



SAMSUNG QLED MONITORS

- WHAT IS QUANTUM DOT TECHNOLOGY?

SAMSUNG

I IMAGES IN LIVING COLOR

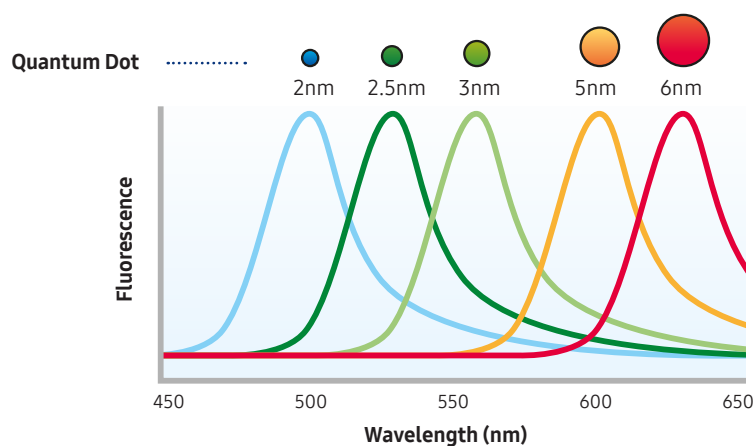
For work and for leisure, more of us than ever spend a significant part of each day in front of a computer screen. What's more, we are turning to our monitors for an ever-increasing variety of everyday tasks. Whether it's catching up on TV shows, browsing photos, or shopping online, that means accurate and true-to-life color reproduction is more critical than ever. And that is where Quantum Dot technology sets the new standard. Due to limitations inherent in their technology, most conventional monitors are unable to create highly pure, true-to-life colors. Quantum Dot technology takes a fundamentally different approach to color, allowing monitors to produce purer colors that more accurately match those we see in the world around us.

Because Quantum Dot technology delivers a wider range of purer colors than conventional displays, you can enjoy clearer and more lifelike images. So in any application you can be sure that what you see on your screen is more accurate and truer to life than ever. And with a Samsung QLED Monitor, you will discover the most astonishingly vivid and true-to-life pictures imaginable.

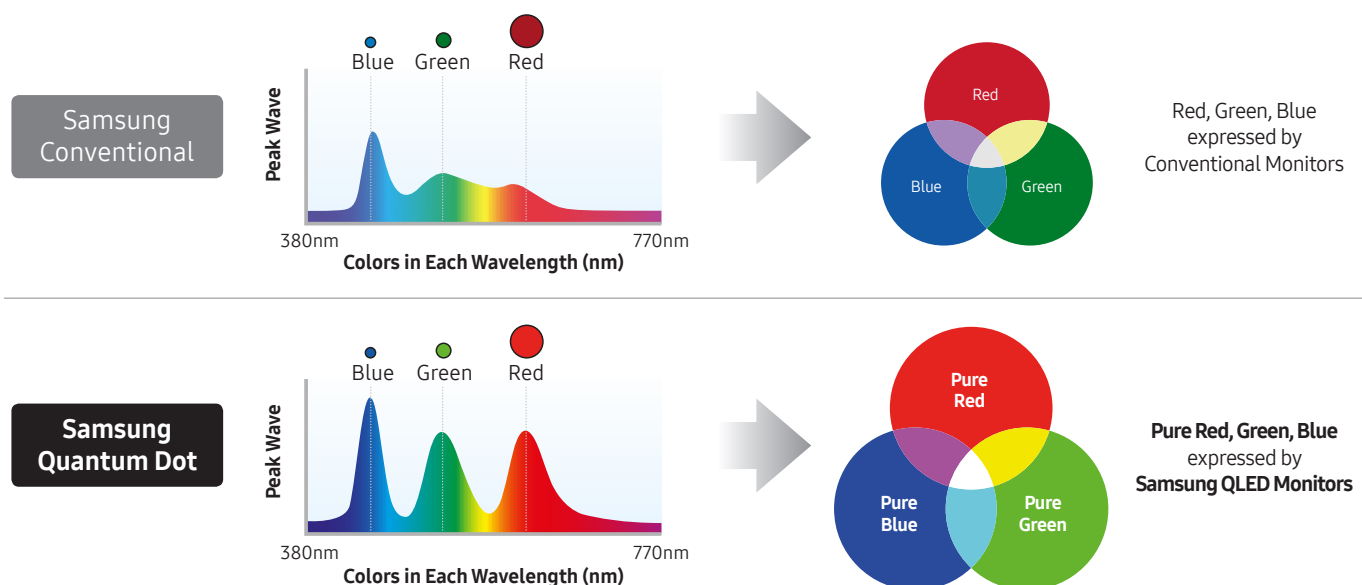
I WHAT IS QUANTUM DOT TECHNOLOGY?

What are Quantum dots?

Quantum dots are semi-conductor nanocrystals that are able to absorb higher-energy light and convert it to lower-energy light. The light wavelength — or color — that quantum dots emit varies depending on their size. For example, the smallest dots, with a diameter of just 2nm, emit blue light. The largest particles, with a diameter of around 6nm, emit red light.



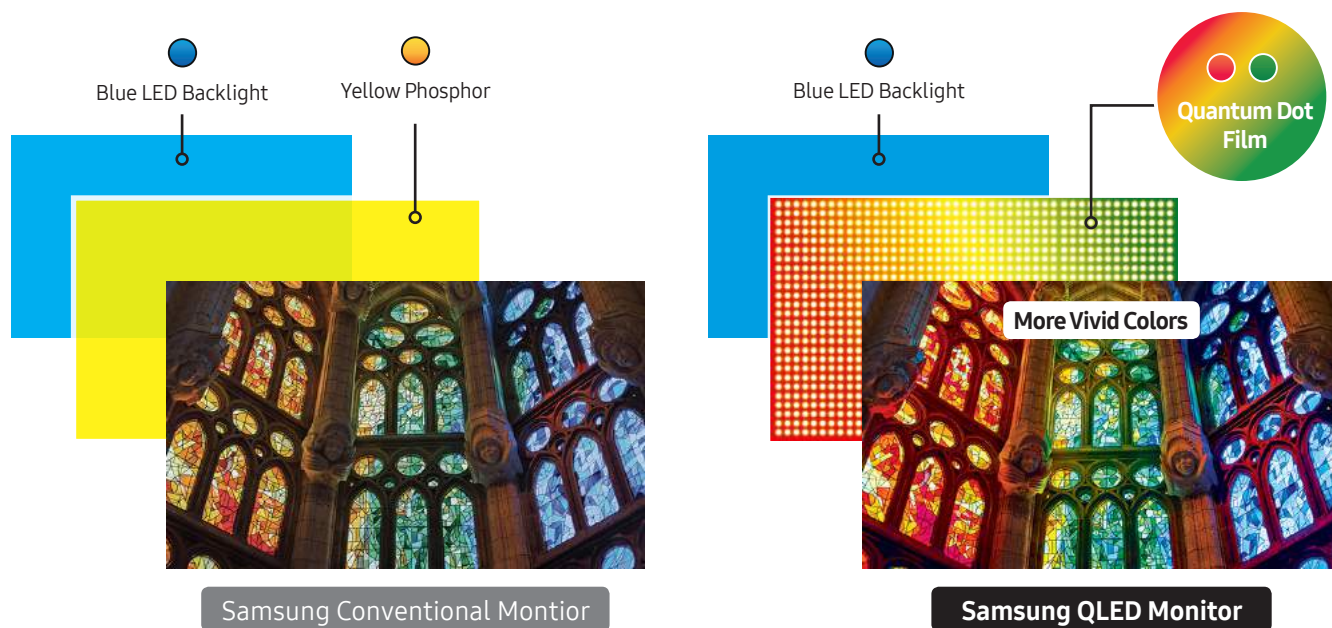
The colors quantum dots emit are extremely pure and highly saturated. That is because they produce higher spectral wave peaks than conventional materials, which result in a wider range of colors, especially reds and greens, that are clearer, more accurate, and truer to life. Quantum dots are also highly efficient at converting light, so using the same amount of electrical power they are able to generate brighter colors than other materials.



How is Quantum dot applied to monitors?

To understand the advantages of Quantum Dot Technology, it is helpful to understand how LCDs usually produce color. In conventional LCD monitors, blue LEDs are coated in yellow phosphor to create a white light that illuminates the screen pixels. Those pixels each consist of RGB sub-pixels that selectively filter the light to create the colors you see on the screen. The accuracy, range and brightness of colors produced by this process are limited, however, because white light and the RGB filters do not produce completely pure colors.

In Samsung QLED Monitors, the blue LEDs illuminate a layer of red and green quantum dots that cover the entire screen. The film of dots creates a much purer white and a wider range of purer, brighter colors than is possible using conventional technology. That means the colors you see on the screen are much more accurate and closer to real life than colors on conventional monitors.

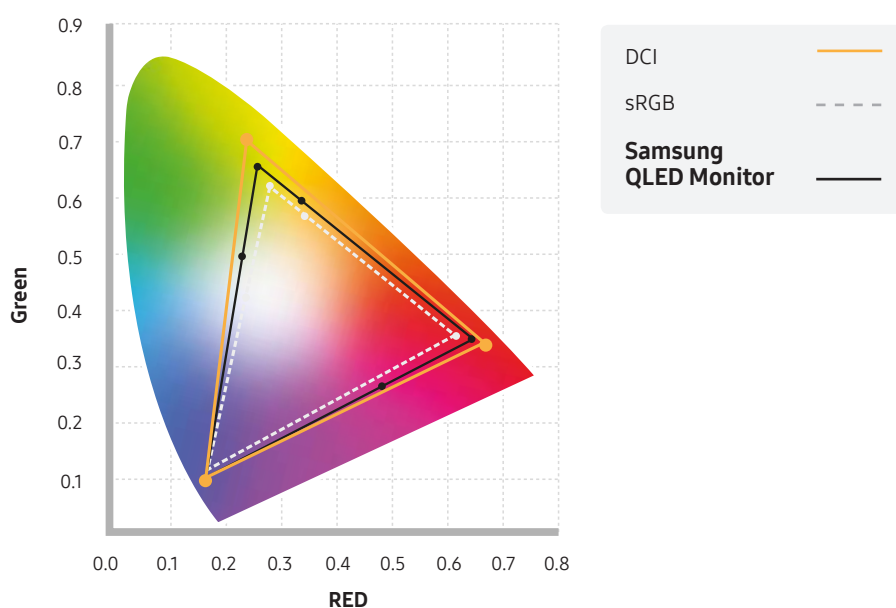


* This is an illustration of Quantum dot technology as employed in Samsung QLED Monitors.

I SAMSUNG QUANTUM DOT TECHNOLOGY

Wider range of more life-like colors

The wider range of colors that Quantum Dot technology is capable of producing means that Samsung QLED Monitors can display more accurate and realistic colors than conventional monitors. More specifically, Samsung QLED Monitors support approximately 125% sRGB (CIE 1931), meaning they are able to display more colors than the standard RGB color space used for monitors, printers and the Internet. They can also display up to 95% DCI Specification (CIE 1976), the digital cinema industry standard for content, making them perfectly suited to viewing multimedia content such as games, movies, and sporting events.

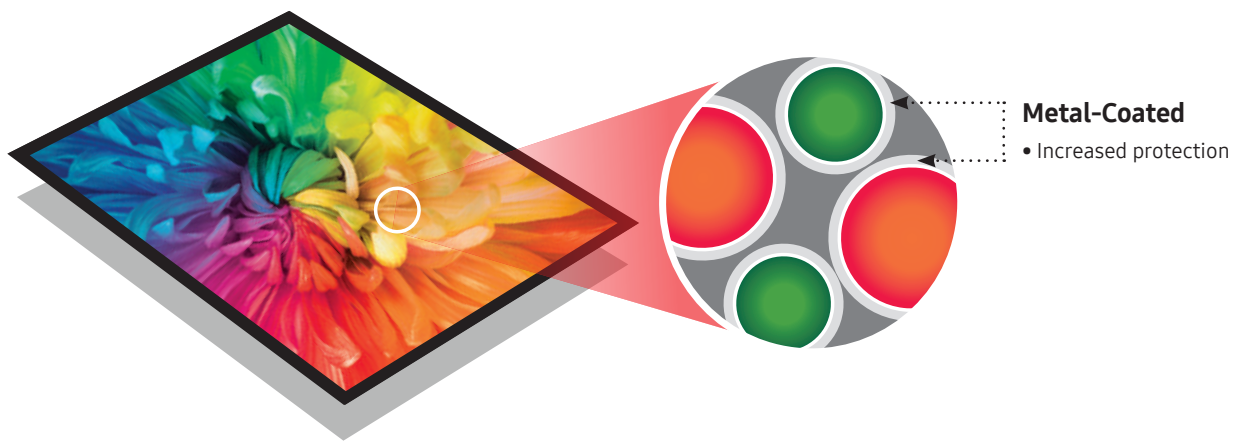


Cadmium-free, Environment Friendly Technology

Quantum dot fabrication generally involves the use of cadmium sulfide (CdS) or selenide (CdSe), elements that are potentially harmful to the environment due to the toxic Cd^{2+} they release as nanoparticles degrade. After extensive research, Samsung has developed a unique technology to create indium-based (In) Quantum dots that match or exceed the performance of those based on cadmium. Samsung is currently a leading producer of cadmium-free quantum dot monitors.

Long lasting, Metal-coated Quantum dots

Samsung's QLED Monitors are manufactured to last. Using newly developed technology, from 2017 all Samsung Quantum dots are coated with a metal alloy that provides increased protection against moisture and other environmental agents and ensures continued energy efficiency. That means Samsung QLED Monitors continue to perform consistently and sustain bright, vibrant color performance over years of regular use.



I SAMSUNG QLED MONITOR — BETTER CHOICE FOR COLOR ACCURACY

With its unique combination of wider color range and greater brightness, Samsung's Quantum Dot technology delivers more lifelike and clearer images than conventional monitor technologies. For business users who demand high color quality, home users who want to enjoy games, movies, and photos in their true colors, and anyone who needs to be sure the colors they see online exactly match the real thing, Samsung QLED Monitors provide the ultimate solution.

For Movies



Samsung Conventional Monitor



Samsung QLED Monitor

For Games



Samsung Conventional Monitor



Samsung QLED Monitor

For more information

For more information about Samsung QLED Monitor

www.samsung.com/monitor or

www.youtube.com/samsungmonitorglobal

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