

MultiSync® Large-Screen LCD Series

46", 40" and 32" (31.5" VIS) LCDs ideal for digital information applications



Digital merchandising



Airports/flight and baggage information



Corporate

Also serving markets such as...



Restaurants



Medical



Financial



Theaters



Tradeshows



Broadcasting

Expanding information display options with

SUPERIOR

screen performance.

Providing visual display solutions to a wide variety of users for many years, NEC LCD monitors have consistently set the standard for flat-panel technology and continue to offer new ways to enhance visual experiences. Our visual solutions provide users with a diverse range of options to help them see their digital world more clearly and support them in achieving their goals.

Building on this tradition of quality and innovation, NEC's 46" (46" VIS) LCD4610, 40" (40" VIS) LCD4010 and 32" (31.5" VIS) LCD3210 feature the next generation of LCD technologies and create new options for those in the information display market. The exclusive Digital Signage Technology Suite (DSTS), which was developed based on feedback from our customers, further sets these displays apart with more than 20 advanced features that take screen performance to uncharted levels.

These models include all of the benefits users have come to value in NEC's smaller-sized LCD monitors, and now they can be enjoyed in a variety of information display applications, including airports, retail merchandising, conference rooms, financial exchanges, broadcasting environments and tradeshow exhibits.

All models are available in both standard and IT versions to best meet your display requirements. The value-driven IT version features only PC inputs, while the standard version includes audio and video inputs for a broader set of applications.

Sized to please. With their spacious screens, MultiSync Large-Screen LCDs are ideal for applications that require precise readability and clarity from a distance, such as airports and financial institutions. The LCD4610 touts the largest screen

size LCD commercially available. The LCD3210, which fills the gap between flat panels designed for the desktop and those intended for larger venues, offers digital signage markets a lower-priced option for a variety of visual display needs.

Superior screen performance. MultiSync Large-Screen LCDs take advantage of the many display technologies that have made LCD monitors so popular over the years, and deliver them through expansive screens featuring a wide aspect ratio. Their 1366 x 768 (WXGA) resolution, which provides a true 16:9 aspect ratio, optimizes on-screen text, images and video with remarkable precision

The screen performance of the MultiSync Large-Screen LCD Series brings ideas to life, capturing the attention and imagination of viewers and ensuring that messages reach audiences with maximum clarity and impact.

and clarity, allowing onlookers to clearly view presentations, charts, advertisements, pricing and other public display information. Further, applications can be viewed simultaneously, utilizing the displays' picture-in-picture capability when using the defined combination of video inputs (see User's Manual).

In applications where spectators are situated at various angles in front of the screen or where they are passing by the display, the monitors provide an undistorted view of the screen. Using XtraView wide-angle viewing technology, the displays deliver flexible horizontal and vertical viewing angles (up to 176°; 88° up, down, left and right) with less glare, reflection and distortion.

With brightness adjustable to 450 cd/m², these displays stand out in a crowd, allowing onlookers

to view text and graphics with ease and comfort. Exceptional contrast ratios help the displays deliver amazingly vivid colors, while automatic black level adjustment regulates grayscale images for optimal picture quality. Further, Rapid Response technology allows them to display virtually uninterrupted and undistorted viewing of high-speed, full-motion video without ghosting or image trailing.

Avoid image persistence. With some screen technologies, leaving the display on for a long period of time would permanently burn the image into the screen. As can be noted with phosphor-based

public displays, the image would remain permanently "engraved" into the display, rendering it useless. It is important to understand that LCD technology may experience phenomena known as image persistence, which occurs when a residual or "ghost" image of a previously displayed image

remains visible on the screen. Unlike CRT or other phosphor-based monitors, LCD monitors' image persistence is not permanent; however, constant images being displayed for a long period of time should be avoided. To alleviate image persistence, NEC Display Solutions developed a new panel design and employs many advanced technologies for its MultiSync Large-Screen LCDs. Some of these technologies include a screen saver function, a power-save function that puts the display in power management mode when a sync or input signal is lost, a side color function that adjusts black bars in 4:3 mode, a real-time clock for content scheduling and sleep/wake management and an image mover function.

Take control of your monitor. To make remote control and diagnostics easier, MultiSync Large-Screen LCDs provide three different methods to

manipulate the display—an RS-232 connector, an advanced remote diagnostics and remote control capabilities of the Display Data Channel/Command Interface (DDC/CI), and a handheld IR remote control. By utilizing the inherent power of the PC (a typical source for the display), DDC/CI allows control commands to be sent directly to the monitor through a standard PC system or remotely over an existing network (LAN) by a system administrator. A wide range of DDC/CI-based graphics cards, which will become standard in the near future, allow for easy control through a Windows 2000/XP interface.

Another control capability is daisy-chaining, which links monitors to one another to display the same content and deliver the same au-

dio—all from a single source. This helps avoid the hassle and extra costs of using splitters or connecting monitors to multiple sources.

Achieve consistent, long-distance signals. NEC Display Solutions' exclusive CableComp technology (featured on the LCD4010 and LCD4610) enables users to realize the advantages of long monitor cable lengths without the difficulties and costs normally associated with this type of configuration. In environments such as trading floors, call centers and public signage venues, longer cables enable systems to be centrally located in control rooms far away from users (up to 326 feet/100 meters), allowing monitor upgrades, service and repairs to be accomplished without interrupting the work or display environment.

CableComp technology solves signal and blurred image dilemmas by using a digitized signal delay circuit to automatically compensate for each red, green and blue cable's length and video signal delay, ensuring sharp image reproduction. CableComp also boosts the VGA video signal to prevent blurred images without the need for costly repeaters. A new feature of this technology is its ability to equalize the video signal to eliminate color halos on long cable runs.

Get connected. MultiSync Large-Screen LCDs feature a number of input connections for maximum compatibility (Fig. 1). Both versions include a DVI-D connector for digital video signal adapters and a traditional 15-pin mini D-sub connector that is configured for IBM® VGA-compatible

Multiple application solutions

With space conservation a major concern for all types of markets in today's business world, the LCD4610, LCD4010 and LCD3210's space-conscious design allow them to fit comfortably into almost any application for maximum impact to viewers. Wall mounting, custom-made cabinets and hanging fixtures are just a few of the installation options you have with these displays.



Information Display. Make a lasting impression on the public eye with MultiSync Large-Screen LCDs. Whether the displays are placed in airports, train stations, restaurants or kiosks—in any interior environment, their spacious screens are guaranteed to turn heads and feed useful information to passersby. With XtraView wide-angle viewing technology, it doesn't matter if they're directly in front of the screen or walking by—an ideal view is assured.



Advertising. With their high resolution, bright display and lifelike colors, MultiSync Large-Screen LCDs are unrivaled in drawing consumer attention. Spread the word on your products and services to moviegoers, advertise the latest sale items at a department store or attract the eyes of storefront passersby. No matter the outlet, these displays stop consumers in their tracks.



Corporate. Deliver a presentation they'll remember using MultiSync Large-Screen LCDs. Ideal for board rooms, conference rooms and large offices, the monitors' ability to display crystal-clear text and precise images add clarity and impact to spreadsheets, documents and graphics-based presentations. Picture-in-picture and 50/50 split-screen capabilities allows your group to simultaneously view multiple applications, such as a spreadsheet and full-motion video conference.



Financial. In the fast-paced financial market, information needs to be relayed in real time. MultiSync Large-Screen LCDs are capable not only of displaying on-the-fly market data and other vital information without ghosting or blurring, but do so displaying crisp text and utilizing a high-bright backlight for easier readability.



Tradeshows. With a multitude of exhibitors vying for the attention and time of tradeshow visitors, it can be difficult to stand out from the crowd. MultiSync Large-Screen LCDs help your exhibit become the center of attention with their amazing screen performance. Their brightness and dynamic design will draw interest, while Rapid Response and a high contrast ratio allow you to effectively demonstrate your company's message. The lack of permanent phosphor image burn-in extends the displays' lives and protects your investment.

adapters. This wide compatibility makes it possible to upgrade adapters or software without having to purchase a new monitor. By accepting analog signal inputs, the monitors can display more than 16 million colors, depending on the graphics card and software being used. The standard version display also features BNC VGA, composite video, component video, and an S-Video connector, allowing you to run numerous peripheral devices, including DVD players, media PCs and high-definition video players.

User-friendly, efficient design. As ease of installation is a main concern for the information display market, these displays were designed with light weight in mind, making them simple to

transport and install wherever necessary. In addition, NEC is on the forefront of mounting technology as the displays' cabinets were designed to meet currently proposed VESA mounting standards for larger-sized public displays, which will be required of all manufacturers in the future. Their ability to be mounted in either portrait or landscape orientation further adds to your flexibility. With a uniformly thin frame, the displays' designs are ideal for multi-screen construction for virtually seamless video walls.

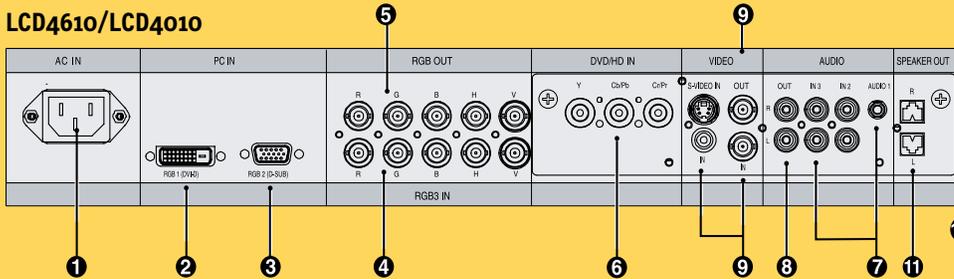
Simplified control of screen settings. For quick and easy setups, a multitude of presets, including automatic image adjust and automatic input detect, make MultiSync Large-Screen LCDs ready

to go right out of the box.

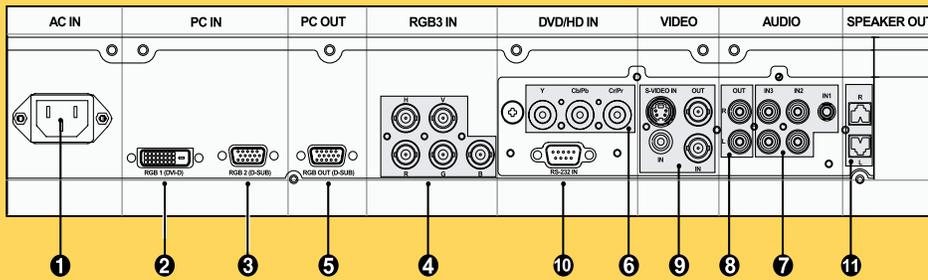
Intelligent power management ensures a smart investment. Utilizing energy-efficient technologies in their design, these displays reduce power consumption and significantly lower your total cost of ownership (TCO). The high-efficiency backlight reduces not only the power consumption but also the heat generation at the front of the screen, while the real-time clock's sleep/wake management scheduler improves energy savings and extends display life.

Figure 1

LCD4610/LCD4010



LCD3210



MultiSync Large-Screen LCDs feature a number of input connectors for maximum compatibility. This makes it possible to upgrade adapters or software without having to purchase a new display.

1. **AC IN connector** Connects with the supplied power cord.
2. **RGB 1 IN (DVI-D)** To input digital RGB signals from a computer*
* This connector does not support analog input.
3. **RGB 2 IN (mini D-Sub 15 pin)** To input analog RGB signals from a personal computer or other RGB equipment.
4. **RGB 3 DVD/HD [R, G, B, H, V] (BNC)** To input the analog RGB signals or signals from other RGB equipment. A Sync-on-Green signal can be connected to the G connector.
5. **RGB OUT connector (mini D-Sub 15 pin)** To output the signal from the RGB 2 or 3 IN connector.
6. **DVD/HD CONNECTOR (BNC)** Connecting equipment such as a DVD player, HDTV device or laser disc player. **AV**
7. **AUDIO IN 1,2,3** Input audio signal from external equipment such as a computer, VCR or DVD player. **AV**

8. **AUDIO OUT** Output the audio signal from the selected AUDIO IN source. **AV**
9. **VIDEO INPUT/OUTPUT CONNECTOR **AV****
VIDEO IN connector (BNC and RCA): Input a composite video signal. BNC and RCA are not available at the same time. (Use only one input).
VIDEO OUT connector (BNC): Output the composite video signal from the VIDEO IN source.
S-VIDEO IN connector (DIN 4 pin): Input the S-video (Y/C separate signal).
10. **EXTERNAL CONTROL (mini D-Sub 9 pin) RS-232C** Input signal from control equipment such as a computer.
In connector: Input signal from control equipment such as a computer or the output from a different MultiSync LCD4610/LCD4010/LCD3210
LCD4610/LCD4010 only - Out connector: To connect multiple MultiSync LCD4610/LCD4010
11. **EXTERNAL SPEAKER TERMINAL** Outputs the audio signal from the selected audio source. **AV**

AV Denotes an AV unit function.
All AV functions are enabled when the AV unit is installed.

SERIES FEATURES AND BENEFITS

High brightness level and contrast ratio, measured according to VESA FPDM, enhance the visual experience

XtraView® technology allows for up 176° wide-angle viewing

User-friendly, efficient design features VESA-standard mounting and an overall lightweight construction for easy transport and installation

Automatic black level adjustment regulates grayscale images for optimal picture quality

Reduced reflection and glare in high ambient light environments provide you with a more comfortable view of the screen

Optional detachable speakers deliver an enhanced multimedia experience with amazing sound quality (Creative Labs™ for LCD4010/LCD4610 and Onkyo® for LCD3210)

Rapid Response™ technology delivers virtually uninterrupted, undistorted viewing of high-speed, full-motion video

Digital Signage Technology Suite Feature and Benefits

Improved screen performance

- **1366 x 768 ultra-high resolution** for true 16:9 aspect ratio
- **High-definition capable display** supports 480i, 480p, 720p and 1080i
- **New backlight system** leads to better brightness uniformity
- **Zoom mode** enables you to customize the screen size in three directions
- **TileMatrix™** allows you to build video walls (up to 25 displays in a 5x5 matrix [4x4 for LCD3210] equalling almost 20 ft. diagonal)
- **TileComp™** works in tandem with TileMatrix to compensate for the bezel width and create a more seamless video wall
- **Image flip** allows you to properly display content originally prepared for alternative display technologies such as rear projection (LCD4010 and LCD4610)
- **Film mode** delivers a smoother image for DVD movies
- **Color temperature adjustable** from 2600K to 10,000K

Lower total cost of ownership (TCO)

- **New backlight system** leads to higher power efficiency and a longer display life
- **Power save function** puts the display in power management mode when a sync or input signal is lost
- **Screen saver function** reduces the risk of image persistence for extended display life
- **Gamma adjustment** reduces the effect of high contrast images on long-term image quality
- **Side color function** adjusts black bars in 4:3 mode to reduce the risk of image persistence with extended use
- **Real-time clock** allows for content scheduling and monitor sleep/wake management, improving energy savings and extending display life
- **Internal temperature sensors** control self-protective circuits to minimize heat damage
- **Self-diagnostic capabilities** help detect possible failure points via queries through DDC/CI and RS-232C
- **Brightness control** reduces energy consumption and heat generation while extending display life

Enhanced display management

- **Improved CableComp™ technology** equalizes the video signal to eliminate color halos on long cable runs (LCD4010 and LCD4610)
- **Video detect** automatically finds the first or last signal used for easy setup
- **Picture-in picture (PIP)** places a smaller video frame within the full-screen video frame
- **Picture-on-picture (POP)** places a smaller video frame next to the full-screen video frame (LCD4010 and LCD4610)
- **Side-by-side view** places two video frames of equal size next to each other (LCD4010 and LCD4610)
- **Gamma selection** lets you adjust the screen to your preferred settings (2.2, 2.4, S-Curve or native)
- **Black level expansion** improves image quality in shaded and darker images
- **DDC/CI** enables communication between the PC and monitor for display management, diagnostics and the remote control
- **Power-on delay** allows for multiple displays on a single electrical circuit
- **6-axis color control engine** allows for precise and simplified color, color temperature and saturation adjustment (LCD4010 and LCD4610)
- **Daisy chain capability enabled through RS-232C** allows for individually addressable display control (LCD4010 and LCD4610)

Model	LCD3210-BK (LCD3210-BK-IT)	LCD4010-BK (LCD4010-BK-IT)	LCD4610-BK (LCD4610-BK-IT)	
Display	Viewable Size Image Pixel Pitch Pixels Per Inch Brightness (typical) Contrast Ratio (typical) Viewing Angle (typical) Response Time (typical) Display Colors Active Screen Area (W X H) Bezel Width (L/R, T/B) Screen Aspect Ratio	31.5" 0.511 50 @ native resolution 500 cd/m ² 600:1 176° Vert., 176° Hor. (88U/88D/88L/88R) @ CR>10 Rapid Response (18ms) 256 RGB Level, more than 16 million 760 x 450mm 45.66mm, 43.372mm 16:9	40" 0.641mm 40 @ native resolution 450 cd/m ² 800:1 170° Vert., 170° Hor. (85U/85D/85L/85R) @ CR>10 Rapid Response (16ms) 256 RGB Level, more than 16 million 885.2 x 497.6mm 47.6mm, 39.3mm 16:9	46" 0.746mm 34 @ native resolution 450 cd/m ² 800:1 170° Vert., 170° Hor. (85U/85D/85L/85R) @ CR>10 Rapid Response (8ms) 256 RGB Level, more than 16 million 1018.4 x 572.5mm 46.6mm, 39.3mm 16:9
Synchronization Range	Horizontal Vertical	-15,625, 15,744, 31.5-91.1 KHz (Analog, LCD3210-BK) / -31.5-91.1 KHz (Analog, LCD3210-BK-IT) / -31.5-91.1 KHz (Digital) 50-85 Hz Analog/Digital	-15,625, 15,744, 31.5-91.1 KHz (Analog, LCD4010-BK) / -31.5-91.1 KHz (Analog, LCD4010-BK-IT) / -31.5-91.1 KHz (Digital) 50-85 Hz Analog/Digital	-15,625, 15,744, 31.5-91.1 KHz (Analog, LCD4610-BK) / -31.5-91.1 KHz (Analog, LCD4610-BK-IT) / -31.5-91.1 KHz (Digital) 50-85 Hz Analog/Digital
Input Signal	Video Sync	ANALOG RGB 0.7 Vp-p / 75 Ohms Separate sync: TTL Level (Positive/Negative) Composite sync: TTL Level (Positive/Negative) Composite sync on green: (0.3Vp-p negative 0.7Vp-p positive)	ANALOG RGB 0.7 Vp-p / 75 Ohms Separate sync: TTL Level (Positive/Negative) Composite sync: TTL Level (Positive/Negative) Composite sync on green: (0.3Vp-p negative 0.7Vp-p positive)	ANALOG RGB 0.7 Vp-p / 75 Ohms Separate sync: TTL Level (Positive/Negative) Composite sync: TTL Level (Positive/Negative) Composite sync on green: (0.3Vp-p negative 0.7Vp-p positive)
Input	RGB1 RGB2 RGB3 Video 1* Component Video 1 (DVD/HD)* Audio* External Control	DVI-D Analog D-sub Analog BNC Composite RCA or S-Video Component BNC Audio 1 (minijack), Audio 2 and 3 Stereo (RCA) Internal Speaker: None RS232, DDC/CI	DVI-D Analog D-sub Analog BNC Composite RCA or S-Video Component BNC Audio 1 (minijack), Audio 2 and 3 Stereo (RCA) Internal Speaker: None RS232, DDC/CI	DVI-D Analog D-sub Analog BNC Composite RCA or S-Video Component BNC Audio 1 (minijack), Audio 2 and 3 Stereo (RCA) Internal Speaker: None RS232, DDC/CI
Output	RGB Video* Audio* Control Audio Amplifier*	Daisychain RGB3 Daisychain Video1 Daisychain - Selected Audio in RS232 for multiple monitor control 7W x 7W	Daisychain RGB3 Daisychain Video1 Daisychain - Selected Audio in RS232 for multiple monitor control 7W x 7W	Daisychain RGB3 Daisychain Video1 Daisychain - Selected Audio in RS232 for multiple monitor control 7W x 7W
Resolutions Supported	720 x 400 @ 70-85 Hz 640 x 480 @ 60-85 Hz 800 x 600 @ 50-85 Hz 832 x 624 @ 74.5 Hz 1024 x 768 @ 50-85 Hz 1280 x 1024 @ 50-85 Hz 1600 x 1200 @ 60 Hz (Compressed) 1280 x 768 @ 50-85 Hz 1360 x 768 @ 50-85 Hz NTSC/PAL/SECAM, 4.43NTSC, Pal60 HDTV, 480i, 480p, 720p, 1080i (not available on LCD3210-BK-IT)	720 x 400 @ 70-85 Hz 640 x 480 @ 60-85 Hz 800 x 600 @ 60-85 Hz 832 x 624 @ 74.5 Hz 1024 x 768 @ 50-85 Hz 1280 x 1024 @ 50-85 Hz 1600 x 1200 @ 60 Hz (Compressed) 1280 x 768 @ 50-85 Hz 1360 x 768 @ 50-85 Hz NTSC/PAL/SECAM, 4.43NTSC, Pal60 HDTV, 480i, 480p, 720p, 1080i (not available on LCD4010-BK-IT)	720 x 400 @ 70-85 Hz 640 x 480 @ 60-85 Hz 800 x 600 @ 50-85 Hz 832 x 624 @ 74.5 Hz 1024 x 768 @ 50-85 Hz 1280 x 1024 @ 50-85 Hz 1600 x 1200 @ 60 Hz (Compressed) 1280 x 768 @ 50-85 Hz 1360 x 768 @ 50-85 Hz NTSC/PAL/SECAM, 4.43NTSC, Pal60 HDTV, 480i, 480p, 720p, 1080i (not available on LCD4610-BK-IT)	
Native Resolution	1366 x 768	1366 x 768	1366 x 768	
Recommended Resolution	1360 x 768 or 1366 x 768	1360 x 768 or 1366 x 768	1360 x 768 or 1366 x 768	
Additional Features	Power Management, Plug and Play (DDC/CI, DDC2B), PIP (Remote), Multi-level Zoom, FullScan, TileMatrix, TileComp, Screen Saver, Rapid Response, Video Ready (no tuner), Infrared remote control included, removable stand included	Power Management, Plug and Play (DDC/CI, DDC2B), PIP (Remote), Multi-level Zoom, FullScan, 6-axis color, CableComp, TileMatrix, TileComp, Screen Saver, Rapid Response, Video Ready (no tuner), Infrared remote control included	Power Management, Plug and Play (DDC/CI, DDC2B), PIP (Remote), Multi-level Zoom, FullScan, 6-axis color, CableComp, TileMatrix, TileComp, Screen Saver, Rapid Response, Video Ready (no tuner), Infrared remote control included	
Touch-Capable	Designed for integration	Designed for integration	Designed for integration	
Voltage Rating	AC 100-120V / AC 220-240V @ 50/60 Hz	AC 100-120V / AC 220-240V @ 50/60 Hz	AC 100-120V / AC 220-240V @ 50/60 Hz	
Power Consumption (typical)	On Power Savings Mode	140W <5W	230W <5W	260W <5W
Dimensions (WxHxD)	Net (with stand) Net (without stand)	31.1 x 20.1 x 7.9 in./789 x 510.3 x 200mm 31.1 x 18.9 x 5.5 in./789 x 479 x 140mm	38.7 x 24.1 x 13.0 in./981.8 x 611.1 x 330 mm 38.7 x 22.8 x 5.5 in./981.8 x 579.8 x 140 mm	43.8 x 27.1 x 13.8 in./1112.8 x 687.1 x 351 mm 43.8 x 25.8 x 5.5 in./1112.8 x 655.8 x 140 mm
Net Weight	(with stand) (without stand)	37.5 lbs./17 kg 35.3 lbs./16 kg	60.6 lbs./27.5 kg 57.3 lbs./26.0 kg	70.5 lbs./32 kg 67.2 lbs./30.5 kg
VESA Hole Configuration Specifications	200 x 200mm (8 hole) / 200 x 100mm (6 hole)	200 x 200mm (8 hole) / 200 x 100mm (6 hole)	200 x 200mm (8 hole) / 200 x 100mm (6 hole)	
Environmental Conditions	Operating Temperature Operating Humidity Operating Altitude Storage Temperature Storage Humidity Storage Altitude	5-40° C / 41-104° F 20-80% 4200m/13,780 ft. -20-60° C / -4-140° F 10-90% 12,000m/39,370 ft.	5-40° C / 41-104° F 20-80% 4200m/13,780 ft. -20-60° C / -4-140° F 10-90% 12,000m/39,370 ft.	5-40° C / 41-104° F 20-80% 4200m/13,780 ft. -20-60° C / -4-140° F 10-90% 12,000m/39,370 ft.
Regulatory Approvals	UL 1950/CSA C22.2 No. 950/TUV-GS/EN60950/FCC-B/DOC-B/EN55022-B/EN55024/EN61000-3-2/EN1000-3-3/CE	UL 60950/CSA C22.2 No. 950/TUV-GS/EN60950/FCC-B/DOC-B/EN55022-B/EN55024/EN61000-3-2/EN1000-3-3/CE	UL 60950/CSA C22.2 No. 950/TUV-GS/EN60950/FCC-B/DOC-B/EN55022-B/EN55024/EN61000-3-2/EN1000-3-3/CE	
Included Accessories	AC power cord, user manual, setup sheet, wireless remote control, batteries, 15-pin RGB cable, CD-ROM, stands	AC power cord, user manual, setup sheet, wireless remote control, batteries, 15-pin RGB cable, CD-ROM, stands	AC power cord, user manual, setup sheet, wireless remote control, batteries, 15-pin RGB cable, CD-ROM, stands	
Optional Accessories	External speakers	External speakers	External speakers	
Limited Warranty	3 year parts and labor, including backlight	3 year parts and labor, including backlight	3 year parts and labor, including backlight	
Technical Support	24 hours/7 days	24 hours/7 days	24 hours/7 days	

* not available on IT models



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