

R12L100-GSN1-NI

12.1" GS Series NVIS Display



KEY FEATURES

- 12.1" 1024 x 768 Resolution
- Projected Capacitive Multi-Touch (PCAP)
- Full IP65 Water and Dust Proof
- M12 Waterproof Connectors
- Fully rugged elegant, edge-to-edge design
- -20°C to 60°C wide operating temperature
- 9~36V DC Isolation Wide Range Power Input. Optional Ignition on/off control function.
- Support Day Mode/NVIS Mode
- Compliance MIL-STD-3009

INTRODUCTION

Winmate's Defence NVIS Display Series is engineered for mission-critical performance in military and defense operations. Available in sizes from 8.4 inch to 21.5 inch, these displays feature a variety of touchscreen options, including 5-wire/4-wire resistive and projected capacitive (PCAP) technologies. Built to support both Day Mode and NVIS Mode, each unit complies fully with MIL-STD-3009, ensuring compatibility with night vision goggles (NVGs) without compromising visibility or safety. With rugged anti-corrosion housing, wide -20°C to 60°C temperature tolerance, and IP65/IP67 protection, this series offers dependable performance in harsh, tactical environments.

SPECTRUM DIAGRAM

Image 1: RGB Color Gamut Comparison (CIE 1931 Chromaticity Diagram)

This diagram compares the color gamut of LCDs using different backlights—CCFL, White LED, and RGB LED—against the NTSC television color gamut. Each triangle shows the color range that each backlight technology can produce. RGB LED offers the widest gamut, while CCFL has the smallest.

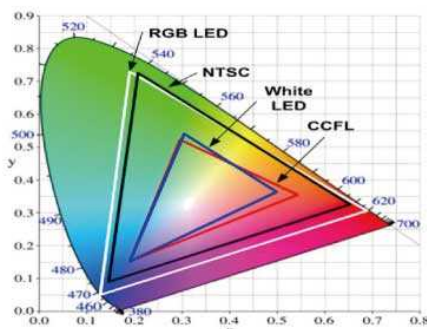
Image 2: CIE 1976 Chromaticity Diagram

This chart maps various colors in the CIE 1976 uniform chromaticity space. It shows specific color targets like GTLS GREEN, GTLS ORANGE, and their positions relative to the white point (WHITE LOCUS). This is typically used for precise color calibration in display and lighting technologies.

Image 3: NVG Spectral Response Curve

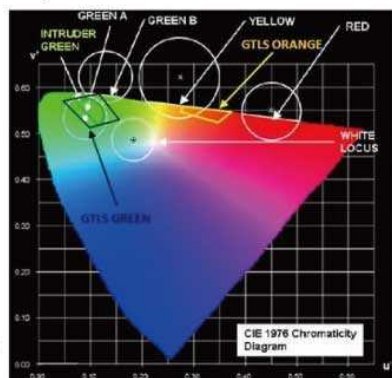
This graph shows the spectral sensitivity of Night Vision Goggles (NVG), Class A and Class B. It plots the relative response (%) over wavelengths from 450 nm to 950 nm. Both classes are most sensitive to wavelengths from about 625 nm (red) to 900 nm (near-infrared), indicating their performance range in low-light environments.

Image 1



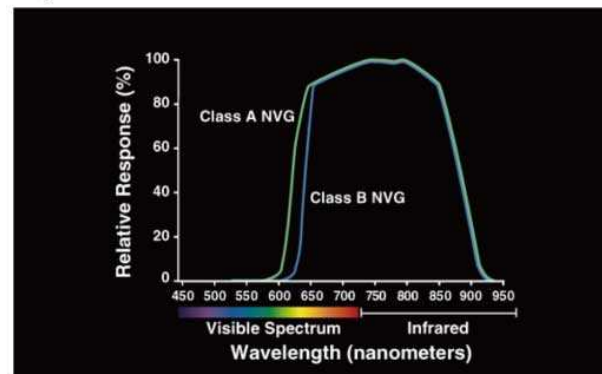
* Reference: Du, K., Liu, Y., Song, T., & Xue, Q. (2021). Color-independent visible light communications based on color space: State of the art and potentials. *Journal of Communications and Networks*, 23(1), 1–15. Figure 2: CIE1931 color space chromaticity diagram, p. 4.

Image 2



* Reference: Petr, P. (2010). Osvedčenie pilotů i ch a vojensk ch hodin ek — č ů st sedm ů . [Blog post]. Chronomag Forum.

Image 3



* Reference: Transport Canada. (n.d.). Civil Aviation Use of NVG. Operational Standards Division, p. 9.

SPECIFICATIONS

Display

| | | | |
|------------------|--|----------------|-----------------|
| Touch / Glass | Projected Capacitive Multi Touch Screen Protection Glass (Optional) | Resolution | 1024x768 |
| Size | 12.1 inches | Contrast Ratio | 1000:1 |
| Panel Brightness | 1200/NVIS nits | Display Color | 16.2M Colors |
| View Angles | 88,88,88,88 | Active Area | 261.12x163.2 mm |

Environment

| | | | |
|---------------------|---------------------------------------|-----------------------|--------------------------------|
| Operating Humidity | 10% to 95% RH | Operating Temperature | -10°C~60°C |
| Storage Temperature | -30°C to 60°C | Shock | 40g for 11ms |
| Vibration | 1.48/1.90/2.24 g rms for XYZ/ 5-500Hz | IP rating | IP65, Dustproof and Waterproof |

Certification

| | |
|---------------|--|
| Certification | CE, FCC Compliant with MIL-STD-810F/G for vibration / shock |
|---------------|--|

IO Ports

| | | | |
|----------|--------------------------|-------|---------|
| USB Port | 1 x USB for Touch Screen | Video | 1 x VGA |
|----------|--------------------------|-------|---------|

Mechanical

| | | | |
|-----------|-------------------------|----------------|--------------------------------------|
| Dimension | 296.2 x 226.7 x 45.5 mm | Mounting | VESA mount Panel mount (Optional) |
| Enclosure | Aluminum | Cooling System | Fanless Design |

Accessory

| | |
|-----------|---|
| Accessory | Quick Start Guide(Hardcopy) AC Adapter(For 7" Display only) M12 Power Cable(Not Supplied with 7" Display) VGA Cable USB for Touch Cable I/O Protective Cap x 3 |
|-----------|---|

Power

| | |
|--------------|---------------------|
| Power Rating | 9-36V DC (M12 type) |
|--------------|---------------------|

Control

| | |
|--------|---------------------------------|
| Button | 5 Keys: -, +, Power, Esc, Enter |
|--------|---------------------------------|

DIMENSIONS UNIT:MM

NOTE

1.This is a simplified drawing and some

components are not marked in detail.
 2. Please contact our sales representative if you need further product information.
 3. All specifications are subject to change without prior notice.
 4. The product shown in this datasheet is a standard model. For diagrams that contain customized or optional I/O, please contact the Winmate Sales Team for more information.

