Accurate Gamma 2.2
And pre-set 5 gamma settings

What is Gamma?
Gamma, previously in CRT and early LCD monitors, was directly linked to voltage and was an important factor in reproducing images accurately on displays. In current LCD monitors, Gamma can be thought of as the moderator of the relationship between the brightness of the data captured (input) and how that affects the total human eye perception of colour (output) while viewing the display, in terms of colour brightness. In a more technical sense, it is the correction of brightness in an image’s colour through colour shading balance in a pixel’s value. Pixels have values that range between 0 (black) to 255 (white) with various degrees of grey in between.

Our normal vision (not excessively dark or exceedingly bright conditions) is more sensitive to changes in dark tones and due to the capture process of an image, colour can be misrepresented, as a result of the difference in how we perceive brightness and the luminance, from when the original image was captured. Our eyes capture brightness in a disproportional way, for example, if a camera captures an image in an extremely bright setting, our eyes perceive the light as being only a fraction brighter. If the image is processed and displayed on a desktop without gamma correction, it will then be perceived by the user as being washed out or too bright. Due to the imbalance, gamma is used to ensure the input relationship matches the desktop output.
When applying this range to colour (RGB) colours can be produced at various brightness levels, while not affecting the colour hue. A red pixel with a value of 192 would be three quarters of the possible brightness with a red pixel with a value of 10 would be extremely dark. Gamma correction is needed to adjust images in response to the properties of human vision, in order to produce true colour. Our eyes capture brightness in a disproportional way, for example, if a camera captures an image and it is exceedingly bright, we will perceive the light as being only a fraction brighter. If the image is processed and displayed on a desktop without gamma correction, it will then be perceived by the user as being washed out or too bright. Due to the brightness imbalance, gamma is used to balance the input relationship to match the desktop output creating true to life colour.

There are various levels of gamma that can balance colour, with varying degrees of success. Gamma levels of 1.8 and 2.2 (Mac OS and Windows OS respectively) were the de facto standard for many years, with gamma level adjustment becoming the new standard in professional monitor production. Gamma 2.2 has been the standard for Windows and Apple (since Mac OS X v10.6 Snow Leopard). Using a monitor with a gamma level of 2.2 can produce almost optimal colours. This level provides the optimal balance for true colour and is used as the standard for graphic and video professionals.

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Gamma curve importance stems from the need of smooth gradation between colours and colour correction. As technology has improved, internal gamma settings have been adjusted to fit usage and better match situational display use. To improve gradation further, subjugating an eight-bit count input signal to a 14 bit colour calculation can help improve the reproduction of darker tones, improve intermediate colour gradation and produce higher quality, more precise colour output. In addition, many displays don’t adjust grayscale gamma correction at all, or only adjust grayscale gamma correction, without focusing on the red, green or blue scale colour gradients. For the best colour and grayscale gradation, the VP2780-4K monitor provides grayscale and RGB scale gamma correction, providing optimum gradation, producing the best colour transitions. With precise factory-calibrated grayscale and RGB scale gamma correction, the VP2780-4K monitor surpasses competing displays and delivers stunning, genuine colour.
Optimal Gamma Range:
ViewSonic Pre-set Gamma settings: In addition to Gamma 2.2, VP2780-4K also offers Gamma 1.8, Gamma 2.0, Gamma 2.4 and Gamma 2.6 for different kinds of viewing scenarios. This range helps compliment everyday life and viewing situations, whether scenes are too bright and need an enhanced bright colour gradient (2.4, 2.6) or too dark (1.8, 2.0). This optimal range allows users the ability to quickly change between modes and find the desired viewing setting for the ideal situation. Whether for casual users, wanting to improve their movie experience or professional movie makers, graphic designers and photographers, ViewSonic Pre-set Gamma settings support a wide range of uses and needs.
Gamma 1.8: Previously the standard for Mac computers, this setting enhances the colour gradient between darker tones, not only making darker scenes clearer but also increases overall colour tone brightness. This setting is ideal for watching movies, television or situations where scenes or pictures are too dark.

Gamma 2.0: As another option, this gamma setting can offer balance while still providing increased enhancement of dark tones, not only enhancing the detail in darker scenes but also the soft, gentle scenes as well. Originally designed as a compromise for Mac and PC, this setting is a perfect middle ground for users that want to utilize the flexibility of multiple gamma settings.

Gamma 2.2: The standard for gamma settings to balance true colour with monitors. This gamma setting is the true standard with Windows and Mac fully supported and the most widely used setting. Adopted because of true colour output, gamma 2.2 provides the best curve to produce true to life
colours with washout or inaccurate shadows.

**Gamma 2.4:** As an additional choice, this gamma setting is used to enhance the detail in scenes that are slightly too bright, providing increased contrast, and improved visibility of vivid colours. Perfect for HD television production, and the Rec. 709 colour space, this gamma setting supports professional users that want to get the most from their high quality ViewSonic monitors.

**Gamma 2.6:** This gamma setting is used to highlight bright tonal contrast in pictures and video where differences in brighter tones are harder to perceive. These various settings allow flexibility to the user, to choose which setting is the ideal, depending on the situation. The gamma standard for DCI (Digital Cinema Initiative) and movie production, this setting provides the higher contrast for users to produce cinema and film.