

# 24" OIP

## OPERATOR INTERFACE PANEL

12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Alder Lake-S)  
24" 5-Wire 1920x1080 Touchscreen Display



- Up to 16-core 12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Alder Lake-S)
- 2 DDR4 RAM up to 64GB
- Fanless -40°C to 70°C Operating Temperature
- Up to 9 Independent 2.5G LAN with 4 IEEE 802.3at PoE+
- 2 x 2.5" SSD Tray
- Optional Night Vision Display
- Supports Intel® vPro, TCC, Time-Sensitive Networking (TSN), and TPM 2.0
- 6 USB 3.2 Gen 2, Up to 4x COM
- 24" 5-Wire 1920x1080 Touchscreen Display

Powered by the MILCORTEX 4000



**Large HD Display | Optional Mounting & Keyboard**  
**Fully Customizable I/O | Optional Night Vision Display**

The 24" MILCORTEX OIP, Operator Interface Panel, is engineered for rugged environments and features an innovative and cost-effective "box-in-box" design. The OIP is powered by a Rugged Science MILCORTEX 4000 Embedded Computer, which is internally mounted within the OIP enclosure. This "box-in-box" design helps manage costs and obsolescence effectively.

The MILCORTEX 4000 embedded computer is powered by an Intel® 12th Gen Alder Lake-S CPU with up to 16 cores and supports up to 64GB of ECC/non-ECC RAM. It includes standard support for Copper and Fiber Optic networks up to 10GbE and offers dual 2.5in SSDs and GPU accelerators for advanced AI edge computing. Security and management features include Intel® vPro, TPM 2.0, and Time-Sensitive Networking (TSN).

**MIL-DTL-901D Grade A Shock | MIL-STD-461G EMC | MIL-STD-167-1A Vibration | MIL-STD-1399 Power**

## Specifications

### System

Embedded	MILCORTEX 4000
Processor	16-core 12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Alder Lake-S)
Chipset	Intel® R680E
BIOS	AMI
SIO	IT8786E
Memory	2 DDR4 RAM up to 64GB
OS	Windows 11, Linux

### I/O Interface

Inline Mouse	Sealed USB inline pointing device on front bezel
OSD Brightness	4-button control and OSD menu
Serial	Up to 4 COM RS-232/422/485
USB	6 USB 3.2 Gen 2
Isolated DIO	16 Isolated DIO : 8 DI, 8 DO (Optional)
LED	Power, HDD, PoE, Wireless

### Expansion

Mini PCIe	1 Mini PCIe Socket (Optional)
M.2	- 1 M.2 Key B Socket (3042/3052, SATA/USB 3(Default)/USB 2) - 1 M.2 Key E Socket (2230, PCIe x2/USB)
SUMIT A, B	2 SUMIT Slot (Optional)

### Graphics & Video

Graphics Processor	Intel® UHD Graphics 770/730 driven by Intel® Xe Architecture
Display Size	24" diagonal viewing area, 5W resistive touch w/ 2.8mm glass
Resolution	1920 x 1080
Aspect Ratio	16:9
Backlight	LED
Brightness	300 nits
Colors	16.7M (24 bit)
Contrast Ratio	5000:1

### Storage

SATA	2 SATA III (6Gbps) support S/W RAID 0, 1
mSATA	1 SATA III (Mini PCIe Type, 6Gbps)
M.2	1 M.2 Key M Socket 2280, PCIe x4 (Optional)
Storage Device	- Front-access 2.5" SSD/HDD Tray - 1 Front-access CFAST Card

### Audio

Audio Codec	Realtek ALC888S-VD, 7.1 Channel HD Audio
Audio Interface	1 Mic-in, 1 Line-out

### Ethernet

LAN 1	Intel® I219LM GigE LAN
LAN 2	Intel® I226 2.5GigE LAN supports TSN

### Mechanical

Size (mm)	648 x 180 x 457 (25.5" x 7.09" x 18")
Weight (lbs)	43.3, 49.1 with bracket
Design	Aluminum chassis and enclosure

### Power

Power Input	DC 11V to 50V
Power Interface	- 3-pin Terminal Block : V+, V-, Frame Ground - 4-pin Mini-DIN
Ignition Control	16-mode Software Ignition Control
Remote Switch	3-pin Terminal Block

### Others

TPM	Infineon SLB9670 supports TPM 2.0, SPI Interface
Watchdog Timer	Reset : 1 to 255 sec./min. per step
Smart Mgmt.	Wake on LAN, PXE supported
HW Monitor	Monitoring temperature, voltages. Auto throttling control when CPU overheats.

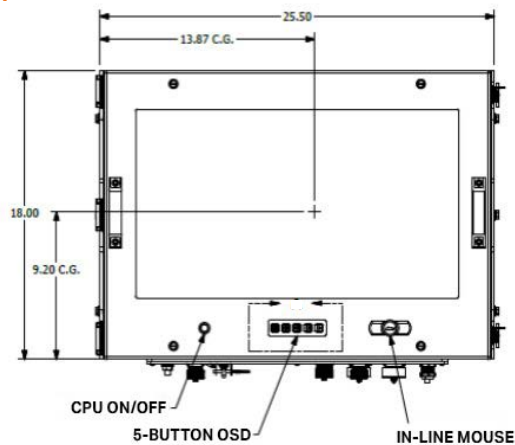
### Environment

Operating Temp.	-40°C to 60°C (-40°F to 140°F), Fanless
Storage Temp.	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% @ 60°C
Designed to Meet	
Shock	MIL-DTL-901D Grade A
Vibration	MIL-STD-167-1A
EMC	MIL-STD-461G
Power	MIL-STD-1399

\*Environmental ratings for base system only.

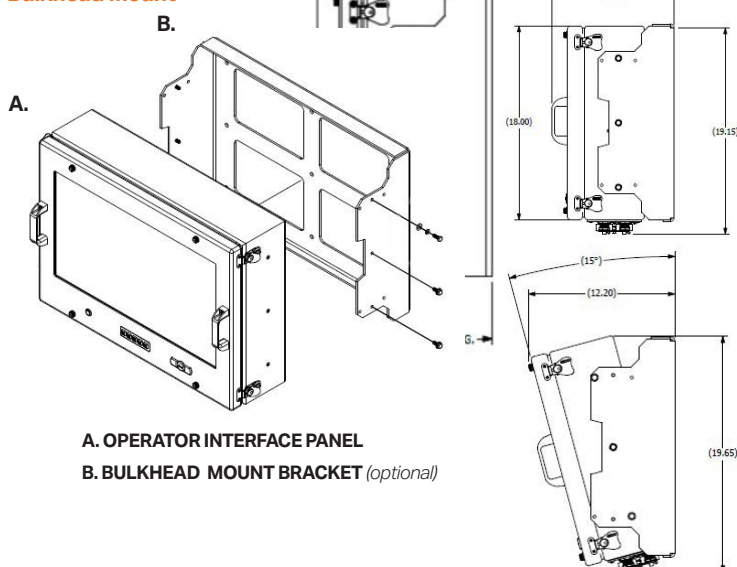
## Dimensions & Drawing

Unit : inch



### Mounting Options

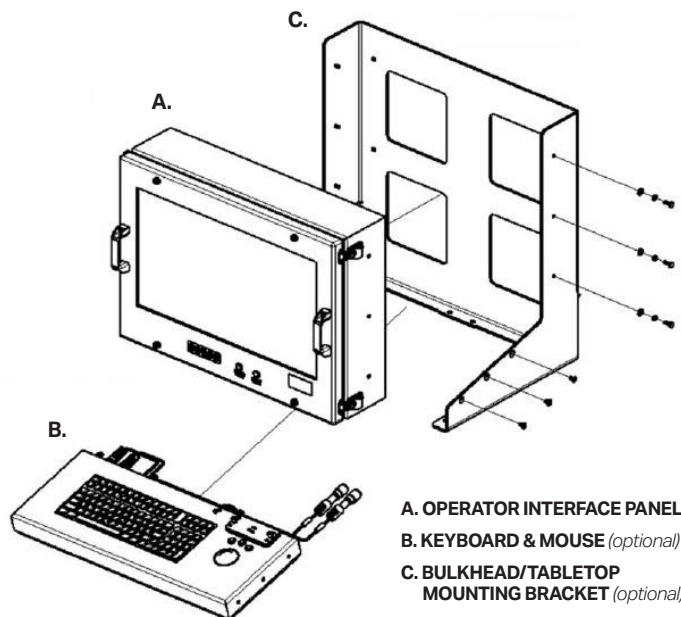
#### Bulkhead Mount



A. OPERATOR INTERFACE PANEL

B. BULKHEAD MOUNT BRACKET (optional)

#### Bulkhead or Tabletop Mount w/Keyboard



A. OPERATOR INTERFACE PANEL

B. KEYBOARD & MOUSE (optional)

C. BULKHEAD/TABLETOP MOUNTING BRACKET (optional)