

Custom Font Lighting Effects GT Style Filter

This Gimp 2.10 plug-in uses the Lighting Plug-in to apply a range of effects to all the characters in a custom font file.

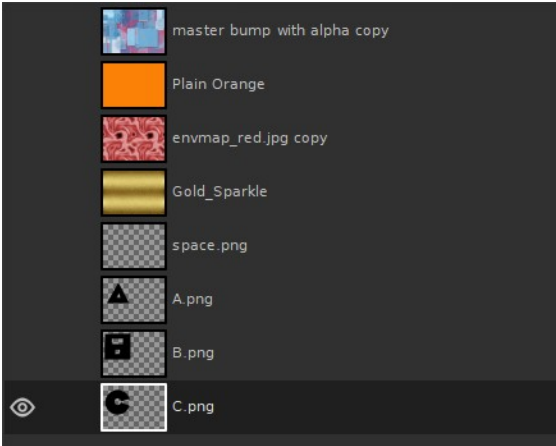
It broadly follows the techniques employed by GnuTux in his Environment Mapped Text tutorial on GimpChat in 2013. Unfortunately, as Graechan bemoaned back in 2010, the Lighting plug-in does not work as it should in non-interactive mode i.e. when used from within a script, and so I have had to be creative and use additional mode methods to apply a patterned layer for the light effects to work with.

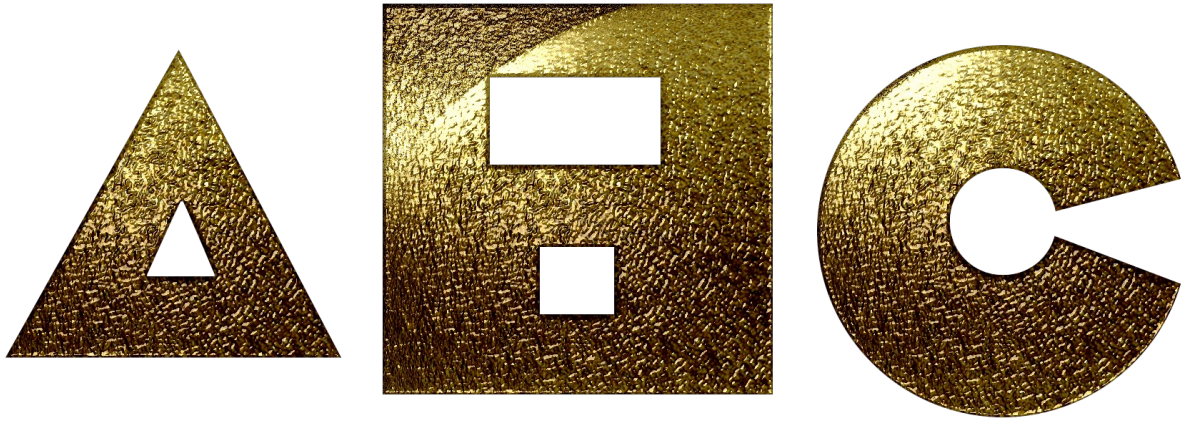
In lighting plug-in terms, this patterned or textured layer is used as an environment map but, unlike the real filter, it requires an alpha channel to work properly; it will still work without an alpha channel but it will not produce very good results. If you are not sure if the layer has an alpha channel, it will be displayed in bold text in the layer stack if it does not have one.

To see the filter work, open up an existing custom font file. The custom font can be plain or decorative – since the plug-in will initially use the outlined shape of each character as its base. If you use your own font add a patterned layer – preferably one bigger than the image height and width – to your image layer stack and click on ‘OK’.

Version 0.6 uses the tabbed dialog developed by Arakne and made available by MareroQ

Below are example outputs using the default options.
Just drag the texture/pattern layer you want the filter to use to the top of the other patterned layers in the layer dock and click 'OK'.





A quick look at the workflow of the filter may help to explain some of options from the dialog.

After checking that a suitable layer exists to use as the environment layer the filter makes a copy of that layer...



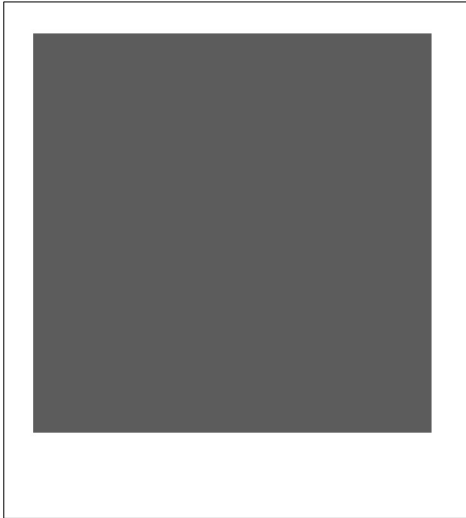
...and then attempts to centre it.



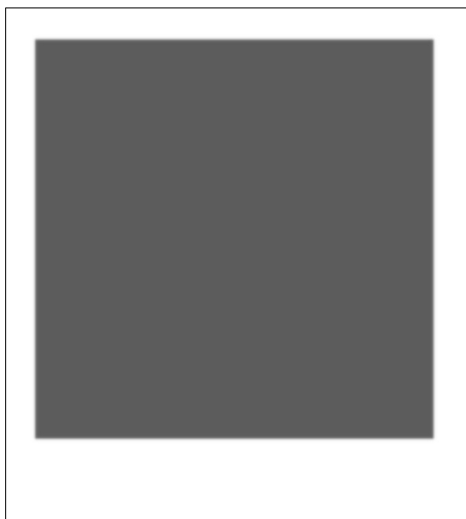
If an appropriate option (Dialog Tab 3 #16 - 18) is checked it will distort this pseudo environment layer with the selected Gimp plug-in. The Apply lens filter is selected by default with a refraction index of 2.0. but you could also introduce some distortion using the Polar co-ords filter option.



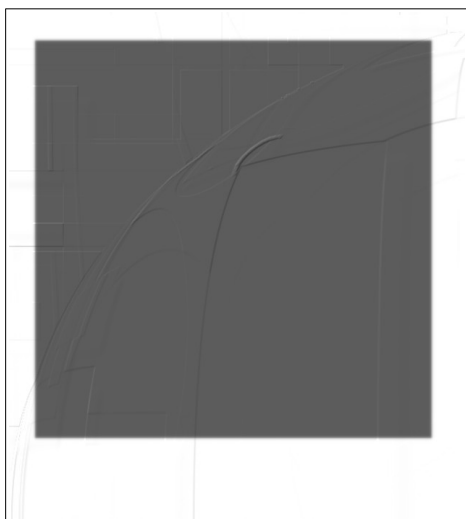
Then the filter creates a filled version of the character on a white background (represented by the rectangle below) in the chosen shade of grey (Dialog Tab 2 Option #1)...



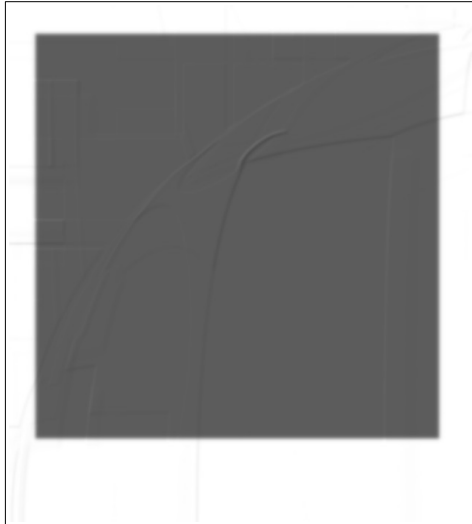
...before adding some of the blur (Dialog Tab 2 Option #5)...



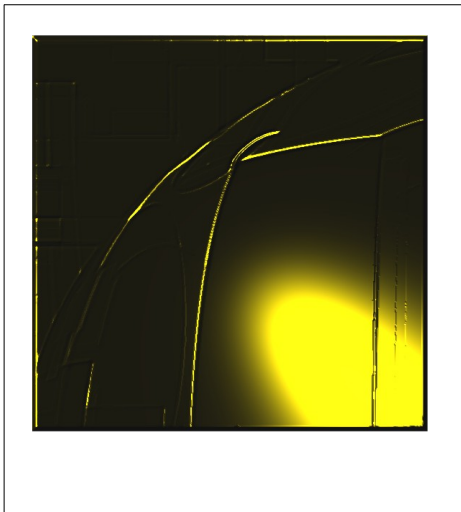
...and a bump-mapped version of the environment layer (Dialog Tab 2 Option #3)...



...before applying a final blur.

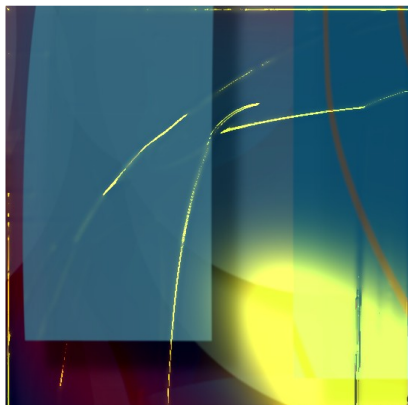


This is now the temporary character bump-map layer that the lighting plug-in can use to create its magic – shown below with a yellow light taken from the foreground colour (Dialog Tab1 #1).



The next step is to attempt to try and remove any artefacts created during the bump-map and lighting process using the selective gaussian blur filter (Dialog #20).

Then the environment layer is added and applied to the bump-map layer using the chosen mode (Dialog Tab 3 Option #4 - 5). Be aware that the new, default modes are used only if the old mode is set to 'Normal'.



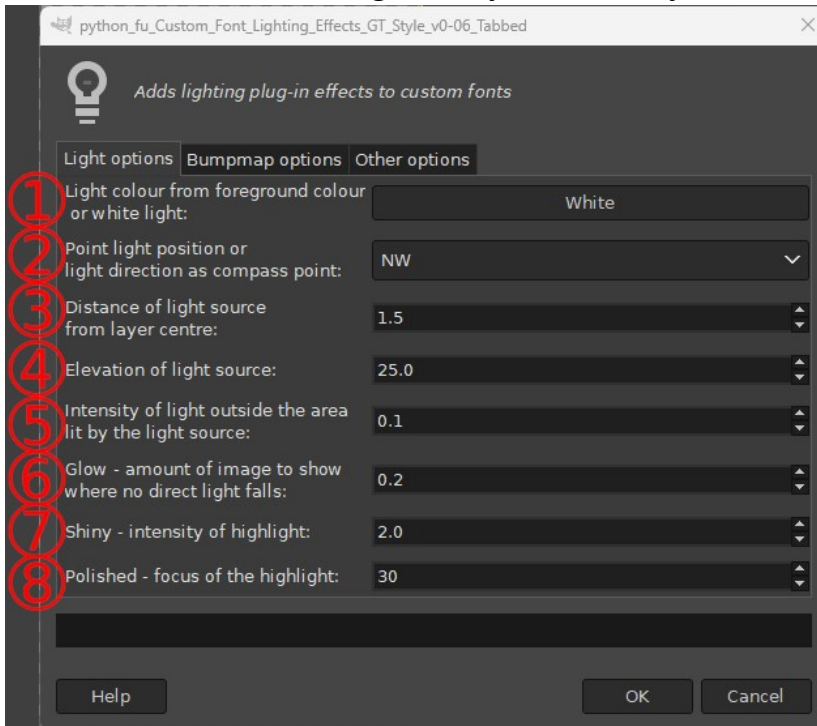
When this process is completed, the filter moves on to the next character in the custom font file.

Finally the filter adds one extra layer named legend as a summary of all the dialog options used (in text form). I got fed up trying to remember which options and values I had used to produce a certain effect.

Light Colour = rgb: 255,255,255
Light Type = directional
Light Direction = NW
Distance from light source = 1.0
Elevation of light source = 2.0
Light intensity = 0.1
Glow = 0.2
Brightness = 0.5
Shiny = 2.0
Polished = 30.0
Grey = Grey 5
Bumpmap characters = Yes
Blur order = Bumpmap before blurring
Bumpmap depth = 1.0
Amount of blur = 10.0
Invert bumpmap = No
Apply Lens = Yes
Lens index = 2.0
Apply polar coords = No
Legacy mode = Normal
New mode = Grain merge
Artifact radius = 10.0
Artifact delta = 150.0
Type of characters = new

If you are familiar with the lighting plug-in then you will feel comfortable with using the lighting options from the filter dialog.

If you are a new user of the lighting filter and feel over-whelmed at the number of options to use then the next section of this guide may be of use to you.

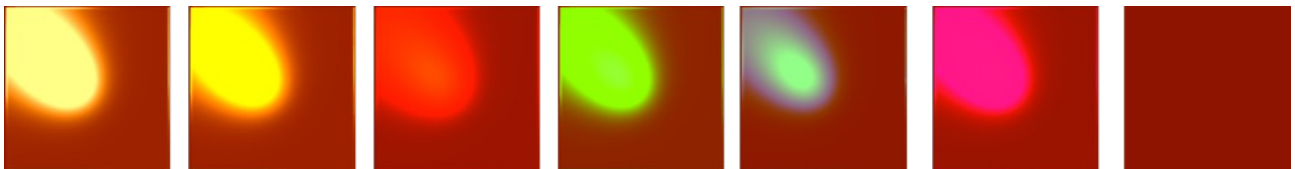


In order to see the effects of changes more clearly I have initially used a plain orange square instead of a real character.

Dialog Tab 1 Option#1: Light colour

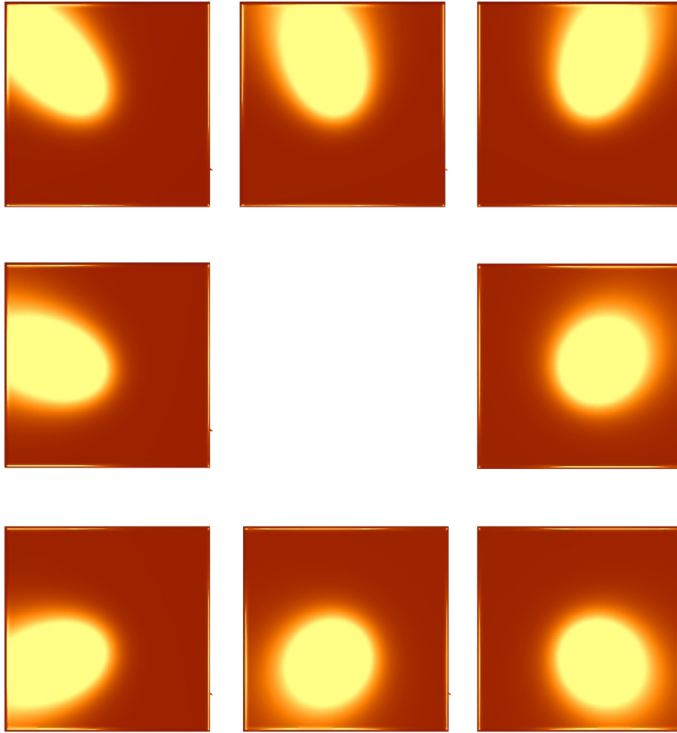
With the option set to 'Foreground' the filter uses the currently selected foreground colour.

Light colours used below on orange; from the left white, yellow, red, green, blue, purple and black.



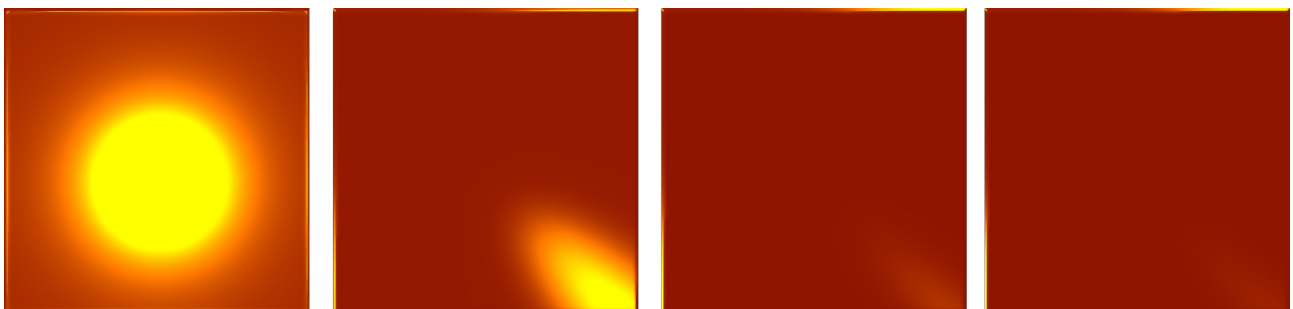
Dialog Tab 1 Option #2: Direction/postion of the light source

To save space I have combined the six (x,y,z) options in the original filter by presenting them as compass positions which I feel is enough for use with custom fonts. The image below gives a rough idea of how (directional) light will be applied to a layer.



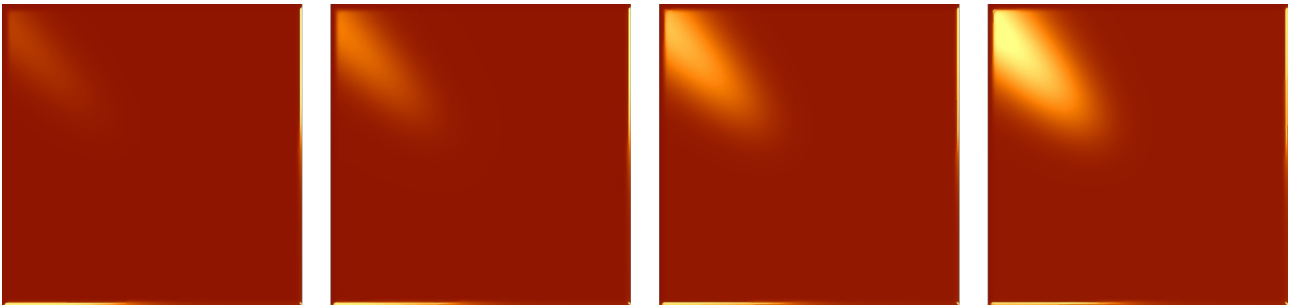
Dialog Tab 1 Option #3: Distance of light source from the centre of the layer

A distance of 0.0 will position the light source at the centre of the layer (not necessarily at the centre of the character). The use of small increments (and small numbers) is recommended for this option when experimenting with values. The image below uses directional light set at an elevation of 0.5 with the following values for distance: From the left 0.0, 2.0 5.0 and 10.0. The most interesting effects on textured surfaces seem to be produced in the range 0.0 – to 2.0.

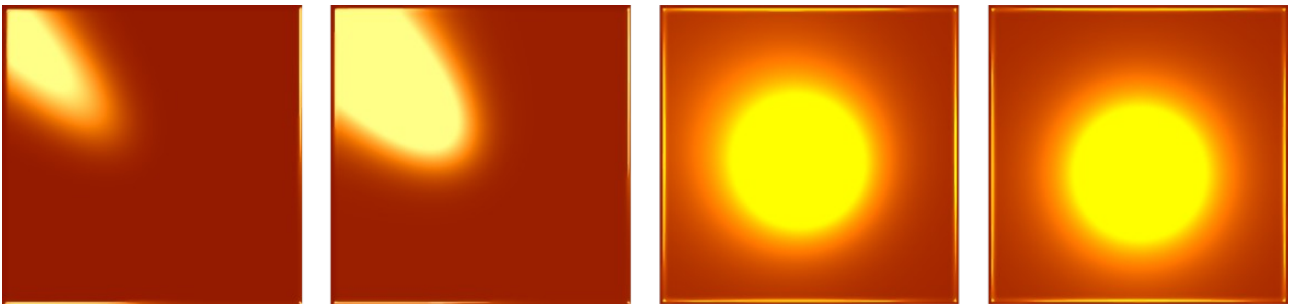


Dialog Tab 1 Option #4: Elevation of light source

This value can have a dramatic effect when the light source falls on bump-mapped textures with light and dark areas. The illustrations below show a light source at elevations between 0.1 and 0.4.

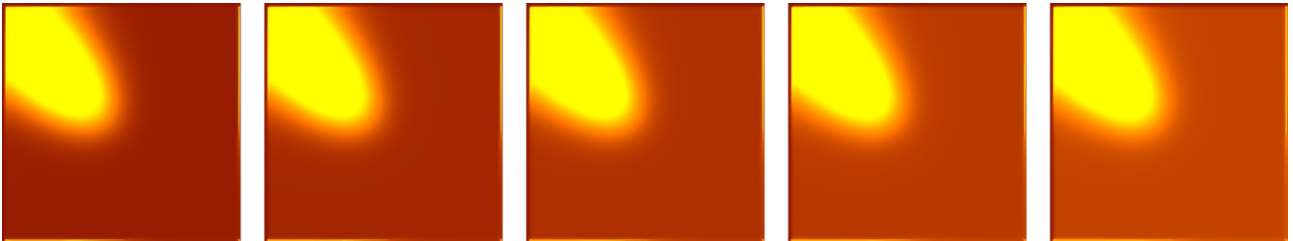


And here the elevation has been set with values of 0.5, 1.0, 10.0 and 100.0. I have found that the most interesting results have been produced in the range of 0.1 to 10.0.

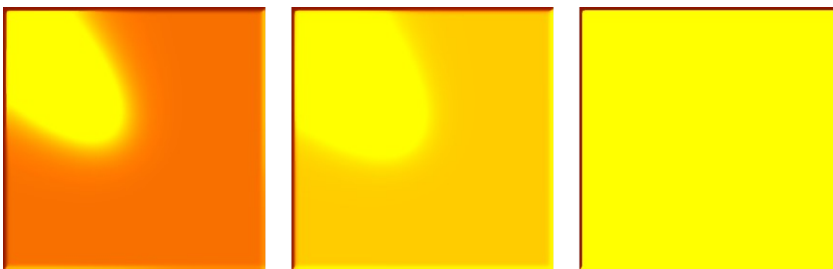


Dialog Tab 1 Option #5: Intensity of light

This option influences the regions that lie outside those directly affected by the light source and if your chosen values produce dark results increasing the value of this parameter can significantly lighten an image. The use of small increments (and small numbers) is also recommended when experimenting with values. The image below using a yellow light source illustrate changes in steps of 0.1 – beginning with a value of 0.1 and ending with 0.5.



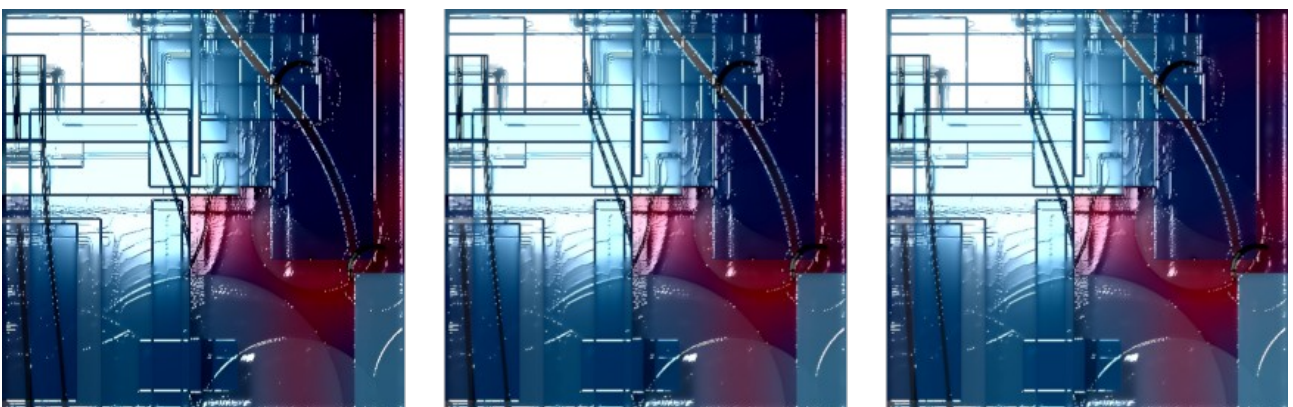
In the following image higher intensity values have been used – 2.0, 5.0 and 10.0.



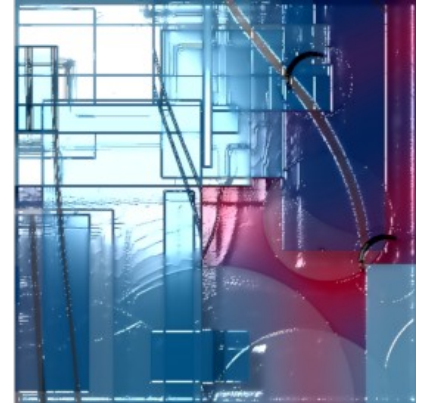
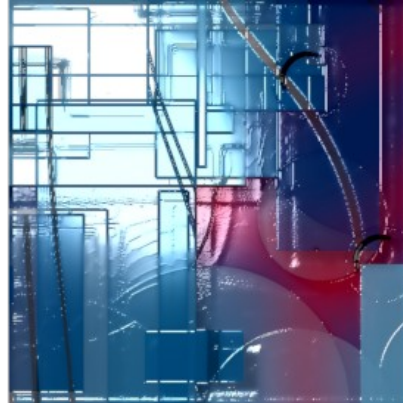
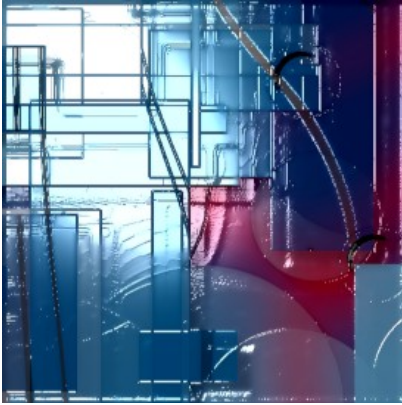
The next three dialog options refer to parameters on the materials tab of the original lighting plug-in dialog. I have not included an option to adjust the ‘bright’ material parameter - it appears to make no difference when called in non-interactive mode.

Dialog Tab 1 Option #6: Glow

This parameter controls the amount of image to show where no direct light falls. The following images use the default settings (but with a bumpmap depth of 15 – option #13) and then only the ‘Glow’ parameter being increased. Below ‘Glow’ values of 0.0, 0.1 and 0.2.



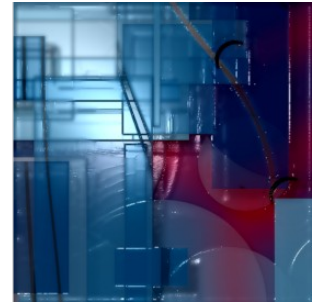
Below with 'Glow' values of 0.3, 0.4 and 0.5.



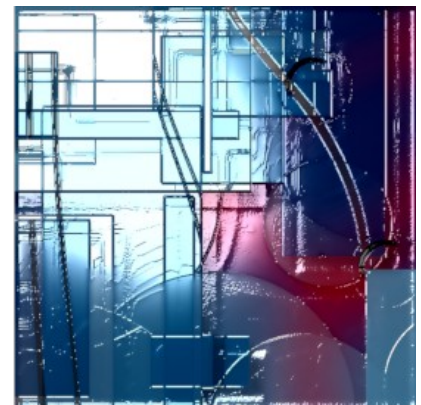
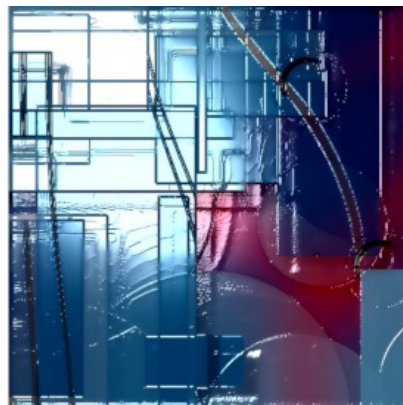
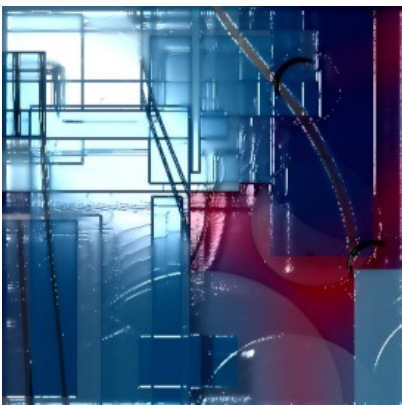
Dialog Tab 1 Option #7: Shiny

This parameter controls the intensity of the highlight.

Below the 'Shiny' values are 0.0, 0.1, 0.2, and 0.5



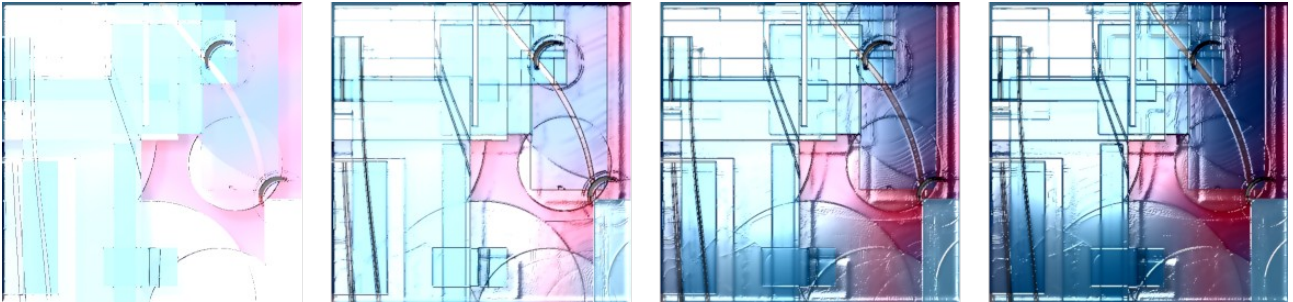
... and below they are set at 1.0, 2.0 and 5.0.



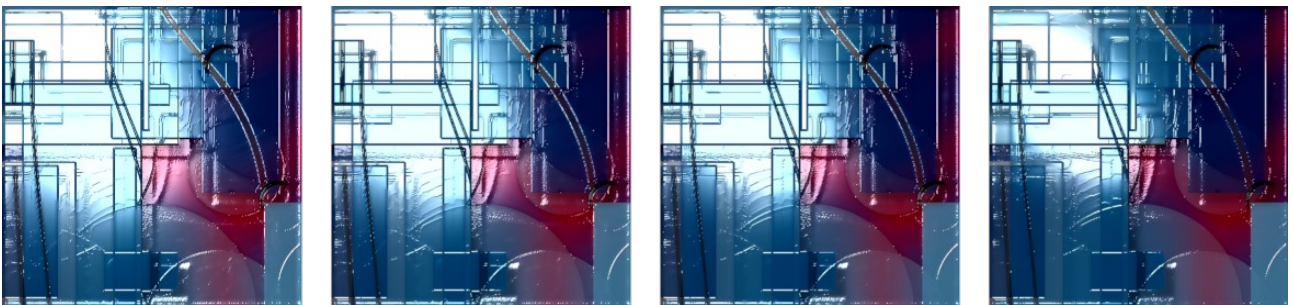
Dialog Tab 1 Option #8: Polished

This parameter controls the ‘focus’ of the highlight. Just as you get into the mind-set of using small values and making small adjustments the ‘Polished’ option comes along to throw a spanner in the works. This parameter seems to work in the opposite way – in fact the default value in the original plug-in is set at 27.0.

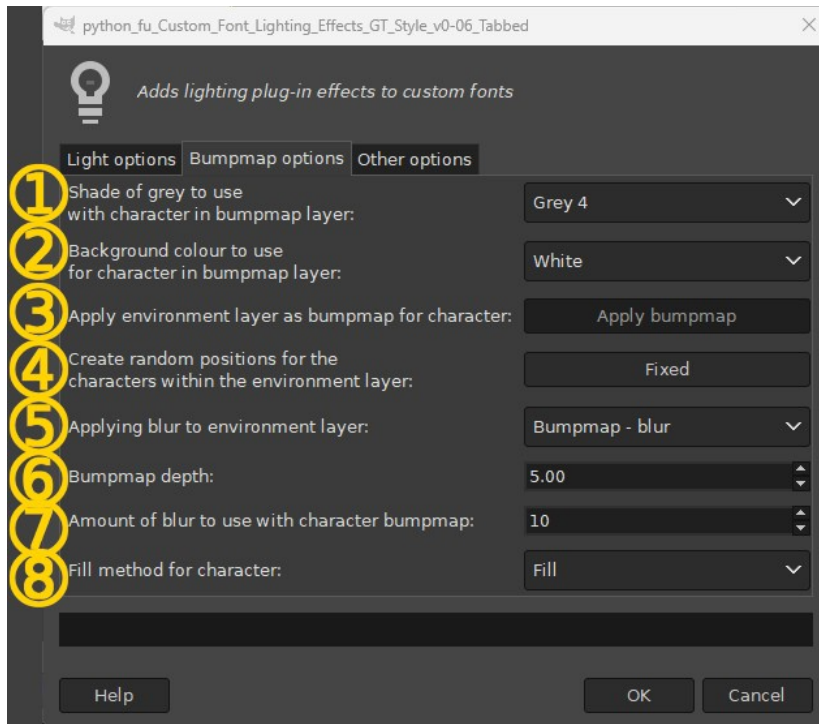
Below the values range (in steps of 5) from 0 to 15.



Below the values used are 20, 25, 30 and 50.



Dialog Tab 2 Options



Dialog Option Tab 2 Option #3 simply turns the bump-map effect on or off.

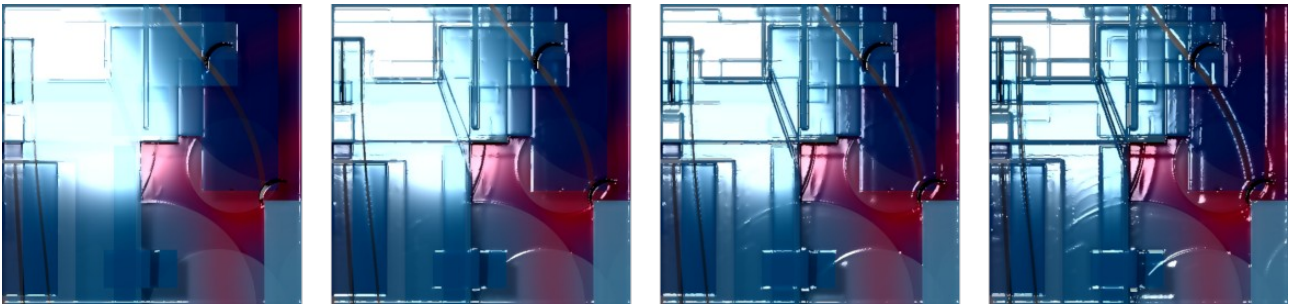
Dialog Tab 2 Option #6: Bumpmap depth

This option sets the value for the bump-map that will be applied to the environment layer to produce varying degrees of light and shadow in an image – a higher value creates greater amounts of both. I have added three other options that influence the effect of the bump-map.

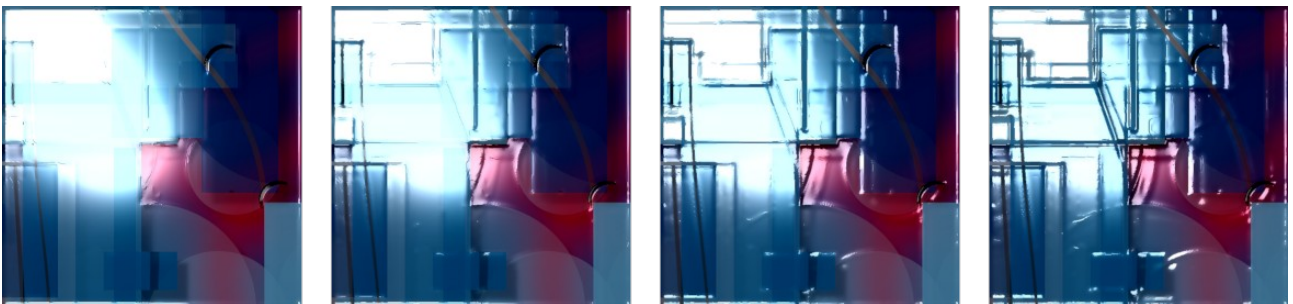
Dialog Tab 2 Option #7 sets the amount of blur to use with the bump-map when applied to the environment layer (as well as controlling how much blur should be applied to the original character bump-map).

All this may sound confusing so the next two examples may help.

The first example shows the default values with a blur of 10.0 using 'Bump after blurring': The 'Bumpmap depth' values are 2.0, 5.0, 10.0 and 20.0.



The second example uses exactly the same values but with the order changed to 'Bump before blurring' in dialog option #12 giving a slightly softer, less defined effect. It does, however, depend upon the environment layer used by the filter so it is worth trying the different options.



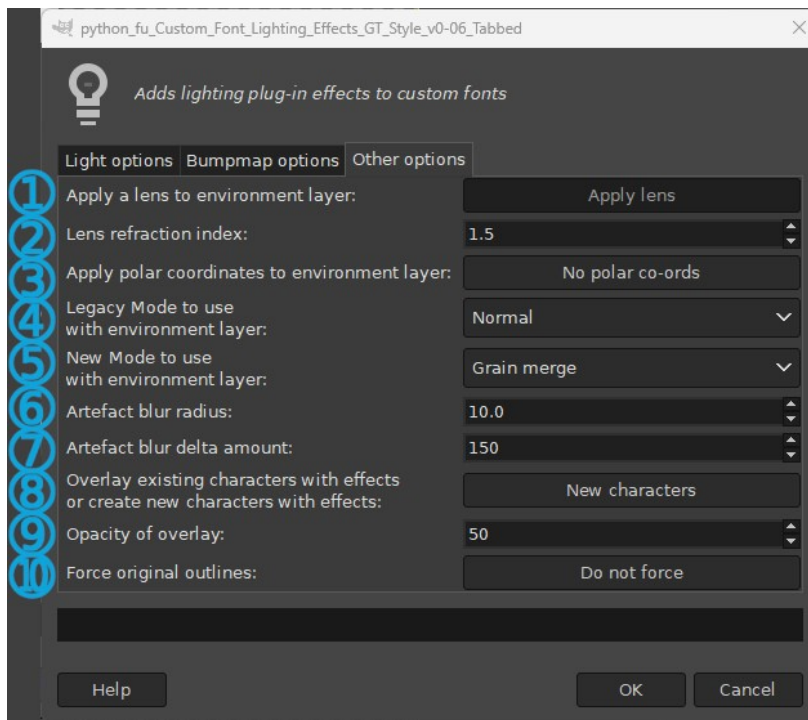
More dialog options

These are mainly options that are not used as parameters for the lighting plug-in.

Dialog Tab 2 Option #1: Shade of grey to use with character bumpmap layer

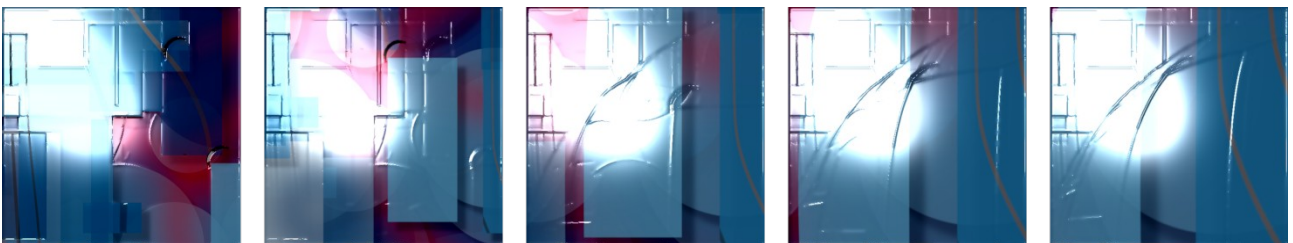
This option can influence how much of an emboss is applied to a character – darker greys produce a more pronounced bevel effect at the edges of a character. The example below uses a blur amount of 30.0 to set the size of the embossed edge and the greys range from 1(i.e. black) to 5 (mid-grey). The first one (using black) should probably have the light intensity increased to lighten the gold sparkle effect.





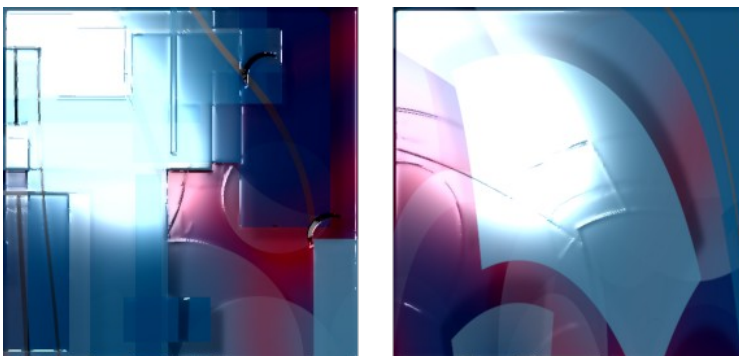
Dialog Tab 3 Options #1 and 2: Apply a lens

In order to add some distortion to the final appearance of the characters the filter can use this Gimp plug-in by setting a refraction index with dialog tab 3 option #2. The first image below uses no lens and then adds lenses with a larger refraction index increasing in steps of 0.5 from an initial 1.0 to 2.5.



Dialog Tab 3 Option #3: Apply polar coordinates

This uses the Gimp Polar co-ords plug-in to deform the environment layer before applying it to a character. The original environment layer is on the left and the deformed one is on the right.



Dialog Tab 3 Options #6 and #7: Artefact blur options

This option makes use of Gimp's selective gaussian blur filter to attempt to remove noise or artefacts created in the embossing stage of the process. Adjust the Delta value until you get the result you want but avoid high blur values unless you like waiting around for a long, long time.

Dialog Tab 3 Options #8-10: Overlaying character options

I wanted to try and use more than one light source and overlay different lighting effects on top of one another – but the results can vary and can often be rather dark and bland. Try changing modes with option #4-5 to improve the results if you are interested.