Grading BRAW HDR footage in Vegas Pro 20

by Wolfgang Schmid. 14.12. 2022 V2

BRAW processing has been available in Vegas Pro 20 for some time. Color grading capabilities have also been significantly improved. Even if you can't speak of an ideal BRAW workflow in Vegas Pro 20 today - you can work with it. And as I was able to show, this is now even possible on more powerful laptops, which have even been available with OLED-capable displays for some time. While not cheap, I wanted to know if I could successfully grade the 6K 50p footage on my Pocket 6K Pro under Vegas using such an OLED laptop.

1. Hardware used – such as ASUS ProArt Studiobook 16 OLED

The laptop used here is this one:

ProArt Studiobook 16 OLED (H7600, 12th Gen Intel) | Laptops For Content Creators | ASUS Germany

It has the following relevant features:

- Windows 11 Pro
- 16" (40.6 cm), WQUXGA (3840 × 2400), OLED, 16:10, 0.2ms, 400 cd/m² (peak 550), 100% DCI-P3, NanoEdge
- Intel® Core™ i9-12900H Processor (24M Cache, up to 5.00 GHz)
- NVIDIA® GeForce® RTX™ 3070 Ti 8GB GDDR6
- Intel® Iris Xe Graphics
- 32GB DDR5 (2x 16GB DDR5 SO-DIMM)
- 1TB PCIe Gen4 M.2 SSD
- HDMI2.1
- RJ45 Gigabit Ethernet
- SD Express 7.0 card reader
- 2x Thunderbolt™ 4 supports display / power delivery
- 2x USB 3.2 Gen 2 Type-A

Purely in terms of performance data, the fast Thunderbolt 4 interface with up to 40 Gbps and the USB 3.2 Gen 2 Type-C with up to 10 Gbps are particularly relevant for the BRAW cut. Because the BRAW files are not exactly small, and of course I recommend having these files on an external SSD - which can be connected to the laptop via a USB 3.2 Gen2 Type C interface. These SSDs can reach up to 10 Gbps, but my experience so far has been closer to 800 MB/s - which is fast enough even for BRAW 6K 50p. In principle, the HDR cut already works with older SSDs such as the Samsung S5, which are available as 2TB disks, and I use them to record my BRAW material directly with the Pocket 6K Pro. This would also allow HDR editing and HDR grading directly from the recording medium. On the other hand, I have had negative experiences with the newer Sandisk Extreme 4TB, since these disks, at least on my system, keep freezing for a few seconds (active time goes up to 100% in the task manager, and in these seconds the system freezes and you cannot continuously cut - and then the fast data rate is of no use).

The internal OLED laptop display offers considerable advantages, especially for editing with Vegas Pro 20, since you can basically use the HDR laptop even alone, to preview and asses the HDR view while grading the footage (either internally or as a full-screen preview on the laptop display).

Of course it is an advantage if you can connect at least one additional SDR or HDR monitor to the existing HDMI 2.1 interface - even if you only put the surface of Vegas on an SDR monitor and use the OLED display of the laptop for the HDR preview. You can also use this HDMI 2.1 interface to attach an HDR TV to the laptop for grading, if you want. The Thunderbolt 4 interface would also be suitable for attaching a monitor if required.

The selection of the hardware - especially for the HDR preview - is essential. More on that later. And to be clear - HDR grading without an HDR preview is like driving with your eyes closed and should be avoided. Today, HDR-capable displays are slowly becoming affordable, so that the enormous price of these displays can hardly be accepted as an excuse anymore, to grade HDR footage without an HDR monitor.

2. 6K BRAW footage from Blackmagic Pocket 6K Pro

The material of the Pocket was recorded with the "Film" gen. 5 mode, as this material records logarithmic raw in 12-bit mode, the quality level Q5 and the best possible dynamic range. In addition, the templates for this material are available in many common editing programs, including in Vegas.

3. Project settings and HDR preview

If you import a 6K 50p BRAW clip into the timeline, you can immediately apply the material properties to the project settings (Fig. 1). However, I recommend the to care about following points:

- If necessary, make sure that HDR is activated on the laptop. Otherwise, Vegas cannot do an internal HDR preview on the laptop's OLED, or even on an external HDR monitor connected to the graphics card.
- What I definitely recommend is to disable automatic proxy file creation BEFORE starting the project. This is because proxies are formed relatively slowly in Vegas, and in addition in a wrong color space. Deactivation under Options/Preferences/Video tab, and there switch off the automatic proxy creation over 4K).
- Import a first clip. You get the following project settings if you have the project settings designed according to the clip:

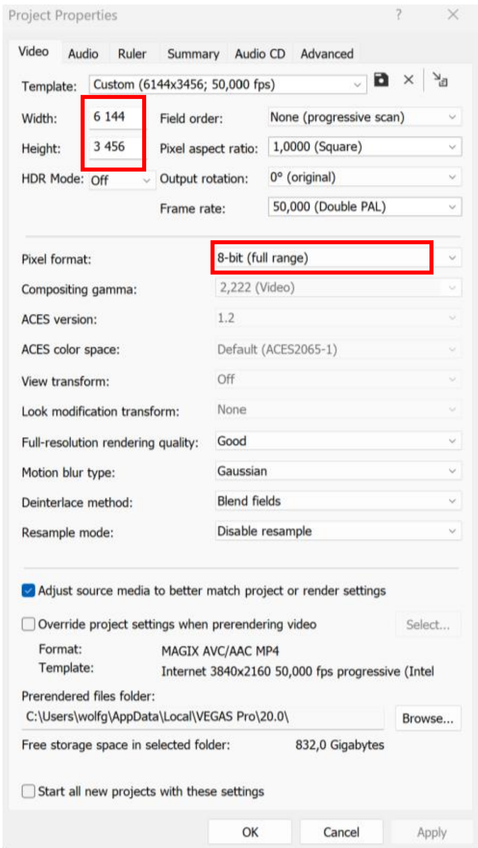


Fig. 1: Project settings, adopted after the material import. Adjustments are still required here, since the ACES transformation to PQ and the HDR10 mode are not yet activated.

I recommend the following adjustments:

- Leave the resolution at 6K – i.e. 6144 x 3456. This ensures that the preview is correctly rescaled later.
- Change the 50p to 25p. This doesn't have to be the case, but I don't see the 50 fps in the preview being reached when editing under Vegas, either on my laptop or on my desktop. Of course, please don't forget to change this back to 50p before rendering.
- Important: activate the HDR10 mode. This sets the correct settings for the ACES workflow, which we absolutely need for the transformation to PQ anyway – with today's display technology at 1000 nits (Fig. 2).

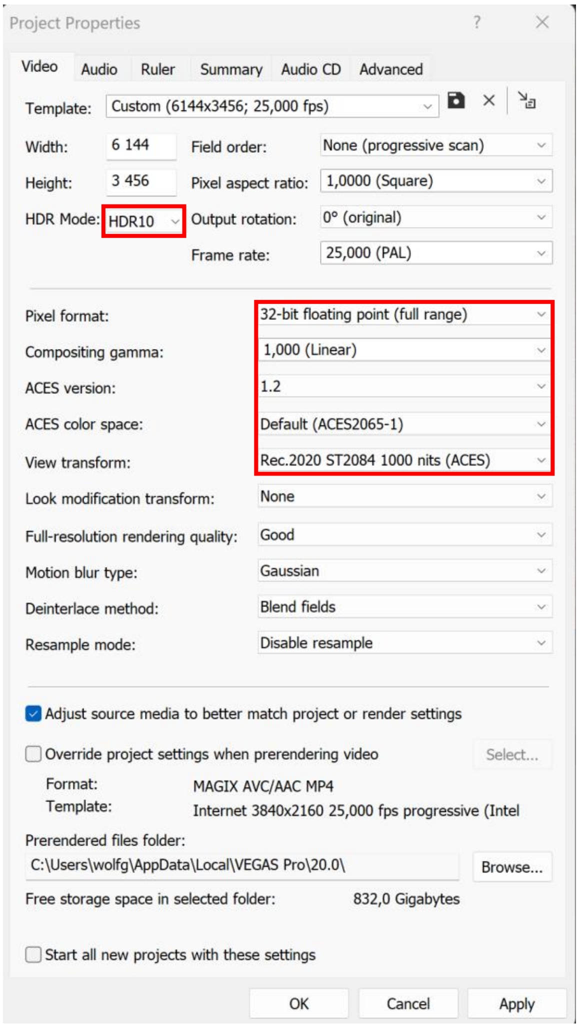


Fig. 2: By selecting "HDR10" you set the project settings for the HDR project - as far as color space conversion, preview and rendering are concerned

- If you activate HDR10, you can of course also go to PQ 2000, 3000 or 4000 nits - or alternatively select HLG.
- If you wish, you can of course move the directory for the prerendered file somewhere else.
- In the preview properties, not only set where the full-screen preview should go, but also check whether the HDR output is activated for the preview. If you have only activated HDR under Windows after Vegas has been opened, or if the Vegas GUI is not on an HDR display, then the "Enable HDR output" field does not show up at all (if necessary, shut down Vegas, enable HDR in Windows, and then start Vegas again).

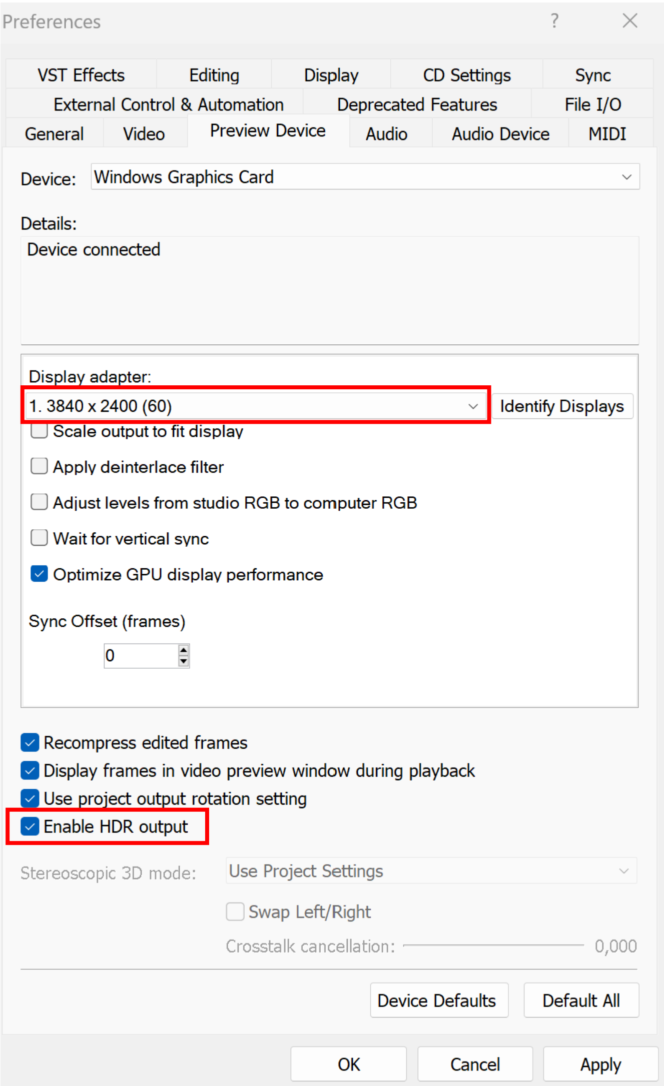


Fig. 3: Preview settings (here on the internal laptop display on screen 1. If an external HDR display is available, you can also place the preview there. Attention - "Enable HDR output" must be visible and selected here, what is possible if an HDR display has been recognized by Vegas)

- IMPORTANT: on the laptop you should deselect the nvidia GPU and select the internal Xe GPU instead. The background to this is that under the nvidia GPU, black preview images can occur when importing several BRAW files - since there is currently (Version Vegas Pro 20, build 214) an unsolved problem when the material is stored in the RAM of the GPU and the system runs short on RAM.
- However, the Xe graphics card supports the BRAW material when playing it back on my laptop just as well as the nvidia card. If you only have one nvidia card installed in your system, this could be problematic for processing BRAW in Vegas.

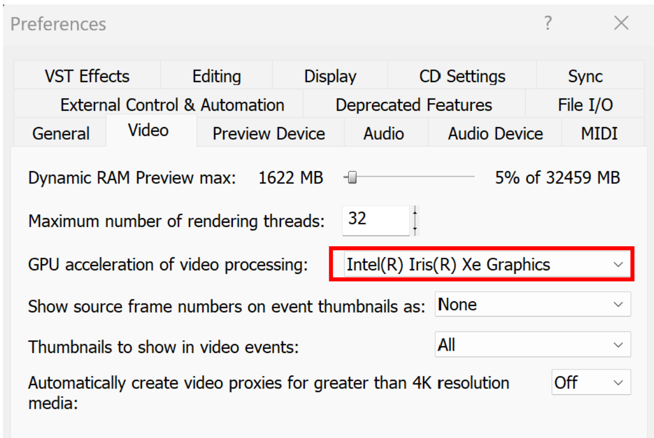


Fig. 4: Relevant graphics card settings. Please deselect nvidia for BRAW!

- For the preview settings, I typically select the “Preview/quarterly” resolution, which at first glance appears to be low. This doesn't seem like much, but since you're coming from 6K material, the preview still has a fairly good resolution. And on the laptop used here, you can achieve a preview performance that is sufficiently high for editing the BRAW footage (about 10-25 fps).
- A more specific case would be using external preview cards, such as a Blackmagic Decklink 4K Extreme 12G or the UltraStudio 4K Mini, delivering a HDR preview using more professional monitor via SDI or HDMI. For example an Atomos Sumo that I use on my desktop device - and where you have the disadvantage that you have to activate the HDR preview directly on the Atomos device. But you have the advantage that you have a standardized output image via the video card. Theoretically, this is an advantage for grading HDR, whether this is actually the case has to be judged by yourself. The OLED preview on my laptop shows a very nice and easy to assess HDR 10 image.

- Alternatively, you can connect an HDR TV directly to the HDMI 2.1 interface of the laptop using a suitable HDMI cable, which ideally can then also be switched to rec.2020 and HDR10 on the TV set.

4. The HDR workflow starts with the exposure of BRAW!

A major advantage of RAW - and also BRAW - is that the material is recorded without pre-processing the camera as it "sees" the camera sensor. This means that certain factors such as the ISO, the color temperature, but also the contrast, white and black points are recorded in metadata and these variables are not permanently burned into the material. Although the selected ISO with the Pocket 6K Pro also determines the dynamic range of the camera, it can be easily changed within existing limits without any computing power or losses. This is a significant advantage of RAW.

Of course, the exposure and, above all, the dynamic range during the recording, or mechanical factors such as sharpness are still relevant. Of course, when filming you should always pay attention to clipping upwards and avoid it - but with BRAW there is no need to overexpose in a targeted manner like with s-log or v-log.

I also like to use the Pocket 6K Pro's internal LUTs for optical control of the image - but I've found that I tend to end up with underexposes footage. The exposure control can actually done using the false color image of the pocket, and important skin tones can be correctly exposed. In my experience, techniques such as ETTR are not really essential here. Even if you don't have to pay very close attention to the correct exposure, as is the case with s-log or v-log, it is still an advantage to select the ISO when taking the picture in such a way that as many f-stops as possible are occupied with sufficient luminance values when taking the picture. These statements are of course contradictory, since targeted ETTR is also not recommended. Exposure is and remains a certain art.

5. The BRAW decoder window

The advantages of RAW mentioned, that certain factors such as ISO, color temperature, contrast, midpoint but also black and white points are not "burned" into the material, can of course only be used if you can access these parameters easily and separately. Not every software offers this today - in Edius X, for example, this is not possible, even if you can grade and edit BRAW very well with it. This is solved excellently in Resolve, but Vegas also allows access to these raw setting options.

To access the settings of the decoder window, please do the following:

1. Import multiple BRAW clips into Vegas. You can do this by dragging the clips straight into the timeline. This has the advantage that you can view the clips in the timeline straight away in the waveform monitor.
2. To do this, select the Layout “Color Correction” (Alt+C, then D)
3. Select the Project Media view.

You'll see an image similar to the one shown here when the cursor is positioned over one of the events in the timeline:

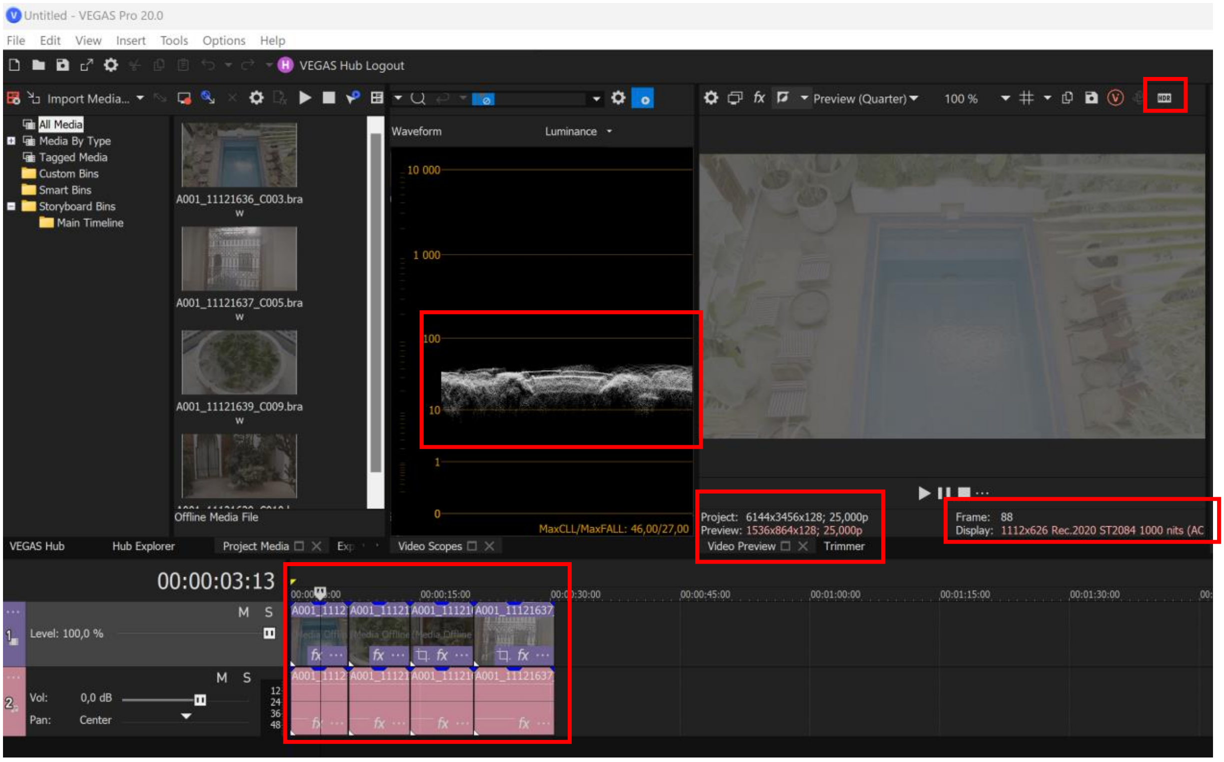


Fig. 5: The Vegas interface after importing the first BRAW clips.

Note the following points in Fig. 5:

1. The preview settings are set to Preview/Quarter - the resolution of the preview is therefore reduced to 1536x864, which is enough for us.
2. Important: the ACES transformation to PQ - i.e. Rec.2020 ST2084 1000 nits - is already activated here
3. The "HDR" button at the top right above the preview image is disabled (grey).
4. The image looks very flat - typical for a log image. The luminance only ranges from 10 to about 50 nits (the waveform scale should be switched to ST.2084 HDR Scopes so that you see the logarithmic instead of the percentage scale in the waveform monitor).

5. As I said, you only see the waveform image because you dragged the clips into the timeline and the cursor is on the first of the four demo clips.

Next, use “CTRL+left mouse button” to mark one or more clips in the Media Pool project. Right-clicking on the marked clips in the Project Media Pool opens the setting options – and there you select “File Format Properties”:

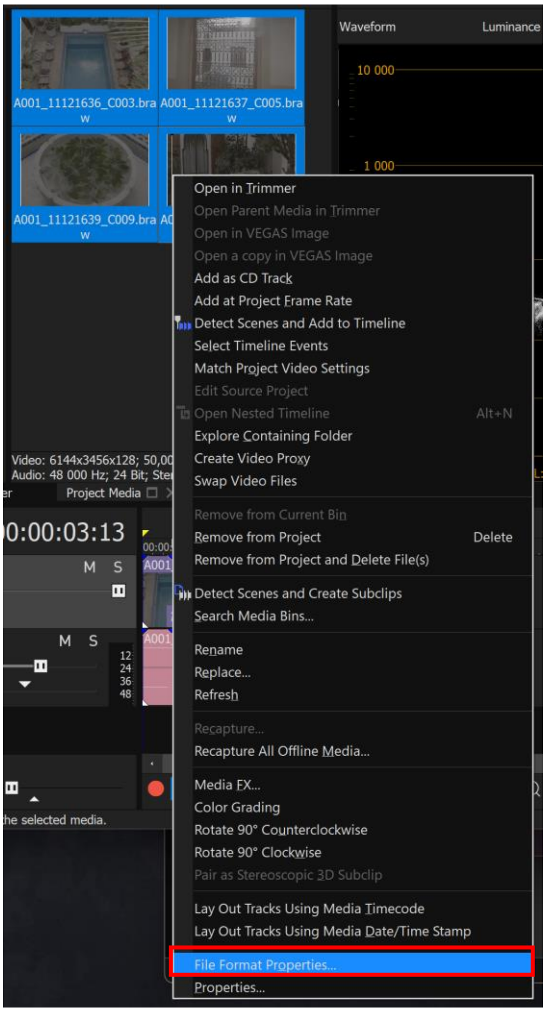


Fig. 6.: Access to the BRAW metadata via File Format Properties

The decoder window appears, which gives you access to the raw metadata of the BRAW files - which you have marked here. Therefore, please note that if you change the setting parameters, you will change the metadata of all selected clips.

Vegas stores this modified metadata in its own files as <filename>.sfdecprop , which are located in the same directory as the original data. You can reset the metadata by deleting these files or by going to "default" in the decoder window.

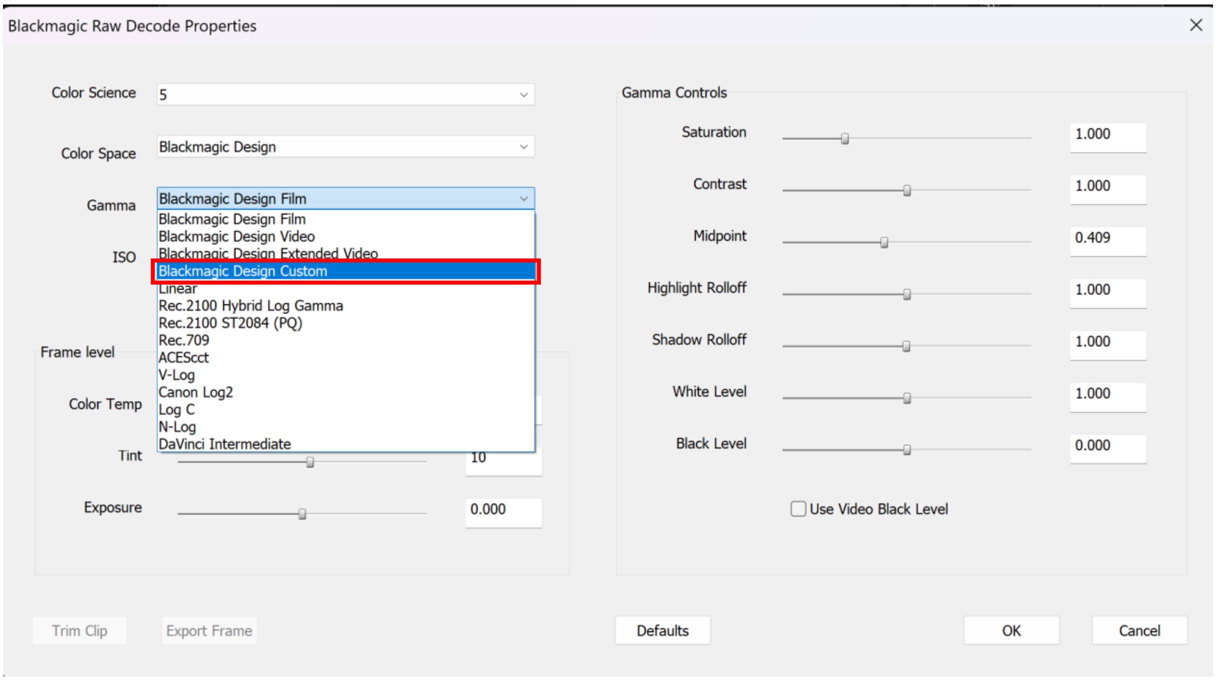


Fig. 7.: Decoder window in Vegas to be able to set the BRAW metadata. It is imperative to switch to "Blackmagic Design Custom" here in order to be able to access the full setting options in the gamma controls.

To get full access to the gamma controls in the right half, you must first set the gamma setting to Blackmagic Design Custom. Unfortunately, this is necessary for every clip in the project - or you mark a large number of clips in the Project Media window, open the Decoder window and change this for all marked clips in one go.

6. Adjust settings in the decoder window - the first step in grading BRAW

First you have to widen the luminance range via the decoder window - since the picture in the ACES transformation looks much too flat. In order to be able to follow this, place the cursor on the respective clip in the timeline.

If the GUI is on an HDR display, as is the case with my laptop, you can also switch the GUI internal preview to HDR (more precisely: the internal preview shows the set ACES transformation). If the GUI is not on an HDR-capable display, then this button has a gray background - and only after you click on the small "HDR" button and only if you work on an HDR display, it turns to blue.

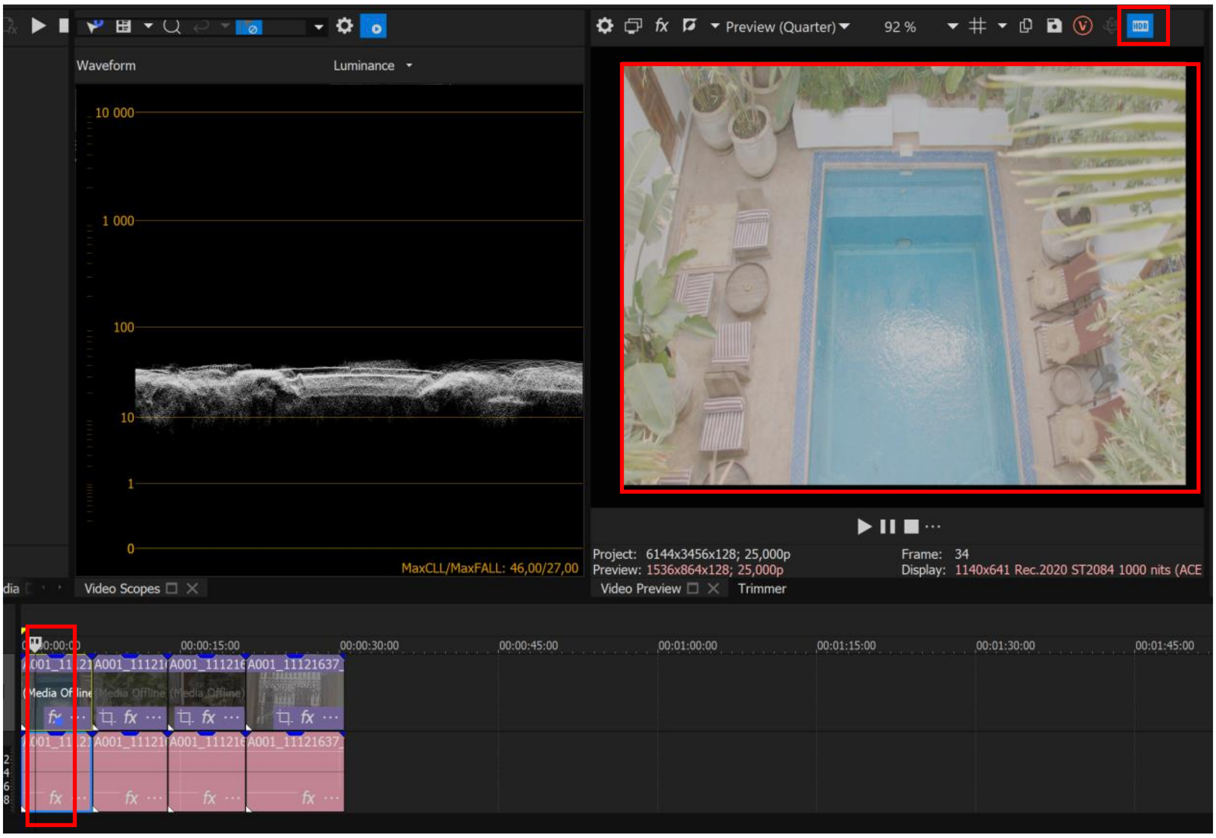


Fig. 8: The internal HDR preview has been enabled in the GUI. The preview image and the waveform monitor show the first event in the timeline.

Please note the following points:

- Unfortunately, the aspect ratios of the image are not correct in the internal HDR preview. However, here you can see the image in rec.2020, which makes grading easier if you only have one monitor on your laptop like I do.
- Alternatively, you can of course also have the secondary display on an external HDR device - which makes the subsequent grading much easier
- There is a bug related to the blue "HDR button". If you deactivate this, the waveform monitor currently loses the signal - or freezes. The remedy here is easy - you switch the videoscopes off in View/Window and immediately on again - this activates the waveform monitor again.

To grade the clip selected in the timeline by the cursor in the decoder window, select it in the media window and switch to the decoder window of this clip via File Format Properties (see Fig. 6). If you have selected "Blackmagic Design Custom" there, you make the image more contrasty - in other words: you increase the nit range of the image from around 10 to 50 nits to a significantly larger range.

This usually works as follows:

- Move the decoder window down, so that you can see both the waveform monitor and the internal HDR image. Unfortunately, this is required every time the decoder window is opened
- Increase the contrast with the corresponding slider. The image becomes less flat, the range visible in the waveform monitor should be between 0 and 100 nits.
- Please don't push the signal below the luminance of zero nits - and don't let the contrast get too big either. If you choose too high a contrast, then at some point the picture will start to “disintegrate” – which you can see in the preview. To do this, switch the preview to large. Unfortunately, you have to exit the decoder window to do this. This is where an external preview has its merits, since the external preview can be enabled all the time!

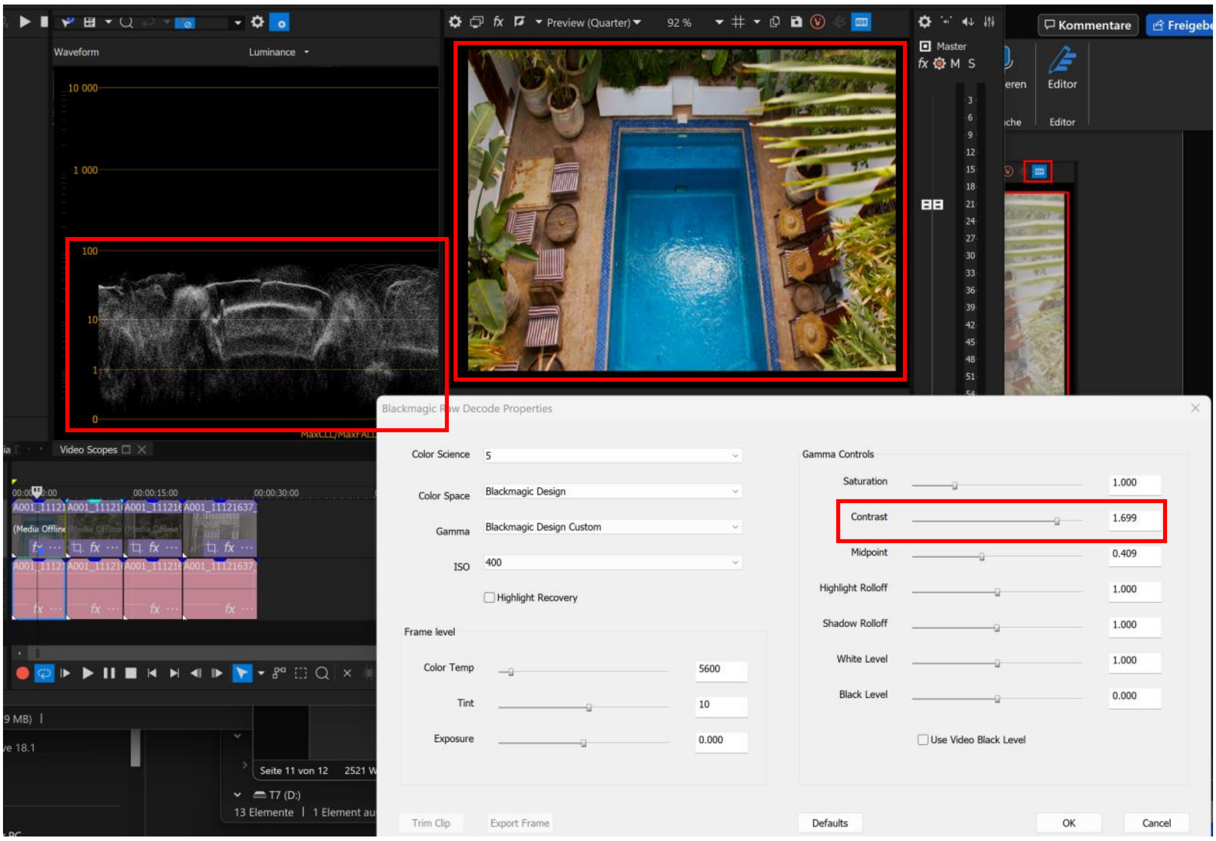


Fig. 9. Adjusting the contrast using the "Contrast" slider

Of course you can also play with the other controls - for example with "Midpoint" to adjust the position of the waveform image a little in terms of height, but it will be compressed again. With "Exposure" you can make the image brighter, since it shifts the luminance values upwards like a gamma function. With "Highlight Rolloff" you can make the highlights a little more pronounced. You can also change the ISO here, or adjust the color temperature.

Play with the various setting options to get to know the effect on the image.

Note that there is impossible to get the white point above 100 nits here - which is due to the ACES transformation! So don't even bother here - the goal is to add enough contrast here, so that the luminance covers a range between 0 and 100 nits. But yet the image should not breaks down, which you would see from various artefacts and unnatural color shifts.

As usual in Vegas, you can reset individual sliders to the zero position with a double-click on the adjustment knob - and if the settings as a whole do not match, you can reset them with "Default".

The waveform image should also not be compressed either downwards or upwards - but should be nicely distributed overall in the mentioned range between 0 and 100 nits. And the preview image should give a natural impression, which you can only reliably judge on an HDR display with activated PQ. Without an HDR display, this assessment of the preview will not be successful, because an evaluation using the waveform monitor alone is insufficient, but must be done by you and your eyes. Of course, the HDR preview in Vegas must be activated and the display used must be set to HDR10.

Confirm and close the decoder window with ok and check the image either on the external monitor or in the internal preview in full size of the laptop monitor if you have not done so during adjusting the settings. In any case on an HDR-capable display. If the picture falls apart, what you may see sometimes only in the full size of the preview, you may have to reduce the contrast a bit. If the picture is ok, place the cursor on the next event in the timeline and repeat the setting in the decoder window.

As an example, consider the next two images. The only difference is that the contrast setting in the decoding window was once adjusted in a good way, while it was set too high in the second image. This leads both to unnatural colors and - because you are working under an ACES PQ 1000 nits transformation mit der Limitierung bei 100 nits - to a "compression" of the luminance spectrum below 100 nits.

All in all, an unnatural picture impression results in the overdriven case.

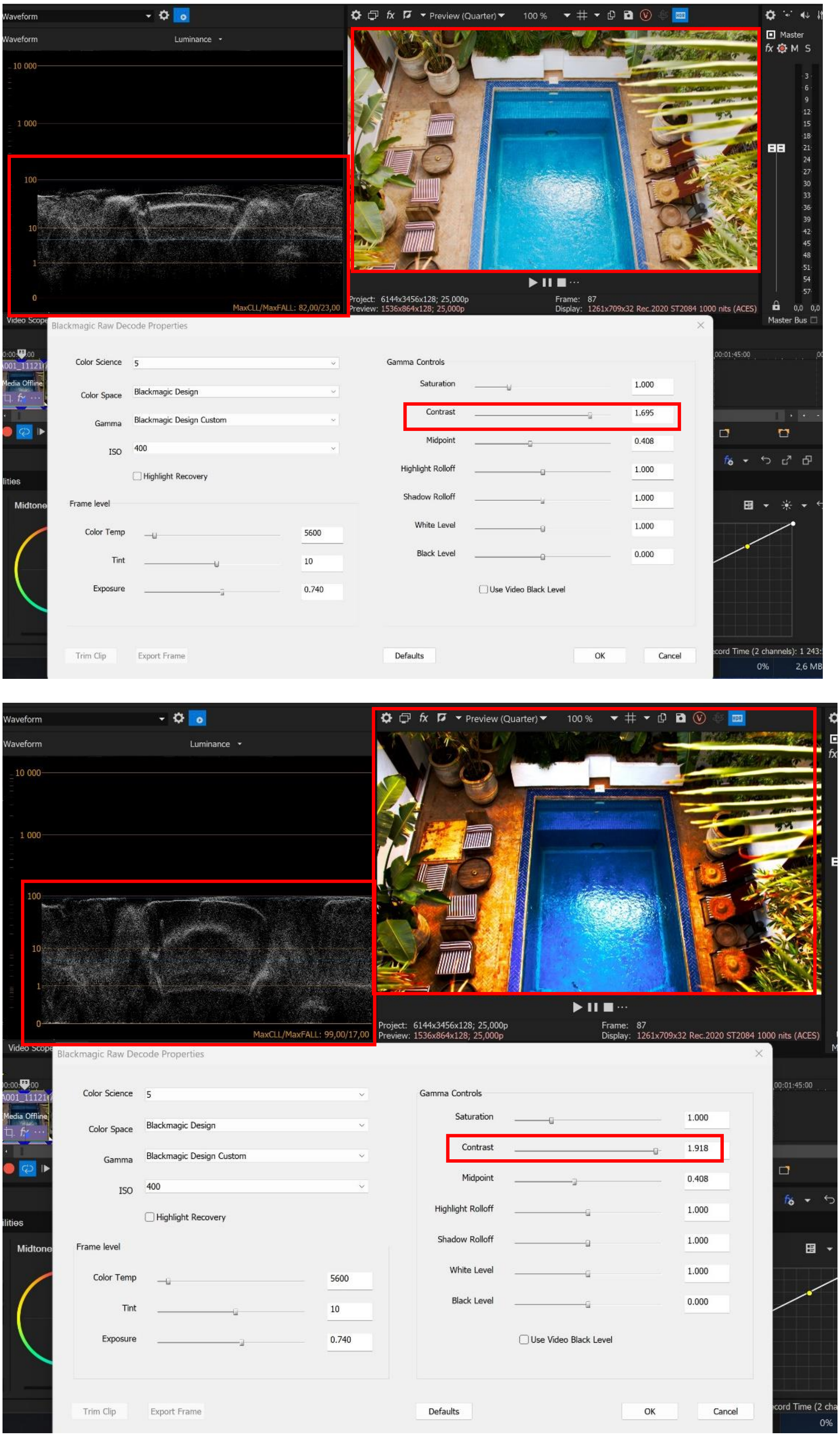


Fig. 10: Example of "disintegrated" image material. The exaggerated increase in contrast leads to a "crushed" image, with unnatural colors and a higher compression in the luminance spectrum of the waveform display near the 100 nits line.

You can also try marking several events in the Project Media window at once, opening the Decoder window and making the settings for several clips at the same time. In my experience, however, this is usually unsuccessful.

7. Grading with the Color Grading Window (CGP)

After you have basically prepared the clips in the decoder window, you can carry out further grading in the Color Grading window in the next step. The aim here is to set both the black point and the white point - and thus the highlights - but also to adjust the overall impression of the image correctly.

The Color Grading Portal now has some interesting tools and windows. To work with the CGP, it is advisable to switch to the appropriate layout under View/Color Correction/Color Correction Layout (or the key combination "Alt+D, C". With Alt+G or by clicking on the symbol with the three Color circles activate the CGP.

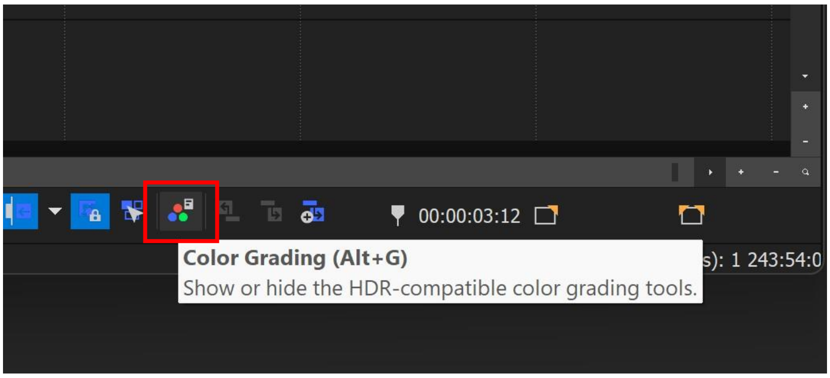


Fig. 11: Access to the CGP

In the **Input LUTs tab** there are some LUTs that are also interesting for BRAW and that act on the input (i.e. before the effect of the CGP). For example, "BMDFilm 6K Gen5 to REC.709" is of interest for grading BRAW material with the currently last color generation 5 to rec.709. However, there are no relevant LUTs for the HDR grading discussed here.

The **Color Wheels tab** is of particular interest for grading SDR footage - but I don't recommend using it for HDR grading . The reason for this is that under the ACES transform to PQ 1000 nits, even with offset in that tab, the luminance cannot be raised beyond 100 nits. More serious is the point that - if you make adjustments here - this even hinders the luminance adjustment of HDR in the RL Color Wheels that should be used. This is a serious point that you have to consider: you shouldn’t make any settings to adjust the luminance directly in other tabs such as Utilities before you use the RL Color Wheels – where you have implemented the Levels function –

because that also limits the setting options in the RL Color Wheels . This doesn't apply to Curves as far as I've seen - but while that may be a matter of taste, I would use that last.

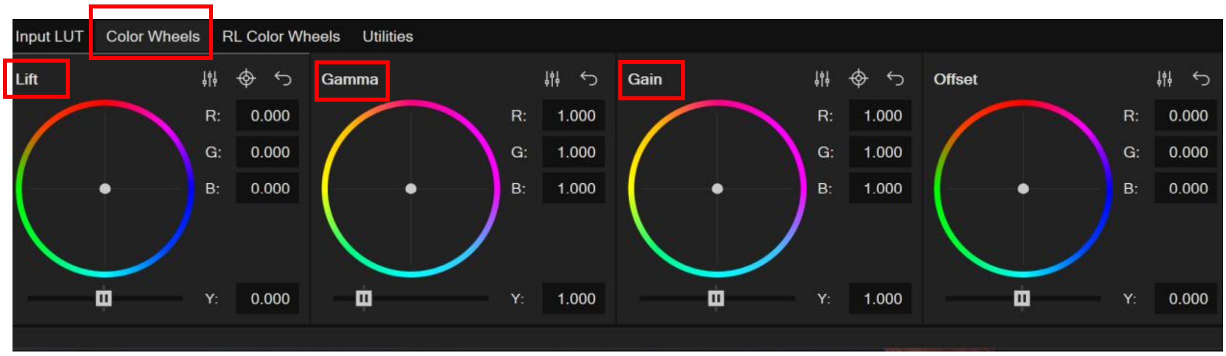


Fig. 11: Color Wheels tab: Please <u>do not</u> use this tool for grading HDR material

RL Color Wheels tool is actually of interest :

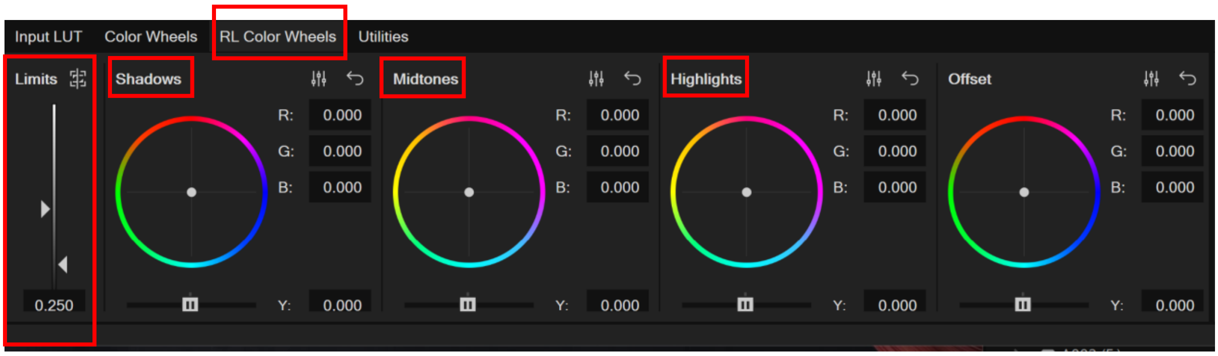


Fig. 12: The RL Color Wheels window - please use this for grading HDR material

When you switch to this tab, do you see the two blue lines in the waveform monitor? If not, activate it with the button on the bottom left next to the word Limit. These two lines at a luminance of 5 and 100 in the default settings (upper value 0.500 and lower value 0.250) show the border between the three areas Shadows, Midtones and Highlights that you can adjust.

So first make sure you see those blue lines.

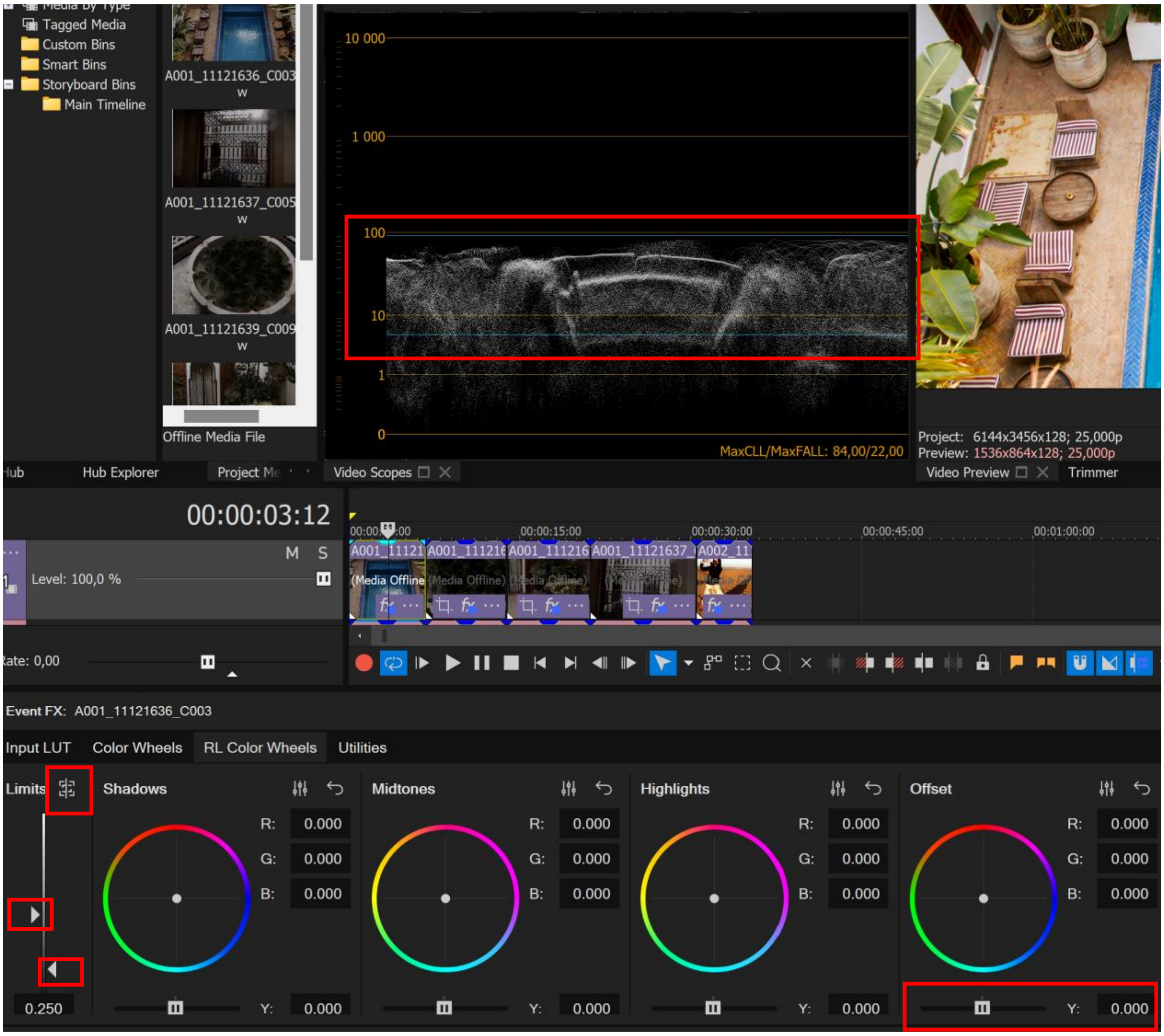


Fig. 13: The RL Color Wheels window with the two blue lines in the waveform window - can be switched on using the button next to "Limits" and moved using the two sliders below.

In the previous steps in the decoder window, we said that it is almost impossible to increase the peak luminance above 100 nits with the decoder settings and activated ACES PQ 1000 nits transformation. Well, you can do that with the luminance slider available in the RL Color Wheels under the “Offset” color wheel on the far right. Therefore, use Offset to shift the luminance in such a way that the luminance spectrum in the waveform monitor is above and below the two blue lines (see Fig. 14).

Please note that by shifting this with offset, you determine which part of the brightness spectrum you will later grade as highlights, which remains in the middle range, and which part you will lower in order to set the black point. This is an important creative step - to decide from looking at the image which part you want to highlight and which part you don't! That creative choice is yours, but as a guide, you can always ask which parts of the image the human eye perceives as particularly bright. And under the luminance of these parts of the picture you put the upper blue line - which you can often easily recognize from the preview picture and the waveform display. I will discuss two examples with you.

Alternatively, you can move the position of the two blue lines up or down using the sliders under the phrase "Limits". But if you have adjusted the contrast correctly when setting the contrast in the decoder window, this is possible, but rarely necessary.

Tip: please note that it is possible to move the blue lines later, but this also increases or decreases the luminance in the affected areas! It is therefore better to adjust the lines as much as possible at the beginning - or to shift the luminance spectrum up or down via "Offset" before making further adjustments to the black and white points.

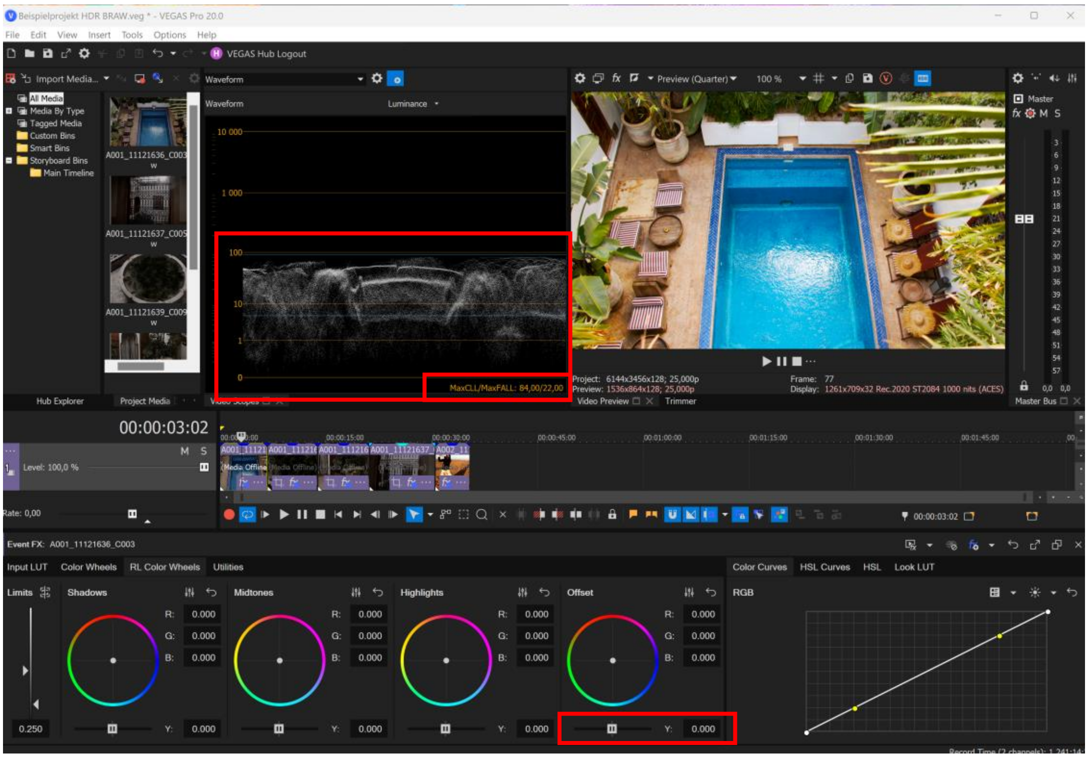
Tip: if you realize that the contrast is not sufficient because you have adjusted it in the decoder window, you can readjust the events at any time using the settings in the decoder window. But make sure that the material doesn't fall apart.

Tip: the adjustment slides are moved with the mouse. Note that you can use "CTRL + hold down the left mouse button" to move the settings very finely. Only "press and hold the left mouse button" is already a little rougher, and "press and hold CTRL + right mouse button" is even rougher, and only "press and hold the right mouse button" is the roughest of all.

Tip: Please also note that these adjustment sliders are designed for an HD display. If you use a UHD display, the sliders are harder to grasp - at least for me - and are difficult to grasp with the "left mouse button pressed" alone - but then you can work with the right mouse button if you don't like the screen resolution want to change. Only resetting such a slider with a double click of the left mouse button is more difficult with a 4K resolution and may require a few attempts.

Tip: please be careful with the "Undo" function when you are in the RL Color Wheels area. This leads to a program crash for me when the RL Color Wheels are activated.

The reason why you shouldn't change anything in the tabs other than RL Color Wheels can now be seen here. If you've changed settings with other controls, you'll see that the adjustment sliders under Shadows, Midton, or Highlights no longer work with those blue lines. Luminance ranges that are also outside the selected setting ranges will be influenced also. Therefore, it is better to avoid to adjust settings in sliders in other tabs before adjusting with the RL Color Wheel sliders. Emphasis on "before" - because afterwards an adjustment can make sense.



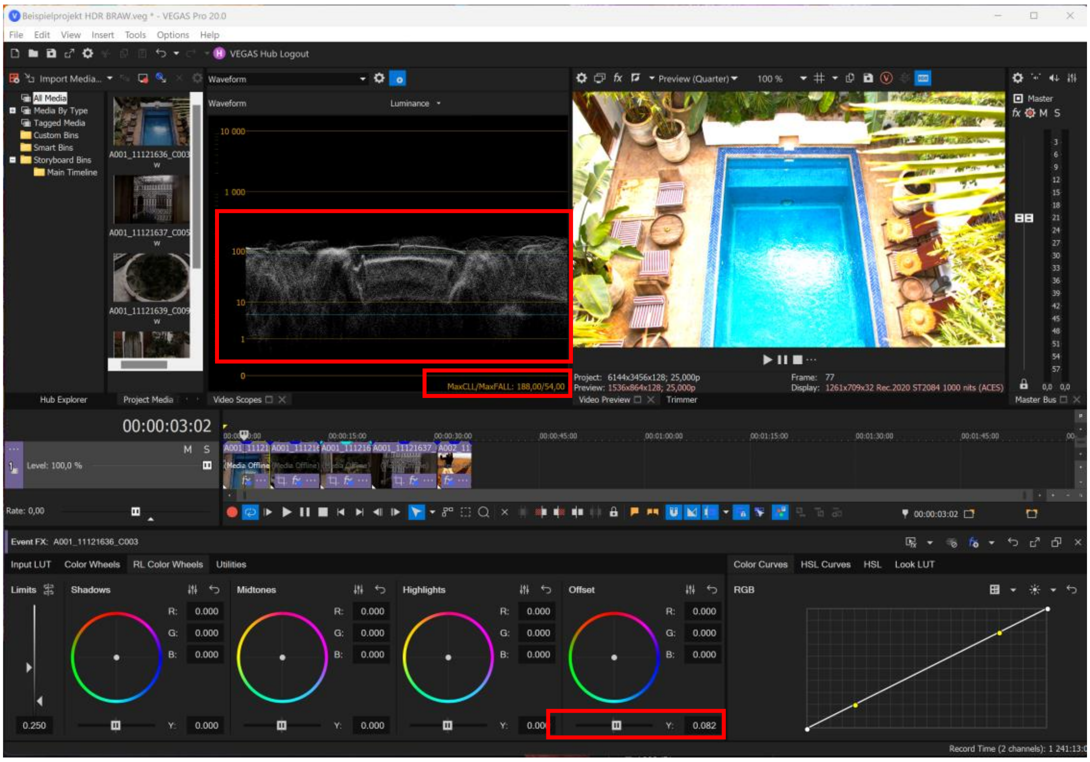


Fig. 14: Positioning the "luminance spectrum" with the "Offset" function in such a way that a part is above the upper blue line at 100 nits (here MaxCLL 188) and a part below the lower blue line is at 5 nits. Only "Offset" in the horizontal luminance slider was moved from 0 to 0.082, with significantly more this image falls apart. Upper picture before and lower picture after the adjustment.

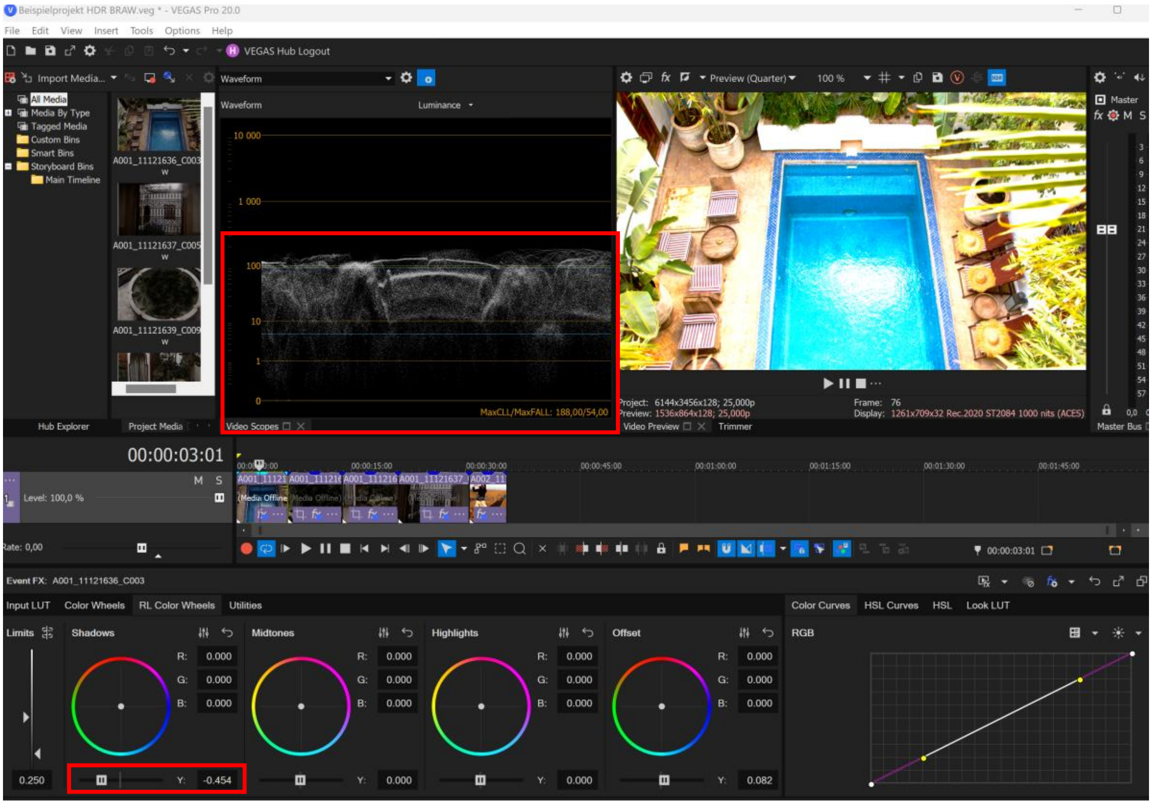


Fig. 15: Adjusting the black point with shadows. You roll down the downward peaks of the luminance spectrum down to zero nits.

After you have divided the luminance spectrum into the three areas with Offset and/or by moving the sliders of the blue lines, you can lower the lowest part of the luminance range down to zero nits with Shadows - this is how you set the black point.

It may well be that you hardly notice any change in the image when adjusting the black point. Please do this anyway – because you basically also reduce the noise in the picture.

With the highlights, you move the top lights up – but please in such a way that the picture does not disintegrate, which you would recognize from the discolouration. You should carefully check this "image decay" with the full-screen preview on the HDR monitor, whether internal or external. Recognizable, of course, from unnatural colors to the point of color decay.

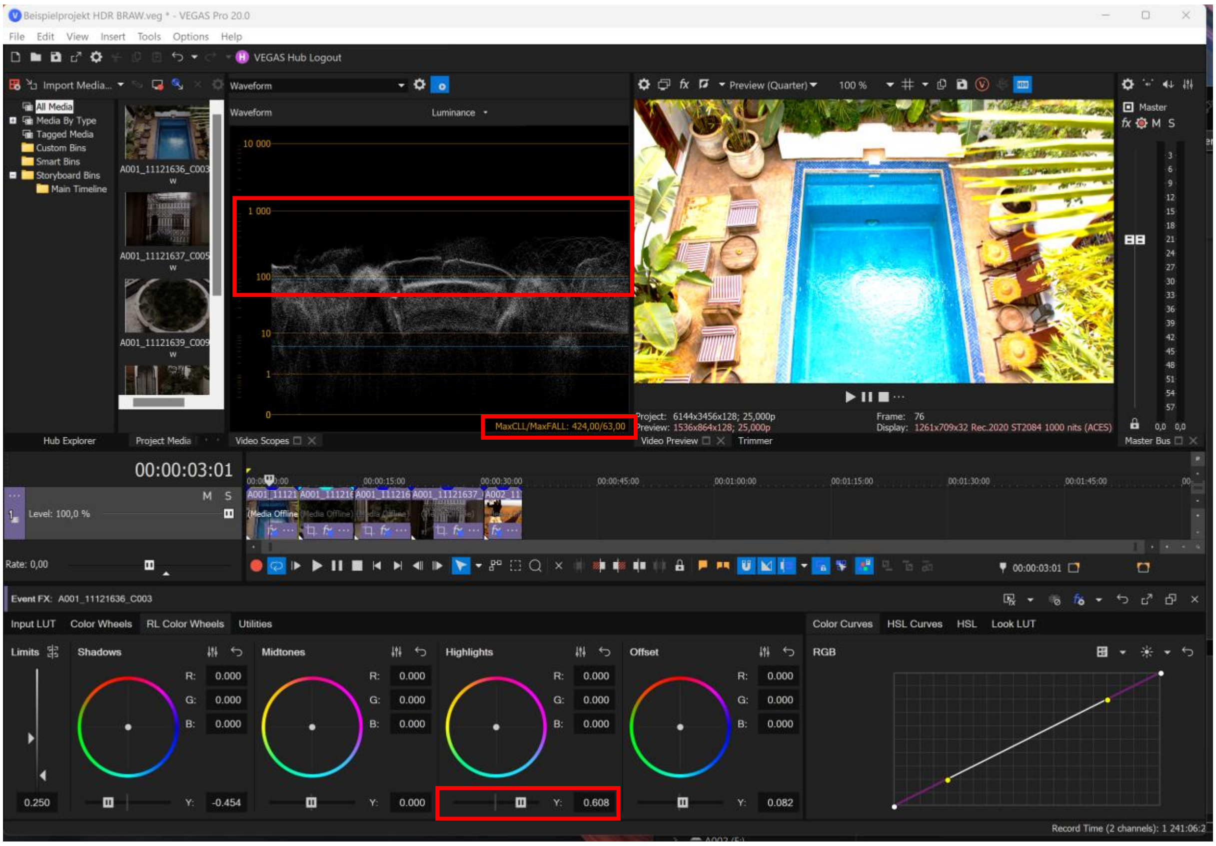


Fig. 16: Adjusting the peak brightness with highlights. Here the peak brightness was set at about 400 nits, MaxCLL sits at 424 - which coincidentally corresponds to a value of 0.608. The 400 nits are also more of an artistic value, the brightest areas of the image can be found in the reflection of the sun in the water. I primarily based myself on the optical image impression of the internal HDR preview, and checked this in the full-screen preview on an HDR display.

Tip: Please also note that on the one hand we actually adjust the brightness for specific end devices - Netflix says that you should grade on 1000 nit monitors. On the other hand, with PQ and HDR10 in particular, the function implemented in the viewing devices of reducing excessive luminance values for displayability on the respective display is not standardized at all - but is left to the manufacturers. It's also good that there is such a function - otherwise image material that is too bright would lead to clipping and thus to white areas on the viewing devices. In an ideal world, however, this function should already be standardized. You can partially circumvent this whole issue by deciding not to use the full 1000 nits, especially for grading for OLEDs.

Unfortunately, the problem goes deeper. Actually, you should use monitors for grading that don't regulate themselves - because then you can see whether you're getting into the limit areas. Production monitors such as the Atomos Sumo, which is a cheap way to grade HDR, offer this behavior - and there you can even adjust the peak brightness you want to achieve.

Pulling up the highlights too much results in unnatural images, with unnatural colors. Here's the picture if you really wanted to go up to 1000 nits:

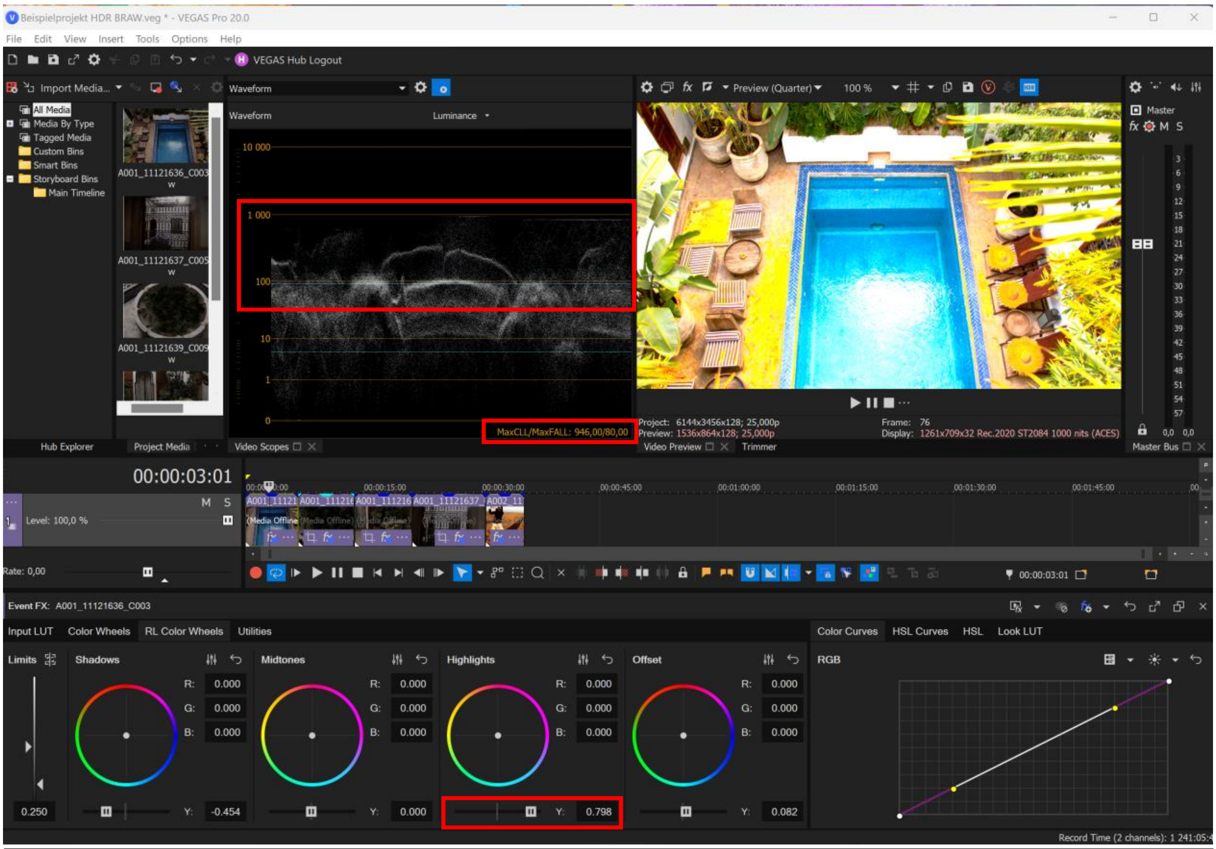


Fig. 17: Raising the peak brightness to around 1000 nits or MaxCLL 946, which is unnecessary here, leads to color decay and a very unnatural image.

Tip: Especially with the peak brightness, you should always keep in mind that today you grade for 1000 nit viewing devices - and thus very bright light sources (such as the sun if it is directly in the picture) have to be set to 1000 nits. But you should definitely not want to set these 1000 nits in every picture motif where such brightnesses are not achieved! Often 200 or 400 or 500 nits are enough here - depending on the image motif.

If you still want to increase the peak brightness, you can do this with the conventional, non-logarithmic tools - for example with "Levels" in the Utilities tab, or with the curves. Judge for yourself in Fig. 17 – I personally find that to be too much and also already unnatural – even if the image material here doesn't disintegrate too much:

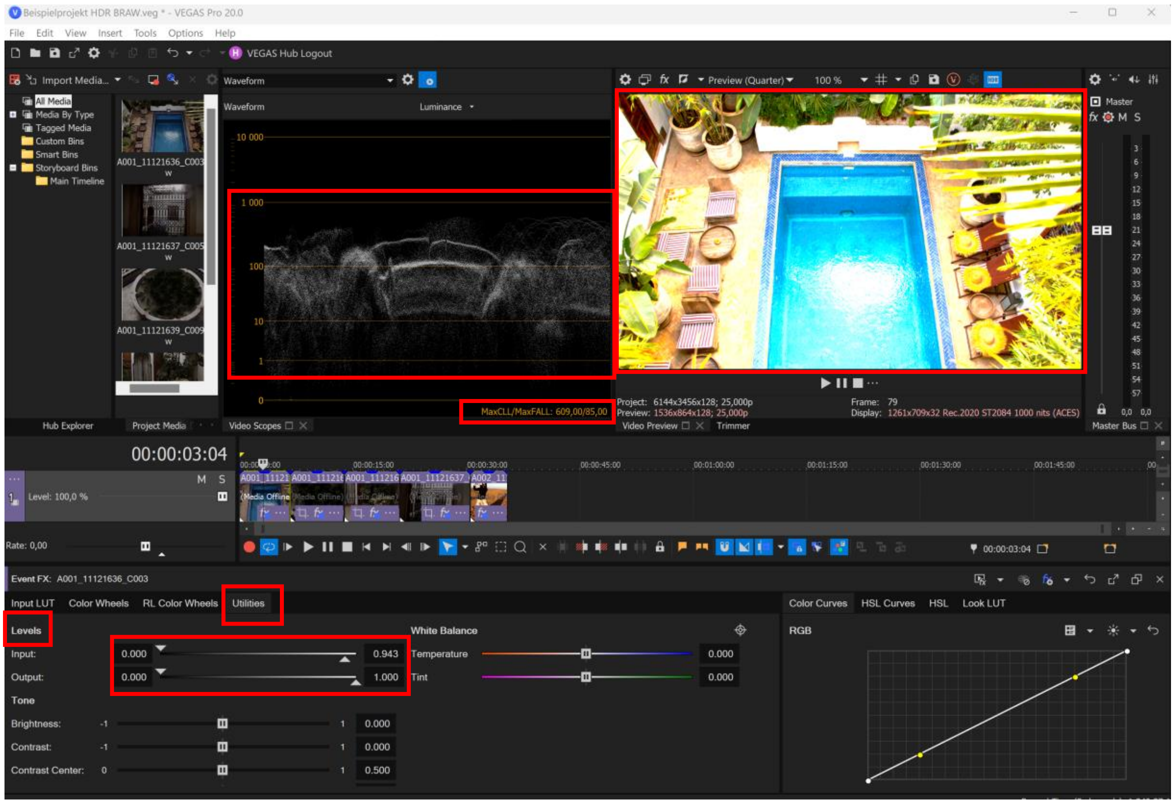


Fig. 18: The peak brightness was readjusted here with levels in the "Utilities" tab - here to approx. 600 nits. Of course, this function also affects the entire luminance spectrum, not just the peak values.

But I find this rather too much for the water reflection, which does not appear that bright in real life. But please judge for yourself - with your recordings (here in Word, with which I am writing this, this picture can actually only be displayed insufficiently, since Word only lets the embedded picture appear outshined, and is not able to show you the HDR view really).

Back to the selected workflow, without the adjustment in the level function. Finally, use midtones to gently adjust the middle brightness tones - and as a rule, you decide very strongly here whether the image motif appears brighter or darker. That too is a rather artistic decision as to where to lie down here.

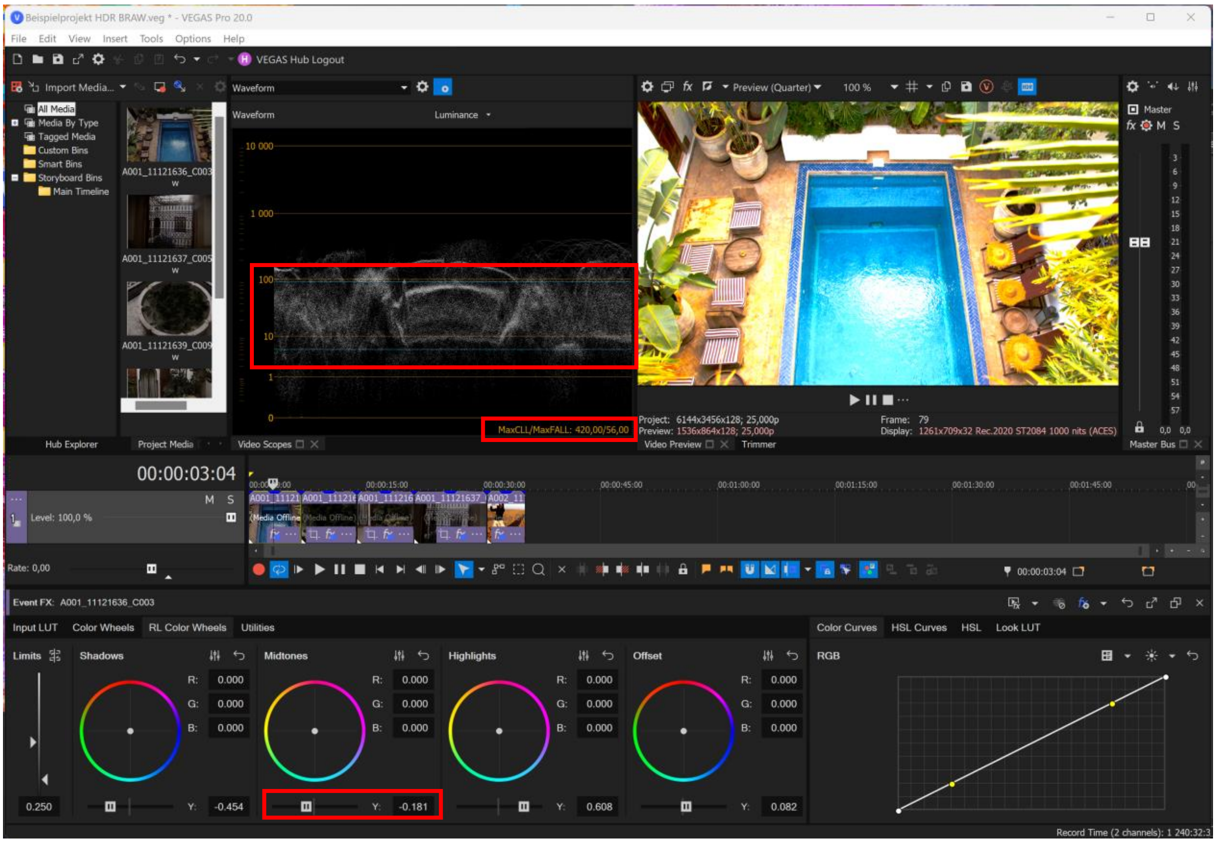


Fig. 19: Adjusting the image brightness with midtones. This can go up - for example to lighten - or even down, as happened here. This makes the picture more interesting because you get a higher-contrast impression.

Note that even with the midtone setting, the colors of the image can tear off if you grade too much.

You can certainly try to use the other functions in the CGP – such as the curves – again after these steps. Always with caution. If something goes wrong, you can partially or completely reset the settings in the CGP and start all over again – which is a matter of practice.

Finally, I would like to show you an example of a motif where it makes sense to go to the 1000 nits of the PQ 1000 nits transformation - because the sun is in a backlit shot there. The pre-grading in the decoder window has already been done here - and as usual you are initially at less than 100 nits after the adjustment in the decoder window. Take a look at the source material:

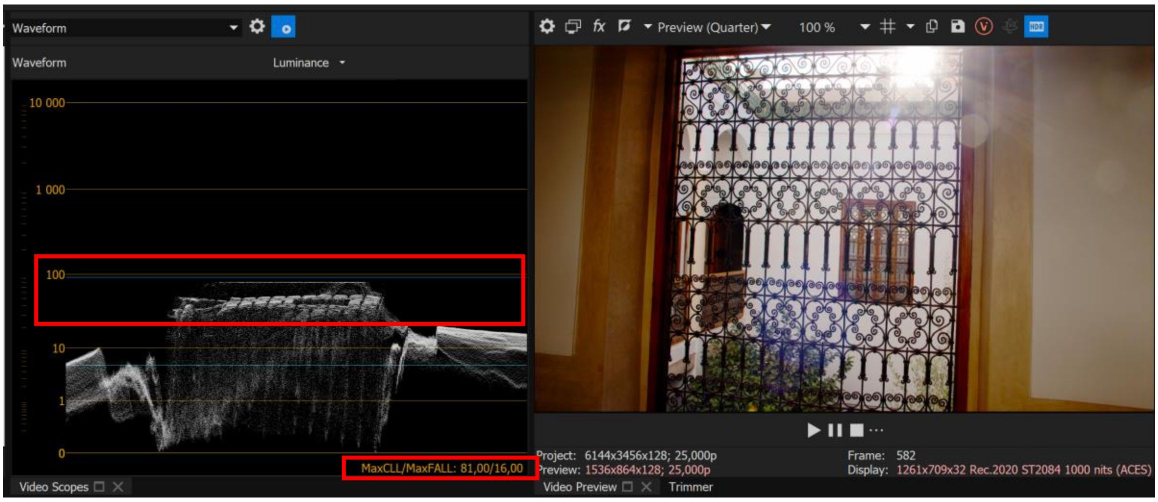


Fig. 20: Grading of a backlight motif - here after the contrast setting in the decoder window, where you are at 100 nits.

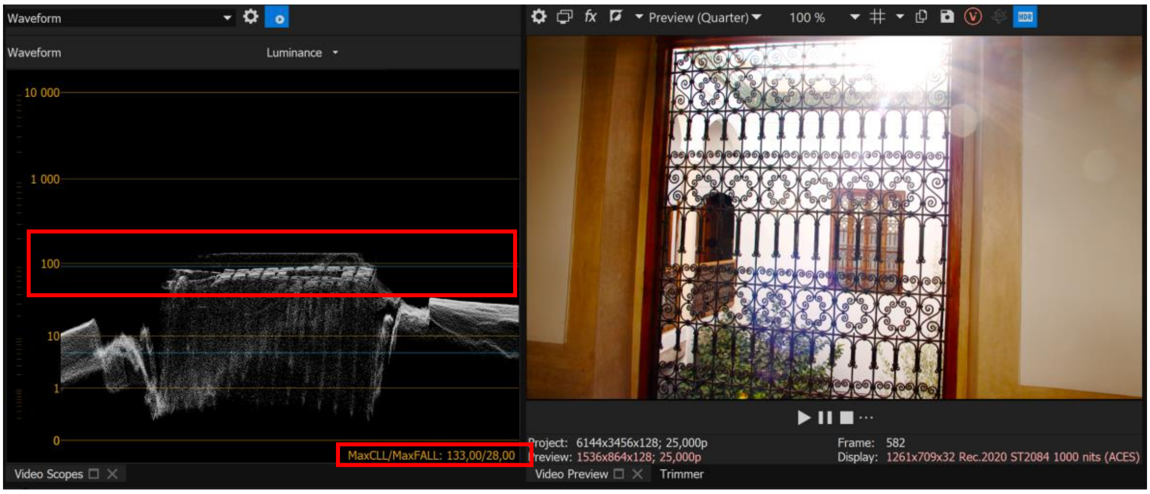


Fig. 21: Slight raising of the luminance spectrum with offset in the RL Color Wheels.

In the waveform image you can clearly see the bars in the above illustrations, I very deliberately leave the white wall behind them slightly below 100 nits here in Fig. 18. Because white should not be significantly higher than 100 nits in HDR material either, at most 150-200 nits.

By only adjusting the highlights above the top blue curve, I separate the highlights to be lifted - the sun - from the white wall.

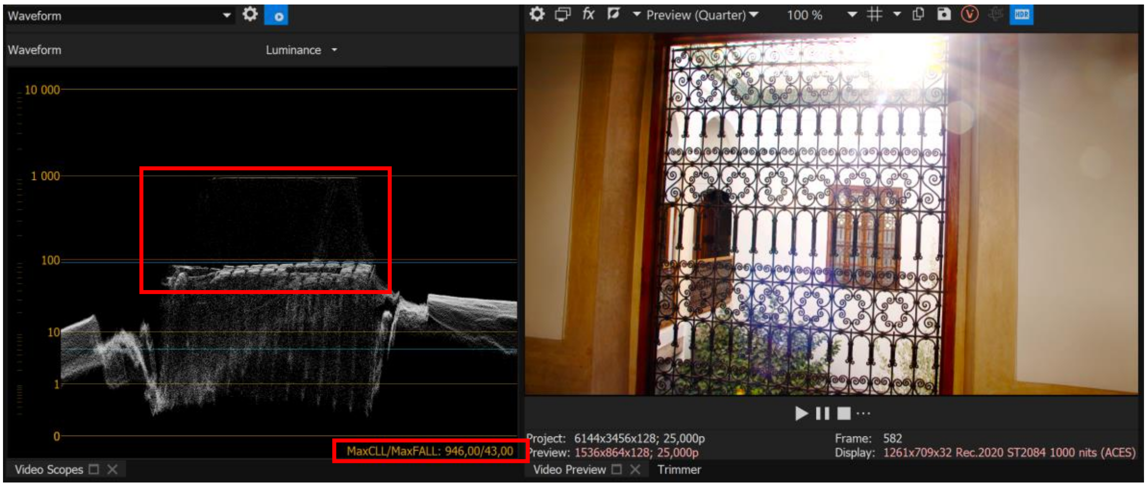


Fig. 22: Raising the bright sun to 1000 nits with highlights , MaxCLL goes to 946 nits. The rest of the picture remains protected in the lower luminance ranges.

This example shows quite well how to use the blue line separation to separate areas of lightness when grading. Lowering the black point is still useful here:

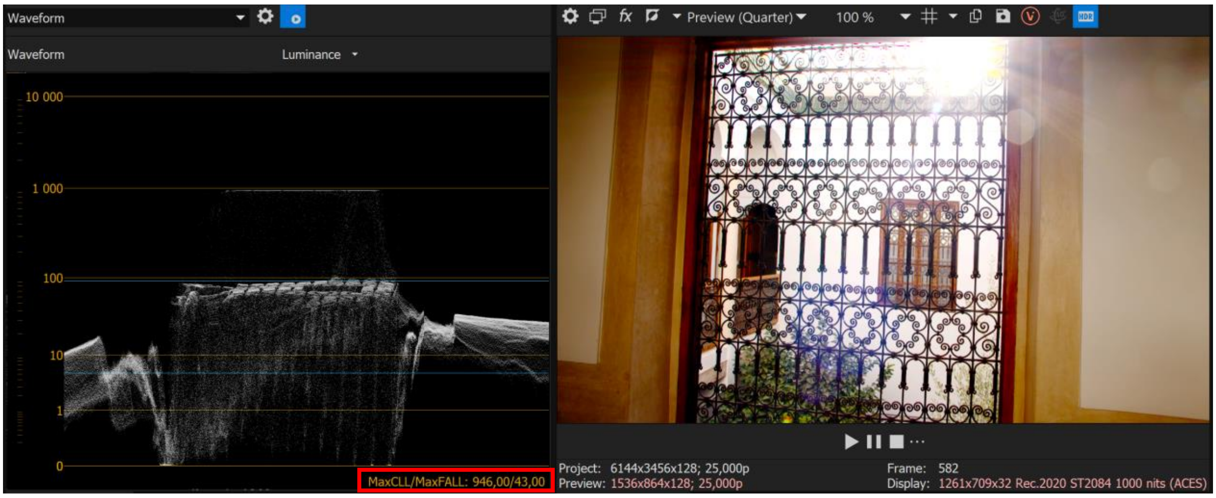


Fig. 23: Final setting of the black point with shadows.

Of course, this can be even more complex - for example, if you place masks around areas and want to grade them extra. But I don't want to deal with that anymore here.

In any case, it is necessary to check the image on an HDR-capable display device again and again - if you do not have the full image on your own HDR display anyway, which makes the work easier, but unfortunately this is not always possible.

Happy grading!