HDR with ReShade for Dummies

*This guide is more of a general overview. It won't give you all the answers but will at least get you pointed in the right direction. For a more thorough explanation of covered topics feel free to ask us in the **HDR Wasteland** Discord server:*
https://discord.com/invite/yRYASQrg8r.

What is HDR?

HDR stands for **H**igh **D**ynamic **R**ange. It allows for a wider range of colors, increased contrast, and more detailed shadows and highlights. It requires an HDR compatible display that is also capable of showing HDR content. This last point is very important as some monitors will say they are HDR / HDR10 compatible but aren't actually able to show HDR content. Do your research before buying an HDR monitor as they vary wildly in price, quality, and overall functionality. Generally speaking, HDR will look better on an OLED display when compared to a VA or IPS panel.

Does ReShade work with HDR?

Generally speaking, most ReShade shaders are not compatible with HDR; however, you can get around that in a few different ways. In theory you can get most shaders working with HDR but which method you'll need to use can vary by game. If a game has the option to use different graphics APIs then the methods can vary with those as well. These methods are discussed below.

HDR with ReShade Methods:

Expect to do some experimenting to find which method works best for your particular use case. There often isn't a "best way" to do things in most situations.

With the exception of Special K, games that use DirectX 10 or older need to converted to DX11/12 or Vulkan to work with any of the methods below; though it's still recommended even with Special K, it's just not required.

- **Soop's scRGB / HDR10 Converters –** The only way to use ReShade with Native HDR or the popular RenoDX mods. Just place any shaders in-between the Before and After parts of the converter. You can use the converters alongside the various AutoHDR methods and inverse tonemappers as well. Just place Soop's converters after the inverse tonemapper. https://github.com/smolbbsoop/smolbbsoopshaders

- **AutoHDR Addon –** a Reshade addon that's used to convert a game from SDR to HDR. Must be used with one of the inverse tonemappers. Can also use in games that have native HDR, but you need to make sure HDR is disabled within the game's settings. https://github.com/EndlesslyFlowering/AutoHDR-ReShade
- **Lilium's DXVK –** a fork of DXVK that Lilium modified to give it HDR capabilities. Similar to the AutoHDR addon in that it's used to convert a game from SDR to HDR. Must be used with one of the inverse tonemappers and if a game has native HDR you should disable it. Converts a game's API to Vulkan which makes it useful for DX9 games. https://github.com/EndlesslyFlowering/dxvk
- **Lilium's Inverse Tonemapper –** shader that is used to convert the luminance range from SDR to HDR. Must be used alongside the AutoHDR addon, Lilium's DXVK, or Special K (when tonemap mode is set to Raw Framebuffer). https://github.com/EndlesslyFlowering/ReShade_HDR_shaders
- **Pumbo's AdvanceAutoHDR –** shader that is an alternative to Lilium's Inverse Tonemapper but can also be used to modify native HDR as well. https://github.com/Filoppi/PumboAutoHDR
- **Special K –** a separate program that can either be run "globally" in its launcher form or "locally" when you place the renamed SpecialK32/64.dll into the game's installation folder (similar to how ReShade is installed when done manually). Can be used to modify a game's native HDR or convert an SDR game to HDR. Has its own built-in inverse tonemapper but can also be used with Lilium's inverse tonemapper or Pumbo's AdvancedAutoHDR shader.
  - Special K's pipeline remastering feature (OpenGL and DX11 only) is an advanced feature which allows the HDR remastering process to start earlier in the graphics pipeline (similar to RenoDX). In simple terms, it can make the final HDR output look better but isn't recommended for first-time users of Special K because of the additional steps it takes to get it configured.
  - Recommend grabbing the latest version of the installer from the Special K Discord: https://discord.com/invite/specialk
  - Special K gets updated often so I recommend turning on automatic updates. You can also grab updates from their Discord's nightly-builds channel.
  - Special K is not compatible with most of Otis' camera tools but this will depend on the game it's being used in.
  - Special K can also be used for much more than HDR but that's out of the scope of this quick overview.

RenoDX

Uses ReShade to inject itself into a game (in the form of a ReShade addon). RenoDX mods should be treated as native HDR, and as far as the graphics rendering pipeline is concerned RenoDX **IS** native HDR. RenoDX is the best way to experience HDR if you're not using any other shaders. As mentioned earlier, you'll need to use Soop's HDR converters if you want to use non-HDR shaders with RenoDX. List of all the currently available RenoDX mods can be found here: https://github.com/clshortfuse/renodx/wiki/Mods

Taking and Sharing HDR Screenshots

- As of ReShade version 6.4, ReShade is capable of taking HDR screenshots in the HDR PNG format, which are compatible with Discord.
  - HDR PNGs will automatically tonemap to SDR when viewed on non-HDR displays. Hardware acceleration must be turned on in Discord for HDR PNGs to tonemap properly. Otherwise, they will need to be opened in a web browser.
  - The *Save before and after images* screenshot feature will not work when using one of the inverse tonemapping shaders because it will disable the inverse tonemapper as well which will produce a washed-out image in the before shot.
- Special K is able to take HDR screenshots in multiple HDR image formats including HDR AVIF, JXR, and HDR PNG.
- **SKIV (Special K Image Viewer)** is a handy tool can be used to properly view HDR images and see detailed information about the image.
  - Convert HDR images to another HDR image type (such as JXR to HDR PNG) and export HDR images to SDR.
  - Crop HDR images using by holding ctrl + left click, then select the area you want to keep, release the left click which will then save the cropped image to your clipboard, paste the image back into SKIV.
  - Can take HDR screenshots which essentially makes it an HDR version of the Windows snipping tool.
  - SKIV automatically comes with Special K when you install the latest version from the Discord. You'll find SKIV in the main Special K install directory.
  - SKIV does not need Special K to function so if you have no interest in using Special K you can move SKIV.exe to its own folder, then uninstall Special K. I

do recommend moving SKIV to a folder, and not just place the program on your desktop because it will automatically download any additional needed files that are required when saving an image to that particular file type. So you'll end up with more than just SKIV.exe in that folder.

- Windows Game Bar can take HDR screenshots in the JXR file format.
- Nvidia Overlay can take HDR screenshots in the JXR file format and can also record HDR video.
- OBS can capture HDR screenshots in the JXR file format and record HDR video.
  - OBS HDR setup guide: https://www.reddit.com/r/IntelligentGaming2020/comments/x4s8h4/how_to_capture_record_hdr_high_dynamic_range/

Links to Helpful Resources

- **HDR Den Discord:** https://discord.com/invite/WJ9YZctPND. This server is dedicated to all things HDR. Home to RenoDX, PumboAutoHDR, and Lilium's HDR ReShade shaders. This is a good place for asking about the technical details of HDR and for inquiring about what kind of HDR display you should get.
- **Special K Discord:** https://discord.com/invite/specialk. You can find the latest Special K updates here and support is also provided. If you're interested in the non-HDR aspects of Special K such as the various texture mod packs then this is the place to ask.
- **HDR Wasteland Discord:** https://discord.com/invite/yRYASQrg8r. A new server made by yours truly, CreepySasquatch. Dedicated to using ReShade with HDR and specializes in using non-HDR shaders with HDR. Home to Soop's collection of shaders and Creepy's HDR ReShade guides. If you're interested in using shaders such as RTGI or Filmdeck with HDR or you want to learn how to take better HDR screenshots then this is the Discord server for you.
- **Marty's Mods ReShade guides:** https://guides.martysmods.com/. Nice collection of general ReShade guides, but nothing specifically for HDR.
- **PC Gaming Wiki:** https://www.pcgamingwiki.com/wiki/Home. If you need help finding specific information about a game, such as what API it uses.
- **Special K Wiki**: https://wiki.special-k.info/. If you want to learn more about the various features Special K has to offer.
- **FRAMED Screenshot Guides**: https://framedsc.com/basics.htm. If you're interested in learning how to take better screenshots this is a good place to start. Nothing specifically for HDR but still a good resource nonetheless.