



Maritime Display Solutions
DuraVision®



Reliability Every Step of the Way

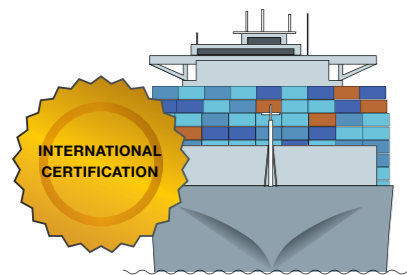
Steadfast Quality for Maritime

Providing ships and offshore structures with equipment that will continue to operate optimally even in harsh conditions is essential for maritime. EIZO's marine monitors meet the important requirements for high performance route planning and navigation.

Approval from Classification Societies

Each monitor meets the requirements for major maritime classifications with approvals for LR (UK), DNV GL (Norway/Germany), ABS (USA), and NK (Japan). Additional certifications are available on request.

DuraVision DV4624 comes standard with approvals for DNV GL only. Formal approval dates for classifications may vary.



Protection

EIZO's line of marine monitors offer durability for use in harsh maritime environments, complying with the conditions for temperature, humidity, and vibration as defined in the IEC 60945 international standard for maritime navigation and radio communication equipment and systems. An IP65 rating for the front of the monitors ensures they can withstand dust ingress and are protected against low-pressure water jets.

DuraVision DV4624 has an IP55 rating.



Calibrated for ECDIS

Backlight brightness, gamma, and RGB color settings are calibrated at the factory so the monitors achieve accurate color reproduction for meeting the highly specialized requirements of ECDIS systems. They meet IEC 61174, IEC 62288, and IEC 62388 international standards for ECDIS and RADAR applications.

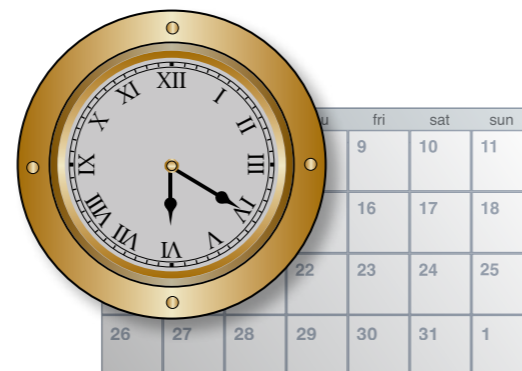
Formal approval dates for international standards may vary. Contact EIZO for date of compliance for IEC 61174.



Long-Term Reliability

The monitors are built for 24-hour use and are backed by a 3-year manufacturer's warranty for long-term reliability.

DuraVision DV4624 is covered by a 2-year standard-use warranty.



ROUTE PLANNING

DuraVision **MDF4601WT**
46" (116.8 cm)



46" Chart Table Monitor

Fully Flat Table Design

The monitor can be laid horizontally and has a fully flat surface, allowing it to double as a table for laying out traditional paper charts when they are occasionally called for. The wide outer edges of the monitor also provide a place for the crew to conveniently set items or rest their hands without obstructing the view of the screen.

Chart table stand is not included with the monitor.



Projected Capacitive Touch Panel

The DuraVision MDF4601WT chart table monitor features projected capacitive touch technology which is more durable and reliable compared to other touch technologies. The monitor accepts touch input from a bare finger or dedicated stylus. EIZO's touch stylus TSA-01 and holder are included with the monitor. Users can easily turn touch detection on or off by pushing the button conveniently located on the monitor's outer rim.



High Visibility

The wide dimming range of less than 1 to 620 cd/m² allows operators to adjust to the appropriate brightness level for viewing during the day or at night, providing optimal visibility.

ECDIS-certified brightness: 400 cd/m².



620 cd/m²

Less than 1 cd/m²

ECDIS Indicator

The ECDIS indicator located on the front of the monitor is lit when the brightness and color settings correctly meet the requirements for ECDIS. In the event the monitor's settings are adjusted such that the brightness is no longer supporting ECDIS standards, the light will automatically turn off.



Brightness meets ECDIS



Brightness doesn't meet ECDIS

EIZO Screen Rotator

EIZO Screen Rotator is a free software application that allows you to quickly rotate the image on the monitor by 180° with a single touch. This is helpful when multiple members of the crew are viewing the screen from opposite sides of the chart table.

Supported by Windows OS only.



Additional Features

- Fingerprint-resistant finish
- Spill detection
- Picture-in-Picture (PiP)
- AC and DC power inputs

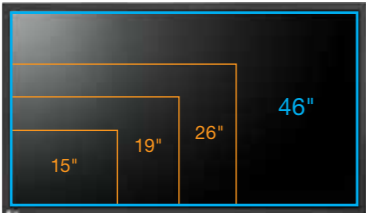
NAVIGATION

DuraVision DV4624
46" (117 cm)

46" Bridge System Monitor

Ample Space for Efficient Operation

A large 46-inch screen provides ample space for ship operators to view important nautical information from one or more applications in a single location. Images are displayed pixel by pixel in full high definition (1920 × 1080) for precise observation.

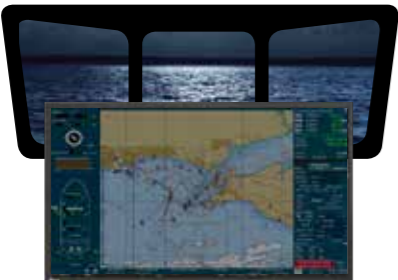


High Visibility

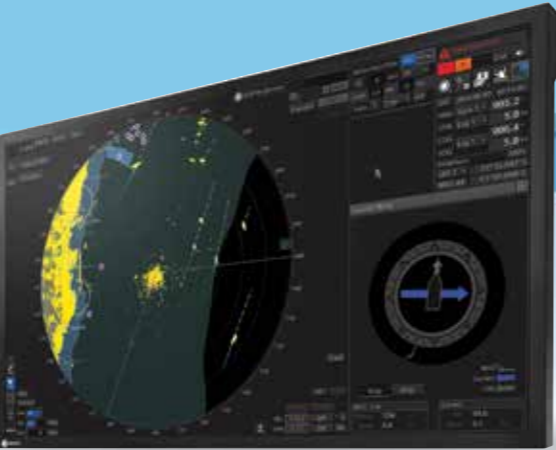
The wide dimming range of less than 1 to 600 cd/m² allows operators to adjust to the appropriate brightness level for viewing during the day or at night, providing optimal visibility.
ECDIS-certified dimming: 400 cd/m².



600 cd/m²

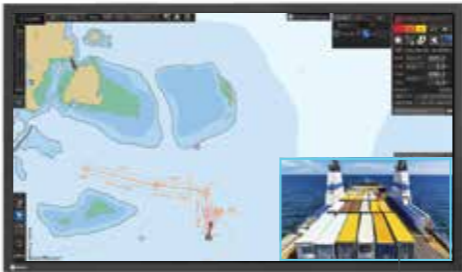


Less than 1 cd/m²



Picture-in-Picture

Picture-in-Picture (PiP) functionality allows operators to display a small separate screen from a second signal source within the monitor to effectively view multiple windows containing navigational information.



PiP image

Non-Intrusive Hardware Calibration

The monitor comes equipped with EIZO's hardware calibration functionality using the optional EIZO EACAL-R01 luminance reader. Easily accessed through the OSD menu, calibration of the backlight brightness, gamma, and white point can be carried out in just minutes. No additional software is needed, ensuring calibration operation is non-intrusive to your system.



DuraVision FDS1904
19" (48 cm)



19" and 25.5" Panel Mount Monitors

High Visibility

The wide dimming range of less than 1 cd/m² up to maximum brightness allows operators to adjust to the appropriate brightness level for viewing during the day or at night, providing optimal visibility.



Maximum brightness



Minimum brightness

Projected Capacitive Touch Panel

The DuraVision FDS1904T and FDU2603WT are the touch variations. They feature highly responsive projected capacitive touch technology that accepts touch input from a bare hand or dedicated stylus and supports multitouch operation.



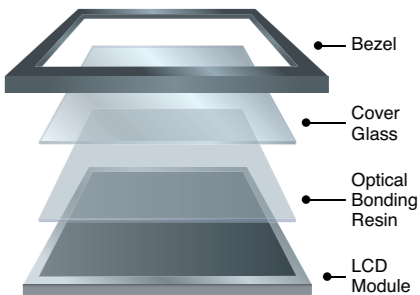
Clear Display

Both monitors are equipped with a VA panel with wide viewing angles that minimize changes in contrast and gradation to maintain excellent visibility when the screen is viewed from the side. An AR coating is applied to reduce the amount of reflections on the screen.



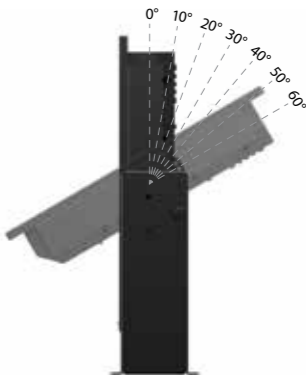
Optical Bonding

Optional optical bonding is available for both monitors for significantly improving visibility. See details on page 6.



Optional Stand

An optional stand is available with the monitors which allows tilt positioning from 0 – 60 degrees. The stand, when combined with the monitors, complies with the conditions for temperature, humidity, and vibration as defined in IEC 60945. It also meets the requirements for LR (UK), DNV GL (Norway/Germany), ABS (USA), and NK (Japan).

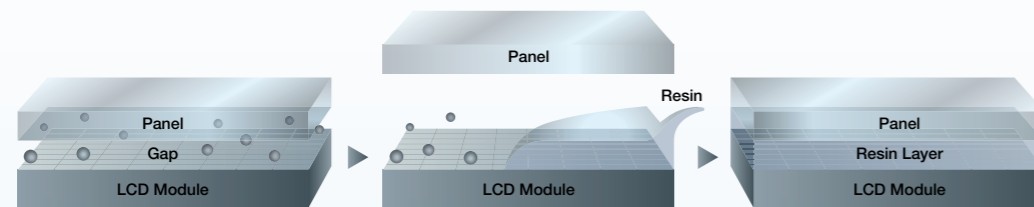


AlphaPremiumBridge equipped with DuraVision DV4624 monitors.



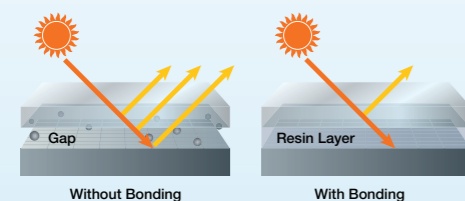
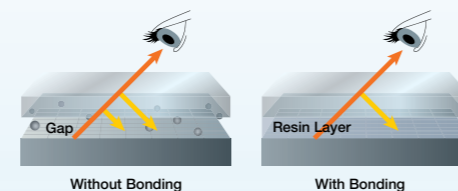
In-House Optical Bonding Production

Optical bonding is produced in-house at EIZO's factory in Japan and is available as an option for 19" and 25.5" marine monitors. A layer of resin is used to fill the gap between the LCD module and panel to adhere them together, greatly improving visibility. In-house production allows EIZO to continue to meet the needs of maritime and other specialty markets while ensuring high quality in each product.



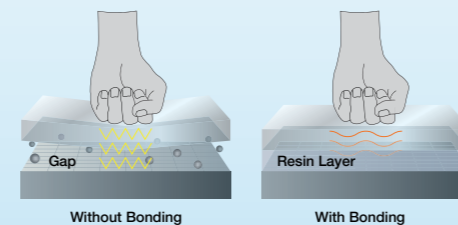
Clear Display

Without bonding, light generated from the LCD module bends when it passes through, resulting in a loss in its intensity. Optical bonding fills the gap, increasing the transmission of light for a clearer display.



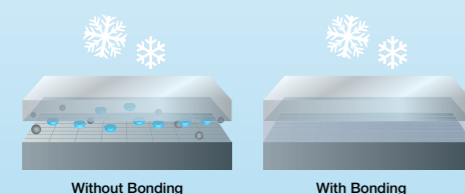
Glare Reduction

Optical bonding also reduces glare on the screen, making it an ideal option when viewing a monitor outdoors or in environments with an intense direct light source.



Increased Physical Durability

The additional resin layer with optical bonding provides increased physical durability to the screen, making it more resistant to physical pressure, scratches, dust, and fluids.

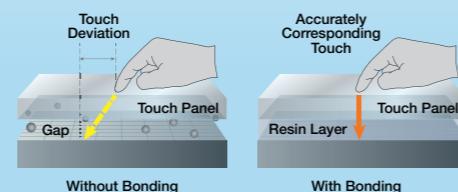


No Condensation

In environments with wide temperature ranges, such as ships or offshore structures, screens are susceptible to becoming foggy from the moisture that penetrates the air gap. Optical bonding fills this gap to prevent condensation.

Accurate Touch Experience

Panel thickness influences touch accuracy in touch panel monitors. A touch monitor with optical bonding maintains consistently accurate touch response, making it easy to use and reliable.



Case Studies

Customized Monitor Solution — Alpatron Marine BV



Alpatron Marine, headquartered in the Netherlands, designs, delivers, and installs high-quality navigation and communication systems for maritime and inland shipping. The company opted for EIZO when it came to selecting a suitable monitor manufacturer for their new bridge concept.

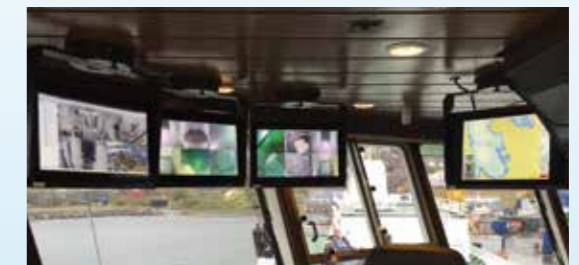
EIZO took on the major challenge of working with Alpatron to realize their vision and developed a new 46-inch monitor specifically designed for the AlphaPremiumBridge. Alpatron supplied four patrol boats of a renowned Dutch shipyard with the first AlphaBridge system to feature three integrated DuraVision DV4624 monitors in fall of 2015.

“[We value] the direct communication and the quick reaction times, as well as EIZO's proactive approach to the development work.”

Full-Range Solutions for Bridges — Marinequip

“EIZO is a well-known brand that represents excellent quality, proven service, and the best possible technical support”

Marinequip AS is a Norwegian supplier and manufacturer of ROVs (Remotely Operated Vehicle) and lighting and monitoring systems for above and below water. They rely entirely on EIZO for marine-certified monitor solutions of up to 46 inches for use on ship bridges. This is because EIZO offers a full range of products with the corresponding certificates (IEC 61174, IEC 62288, IEC 62388) and also fulfills Marinequip's expectations as a reliable partner.



They integrated both 25.5- and 46-inch marine monitors into their matrix solution for a customer from the fishing and aquaculture industry. Six of the monitors assembled on the bridge are used for navigation, ECDIS, RADAR, ship PV, automation, and CCTV system applications. An additional monitor is also used in the engine control room for CCTV applications.

Solutions for Ice-Breaking Fleets — Ravenstvo

Ravenstvo is one of the leading Russian instrument-making companies in the field of marine-electronic equipment for the Russian Navy and the Border Service. They supply advanced coastal and shipborne radar stations with improved reliability and usability characteristics, weather monitoring stations, as well as radar stations for maritime traffic control systems.

They equipped each of the Delta software and hardware complex for monitoring and evaluation of ice condition parameters with DuraVision FDU2603WT touch panel monitor. Data acquired with the Delta software and hardware complex will be used in the creation and operation of ships and offshore facilities in freezing Arctic and Antarctic seas, including the area of the Arctic shelf.



Innovative Technology

Comprehensive Solutions

Visual Technology Company



Business Enterprise

FlexScan

The FlexScan Series of monitors offer a range of features for reducing eye fatigue and improving image clarity for the office, schools, or home use.



Global Reach

EIZO products are highly regarded in many specialty fields throughout the world because of their accurate and stable image display. EIZO is based in Japan and is represented in over 80 countries by a network of group companies and exclusive distributors.

Integrated Approach

Customization

We offer extensive customization for select monitors to meet the diverse requirements of various markets, including mission-critical fields such as maritime and air traffic control.

Quality Control

We use our own anechoic chambers to confirm that our products comply with international regulations covering electromagnetic interference (EMI) and susceptibility. We also conduct long-life testing where our monitors are kept powered on for thousands of hours and their image quality is checked regularly.



45+ years of expertise

With over 45 years of technical expertise, EIZO is dedicated to developing innovative and high quality visual display solutions.

Integrated Production

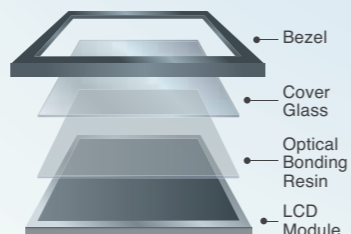
To incorporate the latest technologies in our products, we follow a unique in-house research and development production model, including the production of our own printed circuit boards (PCBs).

Manufacturing

Our in-house manufacturing combines manual and automated operations to ensure high quality products are made as efficiently as possible.

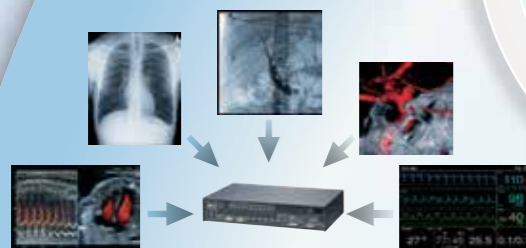


In-House Optical Bonding



EIZO has an in-house production line for optical bonding which allows the company to continue to meet the needs of professionals while ensuring each product maintains high quality standards.

Video Management Solutions



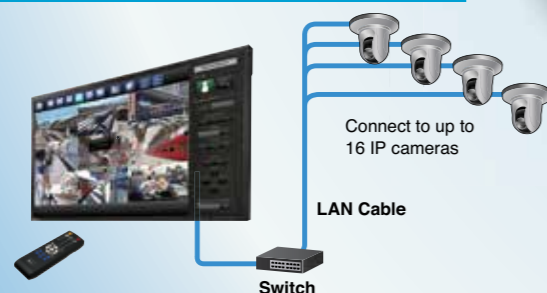
EIZO's Large Monitor Managers gather various video inputs and display them on a large screen. Different layouts can be arranged according to user preference and work environment for a streamlined workflow.

Visibility-Enhancing Technology



EIZO's Visibility Optimizer technology includes three functions for improving image clarity in security environments. Defog enhances images that appear hazy due to fog or snow. Low-Light Correction detects areas of the screen that are too dark and adjusts the brightness of each pixel. Outline Enhancer ensures noise is not accentuated while correcting blurred areas.

IP Security Monitors



EIZO's IP solutions offer PC-less connection to multiple IP cameras for efficient video management in security and surveillance environments.



Graphics

ColorEdge

ColorEdge is a series of color management monitors and software solutions that provides users in photography, design, post production, and other fields faithful color reproduction, ease-of-use, and reliability for expressing their creative vision.



Home Entertainment

FORIS

FORIS, which means "door" in Latin, is EIZO's line of monitors for gaming, watching videos, enjoying digital photos, and more. With unique features such as smartphone notifications, FORIS provides users with an immersive experience.



Healthcare

CuratOR / RadiForce

With CuratOR, EIZO offers complete solutions for the integrated OR, interventional radiology, and the control room. RadiForce medical monitors are designed for displaying medical images faithfully using cutting edge technology and unique features.



Maritime / Security & Surveillance

DuraVision

DuraVision monitors offer robust performance and reliable 24/7 operation to maritime, security & surveillance, and industrial markets. The monitors are highly configurable for flexible installation in a range of environments.



Air Traffic Control

Raptor / Re/Vue

EIZO provides air traffic control centers, towers, and training & simulation facilities with the most extensive lineup of monitors, recording & streaming solutions, and graphics boards in the industry. Extensive customizability is also offered for meeting the needs of any installation.

Specifications



MDF4601WT

DV4624

FDU2603W

FDU2603WT

FDS1904

FDS1904T

Model Variations		Without Stand	Without Stand	Panel mount (-OP: with optical bonding)		Panel mount (-OP: with optical bonding)	
Cabinet Color		Black	Black	Black		Black	
Panel	Type	VA	VA	VA		VA	
	Backlight	LED	LED	LED		LED	
	Size	46" / 116.8 cm	46" / 117 cm	25.5" / 65 cm		19" / 48 cm	
	Native Resolution	1920 × 1080 (16:9 aspect ratio)	1920 × 1080 (16:9 aspect ratio)	1920 × 1200 (16:10 aspect ratio)		1280 × 1024 (5:4 aspect ratio)	
	Viewable Image Size (H × V)	1018.1 × 572.7	1018 × 572.7 mm	550 × 343.8 mm		376.3 × 301 mm	
	Pixel Pitch	0.530 × 0.530 mm	0.530 × 0.530 mm	0.287 × 0.287 mm		0.294 × 0.294 mm	
	Grayscale Tones	256 tones	256 tones	256 tones		256 tones	
	Display Colors	16.77 million	16.77 million	16.77 million		16.77 million	
	Viewing Angles (H / V, typical)	178°, 178°	178°, 178°	176°, 176°		178°, 178°	
	Brightness (typical)	620 cd/m ² (ECDIS-certified dimming: 400 cd/m ²)	600 cd/m ² (ECDIS-certified dimming: 400 cd/m ²)	490 cd/m ² (-OP: 500 cd/m ²)	470 cd/m ² (-OP: 500 cd/m ²)	590 cd/m ² (-OP: 600 cd/m ²)	540 cd/m ² (-OP: 580 cd/m ²)
Touch Panel	Contrast Ratio (typical)	4000:1	4000:1	1500:1		2000:1	
	Response Time (typical)	6.5 ms (gray-to-gray)	6.5 ms (gray-to-gray)	20 ms (black-white-black)		20 ms (black-white-black)	
	Type	Projected Capacitive	—	—	Projected Capacitive	—	Projected Capacitive
	Communication Protocol	USB	—	—	USB, RS-232C	—	USB, RS-232C
	Touch Life	50 million touches (minimum)	—	—	50 million touches (minimum)	—	50 million touches (minimum)
	Surface Hardness	5H	—	—	5H	—	5H
	Compatible OS	Windows 10 (32-bit, 64-bit) Windows 8.1 (32-bit, 64-bit) Windows 7 (32-bit, 64-bit)	—	—	Windows 10 (32-bit, 64-bit) Windows 8.1 (32-bit, 64-bit) Windows 7 (32-bit, 64-bit) Windows XP (32-bit)	—	Windows 10 (32-bit, 64-bit) Windows 8.1 (32-bit, 64-bit) Windows 7 (32-bit, 64-bit) Windows XP (32-bit)
Video Signals	Input Terminals	DVI-I 29 pin × 1, DVI-D 24-pin × 1, VGA HD-D-Sub 15 pin × 1, CVBS (BNC) × 1	DVI-I 29 pin × 1, DVI-D 24 pin × 1, VGA HD-D-Sub 15 pin × 1, CVBS (BNC) × 1	D-Sub mini 15 pin × 1, DVI-D 24 pin × 1, D-sub 9 pin (female) × 1 (for monitor control)		D-Sub mini 15 pin × 1, DVI-D 24 pin × 1, D-sub 9 pin (female) × 1 (for monitor control)	
	Output Terminals (Loop Through)	—	—	D-Sub mini 15 pin × 1		D-Sub mini 15 pin × 1	
	Digital Scanning Frequency (H / V)	31 – 68 kHz, 59 – 61 Hz (VGA Text: 69 – 71 Hz)	15 – 100 kHz, 50 – 100 Hz (Max. Dotclk: 155 MHz)	31 – 76 kHz, 59 – 61 Hz (VGA Text: 69 – 71 Hz)		31 – 64 kHz, 59 – 61 Hz (VGA Text: 69 – 71 Hz)	
	Analog Scanning Frequency (H / V)	31 – 80 kHz, 56 – 76 Hz	15 – 100 kHz, 50 – 100 Hz (Max. Dotclk: 155 MHz)	31 – 81 kHz, 56 – 76 Hz		31 – 80 kHz, 56 – 76 Hz	
	Sync Formats	Separate, Composite	Separate, Composite, Sync on Green	Separate, Composite, Sync on Green		Separate, Composite, Sync on Green	
	Video Input Format	NTSC, PAL, SECAM	NTSC, PAL, SECAM	—		—	
USB	Function	1 port for touch panel control and communication	1 port for communication	—	1 port for touch panel control	—	1 port for touch panel control
	Standard	USB 2.0	USB 2.0	—	USB 2.0	—	USB 2.0
Power	Power Requirements	AC 100 – 240 V, 50 / 60 Hz, DC 24 V	AC 100 – 240 V, 50 / 60 Hz, DC 18 – 36 V	AC 85 – 264 V, 50 / 60 Hz, DC +24V +30%/-10%		AC 85 – 264 V, 50 / 60 Hz, DC +24V +30%/-10%	
	Maximum Power Consumption	AC 125 W, DC 121 W	AC 110 W, DC 100 W	108 W		64 W	
	Typical Power Consumption	—	AC 35 W, DC 30 W	—		—	
	Power Save Mode	Less than 17 W (AC input), Less than 13 W (DC input)	Less than 16 W (AC input), Less than 10 W (DC input)	Less than 10 W (AC input), Less than 7 W (DC input)		Less than 9 W (AC input), Less than 6 W (DC input)	
	Standby Mode	Less than 5 W (AC input), Less than 2.5 W (DC input)	AC 4 W, DC 2 W	Less than 10 W (AC input), Less than 7 W (DC input)		Less than 7 W (AC input), Less than 5 W (DC input)	
	Power Management	Power Save (VESA DPM and DVI DMPM)	Power Save (VESA DPMS)	Power Save (VESA DPM and DVI DMPM), ECO Timer		Power Save (VESA DPM and DVI DMPM), ECO Timer	
Features and Functions	Preset Modes	Color Mode (Custom, Day, Dusk, Night)	Color Mode (Custom, Day, Dusk, Night)	Color Mode (Custom, Day, Dusk, Night)		Color Mode (Custom, Day, Dusk, Night)	
	Communication Protocol	Modbus, SNMP, EIZO proprietary	Modbus, SNMP, EIZO proprietary	VESA DDC2B		VESA DDC2B	
	Communication Interface	RS232, RS485, USB, Ethernet, ext. Keyboard	RS232, RS485, USB, Ethernet, ext. Keyboard	DDC/Ci, RS232		DDC/Ci, RS232	
Physical Specifications	Dimensions (W × H × D)	1,336 × 890 × 91 mm	1,067 × 622.5 × 89.6 mm	624 × 456 × 86 mm		429 × 406 × 75 mm	
	Net Weight	47.2 kg / 104.1 lbs	31 kg / 68.3 lbs	14.5 kg / 32 lbs (-OP: 14.9 kg / 32.8 lbs)	15.1 kg / 33.3 lbs (-OP: 15.9 kg / 35.1 lbs)	5.9 kg / 13 lbs (-OP: 6.2 kg / 13.7 lbs)	6.4 kg / 14.1 lbs (-OP: 6.7 kg / 14.8 lbs)
Safe Distance of Nautical Equipment from Compasses	Standard Compass	2.95 m	—	1.5 m		0.95 m	
	Steering Compass	1.95 m	—	1 m		0.6 m	
Environmental Requirements	Operating Temperature	-15 – 55 °C	-15 – 55 °C	-15 – 55 °C		-15 – 55 °C	
	Operating Humidity (R.H., non condensing)	10 – 90%	max. 95 %	10 – 90 %		10 – 90 %	
	Storage Temperature	-20 – 60 °C	-20 – 70 °C	-20 – 60 °C		-20 – 60 °C	
	Degree of Protection	IP65 (front), IP22 (rear)	IP55 (front), IP20 (rear)	IP65 (front), IP22 (rear)		IP65 (front), IP22 (rear)	
Certifications & Standards*		Ship Classification: NK (Japan), LR (UK), ABS (US), DNV GL (Norway/Germany) General: CB, CE, RoHS, WEEE, China RoHS, IEC60945 (EMC/environmental testing), IEC62288/IEC61174/IEC62388 (items for monitor)	General: RoHS, REACH, IEC60945 (EMC/environmental testing), IEC62288/IEC61174/IEC62388 (items for monitor)	Ship Classification: NK (Japan), LR (UK), ABS (US), DNV GL (Norway/Germany) General: CB, CE, RoHS, WEEE, China RoHS, IEC60945 (EMC/environmental testing), IEC62288/IEC61174 (items for monitor), KC (K60950-1, K00022, K00024), CCC (China model only)		Ship Classification: NK (Japan), LR (UK), ABS (US), DNV GL (Norway/Germany) General: CB, CE, RoHS, WEEE, China RoHS, IEC60945 (EMC/environmental testing), IEC62288/IEC61174/IEC62388 (items for monitor), KC (K60950-1, K00022, K00024)	
Supplied Accessories		Setup manual, CD-ROM, cleaning cloth, stylus (touch pen), batteries for stylus, stylus holder, rubber tip for stylus	Setup manual, connectors for RS485, DC-Power and keyboard interface	Setup manual, CD-ROM, cleaning cloth		Setup manual, CD-ROM, cleaning cloth	
Warranty		3 years	2 years	3 years		3 years	

Chart table stand is not included with DuraVision MDF4601WT.

Formal approval dates for international standards and classifications may vary. Contact EIZO for date of compliance for IEC 61174.

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