

Ruggedized, Sunlight Readable 4.0" Color Active Matrix LCD Module

Electronic Designs, Inc. (EDI) has developed a 4.0" diagonal, ruggedized, sunlight readable color active matrix LCD display head for use in harsh, sunlight readable applications. Designed for use in commercial and military cockpits as a multifunctional color display assembly, EDI's display head utilizes proven ruggedization techniques and high performance commercial off the shelf AMLCD technology to provide a cost effective solution for tough applications.

- Active Matrix TFT
- Landscape Mode
- 4:3 Aspect Ratio
- Resolution: 160xRGBΔx234
- Accepts 2 Channels RGB Analog Input
- Accepts NTSC (Composite Video)
- Accepts S-Video (Y/C)
- ±60° Horiz; +55°/-35° Vert Viewing
- Anti-reflective
- EMI Shielded (option)
- High Bright/Long Life Backlight



Environmental Characteristics

Temperature:

Operating (w/o heater): -30°C to +85°C
 Operating (w/heater)¹: -40°C to +85°C
 Non Operational: -55°C to +90°C

MTBF:

AMLCD > 40,000 hours²
 Backlight > 17,000 hours²

1. Ruggedized with 25ohm/sq. heater
2. Under nominal temperature conditions

Interface Characteristics

Driver Signal Compatibility:

Accepts RGB Analog using NTSC or PAL timing
 Accepts NTSC
 Accepts S-Video
 Accepts Discrete and Composite Sync Signals

Viewing Angle

EDI offers for the first time a Wide Viewing Angle 4.0" ruggedized unit. EDI has the capability to enhance the viewing area by the application of compensation films. This enhancement offers systems integrators to utilize this panel in cross cockpit applications where sunlight readability at extreme angles is critical.

Left/Right: 60°/60°
 Top/Bottom: 35°/60°

Shall maintain a contrast ratio of 5:1 in dark ambient conditions.

Power Input Specifications

Parameter	Symbol	Min	Typ	Max	Units
Positive Input Voltage	VS	10.5	12.0	13.0	V
Negative Input Voltage	VSL	-8.0	-12.0	-13.0	V
Analog Input Voltage	Vah	0.7	0.74	1.0	Vp-p
Digital Input Voltage	Vdh	3.7	--	5.1	V
	Vdl	0	--	1.0	V

General Panel Specifications

Parameter	Specification	Units
Panel Dimensions	96.1(H)x75.5(V)	mm
Screen Size	4.0" diag. (101.6 mm)	in.
Effective Viewing Area	80.7(H) x 60.6(V)	mm
Active Area	48.90	cm ²
Display Format	320xRGBx234	pixels
Viewing Orientation	6:00*	
Dot Pitch	0.687(H)x0.259(V)	mm
Pixel Configuration	RGB Delta	
Display Mode	Normally White	
Transmissivity	7.4%	

*12:00 viewing possible w/ scan reversal

