

19" SXGA DUAL MODE (DAY & NVIS) ENHANCED LED BACKLIT DISPLAY SOLUTION

Sunlight Readability/MIL-STD-3009 NVIS White Operation/Very Wide Range Dimming

GENERAL DESCRIPTION

The ACD-NVIS190-2940 consists of the AUO G190ETN01.2 19" SXGA TFT display, modified with a high performance LED backlight capable of Day and NVIS White Operation.

Performance at given luminance levels

800 cd/m² with 31.7 watts LED power (Day)

1.71 cd/m² with 1.78 watts LED power (NVIS)

The "NVIS White" enhancement portion of this display solution, is intended to be capable of compliance per MIL-STD-3009 for Electronic and electro-optical displays (multi-color), Type 1, Class A or Class B. Other post enhancements placed in front of the LCD glass, can have an affect on the final Luminance & Chromaticity results.



LED BACKLIGHT FEATURES

Dual Edge Day and NVIS LED rails

Projected lifetime > 75,000 hours

Designed to be driven by constant current, selectable dual output LED backlight driver ¹

¹ For best power transfer and control, use ACI-2954 and ACI-2959 Dual Mode LED Drivers.

LCD PANEL HIGHLIGHTS

19" TFT Active Matrix Color

376.32mm(H) x 301.06mm(V) viewable area

396mm(H) x 324mm(V) x 15.18mm(D) physical size

SXGA 1280 x 1024 pixels, 16.7M colors

1000:1 typical contrast ratio

Display Mode, Normally White

Surface Treatment Anti-glare; Hardness 3H

For complete LCD specification (standard panel), refer to the datasheet AUO G190ETN01.2

MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
Top ¹	Operating temperature of display (center of backplate surface)	-30 to +85	Deg-C
Tled	Operating temperature of LED edge light (light rail contact)	-30 to +85	Deg-C
Tstg ¹	Display storage temperature	-30 to +85	Deg-C
IfwdD	LED forward current (Day)	96	mA
IfwdN	LED forward current (NVIS)	12	mA

*Maximum Ratings are those values beyond which damage may occur

¹Per Manufacturer's Specification

PANEL/BACKLIGHT OPTICAL CHARACTERISTICS

Ifwd(Day) = 80mA per bank, 3 bank per rail, 2 rails per display, Ifwd(NVIS) = 10mA per bank, 1 bank per rail, 2 rails per display, LED rails: ACR-2943/ACR-3077, Ta = +25 Deg-C moving air (36 CFM), LCD displaying full-white image, minimum 2 hour soak.

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Bpd	Panel Luminance (Day)		720	800	880	cd/m ²
Bpn	Panel Luminance (NVIS)			1.71		cd/m ²
u'd	White u' coordinate (DAY)			0.190		-
v'd	White v' coordinate (DAY)			0.460		-
u'n	White u' coordinate (NVIS)			0.190		-
v'n	White v' coordinate (NVIS)			0.490		-
Rn	White radius error (NVIS)				0.040	-

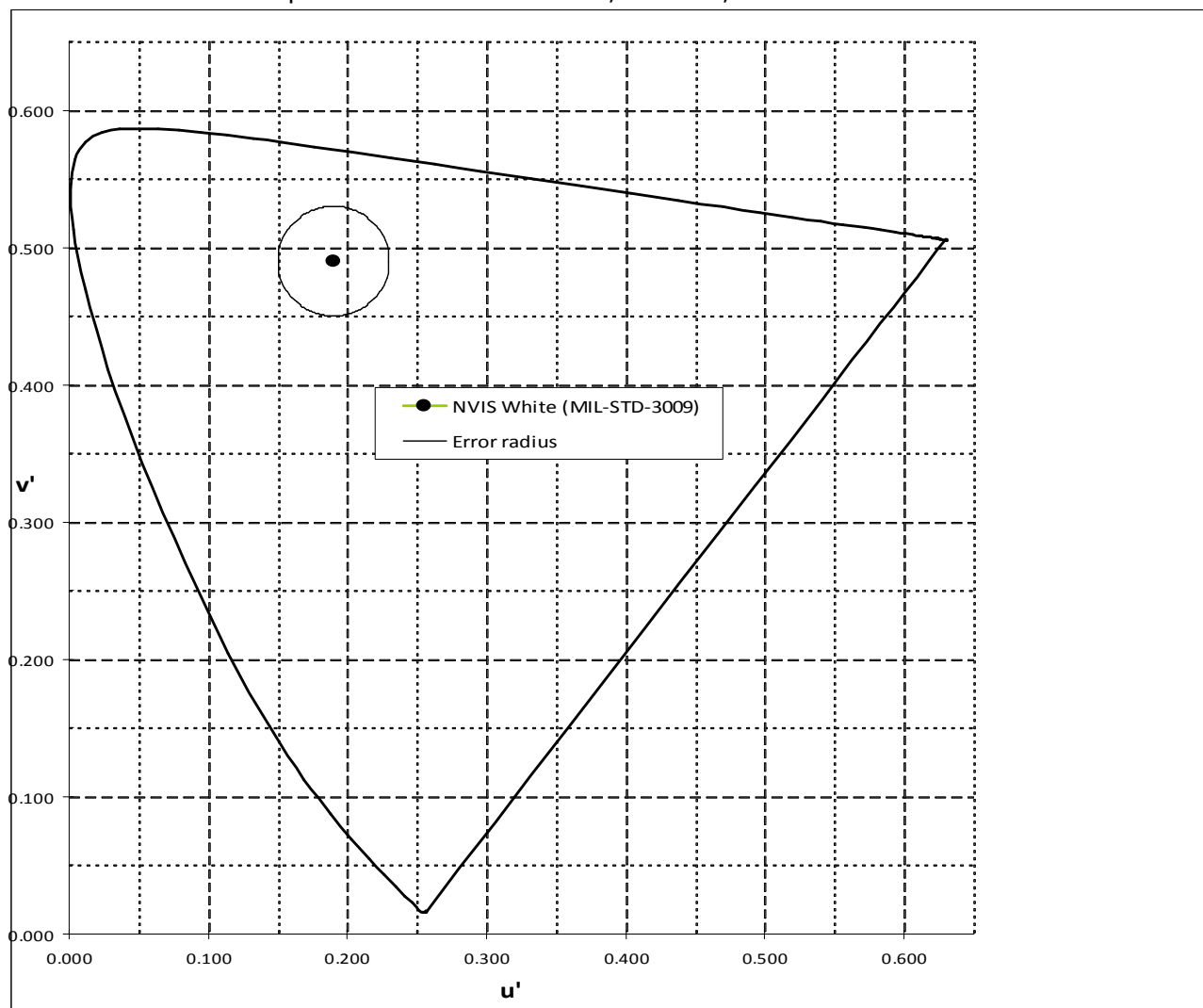
LED EDGE-LIGHT ELECTRICAL CHARACTERISTICS

Ifwd(Day) = 80mA, Ifwd(NVIS) = 10mA, Top = +25Deg-C

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Vfwd	LED rail forward voltage drop (Day mode)		59	66	73	Vdc
Vfwd	LED rail forward voltage drop (NVIS)		80	89	98	Vdc

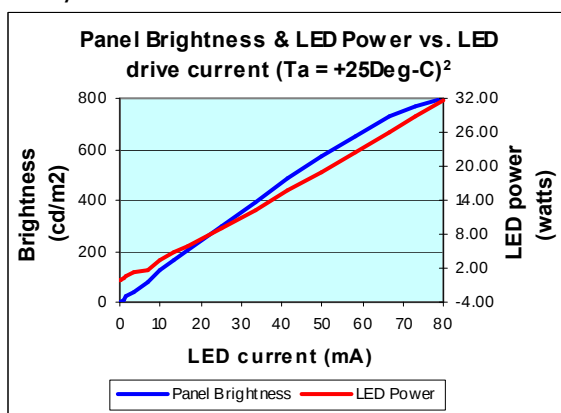
CIE 1976 UCS CHROMATICITY DIAGRAM

NVIS WHITE coordinates per MIL-STD-3009: $u'=0.190$, $v'=0.490$, $r=0.04$

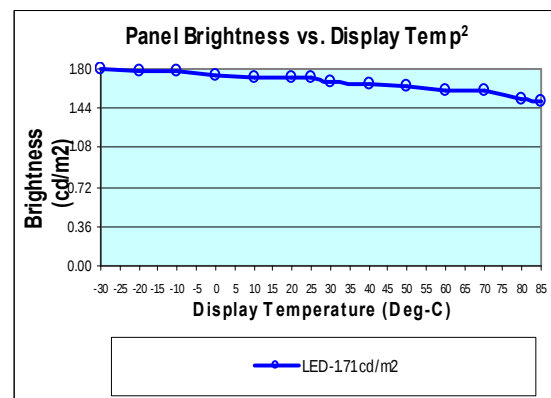
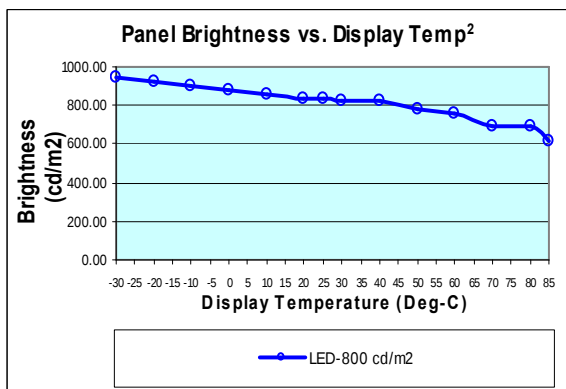
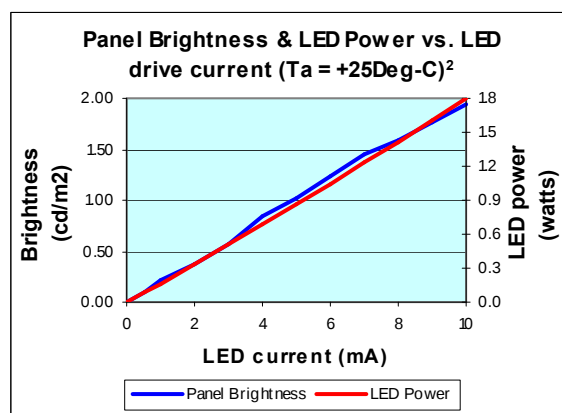


TYPICAL LCD/LED BACKLIGHT PERFORMANCE GRAPHS

Day



NVIS



² Moving air (36.0 CFM)