

10.1" WUXGA DUAL MODE (DAY & NVIS) ENHANCED LED BACKLIT DISPLAY SOLUTION

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

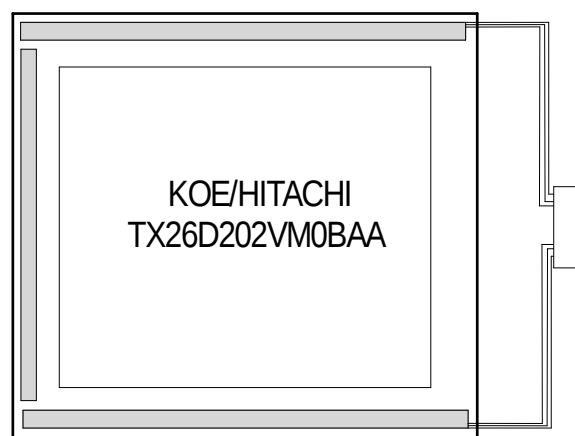
GENERAL DESCRIPTION

The ACD-2870 consists of the KOE/Hitachi TX26D202VM0BAA 10.1" TFT display modified with a high performance LED backlight capable of Day and NVIS White operation.

Performance at given brightness levels

1900 cd/m² with 14.7 watts LED power (Day)
2.95 cd/m² with 0.83 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.



LCD PANEL HIGHLIGHTS

10.1" TFT Active Matrix Color

217.44 (W)mm x 135.9 (H)mm viewable area

WUXGA 1920 x 1200 pixels, 16.7 M colors

800:1 typical contrast ratio

Display Mode Normally Black

Physical Size 232.1(W)mm x 153.2(H)mm x 10.9(D)mm

Must be used with Bonded Cover Glass

For complete LCD specification (standard panel), refer to the KOE/Hitachi TX26D202VM0BAA datasheet

LED BACKLIGHT FEATURES

Day and NVIS LED edge-light rail

Single Connector allows simple interconnection with LED driver¹

Projected lifetime > 75,000 hours

5000:1 or better dimming ratio (Day)¹

¹ For best power transfer and control, use ACI ID5 Dual Mode LED Driver ACI-2861.

MAXIMUM RATINGS *

Symbol	Parameter	Value	Unit
Top ¹	Operating temperature of display (center of panel surface)	-30 to +80	Deg-C
Tled	Operating temperature of LED edge light (light rail contact)	-30 to + 95	Deg-C
Tlstg ¹	LEED storage temperature	-40 to +100	Deg-C
Tstg ¹	Display storage temperature	-30 to +80	Deg-C
IfwdD	LED forward current (Day)	93	mA
IfwdN	LED forward current (NVIS)	14	mA

*Maximum Ratings are those values beyond which damage may occur

¹ Per Manufacturer's Specification

PANEL/BACKLIGHT OPTICAL CHARACTERISTICS

Ifwd(Day) = 77.5mA per bank, 1 bank per rail, 2 rails per display, Ifwd(NVIS) = 12mA per bank, 1 bank per rail, 1 rail per display, LED rails: ACR-2845/ACR-2846 Ta = +25Deg-C, moving air (36.0 CFM), LCD displaying full-white image, min 2hr soak

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Bpd	Panel Brightness (Day)		1520	1900		cd/m ²
Bpn	Panel Brightness (NVIS)		2.36	2.95		cd/m ²
u'd	White u' coordinate (DAY)			0.210		-
v'd	White v' coordinate (DAY)			0.515		-
Rd	White radius error (DAY)				0.040	-
u'n	White u' coordinate (NVIS)			0190		-
v'n	White v' coordinate (NVIS)			0.490		-
Rn	White radius error (NVIS)				0.040	-

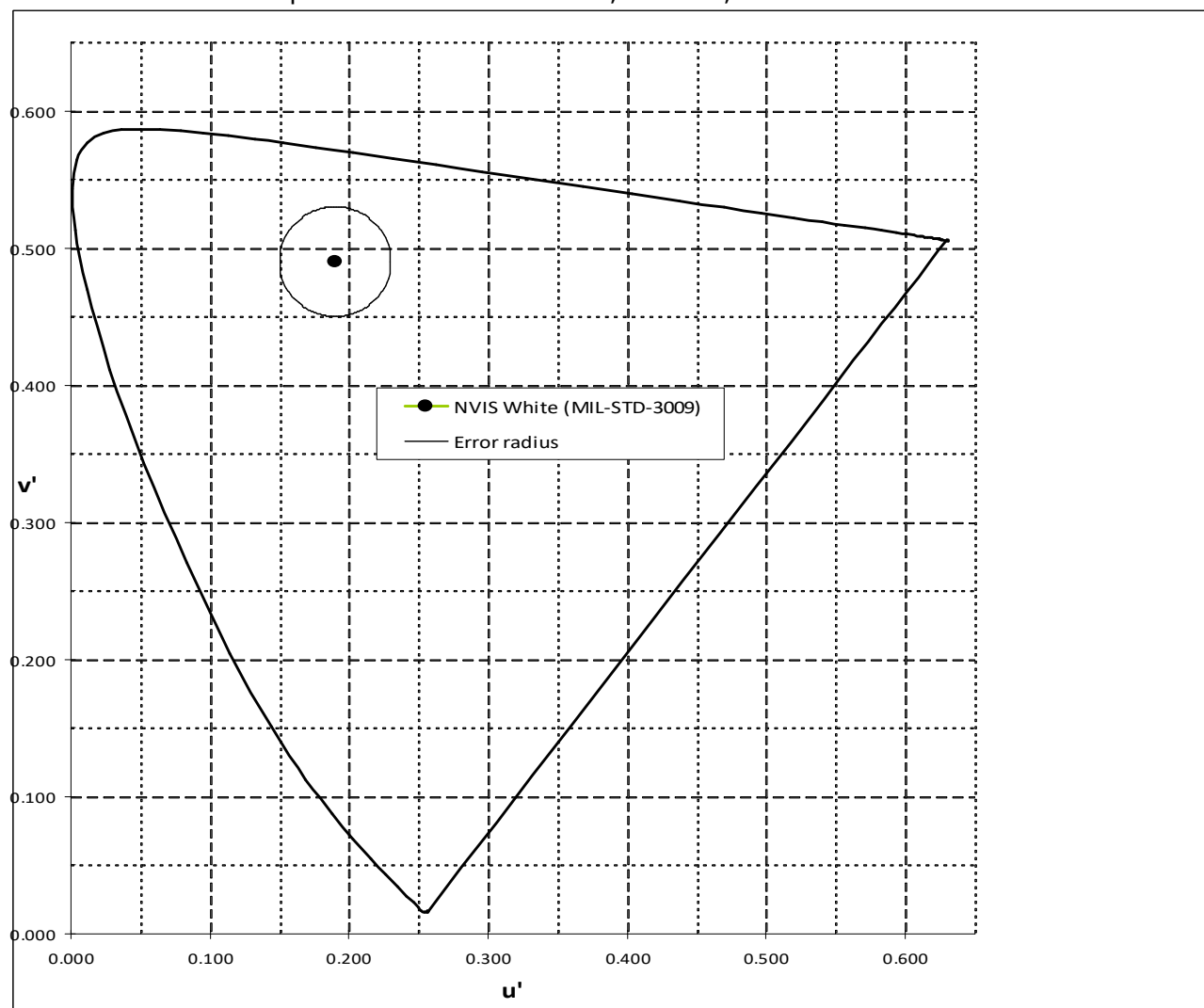
LED EDGE-LIGHT ELECTRICAL CHARACTERISTICS

Ifwd(Day) = 77.5mA, Ifwd(NVIS) = 12mA, Top = +25Deg-C

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Vfwd	LED rail forward voltage drop (Day mode)		85	95	105	Vdc
Vfwd	LED rail forward voltage drop (NVIS)		62	69	76	Vdc

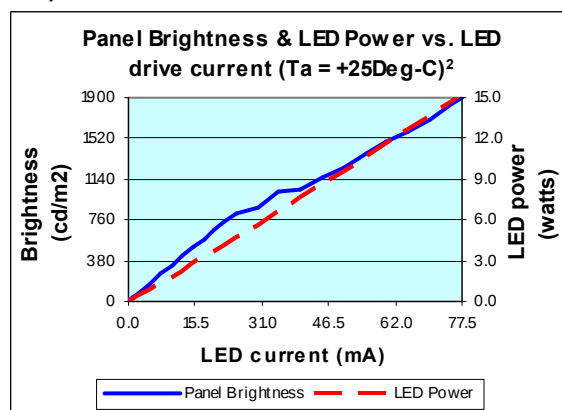
CIE 1976 UCS CHROMATICITY DIAGRAM

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

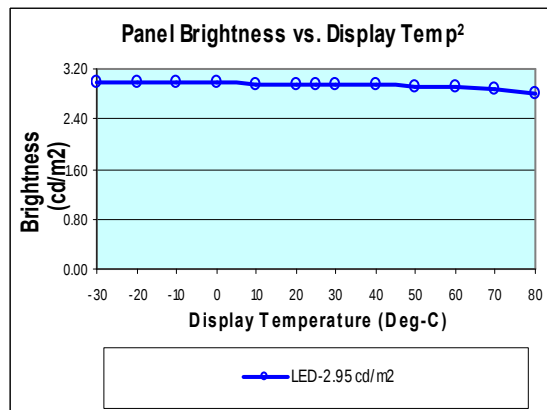
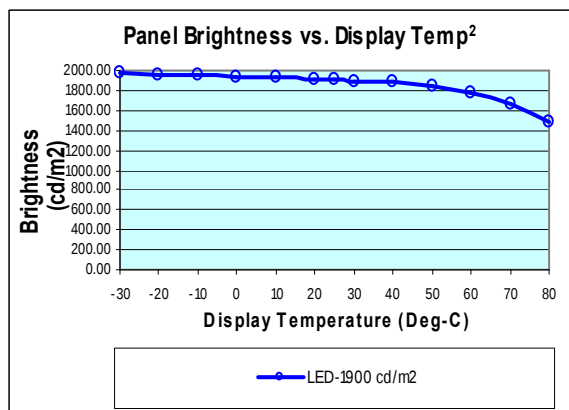
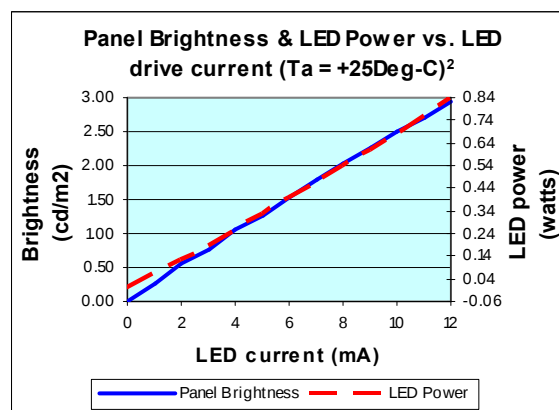


TYPICAL LCD/LED BACKLIGHT PERFORMANCE GRAPHS

Day

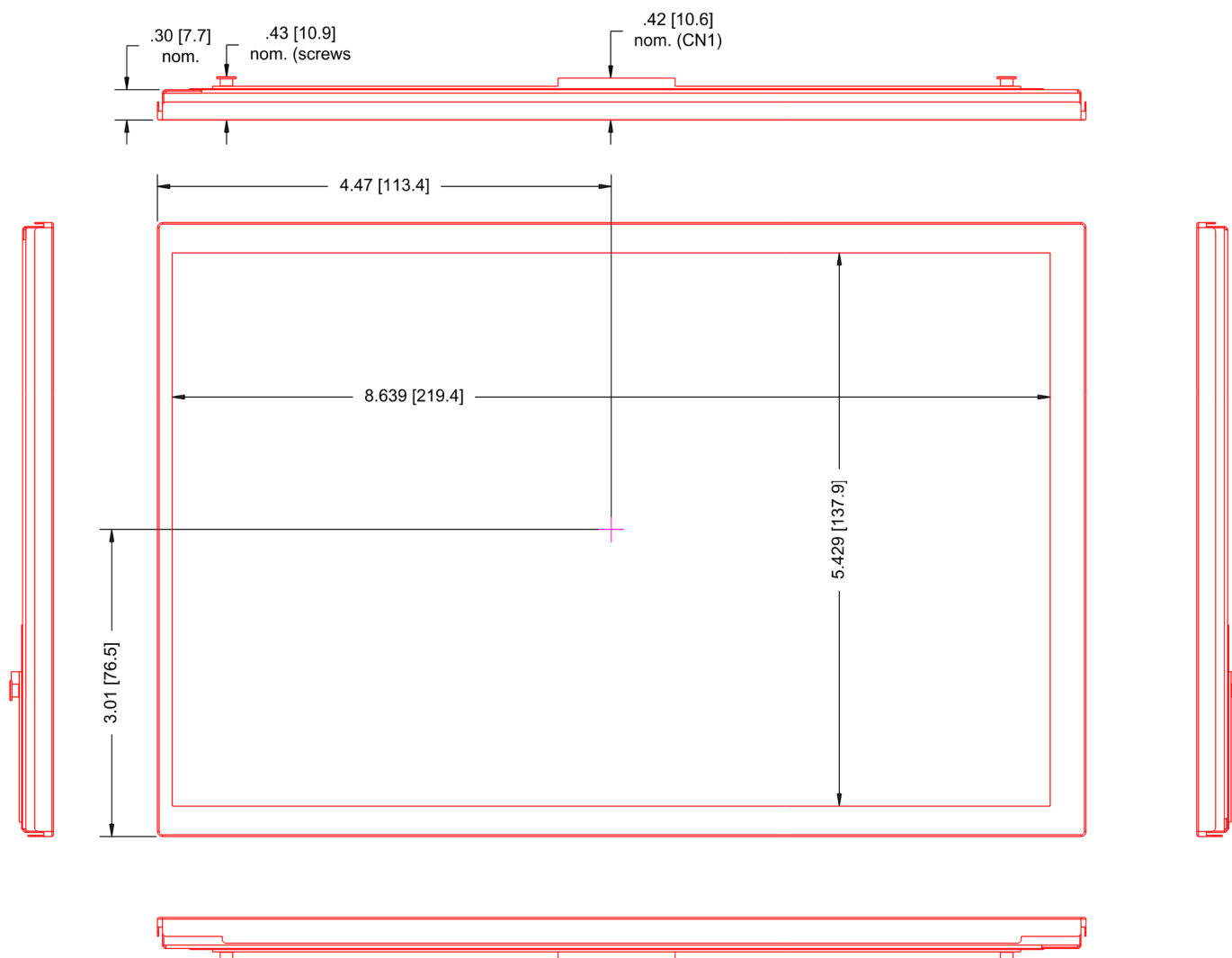


NVIS



² Moving air (36.0 CFM)

MECHANICAL CHARACTERISTICS FRONT



MECHANICAL CHARACTERISTICS BACK

