

15.6" FHD 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-NVIS156-2942 consists of the NLT NL192108BC18-06F 15.6" FHD TFT display, modified with a high performance LED backlight capable of Day and NVIS White Operation.

Performance at given luminance levels

1200 cd/m² with 29.6 watts LED power (Day)
1.71 cd/m² with 0.96 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

15.6" TFT Active Matrix Color

344.16mm(H) x 193.59mm(V) viewable area

363.8mm(W) x 215.9mm(H) x 15.7mm(D) physical size

FHD 1920 x 1080 pixels, 16.7M colors

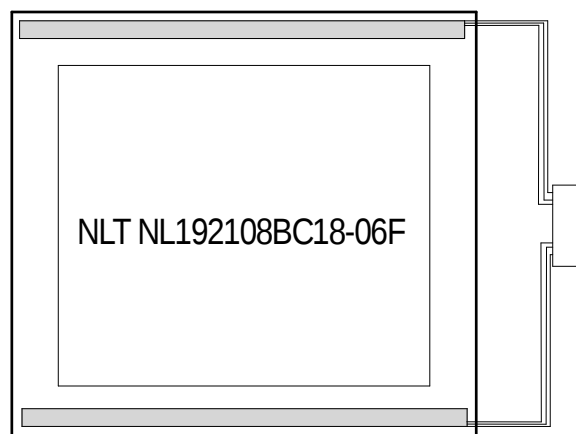
750:1 typical contrast ratio

Display Mode, Normally Black

Surface Treatments: Antiglare; 3H Hardness

For complete LCD specification (standard panel), refer to the datasheet NLT NL192108BC18-06F

8/8/18



LED BACKLIGHT FEATURES

Dual Edge Day/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 ACI-2941 Dual Mode LED Driver.

MAXIMUM RATINGS*

8/8/18

Symbol	Parameter	Value	Unit
Top ¹	Operating temperature of display (center of panel surface)	-30 to +85	Deg-C
Tled	Operating temperature of LED edge light (light rail contact)	-30 to +95	Deg-C
Tstg ¹	Display storage temperature	-40 to +85	Deg-C
IfwdD	LED forward current (Day)	110	mA
IfwdN	LED forward current (NVIS)	9	mA

*Maximum Ratings are those values beyond which damage may occur

¹Per Manufacturer's Specification

PANEL/BACKLIGHT OPTICAL CHARACTERISTICS

Ifwd(Day) = 91.25mA per bank, 2 banks per rail, 2 rails per display, Ifwd(NVIS) = 7.5mA per bank, 1 bank per rail, 2 rails per display, LED rail: ACR-2925, 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)		1080	1200	1320	cd/m ²
Bpn	Panel Luminance (NVIS)			1.71		cd/m ²
u'd	White u' coordinate (DAY)			0.192		-
v'd	White v' coordinate (DAY)			0.464		-
Rd	White radius error (DAY)					-
u'd Red	Red u' coordinate (DAY)			0.405		-
v'd Red	Red v' coordinate (DAY)			0.515		-
u'd Green	Green u' coordinate (DAY)			0.153		-
v'd Green	Green v' coordinate (DAY)			0.555		-
u'd Blue	Blue u' coordinate (DAY)			0.150		-
v'd Blue	Blue v' coordinate (DAY)			0.284		-
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

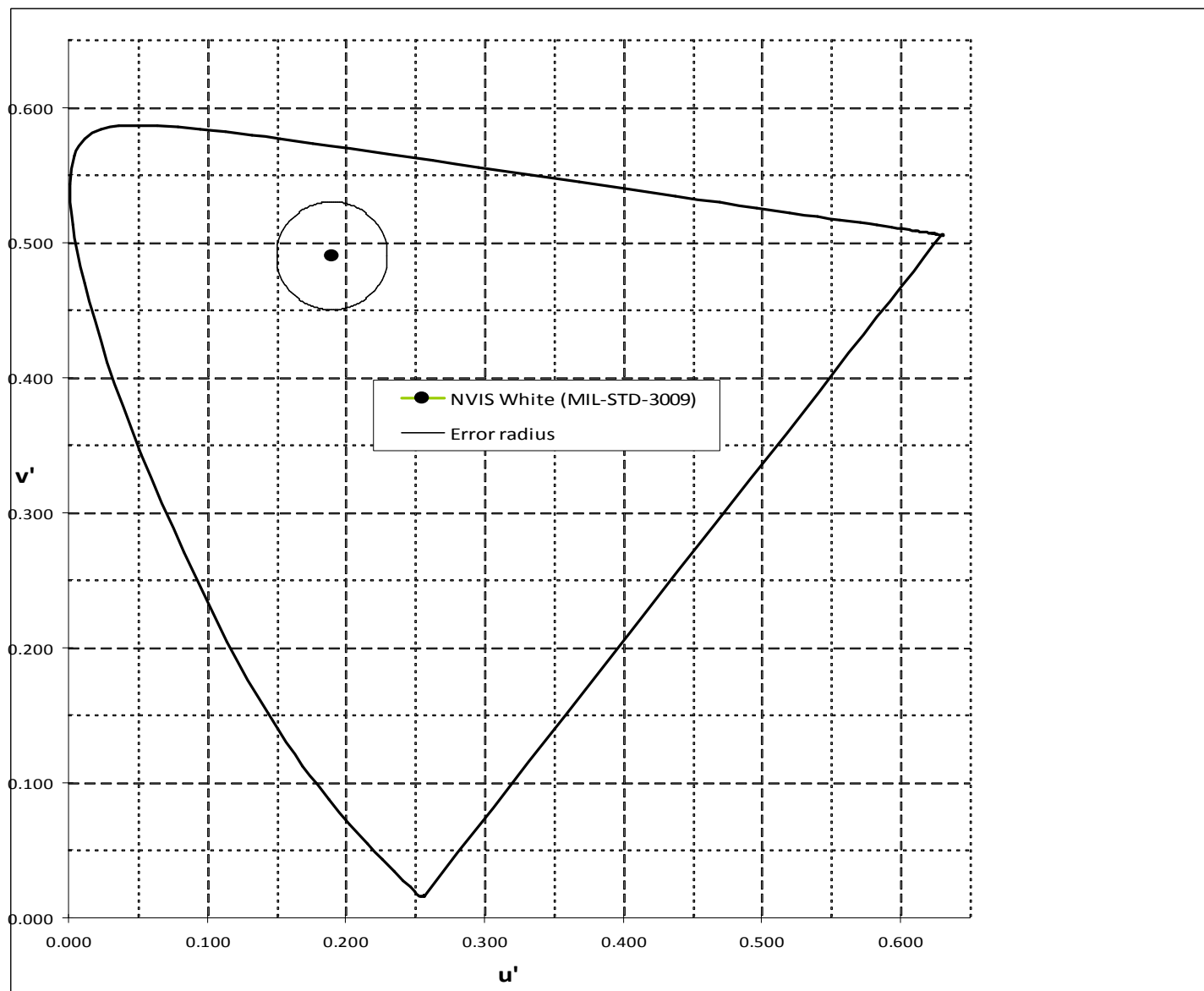
Ifwd(Day) = 91.25mA, Ifwd(NVIS) = 7.5mA, Top = +25Deg-C

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Vfwd	LED rail forward voltage drop (Day mode)		73	81	89	Vdc
Vfwd	LED rail forward voltage drop (NVIS)		58	64	70	Vdc

CIE 1976 UCS CHROMATICITY DIAGRAM

8/8/18

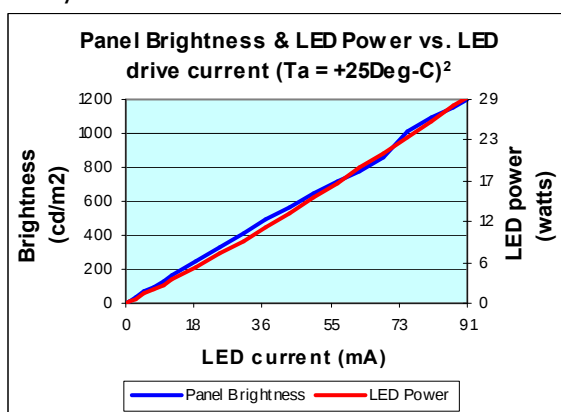
NVIS WHITE coordinates per MIL-STD-3009: $u'=0.190$, $v'=0.490$,
 $r=0.04$



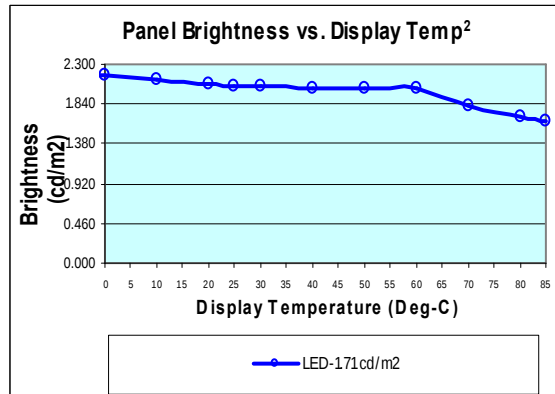
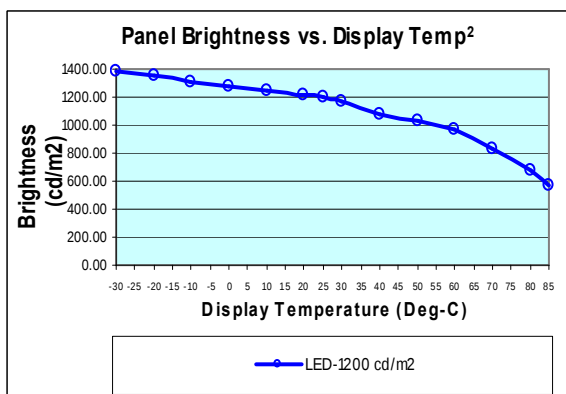
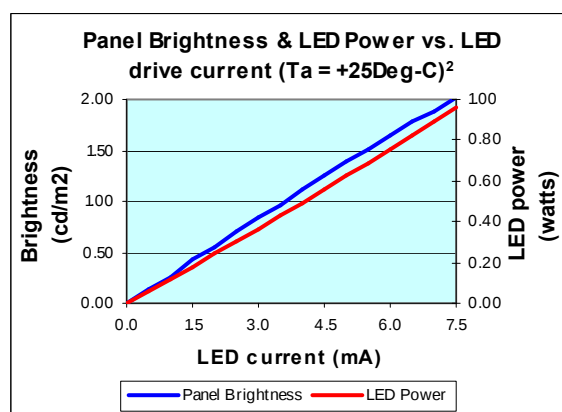
TYPICAL LCD/LED BACKLIGHT PERFORMANCE GRAPHS

8/8/18

Day



NVIS



² Moving air (36.0 CFM)