

Tips for Enriching Color Saturation in Dark Areas of an Image

Preface

When shooting a documentary, for example, the color saturation in the dark areas of the picture may sometimes not be properly reproduced. As shown in the “Before setting” image, the dark areas in the background of the room are not fully reproduced, and the color of the picture appears slightly faded.

This occurs because the signals from the dark areas are not output as dark as they should be or with the shades that they should have.

In such situations, by adjusting the signal level of the black areas to better match the entire image, the picture is reproduced with a much richer visual impression.



Before setting



After setting

Features of Sony Cameras

Sony cameras have a BLACK GAMMA adjustment function which can be used to reproduce rich looking pictures. This function applies signal adjustments to the black or near black areas, without influencing mid tone and bright areas of the image.

As shown in the “After Setting” image, by decreasing the BLACK GAMMA level so that the dark areas are reproduced with more color and darkness, the shade across the white cabinet (behind the desk) and the color of the desk lamp are reproduced with

more visual richness.

This function can also be used to increase contrast in the dark picture areas, thus making the entire image look brighter, by increasing the BLACK GAMMA level.

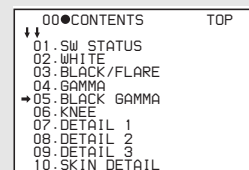
Major Sony cameras with the BLACK GAMMA adjustment function

HDW-900 series, HDW-750/730 series, DVW-970 series, PDW-530/510 series, DSR-450/400 series, MSW-970 series

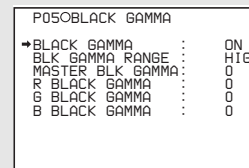
Camera Settings

To adjust BLACK GAMMA, use the BLACK GAMMA page of the PAINT menu.

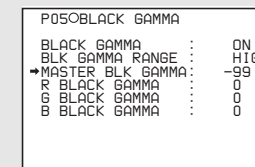
1 Open BLACK GAMMA of the PAINT menu.



2 Set BLACK GAMMA to ON (default).



3 Adjust MASTER BLK GAMMA in the range of -99 to +99.



Setting a negative (-) values darkens the black tone and enriches the color, and setting a positive (+) values brightens the black contrast but fades away the color. In the case shown in the “After Setting” image, the BLACK GAMMA level was decreased and set to “-99.”

Adjusting BLACK GAMMA to a positive (+) value results in increasing noise. To keep this to a minimum, the combined use of the CRISPENING function is recommended (refer to Issue 03).

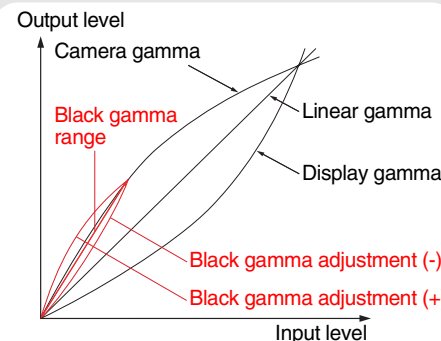
Technical Information

What is GAMMA?

Gamma is a numerical value that indicates the response characteristics between the image brightness of a camera or display device, and its input voltage. In order to obtain faithful picture reproduction, a linear (straight) gamma is required. However, the brightness of a display device and its input voltage retain a relationship with an exponential function, instead of a directly proportional one. This is compensated for in the acquisition camera.

What is BLACK GAMMA?

BLACK GAMMA is a function that allows the gamma curve near black signal levels to be either lowered or boosted with respect to the input level, to achieve the desired picture reproduction in dark areas of the image. Using this function, dark areas of the picture can either be reproduced with deeper darkness and more color saturation, or with higher contrast but less color depth. In Sony cameras, setting the BLK GAMMA RANGE to either LOW, L.MID, H.MID, or HIGH determines the signal level range to be adjusted, and adjusting the MASTER BLK GAMMA value (-99 to +99) determines the shape of the gamma curve to be applied to that signal range.



As in this example, adjusting MASTER BLK GAMMA applies the same gamma curve to all R/G/B channels. However, Sony cameras also allow BLACK GAMMA to be adjusted individually for each R/G/B channel (R GAMMA/G GAMMA/B GAMMA).