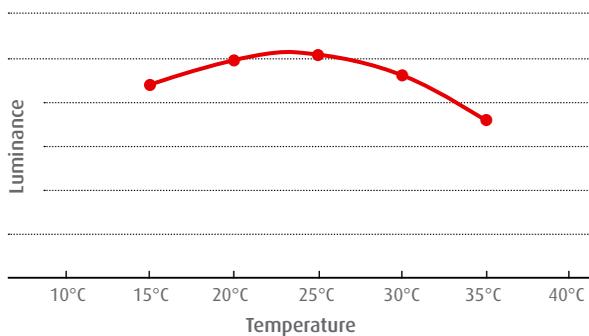


# I-Guard

## Maintaining image quality and DICOM-compliance

Radiologists expect the quality of their medical images to remain stable over time. Although the data stored in the computer archive is purely digital and therefore stable over time, the perceived image on a display workstation is not. Aging and environmental changes can affect the perceived image significantly. Therefore, displays intended for medical use should have a means to stabilize the image quality and maintain DICOM accuracy over time.



Barco has effectively tackled DICOM consistency issues with innovation that ensures worry-free DICOM compliance: its patented I-Guard technology.

## I-Guard technology



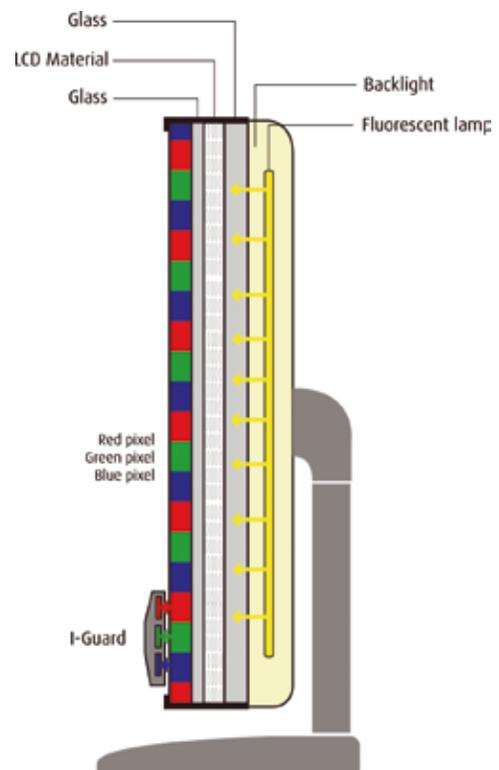
As an essential component of Barco's Coronis family of diagnostic displays, I-Guard has become the industry standard technology for monitoring the image quality and DICOM-consistency of diagnostic displays.

The latest version of I-Guard has been further perfected with increased read-out speed and enhanced sensitivity down to the lowest luminance levels.

I-Guard technology brings:

- Perfect DICOM-compliance for both color and grayscale display systems
- Much faster calibration speed
- Improved low light measurement performance

In addition to its application in grayscale diagnostic display systems, the I-Guard perfectly meets the needs of color display systems.



Side view of an LCD screen with I-Guard sensor



In color displays, a transparent color filter is stacked on top of the Liquid Crystal Display (LCD). So, in order to properly calibrate the luminance output of a color display, the sensor has to look at the image the same way as the radiologist does: from the front of the screen.

Barco's I-Guard is a tiny, embedded optical precision photometer positioned at the front of the LCD screen. Contrary to backlight sensors, which are only capable of detecting what they see (the backlight), I-Guard sees what the radiologist sees: the result of the complete image formation process of the LCD, including the graphic board, the Look-Up Table, the driving electronics, the backlight and the Liquid Crystal cells. I-Guard continuously monitors the light output of the red, green and blue contributions without disturbing the actual image display. The intelligent I-Guard communicates its readings to the controlling electronics, which make corrections to the LCD in real-time.

In addition to its stabilizing function, I-Guard can precisely measure and calibrate any DICOM Just Noticeable Difference (JND) value as defined by DICOM Part 14 with 18-bit precision. I-Guard requires a few square millimeters at the edge of the screen to do its job unnoticed in the background, without disturbing the radiologist's work. Whether it is overnight when the screen is not used, or during a busy day while the display is in use, I-Guard can take readings from the small test-patch displayed in the I-Guard area while a medical image is on the screen. Combined with Barco's MediCal QAWeb softcopy QA tool, I-Guard facilitates fast and easy calibrations, automatic Quality Assurance testing and remote diagnoses of the display.

## Request more information

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