

Put the **Best Face** on Your **Outdoor Applications** with OPTREX Flat Panel Displays



Optrex is an industry leader for supplying outdoor readable and reliable TFT displays. Super high brightness (1,500 nits luminance), transfective properties, anti-reflective surfaces, extended temperature ranges and other technological attributes make Optrex your best solution for outdoor applications.

Super High Bright LCDs

With TFTs at up to 1500 nits luminance, Optrex displays provide legibility and image clarity in high ambient light environments – even direct sunlight. WideViewing technology permits display readability at angles up to 170 degrees, while Optrex's Natural Color Matrix (NCM) renders vivid color, crisp text and smooth video.

Reverse Scan

Optrex's Reverse Scan feature further complements outdoor use applications by allowing the display's scan to be set for best image quality when a mounted display is intended to be viewed from above or below.

Anti-reflective Surfaces

Anti-reflective (AR) coating reduces surface reflectivity to approximately 0.3% with no decrease in luminance or contrast and no increase in power. Optrex's AR technology is ideally suited to preserving screen readability in high-ambient-light environments. AR coating is more reliable since it is integrated at the factory.

Transflective

Optrex' Transflective displays offer both Reflective and Transmissive modes resulting in high light reflectance, for a "bright display", even in direct sunlight and in varying lighting environments.

The Right Displays for Your Outdoor Applications

- Outdoor Kiosk/Point-of-Sale
 - Industrial Equipment
 - Marine/GPS
 - Gas Pumps
 - Rugged PC
 - Gaming
- and more...



Technology Offering At-a-Glance

High Luminance



High Luminance Normal Luminance

- High ambient-light legibility
- Anti-glare or Anti-reflective surface
- AR coating is more reliable since it is intergrated at factory
- Wide temperature range

15.0" XGA 1500 Cd/m²
800 Cd/m²

12.1" SVGA 1500 Cd/m²
1000 Cd/m²

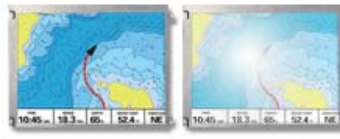
12.1" XGA 1000 Cd/m²

10.4" XGA 1000 Cd/m²

10.4" VGA 1500 Cd/m²

6.5" VGA 600 Cd/m²
750 Cd/m²

Anti-Reflective (AR)



Anti-reflective Anti-glare

- Surface reflectivity reduced to approximately 0.3%
- High image clarity
- AR coating is more reliable since it is intergrated at factory
- Wide temperature range

14.0" WXGA

12.1" WXGA

12.1" XGA / SVGA

10.4" SVGA/VGA

9.0" WVGA

8.4" XGA/VGA

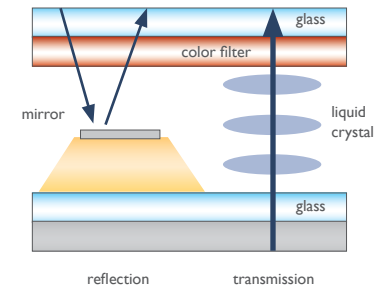
6.5" VGA

Transflective



Transflective

Conventional 200 nits



- An inner mirror design
- Achieved 20% reflectivity

8.8" HVGA

8.4" VGA

3.5" QVGA

3.0" WQVGA

Addressing Outdoor Application Requirements

Applications	Display Demands	Optrex Technology
<ul style="list-style-type: none"> • Marine (GPS, Fish finder) • ATM • Gas Pump • Point-of-Sale • Kiosk • Rugged PC • Gaming and Voting Machines • Industrial Equipment 	<ul style="list-style-type: none"> • Direct Sunlight Readable • True Color • Image Clarity • Extreme Operating Temperatures • Ruggedized • Wide Viewing Angles • Field Serviceable 	<ul style="list-style-type: none"> • High Luminance (Brightness) - Outdoor legibility and image clarity with luminance up to 1500 nits • Natural Color Matrix - NCM delivers true color fidelity using a hardware-based color transform algorithm to render vivid color, crisp text and artifact-free video that are true to the source data • Anti-reflective Surface Treatment - For greatly reduced surface reflectivity • Ultra Wide Viewing - Up to 170° viewing angle and high brightness • Reverse Scan - Ability to select either a normal or reverse scan to obtain the best intended image, depending on whether the mounted display will typically be viewed from above or below • Replaceable Backlights - Backlights are field replaceable • Redundant Backlights - Display functions with only one tube allowing for emergency down time (important feature for touch screen applications) • Transflective - High brightness in direct sunlight

Outdoor Use TFT Display Line-up

High Luminance (Brightness)

Size	Part #	Display Format	Contrast	Cd/m ²	Interface	Viewing Angle	Operating Temp.	Special Features
6.5"	T-51750GD065J-LW-ANN	640 x 480	300:1	750	CMOS	(h v): ±55 -30/60	-25 to 75°C	
	T-51952D065J-FW-A-ABN	640 x 480	700:1	600	CMOS	(h v): ±70 -60/50	-20 to 70°C	
	T-51952D065J-FW-A-ACN	640 x 480	700:1	600	CMOS	(h v): ±70 -60/50	-20 to 70°C	
10.4"	T-55334D104J-FW-A-AAN	640 x 480	700:1	1500	CMOS	(h v): ±70 -65/65	-20 to 70°C	
	T-55468D104J-FW-A-AAN	1024 x 768	600:1	1000	LVDS	(h v): ±80 -65/65	-20 to 70°C	
12.1" X	T-55105D121J-FW-A-AAN	1024 x 768	600:1	1000	LVDS	(h v): ±65 -75/45	-20 to 70°C	
	T-55105D121J-FW-A-ABN	1024 x 768	700:1	1000	LVDS	(h v): ±60 -75/45	-20 to 70°C	
	T-55105D121J-FW-A-ACN	1024 x 768	450:1	900	LVDS	(h v): ±85 -70/80	-20 to 70°C	
12.1" S	T-52017D121J-FW-A-AAN	800 x 600	650:1	1000	LVDS	(h v): ±65 -75/45	-20 to 70°C	
	T-52017D121J-FW-A-ABN	800 x 600	700:1	1000	LVDS	(h v): ±60 -75/45	-20 to 70°C	
	T-55196D121J-FW-A-AAN	800 x 600	650:1	1500	LVDS	(h v): ±65 -75/45	-20 to 70°C	
	T-55196D121J-FW-A-ABN	800 x 600	700:1	1500	LVDS	(h v): ±60 -75/45	-20 to 70°C	
15"	T-51863D150J-FW-A-AFN	1024 x 768	600:1	800	LVDS	(h v): ±75 -60/50	-20 to 70°C	
	T-55335D150J-FW-A-AAN	1024 x 768	650:1	1500	LVDS	(h v): ±75 -60/50	-20 to 70°C	

Transflective

Size	Part #	Display Format	Contrast	Cd/m ²	Interface	Viewing Angle	Operating Temp.	Additional Features
3.0"	T-55149GD030J-MLW-AJN	240 x 400	105:1	400	CMOS	(h v): ±70 -58/70	-20 to 70°C	
3.5"	T-51963GD035J-MLW-AFN	240 x 320	70:1	160	CMOS	(h v): ±40 ±40	-20 to 70°C	
	T-51963GD035J-MLW-AGN	240 x 320	70:1	130	CMOS	(h v): ±40 ±40	-20 to 70°C	
	T-51963GD035J-MLW-AHN	320 x 240	70:1	160	CMOS	(h v): ±40 ±40	-20 to 70°C	
8.4"	T-55151FD084J-MFW-A-AAN	640 x 480	200:1	200	CMOS	(h v): ±80 -70/50	-20 to 70°C	
8.8"	T-51965GD088H-FW-AEN	640 x 240	185:1	250	CMOS	(h v): ±50 ±45	-40 to 80°C	

Legend: Natural Color Matrix Ultra Wide Viewing High Luminance Anti-reflective Coating Transflective Wide Format LED backlight

Outdoor Use TFT Display Line-up

Anti-reflective (AR) Surface Treatment

Size	Part #	Display Format	Contrast	Cd/m ²	Interface	Viewing Angle	Operating Temp.	Special Features
6.5"	T-51750GD065J-FW-AFN	640 x 480	300:1	400	CMOS	(h v): ±55 -30/60	-25 to 70°C	
	T-51750GD065J-LW-ANN	640 x 480	300:1	750	CMOS	(h v): ±55 -30/60	-25 to 70°C	
	T-51952D065J-FW-A-ACN	640 x 480	700:1	600	CMOS	(h v): ±70 -60/50	-20 to 70°C	NCM
8.4"	T-51638D084J-FW-A-AC	640 x 480	500:1	480	CMOS	(h v): ±65 -60/50	-20 to 70°C	
	T-55151FD084J-MFW-A-AAN	640 x 480	200:1	200	CMOS	(h v): ±80 -70/50	-20 to 70°C	NCM
9.0"	T-55311D090J-FW-A-AAN	800 x 480	600:1	600	LVDS	(h v): ±75 -60/80	-20 to 70°C	NCM
10.4"	T-51944D104J-FW-A-ABN	800 x 600	600:1	400	LVDS	(h v): ±70 -60/50	-20 to 70°C	NCM
	T-51513D104JU-FW-A-AHN	640 x 840	600:1	430	CMOS	(h v): ±65 -45/65	-20 to 70°C	NCM
12.1"	T-55312D121J-FW-A-AAN	1280 x 800	500:1	400	LVDS	(h v): ±60 -75/45	-20 to 70°C	NCM
	T-55105D121J-FW-A-ABN	1024 x 768	700:1	1000	LVDS	(h v): ±65 -75/45	-20 to 70°C	NCM
	T-51756121J-FW-A-ADN	1024 x 768	550:1	320	LVDS	(h v): ±85 ±85	-20 to 70°C	NCM
	T-52017D121J-FW-A-ABN	800 x 600	500:1	1000	LVDS	(h v): ±65 -75/45	-20 to 70°C	NCM
	T-51866D121J-FW-A-ABN	800 x 600	600:1	400	LVDS	(h v): ±65 -75/45	-20 to 70°C	NCM
	T-51512D121J-FW-A-AGN	800 x 600	500:1	400	CMOS	(h v): ±65 -75/45	-20 to 70°C	NCM
	T-55196D121J-FW-A-ABN	800 x 600	700:1	1500	LVDS	(h v): ±60 -75/45	-20 to 70°C	NCM

Legend: Natural Color Matrix Ultra Wide Viewing High Luminance Anti-reflective Coating Transflective Wide Format Touch Screen

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