

APPENDIX H
: USER'S MANUAL


User's Guide



M1717TM
M1917TM

Make sure to read the **Important Precautions** before using the product.
Keep the User's Guide(CD) in an accessible place for future reference.

See the label attached on the product and quote this information to your dealer when you require service.



This unit has been engineered and manufactured to ensure your personal safety, however improper use may result in potential electrical shock or fire hazards. In order to allow the proper operation of all safeguards incorporated in this display, observe the following basic rules for its installation, use, and servicing.

On Safety

Use only the power cord supplied with the unit. In case you use another power cord, make sure that it is certified by the applicable national standards if not being provided by the supplier. If the power cable is faulty in any way, please contact the manufacturer or the nearest authorized repair service provider for a replacement.

The power supply cord is used as the main disconnection device. Ensure that the socket-outlet is easily accessible after installation.

Operate the display only from a power source indicated in the specifications of this manual or listed on the display. If you are not sure what type of power supply you have in your home, consult with your dealer.

Overloaded AC outlets and extension cords are dangerous. So are frayed power cords and broken plugs. They may result in a shock or fire hazard. Call your service technician for replacement.

Do not Open the Display.

- There are no user serviceable components inside.
- There are Dangerous High Voltages inside, even when the power is OFF.
- Contact your dealer if the display is not operating properly.

To Avoid Personal Injury :

- Do not place the display on a sloping shelf unless properly secured.
- Use only a stand recommended by the manufacturer.

To Prevent Fire or Hazards:

- Always turn the display OFF if you leave the room for more than a short period of time. Never leave the display ON when leaving the house.
- Keep children from dropping or pushing objects into the display's cabinet openings. Some internal parts carry hazardous voltages.
- Do not add accessories that have not been designed for this display.
- During a lightning storm or when the display is to be left unattended for an extended period of time, unplug it from the wall outlet.

On Installation

Do not allow anything to rest upon or roll over the power cord, and do not place the display where the power cord is subject to damage.

Do not use this display near water such as near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.

Displays are provided with ventilation openings in the cabinet to allow the release of heat generated during operation. If these openings are blocked, built-up heat can cause failures which may result in a fire hazard. Therefore, NEVER:

- Block the bottom ventilation slots by placing the display on a bed, sofa, rug, etc.
- Place the display in a built-in enclosure unless proper ventilation is provided.
- Cover the openings with cloth or other material.
- Place the display near or over a radiator or heat source.

Do not rub or strike the Active Matrix LCD with anything hard as this may scratch, mar, or damage the Active Matrix LCD permanently.

Do not press the LCD screen with your finger for a long time as this may cause some afterimages.

Some dot defects may appear as Red, Green or Blue spots on the screen. However, this will have no impact or effect on the display performance.

If possible, use the recommended resolution to obtain the best image quality for your LCD display. If used under any mode except the recommended resolution, some scaled or processed images may appear on the screen. However, this is characteristic of the fixed-resolution LCD panel.

On Cleaning

- Unplug the display before cleaning the face of the display screen.
- Use a slightly damp (not wet) cloth. Do not use an aerosol directly on the display screen because over-spraying may cause electrical shock.

On Repacking

- Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it in its original material.

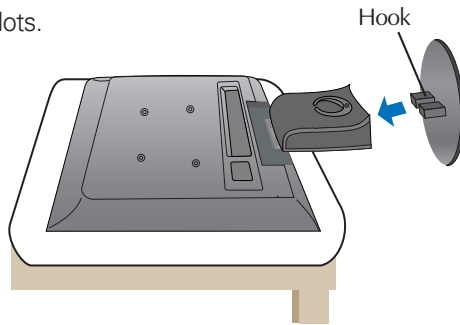
On Disposal

- The fluorescent lamp used in this product contains a small amount of mercury.
- Do not dispose of this product with general household waste.
Disposal of this product must be carried out in accordance to the regulations of your local authority.

- Before setting up the monitor, ensure that the power to the monitor, the computer system, and other attached devices is turned off.

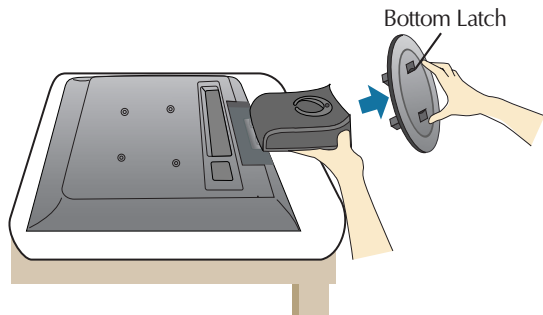
Connecting the stand base

1. Place the monitor with its front facing downward on a cushion or soft cloth.
2. Align the hooks on the stand base with the matching slots in the base of the monitor.
3. Insert the hooks into slots.



Removing the stand base

1. Place the monitor with its front facing downward on a cushion or soft cloth.
2. To remove the stand base, hold the bottom of the stand with one hand and pull the base bottom latch with the other hand, as shown in the figure.



Important

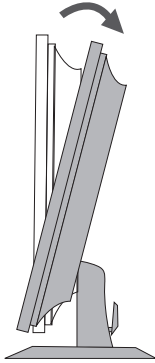
- This illustration depicts the general model of connection. Your monitor may differ from the items shown in the picture.
- Once you connect the stand base, try not to disconnect it.
- Do not carry the product upside down holding only the stand base. The product may fall and get damaged or injure your foot.

- Before setting up the monitor, ensure that the power to the monitor, the computer system, and other attached devices is turned off.

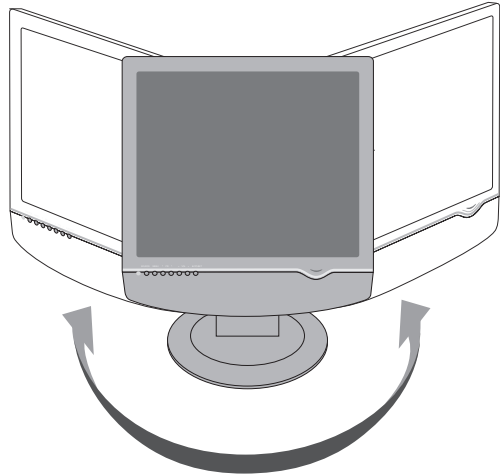
Positioning your display

1. Adjust the position of the panel in various ways for maximum comfort.

■ Tilt Range : $-3^{\circ} \sim 25^{\circ}$



■ Swivel : 345°

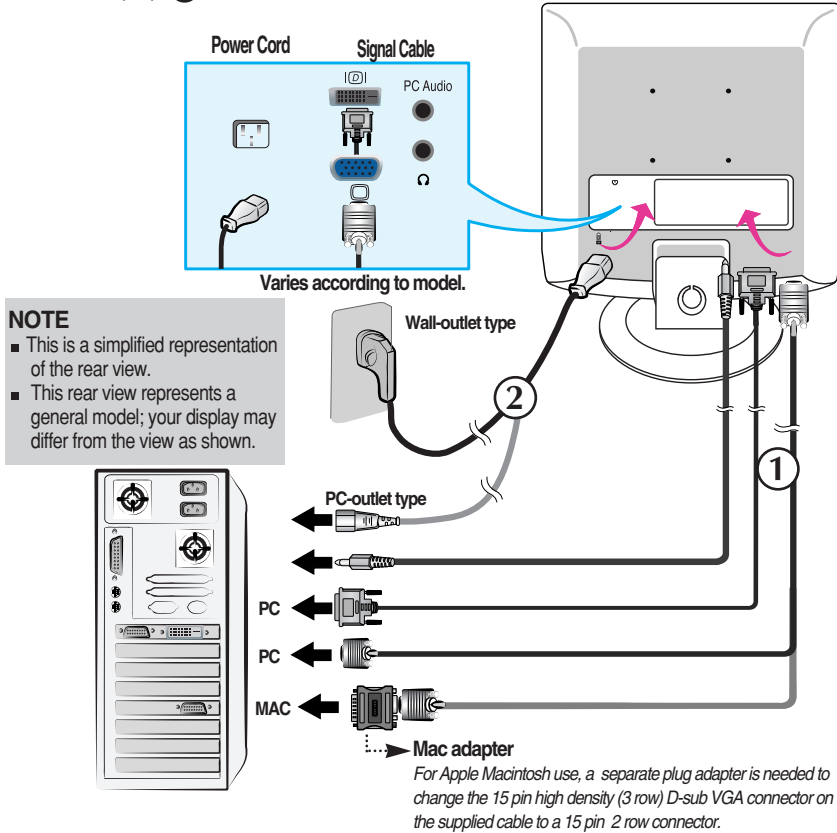



Ergonomic

It is recommended that in order to maintain an ergonomic and comfortable viewing position, the forward tilt angle of the monitor should not exceed 5 degrees.

Using the Computer

1. Place the monitor in a convenient, well-ventilated location near your computer. To adjust height of your monitor, unlock the stand lock on top of the stand.
2. Connect the signal cable. When attached, tighten the thumbscrews to secure the connection. ①
3. Connect the power cord into a proper power outlet that is easily accessible and close to the display. ②



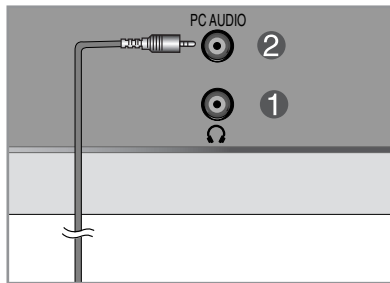
4. Press  button on the front switch panel to turn the power on. When monitor power is turned on, the **'Self Image Setting Function'** is executed automatically. (Only Analog Mode)



NOTE

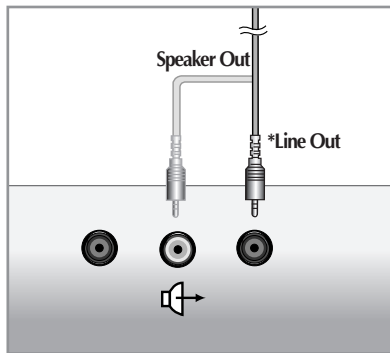
'Self Image Setting Function'? This function provides the user with optimal display settings. When the user connects the monitor for the first time, this function automatically adjusts the display to optimal settings for individual input signals. If you want to adjust the monitor while in use, or wish to manually run this function once again, push the 'AUTO/SET' button on the front panel of the monitor. Otherwise, you may execute the 'Factory reset' option on the OSD adjustment menu. However, be aware that this option initializes all the menu items except 'Language'.

Bottom



<Display - Back>

- 1 Headphone/Earphone Input**
Automatically mutes the speaker volume when the headphones are plugged in.
- 2 Audio Input**
Connects to the *LINE OUT jack of the PC sound card.



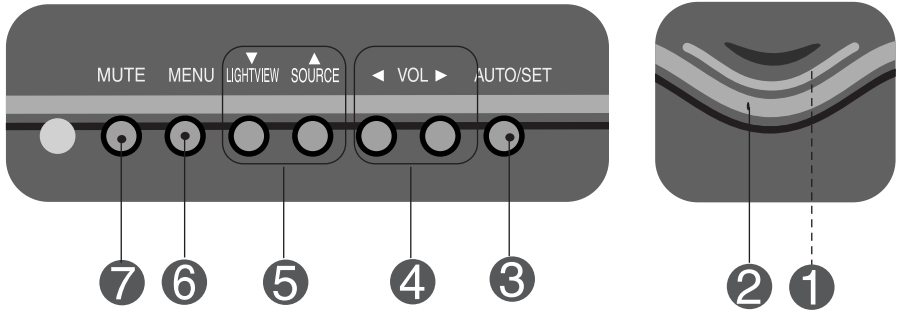
<Jack of the PC sound card>

*LINE OUT

A terminal used to connect to the speaker including a built-in amplifier (Amp). Make sure that the connecting terminal of the PC sound card is checked before connecting. If the Audio Out of PC sound card has only Speaker Out, reduce the PC volume.

If the Audio Out of the PC sound card supports both Speaker Out and Line Out, convert to Line Out using the card jumper of the program (Refer to the Sound Card Manual).


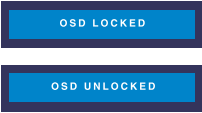
Front Panel Controls



Control	Function
1 Power Button	Use this button to turn the display on or off.
2 Power Indicator	This Indicator lights up green when the display operates normally(On Mode). If the display is in Sleep Mode (Energy Saving), this indicator color changes to amber.
3 AUTO/SET Button	Use this button to enter a selection in the On Screen Display. AUTO IMAGE ADJUSTMENT When adjusting your display settings, always press the AUTO/SET button before entering the On Screen Display(OSD). This will automatically adjust your display image to the ideal settings for the current screen resolution size (display mode). The best display mode is 17 inch monitor : 1280x1024 19 inch monitor : 1280x1024



Front Panel Controls

Control	Function
<p>4 ◀▶ VOL Buttons</p>	<p>Use these buttons to decrease or increase the volume level.</p>
<p>5 ▼▲ Buttons</p> <div data-bbox="188 619 385 730"></div> <p>SOURCE hot key</p>	<p>Use these buttons to select or adjust functions in the On Screen Display.</p> <p>Lightview hot key DAY This feature lets you easily select the best desired image condition optimized to the environment NIGHT image condition optimized to the environment (ambient illumination, image types etc).</p> <ul style="list-style-type: none">• DAY : Bright ambient illumination• NIGHT : Dark ambient illumination• TEXT : For text images (Word processing etc.)• MOVIE : For animation images in videos or movies• PHOTO : For pictures or drawings• NORMAL : This is under normal operating conditions <p>Use this button to make D-Sub or DVI connector active. This feature is used when two computers are connected to the display. The default setting is D-Sub.</p>
<p>6 MENU Button</p> <div data-bbox="219 1142 421 1254"></div>	<p>Use this button to enter or exit the On Screen Display.</p> <p>OSD LOCKED/UNLOCKED</p> <p>This function allows you to lock the current control settings, so that they cannot be inadvertently changed. Press and hold the MENU button for several seconds. The message "OSD LOCKED" should appear.</p> <p>You can unlock the OSD controls at any time by pushing the MENU button for several seconds. The message "OSD UNLOCKED" should appear.</p>
<p>7 MUTE Button</p>	<p>Used to select mute on (means sound off) and mute off (means sound on).</p>

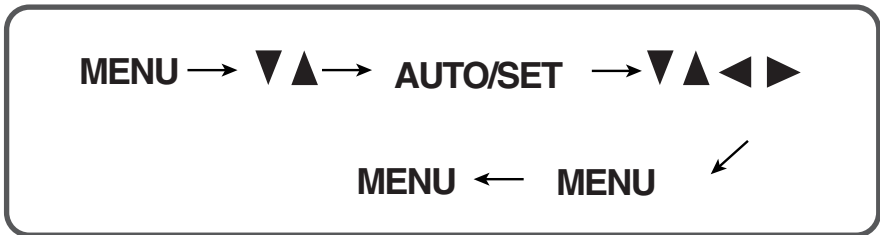
Screen Adjustment

Making adjustments to the image size, position and operating parameters of the display is quick and easy with the On Screen Display Control system. A short example is given below to familiarize you with the use of the controls. The following section is an outline of the available adjustments and selections you can make using the OSD.

NOTE

- Allow the display to stabilize for at least 30 minutes before making image adjustments.

To make adjustments in the On Screen Display, follow these steps:



- 1 Press the **MENU** Button, then the main menu of the OSD appears.
- 2 To access a control, use the ▼ or ▲ Buttons. When the icon you want becomes highlighted, press the **AUTO/SET** Button.
- 3 Use the ▼ ▲ ◀ ▶ Buttons to adjust the item to the desired level.
- 4 Accept the changes by pressing the **MENU** Button.
- 5 Exit the OSD by pressing the **MENU** Button.

On Screen Display(OSD) Selection and Adjustment

The following table indicates all the On Screen Display control, adjustment, and setting menus.

Main menu	Sub-menu			Reference
PICTURE	BRIGHTNESS		●	To adjust the brightness, contrast and gamma of the screen
	CONTRAST		●	
	GAMMA		●	
COLOR	PRESET	6500K	●	To customize the color of the screen
		9300K	●	
	RED		●	
	GREEN		●	
	BLUE		●	
POSITION	HORIZONTAL		●	To adjust the position of the screen
	VERTICAL		●	
TRACKING	CLOCK		●	To improve the clarity and stability of the screen
	PHASE		●	
SETUP	LANGUAGE		●	To customize the screen status for a user's operating environment
	OSD POSITION	HORIZONTAL	●	
		VERTICAL	●	
	WHITE BALANCE		●	
	POWER INDICATOR		●	
	FACTORY RESET		●	
AUDIO	VOLUME		●	To adjust the audio function.
● : Adjustable				

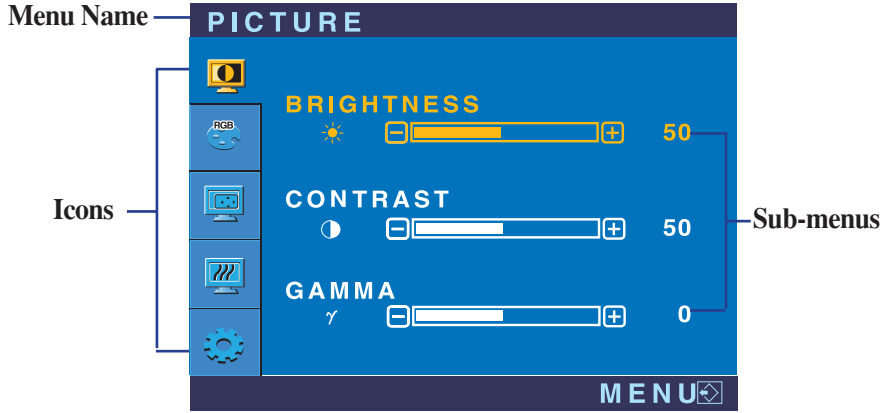
NOTE

- The order of icons may differ depending on the model (A10~A13).

On Screen Display(OSD) Selection and Adjustment


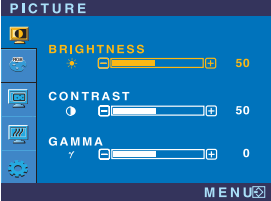

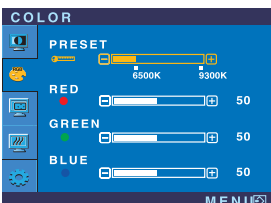

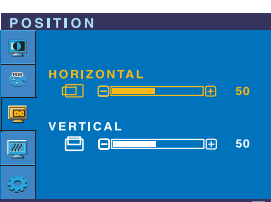

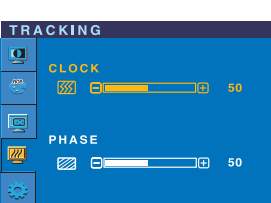
You were introduced to the procedure of selecting and adjusting an item using the OSD system. Listed below are the icons, icon names, and icon descriptions of the all items shown on the Menu.

Press the MENU Button, then the main menu of the OSD appears.


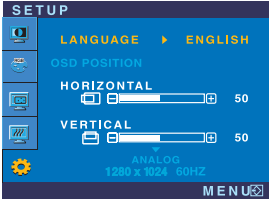
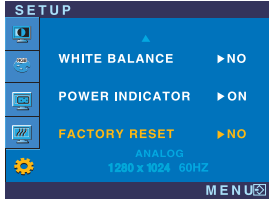


NOTE
■ OSD (On Screen Display) menu languages on the monitor may differ from the manual.

On Screen Display(OSD) Selection and Adjustment

Main menu	Sub menu	Description
	PICTURE	
	BRIGHTNESS	To adjust the brightness of the screen.
	CONTRAST	To adjust the contrast of the screen.
	GAMMA	Set your own gamma value. : -50/0/50 On the monitor, high gamma values display whitish images and low gamma values display high contrast images.
	COLOR	
	PRESET	Select the screen color. <ul style="list-style-type: none">• 6500K: Slightly reddish white.• 9300K: Slightly bluish white.
	RED	Set your own red color levels.
	GREEN	Set your own green color levels.
	BLUE	Set your own blue color levels.
	POSITION	
	HORIZONTAL	To move image left and right.
	VERTICAL	To move image up and down.
	TRACKING	
	CLOCK	To minimize any vertical bars or stripes visible on the screen background. The horizontal screen size will also change.
	PHASE	To adjust the focus of the display. This item allows you to remove any horizontal noise and clear or sharpen the image of characters.

On Screen Display(OSD) Selection and Adjustment

Main menu	Sub menu	Description
 SETUP		
	LANGUAGE	To choose the language in which the control names are displayed.
	OSD POSITION	To adjust position of the OSD window on the screen.
	WHITE BALANCE	If the output of the video card is different the required specifications, the color level may deteriorate due to video signal distortion. Using this function, the signal level is adjusted to fit into the standard output level of the video card in order to provide the optimal image. Activate this function when white and black colors are present in the screen.
	POWER INDICATOR	Use this function to set the power indicator on the front side of the monitor to ON or OFF . If you set OFF , it will go off. If you set ON at any time, the power indicator will automatically be turned on.
	FACTORY RESET	Restore all factory default settings except " LANGUAGE ." Press the ▶ button to reset immediately.

If this does not improve the screen image, restore the factory default settings.
If necessary, perform the white balance function again. This function will be enabled only when the input signal is an analog signal.

Check the following before calling for service.

No image appears	
<ul style="list-style-type: none">● Is the power cord of the display connected?	<ul style="list-style-type: none">• Check and see if the power cord is connected properly to the power outlet.
<ul style="list-style-type: none">● Is the power indicator light on?	<ul style="list-style-type: none">• Touch the Power button.
<ul style="list-style-type: none">● Is the power on and the power indicator blue or green?	<ul style="list-style-type: none">• Adjust the brightness and the contrast.
<ul style="list-style-type: none">● Is the power indicator amber?	<ul style="list-style-type: none">• If the display is in power saving mode, try moving the mouse or pressing any key on the keyboard to bring up the screen.• Try to turn on the PC.
<ul style="list-style-type: none">● Do you see an "OUT OF RANGE" message on the screen?	<ul style="list-style-type: none">• This message appears when the signal from the PC (video card) is out of horizontal or vertical frequency range of the display. See the 'Specifications' section of this manual and configure your display again.
<ul style="list-style-type: none">● Do you see a "CHECK SIGNAL CABLE" message on the screen?	<ul style="list-style-type: none">• This message appears when the signal cable between your PC and your display is not connected. Check the signal cable and try again.

Do you see a "OSD LOCKED" message on the screen?	
<ul style="list-style-type: none">● Do you see "OSD LOCKED" when you push MENU button?	<ul style="list-style-type: none">• You can secure the current control settings, so that they cannot be inadvertently changed. You can unlock the OSD controls at any time by pushing the MENU button for several seconds: the message "OSD UNLOCKED" will appear.

Display image is incorrect

● Display Position is incorrect.

- Press the **AUTO/SET** button to automatically adjust your display image to the ideal setting.
If the results are unsatisfactory, adjust the image position using the **H position and V position** icon in the on screen display.
- Check **Control Panel → Display → Settings** and see if the frequency or the resolution were changed. If yes, readjust the video card to the recommend resolution.

● On the screen background, vertical bars or stripes are visible.

- Press the **AUTO/SET** button to automatically adjust your display image to the ideal setting.
If the results are unsatisfactory, decrease the vertical bars or stripes using the **CLOCK** icon in the on screen display.

● Any horizontal noise appearing in any image or characters are not clearly portrayed.

- Press the **AUTO/SET** button to automatically adjust your display image to the ideal setting.
If the results are unsatisfactory, decrease the horizontal bars using the **PHASE** icon in the on screen display.
- Check **Control Panel → Display → Settings** and adjust the display to the recommended resolution or adjust the display image to the ideal setting. Set the color setting higher than 24 bits (true color).

● The screen color is mono or abnormal.

- Check if the signal cable is properly connected and use a screwdriver to fasten if necessary.
- Make sure the video card is properly inserted in the slot.
- Set the color setting higher than 24 bits (true color) at **Control Panel - Settings**.

● The screen blinks.

- Check if the screen is set to interlace mode and if yes, change it to the recommend resolution.
- Make sure the power voltage is high enough, it has to be higher than **AC100-240V 50/60Hz**.

Have you installed the display driver?

- | | |
|--|---|
| <ul style="list-style-type: none">● Have you installed the display driver? | <ul style="list-style-type: none">• Be sure to install the display driver from the display driver CD (or diskette) that comes with your display. Or, you can also download the driver from our web site: http://www.lge.com. |
| <ul style="list-style-type: none">● Do you see an "Unrecognized monitor, Plug&Play (VESA DDC) monitor found" message? | <ul style="list-style-type: none">• Make sure to check if the video card supports Plug&Play function. |

Audio function

- | | |
|--|--|
| <ul style="list-style-type: none">● No sound. | <ul style="list-style-type: none">• Check if the audio cable is correctly connected.• Check the volume level. |
| <ul style="list-style-type: none">● Sound level is too low. | <ul style="list-style-type: none">• Check the volume level. |

Display	17 inches (43.2cm) Flat Panel Active matrix-TFT LCD Anti-Glare coating 17 inches viewable 0.264 mm pixel pitch	
Sync Input	Horizontal Freq.	Analog : 30 - 83kHz (Automatic) Digital : 30 - 71kHz (Automatic)
	Vertical Freq.	56 - 75Hz (Automatic)
	Input Form	Separate TTL, SOG (Sync On Green) Digital
Video Input	Signal Input	15 pin D-Sub Connector DVI - D connector (Digital)
	Input Form	RGB Analog (0.7Vp-p/75ohm), Digital
Resolution	Max	Analog: VESA 1280 x 1024@75Hz Digital: VESA 1280 x 1024@60Hz
	Recommend	VESA 1280 x 1024@60Hz
Plug&Play	DDC 2B	
Audio	RMS Audio Output	1W+1W(R+L)
	Input Sensitivity	0.7Vrms
	Speaker Impedance	16Ω
Power Consumption	On Mode	: 37W
	Sleep Mode	≤ 1W
	Off Mode	≤ 1W
Dimensions & Weight (with tilt stand)	Width	38.95 cm / 15.33 inches
	Height	43.79 cm / 17.24 inches
	Depth	23.20 cm / 9.13 inches
	Net	5.28 kg (11.64 lbs)
Tilt Range	Tilt	-3°~25°
	Swivel	345°
Power Input	AC 100-240V~ 50/60Hz 1.0A	
Environmental Conditions	Operating Conditions	
	Temperature	10°C to 35 °C
	Humidity	10 % to 80 % non-Condensing
	Storage Conditions	
Temperature	-20°C to 60 °C	
Humidity	5 % to 95 % non-Condensing	
Tilt Stand	Attached(O), Detached ()	
Signal cable	Attached(), Detached (O)	
Power cord	Wall-outlet type or PC-outlet type	

NOTE

- Information in this document is subject to change without notice.

Display	19 inches (48.18cm) Flat Panel Active matrix-TFT LCD Anti-Glare coating 19 inches viewable 0.294 mm pixel pitch	
Sync Input	Horizontal Freq.	Analog : 30 - 83kHz (Automatic) Digital : 30 - 71kHz (Automatic)
	Vertical Freq.	56 - 75Hz (Automatic)
	Input Form	Separate TTL, SOG (Sync On Green) Digital
Video Input	Signal Input	15 pin D-Sub Connector DVI - D connector (Digital)
	Input Form	RGB Analog (0.7Vp-p/75ohm), Digital
Resolution	Max	Analog: VESA 1280 x 1024@75Hz Digital: VESA 1280 x 1024@60Hz
	Recommend	VESA 1280 x 1024@60Hz
Plug&Play	DDC 2B	
Audio	RMS Audio Output	1W+1W(R+L)
	Input Sensitivity	0.7Vrms
	Speaker Impedance	16Ω
Power Consumption	On Mode	: 42W
	Sleep Mode	≤ 1W
	Off Mode	≤ 1W
Dimensions & Weight (with tilt stand)	Width	44.36 cm / 17.46 inches
	Height	47.56 cm / 18.72 inches
	Depth	23.20 cm / 9.13 inches
	Net	5.98 kg (13.18 lbs)
Tilt Range	Tilt	-3°~25°
	Swivel	345°
Power Input	AC 100-240V~ 50/60Hz 1.0A	
Environmental Conditions	Operating Conditions	
	Temperature	10°C to 35 °C
	Humidity	10 % to 80 % non-Condensing
	Storage Conditions	
	Temperature	-20°C to 60 °C
	Humidity	5 % to 95 % non-Condensing
Tilt Stand	Attached(O), Detached ()	
Signal cable	Attached(), Detached (O)	
Power cord	Wall-outlet type or PC-outlet type	

NOTE

- Information in this document is subject to change without notice.

Preset Modes (Resolution)

	Display Modes (Resolution)	Horizontal Freq. (kHz)	Vertical Freq. (Hz)
1	VGA 640 x 350	31.469	70
2	VGA 720 x 400	31.468	70
3	VGA 640 x 480	31.469	60
4	VESA 640 x 480	37.500	75
5	VESA 800 x 600	37.879	60
6	VESA 800 x 600	46.875	75
7	MAC 832 x 624	49.725	75
8	VESA 1024 x 768	48.363	60
9	VESA 1024 x 768	60.023	75
10	MAC 1152 x 870	68.681	75
11	VESA 1152 x 900	61.805	65
*12	VESA 1280 x 1024	63.981	60
**13	VESA 1280 x 1024	79.976	75

*Recommend Mode

** Only Analog Mode

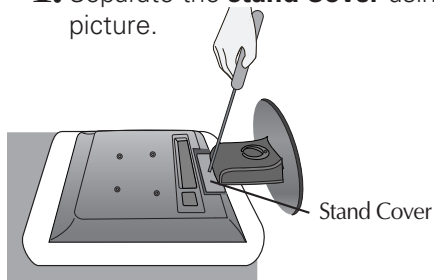
Indicator

Mode	LED Color
On Mode	Green
Sleep Mode	Amber
Off Mode	Off

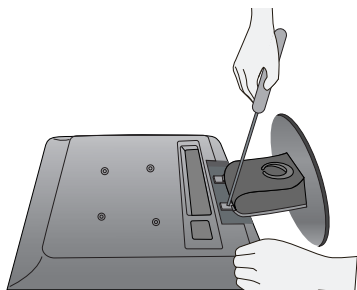
How to Install the Rack wall mounting

This monitor meets VESA-compliant mounting interface pad specifications.

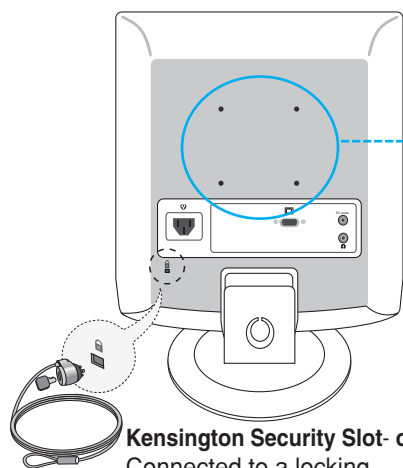
- 1.** Separate the **stand Cover** using a screwdriver as shown in the picture.



- 2.** Please the monitor on a piece of cloth or other soft surface with the front side facing downward.
- 3.** Separate the stand base using a screwdriver as shown in the picture.



- 4.** Install the VESA standrad wall mounting.



VESA wall mounting

Connected to another object (stand type and wall-mounted type). This monitor accepts a VESA-compliant mounting interface pad.-optional)

For further information, refer to the VESA Wall Mounting Instruction Guide.

Kensington Security Slot- optional

Connected to a locking cable that can be purchased separately at most computer stores

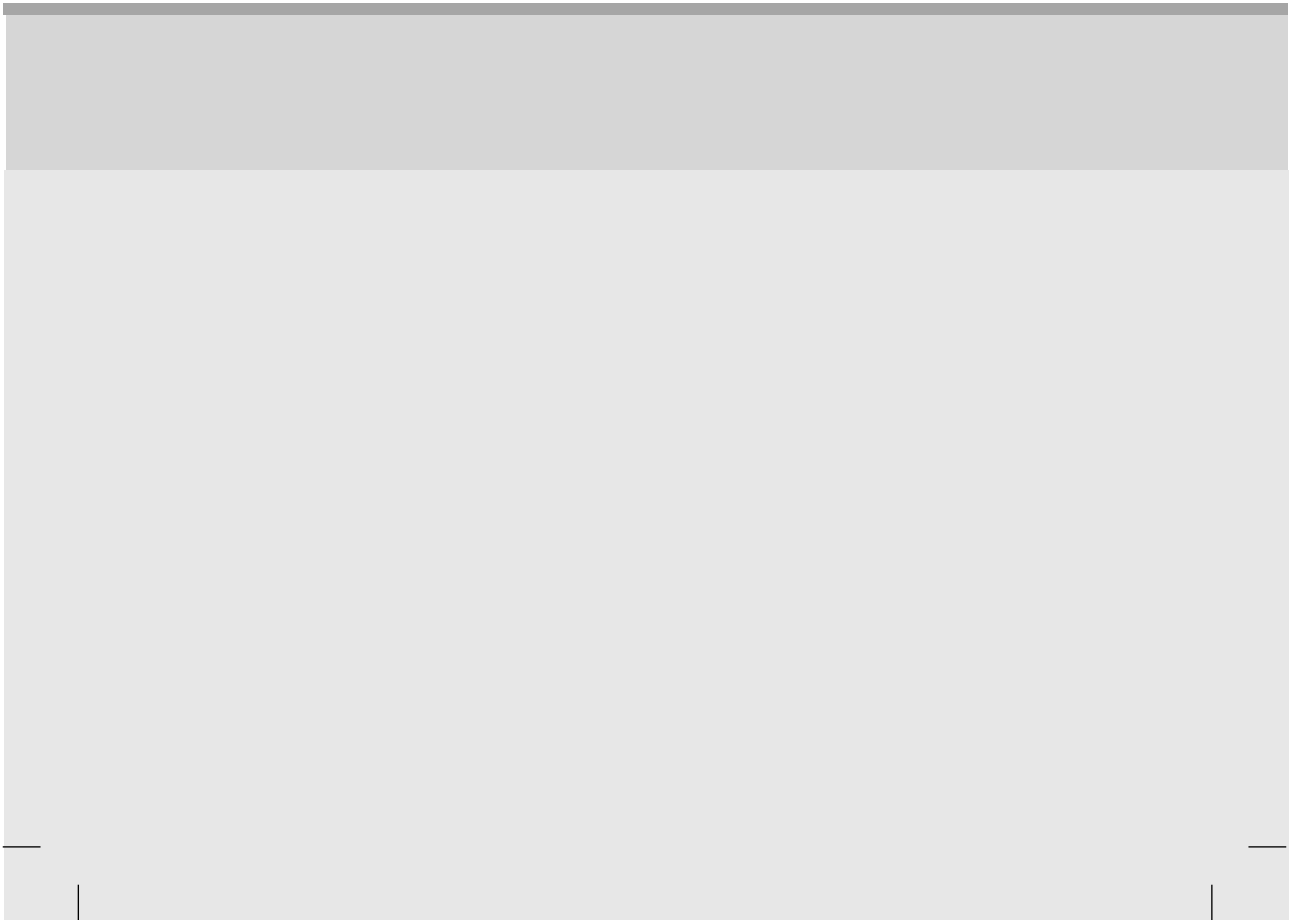
Digitally yours ■■■■■.....





Regulatory information

Regulatory information



■ ■ ■ Regulatory Information cont.

:: FCC Compliance Statement

This equipment has been tested and found to comply within the limits of a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the equipment on and off), the user is encouraged to try to correct the interference by using one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's (or your) authority to operate the equipment. Only peripherals (digital input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this monitor. Operation with non-certified peripherals is likely to result in interference to radio and TV reception. Only shielded signal cables may be used with this System.

NOTICE

The regulations are applied only to the products with the ID LABEL indicating specific requirements.

:: Canadian DOC Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la classe B

respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

NOTICE

The regulations are applied only to the products with the ID LABEL indicating specific requirements.

:: CE Conformity Notice (for Europe)

Products with the "CE" Marking comply with the EMC Directive(89/336/EEC) and LOW VOLTAGE Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms :

- EN 55022 ; Radio Frequency Interference
- EN 55024 ; Electromagnetic Immunity
- EN 61000-3-2 ; Power Line Harmonics
- EN 61000-3-3 ; Voltage Fluctuations

NOTICE

The regulations are applied only to the products with the ID LABEL indicating specific requirements.

:: Low Radiation Compliance (MPR II)

This monitor meets one of the strictest guidelines available today for low radiation emissions, offering the user extra shielding and an antistatic screen coating. These guidelines, set forth by a government agency in Sweden, limit the amount of emission allowed in the Extremely Low Frequency (ELF) and Very Low Frequency (VLF) electromagnetic range.

:: TCO95 (TCO95 applied model only)



Congratulations!

You have just purchased a TCO'95 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and to the further development of environmentally-adapted electronic products.

■ ■ ■ Regulatory Information cont.

Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem as far as computers and other electronic equipment are concerned is that environmentally harmful substances are used both in the products and during their manufacture. Since it has not been possible so far for the majority of electronic equipment to be recycled in a satisfactory way, most of these potentially damaging substances sooner or later enter Nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from both the working and natural environment viewpoints. Since all types of conventional electricity generation have a negative effect on the environment (acidic- and climatic-influencing emissions, radioactive waste, etc.), it is vital to conserve energy. Electronic equipment in offices consumes an enormous amount of energy, since it is often routinely left running continuously.

What does the environmental labelling involve?

This product meets the requirements for the TCO'95 scheme, which provides for international environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Naturkyddsforeningen (The Swedish Society for Nature Conservation), and NUTEK (The National Board for Industrial and Technical Development in Sweden), and SEMKO AB (an international certification agency).

The requirements cover a wide range of issues: environment, ergonomics, usability, emission of electrical and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands concern, among other things, restriction on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons), and chlorinated solvents. The product must be prepared for recycling, and the manufacturer is obliged to have an environmental plan, which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the

computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level, in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, along with physical and visual ergonomics and good usability.

The following is a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

TCO Development Unit
Linnegatan 14, S-11494 Stockholm, Sweden
FAX +46-8 782 92 07
E-mail (Internet): development@tco.se

Current information regarding TCO'95 approved and labelled products may also be obtained on the Internet using the address: <http://www.tco-info.com/>

TCO'95 is a co-operative project between:



Naturkydds
foreningen



NUTEK

SEMKO

Närings- och teknikutvecklingsverket

Environmental requirements

Brominated flame retardants are present in printed circuit boards, cabling, casings, and housings, and are added to delay the spread of fire. Up to 30% of the plastic in a computer casing can consist of flame-retardant substances. These are related to another group of environmental toxins, PCBs, and are suspected of giving rise to similar harm, including reproductive damage in fish-eating birds and mammals. Flame retardants have been found in human blood, and researchers fear that they can disturb fetus development.

Bio-accumulative¹ TCO'95 demands require that plastic components weighing more than 25 grams must not contain flame retardants with organically bound chlorine or bromine.

Lead can be found in picture tubes, display screens, solder, and capacitors. Lead damages the nervous system and in higher doses causes lead poisoning. The

■ ■ ■ Regulatory Information cont.

relevant bio-accumulative TCO'95 requirement permits the inclusion of lead, as no replacement has yet been developed.

Cadmium is present in rechargeable batteries and in the color-generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses. The relevant bio-accumulative TCO'95 requirement states that batteries may not contain more than 25 ppm (parts per million) of cadmium. The color-generating layers of display screens must not contain any cadmium.

Mercury is sometimes found in batteries, relays and switches. Mercury damages the nervous system and is toxic in high doses. The relevant bio-accumulative TCO'95 requirement states that batteries may not contain more than 25 ppm of mercury and that no mercury is present in any of the electrical or electronic components concerned with the display unit.

CFCs (freons) are sometimes used for washing printed circuit boards and in the manufacture of expanded foam for packaging. CFCs break down ozone and thereby damage the ozone layer in the atmosphere, causing increased reception on Earth of ultra-violet light with consequent increased risks of skin cancer (malignant melanoma). The relevant TCO'95 requirement: Neither CFCs nor HCFCs may be used during the manufacture of the product or its packaging.

¹ Bio-accumulative means that the substance accumulates within living organisms.

Shipping Package

The packaging material can be recycled, or you can save it to return the monitor to a service center for repair or disposal.

CFC Compounds in Distribution Packaging

Cushioning material used for shipping finished monitors are not manufactured with nor do they contain any CFC compounds.

Design for Disassembly/Recycling

These monitors have been designed for easy end-of-life disassembly and recycling. Fasteners are generally of the same type for efficient disassembly. Components made of different materials can be easily separated and plastics have been identified using international symbols to aid in recycling.

Monitor Disposal

WARNING

If you need to dispose of a monitor, ask a qualified service representative for the proper procedure. Improper disposal could result in personal injury from implosion.

:: **TCO'99** (TCO'99 applied model only)



Congratulations!

You have just purchased a TCO'99 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also to the further development of environmentally adapted electronics products.

Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. With the growing manufacture and usage of electronic equipment throughout the world, there is a recognized concern for the materials and substances used by electronic products with regards to their eventual recycling and disposal. By proper selection of these materials and substances, the impact on the environment can be minimized.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Electronic equipment in offices is often left running continuously, resulting in unnecessary consumption of large amounts of energy and additional power generation. From the standpoint of carbon dioxide emissions alone, it is vital to save energy.

What does labelling involve?

The product meets the requirements for the TCO'99 scheme which provides for international and environmental labelling of personal computers and/or displays.

The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation) and Statens Energimyndighet (The Swedish National Energy Administration).

■■■ Regulatory Information cont.

Approval requirements cover a wide range of issues: ecology, ergonomics, emission of electrical and magnetical fields, energy consumption and electrical safety.

Ecological criteria impose restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, and other substances. The product must be prepared for recycling and the manufacturing site(s) shall be certified according to ISO14001 or EMAS registered.

Energy requirements include a demand that the system unit and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the system unit shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electrical and magnetical fields as well as work load and visual ergonomics.

Below you will find a brief summary of the ecological requirements met by this product. The complete ecological criteria document can be found at TCO Development's website <http://www.tcodevelopment.com> or may be ordered from:

TCO Development
SE-114 94 STOCKHOLM, Sweden
Fax: +46 8 782 92 07
Email : development@tco.se
Information regarding TCO'99 approved and labelled products may also be obtained at <http://www.tcodevelopment.com>

Ecological requirements

Flame retardants

Flame retardants may be present in printed wiring board laminates, cables, and housings. Their purpose is to prevent, or at least to delay the spread of fire. Up to 30% by weight of the plastic in a computer casing can consist of flame retardant substances. Many flame retardants contain bromine or chlorine, and these flame retardants are chemically related to PCBs (polychlorinated biphenyls). Both the flame retardants containing bromine or chlorine and the PCBs are suspected of giving rise to health effects, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative* processes when not disposed of in accordance with strict standards for disposal.

TCO'99 requires that plastic components weighing more than 25 grams shall not contain flame retardants with organically bound bromine or chlorine. Flame retardants are allowed in the printed wiring board laminates due to the lack of commercially available alternatives.

Cadmium**

Cadmium is present in rechargeable batteries and in the colour-generating layers of certain computer displays. TCO'99 requires that batteries, the colour-generating layers of display screens, and the electrical or electronics components shall not contain any cadmium.

Mercury**

Mercury is sometimes found in batteries, relays and switches. TCO'99 requires that batteries shall not contain any mercury. It also demands that mercury is not present in any of the electrical or electronics components associated with the labelled unit. There is however one exception. Mercury is, for the time being, permitted in the back light system of flat panel monitors as there today is no commercially available alternative. TCO aims on removing this exception when a mercury free alternative is available.

Lead**

Lead can be found in picture tubes, display screens, solders and capacitors. TCO'99 permits the use of lead due to the lack of commercially available alternatives, but in future requirements TCO Development aims at restricting the use of lead.

* Bio-accumulative is defined as substances which accumulate in living organisms.

**Lead, Cadmium and Mercury are heavy metals which are bio-accumulative.

■■■ Regulatory Information cont.

:: **TCO'03** (TCO'03 applied model only)



Congratulations!

The display you have just purchased carries the TCO'03 Displays label.

This means that your display is designed, manufactured and tested according to some of the strictest quality and environmental requirements in the world. This makes for a high performance product, designed with the user in focus that also minimizes the impact on our natural environment. Some of the features of the TCO'03 Display requirements:

Ergonomics

- Good visual ergonomics and image quality in order to improve the working environment for the user and to reduce sight and strain problems. Important parameters are luminance, contrast, resolution, reflectance, colour rendition and image stability.

Energy

- Energy-saving mode after a certain time – beneficial both for the user and the environment
- Electrical safety

Emissions

- Electromagnetic fields
- Noise emissions

Ecology

- The product must be prepared for recycling and the manufacturer must have a certified environmental management system such as EMAS or ISO 14 001
- Restrictions on
 - chlorinated and brominated flame retardants and polymers
 - heavy metals such as cadmium, mercury and lead.

The requirements included in this label have been developed by TCO Development in co-operation with scientists, experts, users as well as manufacturers all over the world. Since the end of the 1980s TCO has been involved in influencing the development of IT equipment in a more user-friendly direction. Our labelling system started

with displays in 1992 and is now requested by users and IT-manufacturers all over the world.

For more information, please visit
www.tcodevelopment.com

English

Information for Environmental Preservation

LGE. announced the 'LG Declaration for a Cleaner Environment' in 1994, and this ideal has served as a guiding managerial principle ever since. The Declaration is a foundation that has allowed us to undertake environmentally friendly activities in careful consideration of economic, environmental, and social aspects.

We promote activities for environmental preservation, and we specifically develop our products to embrace the concept of environment-friendly.

We minimize the hazardous materials contained in our products. For example, there is no cadmium to be found in our monitors.

Information for recycling

This monitor may contain parts which could be hazardous to the environment. It is important that this monitor be recycled after use.

LGE. handles all waste monitors through an environmentally acceptable recycling method. There are several take-back and recycling systems currently in operation worldwide. Many parts will be reused and recycled, while harmful substances and heavy metals are treated by an environmentally friendly method.

If you want to find out more information about our recycling program, please contact your local LG vendor or a corporate representative of LG.

We set our vision and policies on a cleaner world by selecting the issue of the global environment as a task for corporate improvement. Please visit our website for more information about our 'green' policies.

http://www.lge.com/experience/social_commitment/environment.jsp

Regulatory Information cont.

Deutsch

Informationen zur Erhaltung der Umwelt

Im Jahr 1994 verkündete LGE die 'LG Declaration for a Cleaner Environment' (LG Erklärung für eine sauberere Umwelt). Seitdem dient dieses Ideal als führendes Prinzip des Unternehmens. Diese Erklärung war die Basis für die Durchführung von

umweltfreundlichen Aktivitäten, wobei wirtschaftliche, umweltbezogene und soziale Aspekte in die Überlegungen mit einbezogen wurden.

Wir fördern Aktivitäten zum Schutz der Umwelt und die Entwicklung unserer Produkte ist darauf ausgerichtet, unserem Konzept bezüglich Umweltfreundlichkeit gerecht zu werden.

Wir sind darauf bedacht, den Anteil der in unseren Produkten enthaltenen schädlichen Materialien zu minimieren. So ist in unseren Monitoren beispielsweise kein Kadmium zu finden.

Informationen zum Thema Recycling

Dieser Monitor enthält Teile, die umweltschädlich sein können. Es ist unbedingt erforderlich, dass der Monitor recycelt wird, nachdem er außer Dienst gestellt wurde.

Bei LGE werden alle ausrangierten Monitore in einem unter umweltbezogenen Aspekten geeigneten Verfahren recycelt. Augenblicklich sind weltweit mehrere Rücknahme- und Recyclingsysteme im Einsatz. Viele Teile werden wieder verwendet und recycelt. Schädliche Substanzen und Schwermetalle werden durch umweltverträgliche Verfahren behandelt.

Falls Sie mehr über unser Recyclingprogramm erfahren möchten, wenden Sie sich bitte an Ihren lokalen LG-Händler oder einen Unternehmensvertreter von LG.

Wir richten unsere Firmenpolitik auf eine sauberere Umwelt hin aus, indem wir umweltspezifische Aspekte als wichtigen Punkt in die Weiterentwicklung unseres Unternehmens einfließen lassen. Zusätzliche Informationen über unsere 'grüne' Firmenpolitik erhalten Sie auf unserer Website.

http://www.lge.com/experience/social_commitment/environment.jsp

Français

Information sur la protection de l'environnement

LGE a publié sa 'Déclaration en faveur d'un

environnement plus propre' en 1994 et celle-ci est restée, depuis lors, un principe directeur de notre entreprise. Cette déclaration a servi de base à notre réflexion et nous a permis de prendre en compte à la fois les aspects économiques et sociaux de nos activités, tout en respectant l'environnement.

Nous encourageons les activités en faveur de la préservation de l'environnement et c'est dans cet esprit que nous développons nos produits : nous réduisons au minimum les matières dangereuses qui entrent dans leur composition et l'on ne trouve pas de cadmium, par exemple, dans nos moniteurs.

Information sur le recyclage

Ce moniteur peut contenir des composants qui présentent un risque pour l'environnement. Il est donc important que celui-ci soit recyclé après usage.

LGE traite les moniteurs en fin de cycle conformément à une méthode de recyclage respectueuse de l'environnement. Nous reprenons nos produits et les recyclons dans plusieurs sites répartis dans le monde entier. De nombreux composants sont réutilisés et recyclés, et les matières dangereuses, ainsi que les métaux lourds, sont traités selon un procédé écologique.

Si vous souhaitez plus de renseignements sur notre programme de recyclage, veuillez contacter votre revendeur LG ou un l'un de nos représentants.

Nous voulons agir pour un monde plus propre et croyons au rôle de notre entreprise dans l'amélioration de l'environnement. Pour plus de renseignements sur notre politique "verte", rendez visite à notre site :

http://www.lge.com/experience/social_commitment/environment.jsp

Italiano

Informazioni per la tutela dell'ambiente

La LGE ha annunciato nel 1994 la cosiddetta 'LG Declaration for a Cleaner Environment' (Dichiarazione di LG a favore di un ambiente più pulito), un ideale che da allora funge da principio ispiratore della gestione aziendale. La dichiarazione rappresenta il fondamento che consente di intraprendere attività a favore dell'ambiente tenendo conto degli aspetti economici, ambientali e sociali.

Regulatory Information cont.

Noi della LG, promuoviamo attività a favore della tutela dell'ambiente sviluppando appositamente i nostri prodotti per cogliere il concetto del rispetto dell'ambiente riducendo i materiali dannosi presenti nei nostri prodotti. Ad esempio nei nostri monitor non è presente il cadmio.

Informazioni per il riciclaggio

Il monitor può presentare componenti che potrebbero risultare eventualmente dannosi per l'ambiente. È importante che il monitor sia riciclato al termine del suo utilizzo.

La LGE gestisce tutti i monitor di rifiuto con un metodo di riciclaggio soddisfacente dal punto di vista ambientale. In tutto il mondo sono attualmente in funzione numerosi sistemi di riciclaggio e recupero. I diversi componenti sono riutilizzati e riciclati, mentre le sostanze dannose e i metalli pesanti vengono trattati con un metodo rispettoso dell'ambiente.

Se si desiderano maggiori informazioni in merito al programma di riciclaggio, è consigliabile rivolgersi al proprio rivenditore LG o ad un rappresentante aziendale della LG.

Noi della LG impostiamo la nostra visione e le nostre politiche a favore di un mondo più pulito ponendo la questione dell'ambiente dal punto di vista globale come una mansione rivolta al miglioramento della nostra azienda. Vi invitiamo a visitare il nostro sito internet per ulteriori informazioni sulla nostra politica "verde".

http://www.lge.com/experience/social_commitment/enviro ment.jsp

Espanol

Información para la conservación medioambiental

LGE. presentó la 'Declaración para un entorno más limpio de LG' en 1994 y este ideal ha servido para guiar nuestros principios empresariales desde entonces. La Declaración es la base que nos ha permitido llevar a cabo tareas que respetan el medio ambiente siempre teniendo en cuenta aspectos sociales, económicos y medioambientales.

Promocionamos actividades orientadas a la conservación del medio ambiente y desarrollamos nuestros productos específicamente para que se ajusten a la filosofía que protege el entorno.

Reducimos al máximo el uso de materiales de riesgo en nuestros productos. Un ejemplo de ello es la ausencia total de cadmio en nuestros monitores.

Información para el reciclaje

Este monitor puede contener piezas que entrañen riesgos medioambientales. Es importante reciclar este monitor después de su utilización.

LGE. trata todos los monitores usados siguiendo un método de reciclaje que no daña al entorno. Contamos con diversos sistemas de recuperación y reciclaje que funcionan a nivel mundial en la actualidad. Es posible reciclar y reutilizar muchas de las piezas, mientras que las sustancias dañinas y los metales pesados se tratan siguiendo un método que no perjudique al medio ambiente. Si desea obtener más información acerca del programa de reciclaje, póngase en contacto con su proveedor local de LG o con un representante empresarial de nuestra marca.

Basamos nuestra visión y nuestras políticas en un mundo más limpio y para ellos optamos por un entorno global como tarea principal de nuestra evolución como empresa. Visite nuestra página Web para obtener más información sobre nuestras políticas ecológicas.

http://www.lge.com/experience/social_commitment/enviro ment.jsp

Português

Informações relacionadas à preservação ambiental

A LGE. anunciou a 'LG Declaration for a Cleaner Environment' (Declaração da LG para um ambiente mais limpo) em 1994 e esse ideal tem servido desde então como um princípio administrativo de orientação. A Declaração é a base que nos tem permitido realizar atividades favoráveis ao ambiente com consideração atenta aos aspectos econômicos, ambientais e sociais.

Promovemos atividades de preservação ambiental e desenvolvemos nossos produtos para englobar especificamente o conceito de favorável ao ambiente.

Reduzimos os materiais perigosos contidos em nossos produtos. Por exemplo, não há cádmio em nossos monitores.

Regulatory Information cont.

Informações relacionadas à reciclagem

Este monitor pode conter peças que podem representar riscos ao ambiente. É importante que ele seja reciclado após o uso.

A LGE cuida de todos os monitores descartados através de um método de reciclagem agradável ao ambiente. Há vários sistemas de devolução e reciclagem atualmente em operação no mundo. Muitas peças serão reutilizadas e recicladas e as substâncias nocivas e os metais pesados passarão por tratamento através de um método favorável ao ambiente.

Para obter mais informações sobre nosso programa de reciclagem, entre em contato com seu fornecedor LG local ou com um representante corporativo da LG.

Definimos nossa visão e nossas políticas relacionadas a um mundo mais limpo selecionando a questão do ambiente global como uma tarefa de aprimoramento corporativo. Visite nosso site para obter mais informações sobre nossas políticas de meio ambiente.

http://www.lge.com/experience/social_commitment/environment.jsp

Nederlands

Informatie met betrekking tot het behoud van het milieu

LGE publiceerde in 1994 de 'LG Declaration for a Cleaner Environment' (de LG-verklaring met betrekking tot een schoner milieu). Deze verklaring en het ideaal van een schoner milieu fungeren sindsdien als een bestuurlijke leidraad voor onze onderneming. Op basis van deze verklaring ontplooiën wij milieuvriendelijke activiteiten, waarbij er zowel met sociale en economische aspecten, als met milieuaspecten zorgvuldig rekening wordt gehouden.

Wij ondersteunen activiteiten die zijn gericht op het behoud van het milieu en wij houden bij het ontwikkelen onze producten specifiek rekening met de milieuvriendelijkheid van onze producten.

Wij minimaliseren het gebruik van schadelijke stoffen in onze producten. Er wordt bijvoorbeeld geen cadmium verwerkt in onze monitoren.

Informatie met betrekking tot recycling

Deze monitor bevat materialen die schadelijk zouden kunnen zijn voor het milieu. Het is belangrijk dat deze

monitor aan het einde van zijn levensduur wordt gerecycled.

LGE verwerkt alle afvalmonitoren via een milieuvriendelijke recyclingmethode. Hiervoor worden er momenteel wereldwijd verscheidene inname- en recyclingsystemen gehanteerd. Een groot aantal onderdelen wordt opnieuw gebruikt en gerecycled, waarbij schadelijke stoffen en zware metalen volgens een milieuvriendelijke methode worden verwerkt.

Voor meer informatie over ons recyclingprogramma kunt u contact opnemen met uw plaatselijke LG-vertegenwoordiger of een LG-vestiging.

Onze visie en ons beleid met betrekking tot een schonere wereld vloeien voort uit het feit dat wij het milieu hebben aangemerkt als een onderwerp dat speciale aandacht verdient binnen onze onderneming. Bezoek onze website voor meer informatie over ons 'groene' beleid.

http://www.lge.com/experience/social_commitment/environment.jsp

Russian

Информация по охране окружающей среды

В 1994 году корпорация LGE опубликовала 'Декларацию LG по охране окружающей среды', которая с тех пор служит основным принципом управления. На основе этой декларации мы смогли предпринять действия, обеспечивающие безопасность окружающей среды, уделяя при этом должное внимание экономическим, экологическим и социальным аспектам.

Мы стимулируем деятельность по охране окружающей среды, уделяя особое внимание разработке нашей продукции в соответствии с концепцией экологической безопасности.

Мы сводим к минимуму содержание опасных веществ в нашей продукции. Например, в наших мониторах вы не найдете кадмия.

Информация по утилизации отходов

Этот монитор может содержать компоненты, которые могут нанести ущерб окружающей среде.

Необходимо утилизировать монитор после использования.

■■■ Regulatory Information cont.

Корпорация LGE перерабатывает все бракованные мониторы с помощью экологически приемлемого метода утилизации отходов. По всему миру действуют системы утилизации отходов и возврата использованной продукции. Многие компоненты будут вторично использованы и утилизированы, в то время как вредные вещества и тяжелые металлы будут обработаны с помощью экологически приемлемого метода.

За более подробной информацией по нашей программе утилизации отходов обращайтесь к местному поставщику или представителю корпорации LG.

Мы ориентируемся на обеспечение экологической безопасности, ставя себе целью глобальную защиту окружающей среды. Дополнительную информацию о нашей политике по охране окружающей среды вы можете найти на нашем сайте:

http://www.lge.com/experience/social_commitment/environment.jsp

한국어

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<http://www.lge.co.kr/about/digitalg/environment/environment.jsp>

:: **EPA (U.S.A only)** (EPA applied model only)

ENERGYSTAR is a set of power-saving guidelines issued by the U.S. Environmental Protection Agency(EPA).



As an ENERGY STAR Partner LGE U. S. A.,Inc. has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

:: **NOM MARK (Mexico only)**

