BARCO y la Patología Digital. El valor añadido de un monitor de diagnóstico

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Agenda

Introducción a Barco Healthcare

Diagnostic Display versus consumer Display

Pathology diagnostic Display

Q&A

About Barco

You will find us where images are critical to professionals

NYSE Euronext

International company
Headquartered in Belgium
Stocklisted (BAR) on
NYSE Euronext Brussels

90+

Presence in more
than 90 countries

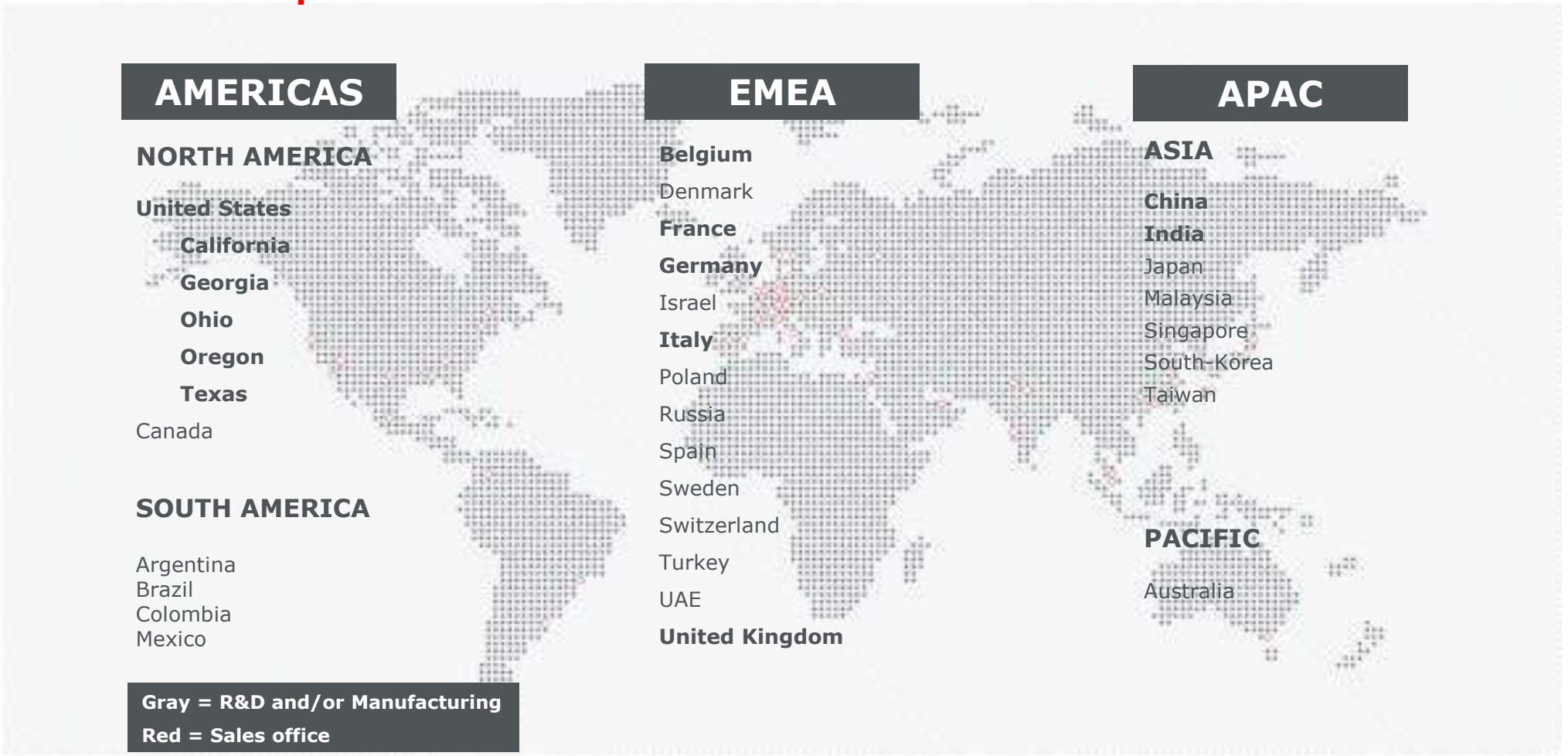
3,507

Employees

1.041

Billion euro
sales in 2011

Worldwide presence



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Geographical breakdown of sales 2011

NORTH-AMERICA

33%

EMEALA

44%

APAC

23%

Healthcare

"Supporting healthcare professionals a billion times a year"

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Enhanced visualization and diagnosis across the healthcare enterprise


Radiology


Pathology


Surgery


Intensive care


Emergency


Cardiology


Patient wards


Point of care


Outpatient clinics


Dentistry

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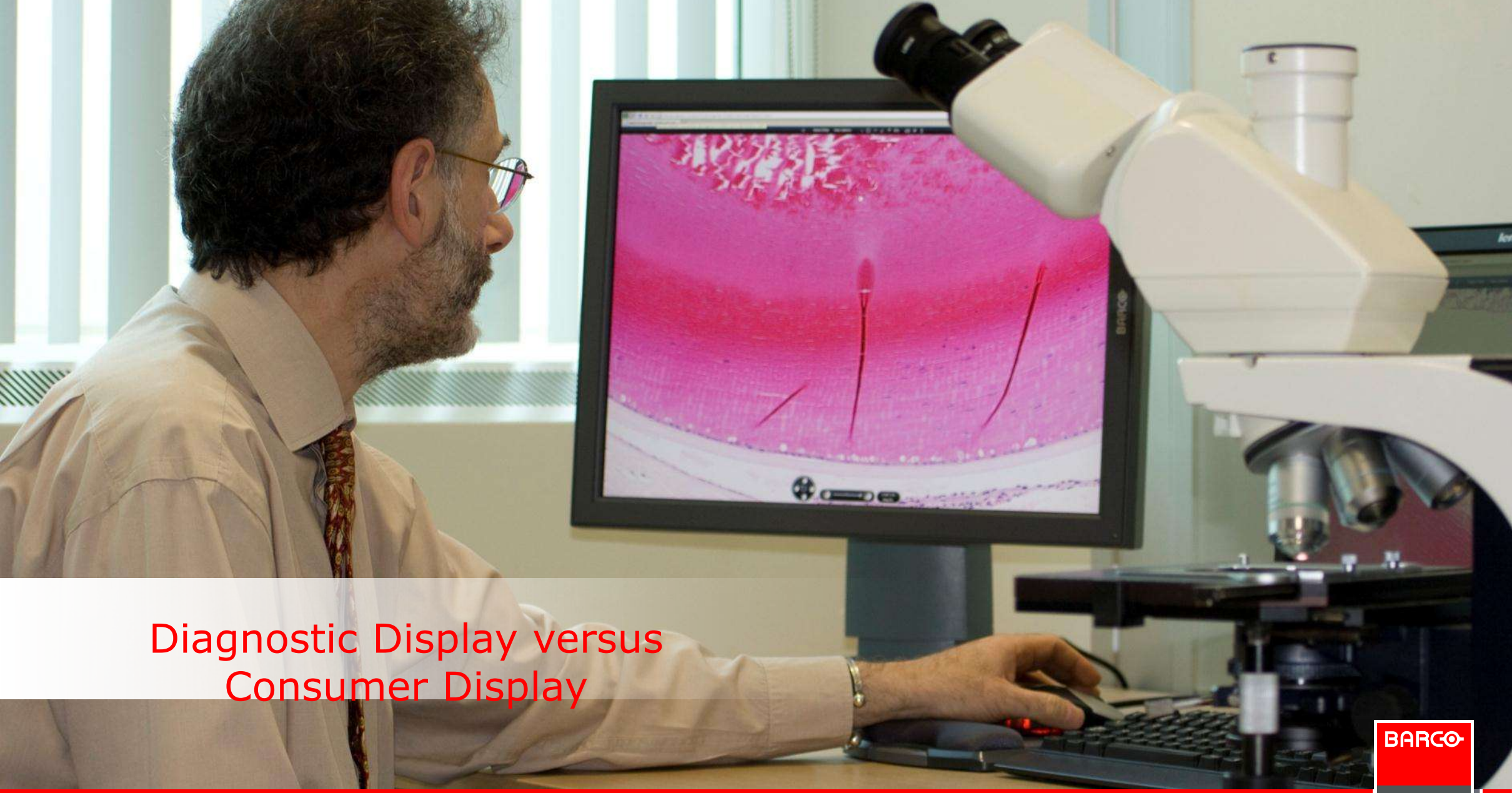

Diagnostic Display versus Consumer Display

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Ultimate Slide-to-Eye Consistency

It’s not just what you scan … It’s what you see!

Scanner’s Role:

From Glass Slide to Digital File
in a Fast, Stable and Standardized way

Diagnostic Display s Role:

From Digital File to Screen
in a Fast, Stable and Standardized way

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The issue with consumer displays

Where is the consistency & diagnostic confidence ?

Sizes – colors – luminance – contrast – bitdepth – supply – QA – medical specifications - ...

Suitable for Medical Diagnosis ??

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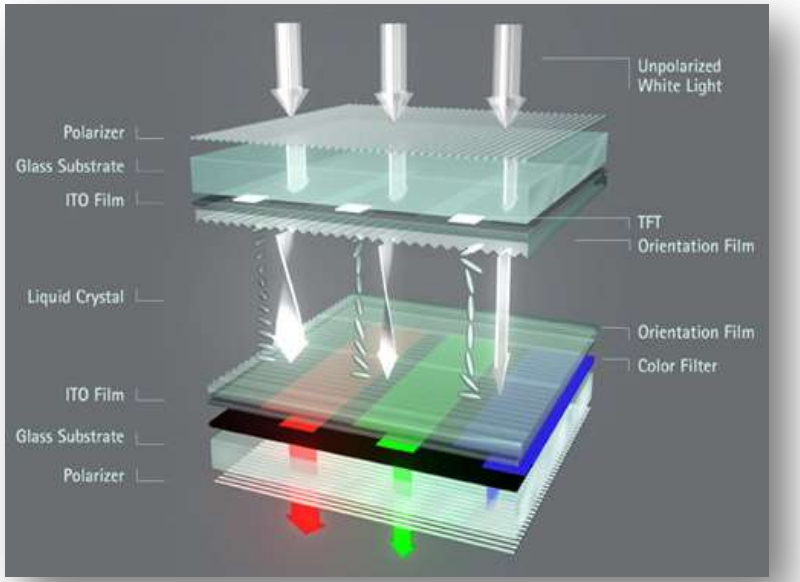
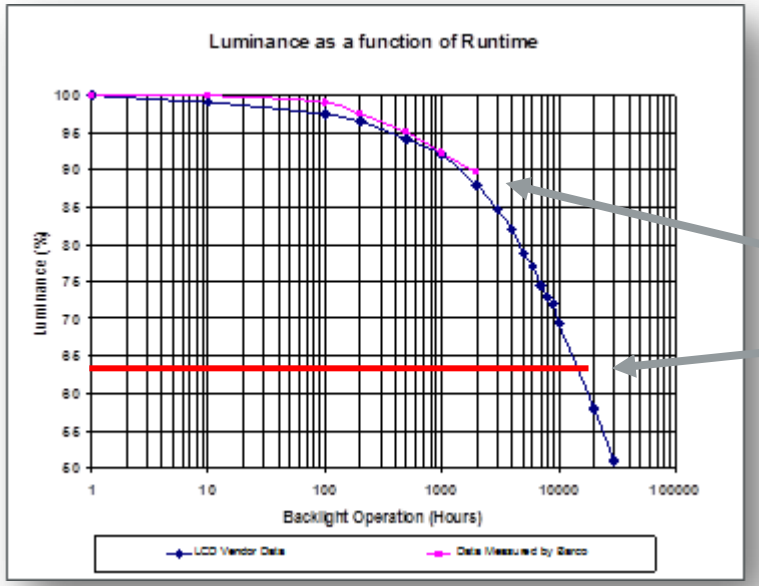
Getting the best out of an LCD

Stable image over time … Fully automatic!





Typical brightness fall-off over time

Calibrated luminance

Selecting the right LCD technology

- 13 Different types
- 14 Vendors
- Medical Diagnostic Quality

Stabilizing the output

- Backlight sensor
- Calibration circuits
- Real-time adjustments

Oversizing the 'Consumables'

- Extra backlight capacity

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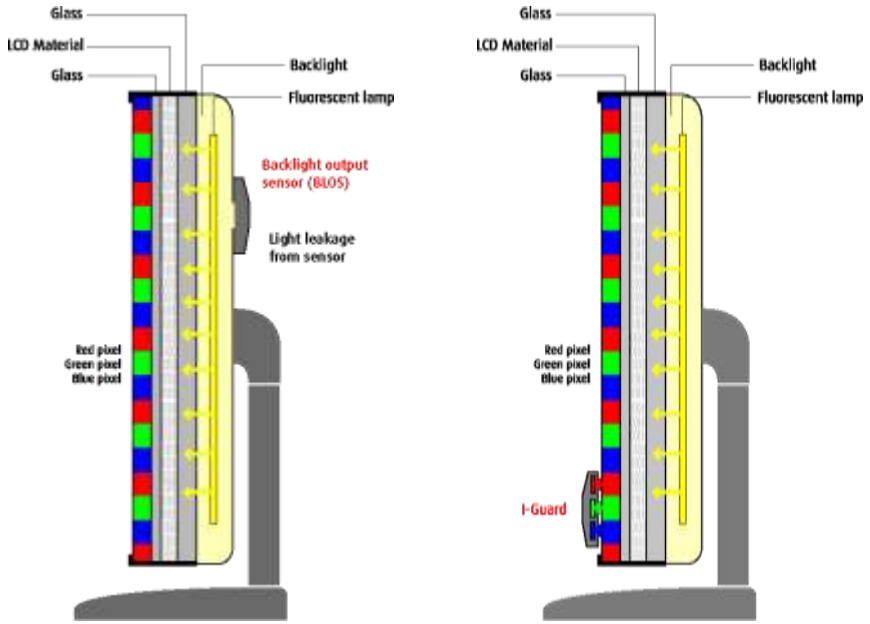
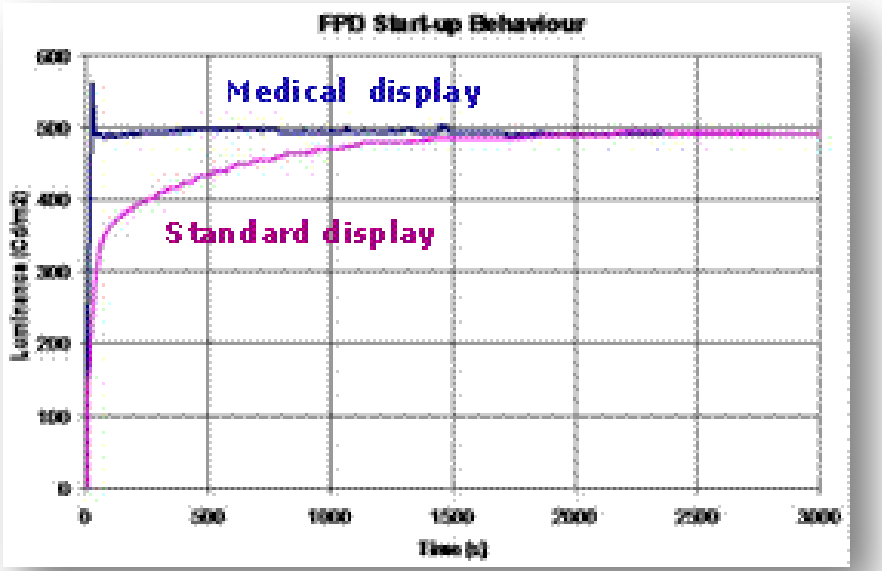
Lack of Image Consistency



"One of the bigger advantages of medical displays over consumer displays is brightness stability. Displays of both types may claim they will output a brightness of 400 cd/m2 for example, but only the medically marketed ones can maintain that brightness within fairly tight limits over the course of years."

Quote: David Hirschorn M.D. SIIM News Fall 2009



Diagnostic displays use sophisticated sensor technology, which continuously measures the brightness of the display and compensates for long term shift

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Diagnostic Displays achieve guaranteed consistency

"Consumer displays are equipped with neither such feedback circuitry nor any significant extra brightness capacity. As such, though they may start out bright, their brightness inevitably decays over time"

Quote: David Hirschorn M.D. SIIM News Winter 2007

How we reach consistency

- I-guard diagnostic-quality front sensor
- Diagnostic-quality BLOS backlight optimization
- SRGB calibration
- 10-bit internal Lookup table
- MediCal QAWeb central QA management
- Internal calibration circuits

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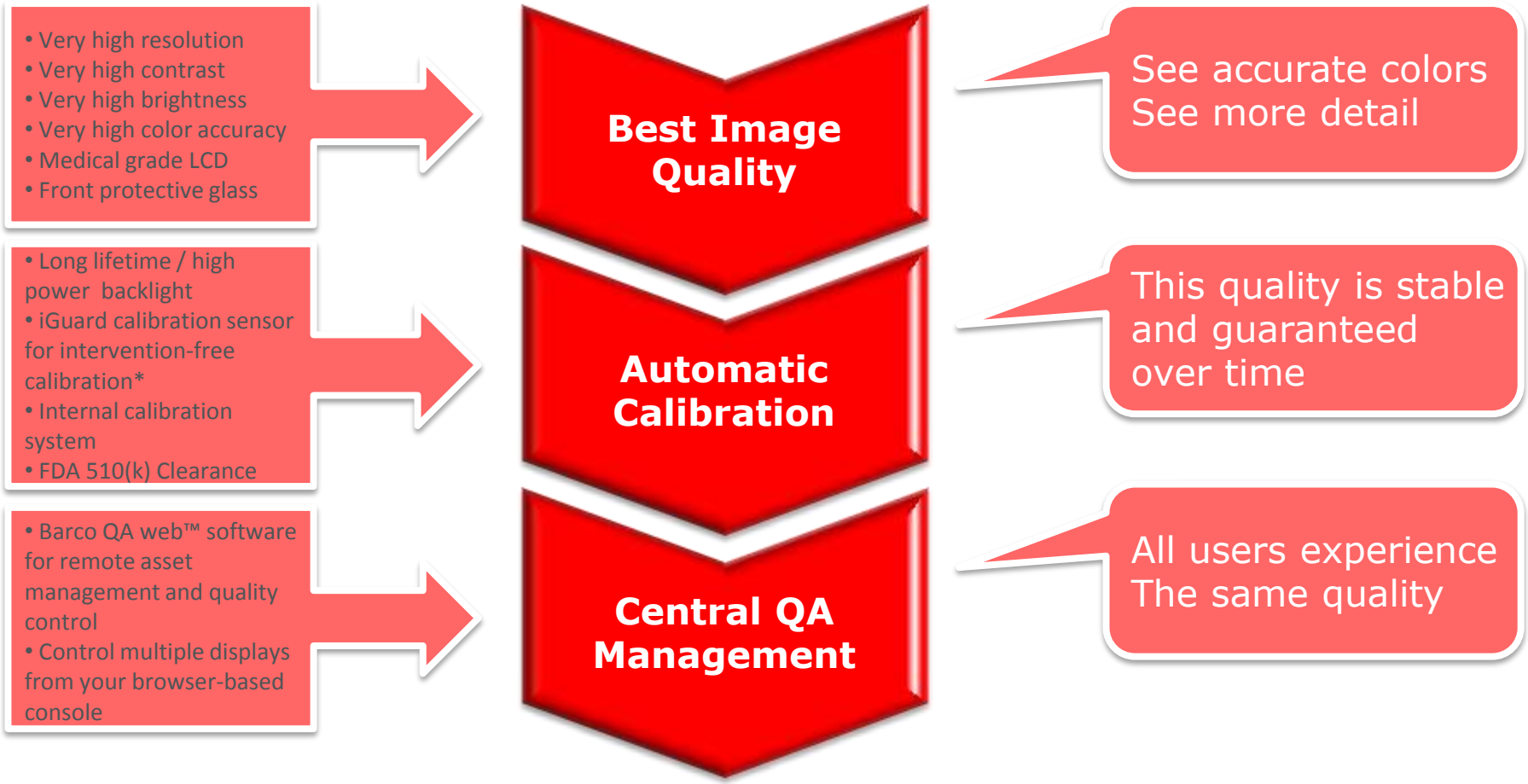
Summary: Barco technologies & advantages



*: depending on the model

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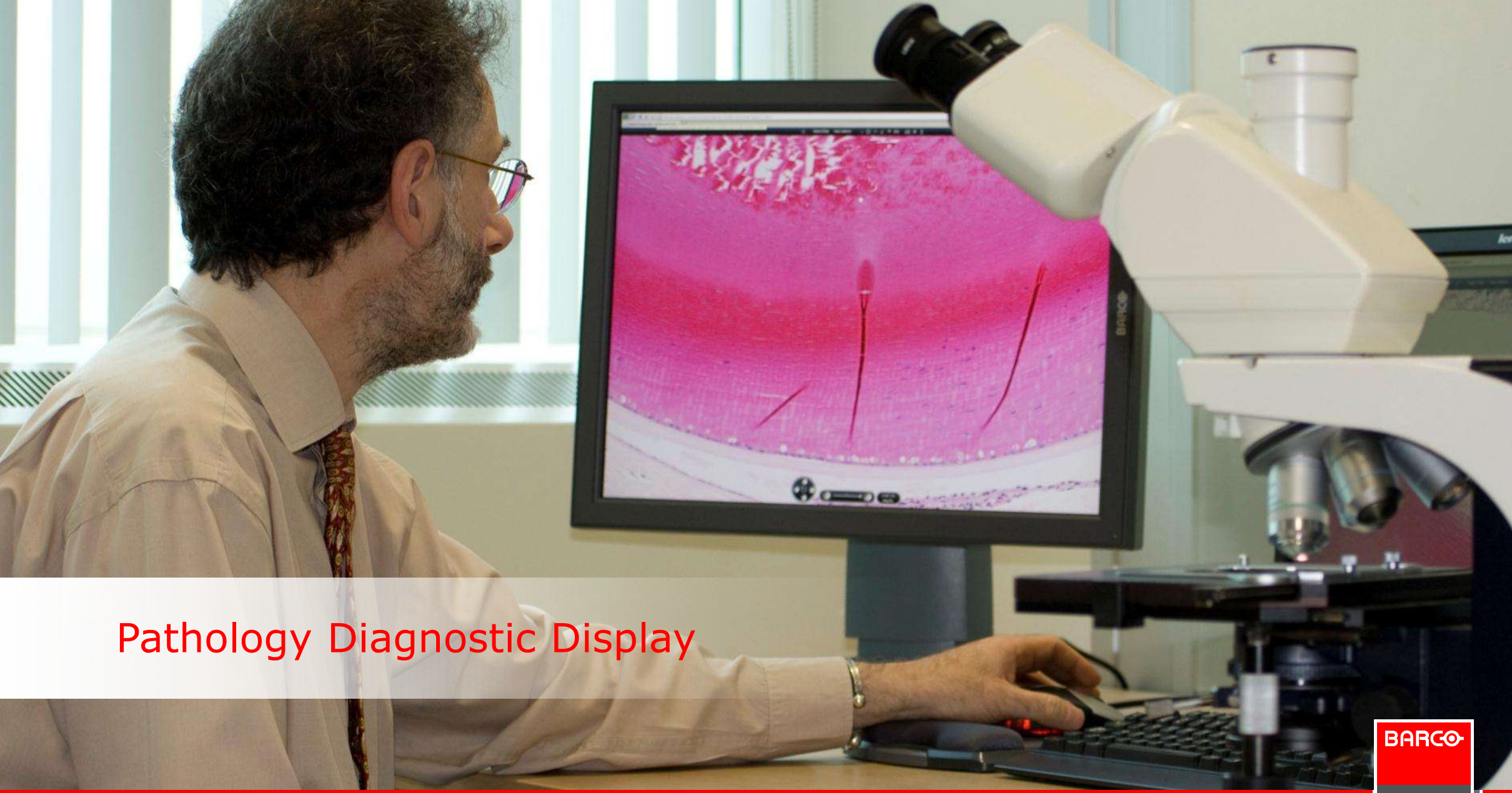

Pathology Diagnostic Display

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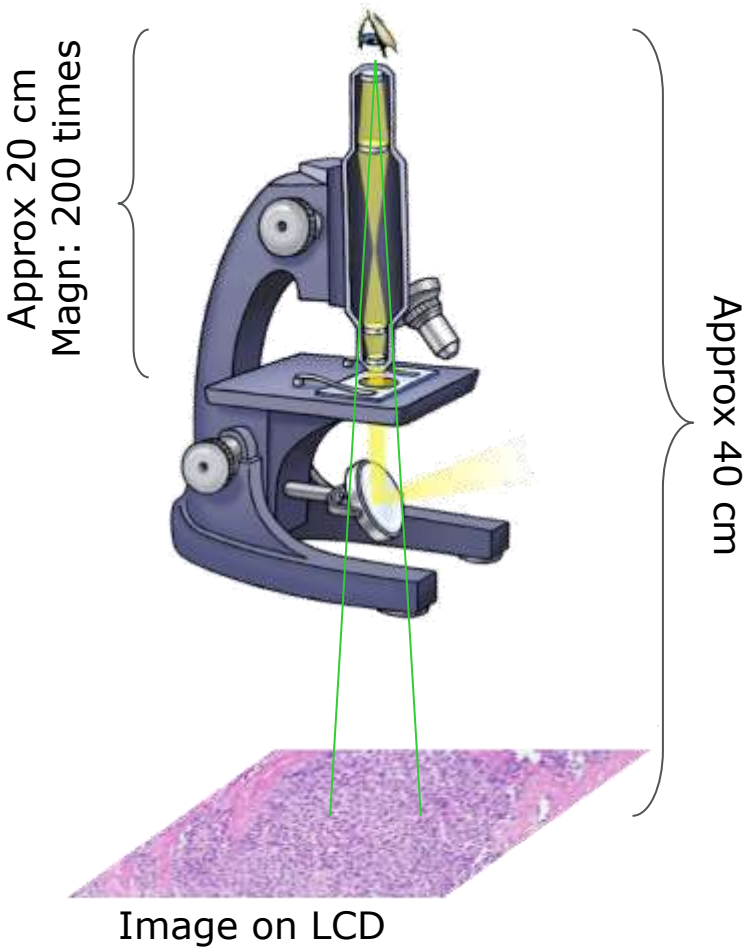
Why 0,200mm pixel pitch may be right



According to experts, the perfect display for pathology should have a pixel pitch of approximately 0.200 mm.

"gives impression like through a microscope at 20x magnification"

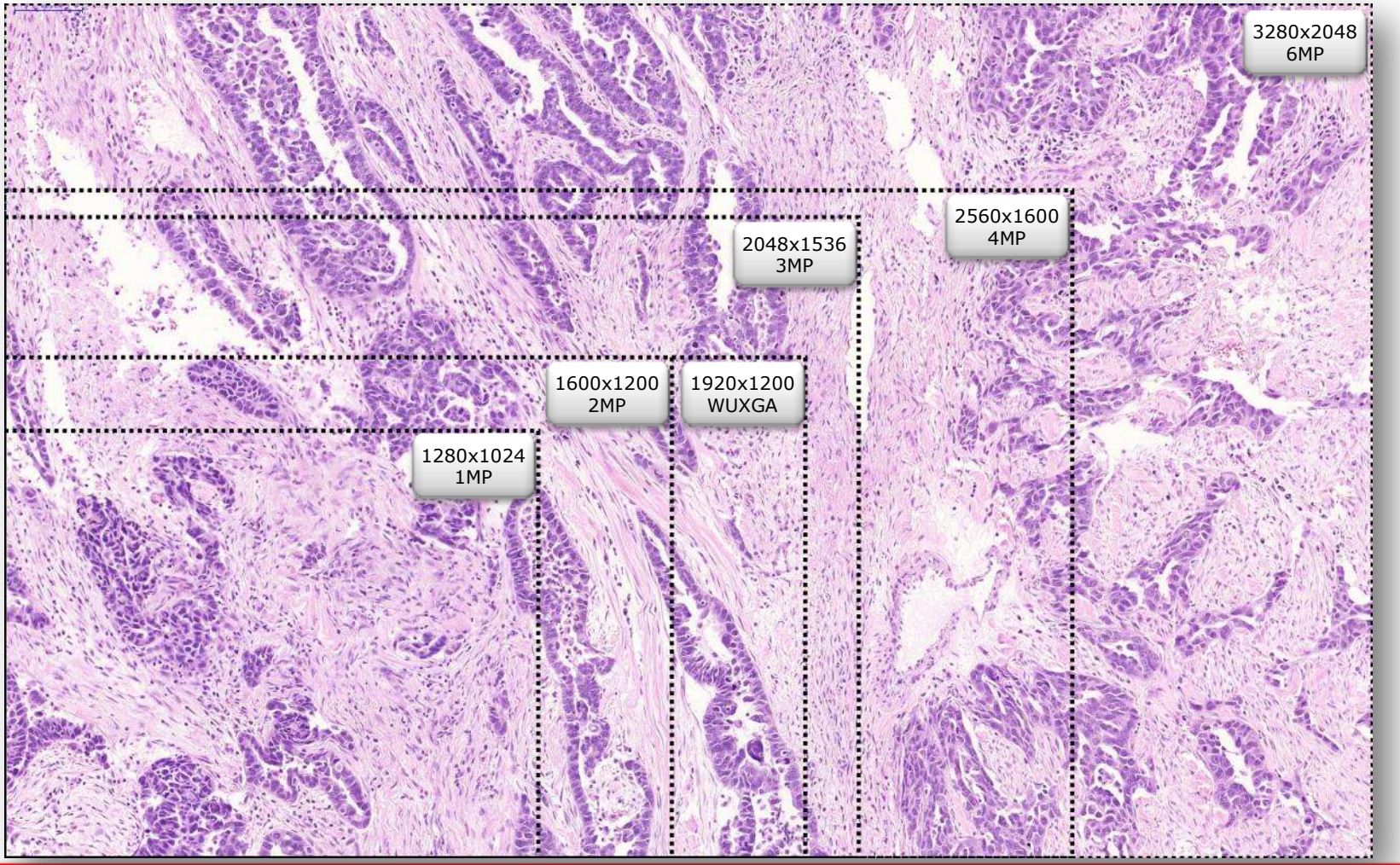
Reasoning

- Scanning at 0,5µm per pixel
- Magnification x20(0)
- Distance x2
- = 0,200 mm per pixel

Corresponds to Barco 3MP and 6MP spatial resolution

The screen size will define your Field of View

The Optimal (Re)solution for any Pathology Application



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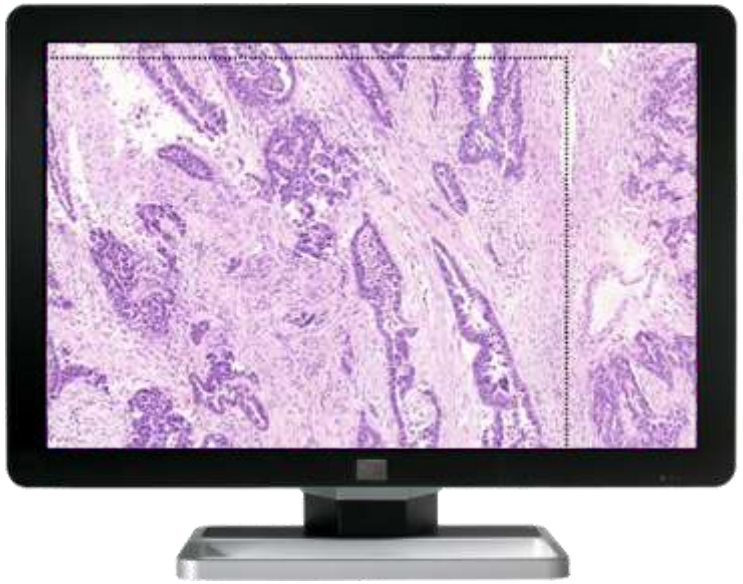
Pixel Pitch

Linking Monitor Sizes & Resolutions

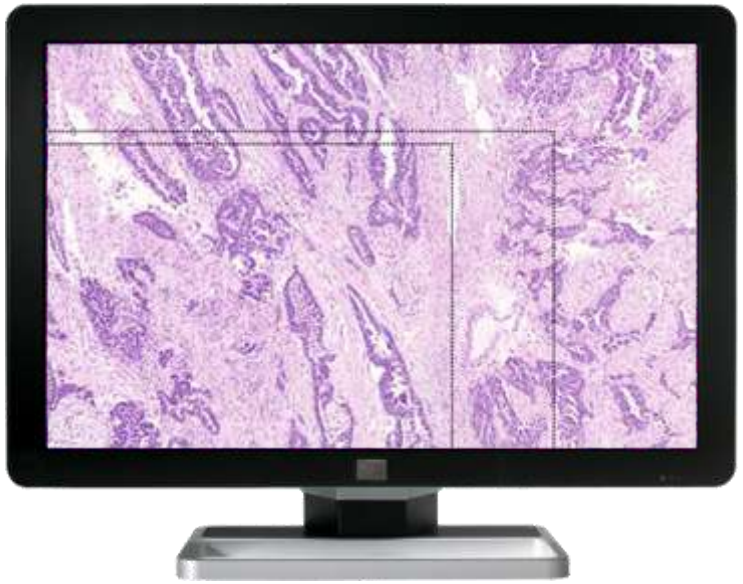
Nio Color 3MP

- Size: 21,3” (541 mm)
- Resolution: 2048x1536
- Pixel Pitch: 0,2115 mm



Coronis Fusion 4MP

- Size: 29,9” (758 mm)
- Resolution: 2560x1600
- Pixel Pitch: 0,2505 mm



Coronis Fusion 6MP

- Size: 30” (772 mm)
- Resolution: 3280x2048
- Pixel Pitch: 0,1995 mm

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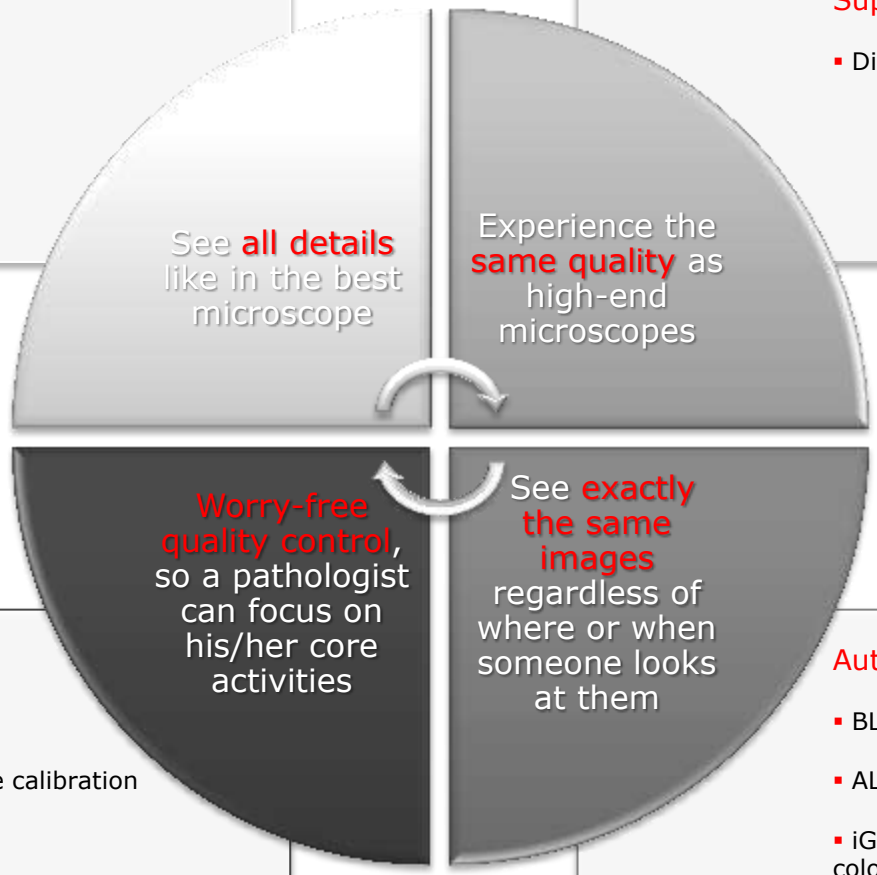
The Barco advantages for Pathology

Very High Resolution

- See all the details of your slide
- Large Field of View

Super High Brightness

- Diagnostic Luminance



Medical Grade Equipment

- Hospital & FDA Approved
- QAWeb for automatic and remote calibration
- Remote Asset Management

Automatic Calibration

- BLOS: Backlight brightness Control
- ALC: Ambient Light Control
- iGuard: unique Barco patented LCD color calibration front sensor

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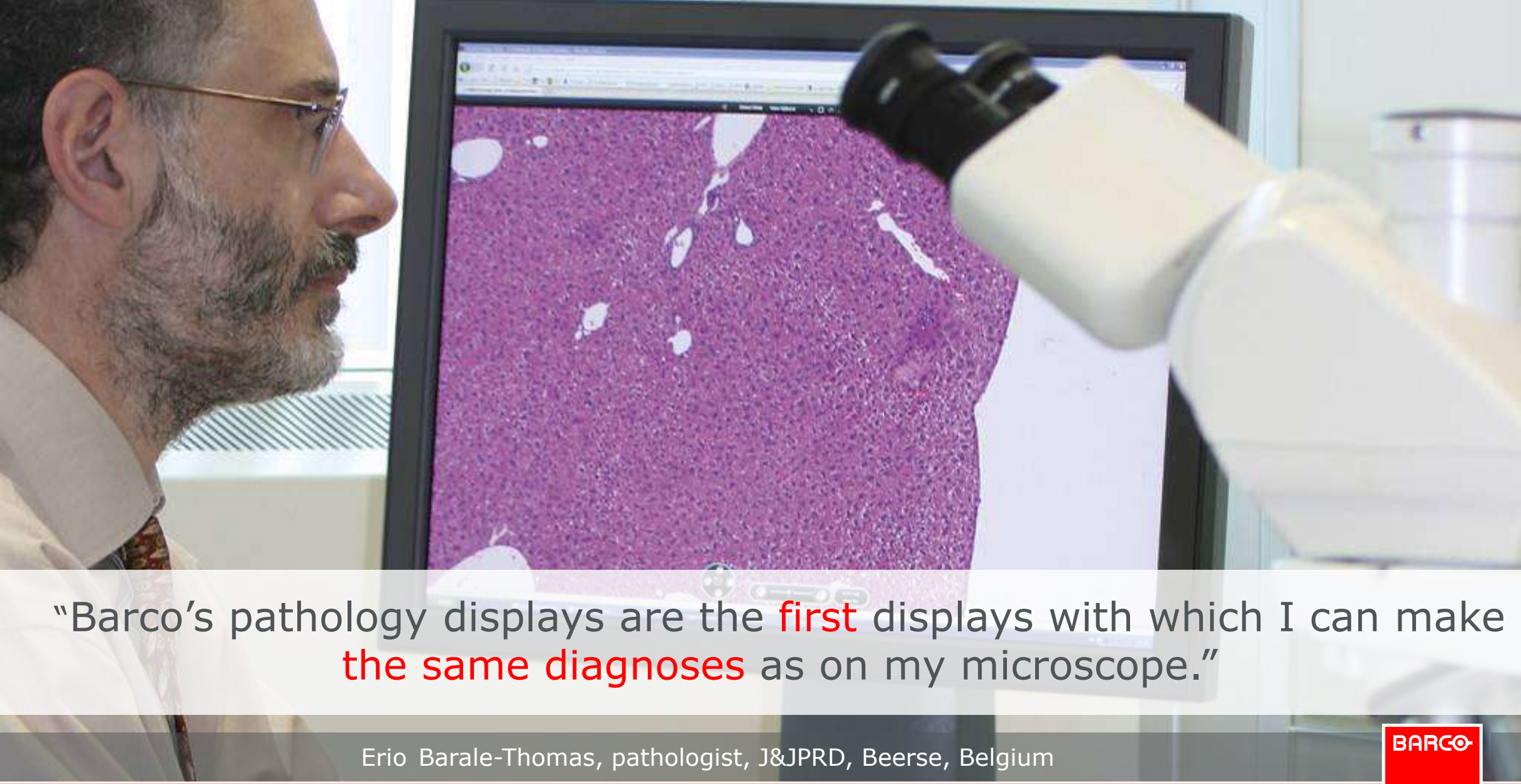

"Barco's pathology displays are the first displays with which I can make the same diagnoses as on my microscope."

Erio Barale-Thomas, pathologist, J&JPRD, Beerse, Belgium

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The Scientists' opinion

Outcome of UPMC study

UPMC
LIFECHANGINGMEDICINE

Barco is Best for Image Quality

Barco is Best for Diagnostic Confidence

Definition of 'Best'

- Better than any display out there, standard or medical grade
- Better than an optical microscope, used as reference in this study!

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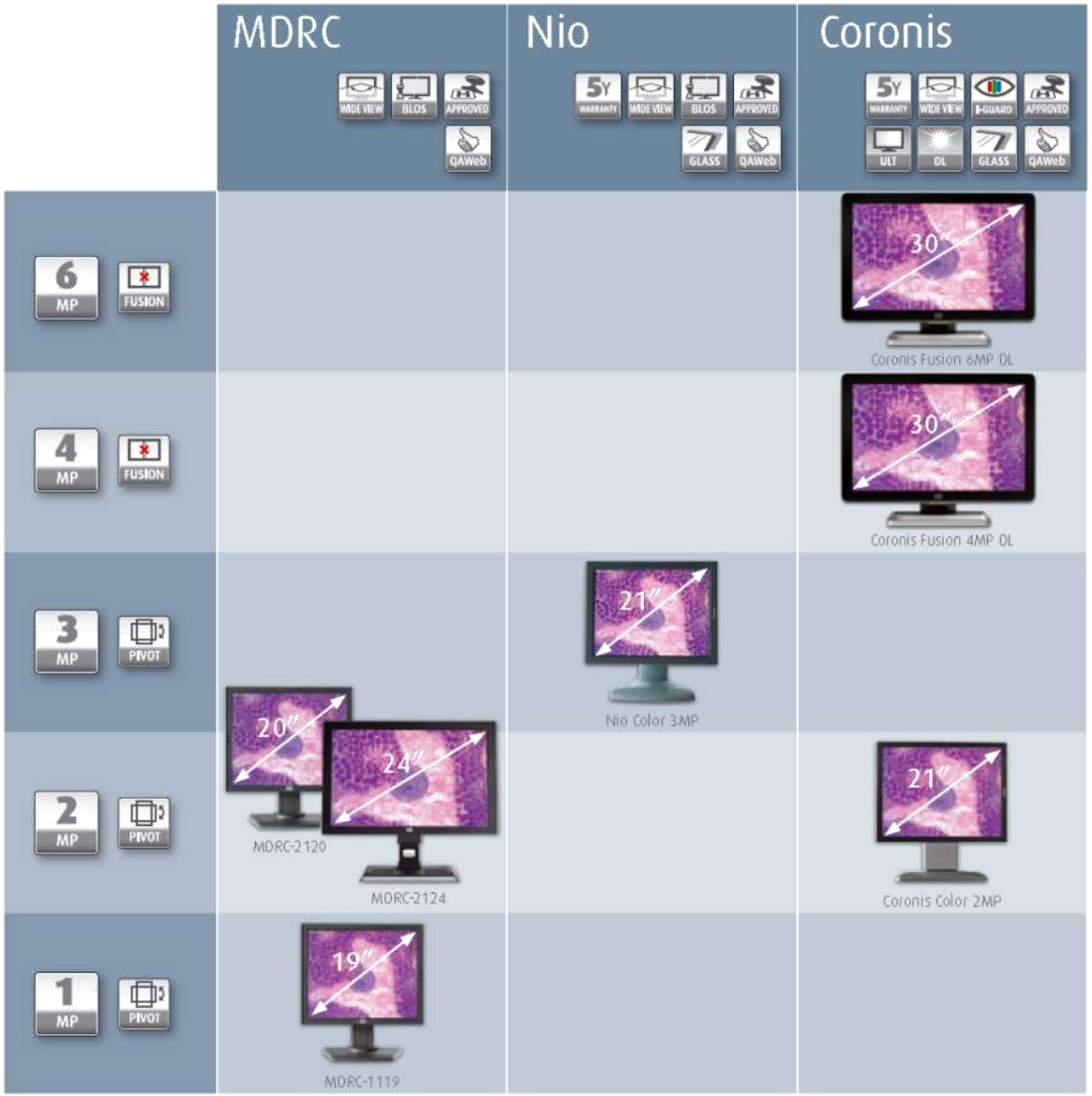
Questions & Answers



Pathology displays

Display systems with built-in calibration and designed to deliver optimal sharpness, contrast and color accuracy

- Microscope-like image clarity and accuracy
- Perfect pathology slides for worry-free diagnostic interpretation
- 100% consistency for uniform diagnosis
- Reliable digital slides at all times

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Product Families

	Medical Use	Fit for Purpose	Image Qualiy	Long Term Stability	Confident Remote Diagnostics	Resolution	Size	Warranty
 Coronis	APPROVED, GLASS	FUSION	WIDE VIEW, 30 BIT, DL, ULT	BLOS, I-GUARD	QAWeb	2 MP, 4 MP, 6 MP	21" SCREEN, 30" SCREEN	5Y WARRANTY
 Nio	APPROVED, COVER	PIVOT	WIDE VIEW, 30 BIT	BLOS	QAWeb	3 MP	21" SCREEN	5Y WARRANTY
 MDRC	APPROVED	PIVOT	WIDE VIEW	BLOS	QAWeb	1 MP, 2 MP, 1920 x1200 WUXGA	19" SCREEN, 20" SCREEN, 24" SCREEN	3Y WARRANTY

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	MDRC-1119	MDRC-2120	MDRC-2124	Nio Color 3MP	Coronis Color 2MP	Coronis Fusion 4MP	Coronis Fusion 6MP
Screen size (inches, screen diagonal)	19.0"	20.1"	24"	21.3"	21.3"	29.9"	30.4"
Resolution (pixels H x V)	1280x1024	1600 x 1200	1920 x 1200	2048 x 1536	1600 x 1200	2560 x 1600	3280 x 2048
Pixel size (µm / pixel)	294	255	269	207	270	250	199
Contrast Ratio (typical)	1300:1	800:1	1000:1	750:1	900:1	1100:1	1000:1
Luminance - calibrated (Cd/m²)	180	180	250	400	300	500	500
Luminance - maximum (Cd/m²)	300	280	400	800	700	950	800
MediCal QA Web (calibration software)	yes	yes	yes	yes	yes	yes	yes
Built-in Backlight optimization	yes	yes	yes	yes	yes	yes	yes
External Calibration sensor	optional	optional	optional	optional	built-in iGuard	built-in iGuard	built-in iGuard
Ambient Light Compensation	manual via QA Web	manual via QA Web	manual via QA Web	manual via QA Web	automatic via QA Web	automatic via QA Web	automatic via QA Web
Uniform Luminance Technology	-	-	-	-	yes	yes	yes
Protective front cover	optional	optional	optional	yes	yes	yes	yes
Warranty	3 years	3 years	3 years	5 years	5 years	5 years	5 years
FDA Clearance	Class 1	Class 1	Class 1	510 (k) class 2	510 (k) class 2	510 (k) class 2	510 (k) class 2
Product page on Barco site	link	link	link	link	link	link	link

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Barco’s high-performance display controllers

Optimized for performance

- Latest AMD FirePro™ 3D technology
- Superior graphics
- Ultra-fast image loading
- Smooth roaming and manipulation of images
- Improved OpenGL and DirectX functionality
- Compatibility with Microsoft Windows® XP and Windows® 7
- Compatibility with the new DisplayPort interface standard
- Optimized to work with Nio and Coronis
- Optimized to work with MediCal QAWeb
- Reliable performance with the latest workstations & leading Digital Pathology applications

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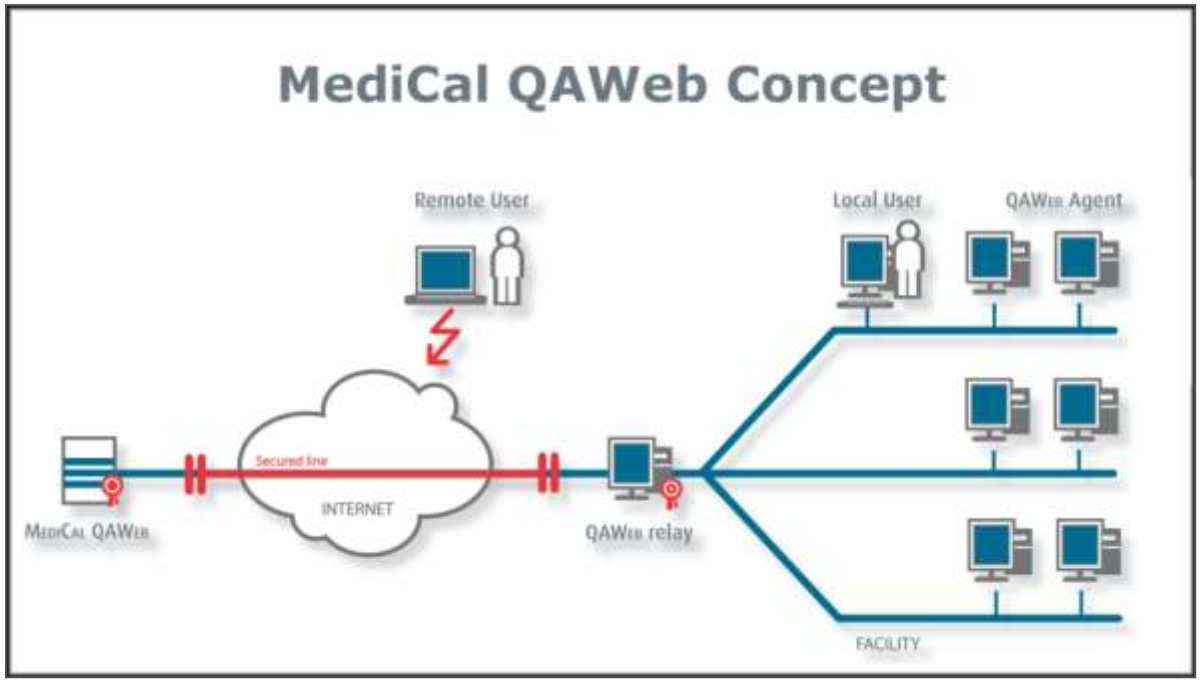
Remote Quality Assurance Management

Optimum peace of mind has never been easier



Displays align over the internet

- Barco's QA Web will assure the best image quality
  - Automatic Quality Checks
  - Automatic Calibration to established standards
  - Same image on all workstations
- And allow centralized control
  - Asset Management
  - Lifetime expectation & budgeting
  - Responsibility by central administrator

QAWeb

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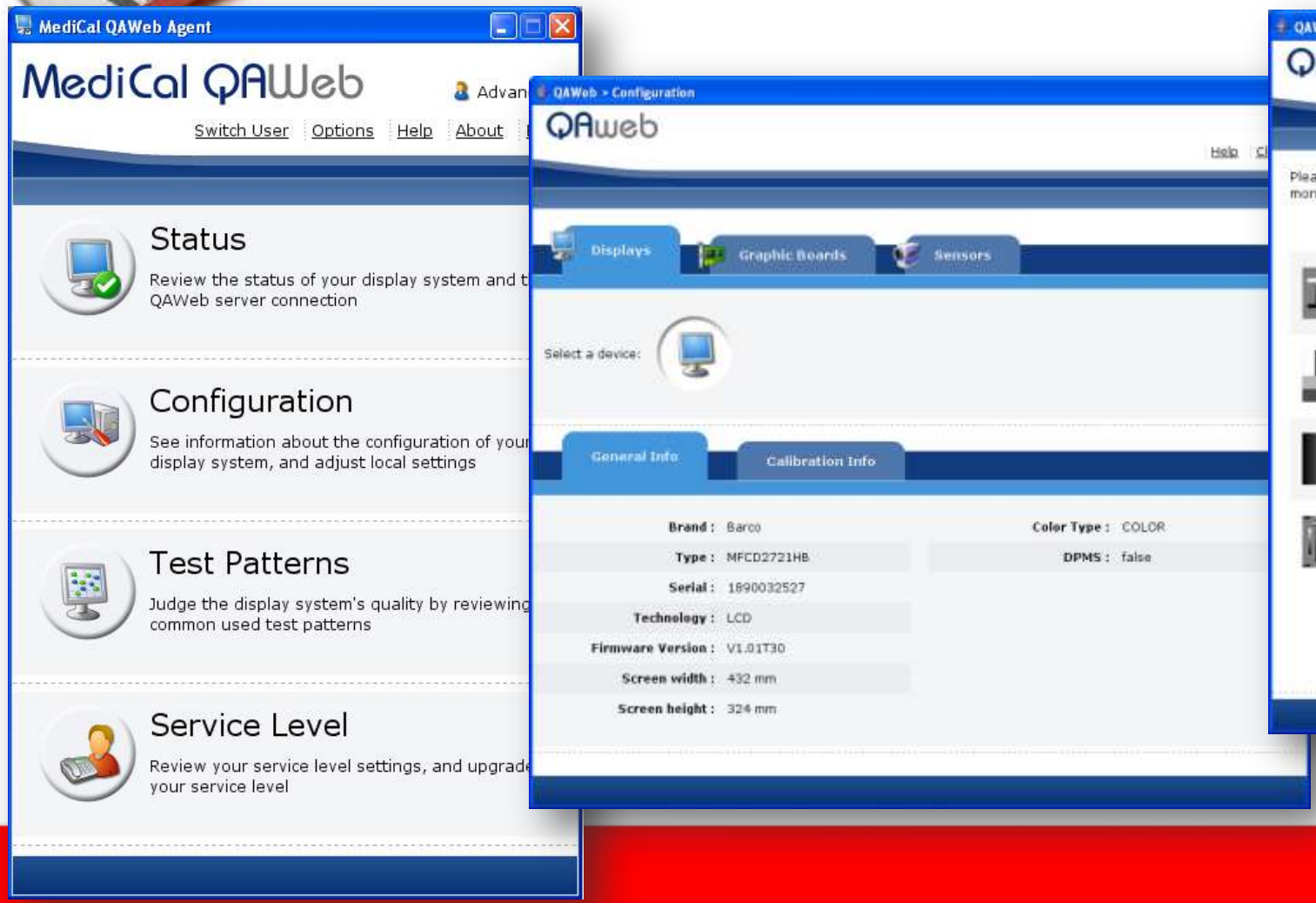
MediCal QAWeb Agent

Remotely manages multiple displays



QAWeb

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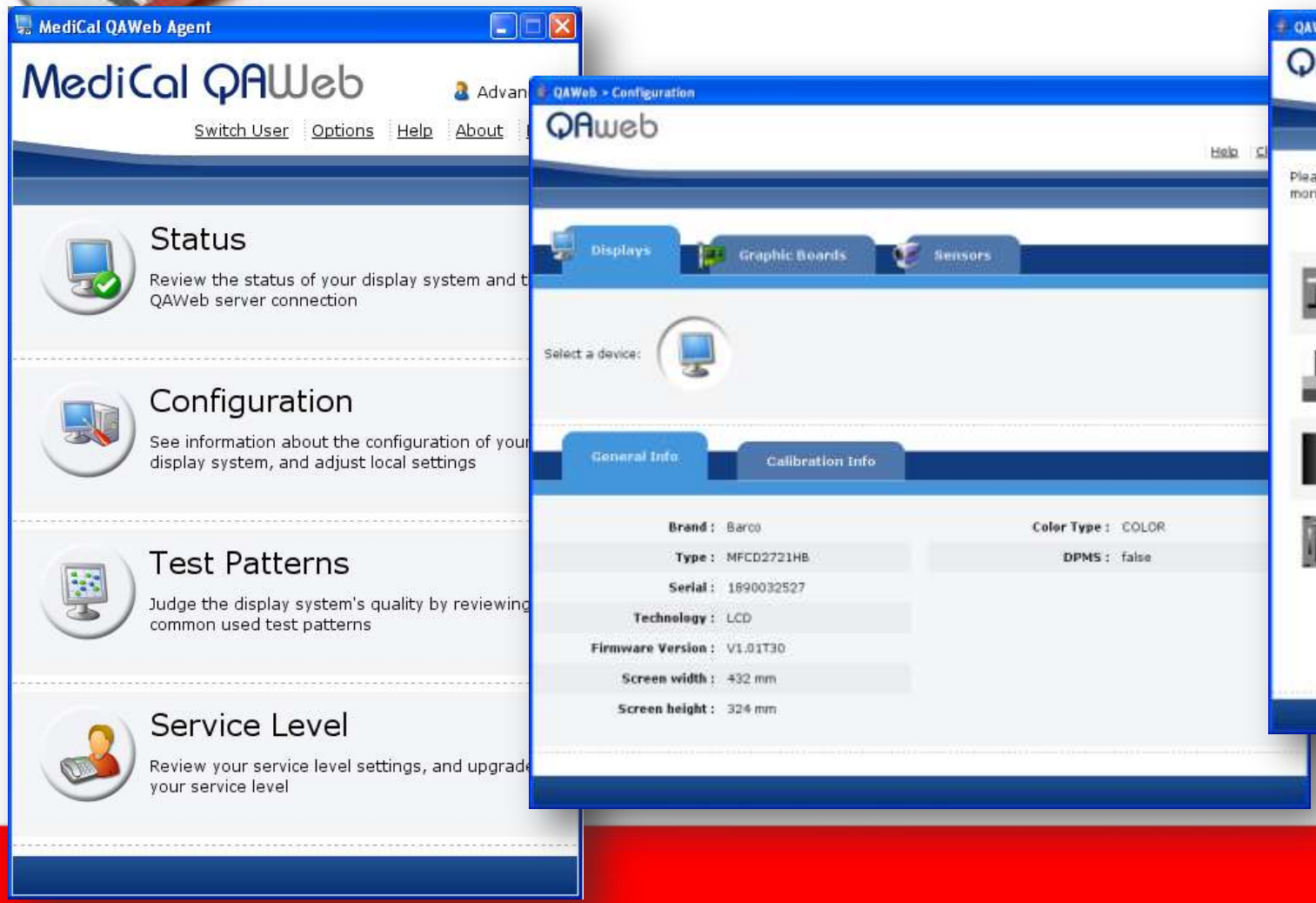
MediCal QAWeb Agent

Remotely manages multiple displays



QAWeb

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