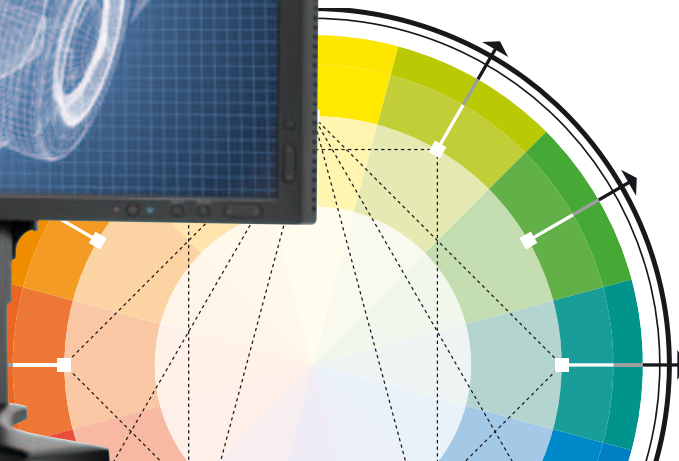# TECH GUIDE LCD Desktop Displays NEC MultiSync® P221W

Technical Innovations and Features

ECO *Green IT*

Innovating Your Success

NEC Display Solutions offers total display solutions for applications across the globe. As a primary interface between users and innovative technology, display solutions are crucial in all aspects of contemporary living and working life. With its comprehensive product portfolio of desktop and large format LCDs as well as projectors, combined with uncompromising quality and a breadth of experience across the most diverse of industry sectors, NEC Display Solutions is unique in its ability to meet the challenge of innovative display solutions.

We're opening up crystal-clear opportunities in visualising the new digital world. see more.

Content

NEC MultiSync® P Series
Professional LCD Desktop Displays

Outstanding technologies that exhibit the perfect combination of product quality and efficiency whilst also demonstrating high environmental sustainability are becoming an ever more important aspect for manufacturers as well as end-users.

With the LCD desktop displays of its new P series, NEC Display Solutions is now filling the gap between the high-performance displays of its MultiSync® 90 series and the recently introduced commercial displays of the NEC MultiSync® EA series.

With its first-class picture quality including programmable 10-bit LUT, numerous ergonomic and environmentally friendly features, as well as flexible connectors, the innovative "Professional" (P) series helps users to achieve a comfortable working style with significantly improved efficiency in office and document management as well as standard graphics applications.

Small to large businesses within the most varied of sectors will continue to enjoy the high degree of flexibility and future-proofing offered by the displays of the NEC MultiSync® P series.

With up to a third more active screen area as compared to an equivalent conventional 4:3 or 5:4 display, the 22-inch P221W monitor offers an enhanced overview for standard and specialised applications, for example, the ability to position additional toolbars or application windows alongside the main application window. The best possible successor model for current users of 19-inch displays.

Independent studies have proven that workplace efficiency is significantly increased when wide-format displays are employed.

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The NEC MultiSync® P221W

The MultiSync® P221W is the first model in the P series of NEC Display Solutions, and apart from its outstanding picture quality, ergonomics and flexibility of connectors for a 16:10 wide-format display, it also offers evident improvement in workplace productivity.

Visual Performance

S-PVA Panel Technology

With its 8-bit colour depth for each RGB channel, S-PVA technology is in a superior class amongst panel technologies. The liquid crystal at each individual subpixel is divided into four domains, in which the liquid crystal automatically align themselves perpendicularly to the glass coating – without any rotating, nematic effects. This effectively allows particularly wide viewing angles as well as giving the display a large contrast ratio.

The integrated S-PVA panel of the NEC MultiSync® P221W allows 16.7 million reproducible colours covering 92% of the NTSC colour space, with a superb resolution of 1680 x 1050 enabling outstanding image representation.
The high quality of the colour representation is also supported by a high blackness value as well as a high contrast ratio of 1,000:1.

S-PVA panels are especially suitable for applications featuring particularly high picture and colour quality requirements, such as those found in CAD/CAM and 3D applications. The panels are also frequently deployed in wide-format form.

Viewing Angles

The S-PVA panel features especially high horizontal and vertical viewing angles of 178 degrees – at a contrast ratio of 10:1 and 5:1, respectively. This is mainly achieved by a doubling of the number of subpixel domains with each domain consisting of liquid crystals aligned at different angles.

High viewing angles are especially advantageous for multi-display use, for example, in office or document management applications.

Superb Brightness

The Professional LCD display has a brightness of 300 cd/m^2, with a response time of 6 ms.

Pixel Pitch

The pixel pitch of 0.282 mm is considered particularly easy on the eyes and so greatly increases the efficiency performance of users in office tasks such as text and spreadsheet applications.

Analogue / Digital Interfaces

Flexibility and future-proofing are particularly important aspects of the MultiSync® P221W:
ambix™ technology allows the display to possess two analogue connectors as well as a single digital connector providing a choice between different signal sources, whilst also supporting HDCP.

Colour Management

Thanks to their excellent colour management and superb hardware calibration capability, the displays in the NEC MultiSync® Professional series guarantee an outstanding picture quality with reliable and faithful colour reproduction.

Programmable 10-bit LUT

The MultiSync® P221W is supplied as standard with a programmable 10-bit look-up table (LUT). This enables exact hardware calibration for each colour channel of the RGB (red, green and blue) signal.
Even the most subtle of hues and colour differences can be reproduced with an almost completely natural precision and sharpness.

The MultiSync® P221W is therefore suitable for deployment in sectors requiring high colour accuracy, such as, for example, some applications in the DTP sector as well as in image and video processing.

Colour Temperature Control

The P221W has been equipped with colour temperature control that can be activated using the On Screen Display (OSD).

NTAA (Non-Touch-Auto-Adjustment)

As soon as the display is connected to a new signal source, or the frequency or resolution is changed, the Non-Touch Auto-Adjustment (NTAA) function automatically controls and optimises the current imaging settings. This guarantees excellent and consistent picture and colour quality right from the word go.

Ergonomics / User-Friendliness

NEC Display Solutions has included a range of ergonomic and functional features for its desktop displays in the MultiSync® P series, so creating a comfortable working environment and enhancing productivity at the workplace.

Height Adjustability

ErgoDesign®: The P221W panel can be height adjusted using its pedestal by up to 150 mm so that it can be adapted to the requirements of each individual user.
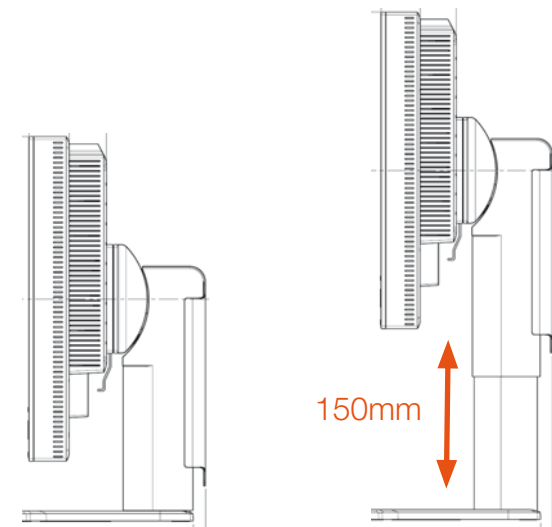
Note: When used in portrait mode the adjustable height range is somewhat reduced.

150mm

Tilting / Swivelling / ToroDesign™

Tilting to an inclination of 5 to 30 degrees and horizontal swivelling of up to 170 degrees to the right or left allow the user to view screen content from a range of different positions.
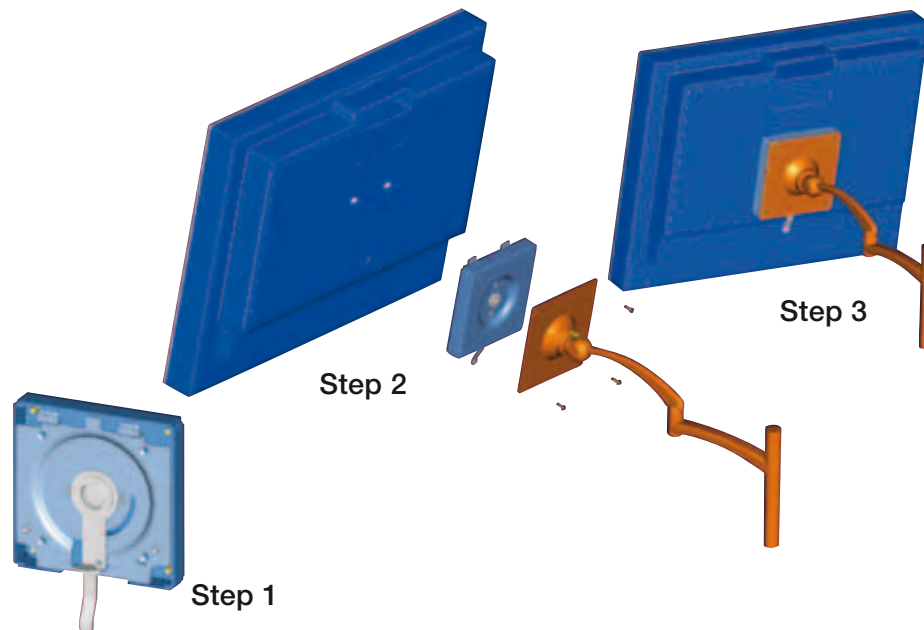
The display panel can be vertically rotated by 90 degrees from a landscape orientation into portrait mode. The viewing and processing of data in portrait mode format, for example, can be made significantly more convenient and comfortable.

TORO Design

Quick Release Stand

Special mounting technology for simple and quick installation onto a wall or an external monitor arm. The standard VESA mount (100 mm x 100 mm) means that installation can be performed without requiring any additional tools.

Step 3

Step 2

Step 1

On Screen Display

All monitor settings can be adjusted using the On Screen Display (OSD). The OSD is particularly user-friendly and intuitive, and can be operated using the elegant OSD control buttons (MENU, Left, Right, Up, Down) that have been discreetly integrated within the display bezel. So as to avoid accidental or unauthorised changes to the monitor settings, the On Screen Display is also lockable.

Narrow Bezel Design

The MultiSync® P221W has been equipped with an extremely narrow bezel of only 15 mm. This means that screen content, whether it's a multimedia presentation or a spreadsheet analysis, always enjoys the best possible presentation.

With the option of two different colour variants – black or silver/white – as well as their timeless and modern design, the displays will always perfectly fit into the most diverse of architectural and interior-designed surroundings.

Multi-Display Capability

Multi-monitor applications are becoming ever more popular within the modern office environment – from the more administrative sections through to multimedia divisions. With its narrow cabinet and bezel design as well as elegant OSD control buttons integrated within the display, the NEC P221W allows a top-quality overall appearance to multi-display solutions. The extremely narrow bezel also means that distracting transitions between the monitors are reduced to a minimum, so that users can enjoy an overview of the complete display area with a minimum of visual impairment.

NEC Green IT Concept

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Climate change and our responsibility for its effects on the global ecological equilibrium has become a central issue in today's society. High energy efficiency, improved recycling, avoiding the use of hazardous materials and an environmentally-conscious company philosophy are core to NEC Display Solutions' values, and an important objective of NEC is also to become carbon neutral. To this end, the CO_2 emissions of NEC and its customers are being balanced by a corresponding reduction in environmental impact - e.g. through the use of innovative technologies.

Carbon Footprint Meter

Activating the Eco Mode function allows the CO_2 emissions of the monitor to be substantially reduced by reducing the brightness of the display or running it in Power Save Mode. Just using the display in Eco Mode already reduces energy consumption by at least 20% and hence also CO_2 emissions. The Carbon Footprint Meter that has been integrated into the P221W informs users in real time the actual and cumulated savings in carbon dioxide that have been achieved by the display, as compared to running the display at 100% brightness.

The Carbon Footprint Meter is simply called up using the On Screen Display (OSD) and acts as an additional device motivating users to employ the monitor in an efficient and ecologically-optimised fashion.

Note: The meter only serves as an indicator of the CO_2 emissions. Savings are not achieved simply by calling up the function.

Power-Off Timer

The Power-Off timer allows the display to switch itself off at any time determined by the user so that additional, unnecessary energy consumption is avoided and CO_2 emissions reduced.

AmbiBright

Using a sensor that measures ambient light levels, the AmbiBright function monitors the local lighting conditions and automatically adapts the brightness of the display accordingly. Not only does this help protect the eyes of the user, but also helps in reducing power consumption.

EPEAT

The MultiSync® P221W has achieved the "Silver" EPEAT environmental certification that recognises particularly environmentally-conscious products. The environmental protection certficate of the American EPA (Environmental Protection Agency) compares PCs, notebooks and monitors using 51 environmental criteria.

Technical Specifications

Panel Technology	S-PVA TFT
Screen Size [inch/cm]	22.0 / 55.9
Pixel Pitch [mm]	0.282
Viewing Angle [°]	178 horizontal / 178 vertical (typ. at CR 10:1), 178 horizontal / 178 vertical (typ. at CR 5:1)
Contrast Ratio (typ.)	1,000:1
Brightness (typ.) [cd/m²]	300
Response Time (typ.) [ms]	16 (7 white/black; 9 black/white)
Colours	16.7 Mio.
Horizontal / Vertical Frequency [kHz]	31.5 - 83.0 / 56.0 - 75.0
Optimum Resolution	1680 x 1050 at 60 Hz
Supported Resolutions	1440 x 900; 1400 x 1050; 1360 x 768; 1280 x 1024; 1280 x 960; 1152 x 870; 1024 x 768; 832 x 624; 800 x 600; 720 x 400; 640 x 480
Connectors	Digital: 1 x DVI-I; Analog: 1 x mini D-sub 15 pin
Plug & Play	VESA DDC/CI; DDC2B/2Bi; EDID Standard
Adjust Functions	NTAA (Non-Touch-Auto-Adjustment); Auto Adjust; Brightness; Colour Temperature Control; Contrast; Fine Adjust (analog); Language Select; Monitor Information; On Screen Display (OSD) lock-out; Power-Off Timer; Programmable 10-bit LUT; sRGB
Safety and Ergonomics	CE; TCO 03; TÜV Ergonomics; TÜV GS; Energy Star; FCC Class B; PCT/Gost; UL/C-UL or CSA; CCC; ISO 13406-2 (pixel failure class II); MPR II/MPR III; RoHS
Power Consumption on Mode [W]	62 (typ.); 50 (Eco Mode)
Power Consumption Power-Saving Mode [W]	2
Power Supply	100-120 V / 220 - 240 V; 0.95 A / 0.4 A; integrated power supply
Ambient Temperature (operating) [°C]	+5 to +35
Ambient Humidity (operating) [%]	20 to 80
VESA Mounting [mm]	100 x 100
ErgoDesign®: Height adjustable stand [mm]	150
Screen Tilt [°] / Pivot [°] / Swivel [°]	-5 to +30 / 0° (Landscape) to 90° (Portrait) / 340
Dimensions (W x H x D) [mm]	506.4 x 410.0 x 247.3
Bezel Width [mm]	15.0
Cable Management	yes
Kensington Lock	yes
Benefits	16:10 wide format; AmbiBright; Carbon Footprint Meter; NaviSet® and NaviSet Administrator compatible; Rapid Response Technology
Colour Versions	Silver Front Bezel; White Back Cabinet Black Front Bezel; Black Back Cabinet
Warranty	3 years incl. backlight

Empowered by Innovation

NEC