

# MARITIME PRODUCT CATALOG





## Your partner for intuitive maritime HMI solutions

### **Experience for your success**

As a leading developer of maritime HMI technology, the Beijer Electronics Group knows the industry inside out. We are constantly upgrading our complete premium offer, to meet the specific needs of the maritime market.

Our solutions are the result of over 30 years of experience navigating the waters where people and technology meet. In the Beijer Electronics Group you will find all the competence and

dedication to both high product quality and excellent customer relations that you would expect from a first class partner.

### **The right information with the right equipment**

There is no room for error at sea. A single mistake could result in dire consequences for ship cargo, passengers and crew alike. That is why you need accurate and reliable information at your fingertips, helping you to make the right decision. Beijer Electronics HMI solutions monitor

and control maritime applications on a daily basis across the globe. They are future-proof affording you an intuitive interface that will always be reliable and geared to your needs. Approved by all major marine classification societies our state-of-the-art technology fulfills the specific maritime demands. Developed in collaboration with maritime partners and customers, it builds an interface that facilitates a true crew-to-vessel connection.

iX Panel &  
iX Panel Pro

Maritime PC  
EPC series

Monitors  
MTe series

Operator panel  
EXTER series

Use	Machine-oriented use when trend-setting process visualization with realistic user interfaces is required.	Universal maritime application in combination with software from third-party suppliers, e.g. SCADA	Universal maritime application in combination with remote computer unit	Machine-oriented use for process operation in combination with a variety of controls
Display sizes in inches/cm				
3 / 7.6				4.11 4.12 4.13
4 / 10.1	1.3			4.14
6 / 15.2				4.15
7 / 17.5	1.4 1.7	2.3		4.3 4.7 4.16
8 / 20.3		2.7		
10 / 25.4	1.5 1.8	2.4 2.8		4.4 4.8 4.17
12 / 30.5				
15 / 38.1	1.9 1.11	2.5 2.11	3.3	4.5 4.9
17 / 43.2	1.12	2.12	3.4	
19 / 48.2	1.13	2.13	3.5	
24 / 60.9	1.14	2.14	3.6	

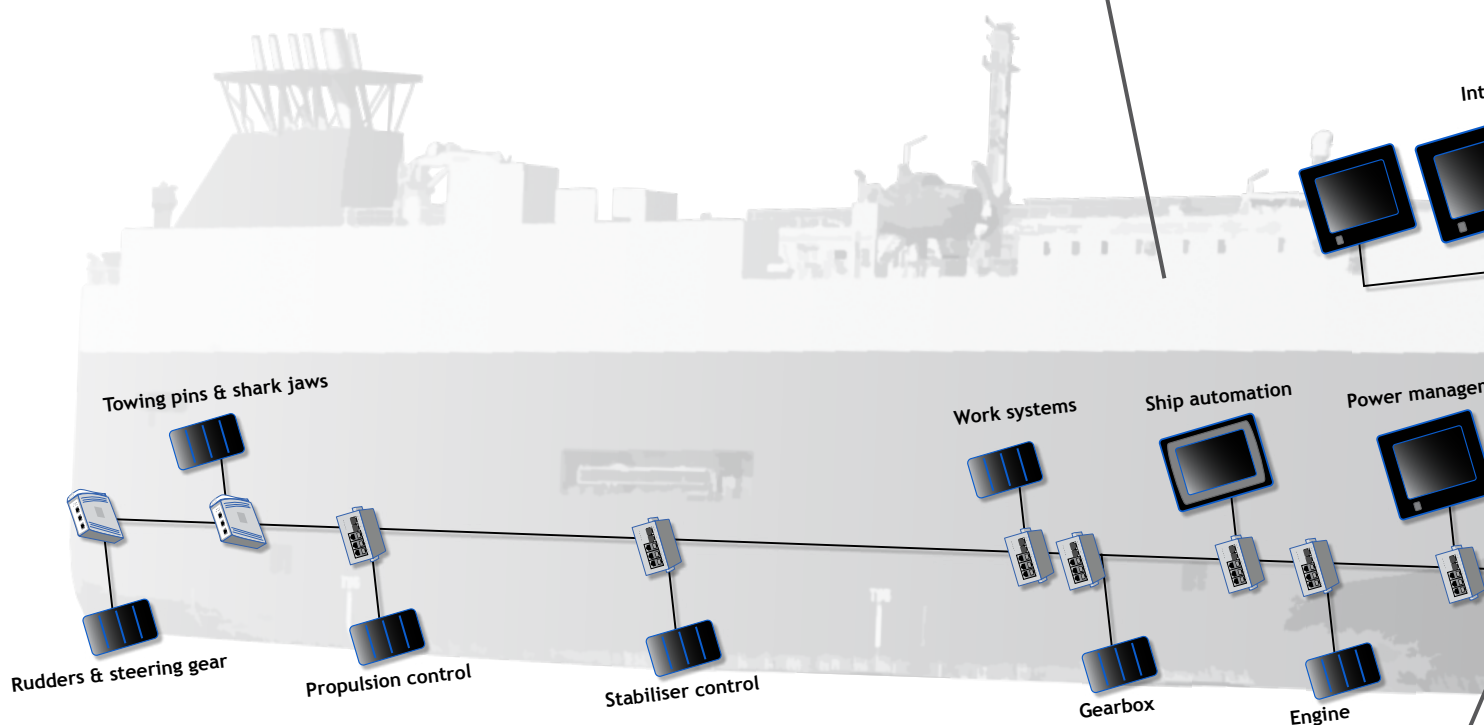
# Content

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<b>iX Panel &amp; iX Panel Pro Nautic</b> Innovative HMI solutions that combines high-performance hardware with State-of-the-art software which are suitable for any maritime application.	1.1
<b>Maritime PC EPC</b> High-performance maritime PCs for SCADA and 3rd party software visualizations. Modular design which guarantees high flexibility.	2.1
<b>Maritime monitors MTe</b> Flat screen monitors for maritime use in combination with remote computer units.	3.1
<b>EXTER operator panel</b> Operator panels with keypad and touchscreen design for the simple and intuitive operation of demanding machine processes.	4.1
<b>Navigation monitor</b> Navigation monitor is ideal for bridge application. Certified with RADAR and ECDIS it meets navigation requirements.	5.1
<b>Accessories</b>	6.1
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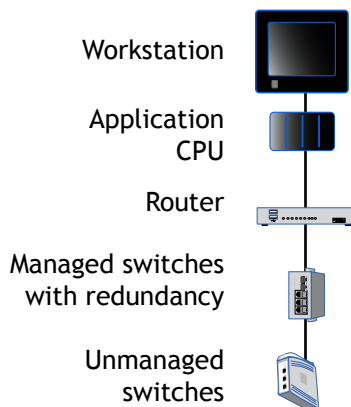
## Captain's cabin and crew area

The captain's display is linked to the navigation network and shows various sensor data such as heading, position, rudder angle, rate-of-turn, depth, or speed. Furthermore RADAR or ECDIS can be included to deliver a live picture of navigation. Depending on the entire network, a Panel PC of the EPC Nautic series or a monitor of the MTe Nautic series could be used as the captain's display.

It can be installed at various locations on board. Thanks to an individual configurability, it is also possible to show selected navigational information at a glance not only in the captain's cabin, but also within crew areas.



### Legend of components

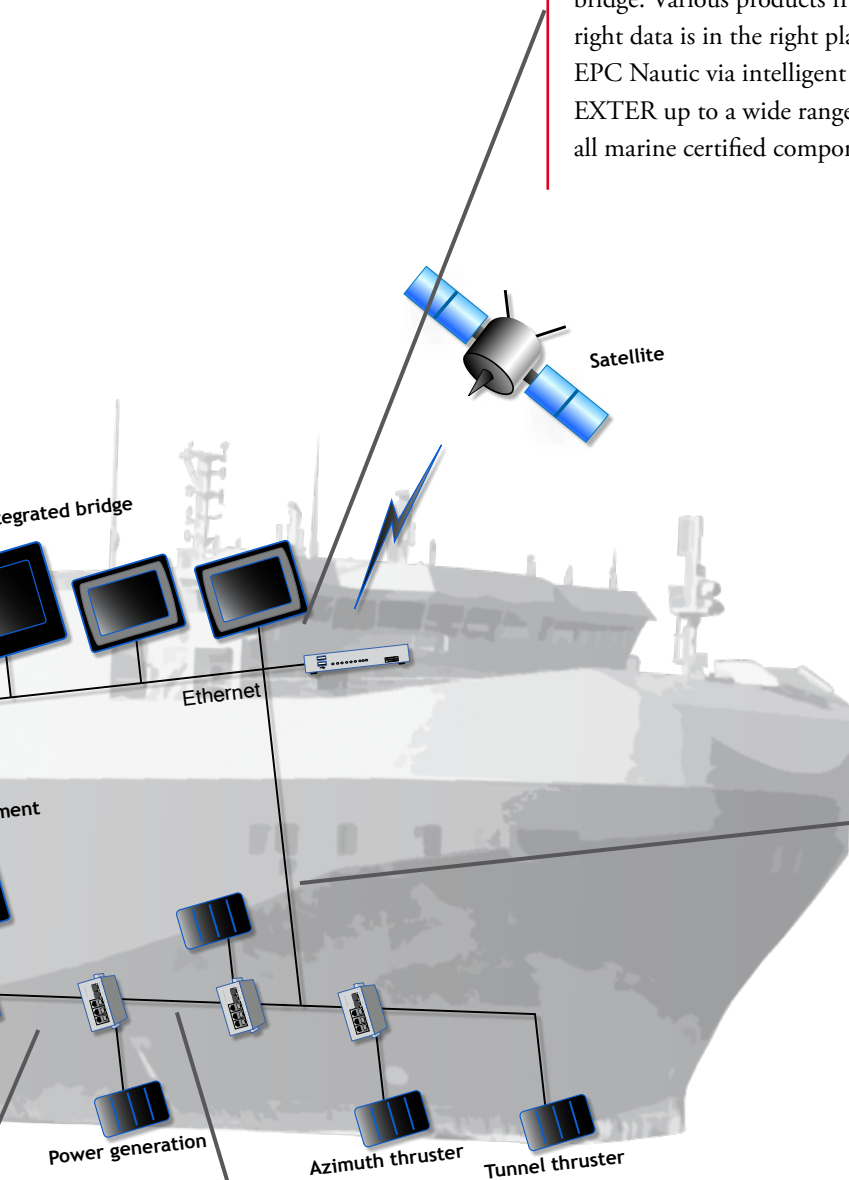


## Ship-wide connectivity

Ethernet provides a high speed and secure backbone structure for data communications around the ship. Westermo offer a complete range of marine approved Ethernet switches- from the 5 port unmanaged SDW-series up to the multiport managed Redfox and Lynx+. Further information regarding industrial data communication you will find here [www.westermo.com](http://www.westermo.com).

## Bridge control

All relevant parameters needed to control a ship, for example navigation, automation, propulsion or CCTV are merged on the bridge. Various products from Beijer Electronics ensure that the right data is in the right place. From powerful Panel PC series EPC Nautic via intelligent touch operator panel series iX and EXTER up to a wide range of flat monitors, MTe Nautic series, all marine certified components are available.



## Reliable control

With the PLCs of Beijer Electronics Automation you have reliable control at sea. The Mitsubishi Electric PLCs offer worldwide compatibility thanks to their wide power supply range and are internationally approved conforming to all major international industrial standards and maritime classifications. From the smaller compact PLCs to scalable modular systems the entire range is characterized by flexible expansion, simple programming and powerful performance. Learn more about the full product package on [www.beijer.net](http://www.beijer.net).

## Machine room

Even on the propulsion engine technical data have to be displayed. Beijer Electronics iX and EXTER series has been developed especially for this rugged environment. The high-resolution TFT touch display ensures optimal viewing in all conditions.

What is iX?





# iX - The world's most graphic HMI solution. Matches perfect for ship automation.



Process visualization is in a state of change. Now, modern user interfaces take on inspiration from consumer-oriented products like smart phones, with advanced 3D-style graphics, icon based navigation and controls.

The result, impressive user interfaces motivate the operator to interact with the working environment in a positive way. This leads to a more efficient workflow and less operating failures.

iX is a complete HMI solution including both, software and hardware providing solutions for a wide range of application scenarios. The open iX platform architecture enhances the functionality of HMI applications in ship automation to a new level.

## State-of-the-art graphics

Take advantage of vector-based graphics, enabling you to scale and rotate objects which stay crystal clear without jagged edges or inconsistent color transitions.

- Vector based objects for crystal clear objects
- Graphical effects for enhanced design
- Windows media objects for clear explanations
- Dynamics to draw operators attention

## Solid HMI functionality

Adopt the comprehensive HMI functionality in iX to increase productivity and user acceptance

- Alarm management for several channels
- Security for clear defined operator access
- Data logging for time or event based records
- Scheduler for automatic event control

## Smarter design tools

You create and configure HMI solutions in a streamlined user-friendly Windows environment with ribbon tabs, tool tips and an intuitive work approach.

- Multiple object editing for efficient engineering
- Templates for time saving design and editing
- Navigation manager for quick project overview
- Simulation for runtime tests

## Truly open platform

Select your favorite runtime platform; from compact iX Panel TxA to iX Panel Pro Nautic maritime PC, depending on your application needs.

- Import of .Net controls
- OPC connectivity for easy communications
- SQL connectivity
- C# scripting for individual object customizing

# Operator panel - iX Panel TxA



## Characteristics

- Latest display technology
- Dimmable LED background lighting
- Compact dimensions
- High-quality industrial design
- Unlimited iX Runtime
- SD card expansion
- Real-time clock
- Available in display sizes 4.3", 7", 10.4"

## TECHNICAL DATA - iX Panel TxA PRODUCT GROUP

<b>Front panel</b>	
Type of data entry	Resistive touch
Degree of protection	IP 65 front-mounted
<b>Power supply</b>	
Operating voltage	24 VDC
Power consumption	max. 2 A
<b>System</b>	
Processor	ARM 9
Application memory	80 MB
External storage medium	SD card slot
Operating system	Windows CE
<b>Interfaces</b>	
Serial	2 x RS232 2 x RS422/485 (combined ports)
Ethernet	10/100 Mbit/s RJ45
USB	USB host
<b>General information</b>	
Frame material	Aluminum
Foil	Acid-resistant polyester Foil
Certification	CE, DNV*

\* In progress

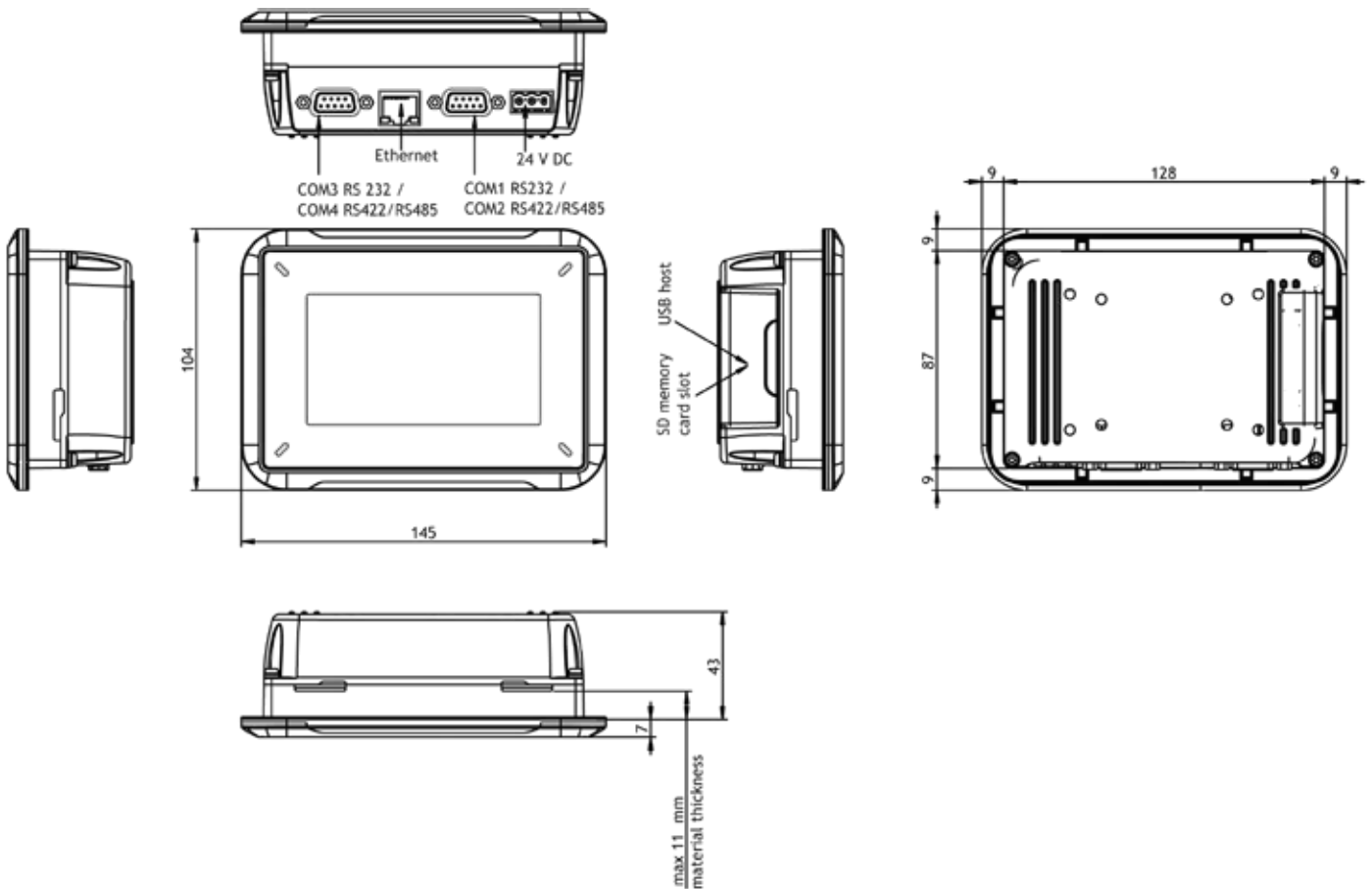
# iX Panel T4A



## TECHNICAL DATA (for further data, see page 1.2)

Display	
Size in inches	4.3"
Resolution in pixels	480 x 272
Coloration	65,000 colors TFT
MTBF backlight	> 40,000 hrs
General information	
External dimensions in mm W x H x D	145 x 103 x 49
Panel profile in mm W x H	128 x 87
VESA	50, 75
Weight	ca. 0.5 kg
Order information	
Description of item	iX Panel T4A

## Dimensional drawings in mm



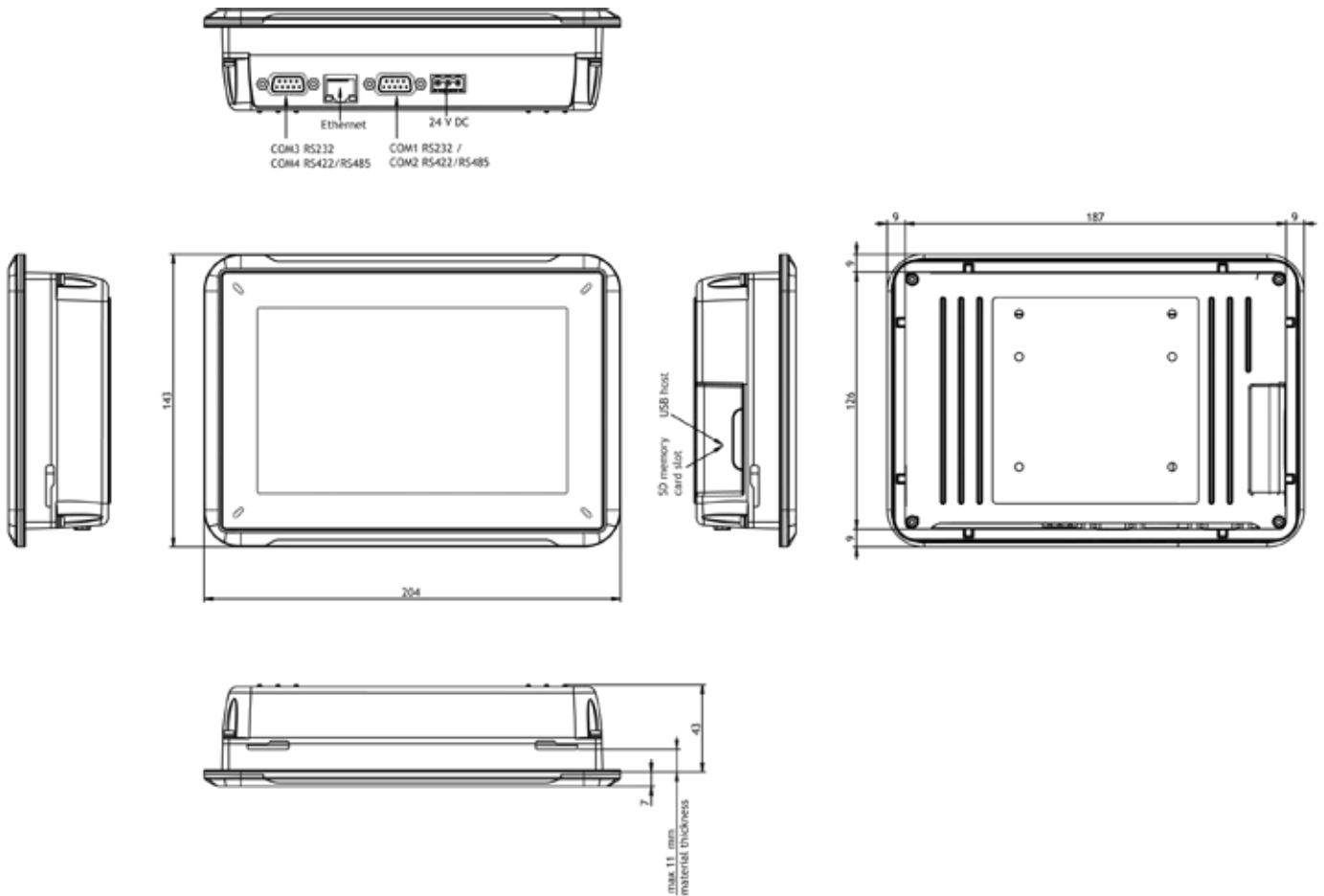
# iX Panel T7A



## TECHNICAL DATA (for further data, see page 1.2)

Display	
Size in inches	7"
Resolution in pixels	800 x 480
Coloration	65,000 colors TFT
MTBF backlight	20,000 hrs
General information	
External dimensions in mm W x H x D	204 x 143 x 49
Panel profile in mm W x H	187 x 126
VESA	50, 75
Weight	ca. 1.2 kg
Order information	
Description of item	iX Panel T7A

## Dimensional drawings in mm



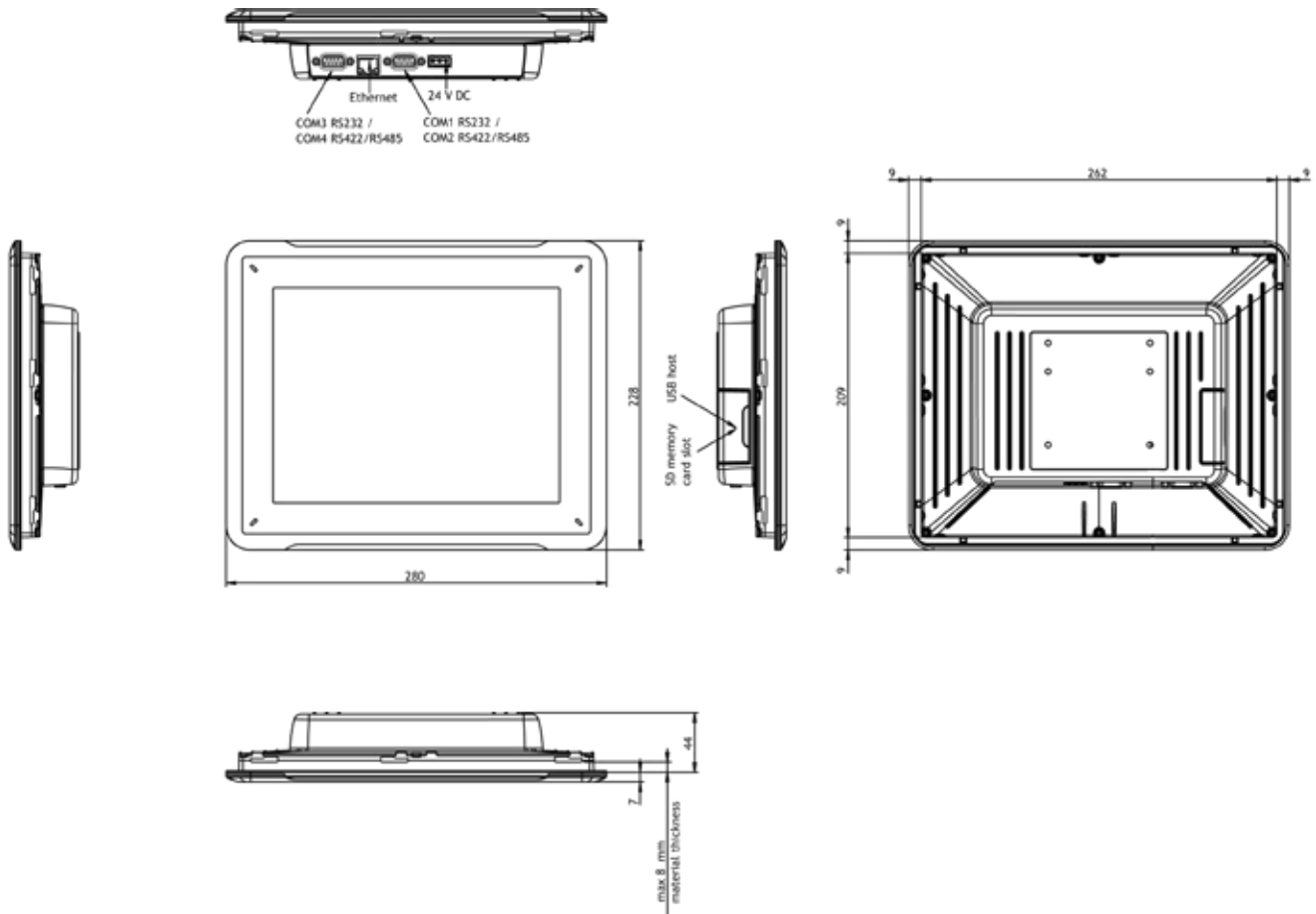
# iX Panel T10A



## TECHNICAL DATA (for further data, see page 1.2)

Display	
Size in inches	10.4"
Resolution in pixels	640 x 480
Coloration	65,000 colors TFT
MTBF backlight	> 40,000 hrs
General information	
External dimensions in mm W x H x D	280 x 228 x 51
Panel profile in mm W x H	262 x 209
VESA	50, 75
Weight	ca. 2.4 kg
Order information	
Description of item	iX Panel T10A

## Dimensional drawings in mm



# iX Panel TA black



## Characteristics

- Rugged design for maritime requirements
- Compass safe distance defined
- Various certifications for major classification societies
- 100% dimmable backlight
- 2x LAN interface
- IP66 degree of protection
- State-of-the-art screen design for efficient work flow

## TECHNICAL DATA

Display		
Coloration		64K color TFT
Type of data entry		Resistive Touch
Degree of protection		IP66 / NEMA 4
Voltage supply		
Operating voltage		24 VDC (20 - 30 V)
Power consumption		max. 2 A
System		
Processor		Intel™ Atom® Z-series 1.1 GHz
Main memory		1024 MB
Internal storage memory		2 GB
External storage media		SD card
Operating system		Windows CE
Interfaces		
Serial		1 x RS232 1 x RS422/485
Ethernet		2 x 10/100 Mbit/s RJ45
USB		USB 2.0
Communication modules		Profibus DP, MPI, CAN
General information		
Frame material		Aluminum
Front foil		acid-resistant polyester foil
Certifications		DNV*
Operating temperature		0 to 55 °C
Storage temperature		-20 to 60 °C

\* in progress

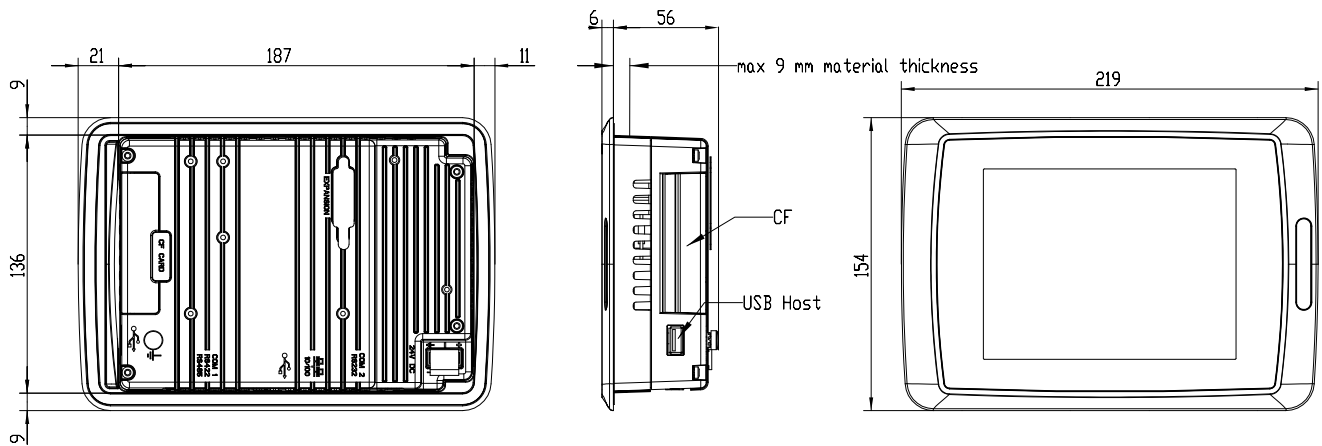
# iX Panel TA70 bl



## TECHNICAL DATA (for further data, see page 1.6)

Display	
Size in inches	6.5"
WxH resolution in pixels	640 x 480
General information	
Outer dimensions in mm WxHxD	219 x 154 x 61
Panel profile in mm WxH	189 x 138
Weight	ca. 1.3 kg
Order information	
Description of item	iX Panel TA70 bl

## Dimensional drawings in mm



Cut out  
 188.5±1 x 137.5±1 mm  
 (7.42±0.04 x 5.41±0.04 inch)

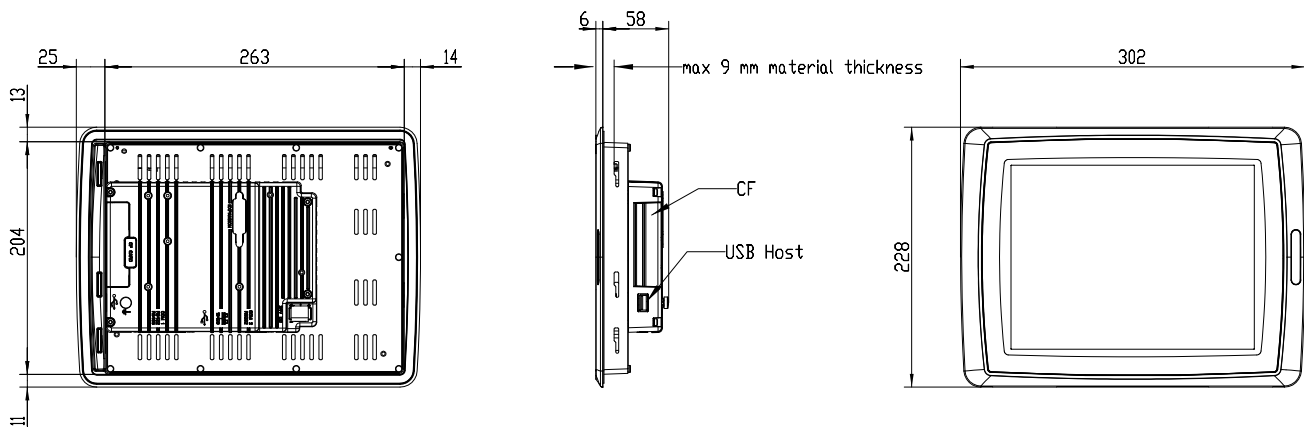
# iX Panel TA100 bl



## TECHNICAL DATA (for further data, see page 1.6)

Display	
Size in inches	10.4"
WxH resolution in pixels	800 x 600
General information	
Outer dimensions in mm WxHxD	302 x 228 x 64
Panel profile in mm WxH	265 x 206
Weight	ca. 2.5 kg
Order information	
Description of item	iX Panel TA100 bl

## Dimensional drawings in mm



Cut out  
 $264.5 \pm 1 \times 206 \pm 1$  mm  
 $(10.4 \pm 0.04 \times 8.1 \pm 0.04)$  inch



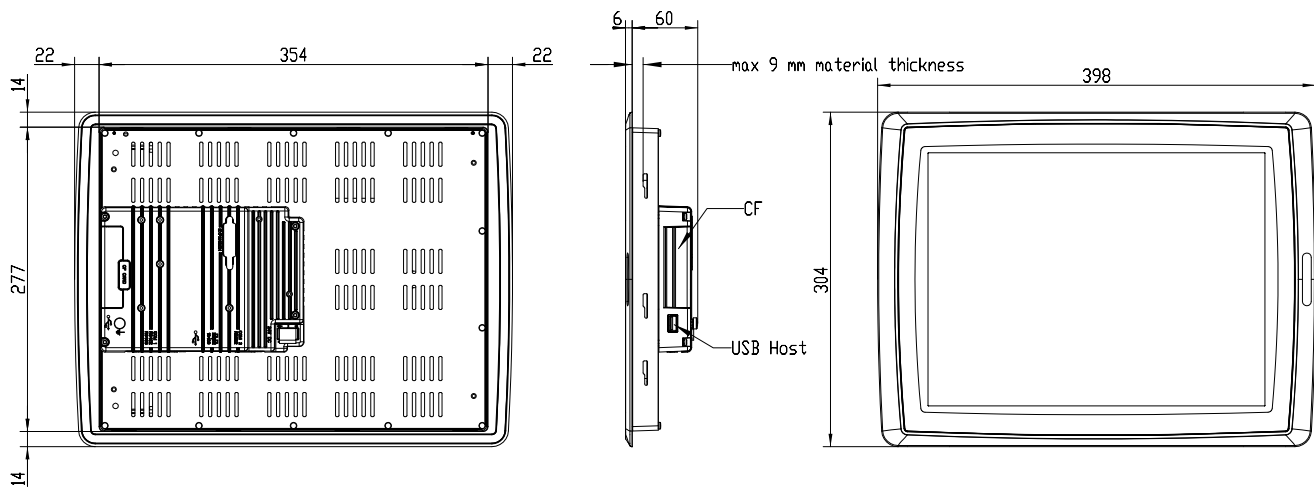
# iX Panel TA150 bl



## TECHNICAL DATA (for further data, see page 1.6)

Display	
Size in inches	15"
WxH resolution in pixels	1024 x 768
General information	
Outer dimensions in mm WxHxD	398 x 304 x 66
Panel profile in mm WxH	356 x 279
Weight	ca. 4 kg
Order information	
Description of item	iX Panel TA150 bl

## Dimensional drawings in mm



Cut out  
 $355.5 \pm 1 \times 278.5 \pm 1$  mm  
 $(14 \pm 0.04 \times 10.96 \pm 0.04)$  inch

# Operator panel - iX Panel Pro Nautic



## Characteristics

- Powerful open PC platform
- Pre-installed iX runtime version for instant operation
- Rugged design for maritime requirements
- Network dimming for optimal night vision
- Various certifications for major classification societies
- Long life components for long term availability

## TECHNICAL DATA

Front panel	
Type of data entry	Resistive touch (Option: anti-reflective glass)
Degree of protection	IP65 front end; IP20 back end
Power supply	
Operating voltage	24 VDC +/- 15% or 115-230 +/- 15% VAC
Power consumption	ca 4.0 A / 1.0 A
System	
Processor	Intel® Core2Duo 2.2 GHz / Celeron > 1.6 GHz*
Main memory	1 GB / 2 GB / 4 GB
External storage media (CFC)	2 - 8 GB
Internal mass memory	4 - 8 GB / HDD automotive 80 GB / SSD 64 GB*
Operating system	Windows XP professional, Windows XP embedded, Windows 7*
Interfaces	
Serial	2 x RS232
Ethernet	2 x 10/100/1000 Mbps
Keypad / mouse	2 x PS/2
Monitor	VGA + DVI-I
USB	4 x USB 2.0
Slots	2 x PCI (max 220 mm)
Communication modules	-
General information	
Frame material	Aluminum
Front foil	acid-resistant polyester foil
Certifications	GL, ABS, DNV, BV*, LR (till 19")
Operating temperature	0 to 55 °C
Storage temperature	-20 to 70 °C

\* in progress

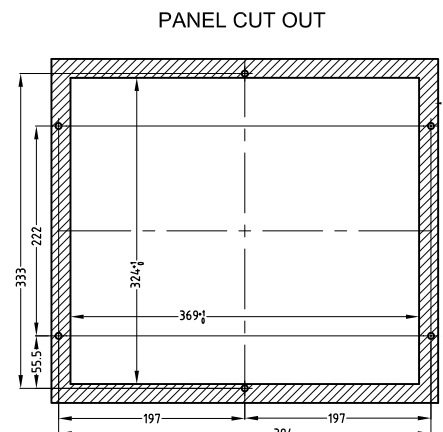
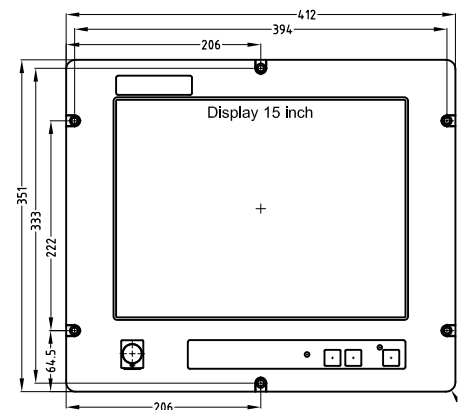
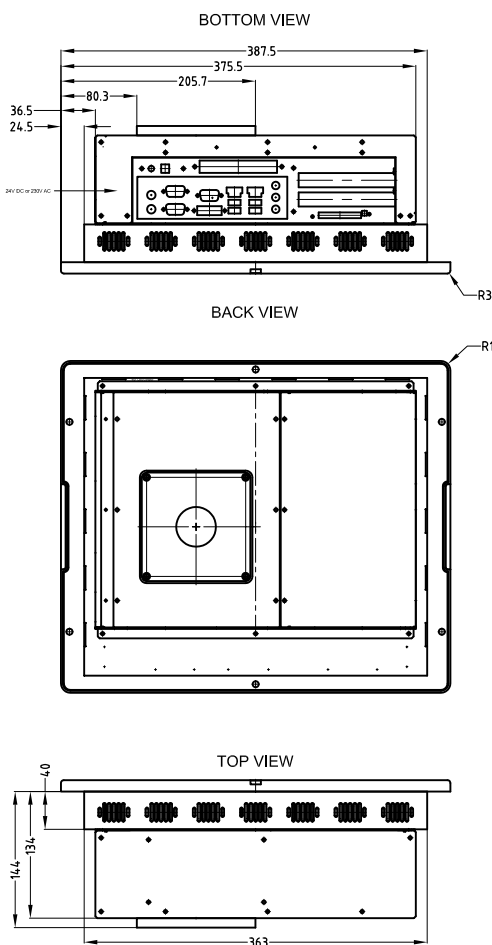
# iX Panel Pro T150 C2D Nautic



## TECHNICAL DATA (for further data, see page 1.10)

Front panel	
Size in inches	15" TFT
WxH resolution in pixels	1024 x 768
Contrast ratio	450:1
Luminous intensity	250 cd/m <sup>2</sup> (typical)
Angle of vision	150° (H) / 110° (V)
General information	
Outer dimensions in mm WxHxD	412 x 351 x 142.5
Panel profile in mm WxH	369 x 324
Weight	ca. 9 kg
Order information	
Description of item	iX Panel Pro T150 C2D Nautic DC / iX Panel Pro T150 C2D Nautic AC

## Dimensional drawings in mm



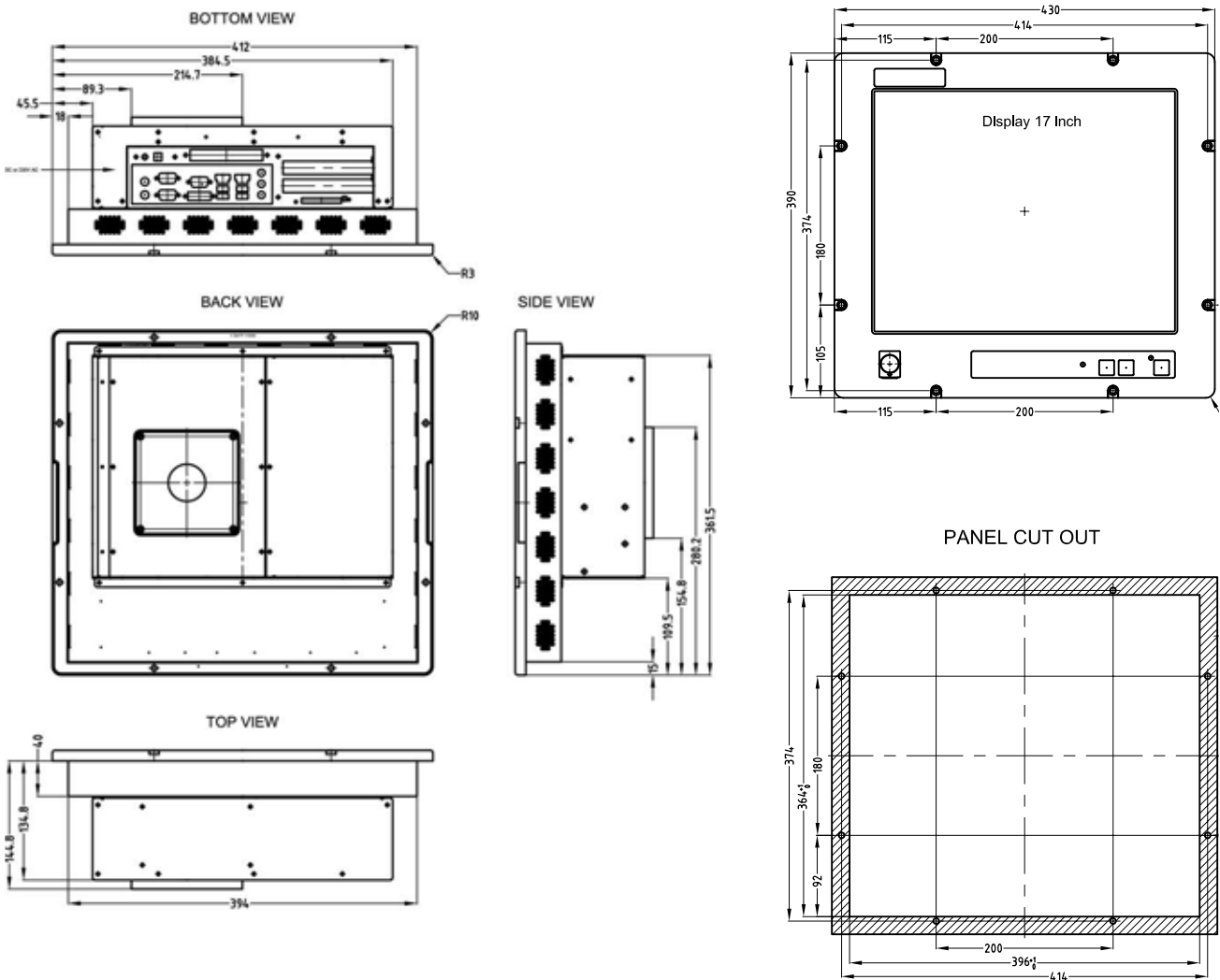
# iX Panel Pro T170 C2D Nautic



## TECHNICAL DATA (for further data, see page 1.10)

Front panel	
Size in inches	17" TFT
WxH resolution in pixels	1280 x 1024
Contrast ratio	600:1
Luminous intensity	250 cd/m <sup>2</sup> (typical)
Angle of vision	178° (H/V)
General information	
Outer dimensions in mm WxHxD	430 x 390 x 142.5
Panel profile in mm WxH	396 x 364
Weight	ca. 10 kg
Order information	
Description of item	iX Panel Pro T170 C2D Nautic DC / iX Panel Pro T170 C2D Nautic AC

## Dimensional drawings in mm



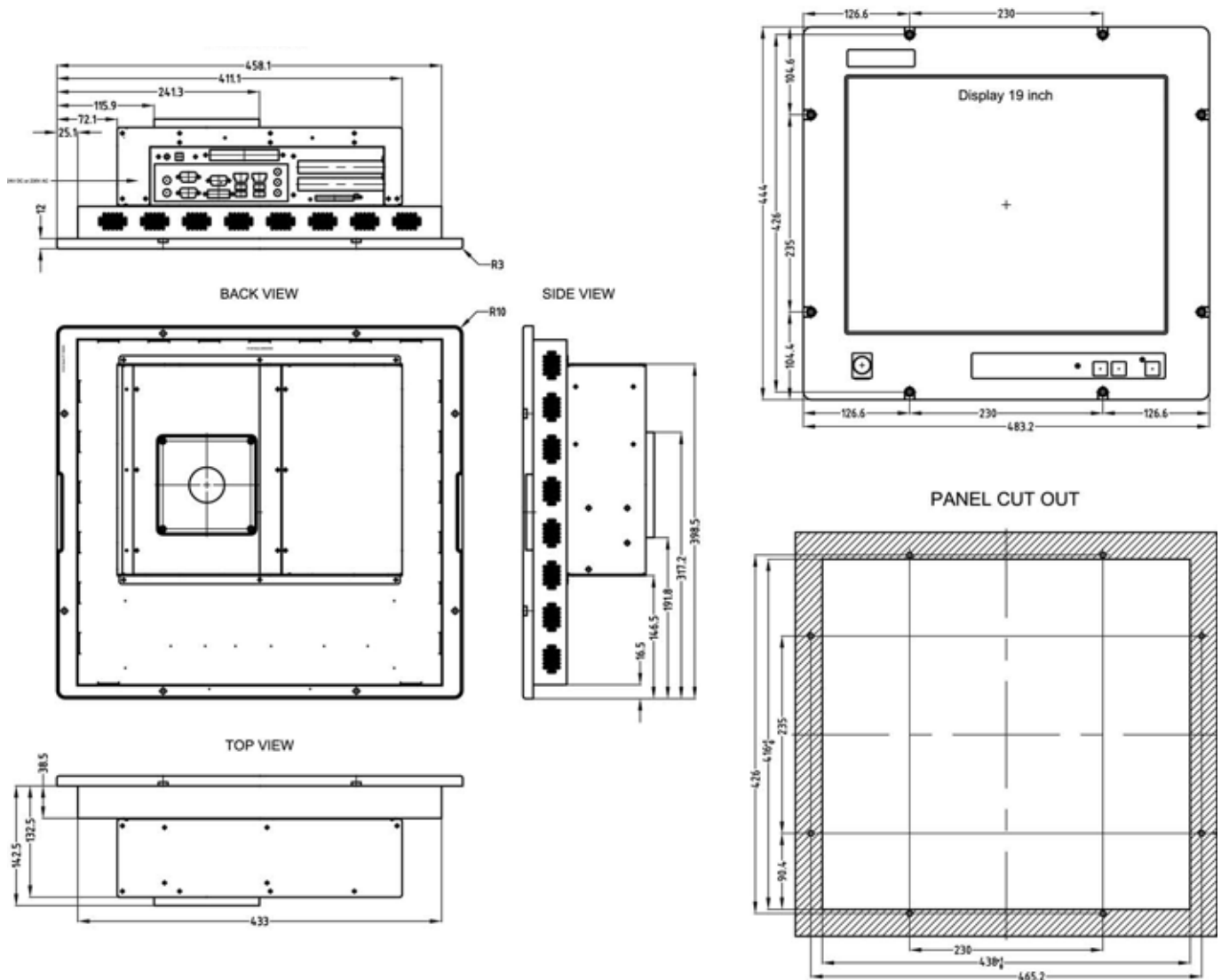
# iX Panel Pro T190 C2D Nautic



## TECHNICAL DATA (for further data, see page 1.10)

Front panel	
Size in inches	19" TFT
WxH resolution in pixels	1280 x 1024
Contrast ratio	1000:1
Luminous intensity	250 cd/m <sup>2</sup> (typical)
Angle of vision	178° (H/V)
General information	
Outer dimensions in mm WxHxD	483.2 x 444 x 142.5
Panel profile in mm WxH	438 x 416
Weight	ca. 13 kg
Order information	
Description of item	iX Panel Pro T190 C2D Nautic DC / iX Panel Pro T190 C2D Nautic AC

## Dimensional drawings in mm



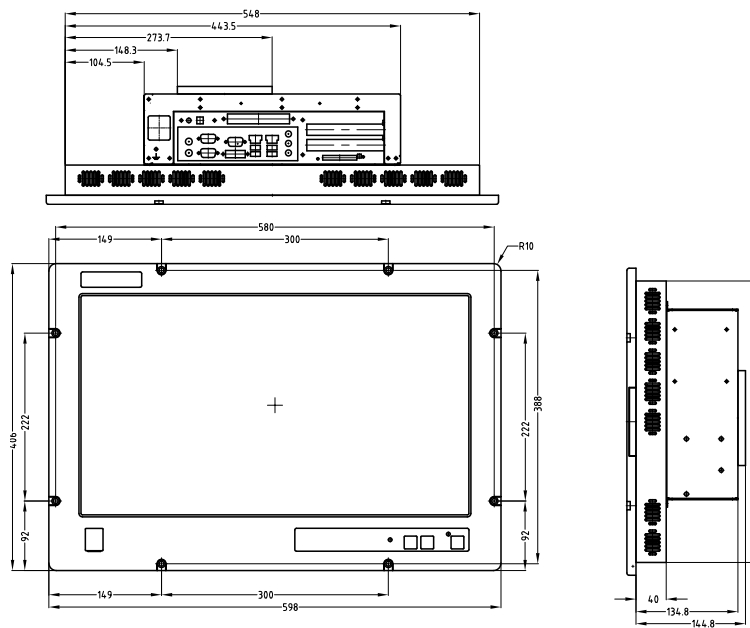
# iX Panel Pro T240 C2D Nautic



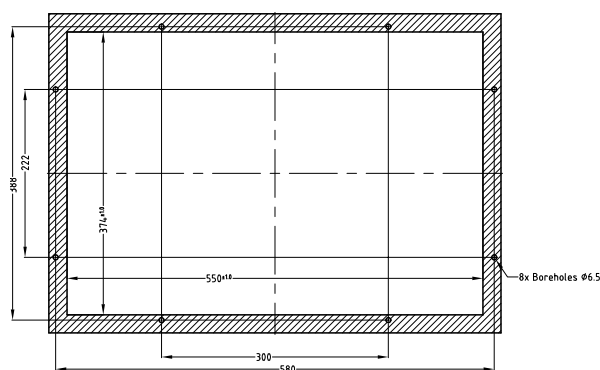
## TECHNICAL DATA (for further data, see page 1.10)

Front panel	
Size in inches	23" wide
WxH resolution in pixels	1920 x 1080
Contrast ratio	1000:1
Luminous intensity	250cd/m <sup>2</sup> (typical)
Angle of vision	170° (H) / 160° (V)
General information	
Outer dimensions in mm WxHxD	598 x 406 x 157
Panel profile in mm WxH	550 x 374
Weight	ca. 14.0 kg
Certifications	DNV (in progress)
Order information	
Description of item	iX Panel Pro T240 C2D Nautic DC / iX Panel Pro T240 C2D Nautic AC

## Dimensional drawings in mm



PANEL CUTOUT



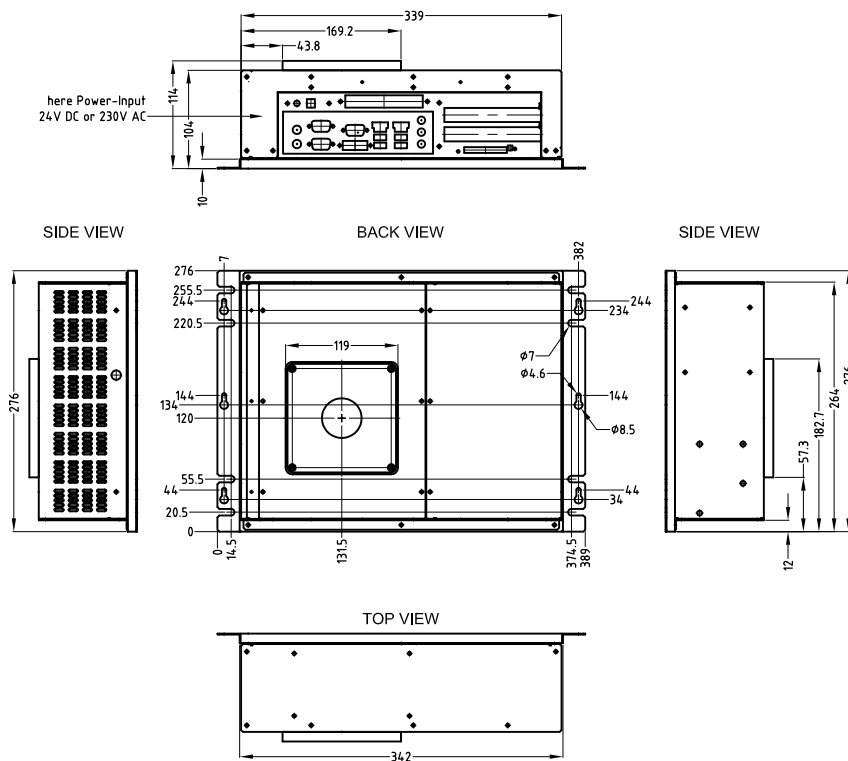
# iX Box Pro C2D Nautic



## TECHNICAL DATA (for further data, see page 1.10)

Degree of protection	IP 20 on all sides
General information	
Frame material	-
Front foil	-
Outer dimensions in mm WxHxD	389 x 276 x 114
Panel profile in mm WxH	-
Weight	ca. 5.5 kg
Type approved HW base	EPC Box C2D Nautic
Order information	
Description of item	iX Box Pro Nautic DC / iX Box Pro C2D Nautic AC

## Dimensional drawings in mm



# iX Software



TECHNICAL DATA - iX Developer & iX Runtime	
<b>iX Developer</b>	
iX Developer	iX development environment for Windows XP & Vista, Windows 7 Single license
<b>iX Runtime</b>	
iX Runtime 250	iX Runtime license with 250 tags limit, with USB dongle
iX Runtime 2000	iX Runtime license with 2000 tags limit, with USB dongle
iX Runtime 4000	iX Runtime license with 4000 tags limit, with USB dongle
iX Runtime upgrade	There is an upgrade to the next version for all iX Runtime licenses
<b>Training</b>	
iX Basic Training	1 day of training at Beijer Electronics in Unterensingen
iX Advanced Training	1 day of training at Beijer Electronics at Beijer Electronics, following on from the basic training
iX Project Training	iX individual project training for customer projects
<b>Service</b>	
iX Project Creation	Creation of a customer project according to specific requirements

## Created for better HMI solutions

iX is the trend-setting HMI solution for ship automation, allowing you to express your ideas with a strong combination of state-of-the-art graphics and solid HMI functionality. Combined with iX hardware (refer pages 1.2 - 1.15) you will get a complete HMI solution for a wide range of application scenarios.





## Maritime PC - High performance in various specifications

The maritime PC Nautic series from Beijer Electronics is especially designed for all kind of maritime application. They are mainly used on vessels for automation or control tasks on their own or as network client PC. The architecture is completely open and will be provided with Windows 7/XP embedded, Windows CE. To fulfil various performance demands, in total three different PC categories are available.

### EPC LX

The PC series EPC LX are compact embedded touch panel computers, based on an AMD LX 800 processor. Thanks to a passive cooled housing, the units come without any rotating parts so decreasing the maintenance ratio drastically. They are equipped with a special alarm signal buzzer (75

dB) and a fully dimming functionality. Its black powder-coated aluminum frame provides a timeless design, which suits modern flybridges as well as cabins perfectly.

### EPC C2D

The PC series EPC C2D Nautic has been developed with a particular focus on usability and demand, where high PC performance and a long lifetime are mandatory. The dimming function which allows a infinite backlight dimming from 100% to 0% qualifies for perfect night vision on flybridges. The user can dim the backlight via buttons on the front of the PC, or remotely via serial, USB or LAN interface. This ensures an equal view level of all back-lighted displays, connected to the dimming network. The utilization of specific industrial electronic components, e.g. storage

media and cooling systems, guarantees a much better robustness and system lifetime, compared with common used COTS devices (Commercial of the shelf).

### EPC AM

The PC series EPC AM stands for outstanding performance with reduced heat build-up. Based on the Intel® Atom™ CPU Z-series and housed in an extremely flat frame, the PC series is well equipped for demanding maritime applications. By constant avoidance of turning parts and a completely passive cooling system, as well as a 4 GB solid-state-Disc, the computer is optimally suitable for high demand environments.

# Maritime PC - EPC AM Nautic

## Characteristics

- Less maintenance thanks to passive cooled housing
- Rugged design for maritime requirements
- 2x LAN interface
- Various certifications for major classification societies
- Open PC platform



## TECHNICAL DATA

<b>Display</b>	
Coloration	64K color TFT
Type of data entry	Resistive Touch
Degree of protection	IP66 / NEMA 4
<b>Voltage supply</b>	
Operating voltage	24 VDC (20 - 30 V)
Power consumption	max. 2 A
<b>System</b>	
Processor	Intel™ Atom® Z-series 1.6 GHz
Main memory	1024 MB
Internal storage memory	4 GB
External storage media	SD card
Operating system	Windows XP embedded
<b>Interfaces</b>	
Serial	1x RS232 1x RS422/485
Ethernet	1x 10/100 Mbit/s, 1x 10/100/1000 Mbit/s
USB	USB 2.0
Communication modules	Profibus DP, MPI, CAN**
<b>General information</b>	
Frame material	Aluminum
Front foil	acid-resistant polyester foil
Certifications	DNV*
Operating temperature	0 to 55 °C
Storage temperature	-20 to 60 °C

\* in progress

\*\* depending on used software

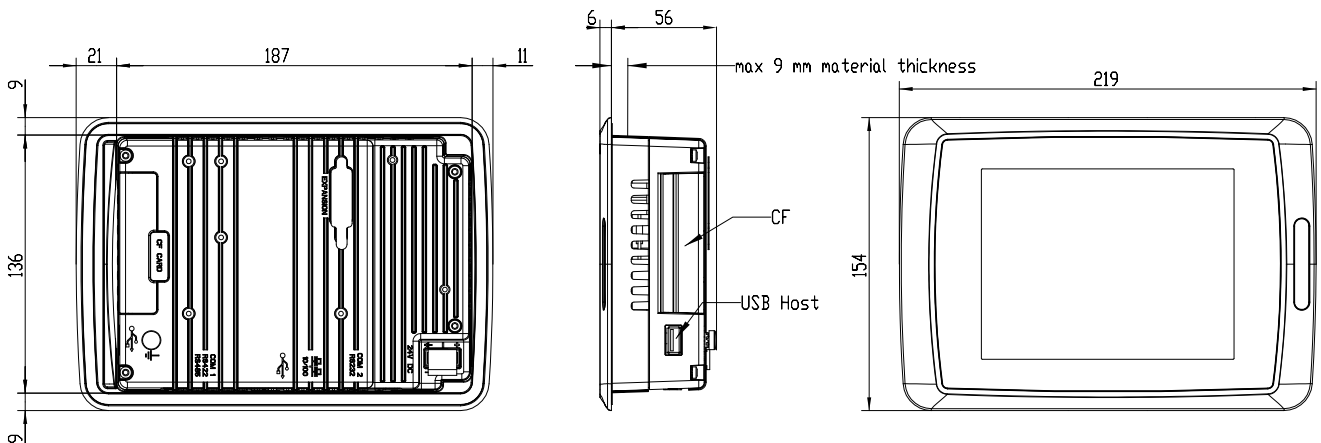
# EPC TA70 AM Nautic



## TECHNICAL DATA (for further data, see page 2.2)

Display	
Size in inches	6.5"
WxH resolution in pixels	640 x 480
General information	
Outer dimensions in mm WxHxD	219 x 154 x 61
Panel profile in mm WxH	189 x 138
Weight	ca. 1.3 kg
Order information	
Description of item	EPC TA70 AM Nautic

## Dimensional drawings in mm



Cut out  
 $188.5 \pm 1 \times 137.5 \pm 1$  mm  
 $(7.42 \pm 0.04 \times 5.41 \pm 0.04)$  inch

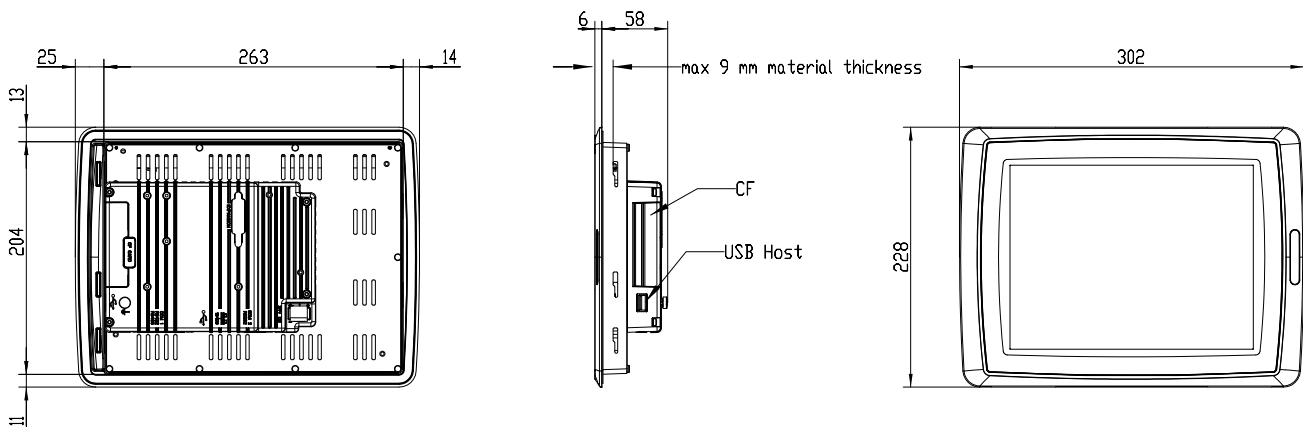
# EPC TA100 AM Nautic



## TECHNICAL DATA (for further data, see page 2.2)

Display	
Size in inches	10.4"
WxH resolution in pixels	800 x 600
General information	
Outer dimensions in mm WxHxD	302 x 228 x 64
Panel profile in mm WxH	265 x 206
Weight	ca. 2.5 kg
Order information	
Description of item	EPC TA100 AM Nautic

## Dimensional drawings in mm



Cut out  
 $264.5 \pm 1 \times 206 \pm 1$  mm  
 (10.4  $\pm$  0.04 x 8.1  $\pm$  0.04 inch)

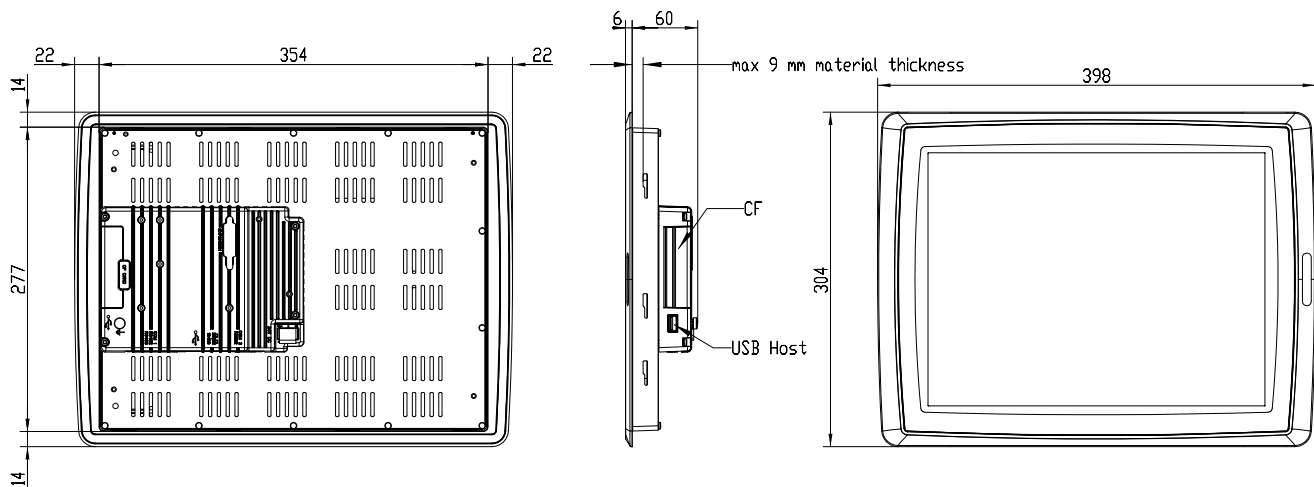
# EPC TA150 AM Nautic



## TECHNICAL DATA (for further data, see page 2.2)

Display	
Size in inches	15"
WxH resolution in pixels	1024 x 768
General information	
Outer dimensions in mm WxHxD	398 x 304 x 66
Panel profile in mm WxH	356 x 279
Weight	ca. 4 kg
Order information	
Description of item	EPC TA150 AM Nautic

## Dimensional drawings in mm



Cut out  
 $355.5 \pm 1 \times 278.5 \pm 1$  mm  
 $(14 \pm 0.04 \times 10.96 \pm 0.04)$  inch

# Maritime PC - EPC LX Nautic



## Characteristics

- Rugged design for specifics of maritime requirements
- Perfect night vision by network dimming function
- Vibration resistance due to exclusion of rotating parts
- Compact design for space-saving installation
- Alarm signal buzzer

## TECHNICAL DATA

<b>Front panel</b>	
Type of data entry	Resistive touch
Degree of protection	IP65 on the front according to DIN EN60529
<b>Power supply</b>	
Operating voltage	24 VDC +/- 20%
Power consumption	ca. 500 mA
<b>System</b>	
Processor	AMD LX 800
Main memory	512 MB / 1024 MB
External storage media (CFC)	2 - 16 GB
Internal mass memory	2 - 16 GB
Operating system	Windows CE.NET, Windows XP Embedded
<b>Interfaces</b>	
Serial	RS232
Ethernet	2 x 10/100 Mbps
Keypad / mouse	1 x PS/2
Printer	-
Monitor	VGA
USB	2 x USB 2.0
Slots	PC/104
Communication modules	MPI, DUAL-CAN**
<b>General information</b>	
Frame material	Aluminum
Front foil	acid-resistant polyester foil
Certification	GL
Operating temperature	0 to 55 °C
Storage temperature	-20 to 60 °C

\*\* depending on used software

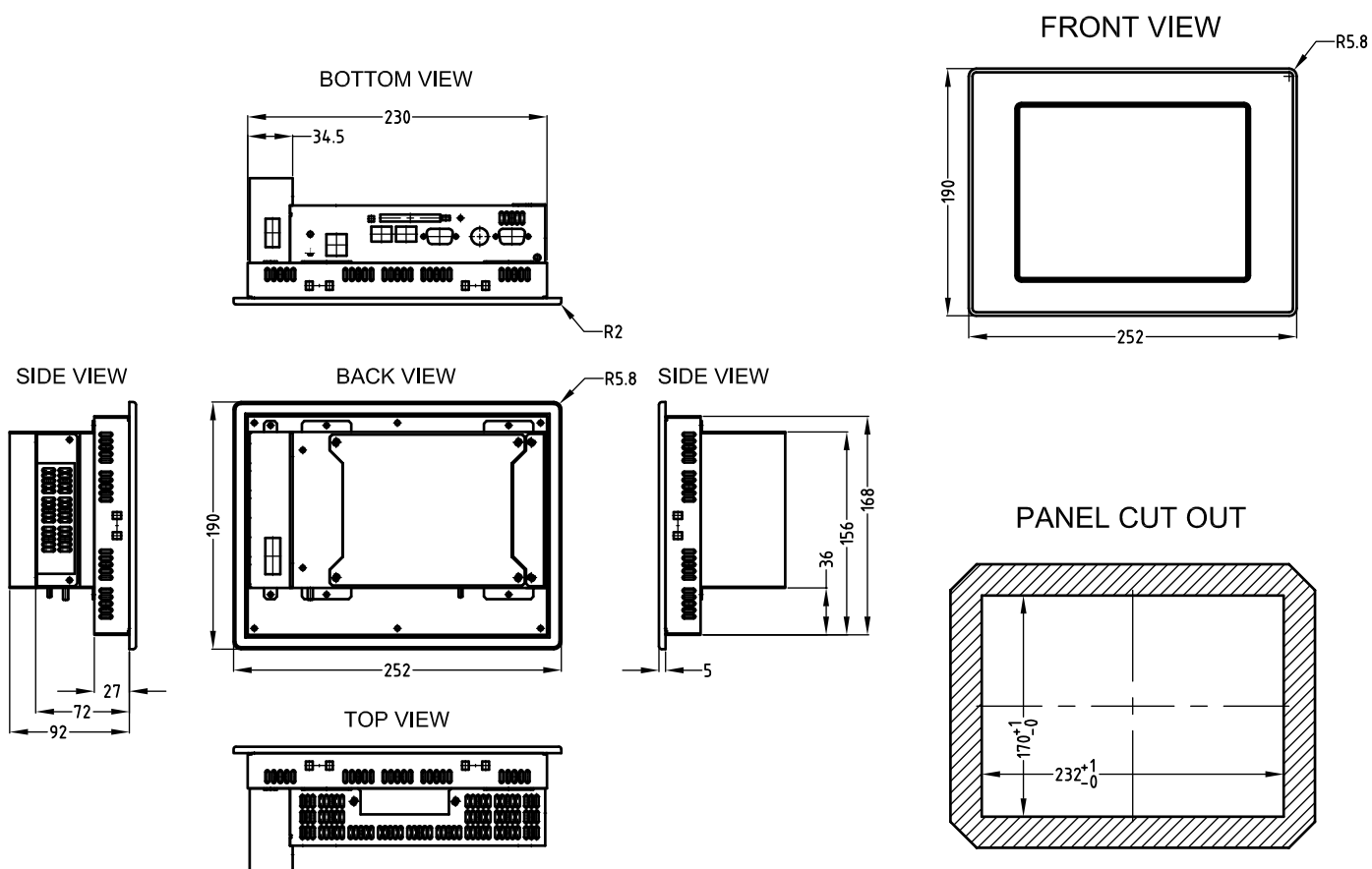
# EPC T80 LX Nautic



## TECHNICAL DATA (for further data, see page 2.6)

Front panel	
Size in inches	8.4"
WxH resolution in pixels	640 x 480
Contrast ratio	500:1
Luminous intensity	320 cd/m <sup>2</sup> (typical)
Angle of vision	130° (H) / 110° (V)
General information	
Outer dimensions in mm WxHxD	252 x 190 x 77
Panel profile in mm WxH	232 x 170
Weight	ca. 1.9 kg
Order information	
Description of item	EPC T80 LX Nautic

## Dimensional drawings in mm



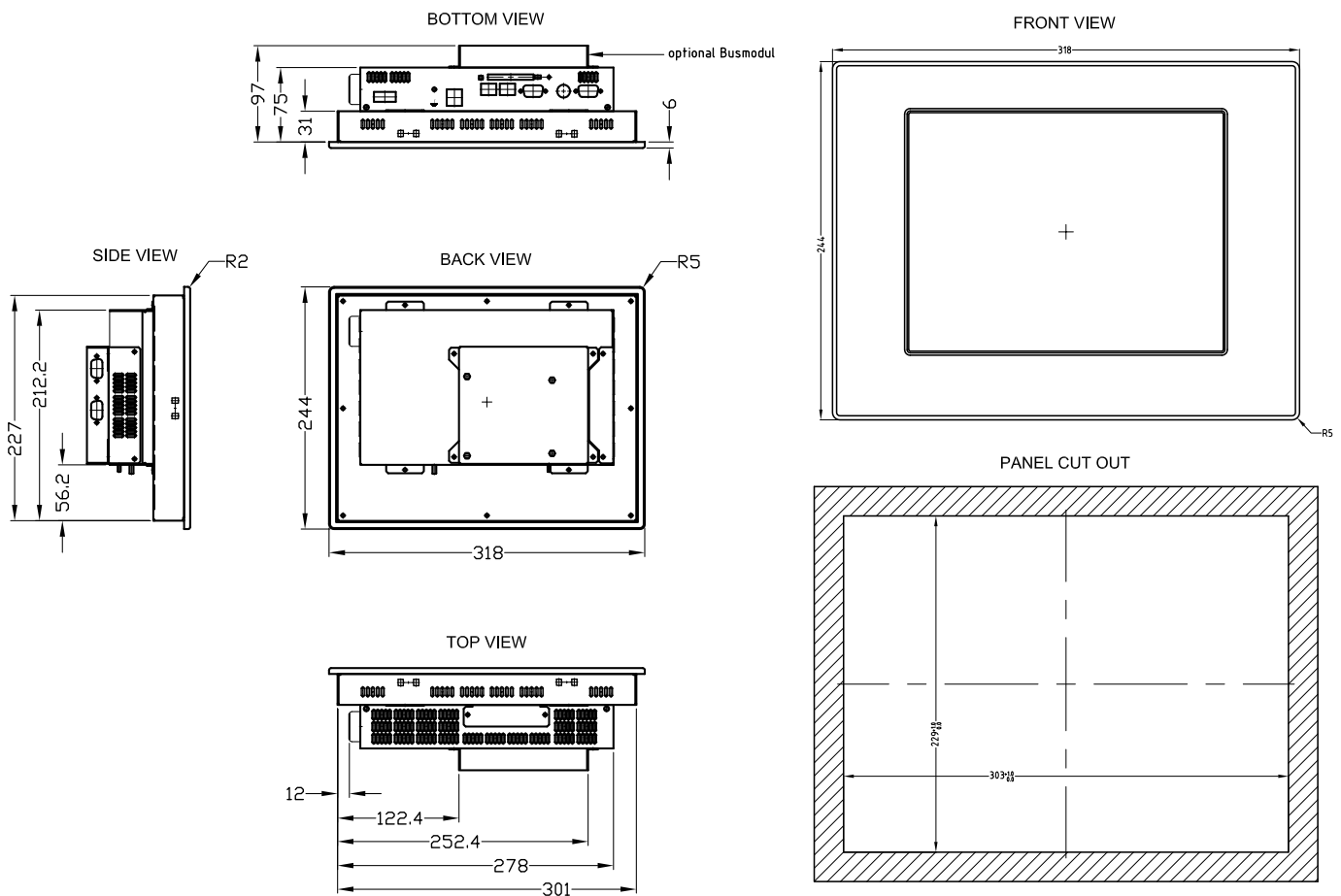
# EPC T100 LX Nautic



## TECHNICAL DATA (for further data, see page 2.6)

Front panel	
Size in inches	10.4"
WxH resolution in pixels	640 x 480
Contrast ratio	1500:1
Luminous intensity	320 cd/m <sup>2</sup> (typical)
Angle of vision	176° (H/V)
General information	
Outer dimensions in mm WxHxD	318 x 244 x 85
Panel profile in mm WxH	303 x 228
Weight	ca. 2.3 kg
Order information	
Description of item	EPC T100 LX Nautic

## Dimensional drawings in mm







# Maritime PC - EPC C2D Nautic



## Characteristics

- Rugged design for specifics of maritime requirements
- Perfect night vision by network dimming function
- Long life components for long term availability
- Various certifications for major classification societies
- Reliable resistive touch panel
- Open PC platform

## TECHNICAL DATA

<b>Front panel</b>	
Type of data entry	Resistive touch (Option: anti-reflective glass)
Degree of protection	IP65 front end; IP20 back end
<b>Power supply</b>	
Operating voltage	24 VDC +/- 15% or 115-230 +/- 15% VAC
Power consumption	ca 4.0 A / 1.0 A
<b>System</b>	
Processor	Intel® Core2Duo 2.2 GHz / Celeron > 1.6 GHz*
Main memory	1 GB / 2 GB / 4 GB
External storage media (CFC)	4 - 8 GB
Internal mass memory	4 - 8 GB / HDD automotive 80 GB / SSD 64 GB*
Operating system	Windows XP professional, Windows XP embedded, Windows 7*
<b>Interfaces</b>	
Serial	2 x RS232
Ethernet	2 x 10/100/1000 Mbps
Keypad / mouse	2 x PS/2
Printer	-
Monitor	VGA + DVI-I
USB	4 x USB 2.0
Slots	2 x PCI (max 220 mm)
Communication modules	-
<b>General information</b>	
Frame material	Aluminum
Front foil	acid-resistant polyester foil
Certifications	GL, ABS, DNV, BV*, LR (till 19")
Operating temperature	0 to 55 °C
Storage temperature	-20 to 70 °C

\* in progress

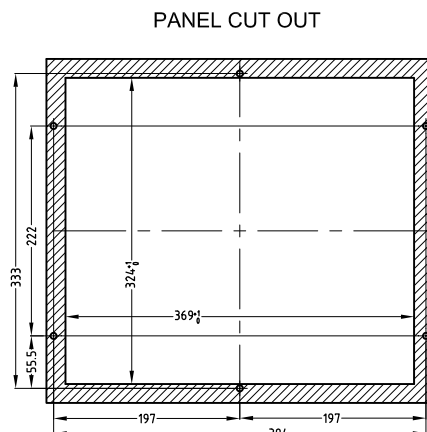
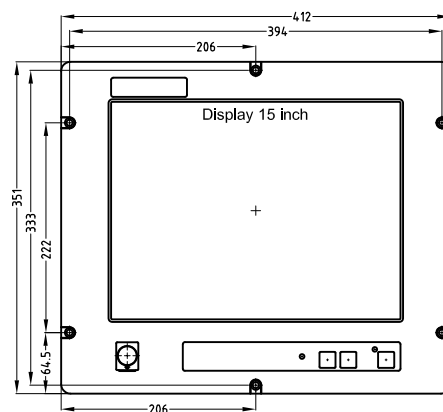
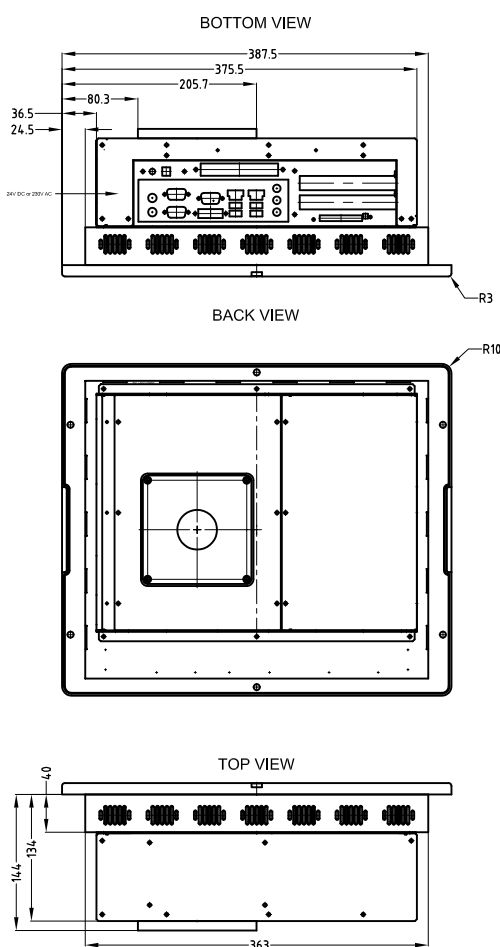
# EPC T150 C2D Nautic



## TECHNICAL DATA (for further data, see page 2.10)

Front panel	
Size in inches	15" TFT
WxH resolution in pixels	1024 x 768
Contrast ratio	450:1
Luminous intensity	250 cd/m <sup>2</sup> (typical)
Angle of vision	150° (H) / 110° (V)
General information	
Outer dimensions in mm WxHxD	412 x 351 x 142.5
Panel profile in mm WxH	369 x 324
Weight	ca. 9 kg
Order information	
Description of item	EPC T150 C2D Nautic DC / EPC T150 C2D Nautic AC

## Dimensional drawings in mm



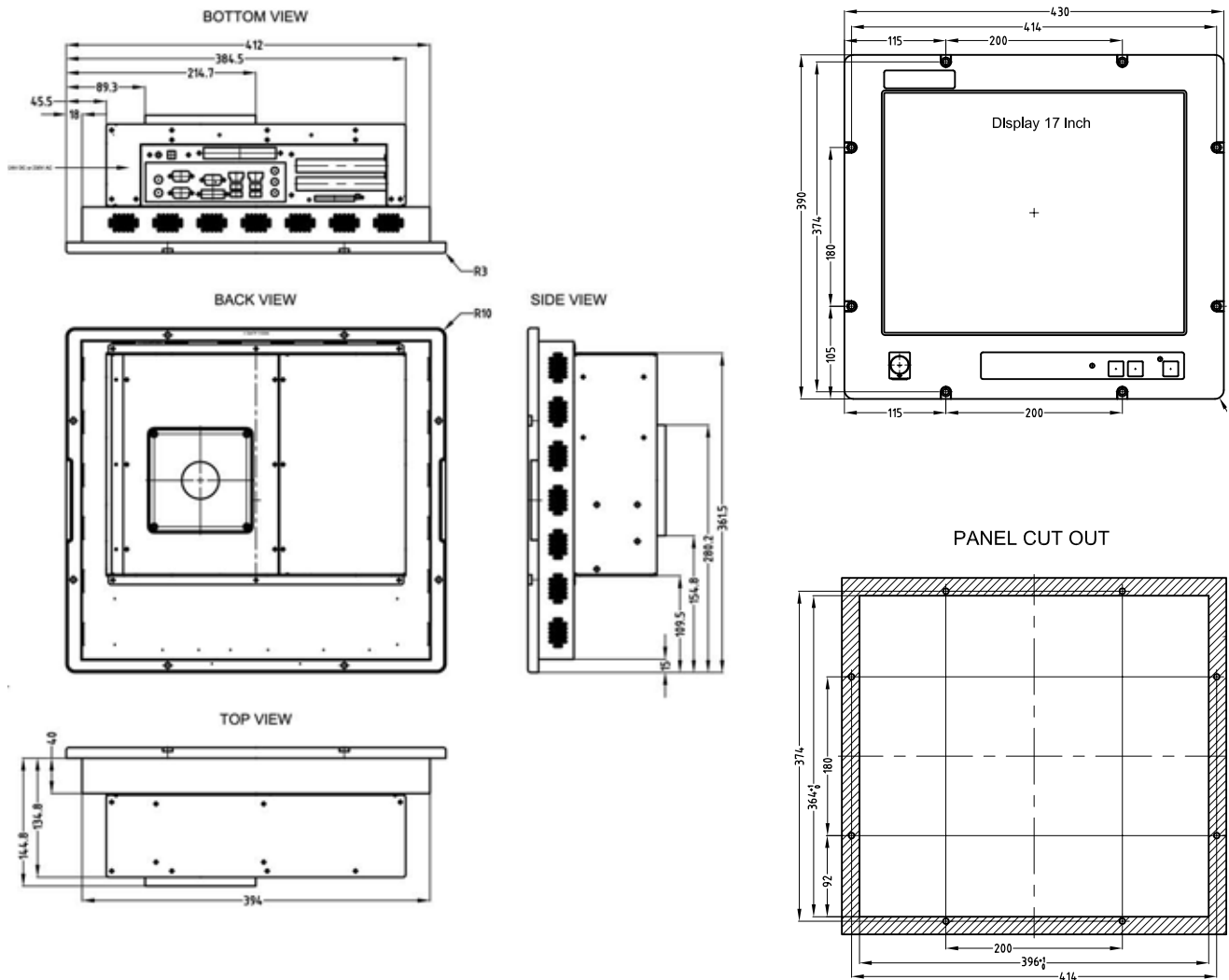
# EPC T170 C2D Nautic



## TECHNICAL DATA (for further data, see page 2.10)

Front panel	
Size in inches	17" TFT
WxH resolution in pixels	1280 x 1024
Contrast ratio	600:1
Luminous intensity	250 cd/m <sup>2</sup> (typical)
Angle of vision	178° (H/V)
General information	
Outer dimensions in mm WxHxD	430 x 390 x 142.5
Panel profile in mm WxH	396 x 364
Weight	ca. 10 kg
Order information	
Description of item	EPC T170 C2D Nautic DC / EPC T170 C2D Nautic AC

## Dimensional drawings in mm



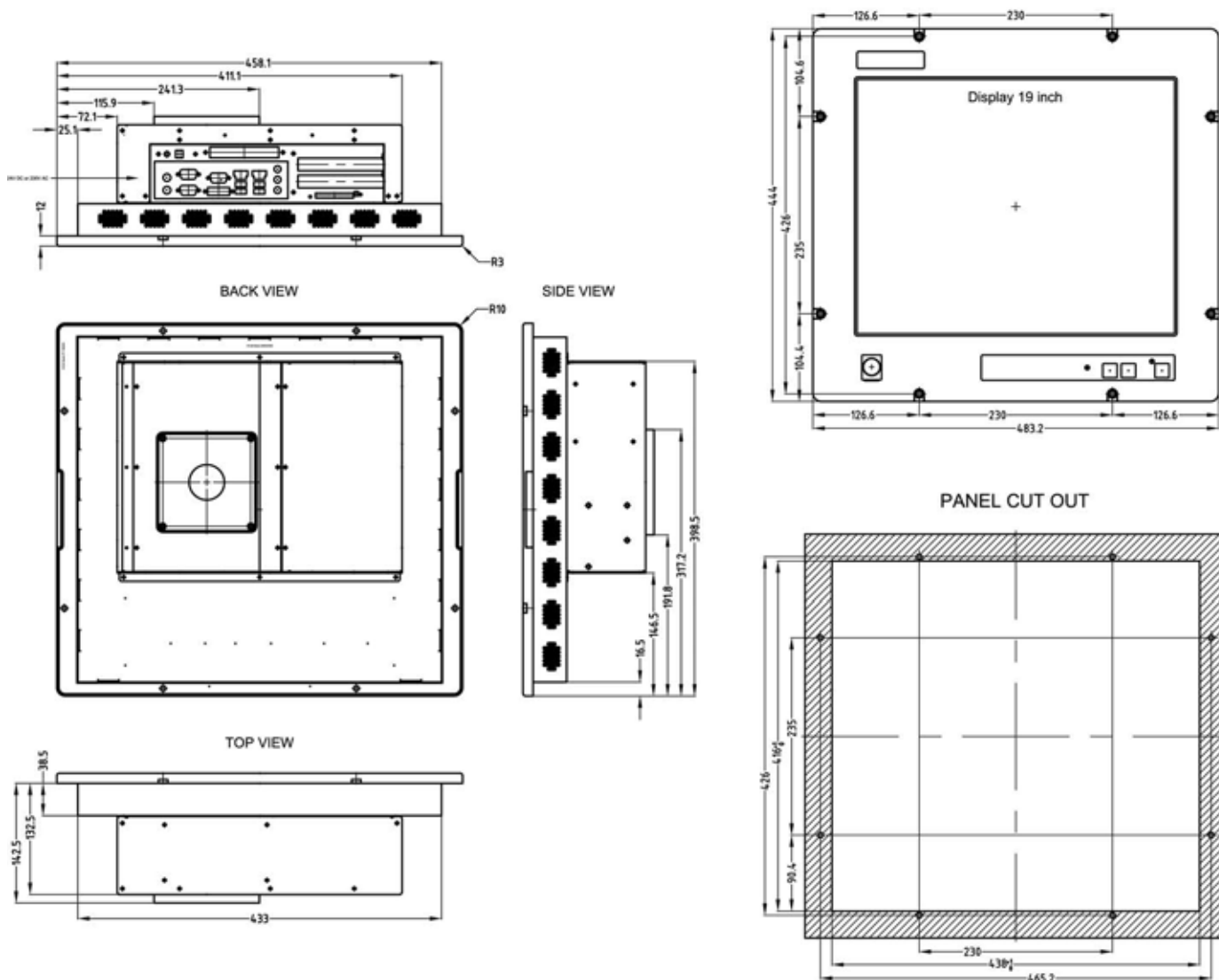
# EPC T190 C2D Nautic



## TECHNICAL DATA (for further data, see page 2.10)

Front panel	
Size in inches	19" TFT
WxH resolution in pixels	1280 x 1024
Contrast ratio	1000:1
Luminous intensity	250 cd/m <sup>2</sup> (typical)
Angle of vision	178° (H/V)
General information	
Outer dimensions in mm WxHxD	483.2 x 444 x 142.5
Panel profile in mm WxH	438 x 416
Weight	ca. 13 kg
Order information	
Description of item	EPC T190 C2D Nautic DC / EPC T190 C2D Nautic AC

## Dimensional drawings in mm



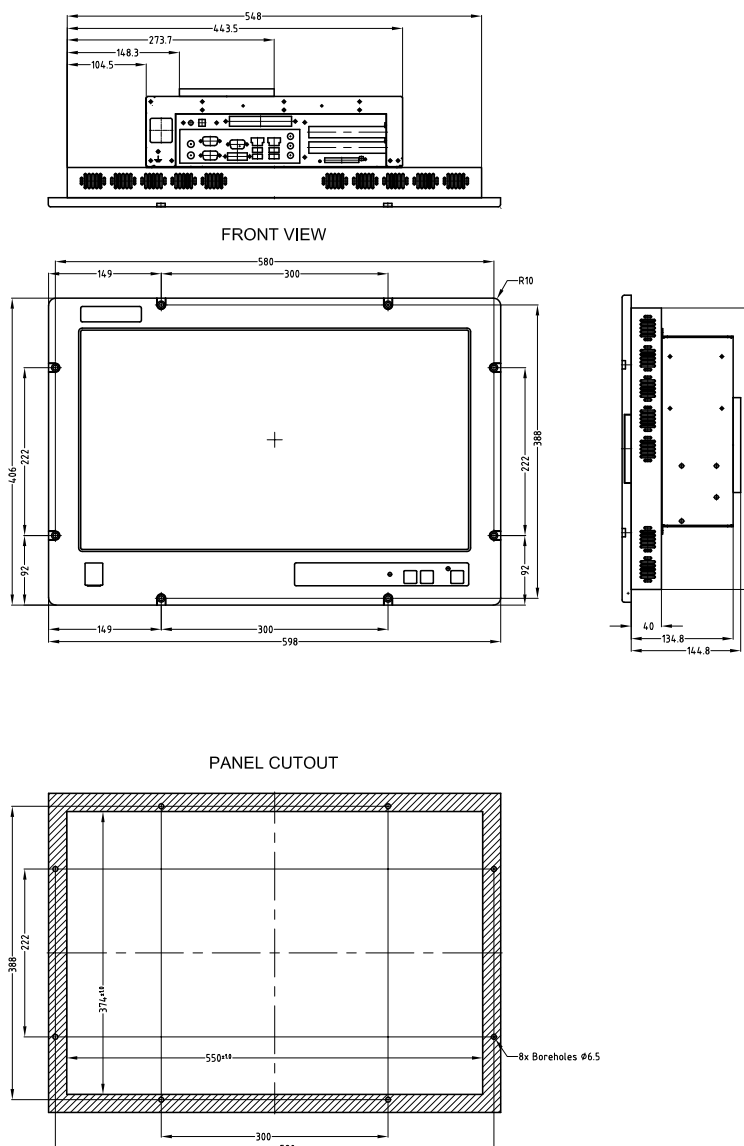
# EPC T240 C2D Nautic



## TECHNICAL DATA (for further data, see page 2.10)

Front panel	
Size in inches	23" wide
WxH resolution in pixels	1920 x 1080
Contrast ratio	1000:1
Luminous intensity	250cd/m <sup>2</sup> (typical)
Angle of vision	170° (H) / 160° (V)
Type of data entry	Resistive touch (Option: anti-reflective glass)
Degree of protection	IP65 front end; IP20 back end
General information	
Outer dimensions in mm WxHxD	598 x 406 x 157
Panel profile in mm WxH	550 x 374
Weight	ca. 14.0 kg
Certifications	DNV (in progress)
Order information	
Description of item	EPC T240 C2D Nautic DC / EPC T240 C2D Nautic AC

## Dimensional drawings in mm









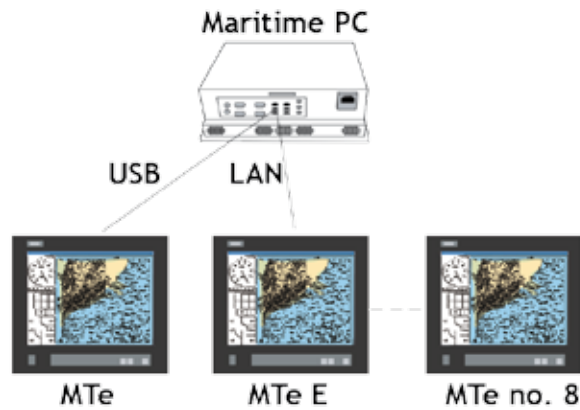
# Maritime monitor - MTe and MTe E

## Field of Application

The maritime monitor series MTe and MTe E have been developed for software applications on bridges, engine control rooms and many other PC-based applications on vessels and offshore environment. Either as single based unit or in a local area network (LAN) connected to several other displays, the maritime monitors go strong with specific functionalities.

## Video over LAN

The “e” stands for “enhanced functionality” which means, the video signal transmission can be realized via USB or LAN interface. The result is an open network structure with connection of up to 8 different monitors without any VGA or DVI converter. It is possible to use an existing LAN to save inflexible VGA cabling and expensive multi mode graphic cards.



Comprehensive video network with existing LAN or USB cabling

## Dimming in several ways

At bridges it is mandatory to use a dimming functionality for all back-lighted devices. MTe displays can be dimmed infinitely variable to 0% brightness, which ensures a non-dazzling control for the crew. There are several ways to adjust the display brightness. One way is to adjust the dimming for every monitor individually, using the front buttons. But in some cases it might be useful, to dim the whole range of monitors at once. For this case the remote dimming feature allows the building of local networks of connected monitors where any monitor can control the backlight brightness of any other.

### Point-to-Point

Two monitors can control each other via RS232. Multiple Monitors can be connected and control each other via an RS485 bus. Other remote dimming features are available via USB

or Ethernet connection with the Beijer Electronics RBC Router. The RBC Router is a service that handles SCOM commands. It is a part of the Monitor Control Center.

### USB Network

Several monitors can control each other via USB connection. To enable this feature, the RBC Router must run on the PC, and USB output must be enabled.

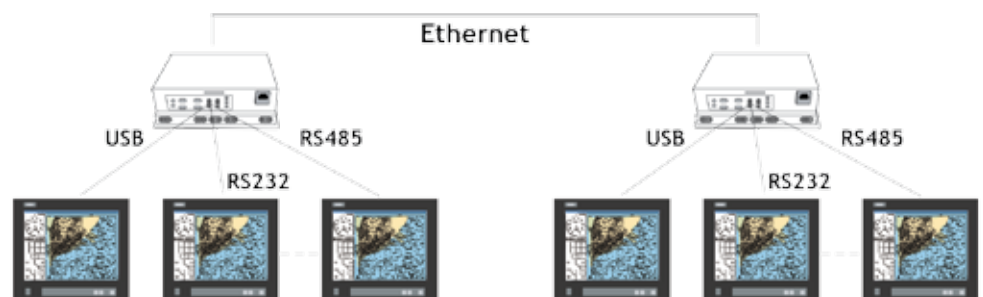
### Local Universal Network

Several monitors can control each other via RS232, RS485 or

USB to the same PC. To enable this feature, the RBC Router must run on the PC, and RS232 output, RS485 output or USB output must be enabled.

### Global Universal Network

Several monitors in different local networks can control each other via Ethernet, RS232 (only two PCs per connection), RS485 or USB. To enable this feature, the RBC Router must run on every PC, and RS232 output, RS485 output, USB output and Ethernet input must be enabled.



Easy to realize dimming network in several ways with MTe and MTe E

# Maritime Monitor - MTe Nautic



## Characteristics

- Decrease cabling through Video over LAN
- Perfect night vision by network dimming function
- Various certifications for major classification societies
- Rugged design for specifics of maritime requirements
- Choice between resistive touch and anti-reflective glass

## TECHNICAL DATA

Front panel	
Type of data entry	Resistive touch (Option: anti-reflective glass)
Degree of protection	IP65 front end; IP20 back end
Power supply	
Operating voltage	24 VDC +/- 15% or 115-230 +/- 15% VAC
Power consumption	ca. 4.0 / 1.0 A
Interfaces	
Serial	RS232 / 485
Ethernet	Option 10/100 Mbps
Graphics	VGA / DVI / USB (Option: Ethernet)
Input	USB
General information	
Frame material	Aluminum
Front foil	acid-resistant polyester foil
Certifications	GL, ABS, DNV, BV*, LR (till 19")
Operating temperature	0 to 55 °C
Storage temperature	-20 to 70 °C

\* In progress

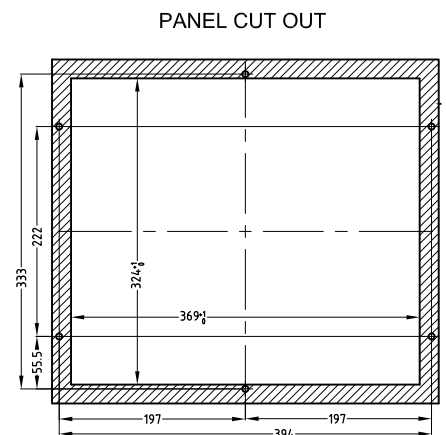
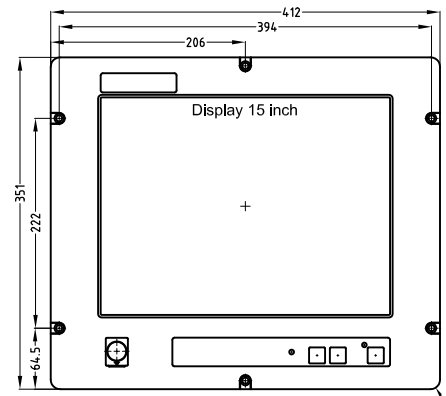
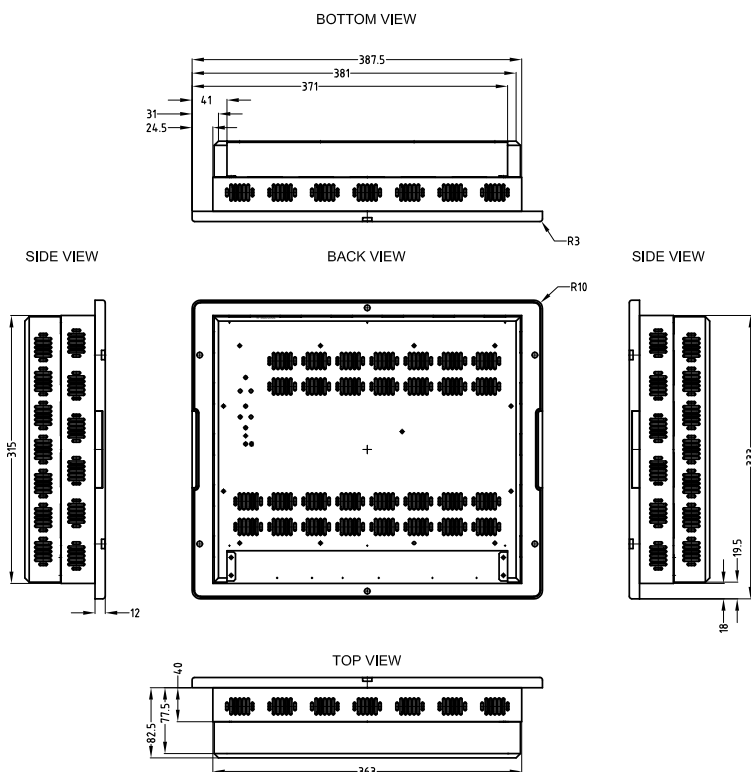
# MTe T150 Nautic



## TECHNICAL DATA (for further data, see page 3.2)

Front panel	
Size in inches	15"
WxH resolution in pixels	1024 x 768
Contrast ratio	450:1
Luminous intensity	250 cd/m <sup>2</sup> (typical)
Angle of vision	150° (H) / 110° (V)
General information	
Outer dimensions in mm WxHxD	412 x 351 x 81
Panel profile in mm WxH	369 x 324
Weight	ca. 6.5 kg
Order information	
Description of item	MTe T150 Nautic DC / MTe T150 Nautic AC

## Dimensional drawings in mm



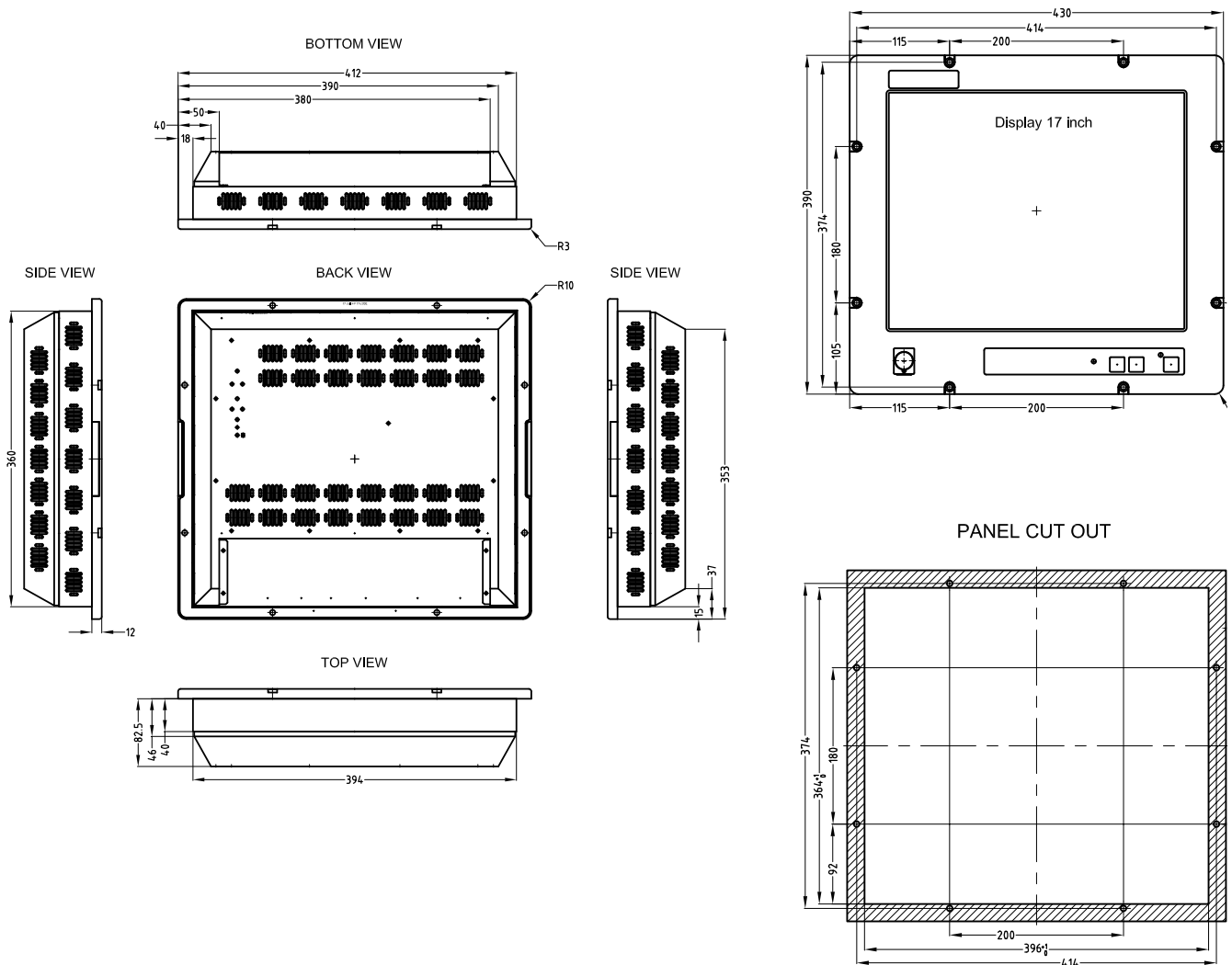
# MTe T170 Nautic



## TECHNICAL DATA (for further data, see page 3.2)

Front panel	
Size in inches	17"
WxH resolution in pixels	1280 x 1024
Contrast ratio	600:1
Luminous intensity	250 cd/m <sup>2</sup> (typical)
Angle of vision	178° (H/V)
General information	
Outer dimensions in mm WxHxD	430 x 390 x 81
Panel profile in mm WxH	396 x 364
Weight	ca. 7.5 kg
Order information	
Description of item	MTe T170 Nautic DC / MTe T170 Nautic AC

## Dimensional drawings in mm



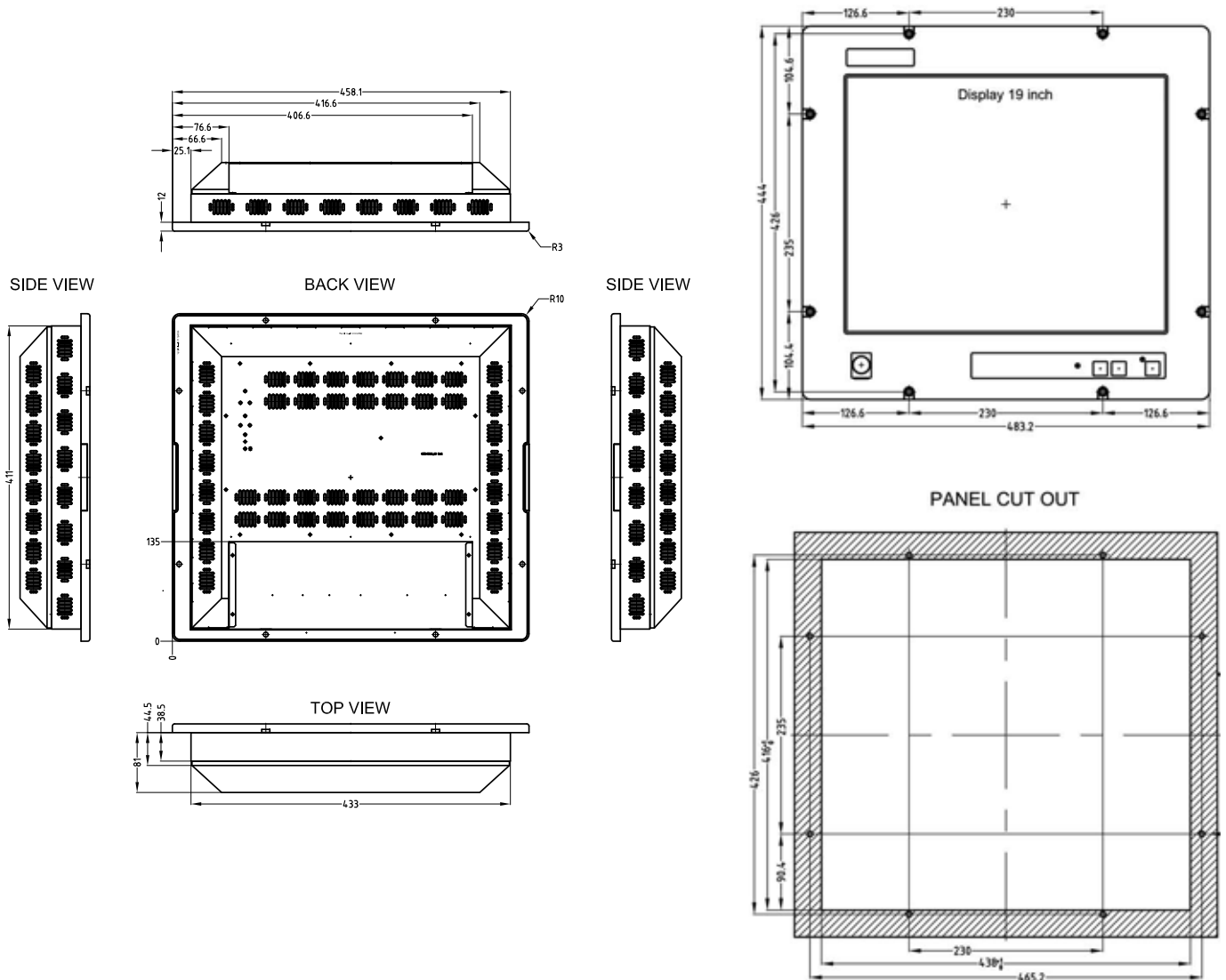
# MTe T190 Nautic



## TECHNICAL DATA (for further data, see page 3.2)

Front panel	
Size in inches	19"
WxH resolution in pixels	1280 x 1024
Contrast ratio	1000:1
Luminous intensity	250 cd/m <sup>2</sup> (typical)
Angle of vision	178° (H/V)
General information	
Outer dimensions in mm WxHxD	483,2 x 444 x 81
Panel profile in mm WxH	438 x 416
Weight	ca. 10.0 kg
Order information	
Description of item	MTe T190 Nautic DC / MTe T190 Nautic AC

## Dimensional drawings in mm



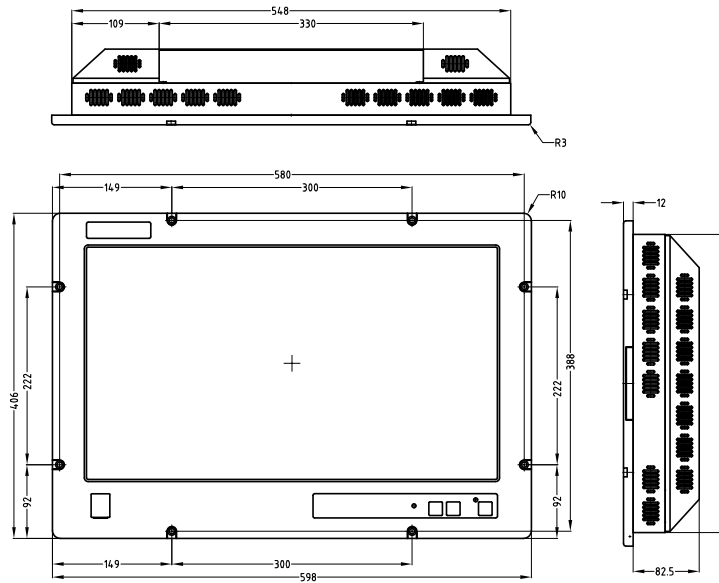
# MTe T240 Nautic



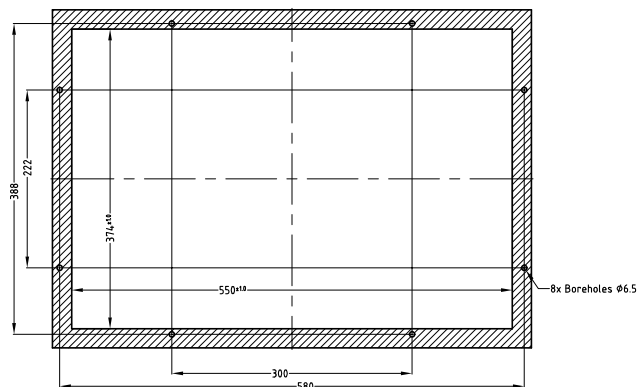
## TECHNICAL DATA (for further data, see page 3.2)

Front panel	
Size in inches	23" wide
WxH resolution in pixels	1920 x 1080
Contrast ratio	1000:1
Luminous intensity	250 cd/m <sup>2</sup> (typical)
Angle of vision	170° (H) / 160° (V)
Type of data entry	Resistive touch (Option: anti-reflective glass)
Degree of protection	IP65 front end; IP20 back end
General information	
Outer dimensions in mm WxHxD	598 x 406 x 95
Panel profile in mm WxH	550 x 374
Weight	ca. 14.0 kg
Certifications	DNV (in progress)
Order information	
Description of item	MTe T240 C2D Nautic DC / MTe T240 C2D Nautic AC

## Dimensional drawings in mm



### PANEL CUTOUT





## EXTER operator panel - Robust functionality in an elegant design

The EXTER product group offers high-performance operator panels which can be used in almost all maritime control processes. This robust operator panel series comes into use when intuitive operation and ergonomic design is required. Typical applications are machine visualization on site with networking to a guidance system, or other processes that require convincing user interfaces.

From outside installation on offshore platforms via space-saving fly bridges assembly up to direct mounting into propulsion engines, these compact panels can be relied on to do their job anywhere. Choose from a variety of devices, equipped with keypads or touch screens with 4 to 15-

inch displays. Use a selection, that offers the right model for almost any application.

### **Reliable in all environments**

The appealingly designed black or light gray, powder-coated aluminum frame and casing provides protection and affords a timeless look. The front enclosure is IP66 classified, which means that it is waterproof even when exposed to high pressure washing. The high-resolution TFT touch display ensures optimal view and wide viewing angles in all conditions. With their low installation depth, they can be used in many narrow environments, such as control desk mounting or directly fixed in the machine. The background

lighting is infinitely dimmable from 100% to 0%. This guarantees a non-glare display even in night-time vision. The units fulfil a broad variety of marine certifications.

### **Easy project development**

With the Information Designer, impressive user interfaces are created quickly and efficiently for the entire EXTER series. Finished masks and graphic objects are integrated into the interface through simple drag and drop. The Designer also creates detailed documentation. This means that accompanying project documents are quickly prepared for the machine description.

# Operator Panel - EXTER black



## Characteristics

- Reliable resistive touch
- 100 % dimmable backlight
- Appealing black design
- Reliable die-cast aluminum housing
- Various certifications for major classification societies
- IP66-classified front
- Compass safe distance defined

## TECHNICAL DATA

<b>Display</b>	
Type of data entry	Resistive Touch
Degree of protection	IP66 / NEMA 4
<b>Voltage supply</b>	
Operating voltage	24 VDC (20 - 30 V)
<b>System</b>	
Processor	XScale
Main memory	12 MB
External storage media (CFC)	yes
Operating system	Windows CE
<b>Interfaces</b>	
Serial	RS232/422/485
Ethernet	10/100 Mbit/s RJ45
USB	USB Host
Communication modules	Profibus DP, MPI, CAN
<b>General information</b>	
Frame material	Aluminum
Front foil	acid-resistant polyester foil
Certifications	GL, ABS, DNV, LR, RINA, CCS, Acc. EN 60945
Operating temperature	0 to 50 °C
Storage temperature	-20 to 60 °C



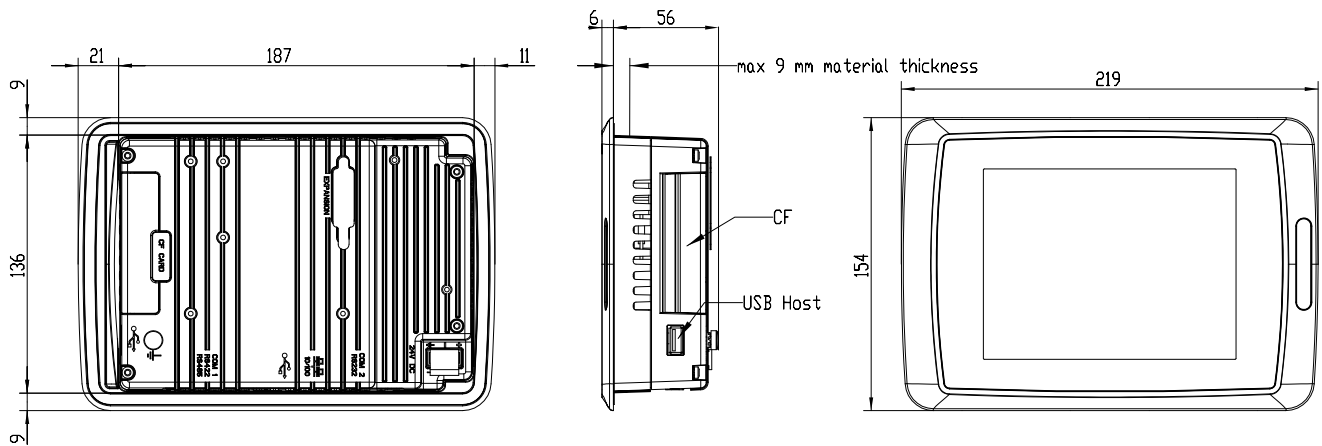
# EXTER T70-bl



## TECHNICAL DATA (for further data, see page 4.2)

<b>Display</b>	
Size in inches	6.5"
WxH resolution in pixels	640 x 480
Coloration	64K color TFT
<b>Voltage supply</b>	
Power consumption	max. 0.9 A
<b>General information</b>	
Outer dimensions in mm WxHxD	219 x 154 x 61
Panel profile in mm WxH	189 x 138
Weight	ca. 1.3 kg
<b>Order information</b>	
Description of item	EXTER T70-bl

## Dimensional drawings in mm



Cut out  
 188.5±1 x 137.5±1 mm  
 (7.42±0.04 x 5.41±0.04 inch)

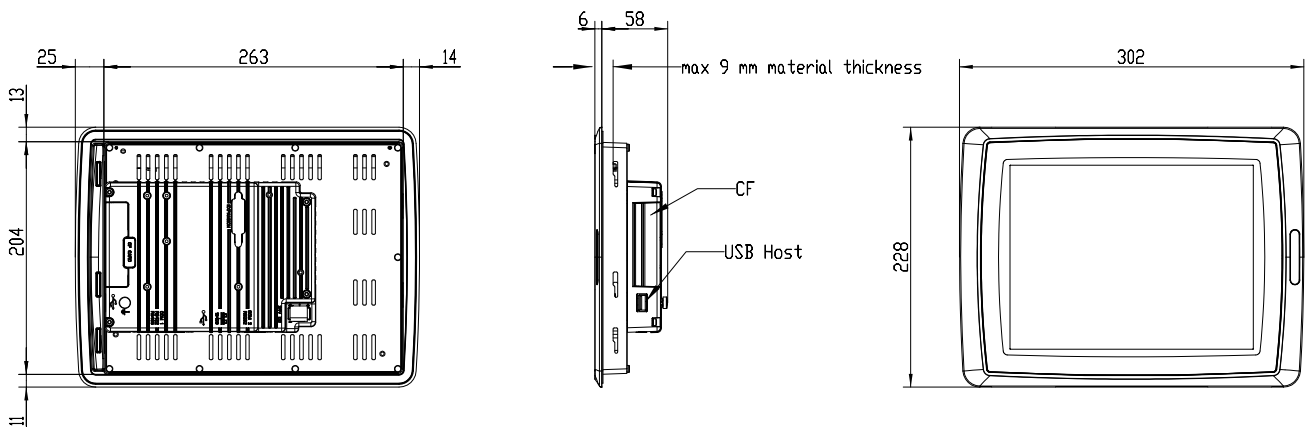
# EXTER T100-bl



## TECHNICAL DATA (for further data, see page 4.2)

<b>Display</b>	
Size in inches	10.4"
WxH resolution in pixels	800 x 600
Coloration	64K color TFT
<b>Voltage supply</b>	
Power consumption	max. 1 A
<b>General information</b>	
Outer dimensions in mm WxHxD	302 x 228 x 64
Panel profile in mm WxH	265 x 206
Weight	ca. 2.5 kg
<b>Order information</b>	
Description of item	EXTER T100-bl

## Dimensional drawings in mm



Cut out  
 $264.5 \pm 1 \times 206 \pm 1$  mm  
 $(10.4 \pm 0.04 \times 8.1 \pm 0.04)$  inch

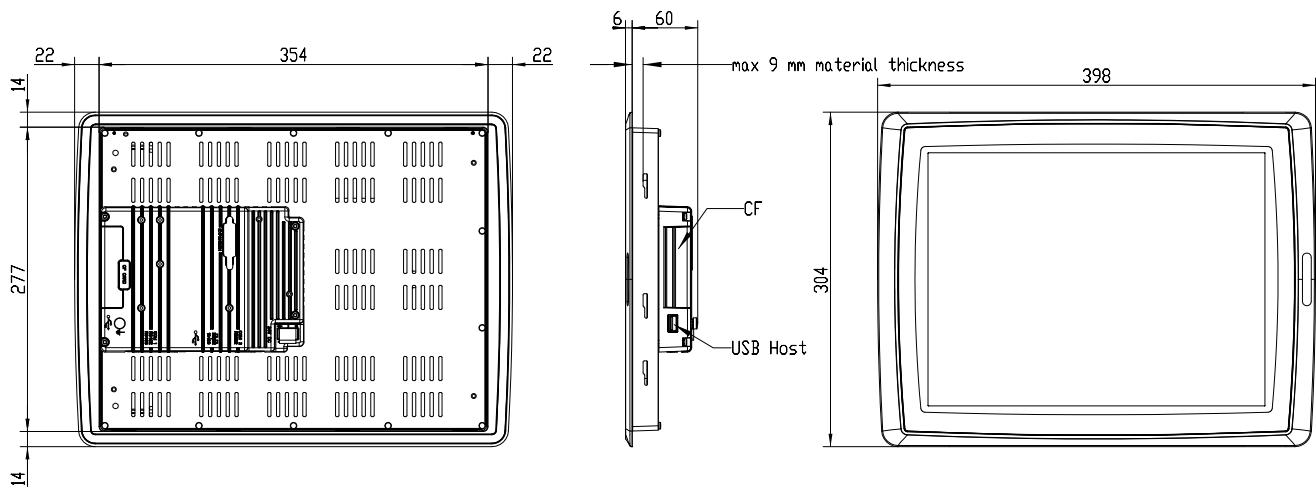
# EXTER T150-bl



## TECHNICAL DATA (for further data, see page 4.2)

<b>Display</b>	
Size in inches	15"
WxH resolution in pixels	1024 x 768
Coloration	64K color TFT
<b>Voltage supply</b>	
Power consumption	max. 1.7 A
<b>General information</b>	
Outer dimensions in mm WxHxD	398 x 304 x 66
Panel profile in mm WxH	356 x 279
Weight	ca. 4 kg
<b>Order information</b>	
Description of item	EXTER T150-bl

## Dimensional drawings in mm



Cut out  
 $355.5 \pm 1 \times 278.5 \pm 1$  mm  
 $(14 \pm 0.04 \times 10.96 \pm 0.04)$  inch

# Operator Panel - EXTER sunlight readable black



## Characteristics

- Reliable resistive touch
- 100% dimmable backlight
- Fully operable even in glare of direct sunlight
- Appealing black design
- Various certifications for major classification societies
- IP66 classified front

## TECHNICAL DATA

<b>Display</b>		
Coloration		64K color TFT
Type of data entry		Resistive touch
Degree of protection		IP66 / NEMA 4
<b>Voltage supply</b>		
Operating voltage		24 VDC (20 - 30 V)
<b>System</b>		
Processor		XScale
Main memory		12 MB
External storage media (CFC)		yes
Operating system		Windows CE
<b>Interfaces</b>		
Serial		RS232/422/485
Ethernet		10/100 Mbit/s RJ45
USB		USB Host
Communication modules		Profibus DP, MPI, CAN
<b>General information</b>		
Frame material		Aluminum
Front foil		acid-resistant polyester foil
Certifications		GL, ABS, DNV, LR, RINA, CCS
Operating temperature		0 to 50 °C
Storage temperature		-20 to 60 °C

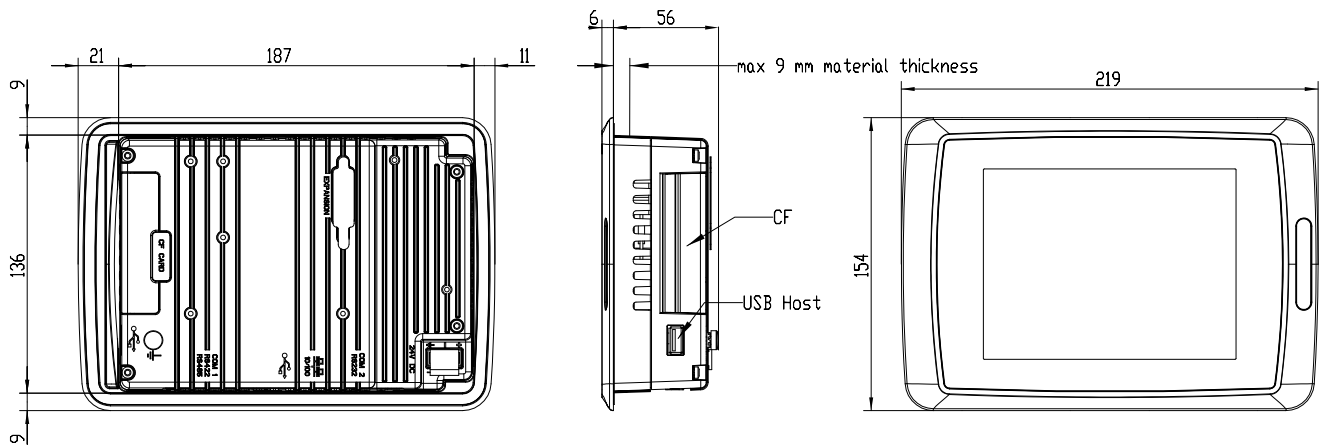
# EXTER T70 sr-bl



## TECHNICAL DATA (for further data, see page 4.6)

<b>Display</b>	
Size in inches	6.5"
WxH resolution in pixels	640 x 480
<b>Voltage supply</b>	
Power consumption	max. 0.9 A
<b>General information</b>	
Outer dimensions in mm WxHxD	219 x 154 x 61
Panel profile in mm WxH	189 x 138
Weight	ca. 1.3 kg
<b>Order information</b>	
Description of item	EXTER T70 sr-bl

## Dimensional drawings in mm



Cut out  
 $188.5 \pm 1 \times 137.5 \pm 1$  mm  
 $(7.42 \pm 0.04 \times 5.41 \pm 0.04)$  inch)

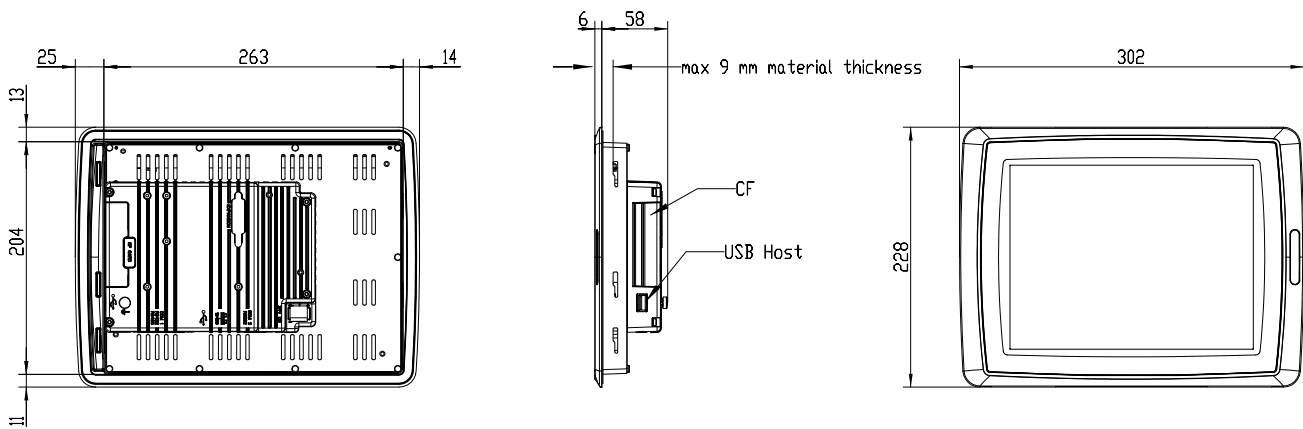
# EXTER T100 sr-bl



## TECHNICAL DATA (for further data, see page 4.6)

<b>Display</b>	
Size in inches	10.4"
WxH resolution in pixels	800 x 600
<b>Voltage supply</b>	
Power consumption	max. 1 A
<b>General information</b>	
Outer dimensions in mm WxHxD	302 x 228 x 64
Panel profile in mm WxH	265 x 206
Weight	ca. 2.5 kg
<b>Order information</b>	
Description of item	EXTER T100 sr-bl

## Dimensional drawings in mm



Cut out  
 $264.5 \pm 1 \times 206 \pm 1$  mm  
 (10.4 ± 0.04 x 8.1 ± 0.04 inch)

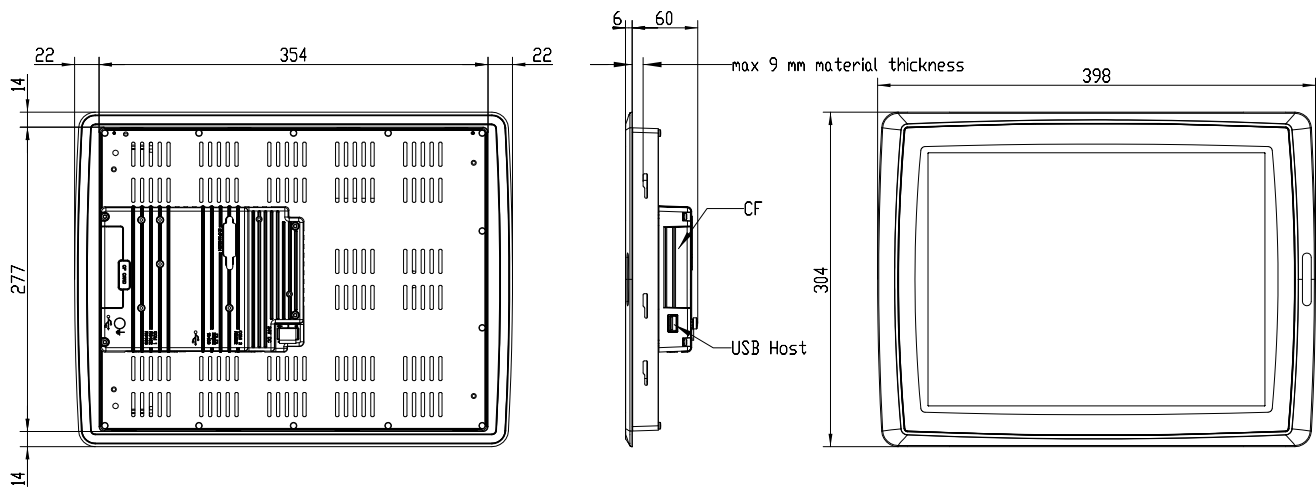
# EXTER T150 sr-bl



## TECHNICAL DATA (for further data, see page 4.6)

<b>Display</b>	
Size in inches	15"
WxH resolution in pixels	1024 x 768
<b>Voltage supply</b>	
Power consumption	max. 1.7 A
<b>General information</b>	
Outer dimensions in mm WxHxD	398 x 304 x 66
Panel profile in mm WxH	356 x 279
Weight	ca. 4 kg
<b>Order information</b>	
Description of item	EXTER T150 sr-bl

## Dimensional drawings in mm



Cut out  
 $355.5 \pm 1 \times 278.5 \pm 1$  mm  
 $(14 \pm 0.04 \times 10.96 \pm 0.04)$  inch

# Operator panel EXTER



## Characteristics

- Reliable resistive touch
- Text display with keypad
- IP66 degree of protection
- LAN interface
- Compact design
- Available sizes:  
3" - 15"

## TECHNICAL DATA - EXTER PRODUCT GROUP

<b>Display</b>	
Degree of protection	IP66 / NEMA 4 front-mounted
<b>Voltage supply</b>	
Operating voltage	24 VDC
Power consumption	See detailed description
<b>System</b>	
Processor	XScale
Application memory	500 kB / 12 MB
External storage medium (CFC)	See detailed description
Operating system	Windows CE
<b>Interfaces</b>	
Serial	1 x RS232 1 x RS222/485
Ethernet	10/100 Mbit/s RJ45
USB	See detailed description
Communications module	Profibus DP, MPI, CAN J1939
<b>General information</b>	
Frame material	Aluminum
Foil	Acid-resistant polyester Foil
Certifications	GL, ABS, DNV, LR, RINA, CCS, Acc. EN 60945
Operating temperature	0 to 50 °C
Storage temperature	-20 to 60 °C



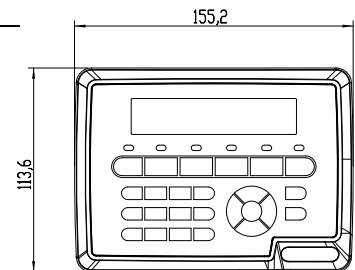
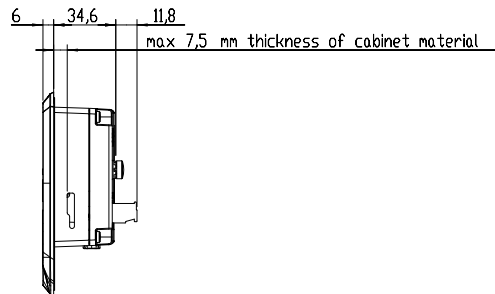
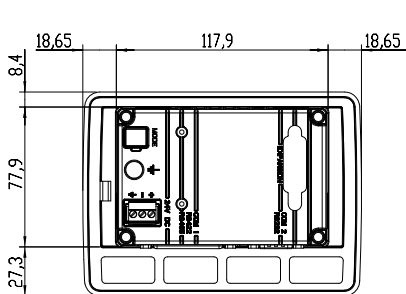
# EXTER K10



## TECHNICAL DATA (for further data, see page 4.10)

<b>Display</b>	
Size in inches	3.6
Resolution in pixels	160 x 32
Coloration	FSTN Monochrome
Type of data entry	Numerical keypad
<b>Voltage supply</b>	
Power consumption	max. 0.3 A
<b>System</b>	
Application memory	500 KB
External storage medium (CFC)	-
<b>Interfaces</b>	
Ethernet	10 Mbit/s RJ45 (as extension module)
USB	-
<b>General information</b>	
External dimensions in mm W x H x D	155 x 114 x 49
Panel profile in mm W x H	121 x 80
Weight	ca. 0.9 kg
<b>Order information</b>	
Description of item	EXTER K10m

## Dimensional drawings in mm



Cut out  
 $121 \pm 1 \times 80 \pm 1$  mm  
 $(4.76 \pm 0.04 \times 3.15 \pm 0.04)$  inch

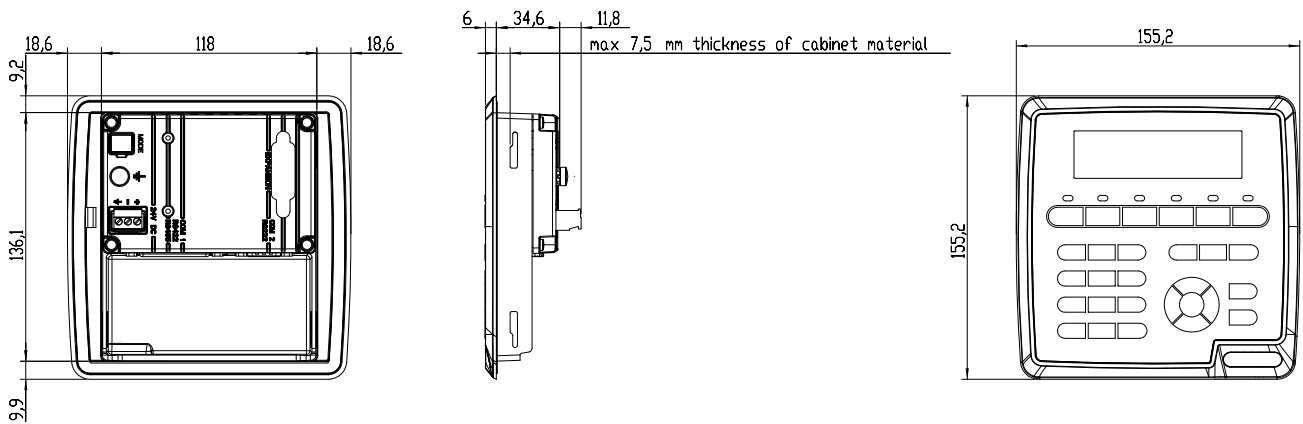
# EXTER K20



## TECHNICAL DATA (for further data, see page 4.10)

<b>Display</b>	
Size in inches	3.6"
Resolution in pixels	240 x 64
Coloration	FSTN monochrome
Type of data entry	Alphanumeric keypad
<b>Voltage supply</b>	
Power consumption	max. 0.3 A
<b>System</b>	
Application memory	500 KB
External storage medium (CFC)	-
<b>Interfaces</b>	
Ethernet	10 Mbit/s RJ45 (as extension module)
USB	-
<b>General information</b>	
External dimensions in mm W x H x D	155 x 155 x 50
Panel profile in mm W x H	120 x 138
Weight	ca. 0.9 kg
<b>Order information</b>	
Description of item	EXTER K20m

## Dimensional drawings in mm



Cut out  
 $138 \pm 1 \times 120 \pm 1$  mm  
 $(5,44 \pm 0,04 \times 4,73 \pm 0,04)$  inch)

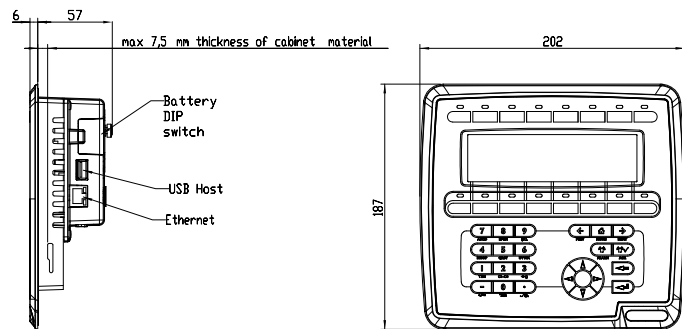
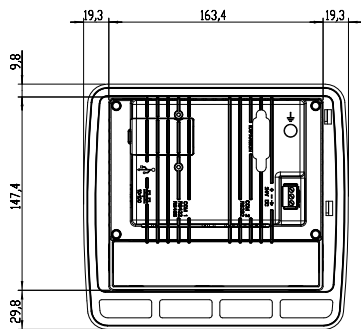
# EXTER K30



## TECHNICAL DATA (for further data, see page 4.10)

<b>Display</b>	
Size in inches	5.2"
Resolution in pixels	240 x 64
Coloration	FSTN monochrome
Type of data entry	Alphanumeric keypad
<b>Voltage supply</b>	
Power consumption	max. 0.35 A
<b>System</b>	
Application memory	12 MB
External storage medium (CFC)	-
<b>Interfaces</b>	
USB	USB host
<b>General information</b>	
External dimensions in mm W x H x D	202 x 187 x 63
Panel profile in mm W x H	166 x 149
Weight	ca. 0.9 kg
<b>Order information</b>	
Description of item	EXTER K30m

## Dimensional drawings in mm



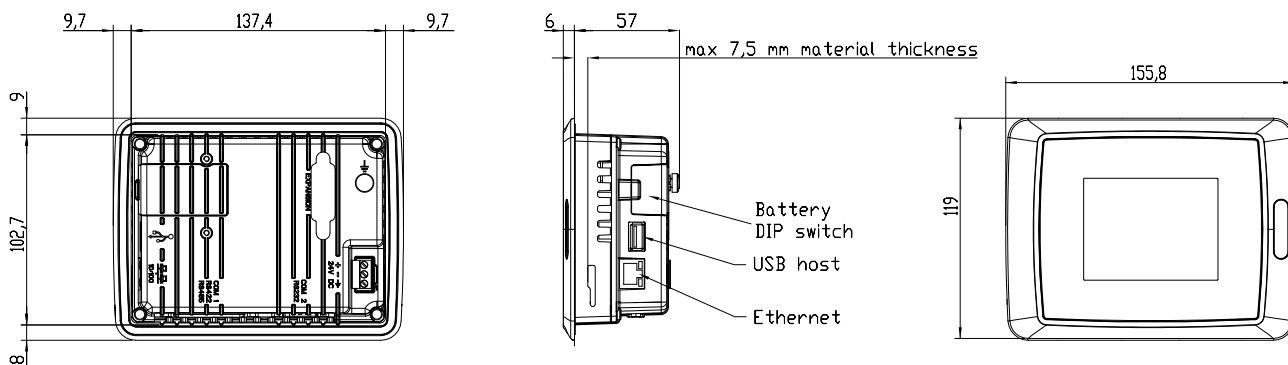
Cut out  
 166±1 x 149±1 mm  
 (6.54±0.04 x 5.87±0.04 inch)

# EXTER T40



TECHNICAL DATA (for further data, see page 4.10)	
<b>Display</b>	
Size in inches	3.5 "
Resolution in pixels	320 x 240
Coloration	65,000 colors TFT / B/W
MTBF backlight	> 10,000 hrs
Type of data entry	Resistive touch
<b>Voltage supply</b>	
Power consumption	max. 0.35 A
<b>System</b>	
Application memory	12 MB
External storage medium (CFC)	-
<b>Interfaces</b>	
USB	USB host
<b>General information</b>	
External dimensions in mm W x H x D	155 x 119 x 63
Panel profile in mm W x H	139 x 105
Weight	ca. 0.6 kg
<b>Order information</b>	
Description of item	EXTER T40 / EXTER T40m

## Dimensional drawings in mm



Cut out  
 139±1 x 105±1 mm  
 (5.47±0.04 x 4.13±0.04 inch)

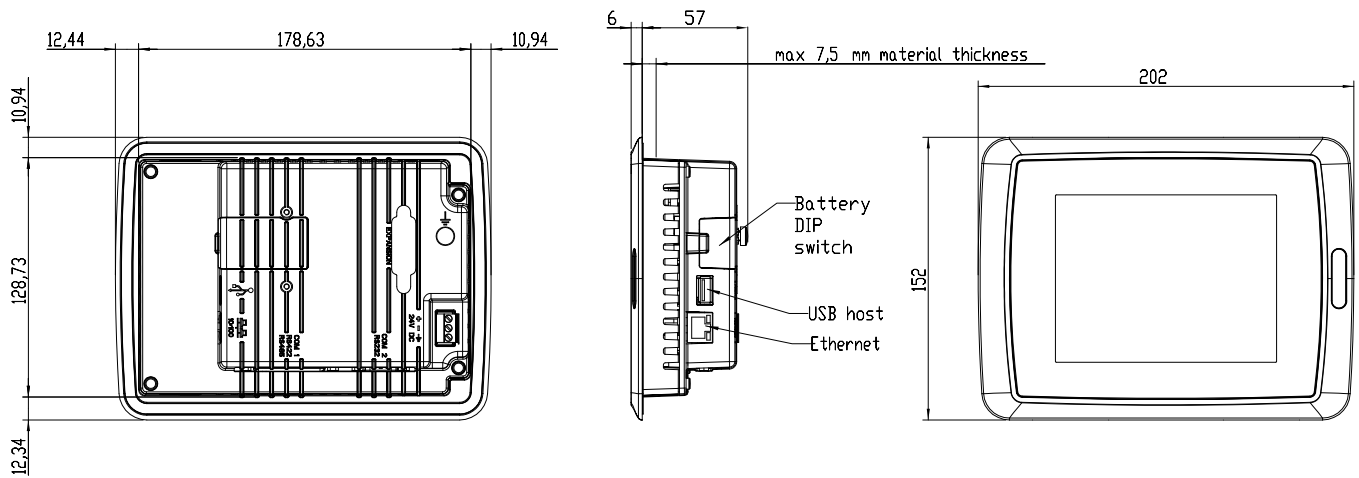
# EXTER T60



## TECHNICAL DATA (for further data, see page 4.10)

<b>Display</b>	
Size in inches	5.7"
Resolution in pixels	320 x 240
Coloration	65,000 colors TFT / B/W
MTBF backlight	> 40,000 hrs
Type of data entry	Resistive touch
<b>Voltage supply</b>	
Power consumption	max. 0.45 A
<b>System</b>	
Application memory	12 MB
External storage medium (CFC)	-
<b>Interfaces</b>	
USB	USB host
<b>General information</b>	
External dimensions in mm W x H x D	201 x 152 x 63
Panel profile in mm W x H	180 x 130
Weight	ca. 0.9 kg
<b>Order information</b>	
Description of item	EXTER T60 / EXTER T60m

## Dimensional drawings in mm



Cut out  
 180±1 x 130±1 mm  
 (7.09±0.04 x 5.12±0.04 inch)

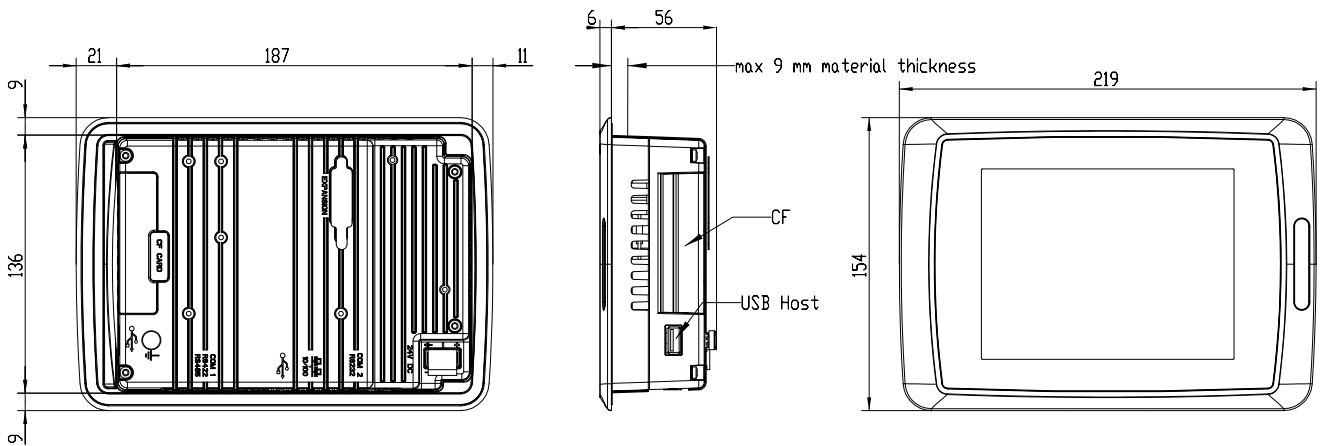
# EXTER T70



## TECHNICAL DATA (for further data, see page 4.10)

<b>Display</b>	
Size in inches	6.5"
Resolution in pixels	640 x 480
Coloration	65,000 colors TFT
MTBF backlight	> 40,000 hrs
Type of data entry	Resistive touch
<b>Voltage supply</b>	
Power consumption	max. 0.9 A
<b>System</b>	
Application memory	12 MB
External storage medium (CFC)	yes
<b>Interfaces</b>	
USB	USB host
<b>General information</b>	
External dimensions in mm W x H x D	219 x 154 x 61
Panel profile in mm W x H	189 x 138
Weight	ca. 1.3 kg
<b>Order information</b>	
Description of item	EXTER T70

## Dimensional drawings in mm



Cut out  
 $188.5 \pm 1 \times 137.5 \pm 1$  mm  
 $(7.42 \pm 0.04 \times 5.41 \pm 0.04)$  inch

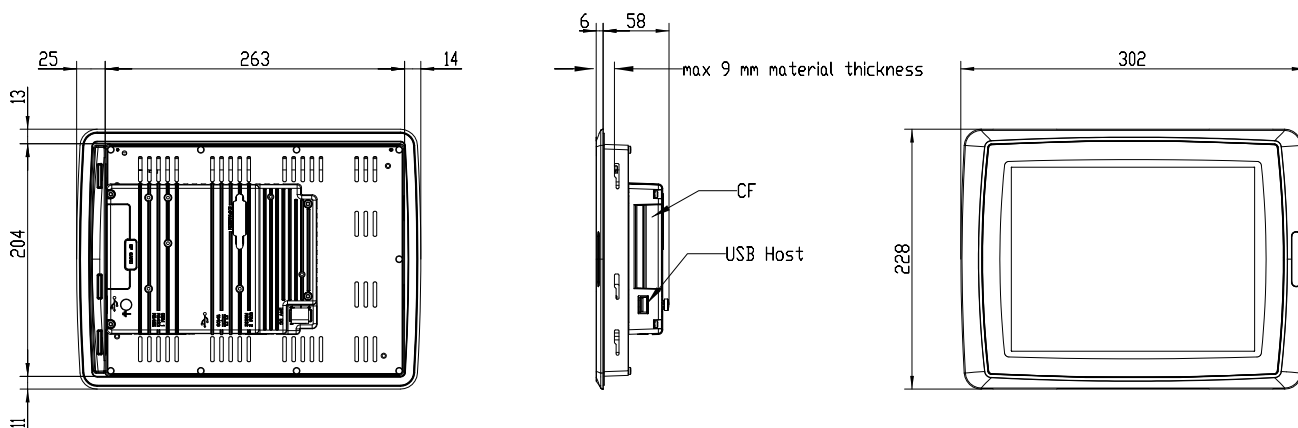
# EXTER T100



## TECHNICAL DATA (for further data, see page 4.10)

<b>Display</b>	
Size in inches	10.4"
Resolution in pixels	800 x 600
Coloration	65,000 colors TFT
MTBF backlight	> 40,000 hrs
Type of data entry	Resistive touch
<b>Voltage supply</b>	
Power consumption	max. 1 A
<b>System</b>	
Application memory	12 MB
External storage medium (CFC)	yes
<b>Interfaces</b>	
USB	USB host
<b>General information</b>	
External dimensions in mm W x H x D	302 x 228 x 64
Panel profile in mm W x H	265 x 206
Weight	ca. 2.5 kg
<b>Order information</b>	
Description of item	EXTER T100

## Dimensional drawings in mm



Cut out  
 $264.5 \pm 1 \times 206 \pm 1$  mm  
 $(10.4 \pm 0.04 \times 8.1 \pm 0.04)$  inch

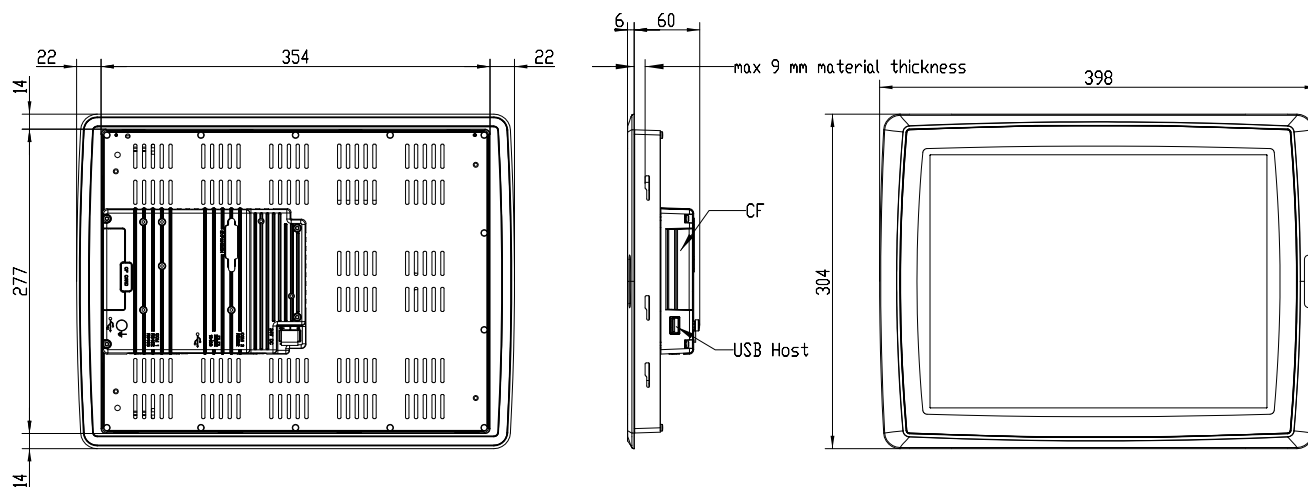
# EXTER T150



## TECHNICAL DATA (for further data, see page 4.10)

<b>Display</b>	
Size in inches	15"
Resolution in pixels	1024 x 768
Coloration	65,000 colors TFT
MTBF backlight	> 40,000 hrs
Type of data entry	Resistive touch
<b>Voltage supply</b>	
Power consumption	max. 1.7 A
<b>System</b>	
Application memory	12 MB
External storage medium (CFC)	yes
<b>Interfaces</b>	
USB	USB host
<b>General information</b>	
External dimensions in mm W x H x D	398 x 304 x 66
Panel profile in mm W x H	356 x 279
Weight	ca. 4 kg
<b>Order information</b>	
Description of item	EXTER T150

### Dimensional drawings in mm



Cut out  
 355.5±1 x 278.5±1 mm  
 (14±0.04 x 10.96±0.04 inch)



# Accessories - Desktop mount bracket

## Characteristics

- Adjustable inclination angle for flexible orientation
- Robust construction ensures perfect standing
- Rugged design meets specifics of maritime requirements
- Appealing black maritime design
- Each holder suits two display sizes



**Desktop mount bracket  
17" + 19"**



**Desktop mount bracket  
21" + 23"**

## TECHNICAL DATA

Display				
For Size in inches	17"	19"	21"	23"
General information				
Frame material	Powder coated hot-dip galvanized steel		Powder coated hot-dip galvanized steel	
Outer dimensions in mm WxHxD	437 x 408 x 185.9	489.2 x 408 x 185.9	532 x 487.8 x 214.1	584 x 487.8 x 214.1
Weight	ca. 6 kg		ca. 8 kg	
Order information				
Description of item	Device holder 17" / 19" Nautic		Device holder 21" / 23" Nautic	

The device holders are specially developed for rugged maritime environments. They are manufactured so that Beijer Electronics maritime monitors and panel PCs are installed accurately. The device holder's appealingly black design is perfectly suited to extravagant floating bridges

as well as in lower deck control rooms. Thanks to the robust hot-dip galvanized steel, it is extremely solid. For optimum display orientation, the inclination angle can be adjusted in several steps. Each device holder can be used for two different unit sizes.





## Navigation monitors for integrated bridges

The control of ships and vessels is in constant change. The new generation of integrated bridges combines nautical functions such as RADAR, Chart RADAR, ECDIS and Conning with the integration of additional applications and data. All information is stored at every single workstation and distributed across the redundant bridge network allowing access to any desired task from any work place connected to the network.

### Efficient navigation

This type of bridge control is designed to make navigation more efficient, ease installation, simplify operation for users and finally help to reduce

ship's running costs. To realize integrated control, appropriate display components are needed. Monitors with large enough displays to visualize a standardized RADAR circle and ECDIS are essential. Additionally the way of installation should be flexible enough to integrate the components into the bridge fulfilling the owner's demands. It doesn't matter whether the monitors shall be used in front or rear installation. Depending on the demand the display frame needs to be flexible to use as well.

### Designed for integration

Beijer Electronics monitor series MT NAV is especially designed to fulfil all the requirements for

integrated bridge control and offer flexibility in product design. All monitors conform to the demands according to ECDIS (EN 60xxx), RADAR and general bridge usage (EN 60945). Furthermore it meets high navigation requirements and include a number of useful functions.

If you want to learn more about Beijer Electronics navigation monitor series, please contact your local sales representative under [www.beijerelectronics.com](http://www.beijerelectronics.com).

# Maritime Certifications

Panel/System	CE	LR	BV	GL	DNV	ABS	RS	RINA	CCS	Acc. <sup>1</sup> EN 60945
iX Panel										
iX Panel T4A	✓				✓					
iX Panel T7A	✓				✓					
iX Panel T10A	✓				✓					
iX Panel TA70 AM bl										
iX Panel TA70 AM bl	✓				✓					
iX Panel TA100 AM bl	✓				✓					
iX Panel TA150 AM bl	✓				✓					
iX Panel Pro										
iX Box Pro C2D Nautic DC * / AC *	✓	✓	✓	✓	✓	✓	✓			✓
iX Panel Pro T150* C2D Nautic DC * / AC *	✓	✓	✓	✓	✓	✓	✓			✓
iX Panel Pro T170* C2D Nautic DC * / AC *	✓	✓	✓	✓	✓	✓	✓			✓
iX Panel Pro T190* C2D Nautic DC * / AC *	✓	✓	✓	✓	✓	✓	✓			✓
iX Panel Pro T240* C2D Nautic DC * / AC *	✓				✓					
EXTER										
EXTER T70-bl	✓			✓	✓	✓	✓		✓	✓
EXTER T100-bl	✓			✓	✓	✓	✓		✓	✓
EXTER T150-bl	✓			✓	✓	✓	✓		✓	✓
EXTER T70sr-bl										
EXTER T70sr-bl	✓			✓	✓	✓	✓		✓	
EXTER T100sr-bl										
EXTER T100sr-bl	✓			✓	✓	✓	✓		✓	
EXTER T150sr-bl										
EXTER T150sr-bl	✓			✓	✓	✓	✓		✓	
EXTER K10m										
EXTER K10m	✓				✓	✓	✓	✓	✓	
EXTER K20m										
EXTER K20m	✓				✓	✓	✓	✓	✓	
EXTER K30m										
EXTER K30m	✓			✓	✓	✓	✓	✓	✓	
EXTER T40										
EXTER T40	✓			✓	✓	✓	✓	✓	✓	
EXTER T60										
EXTER T60	✓				✓	✓	✓	✓	✓	
EXTER T70										
EXTER T70	✓			✓	✓	✓	✓	✓	✓	✓
EXTER T100										
EXTER T100	✓			✓	✓	✓	✓	✓	✓	✓
EXTER T150										
EXTER T150	✓			✓	✓	✓	✓	✓	✓	✓

## LEGEND

Lloyd's Register (LR)



Bureau Veritas (BV)



Germanischer Lloyd (GL)



Det Norske Veritas (DNV)



American Bureau of Shipping (ABS)



Panel/System	CE	LR	BV	GL	DNV	ABS	RS	BSH (Modul B)	Acc. <sup>1</sup> EN 60945
MT 260 Nav AC (only with glass)	✓							✓	✓
MTe T150 Nautic DC * / AC *	✓	✓	✓	✓	✓	✓	✓		✓
MTe T170 Nautic DC * / AC *	✓	✓	✓	✓	✓	✓	✓		✓
MTe T190 Nautic DC * / AC *	✓	✓	✓	✓	✓	✓	✓		✓
MTe T240 Nautic DC * / AC *	✓				✓				
EPC Box C2D Nautic DC / AC	✓	✓	✓	✓	✓	✓	✓		✓
EPC T150 C2D Nautic DC * / AC *	✓	✓	✓	✓	✓	✓	✓		✓
EPC T170 C2D Nautic DC * / AC *	✓	✓	✓	✓	✓	✓	✓		✓
EPC T190 C2D Nautic DC * / AC *	✓	✓	✓	✓	✓	✓	✓		✓
EPC T240 C2D Nautic DC * / AC *	✓				✓				
EPC T80 LX Nautic	✓			✓					
EPC T100 LX Nautic	✓			✓					
EPC TA70 AM Nautic DC *	✓				✓				
EPC TA100 AM Nautic DC *	✓				✓				
EPC TA150 AM Nautic DC *	✓				✓				

\* Panels available with anti-reflective glass  
in progress

<sup>1</sup> for bridge applications

Russian Maritime Register of Shipping (RS)



Register Italiano Navale (RINA)



Bundesamt für Seeschifffahrt

und Hydrographie (BSH)



China classification society (CCS)





## References

National and international companies build on the products, the know-how and support from Beijer Electronics. Our innovative products are used by, among others, the following:

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Besecke

Blom & Voss

Brunvoll

Callenberg Engineering

Converteam

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Hoppe Bordmesstechnik

Interschalt

L3-COM

MAN Diesel

Pleiger

Rolls-Royce Marine

RWO

Scandinavian Electric

STX

Team Italia

Ulstein Elektro

Volvo Penta

Wiska CCTV

Wärtsilä Propulsion



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## Beijer Electronics

Beijer Electronics is a fast growing technology company with extensive experience of industrial automation and data communication. The company develops and markets competitive products and solutions that focus on the user. Since its start-up in 1981, Beijer Electronics has evolved into a multinational group present in 16 countries and sales of 180 MUSD 2010. The company is listed on the NASDAQ OMX Nordic Exchange Stockholm Small Cap list under the ticker BELE. [www.beijerelectronics.se](http://www.beijerelectronics.se)

*Further information you will find on [www.beijerelectronics.com](http://www.beijerelectronics.com)*

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