

Understanding the HP DreamColor LP2480zx DCI-P3 Emulation Color Space



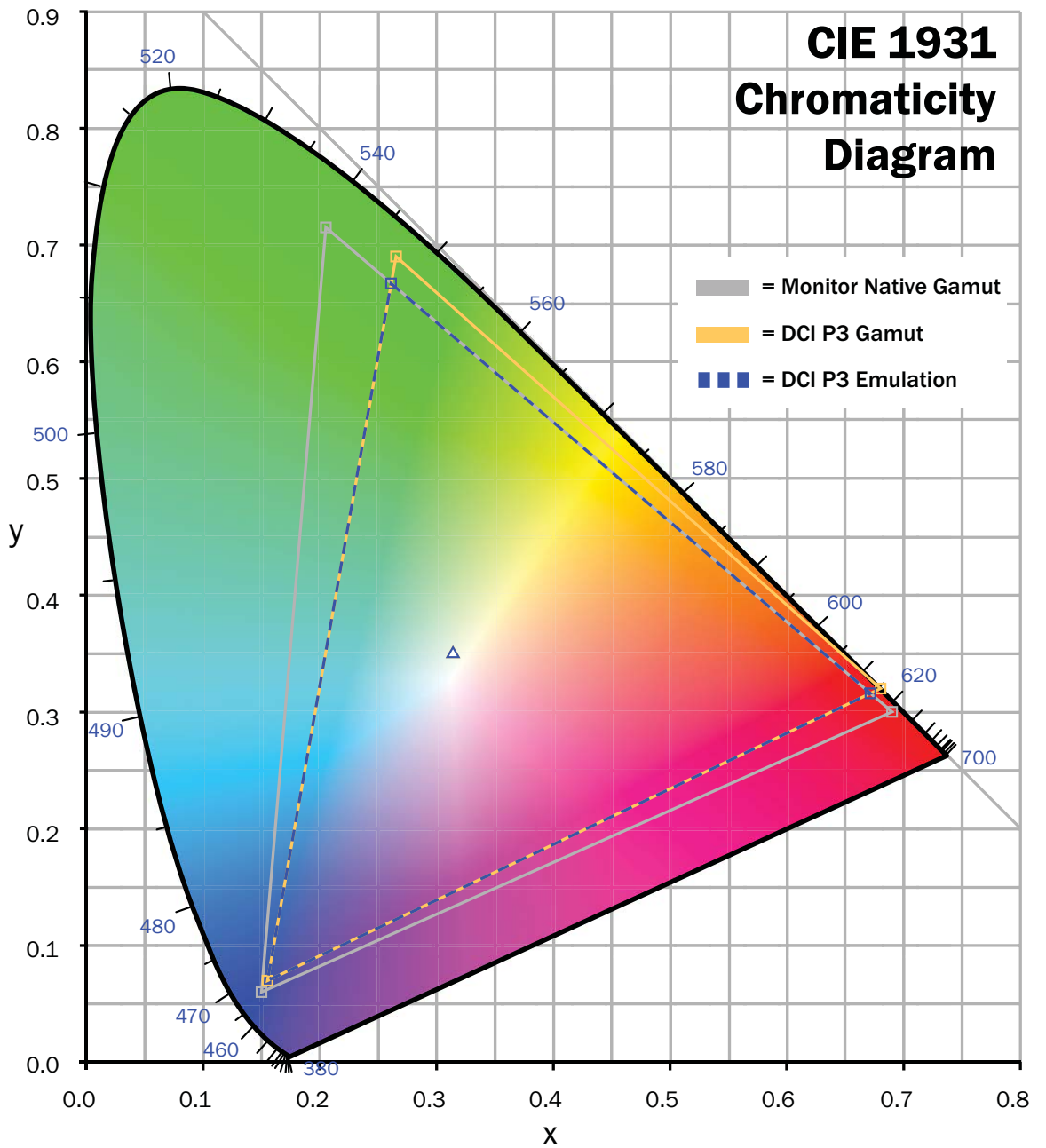
The HP DreamColor LP2480zx Professional Display provides highly accurate color performance, emulating a number of user-selectable output color space standards. This emulation includes matching the specified color space's color primaries, gamma function and white point. With the exception of the DCI P3 color space, all of the emulated spaces are fully enclosed within the monitor's native gamut and can be completely emulated.

The DCI P3 color space contains the widest gamut of all of the emulated color spaces and, as mentioned previously, is not completely enclosed within the native color gamut of the monitor. The following table lists, in CIE 1931 x/y coordinates, the color primaries for the DCI-P3 standard and the native primaries for the LP2480zx.

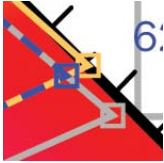


		DCI-P3 (SMPTE-231-2)	LP2480zx Native Gamut
Red	x	0.680	0.690
	y	0.320	0.300
Green	x	0.265	0.205
	y	0.690	0.715
Blue	x	0.150	0.150
	y	0.060	0.045

These differences translate into a DCI-P3 red primary that is more saturated than LP2480zx's and a DCI-P3 green primary that contains more yellow. (The DCI-P3 blue primary is fully enclosed in the LP2480zx's native gamut.)

In order to accurately display as much of the DCI-P3 color space as possible we chose DCI-P3 emulation primaries that were at the intersection of the two color spaces. This intersection and the resultant color space is shown in the following illustration.



The resultant color primaries for the DCI-P3 Emulation color space are listed in the following table.

		DCI-P3 (SMPTE-231-2)	LP2480zx DCI-P3 Emulation	
Red	x	0.680	0.672	
	y	0.320	0.316	
Green	x	0.265	0.261	
	y	0.690	0.667	
Blue	x	0.150	0.150	
	y	0.060	0.060	

= Monitor Native Gamut
 = DCI P3 Gamut
 = DCI P3 Emulation

As you can see by the illustrations in the table, the LP2480zx DCI P3 Emulation clips the DCI P3 gamut just inside the red-green line. This provides the most accurate color space emulation possible with current LCD display technology.

Though the color primaries are simulated, this emulation uses the DCI-P3 white point (x: 0.314, y: 0.351) and gamma (2.6).

In early releases of the LP2480zx monitor the DCI-P3 Emulation did not use the correct color primaries listed above. This can be corrected using the DreamColor Calibration Kit and entering the emulation primaries listed above into the Advanced Profiling Software (APS) calibration configuration. For more information on using the APS software, please refer to the its manual.

For more information

<http://www.hp.com/go/displays>
HP displays

<http://h30267.www3.hp.com/country/us/en/dreamcolor>
HP DreamColor Technologies

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