



## *Enhanced LCDs Selector Guide*

*Enhancing the Viewability Of Your Display*

Increased Brightness

Sunlight Readability

Ruggedization

Viewing Angle Control

EMI/RFI Shielding

Contrast Enhancement

Anti-Reflection

Heat & Radiation Shielding

**DuPont Display Solutions**

# Polar Vision Flat Panel



At Polar Vision, we provide **total solutions** to ensure your displays perform their best... under **any** challenging condition.

## Here's What We Do...

### We Modify "Off-The-Shelf" Displays

(LCDs, VGA, 1/4 VGA, SVGA, XGA, Wide Format)

**NEC**  
**Sharp**  
**Samsung**  
**Toshiba**  
**Mitsubishi...and many others**

### We Offer Systems...

- Controllers & Inverters
- Touch Screens
- Touch Screen Integration
- Resistive
- Capacitive
- Surface Acoustic Wave
- Infrared (IR)

### Anti-Reflection (AR) Film

- Is designed to increase contrast on your display by reducing unwanted glare & reflections
- AR film is a multi-layer coating that strives to provide refractive index matching to interfacing elements (glass to air)
- AR coatings can also be applied to etched glass surfaces with a controlled gloss factor
- Options: Clear, Matte, Conductive, and Non-Conductive

**We transform your "off-the-shelf" display into a high-performance display—with**

- Extraordinary High Contrast
- Sharp, Vibrant Images
- Significantly Reduced Reflections

### We Offer Many Enhanced Display Options

Enhancement Solution	OPT			Direct Bonded			
	OPT-1	OPT-3	OPT-4	DB-1	DB-2	DB-3	DB-4
Anti-Reflection Film-Clear	X	X	X				
Passively Enhanced Backlight		X				X	
High-Bright Backlight			X				X
Direct Bonded AR Glass-Clear				X		X	X
Direct Bonded AR Glass-Matte					X		

### Direct Bonding — Glass Front LCDs

- Permanently gluing a bonded-glass enhancement onto the front of an LCD
- Glass Front LCDs offer superior benefits
  - Optically superior
  - Mechanically robust—they don't scratch or gouge
  - Excellent performance over extreme temperature ranges
  - Resistant to wet environments & Chemicals
- Direct Bonded displays permanently adhere AR glass to the front of the LCD Polarizer
- Enhancements include AR Glass—Which minimizes reflected light energy that competes with light produced by the unit's own backlight
- Standard glass used in Direct Bonding is 0.060". Other thicknesses and finishes (and gloss level are available)
- Direct Bonding available with Conductive Glass < 4 ohms and < 12 ohms

### Backlight Enhancement—To make your display brighter!

#### Passive Enhancements

- Passively enhanced backlights increase the light output of an LCD with no net increase in power consumption or heat
  - Light Guides
  - Brightness Enhancement Film
  - Diffusers
  - Lamp Heaters (low temperature applications)

#### Active Enhancements

- High-Bright Backlights result in an increase in power consumption, typically through the addition of lamps to a backlight
- Lamp Heaters (low temperature applications)

#### Hybrid Solutions

**Enhancements in front of and behind the LCD**

# Display Solutions

## Enhanced Displays Selector Guide 5.5" to 10.4" LCDs

Original Manufacturer's LCD Specifications					Polar Vision Enhanced LCD Specifications			
Display	Pixel	Model Number	Contrast (Typical)	Luminance (nits)	Enhancement Solution	Luminance (nits)	Power (Watts)	Part Number (LCD Included)
5.5" 1/4 VGA	320 x 240	NEC: NL3224AC35-01	85:1	250	OPT-1	250	6.6	ED-A055BAA-01
					OPT-3	480	6.6	ED-A055BBA-01
					DB-1	250	6.6	ED-A055DAA-01
					DB-2	250	6.6	ED-A055HAA-01
					DB-3	480	6.6	ED-A055DBA-01
5.8" Wide Format	800 x 480	TOSHIBA: LTM06C381	250:1	NCA	OPT-4	670	6.0	ED-D058BAB-01
					DB-4	670	6.0	ED-D058DAB-01
6.4" VGA	640 x 480	Sharp: LQ64D343	300:1	300	OPT-1	300	5.5	ED-B064BAA-01
					OPT-3	450	5.5	ED-B064BBA-01
					OPT-4	1,000	12.0	ED-B064BAB-11
					DB-1	300	5.5	ED-B064DAA-01
					DB-2	300	5.5	ED-B064HAA-01
					DB-3	450	5.5	ED-B064DBA-01
					DB-4	1,000	12.0	ED-B064DAB-11
6.5" VGA	640 x 480	NEC: NL6448BC20-08	250:1	300	OPT-1	300	5.0	ED-A065BAA-01
					OPT-3	390	5.0	ED-A065BBA-01
					OPT-4	960	10.0	ED-A065BAB-01
					DB-1	300	5.0	ED-A065DAA-01
					DB-2	300	5.0	ED-A065HAA-01
					DB-3	390	5.0	ED-A065DBA-01
					DB-4	960	10.0	ED-A065DAB-01
8.4" VGA	640 x 840	NEC: NL6448BC26-01	500:1	450	OPT-1	400	5.0	ED-A084BAA-01
					OPT-3	500	5.0	ED-A084BBA-01
					OPT-4	1,300	12.0	ED-A084BAB-01
					DB-1	400	5.0	ED-A084DAA-01
					DB-2	400	5.0	ED-A084HAA-01
					DB-3	500	5.0	ED-A084DBA-01
					DB-4	1,300	12.0	ED-A084DAB-01
8.4" VGA	640 x 480	Sharp: LQ084V1DG21	100:1	300	OPT-1	300	5.4	ED-B084BAA-01
					DB-1	300	5.4	ED-B084DAA-01
					DB-2	300	5.4	ED-B084HAA-01
10.4" VGA	640 x 480	Mitsubishi: AA104VB04	300:1	400	OPT-1	400	7.4	ED-C104BAA-01
					OPT-3	500	7.4	ED-C104BBA-01
					OPT-4	1,050	14.8	ED-C104BAB-01
					DB-1	400	7.4	ED-C104DAA-01
					DB-2	400	7.4	ED-C104HAA-01
					DB-3	500	7.4	ED-C104DBA-01
					DB-4	1,050	14.8	ED-C104DAB-01
10.4" SVGA	800 x 600	NEC: NL8060BC26-17	300:1	280	OPT-1	280	7.0	ED-A104BAA-01
					DB-1	280	7.0	ED-A104DAA-01
					DB-2	280	7.0	ED-A104HAA-01
10.4" SVGA	800 x 600	Samsung: LTN104S2-L01	300:1	230	OPT-1	230	7.5	ED-F104BAA-01
					OPT-3	320	7.5	ED-F104BBA-01
					OPT-4	1,030	15.0	ED-F104BAB-01
					DB-1	230	7.5	ED-F104DAA-01
					DB-2	230	7.5	ED-F104HAA-01
					DB-3	320	7.5	ED-F104DBA-01
					DB-4	1,030	15.0	ED-F104DAB-01
10.4" VGA	640 x 480	Sharp: LQ10D421	100:1	300	OPT-1	300	7.4	ED-B104BAA-01
					OPT-3	375	7.4	ED-B104BBA-01
					DB-1	300	7.4	ED-B104DAA-01
					DB-2	300	7.4	ED-B104HAA-01
					DB-3	375	7.4	ED-B104DBA-01

\* All enhancement solutions are available with or without Anti-Reflection (AR) Coated Film.

\* All enhancements subject to change without notice. Refer to Polar Vision's website for most current information.

# Total Display Solutions

## Enhanced Displays Selector Guide 10.4" to 18.1" LCDs

Original Manufacturer's LCD Specifications			Polar Vision Enhanced LCD Specifications					
Display	Pixel	Model Number	Contrast (Typical)	Luminance (nits)	Enhancement Solution	Luminance (nits)	Power (Watts)	Part Number (LCD Included)
10.4" VGA	640 x 480	Sharp: LQ104V1DG11	300:1	350	OPT-1	350	7.4	ED-B104BAA-02
					OPT-3	400	7.4	ED-B104BBA-02
					OPT-4	670	14.8	ED-B104BAB-02
					DB-1	350	7.4	ED-B104DAA-02
					DB-2	350	7.4	ED-B104HAA-02
					DB-3	400	7.4	ED-B104DBA-02
					DB-4	670	14.8	ED-B104DAB-02
12.1" SVGA	800 x 600	Sharp: LQ121S1DG11	300:1	250	OPT-1	250	7.4	ED-B121BAA-01
					OPT-3	350	7.4	ED-B121BBA-01
					OPT-4	930	14.8	ED-B121BAB-01
					DB-1	250	7.4	ED-B121DAA-01
					DB-2	250	7.4	ED-B121HAA-01
					DB-3	350	7.4	ED-B121DBA-01
					DB-4	930	14.8	ED-B121DAB-01
12.1" SVGA	800 x 600	Sharp: LQ121S1DG31	300:1	300	OPT-1	300	7.4	ED-B121BAA-02
					DB-1	300	7.4	ED-B121DAA-02
					DB-2	300	7.4	ED-B121HAA-02
12.1" SVGA	800 x 600	NEC: NL8060BC31-17	350:1	350	OPT-1	350	7.0	ED-A121BAA-01
					OPT-3	525	7.0	ED-A121BBA-01
					OPT-4	980	14.0	ED-A121BAB-01
					DB-1	350	7.0	ED-A121DAA-01
					DB-2	350	7.0	ED-A121HAA-01
					DB-3	525	7.0	ED-A121DBA-01
					DB-4	980	14.0	ED-A121DAB-01
15.0" XGA	1024 x 768	NEC: NL10276BC30-04D	200:1	300	OPT-1	300	17.0	ED-A150BAA-01
					OPT-4	550	19.2	ED-A150BAB-01
					DB-1	300	17.0	ED-A150DAA-01
					DB-2	300	17.0	ED-A150HAA-01
					DB-4	550	19.2	ED-A150DAB-01
15.0" XGA	1024 x 768	Samsung: LTM150XS-T01	300:1	200	OPT-1	200	6.0	ED-F150BAA-01
					OPT-4	560	12.0	ED-F150BAB-01
					DB-1	200	6.0	ED-F150DAA-01
					DB-2	200	6.0	ED-F150HAA-01
					DB-4	560	12.0	ED-F150DAB-01
18.1" XGA	1024 x 768	NEC: NL128102AC28-07	300:1	240	OPT-1	240	38.0	ED-A181BAA-01
					DB-1	240	38.0	ED-A181DAA-01
					DB-2	240	38.0	ED-A181HAA-01

### High-Performance Displays

Polar Vision's line of optically enhanced high-performance LCDs feature the latest advances in display technology. Dedicated to meeting your total display needs, our ever-expanding selection of standard LCD configurations offers numerous enhancement options, depending on your application requirements. Let a Polar Vision Sales Representative help you select the best enhancement solution for your specific application.

**"The Premier One-Stop Global Resource for Display Enhancement Solutions  
and DuPont-Branded High Performance Displays"**

**Represented by:**



**POLAR VISION INC.**

**DU PONT** A DuPont Displays Company

625 Alaska Avenue • Torrance, CA 90503  
310.320.9768 • 800.269.8801 • FAX: 310.320.9357  
www.polarvision.com • e-mail: sales@polarvision.com