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1. Important

This electronic user's guide is intended for anyone who uses the Philips Display. Take time to read this user manual before you use your Display. It contains important information and notes regarding operating your Display.

The Philips guarantee applies provided the product is handled properly for its intended use, in accordance with its operating instructions and upon presentation of the original invoice or cash receipt, indicating the date of purchase, dealer's name and model and production number of the product.

1.1 Safety precautions and maintenance

Warnings

Use of controls, adjustments or procedures other than those specified in this documentation may result in exposure to shock, electrical hazards and/or mechanical hazards.

Read and follow these instructions when connecting and using your computer Display.

Operation

- Please Keep the Display out of direct sunlight, very strong bright lights and away from any other heat source. Lengthy exposure to this type of environment may result in discoloration and damage to the Display.
- Remove any object that could fall into ventilation holes or prevent proper cooling of the Display's electronics.
- Do not block the ventilation holes on the cabinet.
- When positioning the Display, make sure the power plug and outlet are easily accessible.
- If turning off the Display by detaching the power cable or DC power cord, wait for 6 seconds before attaching the power cable or DC power cord for normal operation.

- Please use approved power cord provided by Philips all the time. If your power cord is missing, please contact with your local service center. (Please refer to Customer Care Consumer Information Center)
- Do not subject the Display to severe vibration or high impact conditions during operation.
- Do not knock or drop the Display during operation or transportation.

Maintenance

- To protect your Display from possible damage, do not put excessive pressure on the LCD panel. When moving your Display, grasp the frame to lift; do not lift the Display by placing your hand or fingers on the LCD panel.
- Unplug the Display if you are not going to use it for an extensive period of time.
- Unplug the Display if you need to clean it with a slightly damp cloth. The screen may be wiped with a dry cloth when the power is off. However, never use organic solvent, such as, alcohol, or ammonia-based liquids to clean your Display.
- To avoid the risk of shock or permanent damage to the set, do not expose the Display to dust, rain, water, or excessive moisture environment.
- If your Display gets wet, wipe it with dry cloth as soon as possible.
- If foreign substance or water gets in your Display, please turn the power off immediately and disconnect the power cord. Then, remove the foreign substance or water, and send it to the maintenance center.
- Do not store or use the Display in locations exposed to heat, direct sunlight or extreme cold.
- In order to maintain the best performance of your Display and use it for a longer lifetime, please use the Display in a location that falls within the following temperature and humidity ranges.

- Temperature: 0-40°C 32-95°F
- Humidity: 20-80% RH
- IMPORTANT: Always activate a moving screen saver program when you leave your Display unattended. Always activate a periodic screen refresh application if your Display will display unchanging static content. Uninterrupted display of still or static images over an extended period may cause "burn in", also known as "afterimaging" or "ghost imaging", on your screen.
- "Burn-in", "after-imaging", or "ghost imaging" is a well-known phenomenon in LCD panel technology. In most cases, the "burned in" or "after-imaging" or "ghost imaging" will disappear gradually over a period of time after the power has been switched off.

Warning

Failure to activate a screen saver, or a periodic screen refresh application may result in severe "burn-in" or "after-image" or "ghost image" symptoms that will not disappear and cannot be repaired. The damage mentioned above is not covered under your warranty.

Service

- The casing cover should be opened only by qualified service personnel.
- If there is any need for any document for repair or integration, please contact with your local service center. (please refer to the chapter of "Consumer Information Center")
- For transportation information, please refer to "Technical Specifications".
- Do not leave your Display in a car/trunk under direct sun light.

Solution Note

Consult a service technician if the Display does not operate normally, or you are not sure what procedure to take when the operating instructions given in this manual have been followed.

1.2 Notational Descriptions

The following subsections describe notational conventions used in this document.

Notes, Cautions and Warnings

Throughout this guide, blocks of text may be accompanied by an icon and printed in bold or italic type. These blocks contain notes, cautions or warnings. They are used as follows:

Solution Note

This icon indicates important information and tips that help you make better use of your computer system.

Caution

This icon indicates information that tells you how to avoid either potential damage to hardware or loss of data.

Warning

This icon indicates the potential for bodily harm and tells you how to avoid the problem.

Some warnings may appear in alternate formats and may not be accompanied by an icon. In such cases, the specific presentation of the warning is mandated by the relevant regulatory authority.

1.3 Disposal of product and packing material

Waste Electrical and Electronic Equipment-WEEE



This marking on the product or on its packaging illustrates that, under European Directive 2012/19/EU governing used electrical and electronic appliances, this product may not be disposed of with normal household waste. You are responsible for disposal of this equipment through a designated waste electrical and electronic equipment collection. To determine the locations for dropping off such waste electrical and electronic, contact your local government office, the waste disposal organization that serves your household or the store at which you purchased the product.

Your new Display contains materials that can be recycled and reused. Specialized companies can recycle your product to increase the amount of reusable materials and to minimize the amount to be disposed of.

All redundant packing material has been omitted. We have done our utmost to make the packaging easily separable into mono materials.

Please find out about the local regulations on how to dispose of your old Display and packing from your sales representative.

Taking back/Recycling Information for Customers

Philips establishes technically and economically viable objectives to optimize the environmental performance of the organization's product, service and activities. From the planning, design and production stages, Philips emphasizes the important of making products that can easily be recycled. At Philips, end-of-life management primarily entails participation in national take-back initiatives and recycling programs whenever possible, preferably in cooperation with competitors, which recycle all materials (products and related packaging material) in accordance with all Environmental Laws and taking back program with the contractor company.

Your display is manufactured with high quality materials and components which can be recycled and reused.

To learn more about our recycling program please visit

http://www.philips.com/sites/philipsglobal/ about/sustainability/ourenvironment/ productrecyclingservices.page

2. Setting up the Display

2.1 Installation

1 Package contents









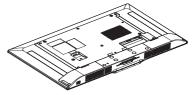




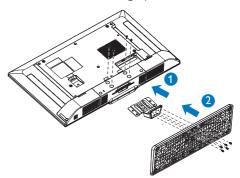
DVI

2 Install base stand

 Place the Display face down on soft and smooth surface taking care to avoid scratching or damaging the screen.

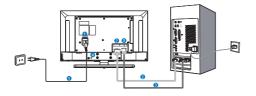


2. After inserting the base column in the guide block, tighten the screws. insert the base into the base column.and secure the base to the column tightly.



1 × 9

3 Connecting to your PC



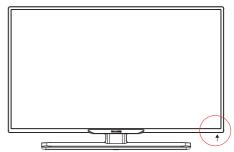
- 1 AC/DC power input
- 2 DVI input
- **3** VGA input
- 4 Kensington anti-theft lock

Connect to PC

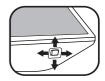
- 1. Connect the power cord to the back of the Display firmly.
- 2. Turn off your computer and unplug its power cable.
- 3. Connect the Display signal cable to the video connector on the back of your computer.
- 4. Plug the power cord of your computer and your Display into a nearby outlet.
- 5. Turn on your computer and Display. If the Display displays an image, installation is complete.

2.2 Operating the Display

1 Front view product description







٩	Switch Display's power ON and OFF.
+	SmartImage. There are six modes to be selected: Office, Photo,Movie, Game,Economy,Off.
	Return to previous OSD level.
	Change the signal input source.
T	Adjust the OSD menu.
Ţ	Change display format
	Adjust the OSD menu.
	Access the OSD menu.
-	Confirm the OSD adjustment.

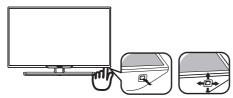
2 Description of the On Screen Display

What is On-Screen Display (OSD)?

On-Screen Display (OSD) is a feature in all Philips LCD Displays. It allows an end user to adjust screen performance or select functions of the Displays directly through an on-screen instruction window. A user friendly on screen display interface is shown as below:

Input	VGA ·
Picture	
Color	
Language	•
OSD Settings	
•	

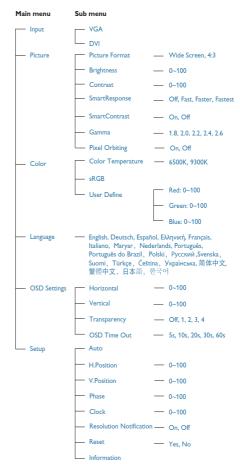
Basic and simple instruction on the control keys



To access the OSD menu on this Philips Display simply use the single toggle button on the underside of the Display bezel. The single button operates like a joystick. To move the cursor, simply toggle the button in four directions. Press the button to select desired option.

The OSD Menu

Below is an overall view of the structure of the On-Screen Display. You can use this as a reference when you want to work your way around the different adjustments later on.



3 Resolution notification

This Display is designed for optimal performance at its native resolution, 1920×1080@60Hz. When the Display is powered on at a different resolution, an alert is displayed on screen: Use 1920×1080@60Hz for best results.

Display of the native resolution alert can be switched off from Setup in the OSD (On Screen Display) menu.

3. Image Optimization

3.1 SmartImage

1 What is it?

SmartImage provides presets that optimize display for different types of content, dynamically adjusting brightness, contrast, color and sharpness in real time. Whether you're working with text applications, displaying images or watching a video, Philips SmartImage delivers great optimized Display performance.

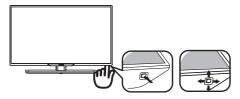
2 Why do I need it?

You want a Display that delivers optimized display all your favorite types of content, SmartImage software dynamically adjust brightness, contrast, color and sharpness in real time to enhance your Display viewing experience.

3 How does it work?

SmartImage is an exclusive, leading edge Philips technology that analyzes the content displayed on your screen. Based on a scenario you select, SmartImage dynamically enhances the contrast, color saturation and sharpness of images to enhance the contents being displayed - all in real time with the press of a single button.

4 How to enable SmartImage?



1. Toggle to the left to launch the SmartImage on screen display;

2. Toggle to the rear or front to select between Office, Photo, Movie, Game, Economy mode and Off.

3. The SmartImage on screen display will remain on screen for 5 seconds or you can also press button to the left to make confirmation.

SmartImage
Office
Photo
Movie
Game
Economy
Off

- Office: Enhances text and dampens brightness to increase readability and reduce eye strain. This mode significantly enhances readability and productivity when you're working with spreadsheets, PDF files, scanned articles or other general office applications.
- **Photo:** This profile combines color saturation, dynamic contrast and sharpness enhancement to display photos and other images with outstanding clarity in vibrant colors all without artifacts and faded colors.
- Movie: Ramped up luminance, deepened color saturation, dynamic contrast and razor sharpness displays every details in darker areas of your videos without color washout in brighter areas maintaining a dynamic natural values for the ultimate video display.
- Game: Turn on over drive circuit for best response time, reduce jaggy edges for fast moving objects on screen, enhance contrast ratio for bright and dark scheme, this profile delivers the best gaming experience for gamers.

3. Image Optimization

- Economy: Under this profile, brightness, contrast are adjusted and backlighting finetuned for just right display of everyday office applications and lower power consumption.
- Off: No optimization by SmartImage.

3.2 SmartContrast

1 What is it?

Unique technology that dynamically analyzes displayed content and automatically optimizes a LCD Display's contrast ratio for maximum visual clarity and viewing enjoyment, stepping up backlighting for clearer, crisper and brighter images or dimming backlighting for clear display of images on dark backgrounds.

2 Why do I need it?

You want the very best visual clarity and viewing comfort for every type of content. SmartContrast dynamically controls contrast and adjusts backlighting for clear, crisp, bright gaming and video images or displays clear, readable text for office work. By reducing your Display's power consumption, you save on energy costs and extend the lifetime of your Display.

3 How does it work?

When you activate SmartContrast, it will analyse the content you are displaying in real time to adjust colors and control backlight intensity. This function will dynamically enhance contrast for a great entertainment experience when viewing videos or playing games.

3.3 Philips SmartControl Lite

The new SmartControl Lite software by Philips allows you to control your Display via an easy to use on-screen graphic interface. Complicated adjustments are a thing of the past as this user friendly software guides you through finetuning resolution, Color calibration, Clock/Phase adjustments, RGB White point adjustment, etc.

Equipped with latest technology in core algorithm for fast processing and response, this Windows 7 compliant eye catching animated lcon based software is ready to enhance your experience with Philips Displays!

1 Installation

- Follow the instruction and complete the installation.
- You can launch after installation is completed.
- If you want to launch later, you can either click the shortcut on desktop or toolbar.



First launch -Wizard

- The first time after installation of SmartControl Lite, it will automatically go to Wizard for first time launch.
- The wizard will guide you through adjustment your Display performance step by step.
- You can go to Plug-in menu to launch wizard later on as well.
- You can adjust more options without wizard by Standard pane.



2 Start with Standard pane:

Adjust menu:

- Adjust Menu allow you to adjust Brightness, Contrast, Focus, Position and Resolution.
- You can follow the instruction and do the adjustment.
- Cancel prompts user if you want to cancel installation.







Contras Focus

26 Resolutio



Color menu:

- Color Menu allow you to adjust RGB, Black Level, White Point, Color Calibration, and SmartImage (Please refer to SmartImage section).
- You can follow the instruction and do the adjustment.
- Refer to below table for sub-menu item base on your input.
- Example for Color Calibration:



Undo Reset

D



1. "Show Me" starts color calibration tutorial.

- 2. Start starts the 6-step color calibration sequence.
- 3. Quick View loads the before/after images.
- 4. To return to Color home pane, click the **Cancel** button.
- 5. Enable color calibration by default is on. If unchecked, does not allow for color calibration to happen, dimes out start and quick view buttons.
- 6. Must have patent info in calibration screen.

3. Image Optimization

First color Calibration Screen:



- Previous button is disabled until the second color screen.
- Next goes to the succeeding target (6-targets).
- Final next goes File>Presets pane.
- Cancel closes the UI and returns to the plug in page.

SmartImage

Allows user to change setting for better display setting based on content.

When Entertainment is set, SmartContrast and SmartResponse are enabled.



Options>Preferences - Will only be active when selecting Preferences from the dropdown Options menu. On a non-supported display capable of DDC/CI, only the Help and Options tabs are available.



- Displays current preference settings.
- A checked box enables the feature. The check box is a toggle.
- Enable Context Menu on desktop is checked (On) by default. Enable Context menu displays SmartControl Lite selections for Select Preset and Tune Display in the desktop right-click context menu. Disabled removes SmartControl Lite from the right click context menu.
- Enable Task Tray icon is checked (On) by default. Enable context menu shows the task tray menu for SmartControl Lite. A right click on the task tray icon displays the menu options for Help, Technical Support, Check for Update, About, and Exit. When Enable task tray menu is disabled, the task tray icon will only display EXIT.
- Run at Startup is checked (On) by default. When disabled, SmartControl Lite will not launch at start or be in the task tray. The only way to launch SmartControl Lite is either from the desktop short cut or from the program file. Any preset set to run at startup will not load when this box is unchecked (Disabled).
- Enable transparency mode (Windows 7, Vista, XP). Default is 0% Opaque.

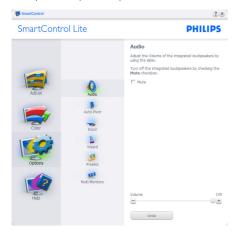
Options>Input - Will only be active when selecting Input from the drop-down Options menu. On a non-supported display capable of DDC/Cl, only the Help and Options tabs are available. All other SmartControl Lite tabs are not available.



- Display the Source instruction pane and current input source setting.
- On single input displays, this pane will not be visible.

Options>Audio - Will only be active when selecting Audio from the drop-down Options menu.

On a non-supported display capable of DDC/ Cl, only the Help and Options tabs are available.



Help>User Manual - Will only be active when selecting User Manual from the drop-down Help menu. On a non-supported display capable of DDC/Cl, only the Help and Options tabs are available.



Help>Version - Will only be active when selecting Version from the drop- down Help menu. On a non-supported display capable of DDC/Cl, only the Help and Options tabs are available.



Context Sensitive menu

The Context Sensitive menu is Enabled by default. If Enable Context Menu has been checked in the Options>Preferences pane, then the menu will be visible.

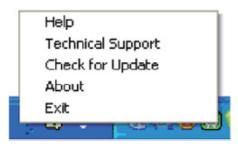


The Context Menu has four entries:

- SmartControl Lite When selected the About Screen is displayed.
- Select Preset Provides a hierarchical menu of saved presets for immediate use. A check mark shows the currently selected preset. Factory Preset can also be called from the drop down menu.
- Tune Display Opens the SmartControl Lite control panel.
- SmartImage Check current settings, Standard, Internet, Game.

Task Tray Menu Enabled

The task tray menu can be displayed by rightclicking on the SmartControl Lite icon from the task tray. Left Click will launch the application.



The task tray has five entries:

• Help - Access to User Manual file: Open User Manual file using the default browser window.

- Technical Support displays the tech support page.
- Check for Update takes the user to PDI Landing and checks the user's version against the most current available.
- About Displays detailed reference information: product version, release information, and product name.
- Exit Close SmartControl Lite.

To run SmartControl Lite again either select SmartControl Lite from Program menu, doubleclick the desktop PC icon or restart the system.



Task Tray Menu Disabled

When the Task Tray is disabled in the preference folder, only the EXIT selection is available. To completely remove SmartControl Lite from the task tray, disable Run at Startup in Options>Preferences.

All the illustrations in this section are for reference only. SmartControl software version might be changed without notification. Please always check official Portrait website www.portrait.com/dtune/phl/enu/index. to download the latest version of SmartControl software.

4. Technical Specifications

Picture/Display		
Display Panel Type	IPS LCD	
Backlight	LED	
Panel Size	31.5" W (80cm)	
Aspect Ratio	16:9	
Pixel Pitch	0.364 x 0.364 mm	
Brightness	300cd/m ²	
SmartContrast	20,000,000:1	
Contrast Ratio (typ.)	1200:1	
Response Time (typ.)	6.5ms(GtG)	
SmartResponse	3ms(GtG)	
Optimum Resolution	1920x1080 @ 60Hz	
Viewing Angle	178° (H) / 178° (V) @ C/R > 10	
Picture Enhancement	SmartImage	
Display Colors	16.7M	
Vertical Refresh Rate	56Hz - 75Hz	
Horizontal Frequency	30kHz - 83kHz	
sRGB	YES	
Connectivity		
Signal Input	VGA(Analog), DVI(Digital)	
Input Signal	Separate Sync, Sync on Green	

Convenience				
OSD Languages	Jages English, German, Spanish, Greek, French, Italian, Hungarian, Dutch, Portuguese, Brazil Portuguese, Polish, Russian, Swedish, Finnish, Turkish, Czech, Ukranian, Simplified Chinese, Traditional Chinese, Japanese, Korean			
Other Convenience	VESA mount(400×2	VESA mount(400×200mm), Kensington Lock		
Plug & Play Compatibility	DDC/Cl, sRGB, Win	dows 8/7, Mac OSX, Li	nux	
Power				
On Mode	43.11W (typ.), 44.16	43.11W (typ.), 44.16W (max.)		
On Mode(ECO mode)	23.22W (typ.)			
Energy Consumption (EnergyStar test method)	AC Input Voltage at 100VAC , 50Hz	AC Input Voltage at 115VAC , 60Hz	AC Input Voltage at 230VAC, 50Hz	
Normal Operation	25.9W (typ.)	24.69W (typ.)	25.36W (typ.)	
Sleep (Standby)	0.5W (typ.)	0.5W (typ.)	0.5W (typ.)	
Off (AC switch)	0W (typ.)	0W (typ.)	0W (typ.)	
Heat Dissipation*	AC Input Voltage at 100VAC , 50Hz	AC Input Voltage at 115VAC , 60Hz	AC Input Voltage at 230VAC , 50Hz	
Normal Operation	88.4 BTU/hr	84.27 BTU/hr	86.55 BTU/hr	
Sleep (Standby)	0.341 BTU/hr	0.341 BTU/hr	0.341 BTU/hr	
Off	0 BTU/hr 0 BTU/hr 0 BTU/hr			

4. Technical Specifications

Power LED indicator	On mode: White, Standby/Sleep mode: White (blinking)
Power Supply	Built-in, 100-240VAC, 50-60Hz

Dimension			
Product with stand (WxHxD)	725.63 x 481.80 x 194 mm		
Product without stand (WxHxD)	725.63 x 428.66 x 84.1 mm		
Weight			
Product with stand	5.7kg		
Product without stand	4.73kg		

Operating Condition		
Temperature range (operation)	0°C to 40 °C	
Temperature range (Non-operation)	-20°C to 60°C	
Relative humidity	20% to 80%	
MTBF	30,000hrs	

Environmental		
Packaging	100% recyclable	
Specific Substances	100% PVC BFR free housing	
Compliance and standards		
Regulatory Approvals	CCC,CEL	
Cabinet		
Color	Black	
Finish	Glossy	

- 1. This data is subject to change without notice. Go to <u>www.philips.com/support</u> to download the latest version of leaflet.
- 2. Smart response time is the optimum value from either GtG or GtG (BW) tests.

4.1 Resolution & Preset Modes

1 Maximum Resolution

1920×1080@60Hz (analog input) 1920×1080@60Hz (digital input)

2 Recommended Resolution

1920×1080@60Hz (digital input)

H. freq (kHz)	Resolution	V. freq (Hz)
31.47	720×400	70.09
31.47	640×480	59.94
35.00	640×480	66.67
37.86	640×480	72.81
37.50	640x480	75.00
37.88	800×600	60.32
46.88	800×600	75.00
48.36	1024x768	60.00
60.02	1024x768	75.03
63.89	1280x1024	60.02
79.98	1280x1024	75.03
55.94	1440×900	59.89
70.64	1440×900	74.98
65.29	1680x1050	59.95
67.50	1920×1080	60.00

Solution Note

Please notice that your display works best at native resolution of 1920x1080@60Hz. For best display quality, please follow this resolution recommendation.

5. Power Management

If you have VESA DPM compliance display card or software installed in your PC, the Display can automatically reduce its power consumption when not in use. If an input from a keyboard, mouse or other input device is detected, the Display will 'wake up' automatically. The following table shows the power consumption and signaling of this automatic power saving feature:

	Power Management Definition				
VESA Mode	Video	H-sync	V-sync	Power Used	LED Color
Active	ON	Yes	Yes	43.11W (typ.) 44.16W(max)	White
Sleep	OFF	No	No	0.5 W (typ.)	White (blink)
Switch Off	OFF	-	-	0.3 W (typ.)	OFF

The following setup is used to measure power consumption on this Display.

- Native resolution: 1920x1080
- Contrast: 50%
- Brightness: 300 nits;
- Color temperature: 6500k with full white pattern

This data is subject to change without notice.

6. Regulatory Information

Lead-free Product



Lead free display promotes environmentally sound recovery and disposal of waste from electrical and electronic equipment. Toxic

substances like Lead has been eliminated and compliance with European community's stringent RoHs directive mandating restrictions on hazardous substances in electrical and electronic equipment have been adhered to in order to make Philips Displays safe to use throughout its life cycle.

China RoHS

The People's Republic of China released a regulation called "Management Methods for Controlling Pollution by Electronic Information Products" or commonly referred to as China RoHS. All products including CRT and Display which are produced and sold for China market have to meet China RoHS request.

中国大陆RoHS

根据中国大陆《电子信息产品污染控制管理办法》(也称为中国大陆RoHS), 以下部分列出了本产品中可能包含的有毒有害物质或元素的名称和含量

本表适用之产品

显示器(液晶及CRT)

有毒有害物质或元素

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镐 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
外壳	0	0	0	0	0	0
CRT显示屏	×	0	0	0	0	0
液晶显示屏/灯管	×	0	0	0	0	0
电路板组件*	×	0	0	0	0	0
电源适配器	×	0	0	0	0	0
电源线/连接线	×	0	0	0	0	0
×:表示该有毒有	害物质在该 品中有毒有 害物质至少 品中有毒有	部件所有均 署物质的限; 在该部件的 署物质的限;)质材料中的 量要求标准 9某一均质机 量要求标准)合量均在 》規定的限量要求	t以下	



环保使用期限

此标识指期限(十年),电子信息产品中含有的 有毒有害物质或元素在正常使用的条件下不会发 生外泄或突变,电子信息产品用户使用该电子 信息产品不会对环境造成严重污染或对其人身、 财产造成严重损害的期限.

中国能源效率标识

根据中国大陆《能源效率标识管理办法》本显示器符合以下要求:

能源效率(cd/W)	> 1.05
能效等级	1级
能效标准	GB 21520-2008

详细有关信息请查阅中国能效标识网:<u>http://www.energylabel.gov.cn/</u>

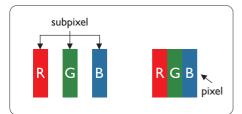
《废弃电器电子产品回收处理管理条例》提示性说明

为了更好地关爱及保护地球,当用户不再需要此产 品或产品寿命终止时,请遵守国家废弃电器电子产 品回收处理相关法律法规,将其交给当地具有国家 认可的回收处理资质的厂商进行回收处理。

7. Customer care and warranty

7.1 Philips' Flat Panel Displays Pixel Defect Policy

Philips strives to deliver the highest quality products. We use some of the industry's most advanced manufacturing processes and practice stringent quality control. However, pixel or sub pixel defects on the TFT Display panels used in flat panel Displays are sometimes unavoidable. No manufacturer can guarantee that all panels will be free from pixel defects, but Philips guarantees that any Display with an unacceptable number of defects will be repaired or replaced under warranty. This notice explains the different types of pixel defects and defines acceptable defect levels for each type. In order to qualify for repair or replacement under warranty, the number of pixel defects on a TFT Display panel must exceed these acceptable levels. For example, no more than 0.0004% of the sub pixels on a Display may be defective. Furthermore, Philips sets even higher quality standards for certain types or combinations of pixel defects that are more noticeable than others. This policy is valid worldwide.



Pixels and Sub pixels

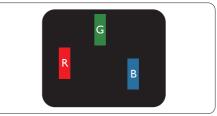
A pixel, or picture element, is composed of three sub pixels in the primary colors of red, green and blue. Many pixels together form an image. When all sub pixels of a pixel are lit, the three colored sub pixels together appear as a single white pixel. When all are dark, the three colored sub pixels together appear as a single black pixel. Other combinations of lit and dark sub pixels appear as single pixels of other colors.

Types of Pixel Defects

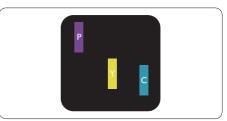
Pixel and sub pixel defects appear on the screen in different ways. There are two categories of pixel defects and several types of sub pixel defects within each category.

Bright Dot Defects

Bright dot defects appear as pixels or sub pixels that are always lit or 'on'. That is, a bright dot is a sub-pixel that stands out on the screen when the Display displays a dark pattern. There are the types of bright dot defects.

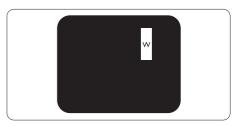


One lit red, green or blue sub pixel.



Two adjacent lit sub pixels:

- Red + Blue = Purple
- Red + Green = Yellow
- Green + Blue = Cyan (Light Blue)



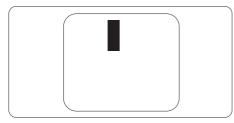
Three adjacent lit sub pixels (one white pixel).

Note

A red or blue bright dot must be more than 50 percent brighter than neighboring dots while a green bright dot is 30 percent brighter than neighboring dots.

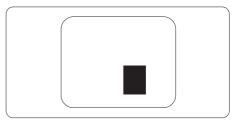
Black Dot Defects

Black dot defects appear as pixels or sub pixels that are always dark or 'off'. That is, a dark dot is a sub-pixel that stands out on the screen when the Display displays a light pattern. These are the types of black dot defects.



Proximity of Pixel Defects

Because pixel and sub pixels defects of the same type that are near to one another may be more noticeable, Philips also specifies tolerances for the proximity of pixel defects.



Pixel Defect Tolerances

In order to qualify for repair or replacement due to pixel defects during the warranty period, a TFT Display panel in a Philips flat panel Display must have pixel or sub pixel defects exceeding the tolerances listed in the following tables.

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL
1 lit subpixel	3
2 adjacent lit subpixels	1
3 adjacent lit subpixels (one white pixel)	0
Distance between two bright dot defects*	>15mm
Total bright dot defects of all types	3
BLACK DOT DEFECTS	ACCEPTABLE LEVEL
1 dark subpixel	5 or fewer
2 adjacent dark subpixels	2 or fewer
3 adjacent dark subpixels	0
Distance between two black dot defects*	>15mm
Total black dot defects of all types	5 or fewer
TOTAL DOT DEFECTS	ACCEPTABLE LEVEL
Total bright or black dot defects of all types	5 or fewer

- 1. 1 or 2 adjacent sub pixel defects = 1 dot defect
- 2. This Display is ISO9241-307 compliant (ISO9241-307: Ergonomic requirement, analysis and compliance test methods for electronic visual displays)

7.2 Customer Care & Warranty

For warranty coverage information and additional support requirement valid for your region, please visit www.philips.com/support website for details. You may also contact your local Philips Customer Care Center number listed below.

Country	CSP	Hotline Number	Price	Opening Hours
Austria	RTS	+43 0810 000206	€ 0.07	Mon to Fri : 9am - 6pm
Belgium	Ecare	+32 078 250851	€ 0.06	Mon to Fri : 9am - 6pm
Cyprus	Alman	800 92 256	Free of charge	Mon to Fri : 9am - 6pm
Denmark	Infocare	+45 3525 8761	Local call tariff	Mon to Fri : 9am - 6pm
Finland	Infocare	+358 09 2290 1908	Local call tariff	Mon to Fri : 9am - 6pm
France	Mainteq	+33 082161 1658	€ 0.09	Mon to Fri : 9am - 6pm
Germany	RTS	+49 01803 386 853	€ 0.09	Mon to Fri : 9am - 6pm
Greece	Alman	+30 00800 3122 1223	Free of charge	Mon to Fri : 9am - 6pm
Ireland	Celestica	+353 01 601 1161	Local call tariff	Mon to Fri : 8am - 5pm
Italy	Anovo Italy	+39 840 320 041	€ 0.08	Mon to Fri : 9am - 6pm
Luxembourg	Ecare	+352 26 84 30 00	Local call tariff	Mon to Fri : 9am - 6pm
Netherlands	Ecare	+31 0900 0400 063	€ 0.10	Mon to Fri : 9am - 6pm
Norway	Infocare	+47 2270 8250	Local call tariff	Mon to Fri : 9am - 6pm
Poland	MSI	+48 0223491505	Local call tariff	Mon to Fri : 9am - 6pm
Portugal	Mainteq	800 780 902	Free of charge	Mon to Fri : 8am - 5pm
Spain	Mainteq	+34 902 888 785	€ 0.10	Mon to Fri : 9am - 6pm
Sweden	Infocare	+46 08 632 0016	Local call tariff	Mon to Fri : 9am - 6pm
Switzerland	ANOVO CH	+41 02 2310 2116	Local call tariff	Mon to Fri : 9am - 6pm
United Kingdom	Celestica	+44 0207 949 0069	Local call tariff	Mon to Fri : 8am - 5pm

Contact Information for WESTERN EUROPE region:

Contact Information for LATIN AMERICA region:

Country	Call center	Consumer care number
Brazil	Vomeent	0800-7254101
Argentina	Vermont	0800 3330 856

Contact Information for China:

Country	Call center	Consumer care number
China	PCCW Limited	4008 800 008

Contact Information for CENTRAL AND EASTERN EUROPE region:

Country	Call center	CSP	Consumer care number
			+375 17 217 3386
Belarus	N/A	IBA	+375 17 217 3389
Bulgaria	N/A	LAN Service	+359 2 960 2360
Croatia	N/A	MR Service Ltd	+385 (01) 640 1111
Czech Rep.	N/A	Asupport	420 272 188 300
Estonia	N/A	FUJITSU	+372 6519900(General) +372 6519972(workshop)
Georgia	N/A	Esabi	+995 322 91 34 71
Hungary	N/A	Profi Service	+36 1 814 8080(General) +36 1814 8565(For AOC&Philips only)
Kazakhstan	N/A	Classic Service I.I.c.	+7 727 3097515
Latvia	N/A	ServiceNet LV	+371 67460399 +371 27260399
Lithuania	N/A	UAB Servicenet	+370 37 400160(general) +370 7400088 (for Philips)
Macedonia	N/A	AMC	+389 2 3125097
Moldova	N/A	Comel	+37322224035
Romania	N/A	Skin	+40 21 2101969
Russia	N/A	CPS	+7 (495) 645 6746
Serbia&Montenegro	N/A	Kim Tec d.o.o.	+381 11 20 70 684
Slovakia	N/A	Datalan Service	+421 2 49207155
Slovenia	N/A	PC H.and	+386 1 530 08 24
the republic of Belarus	N/A	ServiceBy	+375 17 284 0203
Turkey	N/A	Tecpro	+90 212 444 4 832
Ukraine	N/A	Topaz	+38044 525 64 95
Ukraine	N/A	Comel	+380 5627444225

Contact Information for NORTH AMERICA:

Country	Call center	Consumer care number
U.S.A.	EPI-e-center	(877) 835-1838
Canada	EPI-e-center	(800)479-6696

Contact Information for APMEA region:

Country	ASP	Consumer care number	Opening hours
Armenia Azerbaijan Georgia Kyrgyzstan Tajikistan	Firebird service centre	+97 14 8837911	Sun.~Thu. 09:00 - 18:00
Australia	AGOS NETWORK PTY LTD	1300 360 386	Mon.~Fri. 9:00am-5:30pm
Hong Kong Macau	Company: Smart Pixels Technology Ltd.	Hong Kong: Tel: +852 2619 9639 Macau: Tel: (853)-0800-987	Mon.~Fri. 9:00am-6:00pm Sat. 9:00am-1:00pm
India	REDINGTON INDIA LTD	Tel: 1 800 425 6396 SMS: PHILIPS to 56677	Mon.~Fri. 9:00am-5:30pm
Indonesia	PT. CORMIC SERVISINDO PERKASA	+62-21-4080-9086 (Customer Hotline) +62-8888-01-9086 (Customer Hotline)	Mon.~Thu. 08:30-12:00; 13:00-17:30 Fri. 08:30-11:30; 13:00-17:30
Israel	Eastronics LTD	1-800-567000	Sun.~Thu. 08:00-18:00
Korea	Alphascan Displays, Inc	1661-5003	Mon.~Fri. 9:00am-5:30pm Sat. 9:00am-1:00pm
Malaysia	R-Logic Sdn Bhd	+603 5102 3336	Mon.~Fri. 8:15am-5:00pm Sat. 8:30am-12:30am
New Zealand	Visual Group Ltd.	0800 657447	Mon.~Fri. 8:30am-5:30pm
Pakistan	TVONICS Pakistan	+92-213-6030100	Sun.~Thu. 10:00am-6:00pm
Philippines	EA Global Supply Chain Solutions ,Inc.	(02) 655-7777; 6359456	Mon.~Fri. 8:30am~5:30pm
Singapore	Philips Singapore Pte Ltd (Philips Consumer Care Center)	(65) 6882 3966	Mon.~Fri. 9:00am-6:00pm Sat. 9:00am-1:00pm
South Africa	Computer Repair Technologies	011 262 3586	Mon.~ Fri. 08:00am~05:00pm

Taiwan	FETEC.CO	0800-231-099	Mon.~Fri. 09:00 - 18:00
Thailand	Axis Computer System Co., Ltd.	(662) 934-5498	Mon.~Fri. 08:30am~05:30pm
Turkmenistan	Technostar Service Centre	+(99312) 460733, 460957	Mon.~Fri. 09:00 - 18:00
Uzbekistan	Soniko Plus Private Enterprise Ltd	+99871 2784650	Mon.~Fri. 09:00 - 18:00
Vietnam	FPT Service Informatic Company Ltd Ho Chi Minh City Branch	+84 8 38248007 Ho Chi Minh City +84 5113.562666 Danang City +84 5113.562666 Can tho Province	Mon.~Fri. 8:00-12:00, 13:30-17:30 Sat. 8:00-12:00
Japan	フィリップスモ ニター・サポー トセンター	0120-060-530	Mon.~Fri. 10:00 - 17:00

8.1 Troubleshooting

This page deals with problems that can be corrected by a user. If the problem still persists after you have tried these solutions, contact Philips customer service representative.

1 Common Problems

No Picture (Power LED not lit)

- Make sure the power cord is plugged into the power outlet and into the back of the Display.
- First, ensure that the power button on the front of the Display is in the OFF position, then press it to the ON position.

No Picture (Power LED is White)

- Make sure the computer is turned on.
- Make sure the signal cable is properly connected to your computer.
- Make sure the Display cable has no bent pins on the connect side. If yes, repair or replace the cable.
- The Energy Saving feature may be activated

Screen says



- Make sure the Display cable is properly connected to your computer. (Also refer to the Quick Start Guide).
- Check to see if the Display cable has bent pins.
- Make sure the computer is turned on.

AUTO button doesn't function

• The auto function is applicable only in VGA-Analog mode. If the result is not

satisfactory, you can do manual adjustments via the OSD menu.

Note

The Auto Function is not applicable in DVI-Digital mode as it is not necessary.

Visible signs of smoke or sparks

- Do not perform any troubleshooting steps
- Disconnect the Display from mains power source immediately for safety
- Contact with Philips customer service representative immediately.

2 Imaging Problems

Image is not centered

- Adjust the image position using the "Auto" function in OSD Main Controls.
- Adjust the image position using the Phase/ Clock of Setup in OSD Main Controls. It is valid only in VGA mode.

Image vibrates on the screen

 Check that the signal cable is properly securely connected to the graphics board or PC.

Vertical flicker appears

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	- ·

- Adjust the image using the "Auto" function in OSD Main Controls.
- Eliminate the vertical bars using the Phase/ Clock of Setup in OSD Main Controls. It is valid only in VGA mode.

Horizontal flicker appears

• Adjust the image using the "Auto" function in OSD Main Controls.

• Eliminate the vertical bars using the Phase/ Clock of Setup in OSD Main Controls. It is valid only in VGA mode.

Image appears blurred, indistinct or too dark

• Adjust the contrast and brightness on On-Screen Display.

An "after-image", "burn-in" or "ghost image" remains after the power has been turned off.

- Uninterrupted display of still or static images over an extended period may cause "burn in", also known as "after-imaging " or "ghost imaging", on your screen. "Burnin", "after-imaging", or "ghost imaging" is a well-known phenomenon in LCD panel technology. In most cases, the "burned in" or "after-imaging" or "ghost imaging" will disappear gradually over a period of time after the power has been switched off.
- Always activate a moving screen saver program when you leave your Display unattended.
- Always activate a periodic screen refresh application if your LCD Display will display unchanging static content.
- Failure to activate a screen saver, or a periodic screen refresh application may result in severe "burn-in" or "after-image" or "ghost image" symptoms that will not disappear and cannot be repaired. The damage mentioned above is not covered under your warranty.

Image appears distorted. Text is fuzzy or blurred.

• Set the PC's display resolution to the same mode as Display's recommended screen native resolution.

Green, red, blue, dark, and white dots appears on the screen

 The remaining dots are normal characteristic of the liquid crystal used in today's technology, Please refer the pixel policy for more detail.

The "power on" light is too strong and is

disturbing

• You can adjust "power on" light using the power LED Setup in OSD main Controls.

For further assistance, refer to the Consumer Information Centers list and contact Philips customer service representative.

8.2 SmartControl Lite FAQs

Q1. I change the Display on a PC to a different one and the SmartControl Lite becomes un-usable, what do I do?

Ans.: Restart your PC and see if SmartControl Lite can work. Otherwise, you will need to remove and re-install SmartControl Lite to ensure proper driver is installed.

Q2. The SmartControl Lite functions worked well before, but it does not work anymore, what can I do?

- Ans.: If the following actions were executed, the Display driver may need to be re-installed.
- Changed video graphic adapter to another one
- Updated video driver
- Activities on OS, such as service pack or patch
- Run Windows Update and updated Display and/or video driver
- Windows was booted with the Display power off or disconnected.
- To find out, please right click My Computer and click on Properties->Hardware-> Device Manager.
- If you see "Plug and Play Display" shows under Display, then you need to re-install. Simply remove SmartControl Lite and re-install it.
- Q3. After installing SmartControl Lite, when clicking on SmartControl Lite tab, nothing shows up after a while or a failure message shows, what happened?
- **Ans.:** It might be your graphic adaptor is not compatible with the SmartControl Lite. If

your graphic adaptor is one of the above mentioned brands, try to download the most updated graphic adaptor driver from corresponding companies' web site. Install the driver. Remove SmartControl Lite, and re-install it once more. If it is still not working, we are sorry that the graphic adaptor is not supported. Please visit Philips website and check if an updated SmartControl Lite driver is available.

- Q4. When I click on Product Information, only partial information is shown, what happened?
- Ans.: It might be your graphic card adaptor driver is not the most updated version which fully supporting DDC/CI interface. Please try to download the most updated graphic adaptor driver from corresponding companies' web site. Install the driver: Remove SmartControl Lite and re-install it once more.



- Q5. I forgot my PIN for Theft Deterrence Function.What can I do?
- Ans.: Philips Service center has a right to ask for legitimate identification and authorization, in order to establish ownership of the Display.

Please note that the anti-theft deterrence function is provided as a convenient free option. Managing PIN numbers is the sole responsibility of the individual user or the organization who sets it. In case the PIN number is forgotten, Philips service center can re-set it for you at a nominal charge after verification of ownership. Please note that this activity is not covered by standard warranty terms.

8.3 General FAQs

Q1: When I install my Display what should I do if the screen shows 'Cannot display this video mode'?

- Ans.: Recommended resolution for this Display: 1920x1080@60Hz.
- Unplug all cables, then connect your PC to the Display that you used previously.
- In the Windows Start Menu, select Settings/ Control Panel. In the Control Panel Window, select the Display icon. Inside the Display Control Panel, select the 'Settings' tab. Under the setting tab, in box labelled 'desktop area', move the sidebar to 1920x1080 pixels.
- Open 'Advanced Properties' and set the Refresh Rate to 60Hz, then click OK.
- Restart your computer and repeat step 2 and 3 to verify that your PC is set at 1920x1080@60Hz.
- Shut down your computer, disconnect your old Display and reconnect your Philips LCD Display.
- Turn on your Display and then turn on your PC.

Q2: What is the recommended refresh rate for LCD Display?

Ans.: Recommended refresh rate in LCD Displays is 60Hz, In case of any disturbance on screen, you can set it up to 75Hz to see if that removes the disturbance.

Q3: What are the .inf and .icm files on the CD-ROM? How do I install the drivers (.inf and .icm)?

Ans.: These are the driver files for your Display. Follow the instructions in your user manual to install the drivers. Your computer may ask you for Display drivers (inf and .icm files) or a driver disk when you first install your Display. Follow the instructions to insert the (companion CD-ROM) included in this package.

Display drivers (.inf and .icm files) will be installed automatically.

Q4: How do I adjust the resolution?

- Ans.: Your video card/graphic driver and Display together determine the available resolutions. You can select the desired resolution under Windows[®] Control Panel with the "Display properties".
- Q5: What if I get lost when I am making Display adjustments via OSD?
- Ans.: Simply press the OK button, then select 'Reset' to recall all of the original factory settings.

Q6: Is the LCD screen resistant to scratches?

Ans.: In general it is recommended that the panel surface is not subjected to excessive shocks and is protected from sharp or blunt objects. When handling the Display, make sure that there is no pressure or force applied to the panel surface side. This may affect your warranty conditions.

Q7: How should I clean the LCD surface?

Ans.: For normal cleaning, use a clean, soft cloth. For extensive cleaning, please use isopropyl alcohol. Do not use other solvents such as ethyl alcohol, ethanol, acetone, hexane, etc.

Q8: Can I change the color setting of my Display?

- Ans.: Yes, you can change your color setting through OSD control as the following procedures,
- Press "OK" to show the OSD (On Screen Display) menu
- Press "Down Arrow" to select the option "Color" then press "OK" to enter color setting, there are three settings as below.
 - Color Temperature; With settings in the 6500K range the panel appears "warm, with a red-white color tone", while a 9300K temperature yields "cool, bluewhite toning".

- 2. sRGB; this is a standard setting for ensuring correct exchange of colors between different device (e.g. digital cameras, Displays, printers, scanners, etc)
- User Define; the user can choose his/ her preference color setting by adjusting red, green blue color.

Solution Note

A measurement of the color of light radiated by an object while it is being heated. This measurement is expressed in terms of absolute scale, (degrees Kelvin). Lower Kevin temperatures such as 2004K are red; higher temperatures such as 9300K are blue. Neutral temperature is white, at 6504K.

Q9: Can I connect my LCD Display to any PC, workstation or Mac?

Ans.: Yes. All Philips LCD Displays are fully compatible with standard PCs, Macs and workstations. You may need a cable adapter to connect the Display to your Mac system. Please contact your Philips sales representative for more information.

Q10: Are Philips LCD Displays Plug-and- Play?

Ans.: Yes, the Displays are Plug-and-Play compatible with Windows 8/7, Mac OSX, Linux

Q11: What is Image Sticking, or Image Burn-in, or After Image, or Ghost Image in LCD panels?

Ans.: Uninterrupted display of still or static images over an extended period may cause "burn in", also known as "afterimaging" or "ghost imaging", on your screen. "Burn-in", "after-imaging", or "ghost imaging" is a well-known phenomenon in LCD panel technology. In most cases, the "burned in" or "atter-imaging" or "ghost imaging" will disappear gradually over a period of time after the power has been switched off.

Always activate a moving screen saver program when you leave your Display

unattended.

Always activate a periodic screen refresh application if your LCD Display will display unchanging static content.

Warning

Severe"burn-in" or "after-image" or "ghost image" symptoms will not disappear and cannot be repaired. The damage mentioned above is not covered under your warranty.

- Q12: Why is my Display not showing sharp text, and is displaying jagged characters?
- Ans.: Your LCD Display works best at its native resolution of 1920x1080@60Hz. For best display, please use this resolution.

Q13: How to unlock/lock my hot key?

Ans.: Please press button to the right for 10 seconds to unlock/lock the hot key, by doing so, your Display pops out "Attention" to show the unlock/lock status as shown below illustrators.

Attention
Display control unlocked
Attention
Display control locked



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Version: BDM3200E1T