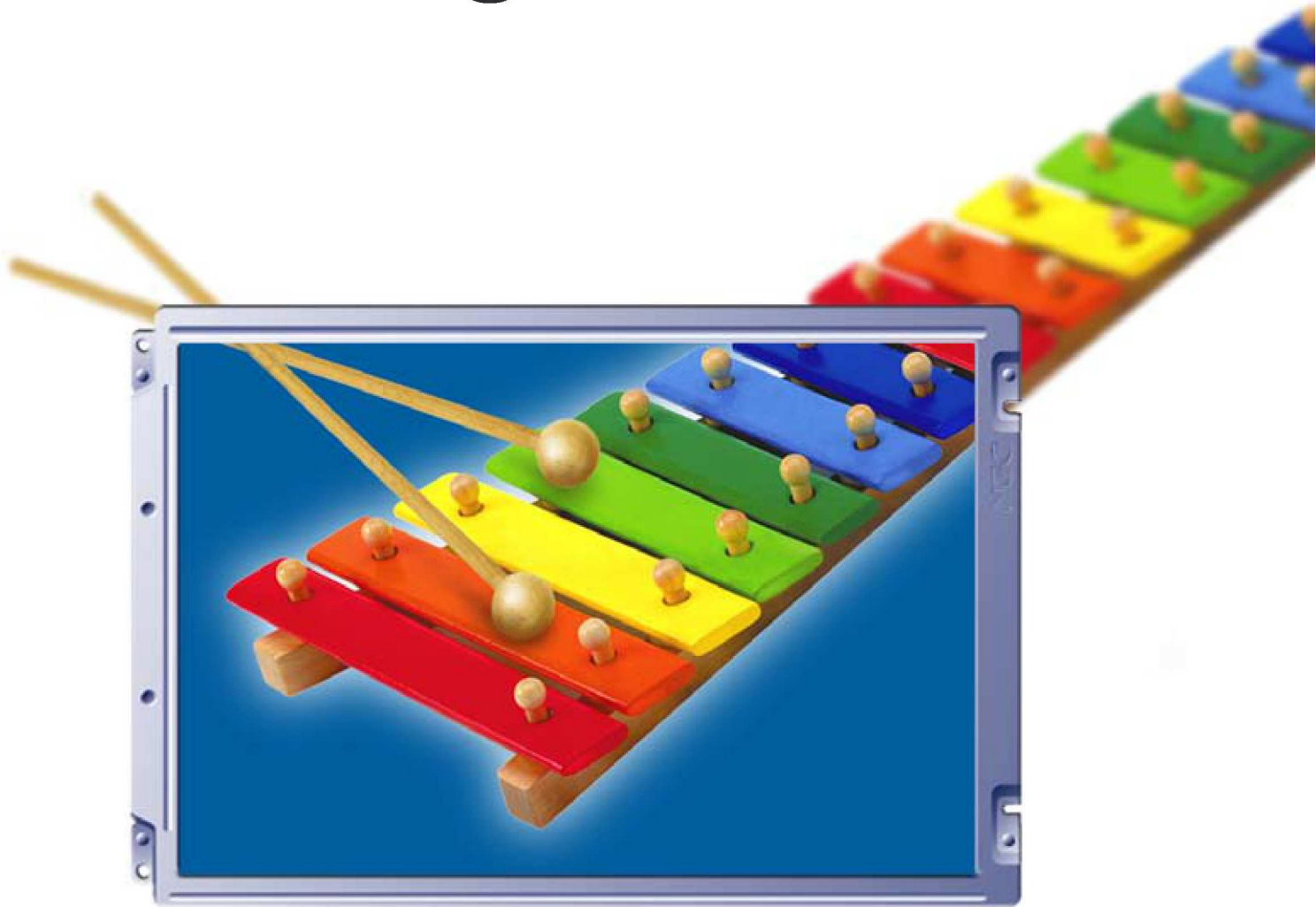


Striking colours.

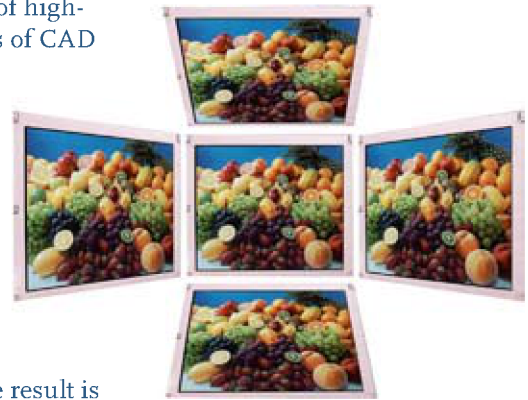


SFT Technology¹

High luminance, wide color gamut.

With our SA-SFT and UA-SFT technologies we have achieved improved panel transmissivity, resulting in higher luminance and wider color gamut displays allowing customers to view clear and vivid color images in bright environments.

- High definition**
 We offer products with pixel density of up to 200 pixels/inch and resolution of up to 5M pixel displays. That means customers enjoy faithful reproduction of high-precision images down to the finest details – from the fine text and lines of CAD and DTP to the delicate nuances of nature images and imaging data for medical purposes.
- Quick response**
 We are developing our SFT technology, which features low dependence on response time between gray-scale levels, to achieve uninterrupted full-motion video.
- Ultra-wide viewing angle, reduced color shift.**
 LCDs with SFT Technology feature a new ultra-wide 170° (right/left and up/down) viewing angle while minimizing the color shift phenomenon that occurs as luminance changes with viewing angle. The result is a new and definitive benchmark in image quality with virtually no color deviation – a great picture no matter how you look at it.



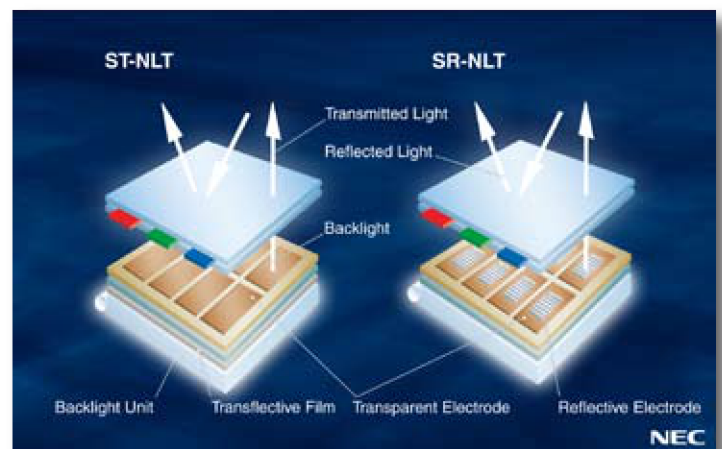
Adaptive Design Technology

For industrial products NEC follows the concept of “form-fit-function”: Every new or improved model is electrically and mechanically compatible to its predecessor. Development of backward-compatible designs enables us to provide the long-term support required by industrial applications.

When even possible, NEC uses identical interfaces and mechanics to create whole display families, giving developers highest flexibility and varieties for their range of applications.

NLT Technology²

- SR-NLT³ guarantees high-visibility in all outdoor light environments**
 SR-NLT maximizes the high ambient light visibility features of a reflective-type LCD along with the low ambient light visibility features of a transmissive-type LCD to deliver high picture quality in all possible light environments.
- ST-NLT⁴ brings you the clearest, sharpest pictures under the sun!**
 This revolutionary new ST-NLT is a transmissive type that guarantees bright, easy-viewing displays even in bright sunlight. It's the history-making forerunner of a new generation of LCDs unaffected by changes in natural light – for bright, vivid color displays anytime.



*1 SFT: Super Fine TFT

*2 NLT: Natural Light TFT

*3 SR-NLT: Super-Reflective NLT

*4 ST-NLT: Super-Transmissive NLT

LED Backlight Technology

NEC announces several new a-Si TFT-LCD modules incorporating newly designed LED units that achieve both long operating life and low power consumption in the backlight systems. These new products enhance NEC's core product lineup of TFT LCD devices featuring high luminosity, long-life, low power consumption and small footprint.

Recently, the demand for LCD modules equipped with white LEDs in the backlight system has risen rapidly in various industrial fields. NEC responds on these requirements with a range of brand-new display devices. By incorporating highly luminescent, highly efficient white LEDs into the backlight system, which eliminates the need for an inverter circuit, NEC has been able to reduce power consumption in new display devices by partially more than 30% compared to modules that use a cold-cathode fluorescent lamp (CCFL). The white LED backlight system also enables thickness and weight to be reduced by more than 15% compared to conventional modules equipped with CCFL-based backlight systems.

- **Long-Life and Low-Power White LED Unit**

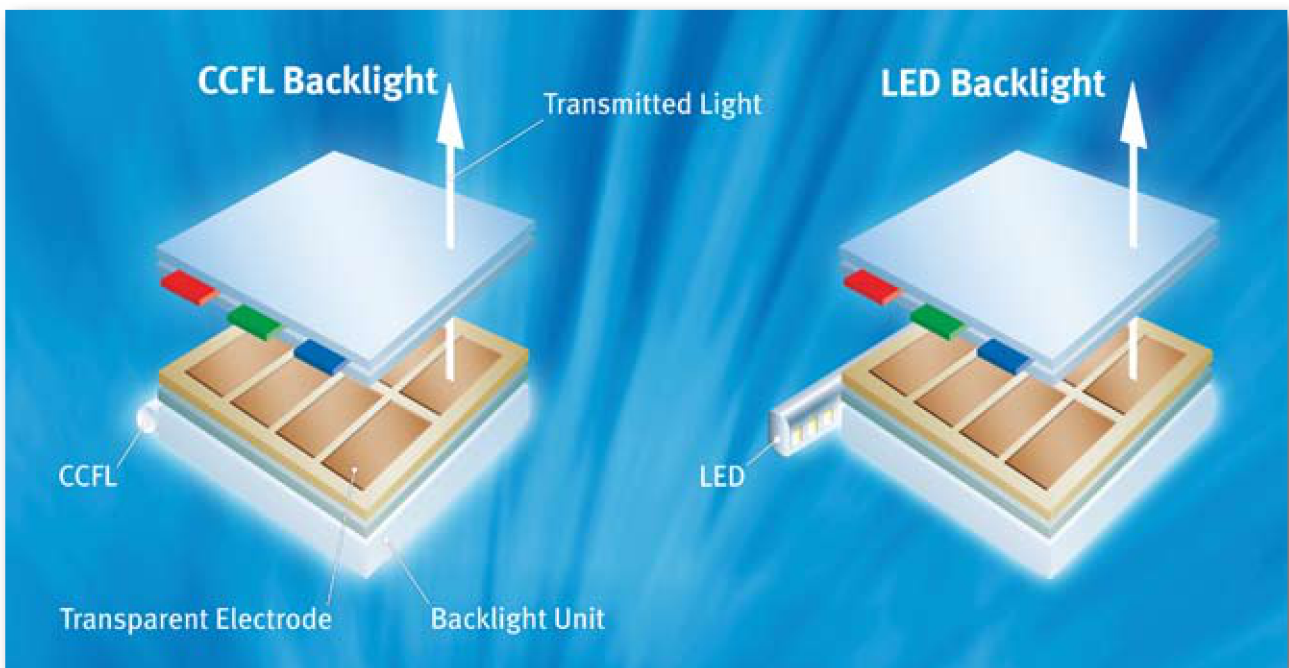
The newly designed white LED units, optimized by NEC LCD Technologies' proprietary optical and structural technology, outperform conventional cold-cathode fluorescent lamps (CCFL) in terms of operating life or mechanical size. They boast high reliability that is ideal for display devices in industrial equipment exposed to severe environmental conditions. In addition, all new modules reduce power consumption by more than 20 percent compared to conventional CCFL backlight systems.

- **Compatibility**

Most of the new modules are compatible with NEC LCD Technologies' conventional standard products of the same size in relation to outer dimensions, position of mounting holes, and screen center. Each also maintains signal compatibility with conventional products. Thus, the modules can be replaced easily without the need to change their peripheral appliances. In accordance with NEC's product policy, most of the LED backlight units are replaceable.

- **Wide operating temperature range**

A wide operating temperature range guarantees operation even in extreme conditions. Moreover, the luminance of the white LED backlight performs exceptionally well under low temperatures, even from initial startup.



TFT module line-up for monitor products

Screen size	22.5" (57 cm diagonal)		21.3" (54 cm diagonal)		
Part number	NL192120AC25-02	NL204153BM21-01/01A	NL204153AM21-07A	NL204153BC21-02	NL204153AC21-09
Resolution	1920 x 1200	2048 x 1536	2048 x 1536	2048 x 1536	2048 x 1536
Display color	1,073,741,824 colors	256 gray scales/1sub-pixel 766 gray scales/1pixel	256 gray scales/1sub-pixel 766 gray scales/1pixel	16,777,216 colors	16,777,216 colors
Pixel pitch (mm)	0.252 x 0.252	0.211 x 0.211	0.211 x 0.211	0.211 x 0.211	0.211 x 0.211
Lumminance (TYP.)	420 cd/m2	800 cd/m2	1450 cd/m2	235 cd/m2	800 cd/m2
Contrast ratio (TYP.)	800 : 1	700 : 1	900 : 1	450 : 1	750 : 1
Viewing angle (Up/down; right/left)	88°, 88°, 88°, 88°	85°, 85°, 85°, 85°	85°, 85°, 85°, 85°	85°, 85°, 85°, 85°	85°, 85°, 85°, 85°
Response time (TYP.)	12 ms	35 ms	27 ms	23 ms	27 ms
Interface	4 port LVDS (RGB 10 bits each)	4 port LVDS (LCR 8 bits each)	4 port LVDS (LCR 8 bits each)	4 port LVDS (RGB 8 bits each)	4 port LVDS (RGB 8 bits each)
Power supply voltage	12 V	12 V	12 V	12 V	12 V (inverter 24 V)
Power consumption (TYP.)	63.6 W	34.2 W	67.2 W	32.5 W *3	80.4 W
Operating temperature	(0°C ~ + 50°C)	0°C ~ + 55°C	0°C ~ + 55°C	0°C ~ + 55°C	0°C ~ + 55°C
Storage temperature	-20°C ~ + 60°C	-20°C ~ + 60°C	-20°C ~ + 60°C	-20°C ~ + 60°C	-20°C ~ + 60°C
Polarizer surface	Antiglare	Antiglare	Antiglare	Antiglare	Antiglare
Module size (mm): WxHxD (D:max)	542 x 362 x 40	457 x 350 x 25	457 x 350 x 37	457 x 350 x 25.5	457 x 350 x 34
Weight (TYP.)	3450 g	3800 g	3000 g	3800 g	3000 g
Backlight	Direct Backlight	6 CCFL	16 CCFL	Top and bottom, 3 CCFL each	Direct Backlight 16 CCFL
Inverter	Built-in	–	Built-in	–	Built-in
Remarks	<ul style="list-style-type: none"> • Super-advanced SFT • 120 Hz frame rate • Fast response time 	<ul style="list-style-type: none"> • Super-advanced SFT • Monochrome • Small footprint 	<ul style="list-style-type: none"> • Super-advanced SFT • Monochrome • High intensity backlight 	<ul style="list-style-type: none"> • Super-advanced SFT • NTSC ratio 72% 	<ul style="list-style-type: none"> • Super-advanced SFT • High contrast • High intensity backlight

Screen size	21.3" (54 cm diagonal)				
Part number	NL160120BM27-03/03A	NL160120AM27-13A	NL160120BC27-14	NL160120AC27-20	NL160120AC27-22B
Resolution	1600 x 1200	1600 x 1200	1600 x 1200	1600 x 1200	1600 x 1200
Display color	256 gray scales/1sub-pixel 766 gray scales/1pixel	256 gray scales/1sub-pixel 766 gray scales/1pixel	16,777,216 colors	16,777,216 colors	16,777,216 colors
Pixel pitch (mm)	0.27 x 0.27	0.27 x 0.27	0.27 x 0.27	0.27 x 0.27	0.27 x 0.27
Lumminance (TYP.)	1000 cd/m2	1650 cd/m2	250 cd/m2	950 cd/m2	900 cd/m2
Contrast ratio (TYP.)	700 : 1	850 : 1	550 : 1	800 : 1	1100 : 1
Viewing angle (Up/down; right/left)	85°, 85°, 85°, 85°	85°, 85°, 85°, 85°	85°, 85°, 85°, 85°	88°, 88°, 88°, 88°	88°, 88°, 88°, 88°
Response time (TYP.)	35 ms	23 ms	20 ms	25 ms	20 ms
Interface	2 port LVDS (LCR 8 bits each)	2 port LVDS (LCR 8 bits each)	2 port LVDS (RGB 8 bits each)	2 port LVDS (RGB 8 bits each)	2 port LVDS (RGB 8 bits each)
Power supply voltage	12 V	12 V	12 V	12 V (inverter 24 V)	12 V (inverter 24 V)
Power consumption (TYP.)	30.7 W	63.7 W	30.7 W *3	80 W	72 W
Operating temperature	0°C ~ + 55°C	0°C ~ + 55°C	0°C ~ + 55°C	0°C ~ + 55°C	0°C ~ + 55°C
Storage temperature	-20°C ~ + 60°C	-20°C ~ + 60°C	-20°C ~ + 60°C	-20°C ~ + 60°C	-20°C ~ + 60°C
Polarizer surface	Antiglare	Antiglare	Antiglare	Antiglare	Antiglare
Module size (mm): WxHxD (D:max)	457 x 350 x 25	457 x 350 x 37	457 x 350 x 25.5	457 x 350 x 34	457 x 350 x 34
Weight (TYP.)	3750 g	2900 g	3750 g	2900 g	
Backlight	6 CCFL	16 CCFL	Top and bottom, 3 CCFL each	Direct Backlight 16 CCFL	Direct Backlight 16 CCFL
Inverter	–	Built-in	–	Built-in	Built-in
Remarks	<ul style="list-style-type: none"> • Super-advanced SFT • Monochrome • 10-bit LUT 	<ul style="list-style-type: none"> • Super-advanced SFT • Monochrome • High intensity backlight 	<ul style="list-style-type: none"> • Super-advanced SFT • NTSC ratio 72% 	<ul style="list-style-type: none"> • Ultra-advanced SFT • 10-bit LUT • High intensity backlight 	<ul style="list-style-type: none"> • Ultra-advanced SFT • 10-bit LUT • Improved Viewing Angle

NEW

Specifications

Screen size	20.1" (51 cm diagonal)		19.0" (48 cm diagonal)		
Part number	NL256204AM15-01/01A	NL256204AM15-03A	NL128102BM29-05A	NL128102BC29-01	NL128102BC29-01B
Resolution	2560 x 2048	2560 x 2048	1280 x 1024	1280 x 1024	1280 x 1024
Display color	256 gray scales/1sub-pixel 766 gray scales/1pixel	256 gray scales/1sub-pixel 766 gray scales/1pixel	256 gray scales/1sub-pixel 766 gray scales/1pixel	16,777,216 colors	16,777,216 colors
Pixel pitch (mm)	0.156 x 0.156	0.156 x 0.156	0.294 x 0.294	0.294 x 0.294	0.294 x 0.294
Lumminance (TYP.)	850 cd/m2	850 cd/m2	1000 cd/m2	300 cd/m2	280 cd/m2
Contrast ratio (TYP.)	600 : 1	600 : 1	900 : 1	450 : 1	450 : 1
Viewing angle (Up/down; right/left)	85°, 85°, 85°, 85°	88°, 88°, 88°, 88°	85°, 85°, 85°, 85°	85°, 85°, 85°, 85°	85°, 85°, 85°, 85°
Response time (TYP.)	30 ms	30 ms	35 ms	20 ms	20 ms
Interface	4 port LVDS (LCR 8 bits each)	4 port LVDS (LCR 8 bits each)	2 port LVDS (RGB 8 bits each)	2 port LVDS (RGB 8 bits each)	2 port LVDS (RGB 8 bits each)
Power supply voltage	12 V	12 V	5V	5V	5V
Power consumption (TYP.)	49.2 W	49.2 W	26.8 W	26.8 W	26.8 W
Operating temperature	0°C ~ + 55°C	0°C ~ + 55°C	0°C ~ + 55°C	0°C ~ + 55°C	0°C ~ + 55°C
Storage temperature	-20°C ~ + 60°C	-20°C ~ + 60°C	-20°C ~ + 60°C	-20°C ~ + 60°C	-20°C ~ + 60°C
Polarizer surface	Antiglare	Antiglare	Antiglare	Antiglare	Antiglare
Module size (mm): WxHxD (D:max)	423.4 x 343.5 x 43.5	423.4 x 343.5 x 43.5	404.2 x 330.0 x 22.0	404.2 x 330.0 x 22.0	404.2 x 330.0 x 22.0
Weight (TYP.)	2440 g	2440 g	2900 g	2900 g	2900 g
Backlight	Direct Backlight 12 CCFL	Direct Backlight 12 CCFL	6 CCFL	6 CCFL	6 CCFL
Inverter	Built-in	Built-in	-	-	-
Remarks	<ul style="list-style-type: none"> • Super-advanced SFT • High contrast • High resolution 	<ul style="list-style-type: none"> • Super-advanced SFT • High contrast • Improved Viewing Angle 	<ul style="list-style-type: none"> • Super-advanced SFT • High contrast • High luminance 	<ul style="list-style-type: none"> • Super-advanced SFT • NTSC ratio 72% 	<ul style="list-style-type: none"> • Super-advanced SFT • NTSC ratio 72% • High uniformity

NEW

Screen size	19.0" (48 cm diagonal)		
Part number	NL128102BM29-08	NL128102BC29-10	NL128102BC29-10C
Resolution	1280 x 1024	1280 x 1024	1280 x 1024
Display color	256 gray scales/1sub-pixel 766 gray scales/1pixel	16,777,216 colors	16,777,216 colors
Pixel pitch (mm)	0.294 x 0.294	0.294 x 0.294	0.294 x 0.294
Lumminance (TYP.)	1000 cd/m2	300 cd/m2	290 cd/m2
Contrast ratio (TYP.)	900 : 1	800 : 1	800 : 1
Viewing angle (Up/down; right/left)	88°, 88°, 88°, 88°	88°, 88°, 88°, 88°	88°, 88°, 88°, 88°
Response time (TYP.)	35 ms	20 ms	20 ms
Interface	2 port LVDS (RGB 8 bits each)	2 port LVDS (RGB 8 bits each)	2 port LVDS (RGB 8 bits each)
Power supply voltage	5V	5V	5V
Power consumption (TYP.)	26.8 W	25.9 W	25.9 W
Operating temperature	0°C ~ + 55°C	0°C ~ + 55°C	0°C ~ + 55°C
Storage temperature	-20°C ~ + 60°C	-20°C ~ + 60°C	-20°C ~ + 60°C
Polarizer surface	Antiglare	Antiglare	Antiglare
Module size (mm): WxHxD (D:max)	404.2 x 330.0 x 22.0	404.2 x 330.0 x 22.0	404.2 x 330.0 x 22.0
Weight (TYP.)	2900 g	2600 g	2600 g
Backlight	6 CCFL	6 CCFL	6 CCFL
Inverter	-	-	-
Remarks	<ul style="list-style-type: none"> • Super-advanced SFT • High contrast • Modified white balance • Improved Viewing Angle 	<ul style="list-style-type: none"> • Super-advanced SFT • High contrast • High colour gamut 	<ul style="list-style-type: none"> • Super-advanced SFT • High contrast • High uniformity • High colour gamut

NEW

NEW

NEW

TFT module line-up for monitor products

	22.5 inch	21.3 inch	20.1 inch	19.0 inch
SXGA¹⁾ 1280 × 1024 (1M pixels)				NL128102BM29-08 • 1000cd/m ² , 900 : 1, 35m • High contrast • Modified white balance • Improved Viewing Angle
				NL128102BC29-10 • 300cd/m ² , 800 : 1, 20m • High contrast • High colour gamut
				NL128102BC29-10C • 290cd/m ² , 800 : 1, 20m • High contrast • High uniformity • High colour gamut
				NL12810BC29-01 • 300cd/m ² , 450 : 1, 20ms • NTSC ratio* 72%
				NL128102BC29-01B • 280cd/m ² , 450 : 1, 20ms • NTSC ratio* 72% • High uniformity
				NL128102BM29-05A • 1000cd/m ² , 900 : 1, 35ms • Monochrome
UXGA¹⁾ 1600 × 1200 (2M pixels)		NL160120AC27-22B • 900cd/m ² , 1100 : 1, 20 ms • 10-bit LUT • Improved Viewing Angle		
		NL160120AC27-20 • 950cd/m ² , 800 : 1, 25 ms • High contrast • High intensity backlight		
		NL160120BC27-14 • 250cd/m ² , 550 : 1, 20 ms • NTSC ratio* 72%		
		NL160120AM27-13A • 1650cd/m ² , 850 : 1, 23 ms • High intensity backlight • Monochrome		
		NL106120BM27-03/03A • 1000cd/m ² , 700 : 1, 35 ms • Monochrome		
WUXGA¹⁾ 1920 × 1200 (2M pixels)	NL192120AC25-02 • 350cd/m ² , 700 : 1, 12 ms • 120 Hz frame rate • Fast response time			
QXGA¹⁾ 2048 × 1536 (3M pixels)		NL204153AC21-09 • 800cd/m ² , 750 : 1, 24 ms • High contrast • High intensity backlight		
		NL204153BC21-02 • 235 cd/m ² , 450 : 1, 23 ms • NTSC ratio* 72%		
		NL204153BM21-01/01A • 800 cd/m ² , 700 : 1, 35 ms • Monochrome		
		NL204153AM21-07A • 1450 cd/m ² , 900 : 1, 27 ms • High intensity backlight • Monochrome		
QSXGA¹⁾ 2560 × 2048 (5M pixels)			NL256204AM15-03A • 850cd/m ² , 600 : 1, 30 ms • High contrast • Improved Viewing Angle	
			NL256204AM15-01/01A • 850cd/m ² , 600 : 1, 30ms • Monochrome	

1) – Ultra-wide viewing angle type

* – Wide colour gamut

┌ ┐ – Mounting compatibility. Outer dimensions (except thickness), position of mounting holes and relative to screen center.

TFT module line-up for industrial products

Screen size	15.3" (39 cm diagonal)			15.0" (38 cm diagonal)		
Part number	NL12876BC26-25	NL12876BC26-25B	NL12876BC26-28	NL10276BC30-15	NL10276BC30-17	NL10276BC30-18
Resolution	1280 x 768	1280 x 768	1280 x 768	1024 x 768	1024 x 768	1024 x 768
Display color	16,777,216 colors	16,777,216 colors	16,777,216 colors	16,777,216 colors	16,777,216 colors	16,777,216 colors
Pixel pitch (mm)	0.261 x 0.261	0.261 x 0.261	0.261 x 0.261	0.297 x 0.297	0.297 x 0.297	0.297 x 0.297
Lumminance (TYP.)	470 cd/m2	470 cd/m2	470 cd/m2	250 cd/m2	350 cd/m2	500 cd/m2
Contrast ratio (TYP.)	700 : 1	700 : 1	1000 : 1	400 : 1	700 : 1	500 : 1
Viewing angle (Up/down; right/left)	85°, 85°, 85°, 85°	85°, 85°, 85°, 85°	88°, 88°, 88°, 88°	40°, 60°, 60°, 60°	85°, 85°, 85°, 85°	80°, 60°, 80°, 80°
Response time (TYP.)	25 ms	25 ms	25 ms	25 ms	25 ms	18 ms
Interface	LVDS RGB (8 bits each)	LVDS RGB (8 bits each)	LVDS RGB (8 bits each)	LVDS RGB (8 bits each)	LVDS RGB (8 bits each)	LVDS RGB (8 bits each)
Power supply voltage	3.3 V	3.3 V	3.3 V	3.3 V	3.3 V	3.3 V
Power consumption (TYP.)	18.0 W	18.0 W	18.0 W	9.4 W	16.6 W	15.7 W
Operating temperature	-10°C ~ + 70°C	-10°C ~ + 70°C	-10°C ~ + 70°C	0°C ~ + 50°C	0°C ~ + 55°C	-10°C ~ + 70°C
Storage temperature	-20°C ~ + 80°C	-20°C ~ + 80°C	-20°C ~ + 80°C	-20°C ~ + 60°C	-20°C ~ + 60°C	-20°C ~ + 80°C
Polarizer surface	Clear	Antiglare	Antiglare	Antiglare	Antiglare	Antiglare
Module size (mm): WxHxD (D:max)	358 x 226 x 15.8	358 x 226 x 15.8	358 x 226 x 15.8	328 x 252 x 11	326.5 x 253.3 x 17.0	326.5 x 253.3 x 17.0
Weight (TYP.)	1270 g	1270 g	1270 g	970 g	1300 g	1300 g
Backlight	Top and bottom, 4 CCFL	Top and bottom, 4 CCFL	Top and bottom, 4 CCFL	Top and bottom, 2 CCFL	Top and bottom, 4 CCFL	Top and bottom, 4 CCFL
Inverter	-	-	-	-	150PW231	150PW231
Remarks	• Super-advanced SFT	• Super-advanced SFT	• High colour gamut	• TN	• UA SFT • PSWG compliant	• PSWG compliant

NEW

Screen size	15.0" (38 cm diagonal)				12.1" (31 cm diagonal)	
Part number	NL10276BC30-18C	NL10276BC30-32D	NL10276BC30-33D	NL10276BC30-34D	NL10276BC24-13	NL10276BC24-13C
Resolution	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768
Display color	16,777,216 colors	16,777,216 colors	16,777,216 colors	16,777,216 colors	16,777,216 colors	16,777,216 colors
Pixel pitch (mm)	0.297 x 0.297	0.297 x 0.297	0.297 x 0.297	0.297 x 0.297	0.24 x 0.24	0.24 x 0.24
Lumminance (TYP.)	600 cd/m2	250 cd/m2	400 cd/m2	(400 cd/m2)	400 cd/m2	400 cd/m2
Contrast ratio (TYP.)	500 : 1	500 : 1	500 : 1	(500 : 1)	600 : 1	600 : 1
Viewing angle (Up/down; right/left)	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 80°, 80°, 80°	45°, 55°, 70°, 70°	45°, 55°, 70°, 70°
Response time (TYP.)	18 ms	18 ms	18 ms	18 ms	33 ms	33 ms
Interface	LVDS RGB (8 bits each)	LVDS RGB (8 bits each)	LVDS RGB (8 bits each)	LVDS RGB (8 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)
Power supply voltage	3.3 V	3.3 V	3.3 V	3.3 V	3.3 V	3.3 V
Power consumption (TYP.)	15.7 W	10.0 W	10.0 W	(10.0 W)	7 W	7 W
Operating temperature	-10°C ~ + 70°C	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-10°C ~ + 70°C	-10°C ~ + 70°C
Storage temperature	-20°C ~ + 80°C	-20°C ~ + 80°C	-20°C ~ + 80°C	-20°C ~ + 80°C	-20°C ~ + 80°C	-20°C ~ + 80°C
Polarizer surface	Clear + Antireflection	Antiglare	Antiglare	Antiglare	Clear	Clear + Antireflection
Module size (mm): WxHxD (D:max)	326.5 x 253.3 x 17.0	326.5 x 253.5 x 12.0	326.5 x 253.5 x 12.0	326.5 x 253.5 x 11.5	280.0 x 210.0 x 13.0	280.0 x 210.0 x 13.0
Weight (TYP.)	1300 g	970 g	970 g		750 g	755 g
Backlight	Top and bottom, 4 CCFL	Top and bottom, 2 CCFL	Top and bottom, 2 CCFL	Long-life LED, 70,000 hrs MTTF	One side, 2 CCFL	One side, 2 CCFL
Inverter	150PW231	150PW331	150PW331	-	121PW181	121PW181
Remarks	• Super-transmissive NLT • PSWG compliant	• PSWG compliant	• PSWG compliant	• September 2009 • PSWG compliant	-	• Super-transmissive NLT

NEW



TFT module line-up for industrial products

Screen size	12.1" (31 cm diagonal)					
Part number	NL10276BC24-19D	NL10276BC24-20	NL8060BC31-20	NL8060BC31-36	NL8060BC31-41C	NL8060BC31-41D
Resolution	1024 x 768	1024 x 768	800 x 600	800 x 600	800 x 600	800 x 600
Display color	262,144 colors	16,777,216 colors	262,144 colours	262,144 colours	16,777,216 colors	16,777,216 colors
Pixel pitch (mm)	0.24 x 0.24	0.24 x 0.24	0.3075 x 0.3075	0.3075 x 0.3075	0.3075 x 0.3075	0.3075 x 0.3075
Lumminance (TYP.)	650 cd/m2	400 cd/m2	250 cd/m2	1100 cd/m2	550 cd/m2	400 cd/m2
Contrast ratio (TYP.)	600 : 1	600 : 1	400 : 1	600 : 1	600 : 1	600 : 1
Viewing angle (Up/down; right/left)	60°, 60°, 70°, 70°	45°, 55°, 70°, 70°	80°, 80°, 80°, 80°	45°, 55°, 70°, 70°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°
Response time (TYP.)	25 ms	33 ms	80 ms	33 ms	25 ms	25 ms
Interface	LVDS RGB (6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)
Power supply voltage	3.3 V	3.3 V	3.3 V / 5 V	3.3 V / 5 V	3.3 V	3.3 V
Power consumption (TYP.)	4.3 W	7 W	7.0 W	13.7 W	6.8 W	6.8 W
Operating temperature	-20°C ~ + 60°C	-10°C ~ + 70°C	0°C ~ + 55°C	-10°C ~ + 70°C	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range
Storage temperature	-20°C ~ + 60°C	-20°C ~ + 80°C	-20°C ~ + 60°C	-20°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C
Polarizer surface	Antiglare	Clear	Clear	Clear	Clear + Antireflection	Antiglare
Module size (mm): WxHxD (D:max)	260.0 x 200.0 x 6.9	280.0 x 210.0 x 13.0	280 x 210 x 13	280 x 209 x 16.5	280 x 210 x 11	280 x 210 x 11
Weight (TYP.)	305 g	750 g	760 g	900 g	670 g	670 g
Backlight	One side, LED	One side, 2 CCFL	One side, 2 CCFL	Top and bottom, 2 CCFL	One side, 2 CCFL	One side, 2 CCFL
Inverter	–	121PW181	121PW161	–	121PW181	121PW181
Remarks	• Small footprint	• Portrait viewing mode	• Advanced SFT	• Ultra-high brightness	• Super-transmissive NLT	–



NEW

NEW

Screen size	12.1" (31 cm diagonal)				10.4" (26 cm diagonal)	
Part number	NL8060BC31-42/42D	NL8060BC31-46	NL8060BC31-47C	NL8060BC31-47D	NL10276BC20-04	NL10276BC20-04C
Resolution	800 x 600	800 x 600	800 x 600	800 x 600	1024 x 768	1024 x 768
Display color	262,144 colours	262,144 colours	16,777,216 colors	16,777,216 colors	262,144 colors	262,144 colors
Pixel pitch (mm)	0.3075 x 0.3075	0.3075 x 0.3075	0.3075 x 0.3075	0.3075 x 0.3075	0.206 x 0.206	0.206 x 0.206
Lumminance (TYP.)	400 cd/m2	(450 cd/m2)	(900 cd/m2)	(450 cd/m2)	300 cd/m2	300 cd/m2
Contrast ratio (TYP.)	600 : 1	(600 : 1)	(600 : 1)	(600 : 1)	300 : 1	300 : 1
Viewing angle (Up/down; right/left)	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	45°, 60°, 60°, 60°	45°, 60°, 60°, 60°
Response time (TYP.)	25 ms	25 ms	25 ms	25 ms	55 ms	55 ms
Interface	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (6 bits each)	LVDS RGB (6 bits each)
Power supply voltage	3.3 V / 5 V	3.3 V / 5 V	3.3 V	3.3 V	3.3 V	3.3 V
Power consumption (TYP.)	6.8 W	(5.3 W)	(5.3 W)	(5.3 W)	6.2 W	6.2 W
Operating temperature	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	0°C ~ + 60°C	0°C ~ + 60°C
Storage temperature	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-20°C ~ + 70°C	-20°C ~ + 70°C
Polarizer surface	42: Clear 42D: Antiglare	Clear	Clear + Antireflection	Clear	Clear + Antireflection	Clear + Antireflection
Module size (mm): WxHxD (D:max)	280 x 210 x 11	280 x 210 x 11	280 x 210 x 11	280 x 210 x 11	243.0 x 185.1 x 11.0	243.0 x 185.1 x 11.0
Weight (TYP.)	670 g	(670 g)	(670 g)	(670 g)	530 g	535 g
Backlight	One side, 2 CCFL	Long-life LED, 70,000 hrs MTTF	Long-life LED, 70,000 hrs MTTF	Long-life LED, 70,000 hrs MTTF	One side, 2 CCFL	One side, 2 CCFL
Inverter	121PW181	–	–	–	104PW191	104PW191
Remarks	–	• September 2009	• Super-transmissive NLT • Q4 2009	• September 2009	–	• Super-transmissive NLT

NEW



NEW



NEW



Screen size	10.4" (26 cm diagonal)					
Part number	NL10276BC20-08	NL10276BC20-12	NL10276BC20-18	NL8060BC26-27	NL8060BC26-28	NL8060BC26-30C
Resolution	1024 x 768	1024 x 768	1024 x 768	800 x 600	800 x 600	800 x 600
Display color	262,144 colors	16,777,216 colors	16,777,216 colors	262,144 colors	16,777,216 colors	16,777,216 colors
Pixel pitch (mm)	0.206 x 0.206	0.206 x 0.206	0.206 x 0.206	0.264 x 0.264	0.264 x 0.264	0.264 x 0.264
Lumminance (TYP.)	300 cd/m2	(200 cd/m2)	(400 cd/m2)	400 cd/m2	400 cd/m2	500 cd/m2
Contrast ratio (TYP.)	700 : 1	(500 : 1)	(900 : 1)	700 : 1	700 : 1	900 : 1
Viewing angle (Up/down; right/left)	85°, 85°, 85°, 85°	40°, 20°, 45°, 45°	80°, 80°, 80°, 80°	85°, 85°, 85°, 85°	85°, 85°, 85°, 85°	80°, 80°, 80°, 80°
Response time (TYP.)	25 ms	18 ms	18 ms	50 ms	50 ms	25 ms
Interface	LVDS RGB (6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	CMOS RGB (6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)
Power supply voltage	3.3 V	3.3 V	3.3 V	3.3 V / 5 V	3.3 V	3.3 V
Power consumption (TYP.)	6.7 W	3.4 W	t.b.d. W	6.6 W	6.5 W	6.5 W
Operating temperature	0°C ~ +55°C	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range	-10°C ~ +70°C	-10°C ~ +70°C	-20°C ~ +70°C • Wide operating temperature range
Storage temperature	-20°C ~ +60°C	-30°C ~ +80°C	-30°C ~ +80°C	-20°C ~ +80°C	-20°C ~ +80°C	-30°C ~ +80°C
Polarizer surface	Clear	Clear	Clear	Clear	Clear	Clear + Antireflection
Module size (mm): WxHxD (D:max)	227 x 174.5 x 10.5	231.2 x 174.6 x 5.3	228 x 178.5 x	243.0 x 185.1 x 10.5	243.0 x 185.1 x 10.5	243.0 x 185.1 x 10.5
Weight (TYP.)	440 g	180 g	(380 g)	475 g	475 g	480 g
Backlight	One side, 2 CCFL	One side, White LED	Long-life LED, 70,000 hrs MTTF	One side, 2 CCFL	One side, 2 CCFL	One side, 2 CCFL
Inverter	104PW191	–	–	104PW161	104PW201	104PW201
Remarks	• Super-advanced SFT	• Small footprint	• June 2009	• Super-advanced SFT	• Super-advanced SFT	• Super-transmissive NLT



Screen size	10.4" (26 cm diagonal)					
Part number	NL8060BC26-30D	NL8060BC26-35C	NL8060BC26-35D	NL6448BC33-53	NL6448BC33-54	NL6448BC33-59/59D
Resolution	800 x 600	800 x 600	800 x 600	640 x 480	640 x 480	640 x 480
Display color	16,777,216 colors	16,777,216 colors	16,777,216 colors	262,144 colours	262,144 colours	262,144 colours
Pixel pitch (mm)	0.264 x 0.264	0.264 x 0.264	0.264 x 0.264	0.33 x 0.33	0.33 x 0.33	0.33 x 0.33
Lumminance (TYP.)	400 cd/m2	800 cd/m2	400 cd/m2	380 cd/m2	220 cd/m2	380 cd/m2
Contrast ratio (TYP.)	900 : 1	1000 : 1	1000 : 1	500 : 1	350 : 1	500 : 1
Viewing angle (Up/down; right/left)	80°, 80°, 80°, 80°	80°, 80°, 80°, 80°	80°, 80°, 80°, 80°	85°, 85°, 85°, 85°	30°, 20°, 45°, 45°	85°, 85°, 85°, 85°
Response time (TYP.)	25 ms	18 ms	18 ms	34 ms	38 ms	34 ms
Interface	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)
Power supply voltage	3.3 V	3.3 V	3.3 V	3.3 V / 5 V	3.3 V / 5 V	3.3 V / 5 V
Power consumption (TYP.)	6.5 W	4.2 W	4.2 W	5.9 W	5.8 W	5.9 W
Operating temperature	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range	-10°C ~ +70°C	-10°C ~ +70°C	-10°C ~ +70°C
Storage temperature	-30°C ~ +80°C	-30°C ~ +80°C	-30°C ~ +80°C	-20°C ~ +80°C	-20°C ~ +80°C	-20°C ~ +80°C
Polarizer surface	Antiglare	Clear + Antireflection	Antiglare	Clear	Clear	-59: Clear / -59D: Antiglare
Module size (mm): WxHxD (D:max)	243.0 x 185.1 x 10.5	243.0 x 185.1 x 10.5	243.0 x 185.1 x 10.5	243 x 185.1 x 10.5	243 x 185.1 x 10.5	243 x 185.1 x 10.5
Weight (TYP.)	475 g	475 g	475 g	475 g	465 g	475 g
Backlight	One side, 2 CCFL	Long-life LED, 70,000 hrs MTTF	Long-life LED, 70,000 hrs MTTF	One side, 2 CCFL	One side, 2 CCFL	One side, 2 CCFL
Inverter	104PW201	–	–	104PW161/104PW191	104PW161/104PW191	104PW161/104PW191
Remarks	–	• Super-transmissive NLT • September 2009	• September 2009	• Super-advanced SFT	–	–



TFT module line-up for industrial products

Screen size	10.4" (26 cm diagonal)					
Part number	NL6448BC33-63C	NL6448BC33-63D	NL6448BC33-64	NL6448BC33-64C	NL6448BC33-70	NL6448BC33-70C
Resolution	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480
Display color	16,777,216 colors	16,777,216 colors	262,144 colours	262,144 colours	262,144 colours	262,144 colours
Pixel pitch (mm)	0.33 x 0.33	0.33 x 0.33	0.33 x 0.33	0.33 x 0.33	0.33 x 0.33	0.33 x 0.33
Lumminance (TYP.)	450 cd/m2	450 cd/m2	450 cd/m2	450 cd/m2	450 cd/m2	900 cd/m2
Contrast ratio (TYP.)	600 : 1	600 : 1	600 : 1	600 : 1	600 : 1	600 : 1
Viewing angle (Up/down; right/left)	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°
Response time (TYP.)	25 ms	25 ms	25 ms	25 ms	25 ms	25 ms
Interface	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)
Power supply voltage	3.3 V	3.3 V	3.3 V / 5 V	3.3 V / 5 V	3.3 V / 5 V	3.3 V / 5 V
Power consumption (TYP.)	6.2 W	6.2 W	6.2 W	6.2 W	(4.0 W)	(4.0 W)
Operating temperature	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range
Storage temperature	-30°C ~ +80°C	-30°C ~ +80°C	-30°C ~ +80°C	-30°C ~ +80°C	-30°C ~ +80°C	-30°C ~ +80°C
Polarizer surface	Clear + Antireflection	Antiglare	Clear	Clear + Antireflection	Clear	Clear + Antireflection
Module size (mm): WxHxD (D:max)	243 x 185.1 x 10.5	243 x 185.1 x 10.5	243 x 185.1 x 10.5	243 x 185.1 x 10.5	243 x 185.1 x 10.5	243 x 185.1 x 10.5
Weight (TYP.)	475 g	475 g	475 g	475 g	475 g	475 g
Backlight	One side, 2 CCFL	One side, 2 CCFL	One side, 2 CCFL	One side, 2 CCFL	Long-life LED, 70,000 hrs MTTF	Long-life LED, 70,000 hrs MTTF
Inverter	104PW161/104PW191	104PW161/104PW191	104PW161/104PW191	104PW161/104PW191	-	-
Remarks	• Super-transmissive NLT	-	-	• Super-transmissive NLT	• September 2009	• Super-transmissive NLT • September 2009

NEW



NEW



Screen size	10.4" (26 cm diagonal)			9" (23 cm diagonal)		8.9"
Part number	NL6448BC33-71C	NL6448BC33-71D	NL6448BC33-74	NL8048BC24-01	NL8048BC24-04	NL10260BC19-01D
Resolution	640 x 480	640 x 480	640 x 480	800 x 480	800 x 480	1024 x 600
Display color	16,777,216 colors	16,777,216 colors	262,144 colours	16,777,216 colors	16,777,216 colors	16,777,216 colors / 262,144 colours
Pixel pitch (mm)	0.33 x 0.33	0.33 x 0.33	0.33 x 0.33	0.246 x 0.246	0.246 x 0.246	0.1905 x 0.189
Lumminance (TYP.)	900 cd/m2	450 cd/m2	450 cd/m2	400 cd/m2	350 cd/m2	300 cd/m2
Contrast ratio (TYP.)	600 : 1	600 : 1	800 : 1	600 : 1	700 : 1	700 : 1
Viewing angle (Up/down; right/left)	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	88°, 88°, 88°, 88°	80°, 60°, 80°, 80°	88°, 88°, 88°, 88°	88°, 88°, 88°, 88°
Response time (TYP.)	25 ms	25 ms	30 ms	25 ms	25 ms	25 ms
Interface	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	CMOS RGB (6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)
Power supply voltage	3.3 V	3.3 V	3.3 V / 5 V	3.3 V	3.3 V	3.3 V
Power consumption (TYP.)	(4.0 W)	(4.0 W)	6.6 W	5.8 W	5.8 W	3.0 W
Operating temperature	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range	-20°C ~ +70°C • Wide operating temperature range
Storage temperature	-30°C ~ +80°C	-30°C ~ +80°C	-30°C ~ +80°C	-30°C ~ +80°C	-30°C ~ +80°C	-30°C ~ +80°C
Polarizer surface	Clear + Antireflection	Antiglare	Clear	Clear	Clear	Antiglare
Module size (mm): WxHxD (D:max)	243 x 185.1 x 10.5	243 x 185.1 x 10.5	243 x 185.1 x 10.5	220.5 x 136.5 x 10.5	220.5 x 136.5 x 10.5	214 x 129 x 5.7
Weight (TYP.)	475 g	475 g	475 g	365 g	365 g	175 g
Backlight	Long-life LED, 70,000 hrs MTTF	Long-life LED, 70,000 hrs MTTF	One side, 2 CCFL	One side, 2 CCFL	One side, 2 CCFL	One side, White LED
Inverter	-	-	104PW201	104PW201	104PW201	-
Remarks	• Super-transmissive NLT • September 2009	• September 2009	• Super-advanced SFT	-	• Ultra-advanced SFT	• Ultra-advanced SFT

NEW



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Screen size	8.4" (21 cm diagonal)					
Part number	NL10276BC16-01	NL8060BC21-02/-06	NL8060BC21-03	NL8060BC21-04	NL8060BC21-09	NL8060BC21-10
Resolution	1024 x 768	800 x 600	800 x 600	800 x 600	800 x 600	800 x 600
Display color	16,777,216 colors / 262,144 colours	16,777,216 colors	16,777,216 colors	262,144 colors	16,777,216 colors	16,777,216 colors
Pixel pitch (mm)	0.1665 x 0.1665	0.213 x 0.213	0.213 x 0.213	0.213 x 0.213	0.213 x 0.213	0.213 x 0.213
Lumminance (TYP.)	400 cd/m2	-02: 400cd/m2 -06: 650 cd/m2	650 cd/m2	400 cd/m2	250 cd/m2	400 cd/m2
Contrast ratio (TYP.)	400 : 1	600 : 1	600 : 1	600 : 1	500 : 1	600 : 1
Viewing angle (Up/down; right/left)	88°, 88°, 88°, 88°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	45°, 55°, 60°, 60°	80°, 60°, 80°, 80°
Response time (TYP.)	25 ms	25 ms	25 ms	25 ms	25 ms	25 ms
Interface	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	CMOS RGB (6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)
Power supply voltage	3.3 V	3.3 V	3.3 V	3.3 V/ 5 V	3.3 V	3.3 V
Power consumption (TYP.)	9.8 W	5.5 W	5.5 W	5.5 W	5.5 W	3.5 W
Operating temperature	0°C ~ + 55°C	-20°C ~ + 70°C • Wide operating temperature range	-10°C ~ + 70°C	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range
Storage temperature	-20°C ~ + 60°C	-30°C ~ + 80°C	-20°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C
Polarizer surface	Antiglare	-02: Antiglare / -06: Clear	Clear + Antireflection	Clear	Clear	Clear
Module size (mm): WxHxD (D:max)	200 x 152 x 16.5	200.0 x 152.0 x 10.5	200.0 x 152.0 x 10.5	200.0 x 152.0 x 10.5	200 x 152 x 10.5	200 x 152 x 10.5
Weight (TYP.)	465 g	330 g	330 g	330 g	330 g	330 g
Backlight	Two side, 4 CCFL	One side, 2 CCFL	One side, 2 CCFL	One side, 2 CCFL	One side, 2 CCFL	Long-life LED, 70,000 hrs MTTF
Inverter	84PW021	84PW031/041	84PW031/84PW041	84PW031/84PW041	84PW031/84PW041	-
Remarks	• Ultra-advanced SFT	-	• Super-transmissive NLT	-	-	• July 2009

NEW

NEW



Screen size	8.4" (21 cm diagonal)					
Part number	NL8060BC21-11C	NL6448BC26-08D	NL6448BC26-09/-09D	NL6448BC26-09C	NL6448BC26-15	NL6448BC26-20F
Resolution	800 x 600	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480
Display color	16,777,216 colors	16,777,216 colors	262,144 colors	262,144 colors	16,777,216 colors	262,144 colors
Pixel pitch (mm)	0.213 x 0.213	0.267 x 0.267	0.267 x 0.267	0.267 x 0.267	0.267 x 0.267	0.267 x 0.267
Lumminance (TYP.)	800 cd/m2	400 cd/m2	450 cd/m2	750 cd/m2	450 cd/m2	800 cd/m2
Contrast ratio (TYP.)	600 : 1	800 : 1	600 : 1	600 : 1	600 : 1	1000 : 1
Viewing angle (Up/down; right/left)	80°, 60°, 80°, 80°	85°, 85°, 85°, 85°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 80°, 80°, 80°
Response time (TYP.)	25 ms	20 ms	25 ms	25 ms	25 ms	18 ms
Interface	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	CMOS RGB (6 bits each)
Power supply voltage	3.3 V	3.3 V	3.3 V / 5 V	3.3 V / 5 V	3.3 V	3.3 V / 5 V
Power consumption (TYP.)	5.8 W	5.4 W	5.3 W	5.3 W	5.3 W	4.1 W
Operating temperature	-20°C ~ + 70°C • Wide operating temperature range	-10°C ~ + 70°C	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range
Storage temperature	-30°C ~ + 80°C	-20°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C
Polarizer surface	Clear + Antireflection	Antiglare	-09: Clear / -09D: Antiglare	Clear + Antireflection	Clear	Clear
Module size (mm): WxHxD (D:max)	200 x 152 x 10.5	200.0 x 152.0 x 11	200.0 x 152.0 x 10.5	200.0 x 152.0 x 10.5	200.0 x 152.0 x 10.5	200 x 152 x 10.5
Weight (TYP.)	330 g	330 g	330 g	330 g	330 g	330 g
Backlight	Long-life LED, 70,000 hrs MTTF	One side, 2 CCFL	One side, 2 CCFL	One side, 2 CCFL	One side, 2 CCFL	One side, White LED
Inverter	-	84PW031/84PW041	84PW031/84PW041	84PW031/84PW041	84PW031/84PW041	-
Remarks	• Super-transmissive NLT • September 2009	• Super-advanced SFT	-	• Super-transmissive NLT	-	• Portrait viewing mode

NEW



NEW



TFT module line-up for industrial products

Screen size	8.4" (21 cm diagonal)					
Part number	NL6448BC26-22F	NL6448BC26-25	NL6448BC26-26	NL6448BC26-26C	NL6448BC26-27	NL6448BC26-27C
Resolution	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480
Display color	262,144 colors	262,144 colors	262,144 colors	262,144 colors	16,777,216 colors	16,777,216 colors
Pixel pitch (mm)	0.267 x 0.267	0.267 x 0.267	0.267 x 0.267	0.267 x 0.267	0.267 x 0.267	0.267 x 0.267
Lumminance (TYP.)	800 cd/m2	600 cd/m2	450 cd/m2	900 cd/m2	450 cd/m2	900 cd/m2
Contrast ratio (TYP.)	1000 : 1	600 : 1	600 : 1	600 : 1	600 : 1	600 : 1
Viewing angle (Up/down; right/left)	80°, 80°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°
Response time (TYP.)	18 ms	25 ms	25 ms	25 ms	25 ms	25 ms
Interface	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)
Power supply voltage	3.3 V / 5 V	3.3 V / 5 V	3.3 V / 5 V	3.3 V / 5 V	3.3 V	3.3 V
Power consumption (TYP.)	4.1 W	5.3 W	4.0 W	4.0 W	5.6 W	5.6 W
Operating temperature	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range
Storage temperature	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C
Polarizer surface	Clear	Clear	Clear	Clear + Antireflection	Clear	Clear + Antireflection
Module size (mm): WxHxD (D:max)	200 x 152 x 10.5	200.0 x 152.0 x 10.5	200.0 x 152.0 x 10.5	200.0 x 152.0 x 10.5	200.0 x 152.0 x 10.5	200.0 x 152.0 x 10.5
Weight (TYP.)	330 g	330 g	330 g	330 g	330 g	330 g
Backlight	One side, White LED	One side, 2 CCFL	Long-life LED, 70,000 hrs MTTF	Long-life LED, 70,000 hrs MTTF	Long-life LED, 70,000 hrs MTTF	Long-life LED, 70,000 hrs MTTF
Inverter	-	-	-	-	-	-
Remarks	• High brightness model	• High brightness model	• May 2009	• Super-transmissive NLT • September 2009	• May 2009	• Super-transmissive NLT • July 2009



NEW



Screen size	7" (18 cm diagonal)				6.5" (17 cm diagonal)	
Part number	NL4832BC37-05	NL8048BC19-02	NL8048BC19-02C	NL8048BC19-03	NL10276BC13-01	NL10276BC13-01C
Resolution	480 x 324	800 x 480	800 x 480	800 x 480	1024 x 768	1024 x 768
Display color	262,144 colors	16,777,216 colors	16,777,216 colors	16,777,216 colors	16,777,216 colors	16,777,216 colors
Pixel pitch (mm)	0.321 x 0.372	0.191 x 0.191	0.191 x 0.191	0.191 x 0.191	0.129 x 0.129	0.129 x 0.129
Lumminance (TYP.)	400 cd/m2	400 cd/m2	550 cd/m2	400 cd/m2	500 cd/m2	600 cd/m2
Contrast ratio (TYP.)	600 : 1	1000 : 1	900 : 1	1000 : 1	500 : 1	600 : 1
Viewing angle (Up/down; right/left)	60°, 80°, 80°, 80°	80°, 80°, 80°, 80°	80°, 80°, 80°, 80°	80°, 80°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°
Response time (TYP.)	25 ms	18 ms	18 ms	18 ms	25 ms	25 ms
Interface	CMOS RGB (6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)
Power supply voltage	3.3 V / 5 V	3.3 V	3.3 V	3.3 V	3.3 V	3.3 V
Power consumption (TYP.)	2.7 W	3.4 W	3.4 W	3.4 W	3.9 W	3.9 W
Operating temperature	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range
Storage temperature	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C
Polarizer surface	Clear	Clear	Clear	Clear	Clear	Clear + Antireflection
Module size (mm): WxHxD (D:max)	174.5 x 105.5 x 11	170.0 x 111.0 x 8.5	170.0 x 111.0 x 8.5	170.0 x 111.0 x 8.5	153 x 118 x 9.0	153.0 x 118.0 x 9.0
Weight (TYP.)	205 g	165 g	165 g	165 g	165 g	170 g
Backlight	One side, 1 CCFL	One side, White LED	One side, White LED	One side, White LED	One side, White LED	Top and bottom, LED
Inverter	70PW021	-	-	-	-	-
Remarks	-	-	• Super-transmissive NLT	• Portrait viewing mode	-	• Super-transmissive NLT



Screen size	6.5" (17 cm diagonal)				5.7" (14 cm diagonal)	
Part number	NL6448BC20-18D	NL6448BC20-20	NL6448BC20-21D	NL6448BC20-21C	NL6448BC18-01	NL6448BC18-01F
Resolution	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480
Display color	262,144 colors	262,144 colors	16,777,216 colors	16,777,216 colors	262,144 colors	262,144 colors
Pixel pitch (mm)	0.207 x 0.207	0.207 x 0.207	0.207 x 0.207	0.207 x 0.207	0.1815 x 0.1815	0.1815 x 0.1815
Luminance (TYP.)	400 cd/m ²	650 cd/m ²	550 cd/m ²	800 cd/m ²	400 cd/m ²	800 cd/m ²
Contrast ratio (TYP.)	600 : 1	600 : 1	600 : 1	600 : 1	1000 : 1	1000 : 1
Viewing angle (Up/down; right/left)	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 60°, 80°, 80°	80°, 80°, 80°, 80°	80°, 80°, 80°, 80°
Response time (TYP.)	25 ms	25 ms	25 ms	25 ms	18 ms	18 ms
Interface	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	LVDS RGB (8 bits each/ 6 bits each)	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)
Power supply voltage	3.3 V / 5 V	3.3 V / 5 V	3.3 V	3.3 V	3.3 V	3.3 V
Power consumption (TYP.)	4.4 W	4.4 W	2.4 W	2.4 W	1.8 W	3.3 W
Operating temperature	-10°C ~ + 70°C	-10°C ~ + 70°C	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range	-30°C ~ + 80°C • Ultrawide operating temperature range	-30°C ~ + 80°C • Ultrawide operating temperature range
Storage temperature	-20°C ~ + 80°C	-20°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C
Polarizer surface	Antiglare	Clear + Antireflection	Antiglare	Clear + Antireflection	Clear	Clear
Module size (mm): WxHxD (D:max)	153.0 x 118.0 x 11	153.0 x 118.0 x 11	153.0 x 118.0 x 9.0	153.0 x 118.0 x 9.0	135 x 104.6 x 10.5	135 x 104.6 x 10.5
Weight (TYP.)	205 g	205 g	165 g	170 g	160 g	165 g
Backlight	One side, 2 CCFL	One side, 2 CCFL	Top and bottom, LED	Top and bottom, LED	One side, White LED	One side, White LED
Inverter	65PW061	65PW061	-	-	-	-
Remarks	-	• Super-transmissive NLT	-	• Super-transmissive NLT	-	• High brightness model



NEW



NEW



Screen size	5.7"	5.5" (14 cm diagonal)		3.5" (9 cm diagonal)	
Part number	NL6448BC18-03F	NL3224BC35-20/ -21	NL3224BC35-22	NL2432HC22-41K (with touchpanel)	NL2432HC22-40J
Resolution	640 x 480	320 x 240	320 x 240	240 x 320	240 x 320
Display color	262,144 colors	262,144 colors	262,144 colors	262,144 colors	262,144 colors
Pixel pitch (mm)	0.1815 x 0.1815	0.348 x 0.348	0.348 x 0.348	0.2235 x 0.2235	0.2235 x 0.2235
Luminance (TYP.)	800 cd/m ²	400 cd/m ²	750 cd/m ²	200 cd/m ²	220 cd/m ²
Contrast ratio (TYP.)	1000 : 1	400 : 1	500 : 1	130 : 1 (transmissive mode) 6 : 1 (reflective mode)	150 : 1 (transmissive mode) 15 : 1 (reflective mode)
Viewing angle (Up/down; right/left)	80°, 80°, 80°, 80°	50°, 40°, 55°, 55°	50°, 40°, 55°, 55°	30°, 35°, 30°, 30°	35°, 35°, 35°, 35°
Response time (TYP.)	18 ms	30 ms	30 ms	30 ms (transmissive mode)	30 ms (transmissive mode)
Interface	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)	CMOS RGB (6 bits each)	CMOS RGB (6 bits each) + serial I/F	CMOS RGB (6 bits each) + serial I/F
Power supply voltage	3.3 V	3.3 V / 5 V	3.3 V / 5 V	3.0 V	3.0 V
Power consumption (TYP.)	3.3 W	3.8 W	3.8 W	50 mW (LCD panel) 384 mW (Backlight)	50 mW (LCD panel) 384 mW (Backlight)
Operating temperature	-30°C ~ + 80°C • Ultrawide operating temperature range	-10°C ~ + 70°C	-10°C ~ + 70°C	-20°C ~ + 70°C • Wide operating temperature range	-20°C ~ + 70°C • Wide operating temperature range
Storage temperature	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 80°C	-30°C ~ + 70°C	-30°C ~ + 70°C
Polarizer surface	Clear	Antiglare	Clear + Antireflection (AR)	Clear	Clear
Module size (mm): WxHxD (D:max)	135 x 104.6 x 10.5	134 x 104.5 x 13	134 x 104.5 x 13	63.5 x 85.0 x 4.2	63.5 x 85.0 x 3.0
Weight (TYP.)	165 g	210 g	215 g	45 g	25 g
Backlight	One side, White LED	Top and bottom, 1 CCFL each	Top and bottom, 1 CCFL each	One side, White LED	One side, White LED
Inverter	-	55PW131	55PW131	-	-
Remarks	• Portrait viewing mode	• 20: lamp compartment side • 21: lamp compartment rear	• Super-transmissive NLT	• Super-reflective NLT	• Super-reflective NLT

NEW



TFT module line-up for industrial products

Resolution	Interface	15.3 inch	15.0 inch	12.1 inch	10.4 inch	9.0 inch	8.0 inch
QVGA 320 × 240	CMOS						
WQVGA 480 × 234	CMOS						
VGA 640 × 480	CMOS				NL6448BC33-53 NL6448BC33-54 NL6448BC33-59 NL6448BC33-64/64C NL6448BC33-70 NL6448BC33-70C NL6448BC33-74 [9, 10]		
	LVDS				NL6448BC33-63C NL6448BC33-63D NL6448BC33-71C NL6448BC33-71D [10]		
WVGA 800 × 480	LVDS					NL8048BC24-01 NL8048BC24-04 [10]	
SVGA 800 × 600	CMOS			NL8060BC31-20 NL8060BC31-36 NL8060BC31-42/42D NL8060BC31-46 NL8060BC31-47C NL8060BC31-47D [8]	NL8060BC26-27 [9]		
	LVDS			NL8060BC31-41D NL8060BC31-41C [8]	NL8060BC26-28 NL8060BC26-30C NL8060BC26-30D NL8060BC26-35C NL8060BC26-35D [9]		
WSVGA 1024 × 600	LVDS						NL1026
XGA 1024 × 768	LVDS*		NL10276BC30-15 NL10276BC30-17 NL10276BC30-18 NL10276BC30-18C NL10276BC30-32D NL10276BC30-33D NL10276BC30-34D [7]	NL10276BC24-13/13C NL10276BC24-19D NL10276BC24-20 [7, 8]	NL10276BC20-08 NL10276BC20-04 NL10276BC20-04C NL10276BC20-12 NL10276BC20-18 [8, 9]		
WXGA 1280 × 768	LVDS	NL12876BC26-25/25B NL12876BC26-28 [7]					

NL... – with LED backlight technology

[1] – Page number in this document (to find more details)

* – The interfaces of 15.0-inch XGA models and 12.1-inch XGA models or models below it are not generally compatible.

9 inch	8.4 inch	7.0 inch	6.5 inch	5.7 inch	5.5 inch	3.5 inch
					NL3224BC35-22 NL3224BC35-20/21 [13]	NL2432HC22-41K NL2432HC22-40J [13]
		NL4823BC37-05 [12]				
	NL6448BC26-09/-09D NL6448BC26-09C NL6448BC26-20F NL6448BC26-22F NL6448BC26-25 NL6448BC26-26 NL6448BC26-26C [11, 12]		NL6448BC20-18D NL6448BC20-20 [13]	NL6448BC18-01 NL6448BC18-01F NL6448BC18-03F [13]		
	NL6448BC26-27 NL6448BC26-27C [12]		NL6448BC20-21C NL6448BC20-21D [13]			
	NL6448BC26-08D NL6448BC26-15 [11]	NL8048BC19-02 NL8048BC19-02C NL8048BC19-03 [12]				
	NL8060BC21-04 [11]					
	NL8060BC21-02 NL8060BC21-03 NL8060BC21-06 NL8060BC21-09 NL8060BC21-11 NL8060BC21-11C [11]					
NL8060BC19-01D [10]						
	NL10276BC16-01 [11]		NL10276BC13-01 NL10276BC13-01C [12]			

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© Published by NEC Electronics (Europe) GmbH
Printed in Germany, March 2009
Document No. EPMC-PU-0018-4.0