

# Level Auto Ino

Spread the brightness range of the picture.

It performs an automatic level correction, useful for increasing the image brightness and contrast.

Based on the brightest and darkest values of the input image, the brightness range is expanded to the darkest (Out Min) and brightest (Out Max) values.

--> See Figure 1: "Auto Levels - Calculation Diagram"

Since it expands the range of each RGBA channel, it does not take into account the RGBA's balance. Therefore please note that it may change colors, in a colored image.

When checking the results, sub-camera must not be used.

Since the sub-camera input image range is different, its darkest and brightest values are different of those of the input image, and will give different results.

--- Inputs ---

Source

Connect the image to be processed.

--- Settings ---

In Min Shift

In Max Shift

The minimum and maximum values of the input image pixels are automatically calculated and adjusted by adding to their values.

For example, if there is only one bright pixel that needs to be ignored, it is possible to spread the range by specifying a negative value for "In Max Shift" .

Pixel values (8 or 16 bits) are specified ranging from 0 to 1.

Minimum value is -1, maximum value is 1.

Min 0

Max -1

These values will make the screen become black.

Min 1

Max 0

These values will make the screen become white.

If both values are set to 0, there will be no adjustment by shift.

The default values for both are 0.

Out Min

Out Max

Determines the darkest (Out Min) and the brightest (Out Max) values of the output image.

Minimum value is 0, maximum value is 1.

The defaults values are

Out Min: 0

Out Max: 1

Gamma

Perform gamma correction between "Out Min" and "Out Max".

A value between 0.1 and 1.0, will make the image become darker.

When the value is 1.0, no correction will be performed.

A value between 1.0 and 10.0, will make the image become brighter.

The default value is 1.

Figure 1: Auto Levels - Calculation Diagram

