PLANAR

Dome E4c Display
User's Guide

020-0436-00A

Product Information

The design of the Dome E4c digital display takes into account every known measure to ensure your personal safety. Improper use of the display can result in electric shock, fire, or damage to the display. Read all instructions before setting up the display.

Classification:

Shock Protection: Class I.

Degree of Protection Against Electric Shock: No applied part.

Degree of Protection Against Harmful Ingress of Water: Ordinary equipment (IPX0).

Degree of Safety in the Presence of Flammable Anaesthetic Mixture with Air or with Oxygen or Nitrous Oxide: Not suitable for use in the presence of a flammable anaesthetic mixture with air or with oxygen or nitrous oxide.

Mode of Operation: Continuous.

Important recycle instruction:

LCD lamp(s) inside this product contain mercury. This product may contain other electronic waste that can be hazardous if not disposed of properly. Recycle or dispose in accordance with local, state, or federal laws. For more information, contact the Electronic Industries Alliance at WWW.EIAE.ORG. For lamp-specific disposal information, check WWW.LAMPRECYCLE.ORG.

Symbol explanations

DISPOSAL. Do not use household or municipal waste collection services for disposal of electrical and electronic equipment. EU countries require the use of separate recycling collection services.

CAUTION. Read the accompanying text carefully, for proper operation and maintenance of the display system.

DANGEROUS VOLTAGE. Important precautions about electric shock. Read the accompanying text carefully, to prevent damage to components of the display system and for your safety.

DIRECT CURRENT.

BAROMETRIC PRESSURE. Maximum operating altitude, up to 3,048 meters (10,000 feet). Maximum unpressurized shipping and storage altitude, up to 12,192 meters (40,000 feet).

RELATIVE HUMIDITY. Operating 10% to 90% (non-condensing). Transport and storage 5% to 90% (non-condensing).

TEMPERATURE. Operating 0° to 40° C. (Ambient air temperature surrounding the display.) Transport and storage -10° to 60° C. (NOTE: After shipping or storage, allow display unit to reach room temperature before powering on. Ambient room temperature ranges from 20° to 25° C (68° to 77° F).

Intended use

The Dome E4c display is an AMLCD unit designed for viewing medical X-ray images. This unit should not be used near patients and should be kept outside of 1.83 m perimeter and 2.29 m vertical.

This device must not be used in primary image diagnosis in mammography.

CAUTION: Federal law restricts this device to sale by or on the order of a medical practitioner.

Safety precautions

External equipment intended for connection to signal input, signal output, or other connectors, must comply with the relevant IEC standard (EN/IEC 60601-1 series for medical electrical equipment). In addition, all such combinations (systems) must comply with the standard IEC 60601-1-1, Safety requirements for medical electrical systems.

Equipment not complying to IEC 60601 must be kept outside the patient environment, as defined in the standard as at least 1.5 meters from the patient or the patient support.

Any person who connects external equipment to signal input, signal output, or other connectors has formed a system and is therefore responsible for the system to comply with the requirements of IEC 60601-1-1. If in doubt, speak with a qualified technician.

Safety tips

- Never open the display case, even when the power is off. Do not drop or push objects into the display case. Dangerous voltage inside may cause electric shock or death.
- Use the grounded power supply and the video cable supplied by Planar. Replace the power supply or video cable if damaged.
- Be sure the display is electrically grounded. Connect the third grounding pin on the US power cord to a grounded outlet. The European power cord does not have a third grounding pin, but it must be plugged into a grounded outlet. If the power cord connects directly into the computer, make sure the computer is grounded.
- Keep the display dry if it is part of a surgical system. The display lacks protection against liquids or spills.
- Do not plug the power supply into an overloaded AC outlet or extension cord. Overloaded AC outlets and cords can result in electric shock or fire.
- Unplug the power cord from the wall outlet during thunderstorms.
- Do not place magnetic devices, such as motors, near the display.
- **In locations where 240V outlets are used, use the E4c display only on a center-tapped, 240V, single-phase supply.**

GROUNDING RELIABILITY CAN ONLY BE ACHIEVED WHEN EQUIPMENT IS CONNECTED TO AN EQUIVALENT RECEPTABLE MARKED “HOSPITAL ONLY” OR “HOSPITAL GRADE.”

Unpacking and handling tips

The Dome E4c display is a precision instrument that requires proper care to maintain adherence to specification. Unpack the display carefully, then set up and handle the unit properly to avoid damage to the LCD panel.

- Use both hands to grasp the display case when lifting it from the shipping carton, but avoid touching the screen.
- Do not apply pressure to the screen or touch the screen with bare fingers or objects. Pressure can affect image quality.
- Allow the display to warm to room temperature before turning it on. Avoid sudden temperature changes in environment to prevent condensation.
- Secure the display onto the Planar-supplied wall or cart mounting hardware to ensure safety if you elect not to use the desk stand.
- Do not set up the display near strong light or heat sources.
- Do not block the vents on the display or install the display in a built-in enclosure. Blocked vents cause excessive heat inside the display.
- Do not remove the back cover or disassemble the display. There are no user-serviceable parts inside.

Shipping/storing the display

Keep the display in its shipping container until installation. Return the display to its original container whenever you need to store the unit, move it to another location, or return it for repair.

Cleaning the display unit

Periodically wipe the display housing with a soft, dry cloth to prevent dust and other material from clogging the venting holes.

The display screen can be damaged by excessive scrubbing and by incompatible cleaning solvents. Dampen a clean, soft lint-free cloth with distilled de-ionized water and wipe the screen gently. Use a clean, soft, dry lint-free cloth to remove any residue.

To remove grease or other organic contaminants from the display screen, use a 50% to 70% IPA (isopropyl alcohol) solution sparingly. Never use acetone, as it can damage the antistatic hard coating and void the warranty.

WARNING
DISCONNECT SUPPLY BEFORE SERVICING

AVERTISSEMENT
COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DEPANNAGE

Disposal information

Follow your local governing ordinance for proper disposal or recycling of electronic components.

AMLCD panel mounted on desk stand

PCI Express display controller

DC power adapter

Power cords

Dual-link DVI cable

Quick reference

Display driver and calibration software

Options available: VESA wall-mounting kit and Dome Surgery Review Cart. See page 8 for more information.

About the Display

The Dome E4c display is a 30-inch AMLCD color panel designed for widescreen diagnostic imaging. The combination of high resolution and high contrast ratio allow the viewing of color and grayscale images simultaneously.

Bezel-free framing of 4 megapixels of data is presented in a landscape resolution of 2560 x 1600 pixels. Gamma correction is achieved on this true color display from a palette of 1786 near-gray values. The integrated Dome RightLight Controller monitors and stabilizes backlight luminance.

The display unit includes a PCI Express graphics card to support the required dual-link connectivity for the display, and an external power adapter.

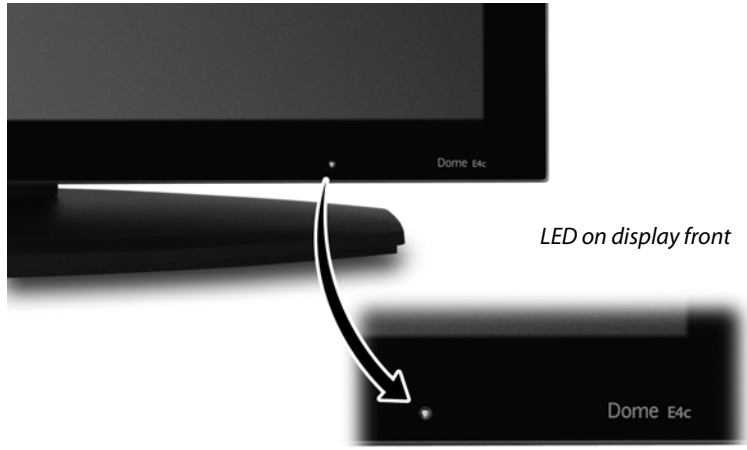
System requirements

- Intel Pentium 4/Xeon; AMD Athlon 64/K7/XP or compatible
- PCI Express x16 lane slot
- 50 MB hard disk space
- 256 MB RAM
- CD-ROM drive
- Power supply, 350 watts or greater
- Windows XP or Windows 2000 with Service Pack 4 or higher

Display components

The Dome E4c display has a light-emitting diode, or LED, on the front panel to indicate display status.

- Green. The display is connected and running properly.
- Amber. The video signal is not being received



LED on display front

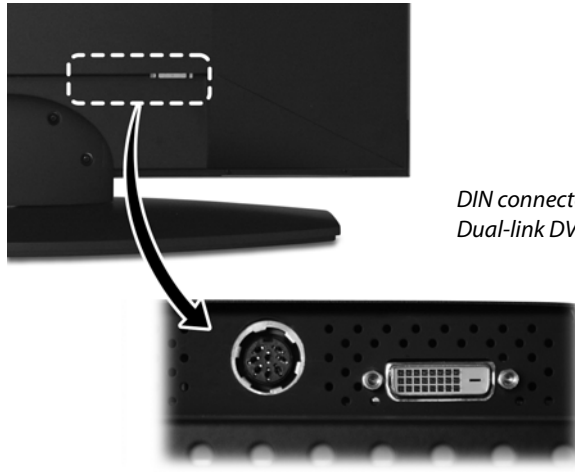
There is no power switch on the display unit. The unit turns on automatically when the computer system is turned on. The LED appears green to indicate functional system, or normal operation.

Improper cable connections could cause no image to appear on the display screen or the LED to glow amber. See "Troubleshooting" on page 9 for more information.

The ports for connecting the power cord and the video cable are on the back. The power input port is an 8-pin DIN connector that drives power to the display. The power input is 24V ±5% (115 W typical). See detail below for pin assignment.

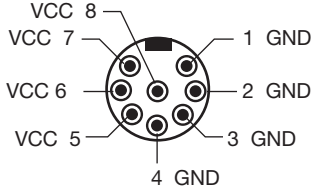
The dual-link DVI connector drives the data to the display. When the DVI cable is disconnected, the display backlight turns off and the unit enters power-saving mode.

Display brightness and power saving functions are controlled via the Dome CXtra software. No other user-accessible controls are available.



DIN connector, left
Dual-link DVI connector, right

Pin assignment of DIN connector



8-pin connector on Dome E4c display

Display Installation

Before you install the display controller, remove any existing graphics card and its driver from your computer. After installation, the display turns on automatically when you turn on your computer system.

WARNING

In locations where 240V outlets are used, use the E4c display only on a center-tapped, 240V, single-phase supply.

Turn off your computer before you install the board, but leave the power cord plugged into the grounded outlet. Otherwise, you could get an electric shock and cause damage to the components.

To prevent electrostatic discharge, take these precautions:

- Remove the controller slowly from its static-shielding bag.
- Wear an antistatic wrist strap.
- Repeatedly touch the power supply or the metal surface of the computer chassis to discharge your body's static electricity.

Installing the controller and display

1 Remove the computer cover and the blank bracket from the available PCI Express slot.

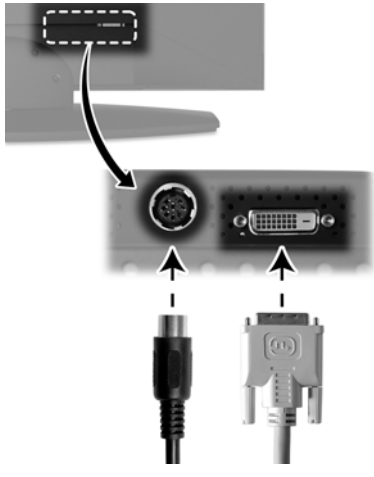
2 Insert the display controller into the slot, align the connector pins, and press the board down until it is firmly seated. Secure the mounting bracket and reattach the cover.

3 Plug the DC power cord into the power input port on the display. Connect the dual-link DVI cable to the display.

4 Connect the DVI cable to the display controller installed in the computer. Use video port #1. Plug the AC power cord into the power adapter and into the grounded power outlet.

1 *Remove the computer cover and the PCI Express bracket.*

2 *Install the board and reattach the cover.*



3 *Connect the power adapter cord and the dual-link DVI cable to the display.*

4 *Connect the DVI cable to port #1 of the installed controller and plug the power cord to the grounded outlet.*

Installing the display driver

Before you install the driver, remove any previously installed display driver for the display controller from your system.

1 Start the system. Click Cancel on the Found New Hardware Wizard. Click No when the system prompts you restart the computer.

2 Insert the driver installation CD and run SETUP.EXE.

3 Click Next.

4 Click Yes to the license agreement. The installation starts.

5 Follow the onscreen instructions to complete the installation. Planar recommends that you select the Express installation option.

6 When the Setup complete message appears, select Yes, I want to restart my computer now, and click Finish.

7 If the Digital Signature Not Found message appears, click Yes or Continue to complete the driver installation.

Configuring the display

1 Right-click the desktop and select Properties > Settings.

2 Use the native resolution of the display.

3 Click OK until you return to the desktop.

Adjusting display properties

Use the Display Properties dialog to make changes to the video settings.

Setting the display mode

1 Right-click the desktop and select Properties > Settings.

2 Select the monitor that you want to change. Then click Advanced.

3 Click the Monitor tab. Make sure that the check box for Hide modes that this monitor cannot display is empty (unchecked).

4 Click the Adapter tab, then click the List All Modes button.

5 Choose the mode and click OK.

6 Click Apply or OK.

Display information is read via the DDC interface between the graphics board and the display interface board. The video board driver configures timing parameters using the EDID of the display. Any rotation support is provided by the display controller, which also provides lookup table support for gamma correction.

Setting brightness

You must have the Dome CXtra software installed to change the display brightness. Adjust the value of the white level on the Backlight tab of the RightLight Panel Configuration.

Removing the driver

1 Close all applications that are running.

2 Navigate to the Control Panel. Select Add/Remove Programs.

3 Select your current graphics card drivers. Select Add/Remove. Follow the wizard to remove your current display drivers.

4 Restart your system.

Installing Dome CXtra

Bundled with the display system, the Dome CXtra software enhances the functionality of the Dome E4c display with a range of value-added services, such as DICOM calibration, error reporting, and backlight saver. Network management of Dome displays running the Dome CXtra software require the Enterprise Management Service for Dome CXtra. For more information and instructions on installation, refer to *Dome CXtra User's Guide*.

Conserving energy use

You have two ways to lower energy usage when the display is idle:

- Dome CXtra Backlight Saver service (preferred)
- Screen Saver (set via Windows operating system)

Activate the power saver when you anticipate periods of inactivity, such as at the end of the work day or work week. Once activated, Backlight Saver (or Screen Saver) automatically turns the backlight off during the period of inactivity. Backlight Saver and Screen Saver both extend the life of the backlight and reduce the burn-in of images.

Do not use the Backlight Saver and Screen Saver concurrently.

Options available

The following options are available for the Dome E4c display.

- VESA (100 mm x 200 mm) wall-mounting kit
- Dome Surgery Review Cart

WARNING: Use only the mounting devices supplied by Planar to attach the display to the wall unit or to the cart. Failure to use the specified device or to follow the mounting instructions exactly could be hazardous.

Troubleshooting

Problem	Possible Cause	Solution
Display does not light up.	Power is not on.	Make sure that the computer is turned on. Activate the computer from sleep mode.
	Power cord is not securely connected.	Tighten power cord connection and turn on computer.
No image appears on the screen	Video cable is not securely connected.	Check to see that all cables are properly connected to the computer and to the display. Make sure that DVI cable is connected to the video #1 port on the display controller.
Power LED is amber.	Video cable is not securely fastened.	Turn off the computer. Make sure that the video cable is properly connected to the display and to the display controller. Check the computer power and graphics adapter configuration.

Specification

In locations where 240V outlets are used, use the E4c display only on a center-tapped, 240V, single-phase supply.

Category	Characteristic Item	Specification
Screen	Screen size diagonal	756.228 mm (30 in.)
	Resolution	2560 x 1600 pixels (landscape)
	Pixel pitch	0.2505 mm, 101 dpi
	Pixel arrangement	RGB vertical stripe
	Active area	641.28 mm x 400.8 mm (25.25 in. x 15.78 in.)
	Number of colors supported	16.7 million colors, 256 shades of gray from a palette of 1786 near-gray shades
	Refresh rate	60 Hz
	Contrast ratio	600:1 (typical)
	Brightness	300 cd/m^2 (typical) – protective glass model 330 cd/m^2 (typical) – open bezel model
	Pixel rise/fall time	14 ms typical Black-White 11 ms typical Gray-Gray
	Viewing angle	± 85° (170°) horizontal ± 85° (170°) vertical
Interface	Digital Video In	DVI Rev. 1.0 digital dual-link connector
	Display control – Brightness/contrast	DDC2B+
	Display identification	EDID read using DDC2B+
	Display status	LED on front of unit
Input formats	Landscape orientation	2560 x 1600 (24-bit color)
	VGA/XGA	640 x 480 –1280 x 800
Physical	Screen type	AMLCD (active matrix liquid crystal display)
	Protective glass	Antistatic hard coating (3H)
	Display size (without stand)	713 mm x 473 mm x 72 mm (28.0 in. x 18.6 in. x 2.8 in.) nominal
	Display weight (without stand)	12.7 kg (28 lb)
	Mounting options	Desktop stand (standard); 100 mm x 200 mm VESA wall mount (optional)
Power requirements	Power supply	100 ~ 240 VAC 50 ~ 60 Hz universal Auto Switching with Medical Approvals and PFC
	Input voltage	+24 V ±5%
	Power consumption	115 Watts typical

Power supply

CAUTION: Use only the power adapter supplied with the E4c display unit (JEC Korea Corporation, Type JMW1150KA2423F51).

Category	Characteristic Item	Specification
Power input requirements	Voltage selection	Auto-ranging
	Voltage	100 – 240V AC
	Current	3.0 A
	Frequency	47 to 63 Hz
Power output requirements	Voltage	24 V DC ±5%
	Current	6.25 A (150 W)
Physical	Size	223.5 mm x 90 mm x 56.6 mm (8.8 in x 3.5 in x 2.2 in)
	Weight	1.4 kg (3 lb)

Reliability

Characteristic item	Specification
Display	MTBF >50,000 hours
Backlight	MTBF 50,000 hours typical

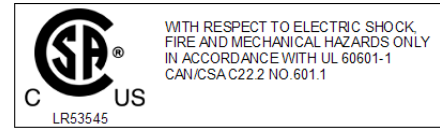
Environment

Characteristic item		Specification
EMI shielding		No emission of low-level radiation
Temperature	operating	0° C to 40° C
	storage	-10° to 60° C
Humidity	operating	10% to 90% Relative Humidity (non-condensing)
	storage	5% to 90% Relative Humidity (non-condensing)

Regulatory Compliance

Canada, European Union, United States

This display has been tested and found to comply with IEC/EN 60601-1 and IEC/EN 60601-1-2 standards, and is certified to meet medical standard C22.2 No. 601.1-M1990 (C US Mark).



The medical display, in addition to meeting medical requirements, has been tested and found to comply with the limits for Federal Communications Commission (FCC) Class B computing devices in a typically configured system since many medical offices are located in residential areas. It is the system integrator's responsibility to test and ensure that the entire system complies with applicable electromagnetic compatibility (EMC) laws.

Planar Systems, Inc. has made great efforts to support the medical device industry, in particular, medical device manufacturers and medical device system integrators. We offer state-of-the-art color displays that are compliant with worldwide accepted medical device safety standards, and for the European market, CE-marked displays based on compliance with counsel directive 93/42/EEC—commonly referred to as the Medical Device Directive (MDD). The following summarizes our qualification of these displays as it relates to compliance with the MDD.

The European Medical Device Directive requires that the intended use of the device be defined. The intended use of these displays is "to display alphanumeric, graphic, and image data as inputted from any type of medical device." These displays do not provide a measurement function in any way, and it is the device and systems manufacturer's responsibility to verify its function in the integrated device or system.

The display was classified as required by the MDD according to Annex IX of the directive and the medical device (MEDDEV) guidance available at the time of classification. Because the display uses electrical energy and has no direct patient connections and—by itself—no medical utility, the display is classified according to Rule 12 as an MDD Class I device, component, or accessory. The MDD states that manufacturers of Class I medical devices or accessories shall satisfy the requirements in regard to design and manufacturing controls, that is, the applicable assessment route to be used for CE-marking under the MDD, and it shall carry the CE mark according to Annex XII of the directive, with no notified body annotation.

The applicable safety standards for an MDD Class I display are IEC/EN 60601-1:1990 along with Amendments 1 and 2. To help the medical device designer evaluate the suitability of these displays, Planar has also conducted EMC testing to IEC 60601-1-2 as it can be applied. The display with its power supply alone does not represent a functional medical device. Hence, Planar configured a minimal operating system to exercise the display. The resulting data are made available to interested parties.

This is informative data, not certification data. Certification data must be obtained by the device or system integrator according to Article 12 of the MDD titled "Particular procedure for systems and procedure packs." Paragraph 2 clearly outlines the device or system integrator's responsibility in this matter.

In summary, Planar Systems, Inc. is CE-marking these displays under the Medical Device Directive, which establishes compliance to the basic medical safety standards. However, EMC compliance can only be accomplished in the configured medical device or system and is the responsibility of the device or system manufacturer. Planar has the necessary documentation such as IEC 60601-1 notified body and other third-party test reports and certifications, a risk/hazard analysis, an essential requirements checklist, and the Planar International Electrotechnical Commission (IEC) declaration of conformity.

Planar Systems, Inc., located in Beaverton, Oregon, USA, is the manufacturer of these displays in the meaning of the directive. As required by the MDD in Article 14, Planar Systems, Inc., not residing in the European Economic Area (EEA), has a European representative, Planar Systems, Inc.—Olarinluoma 9, P. O. Box 46, FIN-02201 Espoo, Finland (phone + 358 9 420 01; fax + 358 9 420 0200).

In the opinion of Planar Systems, Inc. registration required to put this device into commerce is the responsibility of the medical device/system manufacturer, and Planar supports this requirement by providing a European Commission (EC) declaration of conformity. If Planar supplies a display to an end user, rather than a device manufacturer, it is the end user's responsibility to ensure continued compliance with the MDD of the system in which the display is integrated.

The supplier will make available on request, circuit diagrams, component part lists, etc.

For vigilance reporting as required under Article 10 of the MDD, Planar Systems, Inc. will provide any information requested by competent authority to support any reported incident investigation by such an authority.

EU Declaration of Conformity for Medical Application

A Declaration of Conformity has been filed for this product. For additional copies of the Declaration of Conformity document, contact Planar Systems.

The Dome E4c digital flat-panel display meets the essential health and safety requirements, is in conformity with, and the CE marking has been applied according to the relevant EU Directives listed below, using the relevant section of the following EU standards and other normative documents;

EU EMC Directive 89/336/EEC

EU Electromagnetic Compatibility Directive

EN 60601-1-2 (2001) Medical Electrical Equipment	Section 1.2. Collateral standard electromagnetic compatibility requirements
EN 55011 (Class B)	Limits and methods of measurements for radio interference characteristics of industrial, scientific, and medical equipment
IEC 1000-3-2	Harmonic emissions
IEC 1000-3-3	Voltage fluctuations/flicker emissions
IEC 1000-4-2	Electrostatic discharge requirements for industrial process measurement and control equipment
IEC 1000-4-3	Radiated electromagnetic field requirements for industrial process measurement and control equipment
IEC 1000-4-4	Electrically fast transients for industrial process measurement and control equipment
IEC 1000-4-5	Surge requirements
IEC 1000-4-11	Voltage variations/dips/interrupts
IEC 1000-4-6	Conducted immunity
IEC 1000-4-8	Magnetic field immunity
CE	Conformance to the Medical Device Directive 93/42/EEC
EN 60601-1 Medical Electrical Equipment	Part 1: General requirements for safety

U.S. FCC Compliance Statement

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Standard Warranty

Summary

- Standard one-year “repair-and-return” warranty
- Two-year backlight warranty*
- Typical repair turnaround time of 10 business days

Standard Warranty Return Procedure

As a Planar Standard Warranty customer, you must follow the procedure below if you have a non-functioning Dome E4c display. The Planar customer service staff will attempt to correct any minor issues that may be causing the problem. Once Planar has determined that you have a non-functioning product, Planar will arrange for return and repair of the non-functioning product.

1 Contact Planar via the web at http://www.planar.com/support. In North America, call (866) PLANAR1 (866.752.6271). In Europe, call +358 9 420 01 or send your info by fax to +358 9 420 0200. Have the model number, serial number, and proof-of-purchase available.

2 Planar customer service staff will attempt to correct any minor issues that may be causing the problem. If we are unable to correct the problem to your satisfaction, we will issue a Return Material Authorization (RMA).

3 You must return the product, as specified, to Planar Systems. Planar will validate the defect, repair the unit, and return the unit to you. The typical turnaround time is 10 business days.

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* If, within 2 years of initial purchase, the maximum output of the Dome E4c display is determined by Planar Systems to be less than 175 cd/m^2, Planar will repair or replace the display at its sole discretion.

Summary Limitations and Exclusions of Dome Displays

1 Customer must provide original proof of purchase of the display system.

2 Warranty is void on any product with a defaced, modified, or removed serial number.

3 Warranty is void on any product with damage, deterioration, or malfunction resulting from the following:

a) Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.

b) Repair or attempted repair by anyone not authorized by Planar.

c) Any damage of the product due to shipment.

d) Removal or installation of the product.

e) Causes external to the product, such as electric power fluctuations or failure.

f) Use of supplies or parts not meeting Planar's specifications.

g) Normal wear and tear.

h) Any other cause, which does not relate to a product defect.

4 Warranty excludes removal, installation, and setup service charges.

Limitation of Implied Warranties

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Exclusion of Damages

THE LIABILITY OF PLANAR IS LIMITED TO THE COST OF REPAIR OR REPLACEMENT OF THE PRODUCT. PLANAR SHALL NOT BE LIABLE FOR THE FOLLOWING:

1 DAMAGE TO OTHER PROPERTY CAUSED BY ANY DEFECTS IN THE PRODUCT, DAMAGES BASED UPON INCONVENIENCE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, LOSS OF PROFITS, LOSS OF BUSINESS OPPORTUNITY, LOSS OF GOODWILL, INTERFERENCE WITH BUSINESS RELATIONSHIPS, OR OTHER COMMERCIAL LOSS, EVEN IF ADVISED OF THEIR POSSIBILITY OF SUCH DAMAGES.

2 ANY OTHER DAMAGES, WHETHER INCIDENTAL, INDIRECT, CONSEQUENTIAL OR OTHERWISE.

3 ANY CLAIM AGAINST THE CUSTOMER BY ANY OTHER PARTY.

Effect of Local Law

This warranty gives you specific legal rights, and you may have other rights, which vary from locality to locality. Some localities do not allow limitations on implied warranties and/or do not allow the exclusion of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

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