

NEC MultiSync® Large Format Series

NEC Operational Guidelines

NEC Large Format Displays are designed to perform reliably over the long term. However we also grade our products with differing operation time certification. This document provides further detailed information on the levels of certification and recommendations for maintaining image quality.

Information on 24/7 operation

NEC recommends the avoidance of actual 24/7 use of Large Format Displays. If such use is deemed inevitable, NEC approves the following products to be used in such conditions:

V Series	P Series	UN Series	UHD Series / HB Series
V323-2 / PG	P404 / PG / MG / SST	X464UNS-2	X551UHD / IGT
V423	P484 / PG / MG / SST	X464UNV-3	X651UHD-2 / SST / IGT
V463	P554 / PG / MG / SST	X554UNS-2	X841UHD-2 / SST / IGT
V552	P703 / PG / SST	X554UNV-2	X981UHD-2 / SST
V652	P801 / PG / SST	X555UNS / PG	
V801		X555UNV	X474HB
		UN551S	X554HB
V404 / PG / T		UN551VS	X754HB
V484 / PG / T			
V554 / PG / T			

Recommendations for optimised 24/7 operation

- Content should not be of static nature (image retention is not covered by warranty)
- Operating temperature should be as low as possible (ideal: room temperature)
- If possible, reduce brightness (reduces wear on the LCD panel and minimises power consumption)
- Where possible, minimise the contrast of the content (sharp black/white contrasts should be avoided)

Following products are not approved for 24/7 operation

Recommended operation time: 16 hours or less per day.

V Series
V801 TM

Recommended operation time: 12 hours or less per day.

E Series	E Series
E326	E654
E436	E651-T
E506	E705 / SST
E556	E805 / SST
E656	E905 / SST

Helping prevent image retention on an LCD display

LCDs can show image retention when static information is displayed for an extended period of time which is commonly called image retention. Image retention is not covered by warranty as the user can avoid image retention by taking certain measures.

Be extra careful with modified screens

When a protection sheet (glass, acrylic/touch screen) is installed over the LCD surface, or the Large Format Display is mounted in a wall or separate housing, make sure that the temperature sensor readings within the monitor are checked. Using an LCD display in areas with ambient temperatures above 35 degrees Celsius can reduce the time period in which image retention may occur. The ventilation holes must be free of dust and dirt in all locations.

Power save or power OFF

NEC Display Solutions recommends that the display enters the power saving mode, or is turned off, when not in use. Leaving the unit on – even with a blank screen – decreases the overall lifetime of the display. Turning off, or using power management, for 6-8 hours per day can considerably extend the life of the product and minimise image retention.

Screen saver control for static images

In those rare instances when static images over a long period of time cannot be avoided, NEC Display Solutions insists that the display's "Screen Saver" control is activated. This feature is selected via OSD (On Screen Display) under "Display Protection"/"Screen Saver"/"Motion".

Tips for optimised content design

- Keeping the operating temperature as close to room temperature as possible
- Avoid high brightness levels which is closely related to a)
- Avoid bright background colour
- Horizontal scrolling of characters/images at regular, periodic intervals
- Movement of characters/images at periodic intervals. Applying movement to the screen content is one of the most effective ways of reducing image retention. This can easily be achieved by shifting the whole screen content, or just portions that are usually static

Please note: When showing the same static content for an extended period of time, showing a different content for a few seconds will not help reduce image retention. The best effects are achieved when different contents are shown for an equal period of time. Switching the displays off for a few hours per day also supports efforts to minimise image retention effectively.

- Avoid vertical lines, borders or frames next to high contrast pictures
- Avoid high contrast image patterns. High contrast patterns should not be positioned side by side in a static image. This type of pattern increases the risk of image persistence due to the presence of charges in the LCD in adjacent areas

Displays operating under 24/7 conditions (or more than 7000 hours/year) are very likely to experience accelerated aging effects (e.g. staining, image retention, brightness non-uniformity), which cause visible deterioration of image quality.

Consequently, NEC considers that displays which are operated as 24/7 (or more than 7000 hours/year) and which have visible image deterioration are nonetheless still offering an acceptable performance within the expected ageing processes and will not be considered defective.

EXAMPLES OF A GOOD DESIGN:



EXAMPLES OF A BAD DESIGN:



Not recommended: Black / White combinations of fonts and sharp borders with rapid changes



Characters scrolling in horizontal direction / logo in vertical direction



Insert moving pictures between fixed images