

Manufacturer: **Hatteland Technology AS**
 Product: **24.0 inch Industrial Display (STD)**
 Type: **HD 24T21 STD-xxx-Fxxx**

Last Revised: **05 Dec 2022**
 Revision#: **37**

24.0 inch Industrial Display - Series X

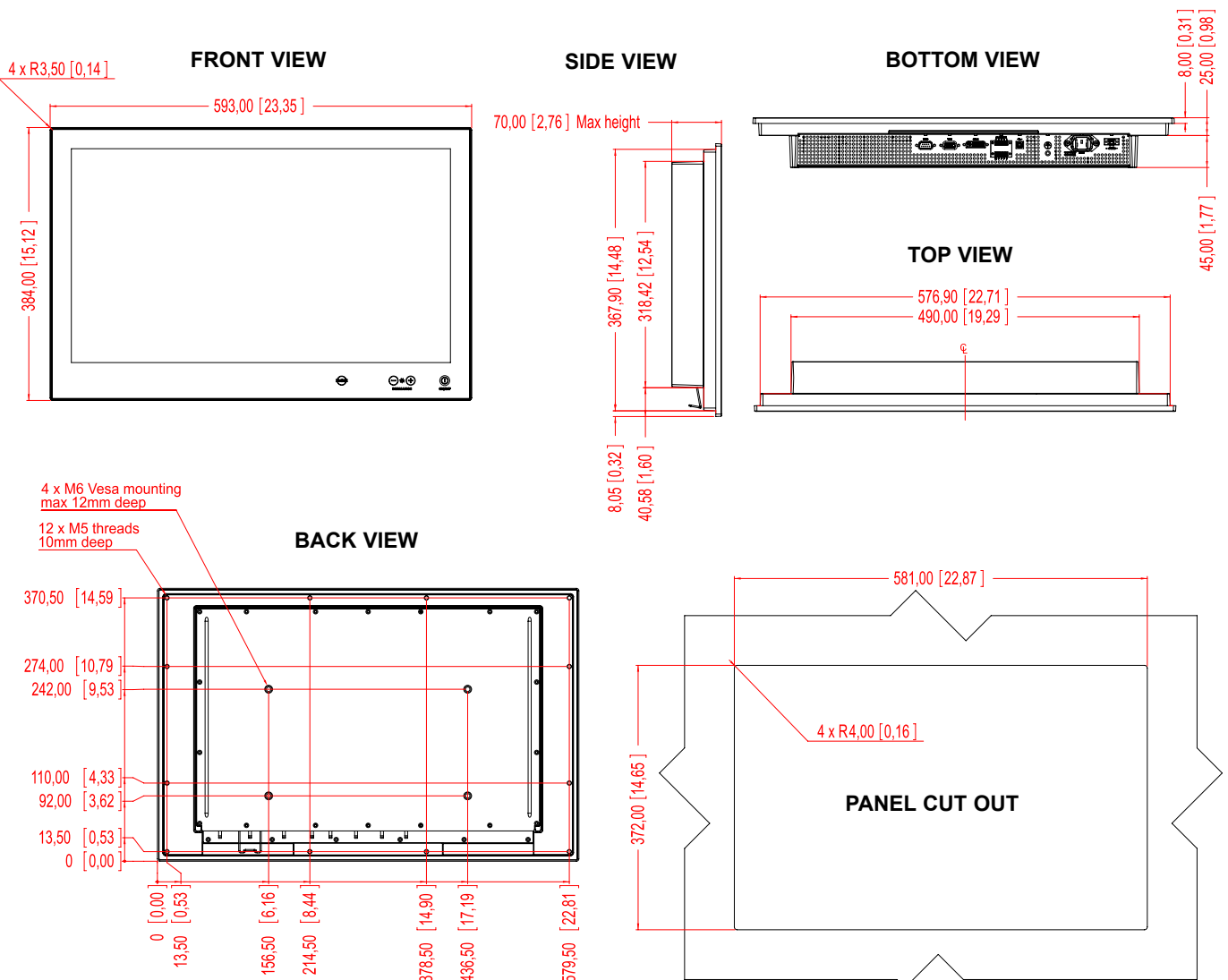
Features:

Series X Displays offer the ultimate in performance, convenience, state of the art design and enduring quality for system integrators and boat builders. Series X products offer a range of feature sets optimized for varying requirements and applications.

The Series X display range is a flexible monitor solution designed and type approved for the professional maritime segment, where reliability and long life time are key prerequisites for the industry. The product range combines stunning design and technology with innovative features and options, making it all that the integrator needs for top class type-approved marine systems.

The entry level STD models provide a wide choice of display size and format for shipboard applications where simple data input (DVI & VGA) is required. Be it for ship navigation or automation, this range with all it's possible options provides a robust and cost effective platform from which to display and manage data.

Series X displays feature Glass Display Control, LED Backlight Technology, full dimming and multipower as standard, and can also accommodate and combine a number of options such as multi-touch screen and optical bonding.



Dimensions might be shown with or without decimals and indicated as mm [inches]. Tolerance on drawings is +/- 1mm. For accurate measurements, check relevant DWG file.

TFT Technology:

- High Quality TFT with LED Backlight
- 24.0 inch viewable image size, Widescreen, Aspect Ratio 16:9
- TFT active-matrix liquid crystal panel, RGB vertical stripe
- MVA (Multi-domain Vertical Alignment) LCD Technology

TFT Characteristics:

- Native Resolution : 1920 x 1080 (FHD)
- Pixel Pitch (RGB) : 0.276 (H) x 0.276 (V) mm
- Response Time : 25 ms (typical), "black" to "white"
- Contrast Ratio : 3000:1 (typical)
- Light Intensity : 300 cd/m² (typical)
- Viewable Angle : +/- 89 deg. (typical) (Up/Down/Left/Right)
- Active Display Area : 531.36 (H) x 298.89 (V) mm
- Max Colors : 16.7 million

Supported Signals:

Resolutions:

- VGA : 640 x 480 (including 640 x 350)
- SVGA : 800 x 600 (including 720 x 400)
- XGA : 1024 x 768
- SXGA : 1280 x 1024
- UXGA : 1600 x 1200
- FHD : 1920 x 1080*
- WUXGA : 1920 x 1200

* Recommended for optimal picture quality

Note: Other resolutions will be scaled full screen, unit has no scaling support.

Power Specifications:

Multi-power Supply:

- 100-240V AC - 50/60Hz + 24 VDC - HD 24T21 STD-Mxx-Fxxx

Note: You may connect either AC power or DC power or both. In case both sources are connected, power will be sourced from the AC input. If AC input is lost, there will be a uninterrupted switch-over to DC input.

Power Consumption:

- Operating AC/DC: 40W (typ) - 156W (max)

Physical Considerations:

Product Dimensions and Weight:

- W:593.00 [23.35"] x H:384.00 [15.12"] x D:70.00 [2.76"] mm [inch]
- 4 x M6 VESA mounting 280x150mm, Max 12mm deep

• Approx weight: 10.1kg / 22.2lbs

Product Carton Size and Weight (Shipping):

- L:700.00 [27.56"] x W:185.00 [7.28"] x H:585.00 [23.03"] mm [inch]
- Approx weight: 12.9kg / 28.4lbs

Signal Terminals:

- DVI-D Signal IN : 1 x 24p DVI (female)
- RGB Signal IN : 1 x 15p HD D-SUB (female)
- SCOM RS-422/485 : 1 x 5-pin Terminal Block 3.81, non-isolated+Buzzer
- SCOM RS-232 : 1 x 9p D-SUB (female) non-isolated+Buzzer
- If Touchscreen : 1 x USB TYPE B Connector (female)
- AC Power IN : 1 x Std IEC Inlet
- DC Power IN : 1 x 2-pin Terminal Block 5.08

User Controls:

Behind front bezel - Glass Display Control™ (GDC) IP66:

- Power On/Off and On Screen Display Menu (OSD)*
 - Brightness Control (-/+)
 - Mode Status Indicators (ECDIS, Service)
 - Buzzer (not visible) (75-85dB), Light Sensor (not visible)
- *OSD Key Codes: 321=Get access to OSD, 362=Advanced Mode

Environmental Considerations:

• Operating	: Temperature -15°C to +55°C
• Storage	: Temperature -20°C to +60°C
• Humidity	: Up to 95% (Operating / Storage)
• Shock - Vibration	: 5g/11ms - 0.7g (IEC 60945 / IACS E10)
• Air Pressure Maximum Altitude	: Operating: 4000m - Storage: 12912m
• Air Pressure Maximum Altitude (Bonded)	: Operating: 3000m - Storage: 3000m
• IP Rating	: Protection: IP66 front - IP22 rear (EN60529)
• Compass Safe Distance	: Standard: 125cm - Steering: 75cm

Lifetime Considerations:

Even though the test conditions for bridge units provide for a maximum operating temperature of 55°C, continuous operation of all electronic components should, if possible, take place at ambient temperatures of only 25°C. This is a necessary prerequisite for long life and low service costs.

Available Accessories:

- HD CMB SX1-B1 : 1 x Console Mount Kit. EN60945 Tested
- HD TMB SX1-C1 : 1 x Table Mount Bracket. EN60945 Tested
- HD VED SX1-A1 : 1 x VESA Bracket, not EN60945 Tested
- HD REM SX1-A1 : 1 x External Remote Control, EN60945 Tested
- HD 24COV SX1-A1 : 1 x UV Sun Cover

Please see user manual/datasheet for more information

Factory Options:

- Projected Capacitive Touch Screen (Multitouch, USB interface)
- Optical Bonding Technology
- Color Calibrated models (ECDIS)

APPROVALS & CERTIFICATES

This product have been tested / type approved by the following classification societies:

IEC 60945 4th (EN 60945:2002)

GL - Germanischer Lloyd

CCS - China Classification Society

EU RO MR - Mutual Recognition by DNV

IACS E10

DNV - Det Norske Veritas

BV - Bureau Veritas

KR - Korean Register of Shipping

ClassNK - Nippon Kaiji Kyokai

ABS - American Bureau of Shipping

LRS - Lloyd's Register of Shipping