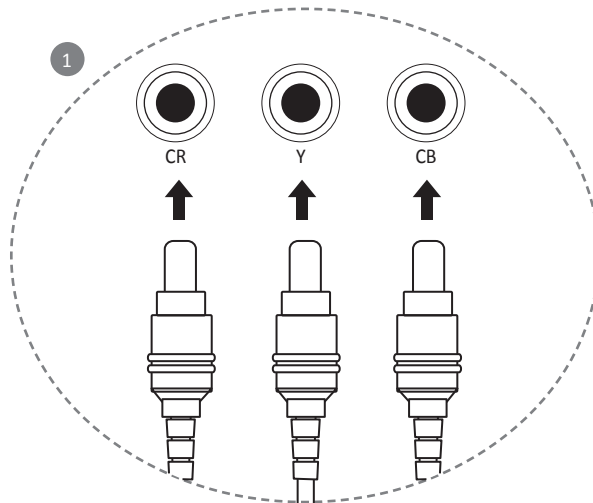
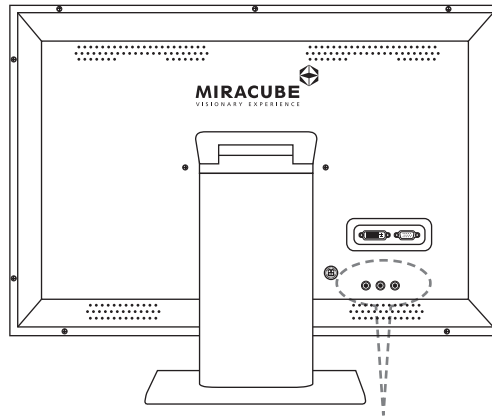
③ Connection with Video Devices



The component (Y, CB, CR) cable should be purchased separately. For purchasing, contact the service center.

■ Monitor Backside

※ Specific models are available to connect with video devices.



1

Connect the component cables as is shown above.



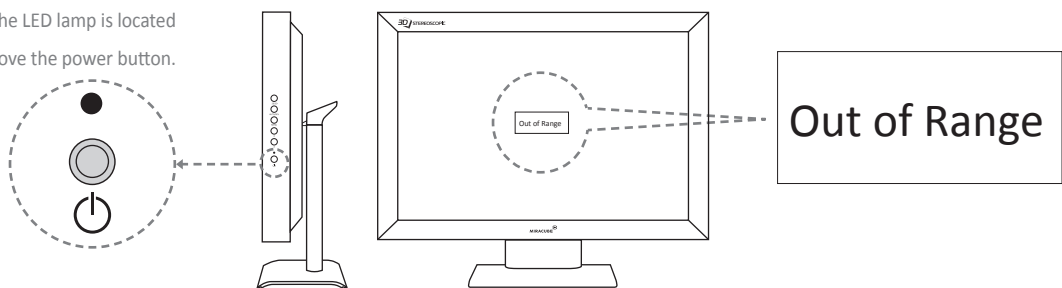
The cables should not be connected to the D-SUB port and the component port at the same time. (As the same port is used physically, interference occurs between the signals and makes the image display improper.)

④ Connection Status Checkup

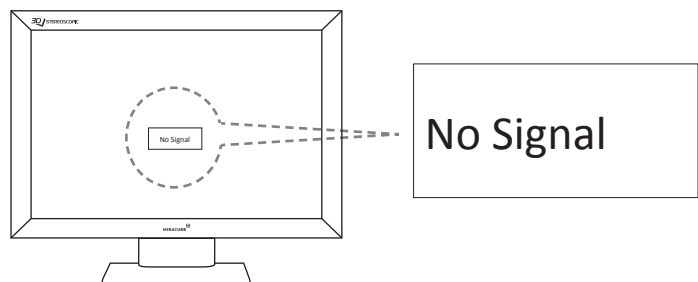
- Turn on the monitor by pressing the Power On button of the monitor.
- See whether the screen works after the PC is turned on.
- If the monitor works well, the LED indication will turn green (2D mode), or yellow (3D mode).
- If the LED indicates green or yellow and the screen does not display any image yet, check if the screen configuration is set between 640x480 - 1280x1024 and the frequency between 60Hz-75Hz.

If an inappropriate video signal is detected, a message appears on the screen, "Out of Range".

※ The LED lamp is located right above the power button.



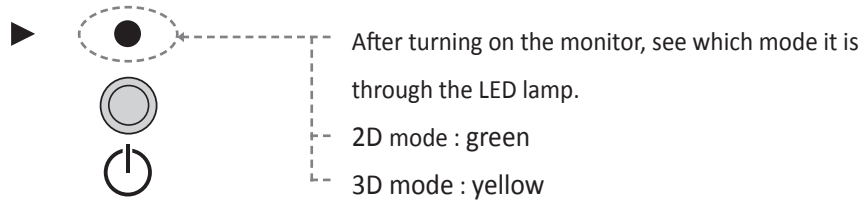
- If the LED lamp frequently blinks in red, and a "No Signal (as shown below)" appears on the screen, check out the connection status of the 15 pin D-SUB cable (or DVI cable).



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Mode	

1. 2D Mode and 3D Modes



※ If the screen does not work normally, or the LED lamp indicates yellow, the monitor is then operated by the 3D mode.

▶ In the 2D mode, a wide selection of HOT keys (Auto Adjustment, Channel, etc.) are available. What is more, almost every function for the monitor can be found and configured at the OSD menu.

▶ Press the OSD “ **2D/3D** ” button located in front of the monitor to convert from 3D to 2D mode, or the other way around.

▶ For viewing the 3D images on this monitor, videos are required to be produced in a 3D format.



Universally, the 2D videos cannot be run by the 3D formats.

▶ For inquiry related to 3D videos, refer to “5-1. Inquiry & A/S Request” in this user manual.

▶ In 3D formats there are four types divided by the production method (Frame Sequential, Sidefields, Subfields, Interlace Stereo), and the way to view each type varies and is configured by a selection button.

※ For more details, see the “3-3. 3D Screen Adjustment”.

2. 2D Mode Screen Adjustment

First check the color of the LED lamp which should be green. If it is yellow, it means the monitor is in 3D mode, and pressing the “2D/3D” button will switch it back to 2D.



This manual is based on the resolution 1280x1024. See the 2D Resolution of Product Specifications for the optimum environment (page 37 and 38).

① Change in Video Input Channel (Hot Key)

- In the 2D mode, press the “>” button to link automatically to the Analog, DVI, or Component. The monitor remains at its original status if there is no input.

※ Video supporting function is only available for the models of M, X and V-series

② Screen Auto Adjustment (Hot Key)

- Press the “AUTO/REV” button in the 2D mode and the monitor will be configured automatically to the optimum environment for watching videos. A message will show up on the screen to show the Screen Auto Adjustment is completed.

※ Repeat the above process if the image is not display properly even after going through the Screen Auto Adjustment.

③ Fine Adjustment (Menu Typed)

- Press the “MENU” button in the 2D mode and the OSD (On Screen Display) Menu will pop up on the screen.

All configuration values and the user environment of monitor can be set and altered in this menu.

- In the OSD menu, the “MENU” button is used to move towards the OSD Title Menu Tap.

The “AUTO/REV” buttons are used for selecting the detailed menu within the chosen Tab.

The “<” and “>” buttons for increasing and decreasing the configuration value.

“2D/3D” button is for the Enter and the Escape OSD functions.

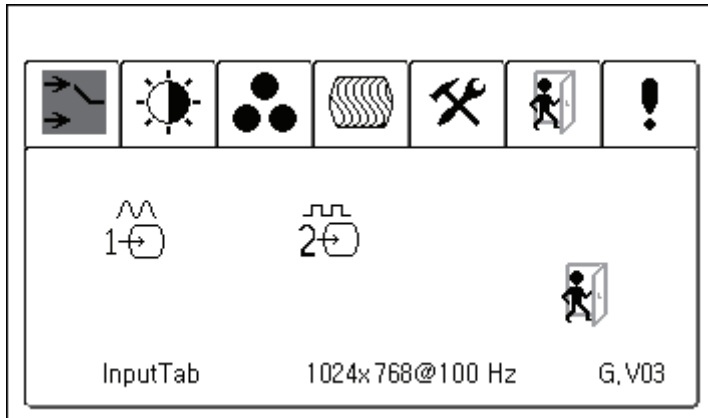
※ The above four buttons cover all the functions of the OSD menu.



Select Input Port



DO NOT connect to the product the RGB cable and component cable at the same time. Signal collision may arise.



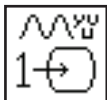
Select Analog RGB Port :

Press “MENU” → Press “MENU” once more → Select “Analog RGB” by pressing “< >” buttons → Press “MENU” again → Select “RGB” → Press “MENU” to complete



Select Digital RGB Port :

Press “MENU” → Press “MENU” once more → Select “DVI” by pressing “< >” buttons → Press “MENU” again → Select “DVI” → Press “MENU” to complete

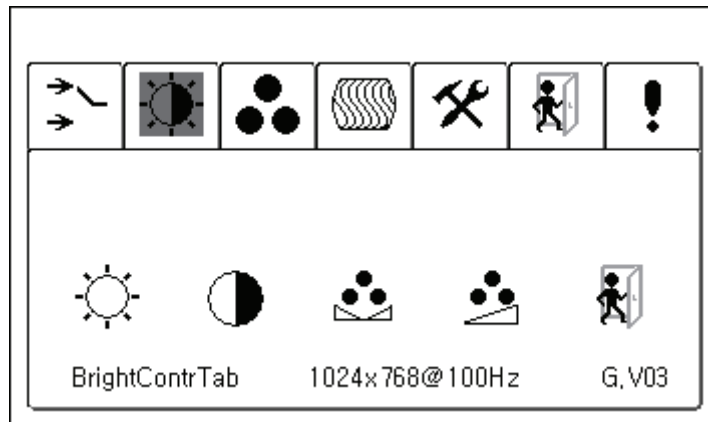


Select Component Video Port:

Press “MENU” → Press “MENU” once more → Select “Analog RGB” by pressing “< >” buttons → Press “MENU” again → Select “YUVin RGB” → Press “MENU” to complete



Brightness, Contrast, Hue and Saturation



Adjust Brightness :

Press “**MENU**” → Move to “**Bright Control**” by pressing “**<**” and “**>**” buttons → Press “**MENU**” → Move to “**Brightness**” by pressing “**<**” and “**>**” buttons → Adjust the brightness with “**<**” and “**>**” buttons → Press “**MENU**” to complete



Adjust Contrast :

Press “**MENU**” → Move to “**Bright Control**” by pressing “**<**” and “**>**” buttons → Press “**MENU**” → Move to “**Contrast**” by pressing “**<**” and “**>**” buttons → Adjust the contrast with “**<**” and “**>**” buttons → Press “**MENU**” to complete



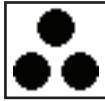
Adjust Hue :

Press “**MENU**” → Move to “**Bright Control**” by pressing “**<**” and “**>**” buttons → Press “**MENU**” → Move to “**Hue**” by pressing “**<**” and “**>**” buttons → Adjust the hue with “**<**” and “**>**” buttons → Press “**MENU**” to complete

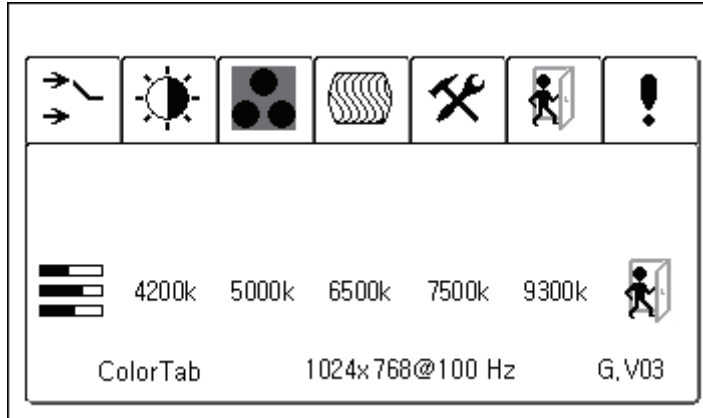


Adjust Saturation :

Press “**MENU**” → Move to “**Bright Control**” by pressing “**<**” and “**>**” buttons → Press “**MENU**” → Move to “**Saturation**” by pressing “**<**” and “**>**” buttons → Adjust the saturation with “**<**” and “**>**” buttons → Press “**MENU**” to complete



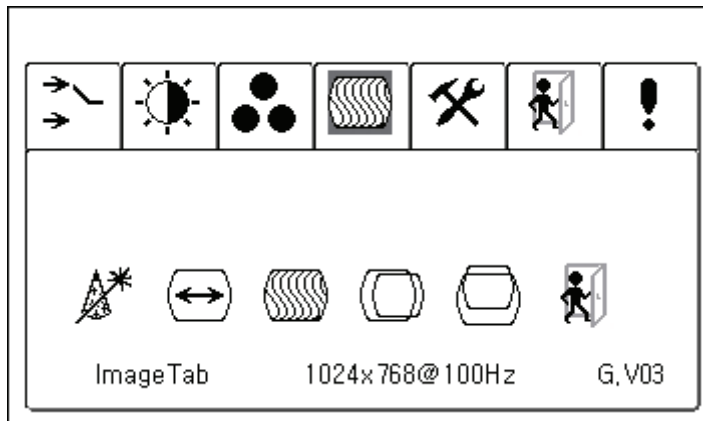
Adjust Color :



- Adjust the colors (Red, Green and Blue) of the monitor's image at the menu of Manual Adjustment, Automatic Adjustment, Color Temperature Selection, Standard Selection (SRGB), etc.



Adjust Image :



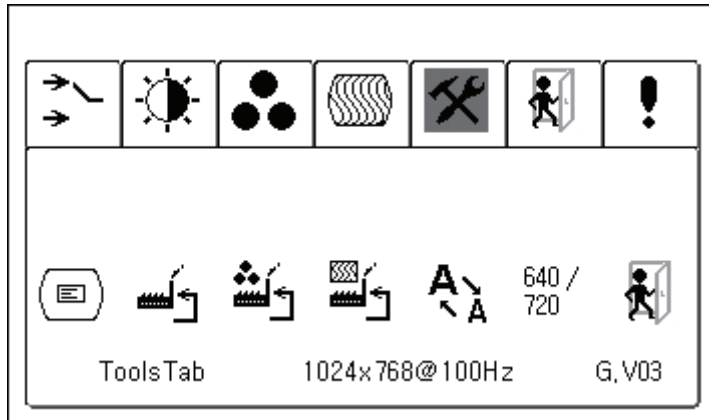
- For the optimal display of images on the monitor panel, adjust at the menu of Screen Size Adjustment, Screen Coordinates Adjustment, Phase Adjustment, Auto Adjustment, etc.



This menu cannot be selected in the DVI Input Mode.



Configure Environment :



- Return to the initial configuration value, and change in the input values (RGB, DVI) are available in this menu. If the screen does not work properly due to unskilled configuration, the monitor can easily return to normal with the “Factory Reset”. Changing the input value from RGB to DVI or the other way around will automatically run by selecting the Change Input Menu. With no input value, the status remains at its original condition.



Tips



Close

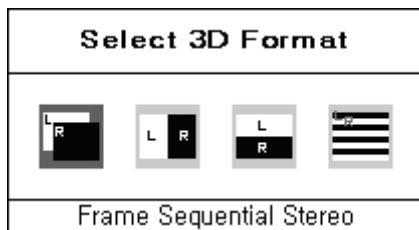
3. 3D Mode Screen Adjustment

① Conversion to 3D mode

- ▶ In the 2D mode, press “**2D/3D**” button and the OSD menu, as is shown below, will indicate that the conversion to 3D mode is progressing, and disappear after a while. This screen lasts for three seconds and disappears if there is not any button inputting. Then the monitor enters the 3D mode automatically.

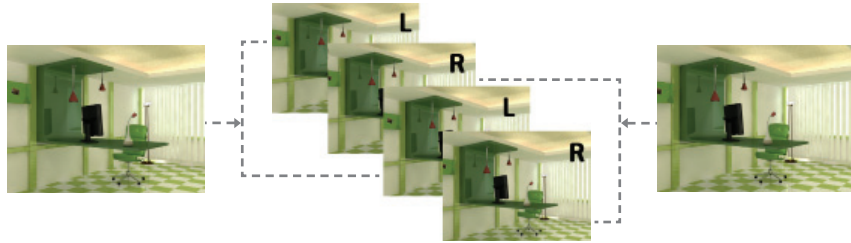
② 3D Format Configuration

- On pressing the “**MENU**” button in the 3D mode, the screen temporarily changes to the 2D mode in order to display the OSD menu, and then moves to the 3D Menu Tab within the OSD menu. At this phase, the desired 3D format can be selected by using the “**<**” and “**>**” buttons. Press the “**2D/3D**” button and the screen will change into the selected 3D format and the OSD menu will disappear.
- This is the menu that pops up when you start 3D mode. You can select the following types of 3D formats being inputted to the monitor.



- ▶ **Types of 3D Formats**
 - The 3D techniques have developed into a variety of types from the production and outputting methods of 3D images. Thus there exist diverse kinds of 3D formats. In consideration of the strength and weakness, a multitude of them, which are applied to the monitors of CRT and LCD, have been narrowed down to four main types. Below are the four types of 3D formats and their descriptions.

■ Frame sequential format :



※ the frame rate is reduced to one half, the images may look like they are flickering.

As an image format which displays sequentially the images of left eye and right eye (hereinafter L and R images) over the whole monitor (1280x1024 resolution), mainly the output format of graphic card (monitor input) for 3D games falls into this category. While there is not any loss of image resolution in this format, the loss of the frame rate may have some viewers experience the flickering of the screen. (The monitor configured at 60Hz, the image may look as if it had been set at 30Hz.)

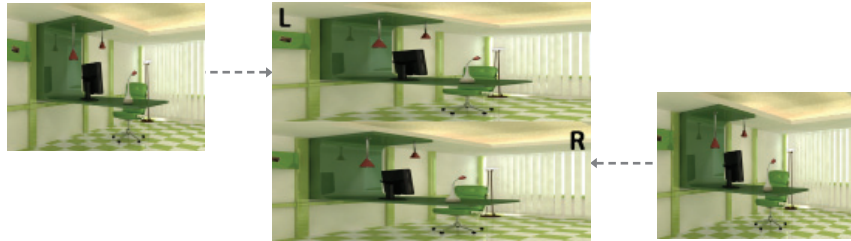
■ Sidefields format :



※ The horizontal resolution is reduced to one half.

This format displays the L and R images over the whole monitor (1280x1024 resolution) with each resolution of them halved (640x512 resolution) and laid from left to right.. There is no screen flickering in this format because the frame rate has the same frequency as is set upon the monitor, which reduces the fatigue of the viewer's eyes. However, the resolution of the left and right images is reduced to one half.

■ Subfields format :



※ The vertical resolution is reduced to one half.

This format displays the L and R images over the whole monitor (1280x1024 resolution) with each resolution of them halved (1280x512 resolution) and laid from top to bottom. The 3D formats, which were applied to the previous shutter-glass typed CRT 3D monitors, fall into this category. Similar to the Sidefields Format, there is no screen flickering, or reduction in the fatigue of the viewer's eyes, and the vertical resolution is reduced to one half.

■ Interlace stereo format :



※ The vertical resolution is reduced to one half.

From top to bottom, the L and R images are displayed alternately in horizontal lines, filling in the whole monitor (1280x1024 resolution). As such, the sequence of output is as follows; an L image line → an R image line → an L image line → an R image line, and more. There is no screen flickering as the frame rate has the same frequency as is set upon the monitor, and it reduces the fatigue of the viewer's eyes. However, the vertical resolution drops to one half (1280x512 resolution).

③ Left - Right Image Converter

- ▶ The reason why we are able to distinguish how far an object is located from us is because we have two eyes. In other words, both the left and right eyes sense the same object, but each looks at it in a different angle. Therefore, the cerebrum recognizes the differences to detect the distance and three-dimensional effect, and the left and right retinas hold different images.

You can only see stereo 3D correctly on a stereo 3D monitor.

In addition, there is no such standard which regulates the priority, so the 3D format varies with individual production companies and their editing process.



If the image appears improper even though the 3D format input was accurately selected, solve this by pressing the “**AUTO/REV**” button on the OSD menu to reverse the right and left images. In the 3D mode, this “**AUTO/REV**” button takes Reverse Function.

④ Subfield Mode: Solution to adjustment of the case where left / right images cross in the vertical line

- ▶ The Subfields Format is divided into two types: one with gaps between images from top to bottom and the other with no gap. For this reason, some of the formatted images are distorted vertically, thereby not lining horizontally. In this case, use the “**<**” and “**>**” buttons on the monitor and adjust the distortion properly prior to the 3D image viewing.



Most of the 3D images are with no gaps, so refrain from adjusting if possible.

4. Others

System Capacity Recommended for 3D Mode

- ▶ CPU: Pentium4 3Ghz or higher (For playing the videos and games)
- ▶ RAM: 1GB SDRAM or higher
- ▶ OS: Windows 98, Windows 2000, Windows XP
- ▶ Graphic Card: NVIDIA Geforce FX 5700 or higher or other graphic cards which support Stereo Driver (For playing the 3D games)
- ▶ On-and off-line 3D games that require DirectX 9 or higher



Some 3D games may not support the Stereo Driver, and therefore are unable to run in the 3D mode.

Troubleshooting

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Checkpoints



Problem: The CRT monitor works. But, the LCD monitor doesn't work.

Answer: Checkpoint: Does the sign "Out of Range" appear on the screen?
 Solution 1: Reboot the PC.
 Solution 2: Change the resolution and the frequency.

Problem: The red LCD lamp is blinking.

Answer: Checkpoint: Does the sign "Bad Cable Connection" appear on the screen?
 Solution: Check out the video input terminal (15 Pin DSUB / DVI cable)

Problem: The LED lamp is green, but the screen is not working.

Answer: Checkpoint: Are the brightness and contrast adjusted well?
 Solution: Adjust the brightness and contrast following the Article 3.2.3.


Problem: The image's location or color is odd. What's wrong?

Answer: Checkpoint 1: Is the video card configuration right?
 Checkpoint 2: Is the monitor signal cable connected well?
 Solution 1: Check out the video card driver configuration and other settings such as the PC's resolution and color bits.
 Solution 2: Check out the cable connection.



Problem: After replacing the video card, the screen has only 16 colors.

Answer: Checkpoint: Is the color configuration of the Windows set well?
 Solution: Reset the graphic card following the user manual for graphic card.

Problem: The letters and shapes are blurred. There is horizontal noise.

Answer: Checkpoint: Are the resolution and frequency configurations set right?
Solution: Press the “” button.

Problem: The monitor is out of focus in the 3D Subfield Mode?


Answer: There can be some gaps between the 3D contents produced in the Subfields Format. These gaps can cause the monitor to go out of focus. Adjust it by using the “” and “” buttons.

The contents of the Subfields Format look best when the duplicated images become horizontal.



If the 3D mode shows duplicated images, or the 3D effect is not felt, check out if the 3D format is right, follow the Article 3.3.2., and have the configuration fixed to the incoming source format for 3D image. If the problem is continuous, however, it means the 3D source is improper, or its format is not supported by this product.

Problem: For many other problems that may arise

Answer: If the “” button (2D mode only) does not solve the problem, run through the OSD menu -> Configuration -> “Factory Reset”, to go back to the initial values. Contact our service center for A/S if the problem continues.



Some pixel dots can be seen on the screen such as red, green, blue, white, or black. This phenomenon is commonly observed in the course of LCD panel manufacturing process. This is not related to the performance of the monitor and the malfunctioning. This does not warrant for exchange of products.

This product has the optimal image condition in the SXGA (1280x1024) / 60Hz mode. (The above resolution is for the 17-inch monitor. See the page 37 and 38 for other monitors of different sizes. Usage in other modes than the above may result in the blurred, uneven shapes of letters,

Service Information

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Inquiry & A/S Request

If this manual does not provide the information you wanted, or any other help is needed about this product, contact Pavonine Korea Inc for technical support.

URL : www.miracube.net

Manufacturer : Pavonine Korea Inc (82-32-851-6060)



Collect the information from the internet

From the internet, download the manual on Miracube's website.

www.miracube.net/support/

The above website provides a variety of drivers and contents, too.

Product Specifications

	G460X	G320S	G240M
Screen Size	46" (116.84cm)	31.51" (80.04cm)	24" (60.96cm)
Panel Type	TFT color LCD	TFT color LCD	TFT color LCD
3D Type	Glasses	Glasses	Glasses
Resolution	2D : 1920 X 1080 3D : 1920 X 540	2D : 1360 X 768 (PC) 3D : 1360 X 384 (PC)	2D : 1920 X 1200 3D : 1920 X 600
Viewing Angle	2D : 178°(Left / Right) 178°(Up / Down) 3D : 19°(Center, VD : 300cm)	2D : 178°(Left / Right) 178°(Up / Down) 3D : 19°(Center, VD : 300cm)	2D : 178°(Left / Right) 178°(Up / Down) 3D : 6°(Center, VD : 100cm)
Brightness	3D : 250 cd/m ² 2D : 500 cd/m ²	3D : 250 cd/m ² 2D : 500 cd/m ²	3D : 145 cd/m ² 2D : 400 cd/m ²
3D Format	Interlace Stereo Frame Sequence Sub-Field Side-Field	Interlace Stereo Frame Sequence Sub-Field Side-Field	Interlace Stereo Frame Sequence Sub-Field Side-Field
Display Color	16.7 million	16.7 million	16.7 million
Contrast Rate	1,800 : 1	1,000 : 1	500 : 1
Responding Speed	16 ms (On/Off)	8 ms (Gray to Gray)	13 ms (Typ, On/Off)
3D Display Function	2D/3D swich Left/Right Reversion Input Image Format Selec- tion Image Separation Power	2D/3D swichable Left/Right Reversion Input Image Format Selection Image Separation Power	2D/3D swichable Left/Right Reversion Input Image Format Selec- tion Image Separation Power
Input Terminal	VGA, DVI, HD-Component	VGA, DVI	VGA, DVI, HD-Component
Broadcast Signal	PAL, NTSC	PAL, NTSC	PAL, NTSC
Size	With Stand : 1100x710x250 mm Without Stand : 1100x660x100 mm	With Stand : 790x550x170 mm Without Stand : 790x500x80 mm	With Stand : 575x455x170 mm Without Stand : 575x400x50 mm
Weight	43.2 Kg	16.5 Kg	8.5 Kg
Provided Accessories	Polarizer Glasses (Circular Type) Power Cable VGA Cable, DVI Cable, Component calbe User Manual	Polarizer Glasses (Circular Type) Power Cable VGA Cable DVI Cable User Manual	Polarizer Glasses (Circular Type) Power Cable Adaptor VGA Cable DVI Cable Component Cable User Manual
Certification	CE	CE, FCC, RoHS	CE, FCC, RoHS

Product Specifications

	G170S	C190X	C190S
Screen Size	17"(43.2cm)	19"(48.0cm)	19"(48.0cm)
Panel Type	TFT color LCD	TFT color LCD	TFT color LCD
3D Type	Glasses	Non Glasses	Non Glasses
Resolution	2D : 1280 X 1024 3D : 1280 X 512	2D : 1280 X 1024 3D : 640 X 1024	2D : 1280 X 1024 3D : 640 X 1024
Viewing Angle	2D : 75° / 75° (Left / Right) 75° / 60° (Up / Down) 3D : 6° (Center, VD : 60cm)	2D : 70° / 70° (Left / Right) 75° / 60° (Up / Down) 3D : 2.7° (Center, VD : 70cm)	2D : 70° / 70° (Left / Right) 75° / 60° (Up / Down) 3D : 2.7° (Center, VD : 70cm)
Brightness	240cd/m ² (Center, Typ)	250 cd/m ² (Center, Typ)	250 cd/m ² (Center, Typ)
3D Format	Interlace Stereo Frame Sequence Sub-Field Side-Field	Interlace Stereo Frame Sequence Sub-Field Side-Field	Interlace Stereo Frame Sequence Sub-Field Side-Field
Display Color	16.2 million	16.2 million	16.2 million
Contrast Rate	700 : 1	500 : 1	500 : 1
Responding Speed	8 ms (On/Off)	8 ms (Typ, On/Off)	8 ms (Typ, On/Off)
3D Display Function	2D/3D swichable Left/Right Reversion Input Image Format Selection Image Separation Power	2D/3D swichable Left/Right Reversion Input Image Format Selection Image Separation Power	2D/3D swichable Left/Right Reversion Input Image Format Selection Image Separation Power
Input Terminal	VGA, DVI	VGA, DVI	VGA, DVI
Broadcast Signal	PAL, NTSC	PAL, NTSC	PAL, NTSC
Size	With Stand : 380x390x190 mm Without Stand : 380x325x50 mm	With Stand : 425x450x170 mm Without Stand : 425x360x37 mm	With Stand : 445x445x250 mm Without Stand : 445x395x60 mm
Weight	6.3 Kg	8 Kg	8 Kg
Provided Accessories	Polarizer Glasses (Circular Type) VGA Cable DVI Cable Adaptor Power Cable User Manual	VGA Cable DVI Cable Adaptor Power Cable User Manual	VGA Cable DVI Cable Adaptor Power Cable User Manual
Certification	MIC, CE, RoHS	CE, FCC, RoHS	CE, FCC, RoHS

MIRACUBE



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