

Precision Display Primer

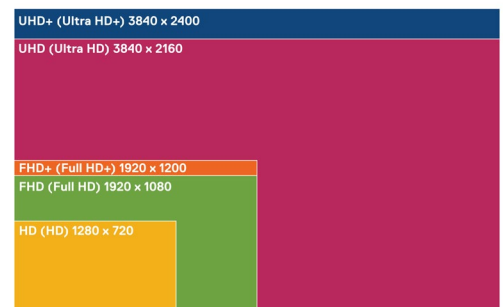


Choosing the right mobile workstation display is critical to the productivity and color accuracy of a project. Artists, engineers and designers spend hundreds of hours in front of screens, but without the right display, they're not getting the best representation of their work.

So, what is the best display for your work? That's a complicated question with multiple variables. We'll help you sort through the lumens and the acronyms to help you make the best selection.

Resolutions: Acronym Explanation

Modern mobile workstation displays have evolved with the rest of hardware to include increasingly sophisticated technology that improves the display and color accuracy. This includes resolution differences. Depending on what's being developed, it's important to fully understand the differences in UHD, UHD+, FHD, FHD+ and HD, what they're best used for, and how HDR plays with each.



	UHD (Ultra HD), UHD+	FHD (Full HD), FHD+	HD
Resolution	UHD: 3840 x 2160 UHD+: 3840 x 2400	FHD: 1920 x 1080 FHD+: 1920 x 1200	1280 x 720
Commonly called	4K	High Def or 1080p	720p
Number of pixels	UHD: 8,294,400 UHD+: 9,216,000	FHD: 2,073,600 FHD+: 2,304,000	921,600
Usually used in	Professional workstations TVs over 40 inches Movie theaters New gaming consoles	TVs under 40 inches Last gen gaming consoles Modern smartphones (varies by brand)	Older phones Streaming in low bandwidth environments
Bottomline	Increasingly becoming the standard for consumer use	The most widely used format, for now	Smaller formats and regions where high-speed Internet is uncommon

What about HDR?

HDR, or high dynamic range, enables a display to show a broader spectrum of colors and contrasts, showing a more detailed image with more realistic color tones, especially lights and darks. It provides a much more vibrant picture with deeper blacks and a wide color gamut. HDR isn't supported by every display, but it's becoming more commonplace. Designers, be it photo, video, or gaming, should strongly consider working in this environment when possible, which includes having a display that supports it.

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Covering the color gamut

A color space is the range of colors a display can show. There are currently three different standards in wide use: sRGB, Adobe RGB, DCI-P3. The vast majority of modern panels support at least one, if not more, of these wide gamut standards, although professional designers should look for displays that work with both Adobe RGB and P3. The ideal choice is one that has the best coverage for your most frequent type of project and based on the workflow guidance given for each color space. A workstation display panel limited to just sRGB would be considered somewhat antiquated by professional standards.

sRGB

sRGB is the most widely used color space and is most likely supported by any display developed today. It is considered the “default” setting of color gamuts. For creators doing everyday graphics printing and especially when doing design with the intent of Web delivery, a display with wide sRGB coverage is the best choice.

Adobe RGB

Adobe RGB greatly expands on sRGB by increasing the color range to show a more accurate display. Many creatives work in Adobe RGB, which is commonly used in professional work, and includes CMYK colors not supported by sRGB. Ensure you have a display with 100% Adobe RGB when using Adobe Creative Cloud applications like Photoshop, Lightroom and InDesign, especially when doing professional CMYK printing. If photography is your focus, then consider monitors with a higher Adobe RGB spec.

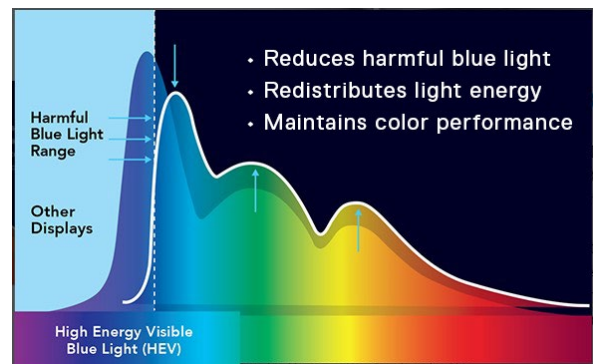
DCI-P3

P3 for short, this joins Adobe RGB as extensively used wide gamut display standards. It was first used with digital cinema, but has found regular use for all applications. P3 has a wider range of yellows and reds, which Adobe RGB stretches farther into blues and greens. A display with 100% DCI-P3 coverage is valuable when doing video, motion graphics or animation work for TV, broadcast or film using software such as Premiere Pro, After Effects, Blackmagic Design Resolve or Autodesk Maya.

Other considerations

Ambient light sensors These sensors automatically adjust screen brightness to adjust for the working environment, reducing eye strain.

ComfortView Plus Dell reduces the effects of blue light with ComfortView Plus technology to make screen time less taxing on the eyes. ComfortView Plus is a TÜV Rheinland-certified Hardware Low Blue Light solution and available on select monitors and laptop displays.



PremierColor Panels Precision workstations come with PremierColor panel options, including a DCI-P3 > 99% color gamut, UHD resolution, 10-bit color depth and a minimum brightness of 300 nits. PremierColor panels deliver amazing color depth and quality, and many include ComfortView Plus, low blue light technology.

PremierColor Software Supported on select Precision workstations, PremierColor Software automatically adjusts the color space for the content being viewed and personal color space calibration providing color accuracy and correction for over-saturation.

Brightness It depends on the application, but for professionals, 400 nits would be on the low end. If working with HDR, you may need up to 1000 nits.

Employees on productivity¹

84% Large displays are important to work
62% Higher resolution displays impact productivity

¹Reference: https://i.dell.com/sites/csdocuments/Product_Docs/en/providing_the_right_monitor_for_the_job_forrester_infographic_en.pdf

	Resolution	PremierColor	ComfortView Plus	Color Gamuts	Size	Brightness
Precision 3000 Series	Up to UHD	Y	Y	sRGB	15.6"	Up to 400 nits
Precision 5000 Series	Up to UHD+	Y	Y	sRGB, Adobe RGB	15" & 17"	Up to 400 nits
Precision 7000 Series	Up to UHD	Y	N	sRGB, Adobe RGB, DCI-P3	15" & 17"	Up to 600 nits