



Gamut

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Is it time for an LCD monitor?

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Is It Time **LCD** for an Monitor?



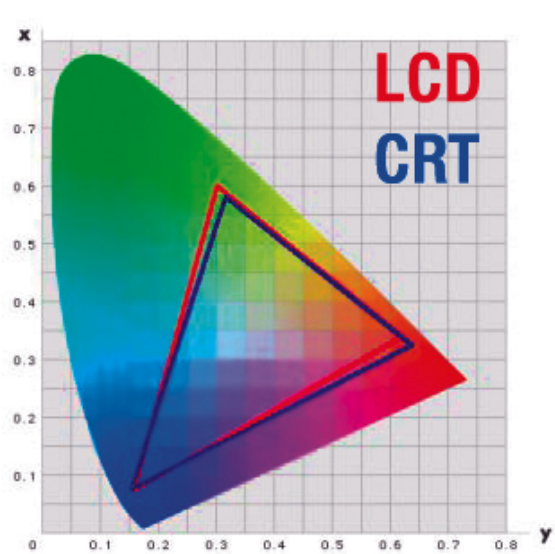
Since Apple made the switch to LCD monitors those involved in digital imaging and creative work have questioned if LCD's are up to the task of displaying images as accurately as high-end CRT's. The intention of this months article is to dig deep into the strengths and weakness of Apple's new 20" and 23" Cinema Displays. The focus will be on using these monitors to accurately predict how a job will print on press.

Gamut:

First lets bring to an end a rumor that has kept many experts from recommending LCD monitors: *the gamut of a LCD monitor is too small for accurate prepress work.*

This was true with the earlier version of the Cinema Display but the newest 20" Cinema display's gamut is only about a few percent smaller than the best CRT.

Apples largest monitor, the 23", has a slightly smaller gamut than the 20". So if you are looking for the best possible match-to-press go with the 20".



Gamut comparison between CRT and LCD

Viewing Angle:

The second question often raised is viewing angle. Again, Apple's early versions of the LCD's definitely did suffer from a smaller viewing angle, making it difficult to move more than a five or six inches without changing the overall densities on screen. The newest 20" and 23" have almost reduced this to a non-issue. There is a small change in densities when you move from standing to sitting.

Calibration:

In order to achieve an accurate on screen match to your press output you must calibrate and profile the display. The best choice for a LCD is GretagMacbeth's i1 Display shown in the image below. This system offers an affordable solution to calibrating and profiling both LCD's and CRT's.



My only complaint about the i1 Display system is that you are not given the option to match the luminance (brightness) of the monitor's white to match your press sheet. The solution is to visually adjust the brightness to match your printing conditions and then calibrate and profile the display.

Colour Purity:

This describes the displays ability to display the same colour at every area of the screen, from top right to bottom left. Some high-end CRT monitors (Barco's Reference Calibrator at \$6,000.00) have the capability to actually adjust colours at all regions. This is not possible for LCD's at this time. Therefore, LCD technology will produce bigger colour differences between all regions, when compared to the center of the screen.

A good way to test this is to create a new document in Photoshop, fill with white, tab to hide all pallets and press "F" twice to change to preview mode and press command + to increase the documents size to fill the screen. Look at the corners for any changes in colour purity. Ideally you should not see any differences in colour from the center to the outer corners.

Recommendations:

I would not hesitate to recommend the 20" Cinema Display for accurate monitor-to-press matching as long as it is properly calibrated and profiled. The added benefits of working with LCD's is how easy they are on the eyes – the increased sharpness, the pure digital signal, the higher brightness, and the non-existent flicker makes the idea of spending the day in front of a monitor, a little easier.