Technical specifications MFCD 2320 display

LCD PANEL

Technology	TFT AMLCD VA Mode LCD Color
Native resolution	1600 x 1200 / 1200 x 1600
Pixel pitch	0.255 mm
Active screen diagonal	510 mm (20.1")
Active screen area	408 x 306 mm (16.1 x 12")
Viewing angle (Hor./Vert.)	170° (at 10:1 contrast)

VISUAL CHARACTERISTICS

Dark room contrast	350:1 typical
Luminance	native 180 Cd/m² (52.8 fL)
Stabilization, calibration and automated QA	Embedded, patent-pending I-GUARD®

CONNECTIVITY

Digital video input	DVI (complying to DVI 1.0)
Analog video input	VGA D-SUB15 connector, BNC (monochrome only)
Display control & comm.	DDC (complying to DDC2Bi standard), EDID
Digital video / DDC input connector	One physical DVI connector, one cable
USB	USB-hub with 1 up- and 2 down stream ports
Supported resolutions	1600 x 1200 (Landscape) 1200 x 1600 (Portrait) VGA boot

POWER REQUIREMENTS

Input	90 to 264 VAC, 45 to 65Hz, 70Wmax.
Power save	Supports DPMS

ENVIRONMENTAL

Operating temperature range	0°C to +40°C (32°F to 104°F)
Within specifications	+15°C to +35°C (59°F to 95°F)

APPROVALS

Safety	CE, UL60950, CSA C22.2 No 60950 (c-UL), CB, IEC 60950, DEMKO EN 60950
Emission	EN 55022,
Immunity	EN 50082-1
Medical	FDA 510 k°

°Please contact factory for status

PHYSICAL CHARACTERISTICS

Dimensions (WxHxD)	L: 525 x 485 x 250 mm P: 385 x 585 x 250 mm (15.2 x 23.0 x 9.8")
Weight	13.9 kg (30.6 lbs)
Ergonomics	Tilt & swivel base with P/L rotation 100mm VESA mounting standard AR coated front cover
Display controls	Display on/off, backlight adjustment, OSD

Technical specifications BARCOMED® 2MP2CF-3D display controller

SYSTEM REQUIREMENTS

Bus Compatibility:	AGP 2.0 4X
Bus Clock Speed:	66MHz
Bus Width:	32 bit
Power Consumption:	< 25 watts
Form Factor:	109mm x 197mm x 18mm
Operating System:	Windows 2000, XP
Platforms:	Pentium 4 and up

CHARACTERISTICS

Display Configuration:	Single or dual-head, portrait or landscape
Graphics Processor:	Custom 3D GPU
Display Memory:	256 MB
VGA:	Integrated VGA controller. Also compatible with external VGA cards
Pixel Clock Rate:	120 MHz
Look-Up Table:	24 bits in / 24 bits out
Pixel Depth:	24 bit color
Electrical Standard:	Single link DVI complying to v1.0 specification
Direct 3D HW Support:	DirectX v8.1, virtex shader v1.1, pixel shader v1.2
OpenGL HW Support:	v1.3 compliant, v2.0 pixel/ vertex shader and other extensions

VIDEO OUTPUT

Supported Resolutions/ Refresh Rates:	1600 x 1200 @ 60 Hz 1200 x 1600 @ 60 Hz 1280 x 1024 @ 60 Hz 1024 x 1280 @ 60 Hz VGA at boot-up
Connectors:	Two DVI connectors (one per head)

TEMPERATURE

Operational:	+5 to +50 C
Storage:	-40 to +70 C

HUMIDITY

Operational:	80%
Storage:	100%

EMI

EMI	FCC Class B, CE, EN 55022 B, EN 55024:1998
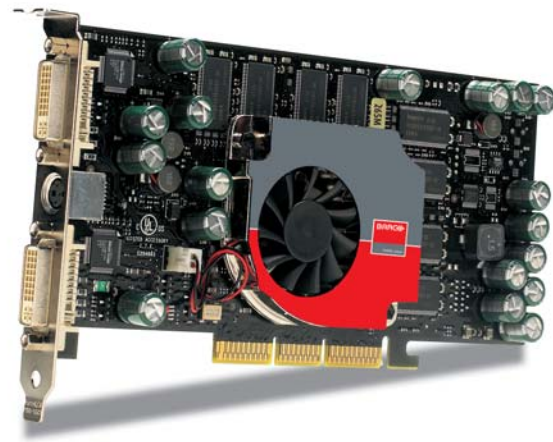
Barco medical imaging systems

Many years of experience in all areas of display technology gives Barco a unique advantage as it continues to expand its color and grayscale display technology for a variety of imaging applications. Barco has established a solid reputation in the medical imaging market with high-performance display technology for X-ray, digital radiography, PACS, digital mammography, ultrasound and magnetic resonance viewing applications.

Barco's expertise in providing high performance display systems is supported by a worldwide network of research, development and support services. A global sales organization, with regional support people who understand your language and requirements, complements Barco's partnership approach.

COLOR CORONIS®

2MP medical color flat panel display system

BARCO

Visibly yours

BARCO

Visibly yours

Full color filmless perfection

For medical applications requiring high-resolution color images and 3D-rendering capabilities, Barco has engineered Color Coronis® 2MP, the next generation medical color display system. Barco's new Color Coronis® 2MP brings enhanced functionality and performance in an ergonomic, space saving display system. Thanks to its outstanding optical performance and color consistency, Color Coronis® 2MP offers an ideal solution for accurate diagnosis in a variety of medical applications, including PACS, ultrasound, orthopedic imaging, cardiology, ophthalmology, dermatology, nuclear medicine and PET. Building on state-of-the-art Coronis® technology, Color Coronis® 2MP offers nothing less than full color filmless perfection.

High-resolution color LCD

Color Coronis® 2MP features a 2 MegaPixel (1600 x 1200 resolution) 20.1" color LCD, offering softcopy performance without compromise. The system's high contrast ratio and luminance results in superior image quality under all viewing conditions.

Perfect grayscale rendering

Color Coronis® 2MP is optimized to display both color and grayscale medical data sets and is fully compatible with 2D and 3D applications. The flexible Color Coronis® 2MP display system therefore provides a perfect integrated desktop solution.

Perfect color matching

Thanks to its built-in Color I-Guard® technology, Color Coronis® 2MP ensures perfect color matching in dual-head medical applications. In addition, Color Coronis® 2MP can be combined with one or more grayscale displays to create a full hybrid display system.

Color Coronis® 2MP features and benefits:

- Unique Color I-Guard® technology ensuring outstanding color consistency and perfect DICOM-compliance at all times
- High-performance 2D image rendering
- Exceptional system performance in 3D applications
- Perfect color matching in multi-head configurations
- High contrast ratio and luminance for superior image quality under all viewing conditions
- Unique intervention-free Quality Assurance concept
- Provides a perfect integrated desktop solution
- Lowest cost of ownership
- PIN-compatible

Color Coronis® 2MP product bundle:

- One or two high-contrast 2MP color LCD displays with built-in Color I-Guard® sensor
- Ultra-fast BarcoMed® display controller with full 3D support
- MediCal® Pro softcopy QA software
- Display driver
- Digital cabling

Color I-Guard® for optimum color consistency

To ensure superior image quality and diagnostic confidence, Color Coronis® 2MP makes use of Barco's unique Color I-Guard® technology. The compact, front-mounted Color I-Guard® sensor located in the corner, continuously guards and adjusts luminance output and color consistency of the actual diagnostic viewing area at the front of the display. Barco's patent pending Color I-Guard® sensor truly sees what you see, thereby ensuring DICOM-consistency over time and across displays.

Portrait/landscape rotation

Color Coronis® 2MP comes with a solid tilt and swivel base, allowing users to adjust the panel's position to their preferred viewing angle or easily switch between portrait and landscape modes. Barco's I-Switch® technology automatically detects if a user has changed the display's orientation and optimizes the display controller's settings accordingly.
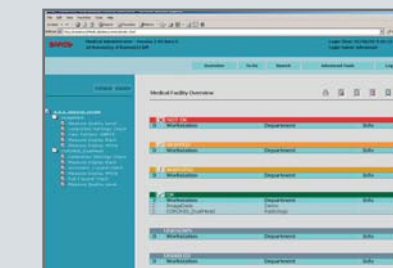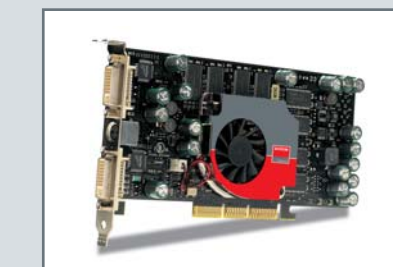
3D Support

The high-performance BarcoMed® 2MP2CF-3D display controller has been designed to support 3D PACS, considered to be the next generation PACS application. As a result, Barco's display controllers bring exceptional performance to the latest 3D CT, MR and PET applications.

Automated Intervention-free QA

Combined with the Color I-Guard® sensor, Barco's MediCal® Pro QA software provides fully automated image Quality Assurance without the need for human intervention. MediCal® Pro tracks, maintains and logs display viewing performance, automates QA tasks, initiates display system calibration and sets up the most precise DICOM Look-Up-Table calibration. With the MediCal® Pro software included, the Color Coronis® 2MP display system is ready for integration into the hospital's softcopy QA management system, using Barco's MediCal® Administrator software.

PIN-compatible for centralized QA

Color Coronis® 2MP is fully compatible with Barco's revolutionary PIN (Product INtelligence) concept, which ensures worry-free diagnostic reading and image distribution by means of "intelligent" technology.

Barco's PIN-compatible PACS products form a distributed network of web-enabled, intelligent devices. The integrated I-Guard® sensor constantly monitors image quality and the collected data are transparently processed and logged with Barco's MediCal® software. The surrounding network of invisible, intelligent devices keeps administrators informed about the display system's consistent quality. If the imaging chain fails, administrators can intervene from any location via user-friendly web interfaces, without disturbing normal radiology activities.

Compatible with MediCal® Administrator for remote softcopy QA management

PIN-compatible for centralized QA

High-performance BarcoMed® 2MP2CF-3D with full 3D support

Built-in Color I-Guard® technology

Multi-purpose medical display solution

Color Coronis® 2MP provides a multi-purpose medical display solution for a multitude of medical applications:

PACS
- Allows standard grayscale imaging with color interface and annotations
- Possibility to combine Barco's grayscale and color solutions into a full hybrid system

Next generation 3D PACS
- 3D volume rendering
- 3D surface rendering of reconstructed surfaces
- 4D support

Ultrasound imaging and ultrasound PACS
- Allows grayscale imaging with color interface and annotations
- Ultra-fast rendering of 2D images

Orthopedic imaging
- Allows grayscale imaging with color interface and annotations
- Ultra-fast rendering of 2D images

Cardiology and cardiology PACS
- Allows grayscale imaging with color interface and annotations
- Ultra-fast rendering of 2D images

Ophthalmology, dermatology, nuclear imaging and PET
- Consistent and reliable color imaging