



 **FLAT PANEL
DISPLAYS**



ARROW ELECTRONICS, INC.

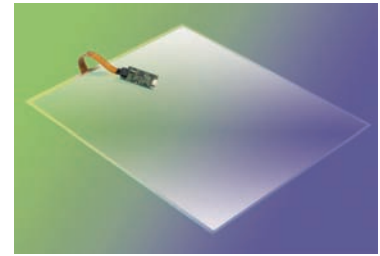
Flat Panel Displays ►

www.arrownac.com



3M Touch Solutions

MicroTouch™ ClearTek™ II touch screens and EX II touch electronics from 3M offer engineers a reliable, robust touch solution for applications requiring surface durability, premium optics, and a wide operating temperature spectrum. Ranging in sizes from 6.4" to 32", ClearTek II is an all-glass solution with a surface durability at least five times greater than comparative capacitive touch screens. With a 91.5 percent transmission value for the capacitive industry's highest optics offering, a narrow border design for ease-of-integration, and a -15 degrees Celsius to +70 degrees Celsius operating temperature range for challenging environments 3M is backed by a five-year warranty and award-winning technical service.



Features ▶

- Brilliant optics (91.5% transmissivity)
- Superior wear resistance (hardened top coat)
- Excellent touch accuracy (99.4% accurate)
- Scratch resistant (smoother-than-glass top coat)
- Contaminant resistant (unaffected by dust, dirt, or liquids)

Benefits ▶

- Brilliant optics equals brighter, bolder software applications
- Superior wear extends touch-enabled product life
- Excellent accuracy for reliable, repeatable touch
- Scratch resistance improves LCD display appearance
- Contaminant resistant for operation in most environments

Applications ▶

- Gaming environments where 24/7 reliability is required
- Self-service applications where on-screen contaminants can affect operations
- Interactive digital sign installations where bright, attractive touch displays are preferred
- Industrial devices where dirt, grid, and grime contaminants are common
- Point-of-sale machines where surface wear is a chronic problem

Product Specifications ▶

Diagonal Viewing Area (in.)	Outer Dimension (in.)	Descriptions
6.71	6.12 x 4.53	17-8091-203, 6.71" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
7.13	6.69 x 4.28	17-9131-203, 7.13" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
8.75	7.65 x 5.75	17-8921-203, 8.75" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
10.83	9.20 x 7.10	17-8021-203, 10.83" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
12.31	10.35 x 8.00	17-8581-203, 12.31" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
13.18	11.00 x 8.50	17-8041-203, 13.18" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
15.68	13.00 x 11.62	17-8031-203, 15.68" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
15.69	12.89 x 10.13	17-8431-203, 15.69" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
15.74	13.05 x 10.03	17-8201-203, 15.74" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
16.35	13.51 x 10.43	17-8641-203, 16.35" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
17.37	14.49 x 10.83	17-8081-203, 17.37" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
17.54	14.08 x 11.62	7-8421-203, 17.54" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
17.8	15.79 x 9.66	17-9241-205, 23.83" ClearTek II Profile touch screen, RoHS, 8" flex tail, 5-pin locking amp, wide aspect ratio
18.39	15.1 x 11.73	17-8211-203, 17.54" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
18.86	15.18 x 12.38	17-8351-203, 19.71" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
19.04	15.30 x 12.50	17-8611-203, 19.04" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
19.34	16.81 x 10.91	17-9251-204, 19.34" ClearTek II Profile touch screen, RoHS, 6" flex tail, 5-pin locking amp, wide aspect ratio
19.71	15.85 x 12.90	17-8051-203, 19.71" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
19.75	15.85 x 12.93	17-8511-203, 19.75" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
20.65	16.93 x 13.03	17-8441-203, 20.65" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
21.86	17.91 x 13.74	17-8541-203, 21.86" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
22.52	18.11 x 14.57	17-8061-203, 22.52" ClearTek II Profile touch screen, RoHS, 4" flex tail, 5-pin locking amp
23.83	21.46 x 12.48	17-9051-205, 23.83" ClearTek II Profile touch screen, RoHS, 8" flex tail, 5-pin locking amp, wide aspect ratio
26.28	24.47 x 14.86	17-8931-205, 23.83" ClearTek II Profile touch screen, RoHS, 8" flex tail, 5-pin locking amp, wide aspect ratio
27.61	24.62 x 14.00	17-9091-205, 27.61" ClearTek II Profile touch screen, RoHS, 8" flex tail, 5-pin locking amp, wide aspect ratio
31.8	29.27 x 17.61	17-8951-205, 31.80" ClearTek II Profile touch screen, RoHS, 8" flex tail, 5-pin locking amp, wide aspect ratio

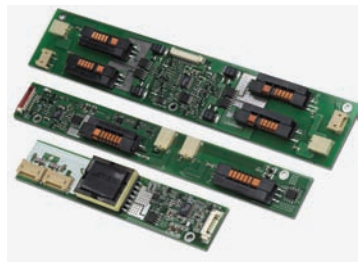
This listing represents the 3M Touch Systems Ready-to-Ship touch screen program. For non-standard integration requirements, contact your Arrow representative for the complete list of 3M Touch Systems touch screen products.

Arrow Electronics Embedded Computing

800-285-7503 | www.arrownac.com



EMBEDDED BOARDS AND SYSTEMS | FLAT PANEL | MEMORY | SOFTWARE | STORAGE



Microsemi Analog Mixed Signal Group (AMSG)

Microsemi Analog Mixed Signal Group (AMSG) is dedicated to building world-class CCFL inverters. Our patented RangeMax™ inverters provide the widest dimming while our PanelMatch™ series offers programmable output currents to match LCDs with ease. We are the one-stop for widest dimming, highest efficiency, smallest module size, and widest array of module options. Microsemi offers some of the industry's best features with aggressive pricing.

Features ▶

- Patented Digital RangeMax™ for the widest, smooth, flicker-free dimming
- Analog dimming offered with all parts
- Easy-to-use brightness control
- Output short-circuit protection and timeout
- Automatic strike-voltage regulation and timeout
- Temperature ratings at least -20°C to +70°C; -30°C to +80°C for StayLit™; -40°C to +85°C for automotive grade
- RoHS- and UL-certified E17910 (components)

Benefits ▶

- StayLit™ will keep multiple lamp panels lit even if one goes out
- PanelMatch™ programs output current for maximum performance and ultimate flexibility of supply chain
- Direct drive: the most efficient inverter on the market

Applications ▶

- ATM
- Automotive
- Consumer handhelds
- Exercise equipment
- In-flight entertainment
- LCDTV
- Lottery machines
- Medical
- Notebook PCs
- POS terminals
- Voting machines

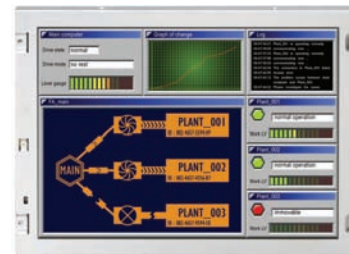
Product Specifications ▶

Type	Typ V _{IN} [V]*	V _{LAMP} Range [V]*	Typ I _{OLAMP} [mA]**	V _{LS} [V] Min/Typ	Max. Dimming	Operating Temp [°C]*	Base PN	Input Cable Available***	Status	Dimensions (L,W,H) [mm]	Lamps Configuration
Single lamp	3.3	325-435	3.5-5.0	1,000/1,100	<5:1	-20 to +70	LXMG1618-03-2x	LX9501G	Active	86 x 16 x 4.6	NA
	3.3	325-435	3.5-5.0	1,000/1,100	50:1	-20 to +70	LXMG1617-03-2x	LX9501G	Active	86 x 16 x 4.6	NA
	5	325-435	3.5-5.0	1,000/1,100	<5:1	-20 to +70	LXMG1618-05-2x	LX9501G	Active	86 x 16 x 4.6	NA
	5	325-435	3.5-5.0	1,000/1,100	50:1	-20 to +70	LXMG1617-05-2x	LX9501G	Active	86 x 16 x 4.6	NA
	5	465-635	5.0-6.5	1,300/1,400	<5:1	-20 to +70	LXMG1618-05-4x	LX9501G	Active	86 x 16 x 4.6	NA
	5	465-635	5.0-6.5	1,300/1,400	50:1	-20 to +70	LXMG1617-05-4x	LX9501G	Active	86 x 16 x 6.2	NA
	5	545-735	5.0-8.0	1,400/1,650	<5:1	-20 to +70	LXMG1618-05-6x	LX9501G	Active	100 x 16 x 7.5	NA
	5	545-735	5.0-8.0	1,400/1,650	50:1	-20 to +70	LXMG1617-05-6x	LX9501G	Active	100 x 16 x 7.5	NA
	12	465-635	5.0-6.5	1,300/1,400	<5:1	-20 to +70	LXMG1618-12-4x	LX9501G	Active	86 x 16 x 4.6	NA
	12	465-635	5.0-6.5	1,300/1,400	50:1	-20 to +70	LXMG1617-12-4x	LX9501G	Active	86 x 16 x 6.2	NA
	12	500-1,000	3.8-8.8	2,000	100:1	-40 to +85	LXMG1614E-14-11	LX9501G	Active—automotive applications	130 x 23 x 8.5	NA
	12	545-735	5.0-8.0	1,400/1,650	<5:1	-20 to +70	LXMG1618-12-6x	LX9501G	Active	100 x 16 x 7.5	NA
Dual lamp	12	545-735	5.0-8.0	1,400/1,650	50:1	-20 to +70	LXMG1617-12-6x	LX9501G	Active	100 x 16 x 7.5	NA
	5	350-530	5.0-6.5	1,250/1,400	50:1	-20 to +70	LXMG1623-05-4x	LX9501G	Active	115 x 30 x 6.5	NA
	5	450-610	5.2-6.7	1,450/1,600	50:1	-20 to +70	LXMG1623-05-44	LX9501G	Active	108.7 x 22.35 x 10.2	NA
	5	460-620	5.0-7.0	1,450/1,600	100:1	-20 to +70	LXMG1626-05-67	LX9501G	Active—New	133 x 25 x 7.5	Comm. Rtrn.
	5	460-620	5.0-7.0	1,350/1,500	100:1	-20 to +70	LXMG1626-05-66	LX9501G	Active	133 x 25 x 7.5	Comm. Rtrn.
	5	510-690	5.0-6.5	1,400/1,500	100:1	-20 to +70	LXMG1626-05-65	LX9501G	Active	133 x 25 x 7.5	Comm. Rtrn.
	5	480-720	5.0-8.0	1,400/1,650	50:1	-20 to +70	LXMG1623-05-6x	LX9501G	Active	165 x 21 x 7.5	NA
	12	1,250	3.5-5.0	1,400/1,650	100:1	-20 to +70	LXMG1626-12-64	LX9501G	Active	165 x 21 x 7.5	NA
	12	350-530	5.0-6.5	1,250/1,400	<5:1	-20 to +70	LXMG1624-12-4x	LX9501G	Active	115 x 30 x 6.5	NA
	12	350-530	5.0-6.5	1,250/1,400	50:1	-20 to +70	LXMG1623-12-4x	LX9501G	Active	115 x 30 x 6.5	NA
	12	450-610	5.2-6.7	1,450/1,600	50:1	-20 to +70	LXMG1623-12-44	LX9501G	Active	108.7 x 22.35 x 10.2	NA
	12	460-620	5.0-7.0	1,450/1,600	100:1	-20 to +70	LXMG1626-12-66	LX9501G	Active	133 x 25 x 7.5	Comm. Rtrn.
	12	460-620	5.0-7.0	1,450/1,600	100:1	-20 to +70	LXMG1626-12-67	LX9501G	Active—new	133 x 25 x 7.5	Comm. Rtrn.
	12	480-720	5.0-8.0	1,400/1,650	<5:1	-20 to +70	LXMG1624-12-6x	LX9501G	Active	165 x 21 x 7.5	NA
	12	480-720	5.0-6.5	1,400/1,650	50:1	-20 to +70	LXMG1623-12-6x	LX9501G	Active	165 x 21 x 7.5	NA
Quad lamp	12	510-690	5.0-8.0	1,450/1,650	100:1	-20 to +70	LXMG1626-12-65	LX9501G	Active	133 x 25 x 7.5	Comm. Rtrn.
	12	530-720	5.0-8.0	1,500/1,650	<5:1	-20 to +70	LXMG1644-12-61	LX9508G	Active	188 x 36 x 8	Dual Comm. Rtrn.
	12	530-720	5.0-8.0	1,500/1,650	50:1	-20 to +70	LXMG1643-12-61	LX9508G	Active	188 x 36 x 8	Dual Comm. Rtrn.
	12	530-730	5.0-8.0	1,500/1,650	50:1	-20 to +70	LXMG1643-12-62	LX9508G	Active	188 x 36 x 8	NA
	12	530-730	5.0-8.0	1,500/1,650	50:1	-20 to +70	LXMG1643-12-63	LX9508G	Active	188 x 36 x 8	NA
	12	530-730	5.0-8.0	1,500/1,650	50:1	-20 to +70	LXMG1643-12-64	LX9508G	Active	188 x 42 x 8	NA

NEC

NEC Display Products

NEC is committed to providing innovative solutions to support the non-PC TFT LCD module industry with panels from 2.7" to 23". NEC has a continuing trend for wide-aspect ratios, wide displays, and NLT transfective technologies in industrial applications and emerging technologies. NEC delivers a wide range of technologically advanced display solutions backed by leading-edge design, long-term product support, and product migration paths. NEC products are based on four core technologies: ultra-wide viewing (SFT), natural-light (NLT), adaptive-design and value-integrated (VIT) (SOG) technologies that are developed from the customer's perspective and deliver a new dimension of quality for industrial and high-end monitor applications. NEC is committed to environmentally friendly initiatives. All products are reduction of hazardous substances (RoHS) compliant.



Features ▶

- Long term product life
- Broad industrial product offering from 2.7" to 23"
- Drop in replacement
- Industrial EOL policy

Benefits ▶

- 5-7 year product life
- 18-24 month EOL policy
- Proven industrial track record

Applications ▶

EC uses our proprietary SFT, NLT, VIT, and adaptive design technologies to deliver high-image quality, high-performance LCDs suitable for a wide range of applications such as medical, broadcasting, industrial, factory automation, mobile, outdoor viewable products, and many more.

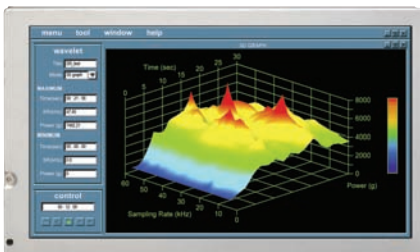
Product Specifications ▶

Size	Part Number	Resolution	Contrast Ratio Viewing Angle (Left/Right) (Top/Bottom)	Luminance (cd/m ²)	Backlight Type	Interface	Operating Temperature (°C)	Features/Remarks	Color	Category
2.7"	NL2432HC17-01B	QVGA 240 x 320	400:1 50/50, 60/30	180	LED	6-bit digital	-20~+60	With touch panel, transmissive, portrait	262,144	Mobile
2.7"	NL2432HC17-02A	QVGA 240 x 320	400:1 55/55, 60/30	200	LED	6-bit digital	-20~+60	Transmissive, landscape viewing w/portrait scan	262,144	Mobile
2.7"	NL2432HC17-02B	QVGA 240 x 320	400:1 55/55, 60/30	180	LED	6-bit digital	-20~+60	Transmissive, landscape viewing w/portrait scan, w/touch	262,144	Mobile
2.7"	NL2432HC17-04B	QVGA 240 x 320	150:1 30/30, 30/35	100	LED	6-bit digital	-20~+60	SR-NLT, w/touch, 35% reflectivity, portrait, w/TC and DC/DC converter	262,144	Mobile
2.7"	NL2432HC17-07A	QVGA 240x320	400:1 50/50, 60/30	550	LED	6-bit digital	-20°C~+10°C	Transmissive portrait viewing angle	262,144	Mobile
3.5"	NL2432HC22-32B	QVGA 240 x 320	70:1 40/40, 40/35	100 (transmissive mode)	LED	6-bit digital	-20~+55	SR-NLT, w/touch, 12% reflectivity, landscape, AG	262,144	Mobile
3.5"	NL2432HC22-37B	QVGA 240 x 320	300:1 55/55, 60/30	350	LED	6-bit digital	-10~+55	Transmissive, w/touch, landscape, AG	262,144	Mobile
3.5"	NL2432HC22-40A	QVGA 240 x 320	150:1 35/35, 35/35	220 (transmissive mode)	LED	6-bit digital	-20~+70	SR-NLT, portrait, w/TC and DC/DC converter, wide temp	262,144	Mobile
3.5"	NL2432HC22-41B	QVGA 240 x 320	130:1 35/35, 30/35	200 (transmissive mode)	LED	6-bit digital	-20~+70	SR-NLT, portrait, w/TC and DC/DC converter, w/touch, wide temp	262,144	Mobile
4.3"	NL4827HC19-01B	WQVGA 480 x 272	300:1 50/50, 70/40400:1 65/65, 65/40	350	LED	6-bit digital	-10~+60	With touch panel, transmissive, landscape	262,144	Mobile
5.5"	NL3224BC35-20	QVGA 320 x 240	65/40	400	CCFL	6-bit digital	-10 to +70	NA	262,144	Industrial
5.5"	NL332BC35-22	QVGA 320 x 240	500:1 50/40, 55/55	750	CCFL	6-bit digital	-10 to +70	ST-NLT/QVGA-VGA mode/ reflective mode 2%	262,144	Industrial
6.3"	NL10276BC12-02	XGA 1,024 x 768	500:1 60/60, 45/60	250	CCFL	LVDS 8-/6-bit digital	0 to +65	NA	16.19M/262,144	Industrial
6.5"	NL6448BC20-18D	VGA 640 x 480	600:1 80/80, 80/60	400	CCFL	6-bit digital	-10 to +70	Reverse scan	262,144	Industrial
6.5"	NL6448BC20-20	VGA 640 x 480	600:1 80/80, 80/60	650	CCFL	6-bit digital	-10 to +70	ST-NLT/COG	262,144	Industrial
6.5"	NL10276BC13-01C	XGA 1,024 x 768	500:1 80/80, 80/60	650	LED	LVDS 8-/6-bit digital	-20 to +70	ST-NLT/LED backlight, high resolution/wide temperature	16.77M/262,144	Industrial
7.0"	NL4823HC37-05	WQVGA 480 x 234	600:1 80/80, 80/60	400	CCFL	6-bit digital	-20 to +70	Wide aspect ratio/wide temperature	262,144	Industrial
8.4"	NL6448BC26-08D	VGA 640 x 480	800:1 85/85, 85/85	400	CCFL	LVDS 8-/6-bit digital	-10 to +70	UA-SFT/reverse scan	16.77M/262,144	Industrial
8.4"	NL6448BC26-09	VGA 640 x 480	600:1 80/80, 80/60	450	CCFL	6-bit digital	-20 to +70	Reverse scan/wide temperature	262,144	Industrial
8.4"	NL6448BC26-09C	VGA 640 x 480	600:1 80/80, 80/60	750	CCFL	6-bit digital	-20 to +70	ST-NLT/wide view and temperature/reverse scan	262,144	Industrial
8.4"	NL8060BC21-02	SVGA 800 x 600	500:1 80/80, 80/60	400	CCFL	LVDS 8-/6-bit digital	-20 to +70	Reverse scan/RF+WW/ wide temperature	16.77M/262,144	Industrial
8.4"	NL8060BC21-03	SVGA 800 x 600	600:1 80/80, 80/60	650	CCFL	LVDS 8-/6-bit digital	-20 to +70	ST-NLT/wide temperature	16.77M/262,144	Industrial
8.4"	NL8060BC21-04	SVGA 800 x 600	600:1 80/80, 80/60	400	CCFL	6-bit digital	-20 to +70	RF+WW/wide temperature	262,144	Industrial
8.4"	NL10276BC16-01	XGA 1,024 x 768	400:1 85/85, 85/85	400	CCFL	LVDS 8-/6-bit digital	-20 to +60	UA-SFT/reverse scan	16.77M/262,144	Industrial
9.0"	NL8048BC24-01	WVGA 800 x 480	500:1 80/80, 80/60	400	CCFL	LVDS 8-/6-bit digital	-20 to +70	Reverse scan/wide temperature	16.77M/262,144	Industrial

NEC Display Products—Continued

Product Specifications ▶

Size	Part Number	Resolution	Contrast Ratio Viewing Angle (Left/Right) (Top/Bottom)	Luminance (cd/m ²)	Backlight Type	Interface	Operating Temperature (°C)	Features/Remarks	Color	Category
10.4"	NL6448BC33-59	VGA 640 x 480	600:1 70/70, 45/55	450	CCFL	6-bit digital	-10 to +70	Reverse scan/RF	262,144	Industrial
10.4"	NL6448BC33-63D	VGA 640 x 480	600:1 80/80, 80/60	450	CCFL	LVDS 8-/6-bit digital	-20 to +70	RF+WV/wide temperature	16.77M/262,144	Industrial
10.4"	NL6448BC33-64	VGA 640 x 480	600:1 80/80, 80/60	450	CCFL	6-bit digital	-20 to +70	RF+WV/wide temperature	262,144	Industrial
10.4"	NL6448BC33-64C	VGA 640 x 480	600:1 80/80, 80/60	450	CCFL	8-/6-bit digital	-20 to +10	ST-NLT, RF+WV/wide temperature	16.77M/262,144	Industrial
10.4"	NL8060BC26-27	SVGA 800 x 600	700:1 85/85, 85/85	400	CCFL	6-bit digital	-10 to +70	SA-SFT/reverse scan	262,177	Industrial
10.4"	NL8060BC26-28	SVGA 800 x 600	700:1 85/85, 85/85	400	CCFL	LVDS 8-/6-bit digital	-10 to +70	SA-SFT/reverse scan	262,177	Industrial
10.4"	NL10276BC20-04	XGA 1,024 x 768	300:1 60/60, 45/60	300	CCFL	LVDS	-20 to +70	RF+WV/reverse scan/ wide temperature	262,144	Industrial
12.1"	NL8060BC31-27	SVGA 800 x 600	600:1 70/70, 45/55	400	CCFL	6-bit digital	-10 to +70	RF/reverse scan	262,144	Industrial
12.1"	NL8060BC31-27D	SVGA 800 x 600	600:1 70/70, 45/55	400	CCFL	6-bit digital	-10~+70	RF, AG surface, reverse scan	262,144	Industrial
12.1"	NL8060BC31-28D	SVGA 800 x 600	600:1 70/70, 45/55	350	CCFL	LVDS	-10~+70	Reverse scan	262,144	Industrial
12.1"	NL8060BC31-32	SVGA 800 x 600	600:1 70/70, 45/55	400	CCFL	6-bit digital	-10~+70	ST-NLT, reflective mode 2.0% typ.	262,144	Industrial
12.1"	NL8060BC31-36	SVGA 800 x 600	600:1 70/70, 45/55	1100	CCFL	6-bit digital	-10~+70	Bright enhancement based on -27	262,144	Industrial
12.1"	NL8060BC31-41D	SVGA 800 x 600	600:1 80/80, 80/60	400	CCFL	LVDS	-20~+70	COF, reverse scan, RF + WV, wide temp	16.77M	Industrial
12.1"	NL8060BC31-42	SVGA 800 x 600	600:1 80/80, 80/60	400	CCFL	6-bit digital	-20~+70	Reverse scan, RF + WV, wide temp	262,144	Industrial
12.1"	NL8060BC31-42D	SVGA 800 x 600	600:1 80/80, 80/60	400	CCFL	6-bit digital	-20~+70	Reverse scan, RF + WV, wide temp, anti-glare	262,144	Industrial
12.1"	NL10276BC24-13	XGA 1,024 x 768	600:1 70/70, 45/55	400	CCFL	LVDS 8/6-bit RGB	-10~+70	NA	16.77M/262,144	Industrial
12.1"	NL10276BC24-13C	XGA 1,024 x 768	600:1 70/70, 45/55	400	CCFL	LVDS 8/6-bit digital	-10~+70	ST-NLT, AR	16.77M/262,144	Industrial
12.1"	NL10276BC24-14	XGA 1,024 x 768	600:1 45/45, 20/40	300	LED	LVDS	0~+55	LED backlight	262,144	Industrial
15"	NL10276BC30-15	XGA 1,024 x 768	400:1 60/60, 40/60	250	CCFL	LVDS	0~+50	NA	262,144	Industrial
15"	NL10276BC30-17	XGA 1,024 x 768	700:1 85/85, 85/85	350	CCFL	LVDS	0~+55	UA-SFT, 72% color gamut	16.77M	Industrial
15"	NL10276BC30-18/18C	XGA 1,024 x 768	500:1 80/80, 80/60	500	CCFL	LVDS	-10~+70	RF + WV, reverse scan	16.77M	Industrial
21.3"	NL160120BM27-03/-03A	UXGA 1,600 x 1,200	700:1 85/85, 85/85	1,000	CCFL	LVDS 10-bit LUT	0 ~ +55	SA-SFT, 2M pixel monochrome, 10-bit LUT	766 grey	Hi-res
21.3"	NL160120BC27-05	UXGA 1,600 x 1,200	450:1 85/85, 85/85	450	CCFL	LVDS	0 ~ +55	SA-SFT, adjustable gamma w/10-bit LUT	16.77M	Hi-res



SHARP

Sharp LCD Modules

Sharp Microelectronics is the world's leader in the development of liquid crystal displays. SHARP offers LCD modules in a variety of technologies and sizes, all with brilliant color and high performance. From 2" displays, to rugged displays for handheld applications, to modules with high color accuracy, to 65" AQUOS® televisions, SHARP has solutions for practically all applications. We also offer tough industrial modules and large, high-brightness, high-contrast modules for electronic signage.



Features ▶

- Ruggedized panels available for handheld applications
- High color gamut panels for accurate colorimetry
- Extended temperature range operation
- High-brightness, high-contrast panels available
- Long lifecycle for industrial-grade panels

Benefits ▶

- Lower power usage
- Industrial-grade panels will survive extreme shock and vibration conditions
- Highly visible panels get your message across
- High color accuracy
- Longer lifecycles mean less standing inventory required

Applications ▶

- Handheld devices
- ATMs and kiosks
- Medical equipment
- Factory automation
- Test and measurement

Product Specifications ▶

Size	Part Number	Resolution	NITS	Viewing Angle (Left/Right); (Top/Bottom)	Contrast Ratio	Backlight Type	Interface	Operating Temperature (°C)
2.2"	LQ022B8UD05	QCIF+	50	100; 50/50	60	4 x LED	Digital	-10 to +60
3.5"	LQ035Q7DB02	QVGA	50	100; 50/50	8 (refl)/70 (trans)	6 x LED	Digital	-10 to +60
3.5"	LQ035Q7DB03	QVGA	55	100; 50/50	15 (refl)/85 (trans)	6 x LED	Digital	-10 to +60
3.5"	LQ035Q7DH06	QVGA	225/R4%	100; 50/50	3 (refl)/80 (trans)	6 x LED	Digital	-10 to +70
3.5"	LQ035Q7DH07	QVGA	250	100/80; 50/50	3 (refl)/80 (trans)	6 x LED	Digital	-10 to +70
3.6"	LQ036Q1DA01	QVGA	280	160; 80/50	500	7 x LED	Digital	-10 to +60
3.7"	LS037V7DW01	QVGA/VGA	R4%/165	160; 80/80	2/200	LED	Digital	-10 to +60
3.7"	LS037V7DW03	QVGA/VGA	R4%/200	160; 80/80	2/200	LED	Digital	-10 to +60
3.8"	LQ038Q7DB03R	QVGA	R13%/90	100; 50/50	8/75	9 x LED	Digital	0 to +50
3.8"	LQ038Q5DR01	QVGA	450	130/130; 40/65	100	1 x CCFT	Digital	-30 to +85
4.3"	LQ043T1DG01	WXVGA	500	120; 40/60	300	9 x LED	Digital	-30 to +85
4.3"	LQ043T3DX02	WXVGA	165	160; 80/80	400	7 x LED	Digital	-10 to +50
5.0"	LQ050Q5DR01	QVGA	380	130; 55/65	100	1 x CCFT	Digital	-30 to +85
5.7"	LQ057V3DG01	VGA	430	130; 65/40	350	1 x CCFT	Digital	-30 to +80
5.7"	LQ057Q3DC12	QVGA	500	130; 65/41	400	1 x CCFT	Digital	-30 to +80
6.4"	LQ064V3DG01	VGA	350	140; 40/70	350	2 x CCFT	Digital	-10 to +70
7.5"	LQ075V3DG01	VGA	400	140; 60/65	600	1 x CCFT	Digital	-30 to +80
8.0"	LQ080V3DG01	VGA	380	130; 65/55	250	1 x CCFT	Digital	0 to +55
8.4"	LQ084V1DG21	VGA	300	110; 55/40	250	1 x CCFT	Digital	0 to +55
8.4"	LQ084S3DG01	VGA	350	160; 45/80	320	2 x CCFT	Digital	-30 to +80
10.4"	LQ100368	VGA	200	140; 40/70	300	1 x CCFT	Digital	-10 to +65
10.4"	LQ104S1DG21	SVGA	350	140; 40/70	300	2 x CCFT	Digital	-10 to +65
10.4"	LQ104S1DG31	SVGA	350	140; 50/60	500	2 x CCFT	Digital	-30 to +80
10.4"	LQ104S1DG61	SVGA	420	140; 50/60	500	2 x CCFT	Digital	-30 to +80
10.4"	LQ104S1LG21	SVGA	350	140; 40/70	300	2 x CCFT	LVDS	-10 to +65
10.4"	LQ104S1LG31	SVGA	350	140; 50/60	500	2 x CCFT	LVDS	-30 to +80
10.4"	LQ104S1LG61	SVGA	420	140; 50/60	500	2 x CCFT	LVDS	-30 to +80
10.4"	LQ104V1DG21	VGA	350	140; 40/70	300	2 x CCFT	Digital	-10 to +65
10.4" (26 cm)	LQ104V1DG61	VGA	450	140; 50/60	600	2 x CCFT	Digital	-30 to +80
10.4" (26 cm)	LQ104V1LG61	VGA	450	140; 50/60	600	3 x CCFT	LVDS	-30 to +80
10.4" (26 cm)	LQ104V1DW02	VGA	380	160; 80/80	450	2 x CCFT	Digital	0 to +70
12.1" (31 cm)	LQ121S1DG61	SVGA	450	140; 50/60	600	2 x CCFT	Digital	-30 to +80
12.1" (31 cm)	LQ121S1LG41	SVGA	370	140; 50/60	450	1 x CCFT	LVDS	-10 to +65
12.1" (31 cm)	LQ121S1LG61	SVGA	450	140; 50/60	600	2 x CCFT	LVDS	-30 to +80
12.1" (31 cm)	LQ121S1LG64	SVGA	450	140; 50/60	600	2 x CCFT	LVDS	-20 to +70
12.1" (31 cm)	LQ121S1LW01	SVGA	250	170; 85/85	800	2 x CCFT	LVDS	0 to +50
15.0" (38 cm)	LQ150X1LGN2A	XGA	260	160; 55/80	350	2 x CCFT	LVDS	-25 to +60
15.0" (38 cm)	LQ150X1LG45	XGA	250	120; 55/45	550	2 x CCFT	LVDS	-25 to +60

SHARP**Sharp LCD Modules—Continued****Product Specifications ▶**

Size	Part Number	Resolution	NITS	Viewing Angle (Left/Right) (Top/Bottom)	Contrast Ratio	Backlight Type	Interface	Operating Temperature (°C)
15.0" (38 cm)	LQ150X1LG55	XGA	350	120; 45/55	550	2 x CCFT	LVDS	0 to +60
15.0" (38 cm)	LQ150X1LGB1	XGA	600	120; 55/45	350	4 x CCFT	LVDS	0 to +60
15.0" (38 cm)	LQ150X1LGN2E	XGA	350	160; 55/80	350	2 x CCFT	LVDS	0 to +60
15.0" (38 cm)	LQ150X1LW72	XGA	350	170; 85/85	600	4 x CCFT	LVDS	0 to +50
23.1" (59.0 cm)	LQ231U1LW01	UXGA	250	160; 80/80	500	6 x CCFT	LVDS	0 to +45
46.0" (116.809 cm)	LK460D3LZ19	1080P	450	176; 88/88	1,800	22 x CCFT	LVDS	0 to +50
52.0" (132.174 cm)	LK520D3LZ19	1080P	450	176; 88/88	1,200	24 x CCFT	LVDS	0 to +50
64.5" (163.9 cm)	LK645D3LZ29	1080P	450	176; 88/88	2,000	36 x CCFT	LVDS	0 to +50
64.5" (163.9 cm)	LK645D3LZ2U	1080P Portrait	400	170; 85/85	700	32 x CCFT	LVDS	0 to +50

TOSHIBA

Toshiba LCD Technology

Toshiba America Electronic Components, Inc., (TAEC) has been developing leading-edge LCD technology since 1968 for a wide range of applications, including portable computing as well as industrial factory automation equipment, point-of-sale, kiosk, automotive PC, navigation, wireless, amusement, and entertainment. Toshiba's award-winning, low-temperature polysilicon (LTPS) technology has enabled innovative products in cell phones, electronic books, notebooks, and tablet PCs.



Features ▶

- Forward-design migration
- Industry-standard interfaces
- High brightness/wide viewing angle
- RoHS-compatible

Benefits ▶

- Low power consumption
- Thin and light
- Higher resolution capability
- High reliability

Applications ▶

- ATM/POS terminals
- Factory automation
- Test and measurement
- In-flight entertainment

Product Specifications ▶

Size	Part Number	Resolution	NITS	Viewing Angle (Left/Right) (Top/Bottom)	Contrast Ratio	Backlight/Life (hrs.)	Interface	Operating Temperature (°C)
3.5"	LTA035A350F	320 x 240	350	120/140	350	LED/20K	CMOS	-20 to +70
5.0"	LTA050B352A	400 x 234	240	90/120	300	LED/10K	Analog	-20 to +60
5.5"	LTA055B0ROA	480 x 234	450	90/120	300	1 "L" CCFL/20K	Analog	-20 to +70
5.6"	LTD056ETOS	1,024 x 600	165	55/80	200	1CCFL/10K	LVDS	0 to +50
5.7"	LTA057A340F	320 x 240	300	120/140	500	LED/20K	CMOS	-10 to +70
5.8"	TFD58W26MW	400 x 234	350	TBD	100	1CCFL/10K	Composite video and analog RGB	-20 to +60
6.5"	LTA065A043F	640 x 480	400	90/120	250	1 "L" CCFL/40K	CMOS	-20 to +70
6.5"	LTA065B0D0F	640 x 480	400	120/140	500	2CCFL/30K	CMOS	-10 to +70
6.5"	LTA065B0E0F	640 x 480	250	100/120	350	2CCFL/30K	CMOS	-10 to +70
7.0"	LTA070A320F	800 x 480	350	100/120	300	1CCFL/30K	CMOS	-20 to +70
7.0"	LTA070A321F	800 x 480	280	100/120	300	1CCFL/30K	CMOS	0 to +50
7.0"	LTA070B0NOA	480 x 234	400	90/120	300	1 "L" CCFL/10K	Analog	-20 to +70
8.0"	LTA080B820A	480 x 234	350	90/120	300	1 "L" CCFL/10K	Analog	-20 to +70
8.4"	LTM08C351L	800 x 600	350	90/100	300	2CCFL/50K	LVDS	-10 to +60
8.4"	LTM08C351R	800 x 600	350	90/100	300	2CCFL/50K	LVDS	-10 to +60
8.4"	LTM08C351S	800 x 600	350	90/100	300	2CCFL/50K	CMOS	-10 to +60
8.4"	LTA084C190F	800 x 600	200	100/120	400	1CCFL/50K	LVDS	-10 to +60
8.4"	LTA084C191F	800 x 600	250	100/120	400	1CCFL/50K	LVDS	-10 to +60
8.5"	LTD085CK1S	800 x 480	240	50/90	250	1CCFL/30K	CMOS	-10 to +60
8.5"	LTA085C182F	800 x 480	270	100/120	250	1 "L" CCFL/50K	CMOS	-10 to +70
8.9"	LTM09C362Z	1,024 x 600	220	50/90	100	1CCFL/10K	LVDS	0 to +50
8.9"	LTD089EXWS	1,280 x 768	200	50/80	140	LED/10K	LVDS	0 to +50
9.0"	LTA090A149A	480 x 234	370	90/120	300	1 "L" CCFL/10K	Analog	-20 to +70
10.4"	LTD104EA5S	1,024 x 768	180	50/80	250	1CCFL/50K	LVDS	0 to +50
10.4"	LTD104EA5R	1,024 x 768	170	50/80	190	1CCFL/20K	LVDS	0 to +50
10.4"	LTD104KA1S	1,024 x 768	170	50/90	250	1CCFL/10K	LVDS	0 to +50
10.4"	LTA104A260F	640 x 480	250	50/90	250	2CCFL/50K	CMOS	0 to +50
10.4"	LTA104A261F	640 x 480	400	100/120	250	2CCFL/50K	CMOS	0 to +50
10.4"	LTA104D181F	800 x 600	400	100/120	450	2CCFL/50K	CMOS	-10 to +70
10.4"	LTA104D182F	800 x 600	400	100/120	450	2CCFL/50K	LVDS	-10 to +70
10.4"	LTD104C11S	640 x 480	400	120/140	500	2CCFL/50K	CMOS	-10 to +65
10.4"	LTD104C11R	640 x 480	400	120/140	500	2CCFL/50K	CMOS	-10 to +65
12.1"	LTD121EC5S	1,024 x 768	200	50/90	250	1CCFL/10K	LVDS	0 to +50
12.1"	LTD121EX1S	1,280 x 768	250	80/50	600	1CCFL/10K	LVDS	0 to +50
12.1"	LTD121KAOS	1,024 x 768	170	50/80	250	1CCFL/10K	LVDS	0 to +50
12.1"	LTD121C30S	800 x 600	350	120/140	250	2CCFL/50K	CMOS	-10 to +65
12.1"	LTD121C31L	800 x 600	250	100/120	450	2CCFL/60K	CMOS	-10 to +65
12.1"	LTD121C31S	800 x 600	250	100/120	450	2CCFL/50K	CMOS	-10 to +65
12.1"	LTD121C32S	800 x 600	250	100/120	450	2CCFL/50K	LVDS	-10 to +65
12.1"	LTD121C33S	800 x 600	350	120/140	500	2CCFL/50K	LVDS	-10 to +65
12.1"	LTD121C34S	800 x 600	350	120/140	500	2CCFL/50K	LVDS	-10 to +65
12.1"	LTD121GAOS	1,024 x 768	350	100/120	250	2CCFL/50K	LVDS	0 to +50
12.1"	LTD121C35S	800 x 600	800 (IFL=6.0 mA (rms))/900 (IFL=7.0 mA (rms))	120/140	500	4CCFL/50K	LVDS	-10 to +65
13.3"	LTD133ECKS	1,024 x 768	200	50/80	250	1CCFL/10K	LVDS	0 to +50
14.9"	LTA149B780F	1,280 x 390	400	120/160	500	2CCFL/10K	LVDS	-10 to +65
15.0"	LTM15C458M	1,024 x 768	350	140/160	450	4CCFL/50K	LVDS	0 to +50

