

21.5" FULL HD 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-2858 consists of the AUO G215HVN01.0 21.5" Full HD TFT display, modified with a high performance LED backlight capable of Day and NVIS White Operation.

Performance at given luminance levels

1000 cd/m² with 47.7 watts LED power (Day)

8 cd/m² with 13.8 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

21.5" TFT Active Matrix Color

476.64mm(H) x 268.11mm(V) viewable area

495.6mm(W) x 292.2mm(H) x 16.4mm(D) physical size

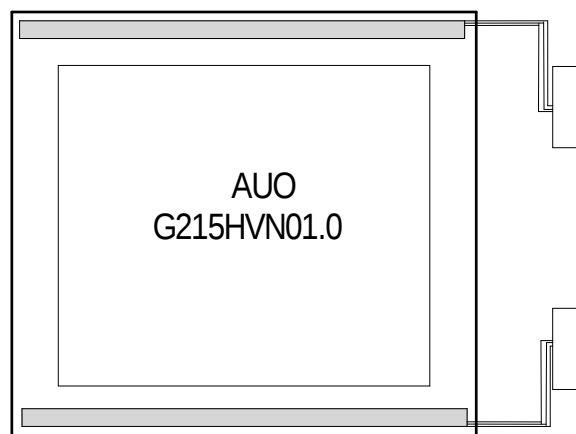
Full HD 1920 x 1080 pixels, 16.2M colors

5000:1 typical contrast ratio

Display Mode, Normally Black

For complete LCD specification (standard panel), refer to the datasheet AUO G215HVN01.0

1/14/19



LED BACKLIGHT FEATURES

Dual Edge Day and Side Edge NVIS LED rails

Single connector allows simple interconnect with LED driver¹

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 2 ACI ID5 Dual Mode LED Drivers (ACI-2634).

MAXIMUM RATINGS*

1/14/19

Symbol	Parameter	Value	Unit
Top ¹	Operating temperature of display (center of panel surface)	0 to +60	Deg-C
Tled	Operating temperature of LED edge light (light rail contact)	-30 to +85	Deg-C
Tstg ¹	Display storage temperature	-20 to +60	Deg-C
IfwdD	LED forward current (Day)	80	mA
IfwdN	LED forward current (NVIS)	30	mA

*Maximum Ratings are those values beyond which damage may occur

¹Per Manufacturer's Specification

PANEL/BACKLIGHT OPTICAL CHARACTERISTICS

Ifwd(Day) = 66.25mA per bank, 4 banks per rail, 2 rails per display, Ifwd(NVIS) = 25mA per bank, 4 banks per rail, 2 rails per display, LED rails: ACR-2857, 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)		900	1000	1100	cd/m ²
Bpn	Panel Luminance (NVIS)			8		cd/m ²
u'd	White u' coordinate (DAY)			0.170		-
v'd	White v' coordinate (DAY)			0.450		-
Rd	White radius error (DAY)				0.04	-
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

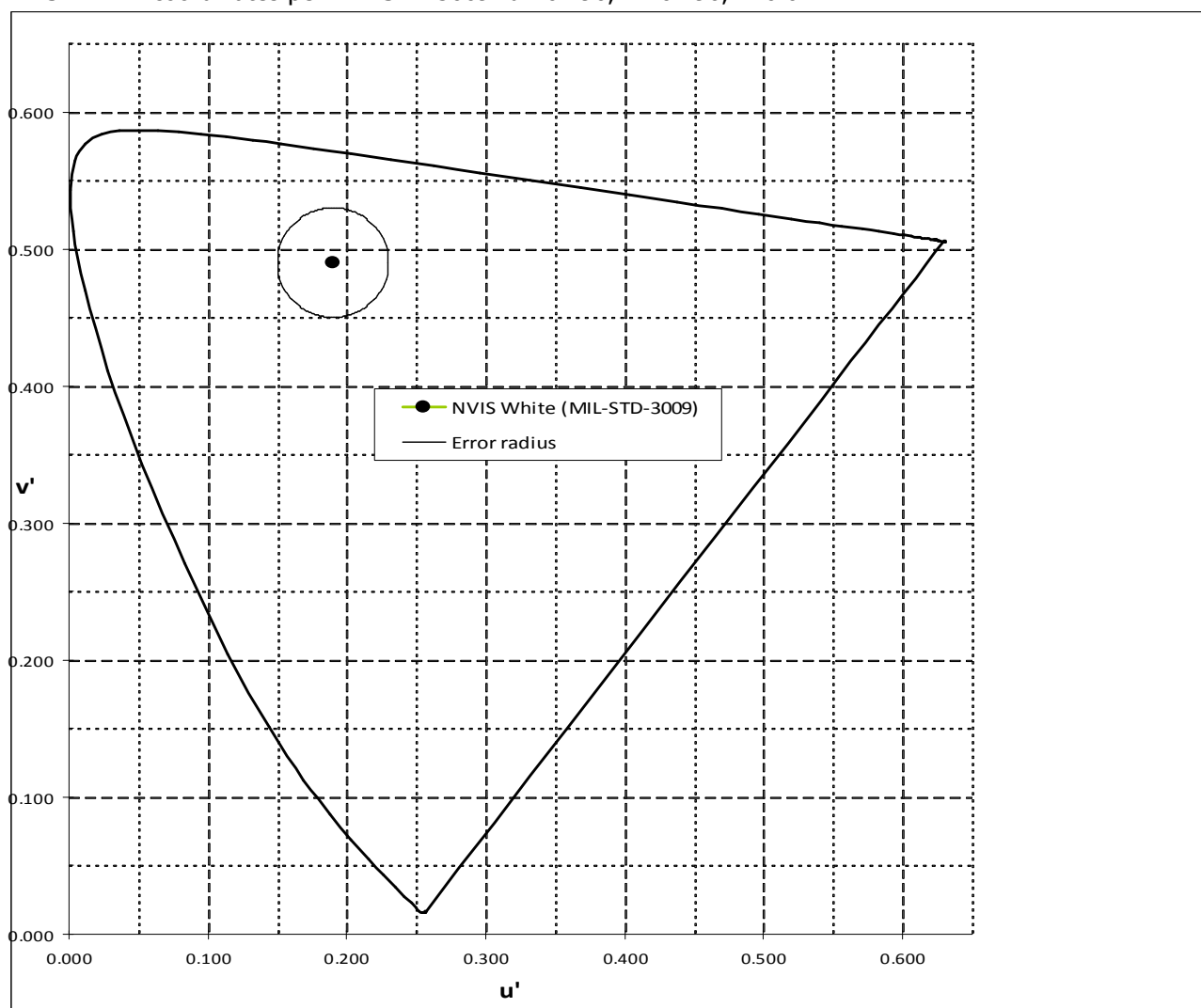
Ifwd(Day) = 66.25mA, Ifwd(NVIS) = 25mA, Top = +25Deg-C

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Vfwd	LED rail forward voltage drop (Day mode)		81	90	99	Vdc
Vfwd	LED rail forward voltage drop (NVIS)		62	69	76	Vdc

CIE 1976 UCS CHROMATICITY DIAGRAM

1/14/19

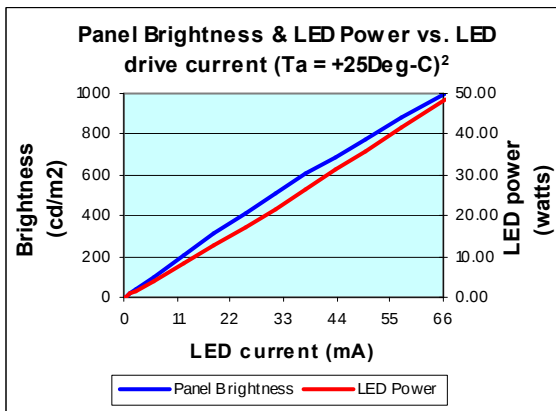
NVIS WHITE coordinates per MIL-STD-3009: $u'=0.190$, $v'=0.490$, $r=0.04$



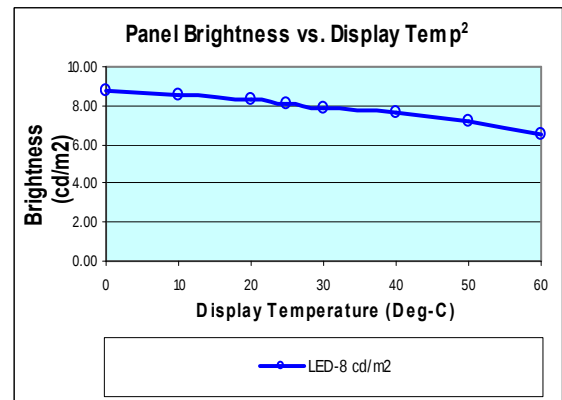
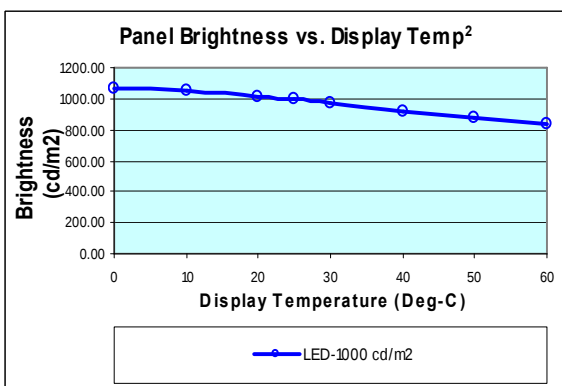
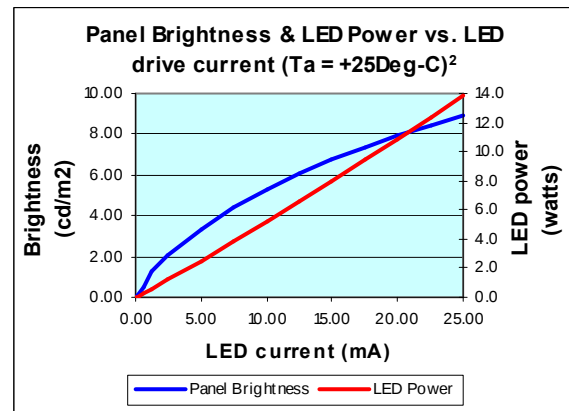
TYPICAL LCD/LED BACKLIGHT PERFORMANCE GRAPHS

1/14/19

Day



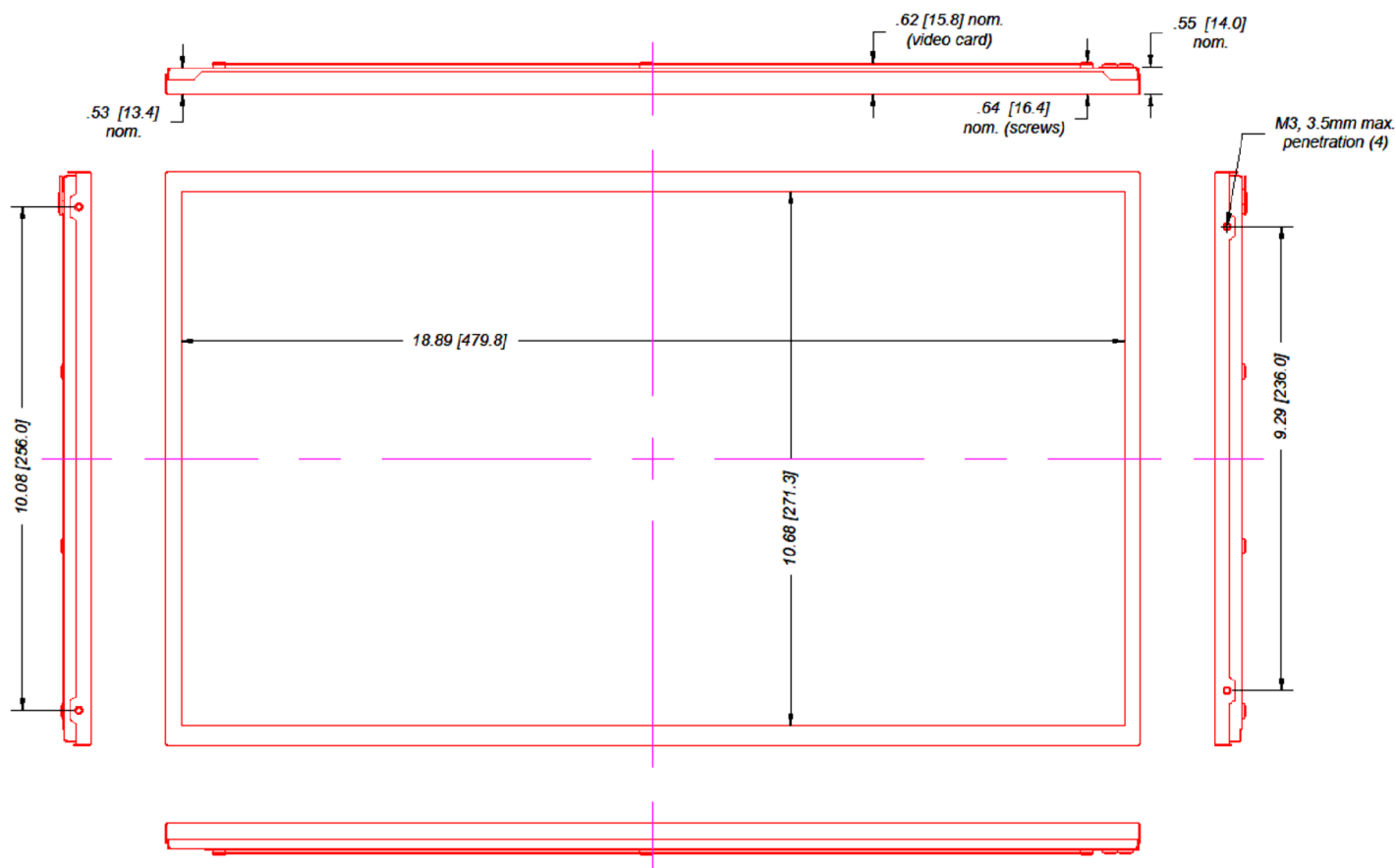
NVIS (TBD)



² Moving air (36.0 CFM)

1/14/19

MECHANICAL CHARACTERISTICS FRONT



1/14/19

MECHANICAL CHARACTERISTICS BACK

