Note: This document has been updated as of October 5, 2021.

Lumenzia Overview

For a detailed video tutorial on Lumenzia's features, please click the "**Tutorials**" button in Lumenzia, this will take you to a private support page with more information and numerous training videos.

To get started, I recommend watching the Quick Start video.



Lumenzia is specifically geared towards making luminosity masking as easy and powerful as possible. In keeping with this, it has three primary functions. Nearly all buttons in the panel fall into the following categories

1. **Create**. These buttons (such as L5, Range Picker, etc) allow you to identify which tones/colors to select. Each of them either uses a default selection or asks you for input to create a preview of the mask/selection. The normal mode creates orange temporary layers to generate a preview, which may be customized and then applied via the orange buttons below. Using the mode buttons (Photoshop CC only) or shortcut keys (CS6 and CC) enables other options, such as "BlendIf" masking, which is applied directly to the active layer. Note that the alternative modes (LIVE-M, etc) are only available on CC.
2. **Apply**. Once you have a preview that selects the desired tones/colors, it is time to apply it. These buttons allow you to apply the preview as a selection or to mask existing or various other custom options (such as a sharpening layer).
3. **Refine**. While you can customize the masks during the first (creation) phase, it is often helpful to further refine the masks once they have been applied. This may include refining the edges for a smoother transition, applying the mask only to certain colors in the image, or applying the mask only to certain parts in the image.

In addition to these primary functions, Lumenzia includes **PreBlend** and **Visualizations** at the bottom of the panel.

*Note for **CS6** users: Your interface looks different, but the vast majority of the functionality is available to you by using modifier keys (such as <cmd/ctrl>) to access extra functionality. Please see the "**Button Reference**" document in the ZIP, as well as seeing the tooltips that appear when you hover over the buttons in the panel. And note that you should <ctrl/cmd>-click the Tutorials button to access the panel preferences and Utilities (CC users have access to this instead via the menu as shown in the tutorial videos).*

Video tutorial: Notes on interface differences for Photoshop CS6 users

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New in Lumenzia v10: UXP

Adobe has been continuously expanding and adapting their support for extension panels for well over a decade. As part of their ongoing efforts, they have introduced the "**UXP**" platform and started calling the "**CEP**" platform "legacy" (though it is likely to remain supported for a very long time because there are so many popular CEP-based panels in use). See my post for more details on UXP, CEP, and Flash panels.

With Photoshop v23.0, the UXP platform has expanded to the point where it can support Lumenzia's needs, and so UXP is now the basis for Lumenzia v10 and all future releases (Photoshop v22 supports an older version of UXP which does not meet Lumenzia's requirements). The Lumenzia v10 release is a **complete top to bottom rewrite** for this new platform. This is roughly 50,000 lines of rewritten code and has been a *major* project.

The focus in v10 is the platform migration, but there are some cosmetic differences in the look and feel of popups (which make them more consistent with Adobe's modern styling). The functionality is nearly identical to the final release of v9. While the benefits will grow substantially over time from this new platform, this update provides the following significant benefits immediately:

- Simplified installation. Just double-click the CCX file to install. No more hassle with custom installers or digital signatures.
- Apple Silicon (M1) computers are able to run UXP natively to increase performance (note that older CEP versions of Lumenzia are still 100% compatible and may be run under Rosetta if you need to run older versions of Photoshop).

There are some other minor changes as noted in the release notes.

If you have v9 or older CEP versions of Lumenzia installed, you may keep it (there's no conflict but the UXP panel won't respond immediately to changes made by the CEP panel), uninstall, or simply close them. Every panel you open has some impact on performance, so my recommendation is to close the old panel when not in use or uninstall it (either has the same impact).

A note for beginners….

Luminosity masks are both complicated and extremely powerful. My goal with Lumenzia is to make luminosity masking much simpler and even more powerful. But no matter how easy it becomes to create luminosity masks, there will always be a bit of a learning curve to use them (especially if you are new to Photoshop as well). The training included with Lumenzia is designed first and foremost to help learn how to use the software. While many luminosity masking techniques are covered in great detail, it is beyond the scope of the included training to cover every possible subject, technique, or workflow. Please be sure to utilize the general luminosity masking group on Facebook to connect with other luminosity masking users, and I'm always happy to take suggestions for future tutorials.

If luminosity masks are new for you, I recommend you start with simple tasks and then move to more complicated ones over time. Trying to understand everything all at once can be frustrating and slow down your ability to really learn the process.

Specifically, you may wish to consider the following learning agenda as you begin (there is an online version of this recommended learning plan as well). There are no right or wrong ways to get started. This suggestion is simply based on the idea that you'll probably learn the fastest by starting with basic topics first, before trying to learn complex topics like exposure blending:

1. Click "**Tutorials**" at the bottom of the panel and watch the "**Quick Start**" video included with Lumenzia.
2. Refer to this **manual**, the **button reference** guide file (also included in the ZIP download), and other videos available by clicking "tutorials" in the order that suits you. Click the "**?**" button in the CC panel for button-specific help at any time.
3. Use the '**?**' button in the panel for button-specific tutorials (note that this even works on the flyout menu at top right and the sliders).
4. Before starting to make real adjustments, take a look at your image and write down what you would like to do with it (areas to fix, enhance, etc). One of the most challenging aspects of luminosity masking is that it is open-ended. You can do almost anything, but you do have to have an idea of what you'd like to do. This is very different from using filters, HDR, or other software that have a limited number of sliders/options. Exploring is a good thing to do with luminosity masking, but making arbitrary adjustments is not likely to produce the results you want.
5. **Target some part of an image to adjust with "Curve" or "Level**". You might use a lights mask to target the sky (such as L3), or a midtone mask (such as M4 or the zone pickers) to adjust contrast. Use the "Mask" button to change masks on an existing layer.
6. Try using the **BlendIf** masks for color and curve/level adjustments.
7. Try further refining that mask with the "**Group**" button. Paint white and black on the group mask to see how you can hide or show the underlying adjustment. Then use the "**Combine**" button to see how group masks can be combined with luminosity masks.
8. Try refining another mask using the "**Color**" button.
9. Play with the "**Contrast**", "**Vignette**", and "**Sharp**" (high pass) buttons to get a sense of how they work. Don't use any luminosity masks with them for now (though you can do that later).
10. Try using the 50% gray pixels option in "**Dodge**". Spend some good time here. Dodging and burning is a very deep subject, and extremely powerful for giving something more/less attention in the image. Trying dodging and burning without any luminosity masks or selections first, just to get the hang of how the process works freehand. Then try dodging with a luminosity mask, and then finally try dodging by painting through selections. [This is a very deep subject: I highly recommend my Dodging & Burning Master Course, which is designed to cover it in great depth.]**
11. After you have mastered the topics above, try **blending multiple exposures** to increase dynamic range. Try the "PreBlend" tool to help arrange the layers. Then try blending exposures by painting through selections based on L2-L6. Blending through luminosity selections will almost always yield superior results to simply applying masks or BlendIf. [This is a very deep topic. I highly recommend my Exposure Blending Master Course, which is designed to cover it in great depth.]**

Example workflows

Luminosity masks and selections can be used just like any mask or selection in Photoshop to provide more accurate post-processing. As a result, Lumenzia is as open-ended as Photoshop – you can do anything you like. So there is no standard workflow. However, there are several workflows which are more common. Below are some examples. Note ***there are an infinite number of ways you can use Lumenzia*** – these are just some ideas to get you started.

General workflow:

1. Create a **preview** by clicking on one of the preview buttons, such as L2 or Vib.
2. **Customize the preview via the sliders** to refine the selection (applies to Photoshop CC only).

3. **Customize the orange preview layers** for advanced customizations that are not controlled by the sliders. Just double-click the layer icons and adjust properties as desired. This includes refinements such as changing the B&W mix layer to help target or avoid certain colors.
4. **Apply** the preview to a **selection or mask** by clicking on one of the "apply" buttons in solid orange, such as "Sel", "Mask", "Contrast", curves, etc.
5. **Refine** the mask using the "refine" buttons, such as "Group" or "Edge". This helps customize even further than what you may have already done in the preview steps.

There are of course some exceptions to this workflow. For example, you skip the preview when creating BlendIf masks (though you can use the red "If" button to visualize the BlendIf after you've created it).

Vignetting:

1. Use the Lasso Tool (<L>) to draw a rough selection around the area to vignette.
2. <shift>-click "Vignette" to create a vignette with a BlendIf mask to help target shadows.
3. Drag the Precision (vertical) slider to adjust the BlendIf

Sharpening:

- Click "Sharp"
- Choose "High Pass" and "add edge/lights mask" to create a sharpening layer with a mask that helps to avoid unwanted noise in the image.

Split-toning:

1. Click the Solid Color icon (looks like a square right above "Sharp") and pick the desired color to use to tone the image.
2. Change the dropdown at top-left to "If:under" mode to be able to use BlendIf masks (or just hold <shift> while clicking in the next step).
3. Click L-L5 to use the color to tone highlights, D-D5 to tone shadows, or midtones such as Z(b)-Z(d) or Zone Pickers to target midtones. Use the sliders to refine the tonal targeting.

Of course, you can use luminosity masks here as well, but this is an ideal use case for BlendIf (which saves file space and provides a more non-destructive workflow).

Create black and white line art:

- Click "Edge", select the edge option, and click "layer". See this tutorial.

This feature works best on simple geometric subjects, such as architecture.

Dodging and burning:

1. Click "Dodge" and choose options to create a new dodge/burn layer. 50% gray pixels with "luminosity+color", all tones, and soft light blend mode is a good general choice if you are not familiar with dodging and burning.
2. Find your desired luminosity preview by clicking on buttons such as L3 or D4. You may use the sliders or adjust the orange layers to customize the preview. Try using the red "Map" button at the bottom of Lumenzia if you need help finding the right midtone zone.

3. Click “Sel” to load the preview as a luminosity selection. (Use the Lumenzia menu option or click <cmd/ctrl-H> to hide marching ants).
4. Paint through the luminosity selection, using white to dodge (darken) and black to burn (darken).
5. Deselect (<ctrl/cmd>-D) and repeat steps 2-4 as needed to target different areas of the image on the same layer. Or repeat all steps to continue dodging/burning with a new layer.

This is a vastly simplified example of the general dodging and burning workflow. This is an extremely deep topic and takes time to learn. I highly recommend my Dodging & Burning Master Course, which is designed to cover it in great depth. The course also goes well beyond dodging and burning (includes full workflows showing panos, sky replacement, finishing effects and other techniques to give a broader sense of how to incorporate dodging and burning into your workflow).

Exposure blending:

1. Open multiple exposures or variations of your image in Photoshop.
2. Click “PreBlend” to help prepare the layers for blending.
3. Starting with the layer right above the base image, click on L2-L5 for a lights preview. Use the precision (vertical) slider or adjust the orange preview layers to customize the preview if desired.
4. Click “Sel” to convert the preview to a luminosity selection. (Use the Lumenzia menu option or click <cmd/ctrl-H> to hide marching ants).
5. Paint with a white brush on the black layer mask to reveal the layer.
6. Deselect (<ctrl/cmd>-D).
7. Repeat steps 3-6 for each layer to be blended (working from the lowest layers up).

Example videos: gregbenzphotography.com/exposure-blending-luminosity-masks

This is a vastly simplified example of the general exposure blending workflow. Exposure blending is an extremely deep topic and takes time to learn. I highly recommend my Exposure Blending Master Course, which is designed to cover it in great depth.

Setup, Menus and Preferences:

Like any panel in Photoshop, Lumenzia can be docked and moved around the screen in Photoshop. Please see this video on configuring the workspace. If you are unable to click and resize/move the panel, make sure that Window / Workspace / Lock Workspace is unchecked.

Preferences

- On Photoshop CC, there is a configuration menu under the three bars icon at the very top-right of the panel. This includes options for:
  - **Create special channels / layers...** Create masks, selections, and layers based on HSB, HSL, LAB, CMYK, or RGB values. This allows advanced selections / masks or for creative effects by creating layers and trying different blend modes. Hover over the options for some tips on possible usage.
  - **Convert layer(s) to linked PSB...** This gives you a way to save very large (>4GB) documents in a format that may be viewed in Lightroom. Described in detail below.
  - **Default to legacy color previews (slower).** The legacy algorithm allows for a different color response. Most users should use the new (unchecked) option, which is faster and equal or better for most use.
  - **Default to legacy vibrance/saturation previews (slower).** The legacy algorithm is slower but selects extremely dark saturated pixels if desired. Most users should use the new (unchecked) option, which is faster and equal or better for most use.
  - **Paint on Orange Previews.** Creates a blank pixel layers in the temporary orange layer stack when previewing masks. This allows manual refinement of the mask preview with a paint brush. You may use this, for example, to paint black to remove an unnecessary part of the mask.
  - **Dodge/Burn Orange Previews**. Similar to the blank pixel layer, but in overlay blend mode. This is helpful for pushing gray pixels toward black or white, while protecting the opposite. For example, paint black on this layer to help remove partially selected areas, without affecting the most fully selected areas.
  - **Hide marching ants**. This determines whether marching ants should be shown after creating a luminosity selection via the "Sel" button. You can always hold the <cmd/ctrl> key while clicking "Sel" to select the behavior opposite this setting. Note that the ✓Sel (visualization button at the bottom of the panel) ignores this setting, and instead keeps the visibility you were using at the time you last clicked the button to create a preview.
  - **Synchronize "Split" Screens.** Offers options to keep both the mask and image views synced when using the zoom or hand tools. The single-document sync is recommended (due to Photoshop limitations, synching with multiple documents open may cause unwanted movement/zooming). You may also disable syncing, which is useful if you prefer to see the whole image while working on mask detail.
  - **Show properties for new adjustment layers**. Opens the properties panel immediately after creating curves, HSL, etc.
  - **Keep independent layer/vector masks when possible**. This controls the behavior of the "Mask" button. When this option is enabled, Mask will not replace both the layer and vector mask if it does not have to. For example, if you have a layer with an L3 layer mask and a vector mask created with a selection, you can apply an L4 mask without removing the vector mask.
  - **Invert orange preview too when inverting via "Mask".** By default, <alt/option>-clicking "Mask" only inverts any selection or path. This makes it easy to flip the selection, and the Mask can be inverted by <alt/option>-clicking during mask creation or by using the "Not" button. However, if you can set this preference so that "Mask" will also invert the luminosity mask

(orange preview layers). Note that selections and paths are always inverted when <alt/option>-clicking "Mask".

- **Add mask name with "Mask"** menu option to prevent "Mask" from adding the mask name to the layer name. This may help when working with other software which expects a particular layer name, or if you just prefer not to rename your pre-existing layers. Note that new layers created by Lumenzia will get masks names and layers with mask names will be updated regardless of this menu preference.
- **[Interface Size]**. This makes Lumenzia compact, or larger.
    - Note: Lumenzia will attempt to restore the size you last used for a given interface option. However, Photoshop will not allow Lumenzia to shrink its width to less than the last value you manually set (ie Photoshop gives panels the ability to get bigger, but not smaller than what the user last used). So if you resize the larger interfaces, you will see the smaller ones likely stay wide the next time you switch to them. Just resize the smaller interface and it should stick as long as you don't keep resizing the panel or the column it is in.
- **[Tool tips]**. This allows you to turn on and off tool tips and the new "panel tips". Panel tips allow you to see help descriptions immediately while hovering over the buttons and are displayed at the bottom of the panel (be sure to click and drag down the lower edge of Lumenzia in order to see the text).
- **[Reset popup notifications].** Some of the dialog boxes have an option to fix the settings so that you don't need to see the dialog box again. Resetting the notifications will allow you to see these dialogs again to change preferences.
- **[Utilities]**.This includes several sub-functions
    - **Automatically optimize working gray colorspace**. This option is on by default and allows Lumenzia to automatically make changes required to offer the highest quality masks and selections. You may turn it off if you prefer to set your working gray colorspace manually. See details below in "about gray colorspace" for more information.
    - **Use Fast Previews**. This is recommended for all users and should only be disabled if you encounter unwanted screen flickering while clicking the various Lumenzia preview buttons (such as L3).
    - **Optimize Photoshop.** This will check your Photoshop settings and make recommendations as needed for best results.
        - Nothing will be changed without your permission.
        - The optimization process checks various settings in the main Photoshop preferences, as well as many of the color management settings (which may be under Edit / Color Settings).
        - You may see a recommendation to change your RGB working space. The significance of this choice largely applies to opening untagged images (from the internet or scanners) or when using Image / Mode to convert to RGB, rather than Edit / Profile (which asks for a specific RGB profile). The use of a monitor or printer space is generally something I advise against. Never use "Monitor RGB – Display", as this disables color management. Unless you are an expert in color management, I strongly recommend you use one of the recommendations provided by Lumenzia (ProPhoto RGB keeps more color for expert users and Adobe RGB is a very good and safe choice if you are uncertain).
        - You will be offered the option to install custom menus, toolbar, and workspace. These help setup Photoshop as shown in most of my tutorials. Note that these options are always shown (Lumenzia does not know if they have been previously installed or in use).

        - *If you wish to revert the workspace, just go to the workspace dropdown at top-right of Photoshop (or Window / Workspace) and choose your previous workspace. It should load in the same state it was last set. The default is "Essentials", so choose that if you never picked one before.*
        - *If you wish to revert the menus, just go to Edit / Menus and change the set to "Photoshop defaults".*
        - *If you wish to revert the toolbar, just go to Edit / Toolbar and choose "restore defaults".*
    - One more item I recommend which Lumenzia cannot set for you in new versions of Photoshop CC, go to Edit / Keyboard Shortcuts and check "Use Legacy Undo Shortcuts". This allows you to use <ctrl/cmd>-Z to quickly toggle before and after the last change.
- **Lumenzia Actions**. Gives you the ability to do basic luminosity masks/selections as part of your own recorded actions. Described in detail below.
- There are options to **show folders** for the panel or plugins. This can be a helpful way to manually install/upgrade/uninstall panels. Just be sure to close Photoshop after showing the folder, as the files for open panels may be locked until Photoshop quits.
- **Reset popup notifications** will bring back options and warnings that you previously dismissed. (this is the same as the option above)
- **Reset panel preferences to default** will reset Lumenzia to its original settings.
- **Draft an Email with System Info** will allow you to easily send your Photoshop/computer configuration info in an email for support.
- **Copy system info to clipboard** will allow you to paste your system info into an email if you need support. This can be used if your computer does not support the previous email button.

Photoshop CS6 users can access these same preferences by <ctrl>-clicking the "tutorials" button in Lumenzia.

About Gray Colorspace

This section gets into details of color management that most users won't care about. The short story is that the gray colorspace selection under Edit / Color Settings in Photoshop affects the quality of luminosity masks and selections in your image, and the best option depends on the RGB color space for your image (it does NOT depend on the working RGB colorspace, unless your image is not tagged with a profile and then assumes the working RGB colorspace). Therefore, you'll get the best quality results when this Photoshop preference is continuously updated for each image and Lumenzia now cares of this for you automatically (starting with Lumenzia v8.1).

If you wish to retain manual control over this setting, please go to Utilities and uncheck "automatically optimize working gray colorspace." However, this automatic default is highly recommended unless you are in the very rare scenario of using the gray image mode (which is not true of nearly all black and white work, which is still typically best done in the RGB color mode).

Background on the issue… Layer masks, channels and selections are treated by Photoshop as images in the grayscale color space. This is true within your RGB files (alpha channels do not use the RGB space even in RGB documents). But unlike your file's ICC profile, there is no specific gray colorspace tagged in the file. As a result, Photoshop assumes the gray working space as the color space for your masks and selections. Color

spaces are encoded using a mathematical relationship known as a "gamma" and your masks/selections will be optimal (and perfectly match the Lumenzia preview) when you use a gray gamma which matches the gamma of your RGB colorspace. Therefore, this automatic setting gives Lumenzia to update your gray working space (it does **not** affect your RGB color profile or working RGB colorspace, it simply updates the gray to match whatever you have chosen for RGB).

Failure to match gray gamma will cause gray tones in the mask/selection to be either lighter or darker than expected. This could result in issues such as areas which appear black in your luminosity preview being too strong in your selection, causing you to blend/dodge/paint outside the intended areas in your selection. The difference may be as much as a 50% change in the strength of the selection in areas which are near black in the preview.

Lumenzia will optimize for common RGB workspaces, including sRGB, Adobe RGB, ProPhoto RGB, eci RGB v2, beta RGB, and numerous other less used RGB working spaces. It will default to gray gamma 2.2 as the safest choice when encountering unknown spaces, such as device-specific RGB profiles, such as monitor or printer profiles. This is a very unlikely scenario, and luminosity masking should ideally be done in an abstract working space such as Adobe RGB and not in an output space (as working in a device-specific space limits the image to that gamut, therefore reducing options for output on other printers or monitors later).

Convert Content to Linked PSB

Luminosity masking files often get very large, due to layer masks and multiple source images. Lumenzia offers many ways to reduce file size (Combine, BlendIf, and Vector masks are all great ways to do this). However, you may still create some very large files. If you are using Lightroom to view and manage your images, you will not be able to view files larger than 4GB (the maximum size for a TIF file, or 2GB for a PSD). Ideally, Adobe will add support for the PSB format natively in Lightroom at some point in the future. However, there is still a way to save large layered files in a way that can be viewed in Lightroom, and Lumenzia's new "Convert Content to Linked PSB" makes it very easy.

The solution is to put some or all of the layers of your image into a PSB file (which can be nearly unlimited in size) and then create a linked Smart Object from a TIF file that points to that PSB file. In other words, you're making a small TIF file (which can be viewed in Lightroom) by moving its content to a second image file. Both files should be saved in the same folder, and only the TIF will show in Lightroom (since PSB is not supported).

Here's the workflow to use this option in Lumenzia:

- In Photoshop CC, go to Lumenzia's menu (three bars at top right) and choose "Convert Layer(s) to Linked PSB". [In Photoshop CS6, <ctrl/cmd>-click the "Tutorials" button to open the Utilities dialog and choose "Convert Layer(s) to Linked PSB".]
- You will have the option to send all content (including channels/paths), all layers or just the selected layers to an external file. It is usually best to send everything if you plan to edit inside the Smart Object.
- If prompted (or you request to set the save name/location), make sure you save this PSB in the same folder as the parent document (the working file you started with).
- If you have paths (or channels when using "everything"), you will have the option to keep or remove duplicates items in the parent document.
- If you use "selected" be careful if you don't select lower layers. Adjustment layers and layer blend modes only affect content within the same document.

- Save your parent document (as it has been updated to point to the external PSB). You can save the parent document as a TIF (highly recommended due to larger 4GB limit) or PSD (no advantage over TIF and has a 2GB limit).
- To edit the file, you would open the TIF file as normal, and then you can double-click the Smart Object if you need to edit the content that has been placed into the external PSB file. When done editing the Smart Object, just hit <ctrl/cmd>-S and close the tab. The changes will be written to the PSB and the Smart Object in the parent document will reflect the updates. You should never need to open the PSB file directly (i.e., always open the parent TIF document and then double-click into the Smart Object to edit the external layers).
- The parent file points to the external PSB as a relative path. So as long as you always keep them in the same folder, everything will work automatically (even if you move or rename the folder). If you rename the external PSB or move it to another folder, you will break the relative link and the Smart Object will show a red question mark on its thumbnail. But even that is fairly easy to fix. If you double-click with a broken link, you will be prompted to point to the external PSB file.

Additionally, there are other steps you can take to keep your TIF files within the 4GB limit to minimize how frequently you might need to use external PSB files:

- Delete any unused layers or masks.
- Use BlendIf instead of layer masks where possible. Any mask that you are applying directly without customization is probably a good candidate. This can have a substantial effect when used on several layers.
- Use the "Combine" function in Lumenzia when you no longer need group masks to be independent.
- Use the Vector Mask preference to render lasso selections as vector masks.
- Note that you can use the file size indicator at the bottom of Photoshop as a guide to get a sense of whether you are within limits before you save. But the file size estimate at the bottom of Photoshop is just that, an estimate. Estimates as low as 1.6GB can yield a TIF file that exceeds the 4GB limit (if saved without ZIP compression). So you'll have to get a sense of what predicted file size typically hits the 4GB limit for you. If you are saving with ZIP compression, an estimate of 2-3GB is probably the upper limit (as the estimate always seems to be quite a bit smaller than the smallest ZIP-compressed TIF file you can create).

If you ever wish to reimport your layers (i.e., undo this export), you can use Convert Layers to Linked PSB again (with the master file active in Photoshop), and there will be a new option to "Re-import External Content". This will allow you bring back layers, paths, and channels – subject to the limitations noted below.

Limitations to Re-importing:

- The option to re-import will not work properly if you have resized or rotated the linked Smart Object. If you need to align the external content, it is therefore best to do so before creating the external PSB.
- Any Smart Filters applied to the Smart Object will be ignored.
- Channels can be re-imported, but only areas which are visible within the parent document. Beyond the edges, channels will be clipped. You will be warned of this situation and may wish to review the channels to know if you should undo, or if it is ok to save. If you keep the channels in the parent document during export, they will of course not be affected by the re-import. You may also increase the size of the parent canvas before re-importing if you wish to fully preserve the external channels while re-importing them.

Video tutorial: Convert Layers to Linked PSB

Lumenzia Actions

Lumenzia is written in JavaScript and does not use any "actions". That means that it is incredibly powerful, but it also means that it is too complex for its buttons to be recorded as actions in Photoshop. In order to give you the ability to create specific light and dark selections/masks, Lumenzia comes with a limited set of actions. They may be used to create L-L6 and D-D6 masks or selections as part of an action. The actions are not used by Lumenzia itself in any way, and do not need to be installed to do anything with the Lumenzia panel.

Note that Lumenzia is very sophisticated, and the actions just approximate some basic functionality. The actions *mimic* the D-D6 and L-L6 buttons run in "traditional" mode (which is available when holding <ctrl/cmd> for advanced options). You should not expect an exact match between the result of the actions and the results created with the Lumenzia panel. The biggest differences will be in the treatment of saturated colors, and the 5-6 masks/selections. The results are very close and well suited for work using actions.

Installation of the Actions (optional):

- If you are using Lumenzia on Photoshop CC, just click the three bars icon in the top-right of Lumenzia and choose Utilities/Load actions. See the tutorial link below for a video.
- If you are on CS6, you do not have the same menu. Instead, <ctrl/cmd>-click on the "Tutorials" button in the panel and then click the "Load Lumenzia Actions" button. Other than this initial step, the use of the actions is the same on CS6 and you should see the video tutorial linked below.

Using the Actions:

1. Open the Actions panel (Window/Actions)
2. Select the action you wish to use by opening "Lumenzia Actions (c) Greg Benz", expand it by clicking the arrow, and then select one of the main actions inside (such as "L4 Mask")
3. Use <shift>-click to select all of the steps (at the same time, as they must remain in order) to the action where you would like them used.
4. Hold <alt/option> to drag and drop them into the action where you would like to use them. Holding <alt/option> will create a copy of the action (otherwise these steps will be moved). Be sure to insert them at the exact point in your script where they should be used.
    - Alternatively (if you forget the keyboard shortcut to copy), you may either reload the actions each time or click on the three-bars at top right of the Actions panel and choose "Duplicate" to duplicate the selected action before moving them.
    - If you ever accidentally change the master actions, you may simply use the installation steps again to reload a clean copy.
    - Note that the Lumenzia actions are designed to be easier to identify when placed in another action. Each action begins and ends with a "Stop" (which has been deactivated so it does nothing, but it clearly marks the beginning and end).

Removal of the Actions:

- If you wish to uninstall the actions, simply select them and then click on the trash can icon at the bottom of the Actions panel.

Video tutorial: Lumenzia Actions

Section #1: Create Masks

Standard masks: D/M/L

These buttons are “dark”, “midtone”, and “light” luminosity masks. When you click on one of them, you’ll see a preview of the mask. You can keep clicking to find the right mask, apply the mask using the orange buttons below, or click “X” to cancel the preview.

For black and white images, Lumenzia creates masks that are the same as my free actions. However, Lumenzia is optimized for color images (channel-based masks tend not to select pixels which are bright but saturated). If you’d like to make selections that are identical to my channel-based actions, just hold the <ctrl/cmd> key while clicking on the button. You’ll see the bottom of the three orange layers is a BW Adjustment Layer in the default mode and is a black and white image labeled “Traditional” when you use the modifier key.

Video tutorial: Standard and Zone masks
Video tutorial: Traditional masks
Video tutorial: Exposure blending
Video tutorial: Exposure blending

Zone masks: (a),(b),(c)…1,2,3

These masks target specific tonal ranges in the image. They are not similar to a channel-based approach, they are optimized to provide a better selection. They are designed to fully select the target zone and provide a natural feathering around that tone. The 5-zone system represented by letters includes a wider selection of tones than the 11-zone system represented by numbers.

Zone pickers: or ┼

There are two zone picker icons. The top one next to the wide zones helps you automatically select a wide zone, while the bottom one next to the narrow zones helps you select a narrow zone. Not only does this tool eliminate the need to know what zone corresponds to your intended target, but it also creates zones centered on the tone you pick (i.e., you could select the equivalent of zone 5.5 with this approach).

The color picker “sample size” can be adjusted in the tool options. I recommend 5x5 sampling for most selections. Please note that much larger sample sizes (31x31 and larger) can produce average samples which do not accurately represent the tones you ultimately want to select (for example, this would be a problematic choice if you wanted to select a halo around a dark edge).

Alternatively, you may use a selection to pick the target zone. Simply lasso a selection first and then click on the zone picker. Lumenzia will find the middle value in the selected area and automatically use that to create a zone mask. This enables a faster workflow, and the ability to easily sample different sized areas. Just as with the manual sample option, you should be targeted in order to get good results, so lasso a small sample area (otherwise, you’ll get the average of a larger area, which may not represent the zone you wish to select).

Video tutorial: Zone pickers

Vibrance/Saturation

These create a selection based on pixel vibrance or saturation. A vibrance map can be used to create color specific vibrance adjustments (when applied to an HSL adjustment layer). A saturation map can be helpful in desaturating over-saturated colors, without diminishing other colors.

You can customize these masks by adjusting the temporary curves layer. Drag the center of the curve down to make the mask more specific to saturated or unsaturated (vibrance) values.

The saturation masking method was significantly improved in Lumenzia v6 (for users on CC 2017 or later). It is much faster, and no longer treats very dark colors as saturated. This also eliminates the need to install the "Optional Multi-plugin" from Adobe for CS6 users to use vibrance and saturation masks. If you wish to use the old method, just check the "Use legacy vibrance/saturation" option in the panel menu (<ctrl/cmd>-click Tutorials in CS6).

Video tutorial: Saturation masks

"Gam"

When you convert your working image from a larger gamut working space (such as Adobe RGB or ProPhoto RGB) to a smaller gamut output space (such as sRGB for the web or perhaps a profile for your printer/paper), you may run into colors which are "out of gamut".

Photoshop will ensure you get a valid color by either desaturating all colors (aka "perceptual" rendering intent) or matching out of gamut colors to the nearest valid color (aka "relative colorimetric" rendering intent). In some cases (such as with the standard sRGBIEC61966-2.1), your choice of perceptual rendering intent will be ignored and you'll get relative colorimetric regardless (as "matrix" or math-based profiles lack the lookup tables required for perceptual conversion). But regardless of which automatic solution you use, the result may be dull color, a lack of color detail, the wrong color, and sometimes spectacularly bad color.

A better approach is to take control over the process to bring colors back in gamut manually while "soft proofing" and using View / Gamut Warning to see areas which may need work in your image. **By using the "Gam" function in Lumenzia, you can create a mask or selection which helps to target pixels based on the degree to which they are out of gamut, so that you may fix them (such as by applying targeted desaturation)**.

Please note that color management is an extremely deep topic that could leave one with questions after a week long workshop. It is therefore out of scope to cover in any realistic depth here. If you wish to dive deeper in the topic, I recommend signing up for a color management or printing workshop and getting some books on the topic (such as Real World Color Management by Fraser, Murphy, and Bunting).*

**This is an affiliate link.*

Diff(+/-) (aka Lighter/Darker)

These masks are completely unlike other luminosity masks. They do not simply consider the luminosity of a given pixel on its own, but rather how much lighter or darker it is than the pixels surrounding it. The radius value determines how far from a given pixel it should be compared. If you wish to try other radius values, simply double-click the Gaussian blur smart filter in the bottom orange preview layer. You may then adjust the radius and see an interactive preview of the mask. Because this mask selects pixels which are different from their neighbors, it tends to work ideally with small objects or for selecting edges. The recommended workflow is the create the preview, load it as a selection with the "Sel" button, and then use a paintbrush to paint through the selection onto a mask (the mask should be created before using +/-, otherwise the selection will be turned into a mask when creating the mask).

You may also use this tool to compare the brightness of 2 layers. This may be helpful to target areas where lighting is changing in an image, or something is moving.

Video tutorial: Lighter/Darker

<Range>

Like the "zone pickers", the "range picker" allows you to select tones by clicking on the image, or by analyzing the tones selected with a lasso. However, instead of selecting a range of tones centered around a single value, the range picker uses two inputs and selects everything between them. If you wish to change feathering, hold <ctrl/cmd> while clicking on the range picker. If you wish to invert the mask to protect a range of tones, hold <alt/option> while clicking on the range picker.

As with the zone pickers, it is best to use a small sample size for accurate tonal selection.

Just like the zone picker, you may also use a lasso selection to target a range of tones. You may also wish to create two small lasso selections to more accurately select the range of tones (hold the <shift> key to lasso multiple areas).

Video tutorial: Range picker overview
Video tutorial: Range picker (example edit)

Section #1a: Modes: Preview, LIVE-M, LIVE-S, BlendIf, color

The following options modify how the mask creation buttons above operate. These are available as buttons in the top row of the CC panel, or **as modifier keys in CS6**. *(Note that modifier keys are also available in CC, but the buttons are preferred, as CC has a bug that may cause Photoshop to lock up if you hold a modifier key down too long inside an extension panel. If you run into this, switch to another program and then back to Photoshop in order to regain control).*

Normal mode:

If you've been watching the videos above, you've already been exposed numerous times to the normal blending mode. When you create a mask preview, Lumenzia creates several orange adjustment layers. *These temporary orange layers not only enable a live preview of the exact mask or selection you will get when you apply them,*

but you can manually tweak these layers to get completely custom masks. To customize them, it is best to adjust from the bottom up (as needed):

- ***BW Mix (bottom orange layer):*** Adjust the sliders of the BW Mix layer to select more or less of a given color range for light or dark masks.
    - Sliding to the left or right may increase or decrease selection based on the orange curve layer and the brightness of target color, just slide left and right to visually select the best value for a given color slider.
    - This layer is not created when working in the LAB color mode (as Photoshop does not allow B&W adjustments in LAB). If you are working in LAB, please use the "Color" option to mask color as desired.
    - You may use alternative color filter options by holding <ctrl/cmd> while clicking on a mask preview button. This will allow you to use the channel mixer (which offers more complete exclusion of a specific color channel) or traditional masks (which create more separation between whites and bright colors). Note that these options are only available while working in the RGB color space.
- ***Curve (middle orange layer):*** Adjust the curves to make specific tonal adjustments. Slide the curve points up to include more of a given tone in the mask. This allows you to make very precise refinements.
    - For example, you can grab the far-right curve point of an L2 curve and drag it down in order to create a mask that protects the brightest highlights (if you are used to a traditional channels approach, this would be similar to subtracting an L5 selection from L2).
- ***Levels (top orange layer):*** At default settings, this layer has no effect. Its purpose is to provide a simple way to make custom global adjustments to the mask preview (which is much faster and simpler than editing multiple points on most of the curves)
    - For example, you might drag in the right (white) levels slider for a DM1 mask, so that the dark midtones are completely selected (as the default mask is a fairly weak selection).
    - In general, use the black slider to specifically protect (exclude) certain pixels, use the white slider to increase strength and targeting if the preview is overall too gray or you want to create a harder mask, and use the gray slider if you want to increase or decrease the selection in general without affecting the most/least selected pixels.
- **PAINT (if enabled in the panel preferences):** You can paint on this blank layer to directly modify the preview (without any regard to the underlying mask preview). This is a quick way to remove extraneous selections with a black brush or add areas other areas with a white brush. [To enable this option, use the top-right menu in the CC panel, or <ctrl/cmd>-click the "Tutorials" button in CS6].
- **DODGE/BURN (if enabled in the panel preferences):** You can paint on this blank layer (which is set to overlay blend mode) to directly modify the preview. This is a quick way to nudge gray pixels in the underlying mask preview toward black or white. [To enable this option, use the top-right menu in the CC panel, or <ctrl/cmd>-click the "Tutorials" button in CS6].

Note that with nearly all the creation options, holding <alt/option> when clicking the preview buttons will create an inverted ("not") mask by inverting the curve. This is a helpful way to protect specific tones. For example, you can load an inverted L4 (aka "Not L4") to protect bright highlights.

These temporary orange preview layers are only used in "normal" mode (live/BlendIf masks are applied immediately).

Video tutorial: Customizing luminosity masks

"X" (Clear orange/red preview layers or BlendIf)

This option removes any orange or red temporary layers. It will also offer to clear a BlendIf mask on the active layer.

You may also <alt/option> or <ctrl/cmd>-click "X" as a handy shortcut to change the Lumenzia interface size.

"↻" (Re-load orange preview layers) – [not yet available under UXP]

The "X" button will show as a circular arrow when it may be used to reload the last orange preview layers. This allows you to make different customizations to your preview, reload the last one you used, or reload it with different underlying layers to adapt to changes in the document. This reloads any customizations you made in the preview, such as changing the sliders or adjusting the levels layer.

There are some limitations: dodge and paint layers are not reloaded and Diff(+/-) is not supported. This option is not shown if no orange preview layers have been applied as a selection or mask in the current editing session, if there are orange or red preview layers already on screen, or if the active layer has a BlendIf which may be cleared.

"LIVE-M" mode (formerly "Live")

When active, clicking on any of the mask buttons will create the respective mask immediately on the active layer. If you wish to tweak the result, you may wish to select the new mask and use the keyboard shortcut <ctrl/cmd>-L to perform a levels adjustment. Note that the live mask will be based on the visible layers below the active layer (as using the currently masked layer would adversely impact the live mask when it is updated).

Alternatively, if you <ctrl/cmd>-click any preview buttons in "live" mode, the corresponding selection will be loaded instead of a mask. This allows you to more easily work with selections while using live mode for masking, as well as for complex tasks that use multiple selections (such as dodging and burning). Note that the live selection is based on all visible layers.

In LIVE-M mode, the active layer and layers above are ignored when creating the mask (this is analogous to the If:Under mode).

LIVE-M is limited to the visible buttons in the CC panel, which limits your options when using the compact interface. You may temporarily switch to the large interface by <ctrl/cmd>-clicking "X", or just create masks the standard way by clicking on the desired preview and then "Mask" (hide the target layer and layers above if you want to match the LIVE-M results exactly).

LIVE-M mode is available in Photoshop CC only. CS6 users should use the normal mode and "Mask" button to achieve the same results.

Video tutorial: Mode buttons for the Photoshop CC panel
Video tutorial: Live mask mode

"LIVE-S" mode

When in LIVE-S mode, click any preview buttons to immediately create a luminosity selection. If you wish to create complex selections, you may use the modifier keys to add (<shift>), subtract (<cmd/ctrl>) or intersect (hold both modifier keys). Marching ants will be hidden in LIVE-S mode if you have set the panel menu preference to "hide marching ants". You may also use the new "✓Sel" button to confirm the selection if desired.

In LIVE-S mode, all visible layers are used to create the selection.

LIVE-S is limited in the compact interface similarly to LIVE-M, and the same workarounds are available (just click "Sel" instead of "Mask").

LIVE-S mode is available in Photoshop CC only. CS6 users should use the normal mode and "Sel" button to achieve the same results.

Video tutorial: Subtract Selections in LIVE-S mode

BlendIf "Masks"

CC users can switch to "If:Under" (or "If:This" if enabled in the panel preferences) to access the BlendIf modes. CS6 users should use the <shift> modifier key for BlendIf under (or <ctrl/cmd><shift> for BlendIf this) when clicking on the various mask options. The keyboard shortcuts are also available to CC users in "Normal" mode.

All of the standard masks, zone masks, zone pickers, and range picker may also be used to create BlendIf "masks". Compared to using layer masks to create luminosity masks, this approach offers two important benefits: BlendIf masks ***do not increase file size*** and are ***dynamic*** (meaning that they are always current, even if you change the layers below for removing dust spots, cloning, etc). But they have some limitations: they are not as easy to visualize, cannot create some masks (such as saturation or Diff), and cannot be customized as much. But they are an incredibly useful tool that should be used along with layer masks. I find them helpful to apply color correction to specific tonal ranges, sharpening to highlights, blend city lights, etc.

To create a BlendIf mask:

- For CC users: Click the "Mask" mode button at top left to cycle between mask (to create layer masks), and the If modes. You may click on the red/green/blue swatches to create BlendIf Masks for those specific color channels. You may also use the shortcut keys described for CS6 users.
- For CS6 users: hold <shift> while clicking on the masking buttons (such as L2, 1, etc). To create a BlendIf mask based on "this" layer, hold <ctrl/cmd><shift> while clicking the button.

BlendIf masks can be case on "underlying (layers beneath) or "this" (the active layer). The underlying method is best for adjustment layers, and either may be appropriate for pixel layers (depending on your purposes).

BlendIf masks can be applied to groups or to multiple layers at the same time. Whatever is selected will receive the BlendIf. Note that BlendIf does nothing when applied to the lowest layer, so Lumenzia will warn you if you attempt to do this.

BlendIf is able to nearly exactly match many masks, but there are some limitations in what is possible with BlendIf. For this reason, the offset midtone ranges (DM1, zone 9, etc) match the normal luminosity masks to

varying degrees of accuracy, though the general tonal range targeted is consistent. Neither approach is technically "better", but you should be aware that they may be different (i.e., if you don't see desired results with an offset-midtone BlendIf, try the normal mask to see if you can achieve better results).

To **customize** a BlendIf mask, double-click the overlapping squares icon on the right side of the layer in the layers pallet. At the bottom of the window that pops up, you'll see sliders to adjust the BlendIf. Hold <alt/option> to split the sliders and create a transition zone between what is 0% selected and that which is 100% selected.

To **remove** a BlendIf mask, click on "X" (<shift>-click "X" to remove BlendIf without the confirmation prompt).

To **visualize** the active layer's BlendIf, click on the "If" button. This creates a preview where bright green shows the areas that are effectively active (same as white in a mask). When you are done with the visualization, click "If" again (you may also click or <shift>-click the "X" button). Photoshop treats BlendIf very differently depending on whether it affects "this" or the "underlying" layer. Therefore, Lumenzia uses a different preview method depending on which type of BlendIf was used. The preview for "underlying" layers is dynamic (will update if you change the active layer or layers below). The preview for "this" layer is a new static layer colored red. You can effectively update that static red layer by clearing and recreating it if needed.

Video tutorial: BlendIf masks and visualization
Video tutorial: BlendIf technical details and customization

Color Mask modes (red, yellow, …)

Available via colored swatches at the top of the CC panel. CS6 users should use the <ctrl/cmd> modifier key when clicking on the various mask options.

Enabling these color modes in "preview" mode will filter the luminosity masks to the selected color hue. This is based on the actual color hue, not color channels. This provides a much more targeted and intuitive result. For example, white, red and yellow would all be selected when using color channels. Using these color swatches, you can select the actual red pixels. (Note that if you wish to actually target R/G/B channels, you can do this by using the channel mixer in the advanced mask options by <ctrl/cmd> clicking on the desired mask).

In v7, the color model for CC users was updated to provide a much faster response. If you wish to use the legacy color model, you may update the preferences in the panel menu at the top right, or just hold <ctrl/cmd> while clicking the color swatches to use the alternative color model for a single mask.

The default color targeting is wide enough to bleed into adjacent channels (targeting green will pick up a little yellow, targeting magenta will pick up a little blue). If you wish to customize the result:

- Adjust the levels in the orange preview layers.
- Use the color picker next to the color swatches to select a specific hue.
- Use the legacy color model and adjust the B&W layer at the bottom of the orange layer stack.
- Use the "Color" group option (with the interactive setting) instead or to refine the result created with the color modes.

Video tutorial: Color Mask Mode

"Color" masks in BlendIf mode:

Enabling these color modes in BlendIf will create red/green/blue color-channel BlendIfs. Selecting magenta, cyan, or yellow will select multiple channels (ie, magenta will modify both blue and red). As this targets color channels (not the same as color hue and saturation), this provides a different result for BlendIf than a color luminosity mask. For example, using red in preview mode will target pixels with a red hue. Using red in BlendIf will target pixels by their red channel, which includes yellows, magenta, and grays. See the video tutorial below for a demonstration.

The use of color BlendIf can be a very effective way to boost faint sky colors. For example, a faint pink sky is typically surrounded by areas of faint blue sky. Using an L3 BlendIf can help you boost the saturation of the sky highlights, while protecting dark surroundings and the shadow edge of clouds. But if you do not differentiate by color channel, the blues often become oversaturated before you make the pinks as fiery as you would like. By using a red L3 BlendIf, you are not rejecting the blue sky. Instead, you are allowing more of the red sky to be targeted. As a result, the reds reach their target saturation much faster. In other words, you can get the desired red with less of a saturation boost, which helps minimize the change in the blues. The result is a fiery sky, without heavy and unrealistic blues.

Video tutorial: Color BlendIf

"Not" mode

Available via mode buttons in CC, CS6 users should use the <alt/option> modifier key when clicking on the various mask options.

The "Not" button will invert the mask/previews, which is useful to protects tones. For example, clicking "Not", then "D3", then "Sharpen" will create a sharpening layer which does not sharpen the shadows in the image.

Changes in the "Not" button status affect the next preview button click (i.e., any existing preview is not affected).

Slider priorities

The sliders can only target one thing at a time. If there are multiple potential items to adjust, the slider will target with the following priority (1 being top priority):

1. Orange preview layers
2. Selected Vector Mask (on the active layer). *A mask is "selected" when it has white corners around it.*
3. Selected Layer or Filter Mask (on the active layer). *A mask is "selected" when it has white corners around it.*
4. BlendIf (on the active layer)
5. Unselected Vector Mask (on the active layer)
6. Unselected Layer Mask (on the active layer)
7. Unselected Filter Mask (on the active layer)

Sliders are not available if none of the above apply.

The slider color indicates what values are displayed/adjusted:

- **Green**: Orange preview layers
- **Blue**: BlendIf (must be a BlendIf created with Lumenzia v8+)
- White: Target mask's feathering
- Yellow: Target mask's density

[Sliders require Photoshop CC]

Tutorial: Vignette demo where sliders target mask or BlendIf

Precision Slider

While Lumenzia's orange layers and feathered layer masks have always been customizable, this new slider gives you a faster and simpler way to perform the most important customizations. This vertical slider is visually oriented the same way as the various preview buttons. Slide it up for more general previews/masks, or slide it down for more targeted previews/masks.

The Precision slider becomes visible when it is available, and adapts its behavior depending on what is available for adjusting. It can make the following adjustments:

- Select levels 1-7 for any standard D, M, or L preview. Slide up for more general previews (such as L1, L2) or down for more targeted previews (such as L6, L7). Not only does the slider allow you to quickly cycle through the different options, it allows you to quickly obtain intermediate masks (such as L1.5) and more targeted masks (such as L7). You may also type the desired value into the text box under the slider.
- Adjust the **white levels** for standard LM/DM and Diff(+/-) previews. Slide down to bring in the white level for a more targeted mask (the result will look brighter, but this is a more targeted mask as it creates more separation between the pixels which are or are not included).
- Adjust the midpoint of the **Vibrance/Saturation** curve. Slide down for a more targeted preview (more limited to the most saturated pixels in a saturation mask or the least saturated pixels in a vibrance mask), or slide up for a more general preview.
- Adjust the width of any **Zone** or **Range** preview. Slide down for a more targeted (narrow) selection of tones, or slide up for a more general (wide) selection of tones.
- Adjust the included **depth of field** with Depth Map previews.
- Adjust the **BlendIf** mask on the target layer. This is available when the selected layer's BlendIf was created with Lumenzia v8 and there are no orange preview layers.
- Adjust the **feathering** of any layer **mask**. Slide down for a more targeted (less feathered) mask or slide up for a more general (highly feathered) mask. This is available when the selected layer has a layer mask and there are no orange preview layers.

Note that when using the sliders to adjust BlendIf, the last target will be used. So if you have "L3 Red", moving the slider down will move you to something like "L4 Red". This is true even if you switch back to normal mode and do not see Lumenzia showing in red, as it is assumed that tweaks to the existing BlendIf should be on the same channel, unless you explicitly change the color.

If you set multiple color channels on the BlendIf, only the last adjustment will be updated via slider. So if you wish to use the sliders for multi-channel BlendIf, the best workflow is to use the slider right after you target each color. For example, if you wish to target a warm sunset and avoid targeting blue parts of the sky, the following would be a good workflow:

1. Switch to BlendIf:under mode

2. Select red and L3 to create the initial red BlendIf
3. Use the slider to tweak the Red L3 BlendIf
4. Select blue and Not L2 to further restrict the BlendIf with this 2nd channel
5. Use the slider to tweak the blue part of the BlendIf.

[Sliders require Photoshop CC]

Value Slider

Like the Precision Slider, the Value Slider allows you to quickly customize certain previews. This horizontal slider can make the following adjustments:

- Adjust **Zone** and **Range** masks to target slightly different tones. Slide left to target darker tones, or slide right to target lighter tones. In order to provide more fine control, the slider only allows you to adjust the results by a couple of zones from the initial mask, rather than a full range of Z0-Z10 at any given time (as it is also assumed that the starting point isn't more than a few zones off the ideal value). If you need further adjustment, click on another closer zone and then use the value slider from there.
- Adjust the **BlendIf** mask on the target layer. This is available when the selected layer's BlendIf was created with Lumenzia v8 and there are no orange preview layers.
- Adjust the **radius** of comparison for a Diff(+/-) mask when using the Smart Object option. Slide left for a smaller radius or right for a larger radius. In order to provide more fine control, the slider range is from 1-100 pixels. If you need a larger radius, please modify the preview manually without the slider.
- Adjust the **distance targeting** for Depth Maps (slide left for closer subjects or right for further ones).

32-bit Workflows

Lumenzia supports any bit-depth, including 32-bits. This allows you to use luminosity masks in HDR workflows. Due to the limitations of Photoshop in 32-bits, there are some differences:

- Previews are generated with using the Channel Mixer layer method (instead of using a Black and White layer in the orange layer stack). This is no different from using the same advanced option in other bit depths, but is a different default (therefore you may see different color targeting)
- Some Lumenzia features are not available, including "Color" (just that button, the color modes are ok), "Map", "Edge", some "Sharp" options, some adjustment layer types (Selective Color, Color Balance, and Solid Fill), and some other minor limitations.

Note that you will likely need to make more targeted previews in 32-bit mode, as the range of tones is much more expansive (ie narrow targeting may be required to compensate for compression of the tones). For example, your image may open up very dark and therefore fall mostly into zones 0-5. Use the precision sliders and levels adjustments to refine the preview as needed.

Section #2: Apply

The tools in this section turn the orange preview layers you have created/customized into a mask or selection. There are numerous ways in which you may apply a mask, selection, or path.

Sel

The "Sel" button allows you to create, save, load, and copy selections:

- ***If the temporary orange preview layers are active:*** "Sel" will convert them into a selection. This is useful for creating selections for painting (especially for dodging and burning). It can also be used to help create other types of adjustment layers that are not built into in the Lumenzia panel (for example, click "Sel" and then create a Color Lookup layer to apply the orange preview as a mask).
- ***If there is an active selection and no temporary orange preview layers, you may be prompted with multiple options***:
    - ***Save selections***. Allows you to save the active selection. Note that the selections are saved as channels so that they are available even if you close and reopen the image.
    - ***Load/Rename/Delete selection.*** Allows you to work with your saved selections. Once you no longer need a saved selection, it is recommended to delete it in order to reduce the size of the saved file (the Sel button will turn red when there is a saved channel).
    - ***Copy the active selection to another document.*** This option is shown if there is at least one other active document (as it needs somewhere to copy to).
    - ***Modify (+/-/*)***. If you have an active selection and a saved one, you may use these options to add, subtract, or intersect the saved selection with the active selection.
    - ***Convert the active selection to a path***. Lower tolerance values create more points for a more accurate path. Low tolerance values should probably be avoided when converting luminosity selections, as they may cause Photoshop to run very slowly. You may use a tolerance value between 0.5 and 10, and whatever value you use will be remembered for the next time. To delete a path, you can use the Paths pallet in Photoshop (Window/Paths), or just click "Sel" to convert it back to a selection (and you can then deselect to discard it).
- **<shift>-click Sel** to quickly save the active preview/selection. This skips the selection/naming step. The saved selections are accessed the same (by clicking "Sel" when there is no active preview or selection).

The "Sel" button also changes color to indicate selection status:

- The Sel button turns green if there is an active selection, which is a helpful warning if there are no visible marching ants.
- The Sel button turns red if there is a saved selection created by Lumenzia, which is a helpful reminder to delete any saved channels when you are done, in order to reduce the size of the saved file.

New in v8:

- You may now work with any saved or component channel, not just selections saved with Lumenzia.
- You may load a channel directly as a layer mask. This is faster than using selections, and preserves 16-bit data (as selections are always 8-bits in Photoshop).

Video tutorial: Applying the masks (also covers curves, etc)
Video tutorial: Load/Save Selections

Adjustment layer icons (Curve, Levels, etc)

Create an adjustment layer with the luminosity mask applied. If no mask is defined, any current selection will be loaded as a mask. If neither is present, an adjustment without masks will be created.

The adjustment layer buttons are grouped with tonal adjustments to the left (curves/levels) and color adjustments to the right. They are also arranged in terms of how specifically they target their adjustments (from most specific on the left to most general on the right).

Curves are particularly useful for adjusting brightness and contrast. HSL is helpful for adjusting saturation (or vibrance if applied through a vibrance mask). Solid Fill is helpful to correct color balance or add color to parts of the image (such as to warm up a sunset). Selective Color is helpful for enhancing color (such as a sunset sky).

If you wish to create other types of adjustment layers, just load the masks as a selection and then create the desired adjustment layer (the selection will be converted to a layer mask on the new layer).

Hold <ctrl/cmd> while clicking on the adjustment layers to use alternative blending modes (see the "Lumenzia Button Reference" or tooltips by hovering over buttons in Lumenzia for more information).

Hold <shift> while clicking "Levels" to use an alternative Gradient Map adjustment layer. This uniquely configured layer is designed to give slider control like levels, but with greater control (5 primary sliders instead of 3).

Shortcut key notes (see the button reference document or tooltips for all shortcuts relevant to this section):

- Hold <shift> while clicking "Curves" to generate a series of curves with all zone masks.
- Hold <shift> while clicking "Levels" to create a gradient map which allows you to make more targeted adjustments. Click into the gradient to adjust it.
- CS6 users can access more adjustment layer types by holding <shift>. See the button reference or tooltips for more info.

Video tutorial: Applying the masks
Video tutorial: Curves & dark masks

Mask

This will load the current luminosity mask preview or active selection to the selected layer. This is a convenient way to replace or add a luminosity mask on any existing layer. If there is no mask preview or selection, a white mask (or black if you <alt/option>-click Mask) will be loaded.

Normally, this button will replace any layer or vector mask on the active layer. However, if you choose the "Keep independent layer/vector masks when possible" option in the panel preferences (top-right menu in CC, or

<ctrl/cmd>-click Tutorials in CS6), then Mask will only replace what it needs to. For example, with this option enabled, you can keep trying different luminosity masks without affecting a vector mask on the active layer.

The Mask command can be combined with "PreBlend" to rapidly blend multiple exposures. If multiple layers are selected, masks will be applied to all layers (excluding groups). This is a quick way to blend multiple exposures to darken highlights by using L2-L5 masks. All selected layers will temporarily get a black mask so that any mask preview may be applied iteratively from the bottom layer up (so if the selected layers have masks, the preview does NOT reflect the mask that will be applied – if you wish to get an accurate preview, <alt/option>-Mask the layers with no mask preview or selection active, and then proceed). This iterative approach allows the contribution of each layer to be considered in the layer mask above (i.e., the L3 mask applied to the top level likely won't be the same as the L3 mask applied to the bottom layer, as that layer has already helped reduce some of the highlights).

You may <shift>-click "Mask" to convert the active layer's layer mask to a vector mask (in order to reduce file size). This will preserve mask feather and density. Note that vector masks have some important limitations:

- They cannot represent gray values in the mask other than feathering. They should generally not be used to convert luminosity masks.
- Photoshop treats the mask feather differently at the edges of a vector mask than a layer mask. In many cases, you may fix this by clicking and dragging out the corners of your resulting vector mask (using the "Direct Selection" tool in Photoshop).
- Note: Complex layer masks such as luminosity masks can occasionally crash Photoshop during conversion (due to a very large number of points in the vector mask). Therefore, Lumenzia will warn you to save all work before converting a layer mask to a vector mask.

Additional capabilities

- <ctrl/cmd>-click "Mask" to convert the active selection into a new layer.
- Hold <shift> while <ctrl/cmd>-clicking "Mask" to keep adding to the layer, which allows you to create more complex layers.
- <ctrl/cmd>-click "Mask" to **convert the orange preview layers into a new layer**. This is a great way to create **black and white art**, as well as for use with blending modes for creative effects.
- <ctrl/cmd>-click "Mask" to **convert BlendIf on the active layer to a layer mask** (this is a shared shortcut, so conversion of orange layers is prioritized first if they are available). This has two major purposes: (1) it allows you to refine the results anywhere the BlendIf is imperfect, and (2) it serves as an excellent learning aid to understand BlendIf, which is really just another layer mask, but hidden. Note that if the target layer already has a layer mask, it will be combined with the BlendIf into the final layer mask (and any feathering on the previous layer mask will be rasterized in the final result).

Combination modes (+ / -/)*

Lumenzia allows you to add (+), subtract (-), or intersect (*) any selection or mask. This allows for the creation of advanced masks. Some potential uses:

- **Add (+)**: Combine multiple zones to cover a broader range of midtones.***
- **Subtract (-)**: Protect highlights by subtracting L6. Or remove an extraneous section of a mask by drawing a lasso selection around it and then subtracting that from the mask. (Note: You may *double-click* the "-" button to immediately create a subtracted selection/mask in the CC panel. This helps immediately execute the most common reason for using subtracted selections/masks: to preserve shadow detail and contrast).***

- **Intersect (*)**: Draw a lasso selection around part of a mask and then only keep that portion of the mask.***

*** *Double-click any of these combination buttons to immediately modify the active selection, layer mask, or filter mask with the current orange preview. If there is no orange preview, something 2 levels stronger than the current selection mask will be used if known (for example, if you currently have a D2 selection and double-click "-" then D4 will be subtracted, or if you have L4 then L6 would be subtracted). If the current selection/mask is unknown, then D5 will be used as the default to modify. The intended use case is to* ***quickly create a subtracted selection to help preserve shadow detail,*** *but there is a lot of flexibility in how you may use the double-click feature.*

In the CC panel, holding <ctrl/cmd> while clicking + or – can be used to expand (lighten gray values) or contract (darken gray values) for an existing luminosity mask.

Note that the CS6 and CC versions of Lumenzia have different interfaces for +/-/*.

CS6
In CS6, + and – are available as buttons to the right of "Sel" and "Mask". There is no * option in the CS6 panel.

Example workflow to create a lights mask that protects the brightest highlights: L2, Mask, L6, - (this will create an L2 preview, convert it to a mask, create an L6 preview, and subtract it from the existing mask).

CC
In CC, these combination buttons are options at the top of the panel. They are only available once there is a masked layer active or an active selection (as there needs to be something to work on), and they then can be used affect the behavior of the "Sel" and "Mask" buttons. These options are also available in the LIVE-S and LIVE-M modes.

Example workflow to create a lights mask that protects the brightest highlights: L2, Mask, L6, -, Mask (this will create an L2 preview, convert it to a mask, create an L6 preview, and then subtract it from the existing mask).

Demo: How to Extract Enhanced Shadow Detail with Subtracted Luminosity Masks
Video tutorial: Mask

Path support

Paths are now supported nearly anywhere you can use a selection. Paths may be used to target areas of the image (just like using lasso selections, but with a different set of tools that may make it easier to create complex shapes, especially architecture). Your active path will be converted to a selection (or vector mask if using the options described in that section).

Simply create a path using the pen tool and make sure it is active (the path will show onscreen in blue when active). Then, when you click on any button that would normally use a selection (such as curves, vignette, etc), that path will be treated as a selection.
If you have both an active path and an active selection, they will be combined (areas that are common to both the path and selection will be treated as selected).

Note that you can also create paths from a selection, which is described above in the "Sel" section (basically, create a selection, click "Sel" and choose the option to convert the selection to a path).

Tips for working with paths:

- View the Paths pallet by going to Window/Paths
- Create paths with the "Pen" or "Curvature Pen" tools. These are complex tools, so please search YouTube for many great videos on how to use it. (Note that you can safely ignore the "freeform" and "add anchor" tools).
- Use the "convert points tool" (looks like an upside-down V, hold <alt/option> while hovering over a point with either pen tool to quickly access this tool) to convert from a smooth point to a corner by clicking on a point. Or convert a corner to a smooth point by clicking and dragging it to add handles.
- Use the path selection tool (black arrow, shortcut <a>) to move a path.
- Use the direct selection tool (white arrow, shortcut <a>) to change the shape of a path. You can move the path points, or the handles that determine path shape. Hold <alt/option> if you want to split the handles at a point. If you have split handles, hold <alt/option> again in order to move both as a pair.
- Hold <ctrl/cmd> to switch between the path and direct selection tools. The opposite tool will be used, and after you use it will become the active tool.

Video tutorial: Paths (input)

Advanced Path options (multiple paths)

If you are not familiar with the pen tool, it is recommended to work with a single active path. But if you leave the pen tool in its default "Combine" mode, then you can select overlapping path areas by using multiple shapes on the same path or select all path areas by using multiple shapes on different paths. Things can get confusing here quickly if you use other settings in the pen tool…

If you have multiple active shapes on different paths (what looks like layers in the paths palette), they will be intersected (the area of overlap will be used). The exception to this is if any of the paths are set to "Subtract Front Shape" in the pen tool settings.

If you have multiple active shapes on the same path, they will be added by default (assuming your "path arrangement" is set to the default "Combine" option in the pen toolbar). Only the blue paths showing anchor points are active if there are multiple shapes on the same path. They will be combined according to the "path operations" and "path arrangement" settings in the toolbar (make the Pen tool active and click on the overlapping squares icon in the middle to choose combine/subtract/etc). And the results are also affected if there are multiple shapes in the same path vs on different paths.

- "Combine" will generally select all the areas selected by any path.
- "Subtract Front Shape" will select the shape designated in front (the "path arrangement" icon in the pen's toolbar can be used to change the stacking order of paths – similar idea to layers, but there's no easy way to see the order of the paths)
- "Intersect Shape Areas" will select the area where the paths overlap.
- "Exclude Shape Areas" selects the areas where the paths do NOT overlap

Vector Mask support

Vector masks are beneficial because they do not add to file size (unlike layer masks) and may be edited with pen tools after you create them (allowing more precise refinements). Vector masks can also simplify your layers by avoiding the need for many group masks (as you can apply a lasso selection as a vector mask on the same layer that has a luminosity mask). And they can achieve the same effect as a group mask on a single layer (since a layer can have both layer masks and vector masks).

When creating a mask (any of the solid orange buttons in Lumenzia other than "Sel"), you will be presented with the option to convert an active selection/path into a vector mask. If you have previously dismissed this dialog permanently, you can show it again by using "reset popup notifications" in the panel menu (CS6 users should instead <ctrl/cmd>-click Tutorials to find the option).

When creating a vector mask, you are also given the option to choose a tolerance. Select a larger number for fewer path points, which is often easier to refine later. Or select a smaller number for a more precise match to your selection.

It is strongly recommended that you DO NOT USE LUMINOSITY SELECTIONS TO CREATE VECTOR MASKS – vector masks are intended to be used with normal selections (lasso, marquee, etc) or paths. Luminosity selections will create vector masks with thousands of points. This will either cause a very long delay, or *possibly crash Photoshop*. If you would like to create a vector mask for an edge defined by a luminosity selection, you should save your image first. Proceed by creating and refining a mask preview which is as simple and high contrast as possible. You may do this by using levels to push all pixels fully black or white and use the optional paint layer in the orange layer stack to paint out any unnecessary details. Then load it as a selection and proceed to use that selection to create your vector mask.

Just like layer masks, vector masks restrict which pixels are visible in a layer. But they differ in a couple of significant ways. Layer masks are grayscale images. Vector masks are paths. That means that vector mask either fully reveal or conceal pixels. There is no partial selection (unless feathering is active on the vector mask).

And vector masks can also be feathered for smooth transitions (Lumenzia will feather vector masks that same way it does with layer masks when working with lasso selections). You can refine vector masks at any time using Photoshop's various pen tools.

Pixel masks are shown in Photoshop as a black and white thumbnail. Vector masks are shown as gray and white thumbnails (even if feathering is applied, it is not shown in the thumbnail). If you are unsure, you can right-click the thumbnail and the pop-up menu options will clearly tell you which type of mask you are using.

Tips for working with vector masks:

- Be careful if you have an active luminosity selection. Unless you deliberately want to render a hard-edged luminosity selection as a mask, converting luminosity selections to vector masks is generally not useful (the vector mask feature is only intended to convert simple selections like lasso selections). If you have enabled the option to convert selections to paths, the luminosity selection may take a long time to render as a vector mask. So be sure to watch-out for a green "Sel" button or use the "ignore" option when asked what to do with the active selection if you have a luminosity selection.
- When you try to modify an existing vector mask with Lumenzia, it will be converted to a layer mask (as there are too many cases where an equivalent vector mask is not possible, so Lumenzia converts to layer masks for consistency).

- To edit the path behind a vector mask, select the vector mask (click on it so that there are white brackets around it) and choose one of the pen or path tools. When you have done both of these, the path will be shown in blue and may be edited.
- See the tips above for working with paths. The direct selection tool (white arrow, shortcut <a>) is very useful for refining the shape of a vector mask.
- <ctrl/cmd>-click the vector mask to load it as a selection. If the mask is feathered, so will the selection be.
- If you want to convert a vector mask to a layer mask, click "Combine" (hold <ctrl/cmd> when doing this on a group to prevent the mask from being applied to layers inside the group).
- Vector masks are paths (they are just in active use). All the same tools apply:
    - Use the "path selection tool" (black arrow) to move a vector mask.
    - Use the "direct selection tool" (white arrow) to change the shape of a vector mask.
    - Use the pen tool to create additional areas to include.

Video tutorial: Vector Masks (output)

Contrast

"Contrast" will enhance **local contrast**. In other words, it increases contrast over a specific tonal range, while minimizing adverse effects (loss of contrast) in other areas of the image. This tool will automatically use the range of tones in your mask preview (if you have orange preview layers active) or selection. If there is no mask preview or selection, you will be prompted to select a tonal range over which contrast should be increased. By design, the new contrast layer has a moderate opacity, so that you may easily increase or decrease the contrast by adjusting the opacity slider. You may also tweak the curve if desired.

If you are applying an orange preview, you will be asked if you would like to apply a BlendIf mask instead of a luminosity mask (to save file size and allow a more non-destructive workflow). This is recommended in most situations, but BlendIf masks are not identical to luminosity masks in all situations. Note that if you customize the orange layers, the BlendIf will ignore the customizations.

Video tutorial: Contrast

Dodge/Burn & Sponge

This creates a layer(s) ready for dodging/burning, applies any luminosity mask/selection, and activates the paint brush tool. You may choose from several options:

- *50% gray layer:* This is an ideal option for landscape work, as you can dodge and burn in a single layer and can work in color. Click <d> to load the default black/white paint for darkening/ lightening. Click <x> to swap between them. Click <e> to load the eraser (or paint with 50% gray) to undo as needed and <b> to re-activate the paint brush.***
- *Transparent layer:* Functions the same way as the 50% layer but has the advantage that you can select the adjusted areas by <ctrl/cmd>-clicking on the layer's thumbnail, or by clipping a layer to this layer. This is a convenient way to further refine just the areas that were dodged and burned – for example, by changing contrast.***

- *Solid Fill:* Produces results similar to gray/transparent layers, but all pixels are dodged/burned with the same color. The advantage of this approach is that it allows you to easily tweak the paint later, which is especially helpful to refine the hue when dodging with color. To use this approach, you paint white onto a black layer mask, just like when using luminosity curves.
- *Luminosity curves:* This is an ideal option for portraits, as it will not cause unwanted color shifts in skin tones. The curves are masked black, just paint white on the dodge/lighten layer to lighten the image, or paint white on the burn/darken layer to darken the image. Paint black to reduce the effect.
- *Tones:* Add an optional BlendIf to target shadow, midtone, or highlight values.
- *Mode:* Allows you to control how the dodge/burn layer will affect the image.
    - *"Default"* is the best general-purpose option, with "*High Contrast*" allowing you to create deeper shadows and brighter highlights with a single layer.
    - The "Extreme (Hard Light)" is useful for adding the appearance of a light source such as the sun in the image. When using the extreme mode with gray/transparent layers, try using more moderate paint values (as <10% or >90% tends to cause too dramatic an effect, even when used at lower opacity).

*** Gray/transparent pixels offer the option to switch to "luminosity only" to help avoid color shifts. In this mode, a neutral (brightness/contrast) adjustment layer is added below in luminosity blend mode and clipped.

If the active layer is a gray or transparent dodge/burn layer (just view the layer mask instead for Solid Fill or Luminosity Curves), you will be given the option to **visualize** the layer (and the "Dodge" button will show a yellow outline if you are using Photoshop CC). This creates a couple temporary red layers which show the dodge/burn pixels against a gray background in normal blend mode. Any layer or vector mask is applied to the visualization to show the effect as accurately as possible, however, BlendIf settings are ignored. You may then adjust this visualization and make the changes permanent by clicking "Dodge" again, or just click "X" to discard the visualization layers without affecting your original dodge/burn layer.

Video tutorial: Dodge & Burn

The Non-destructive Sponge and Saturation Painting tools is also available in the "Dodge" button and includes the following options:

- *Sponge:* This tool is designed to affect color (typically to boost saturation). The CS6 and CC user interfaces are slightly different, but you will ultimately have choices to add saturation or desaturate that will create or more or new layers with a black mask you may paint on to reveal the effect where it is needed.
- *Saturation Painting:* This allows you to directly change the saturation of the underlying pixels, which may be used for more dramatic changes than the sponge tool. Pick a paint color with the desired saturation value and use the brush to apply it (hue and brightness are ignored, only the saturation is relevant).

Video tutorial: Sponge

Vignette

If a selection is active, a vignette will be applied to the areas outside the selection. If no selection has been created, a default vignette is used. To increase/decrease the effect, use the opacity slider. To change the transition/feather, click on the mask and use the "feather option". To refine the area darkened, paint on the mask.

Note that holding the <ALT> / <OPTION> key while clicking "vignette" will do the inverse action and lighten the area inside the selection. This can be helpful for highlighting the center.

Tutorial: Vignette
Tutorial: Inner and Outer Vignette with BlendIf

Sharpen

The "Sharpen" button in Lumenzia offers several sharpening methods (three optimized for landscape work, and one for portraits).

General sharpening options:

- Output may be a **new layer** or **Smart Object**, the latter offers a more non-destructive workflow (though high pass layers may be updated later as well – the option will be offered if you try to use "high pass" while a previous sharpening layer is active).
- **BlendIf**. This is particularly useful for avoiding sharpening shadow noise (by targeting highlights) or clipped sharpening values (by targeting midtones).
- **Add edge/lights mask**: This helps avoid sharpening visible noise in shadow area with limited detail. *(Note that you may also create an edge mask via "Edge" if you choose to use a sharpening method outside of Lumenzia; or if you wish to create multiple selections for more advanced control over the results).*
- **Use selection to protect edges**. This uses the same approach as creating an edge mask via "Edge" and is offered here in order to create a simpler sharpening workflow. This option requires that you create a selection or luminosity preview before clicking "sharp".

Deconvolution

This method of sharpening is designed to offset softness at the capture stage created by lens blur, anti-alias filters, etc. It can help extract a substantial amount of additional small detail and texture from the image and is therefore very helpful for images which are intended to be viewed at a large size (such as large prints).

While deconvolution sharpening may be applied in LR or ACR, applying it in Photoshop has some advantages. The main one is that you can apply it selectively (only where needed), so that you can extract more detail without creating noise in smooth areas like blue skies or water.

Tips for obtaining good results:

- *This method should only be applied to layers created with 0 sharpening at the RAW stage, otherwise unwanted artifacts are likely to occur.*
- This method should not be applied to layers which have been resized, only use it on the native resolution.
- This method is intended to be used on images with a lot of texture or detail. Images which have a lot of smooth areas (blue sky, water, etc) will show noise in the smooth areas. Paint black on the filter mask to remove the sharpening in any areas that appear noisy.
- It may be used with Smart Sharpen or High Pass, but those forms of sharpening should be applied AFTER deconvolution.
- As with all methods of sharpening, be sure to zoom in close to close to evaluate the results. You should not expect to see an effect with this method when zoomed out (if you do, there are very likely artifacts that will be visible when viewed more closely).

Note that Lumenzia uses a different method for deconvolution sharpening in CS6 than in CC, as ACR is not available in CS6. Both produce great results, but the sharpening in CC can be pushed a bit further.

Smart Sharpen

This method is ideal for creative sharpening of landscapes non-destructively. The image may be converted to a Smart Object and sharpened with settings designed to both improve detail and avoid halos. This generally reduces the need for edge protection. However, if you do see any halos (most likely at high contrast edges in dark areas, such as the point where rocks and sky meet in a photo taken during the blue hour), use "Sharpen" again to apply edge protection.

High Pass

This method is ideal for creative sharpening of landscapes. It creates a sharpening layer using a high pass. This method is distinctly different from Photoshop's built-in sharpening algorithms and can produce very nice results in many situations. If a luminosity mask / selection is available, it will be loaded as a mask, which can be helpful for avoiding sharpening areas of noise. Lumenzia will set a recommended default radius based on the resolution of the image. Adjust radius to change the appearance of sharpening as desired, or just click "ok" for the default settings. Once the layer has been created, change the opacity of the layer to increase/decrease sharpening.

High pass is also available as a Smart Object. This is the simplest way to work non-destructively and the results are nearly the same. The only notable difference in results is that highly saturated colors are treated slightly different between these two methods, and the BlendIf options are not available for the Smart Object (though you can use luminosity selections with the filter mask to target the result in a similar way).

If you wish to update an existing high-pass sharpening layer (and aren't using the new Smart Object option), select it and then press "sharpen". Lumenzia will ask if you wish to update the layer, select "yes". This will update the sharpening layer based on anything below the sharpening layer and effectively turns this feature into "non-destructive" sharpening, as you can always update the sharpening effect. The updated layer will retain the existing mask and opacity.

Enable the BlendIf option to help minimize halos or use the edge protection options below.

When using "Minimize color fringe" with the output set to Smart Object, you will see TWO Smart Objects in the final result. This is required to apply the effect in luminosity blend mode to the image, and it does cause some increase in file size (equivalent to the space required for a rasterized copy of the Smart Object). The two Smart Objects are not independent, you may *simply double-click either one to edit the content inside*, as it is identical.

Video tutorials: Sharpening and Edge Protection

Surface Blur (ideal for portraits):

This method is ideal for portraits. It helps sharpen by discriminating between surface texture and edges, which may help enable a greater degree of sharpening without artifact.

Note that the surface blur filter is very complex and tends to respond very slowly when previewing a large image. If you have an active selection (before clicking "sharpen"), you will have the option to use the "rapid"

preview method. Use the marque selection tool to create a selection around a small area you wish to preview. The rapid preview will be done using just this small area, and then the same settings will be applied to sharpen the entire image. This is especially helpful if you wish to customize the radius and threshold, as it provides for a much more responsive interface while changing the options in the preview.

How the surface blur filter works:

- Blur the image using the specified radius.
- Compare each pixel's before and after state. If the difference between is less than the threshold, use the blurred pixel – otherwise keep the original pixel.
- This has the effect of preserving high contrast areas of the image (edges), while blurring areas of lower contrast (surfaces).
- In portraits, skin is essentially a surface – whereas details like eyes are edges.
- Areas that are blurred in the preview will be sharpened in the final output.
    - A small radius (5-15) is usually ideal. Increasing radius too much will cause odd lighting patterns on the face.
    - A threshold of 5-15 is usually ideal. Increase threshold for more edge definition. Larger amounts (50-100) can also work when used with very small radius values (larger radii will cause halos with a large threshold).

Surface blur has a few options for speed/quality (these are only shown when available):

- Default: This provides a preview of the whole image. The sharpening will be done in 8-bits for speed.
- Rapid Preview (available if you have selected some portion of the image): Similar to default, but the preview will only show you the selected area. This allows you to refine radius/threshold much more quickly. The settings will be applied to the entire image in 8-bits, so the result is identical to the default option. It is recommended to use the rectangular marquee when working with this preview option.
- 16-bit (only available for 16-bit images). This operates similarly to the default mode, but in 16-bit. This may theoretically provide higher quality but is unlikely to create visible improvements in the image, even when there will be more processing done later. I recommend sticking with one of the previous options, which are much faster and yield similar high-quality results. To use this option, hold <alt/option> while clicking the surface blur button in the sharpen dialog (noted in the button's tooltip)

Section #3: Refine

Group

Puts the selected layer into a group. This group mask controls the masks inside of it. This is a great way to apply a luminosity mask just to specific parts of the image. If you have a luminosity mask preview, it will be applied. If you have an active selection, it will be applied and automatically feathered. (Lumenzia analyzes the selection and automatically selects an optimal feather, but you can further adjust it if desired by double clicking on the mask to change the feather in the mask properties).

Hint: When you create feathered mask, you may find that it is hard to manually paint on the mask (because your brush strokes are being feathered). A quick solution is to select the layer with the mask, then click "Group" (which adds a white mask that does nothing), and then "Combine" (which will then rasterize/bake-in

the feather so that you may paint normally on the mask). Doing this of course prevents you from further adjusting the feather.

Hold <shift> while clicking Group, and the Combine function will be run on the new group (which produces the same result, but without leaving a new group mask).

Video tutorial: Group masks

"Color" (formerly known as "Color Group")

Like the group tool, this creates a group mask to control the selected layer(s). However, whereas the group tool refines by location within the image, the color group tool refines by color. This is a great way to apply a luminosity mask just to specific colors in the image, which can be very helpful when two different colors have similar luminosity. The tool has two major modes:

- Preset color (red, yellow, green, cyan, blue, magenta): Just choose the desired color you wish to isolate, and a group mask will be automatically created. A few notes on the preset color tools:
    - Foliage in landscapes is often better selected with "yellow" than "green".
    - Results in LAB color are different than in RGB. In my testing, selection of blue skies yielded best results when the Color tool was used in RGB mode. If you need to work in LAB, you may see better results using the Interactive tool than the color presets.
    - Color channels can be noisy in blue skies. Some noise in the mask is expected and generally won't impact the blended image quality. But if you see noise in the blended image, try using the Interactive tool instead of the color presets. Alternatively, you may try to smooth out the mask manually or open the mask properties to apply a moderate feather.
- Interactive (custom): Adjust the fuzziness to select more/less related colors. Adjust the range to increase/decrease the how far the mask extends from the area you click (this can be helpful to isolate one block of color from another). When selecting, hold the <shift> key to add to the selection, or <alt>/<option> to remove colors from it. If you find that the subtraction isn't narrowing your selection sufficiently, I recommend clicking without any modifier keys to start over.

New in v8:

- If the active layer is a Smart Object with Smart Filters, you will see a button to choose "Filter Mask" as the output (instead of a layer mask). If there is an existing filter mask, the color will be intersected (combined) with it, as there is no mechanism to create the equivalent of group masks for filter masks.
- You can refine an active selection with "Color". When you choose the selection output, it will be combined with any active selection.

Video tutorial: Color
Video tutorial: How to white balance interiors (using the new filter mask functionality in v8, you can achieve the same result in a single layer using the following workflow: white balance the Smart object for the interior, go to Filter/Camera RAW Filter and white balance for the exterior, hide the RAW filter by clicking its eyeball icon, click "Color" to update the filter mask for blue/cyan, then reveal the RAW filter. Note that while this approach reduces total file size and workflow complexity, the quality of white balance will often be better when white balancing in the RAW, rather than with the RAW filter).

Note: Color vs Color Modes

You can target color by using the color masks discussed in section 1a (the top row of buttons in CC panel, advanced masks in CS6) or via the "Color" button. If you use the preset colors in these options, you can get the exact same results. For example, both of the following sequences will create the same mask:

- Red mode, L3 preview, Mask
- L3 preview, Mask, Color group with the red preset

But you can use these tools in other ways and there are some differences that make both useful. The color masks allow you to visualize and create the final mask in one step.

The color group tool can be helpful to make more advanced custom masks based on multiple colors, tones, and location within the image. They also allow you to refine an existing mask. Ultimately, the color group tool offers more capability.

Combine (formerly known as "Un-Group")

This button can do two different things:

- Combines group masks by applying the mask on the selected group to the layer(s) inside. This is a helpful way to reduce the number of layers, understand the interaction of masks, and reduce the size of the saved file. This is a very sophisticated operation which can properly manage opacity, fill opacity, feather, density, etc. This is the default action if the active layer is a group and requires that the group is in the default "pass through" blend mode (as there is no way to combine the group in other modes without affecting the way the image looks).
- Rasterize any layer/vector masks and their feather/density properties. This is the default if the active layer is not a group. You may also rasterize the masks on a group (without combining them with child layers) by holding <ctrl/cmd> while clicking "Combine".

Video tutorial: Combine

Edge

This tool has four main capabilities:

- **Isolate edges/surfaces**. These edge/surface masks and selections are very helpful for targeting halos for correction, applying noise reduction in areas of low detail, or applying sharpening selectively to add detail with minimal noise.
- **Refine existing mask/selection edges**. This is an enhancement of the Refine Edge / Select and Mask capability in Photoshop. It offers smart default settings for those tools, the ability to easily brush in mask changes only where needed, and a non-destructive decontaminate option.
- **Isolate and refine subjects.** This combines Photoshop's "Select Subject" capability with the previous capabilities to allow you to more quickly cutout human or animal subjects.
- **Create black and white line art**. Use the "edge" option and click "layer".

Video tutorial: Black and white line art

Isolate Edges/Surfaces (formerly "Edge Protection" in the Sharp button)

This tool is designed to either select/mask edges or surfaces (surfaces are the inverse of an edge mask/selection and can simply be thought of as "edge protection" when dealing with sharpening).

This tool has two modes:

- **Automatic edge detection**.
    - This uses the **current state of the image** to automatically detect edges.
    - This is used whenever there is no active selection, path or orange preview layers when "Edge" is clicked.
    - This is generally a great solution for **general sharpening and noise reduction**.
    - The radius and expand/contract options are grayed out, as they do not apply to the automatic method.
    - After you click "Select" or "Mask" to start the process, you will be offered the opportunity to adjust the amount of blurring applied to the edge. The default works well, but you may wish to use slightly larger values for some images.
- **Manual edge detection**.
    - This uses **any active selection/path and the orange preview layers** to define edges (everything will be combined and treated as a selection when you click "Edge").
    - This is typically a better solution for targeting **large halo edges**, such as where the foreground meets the sky. In these cases, the expand/contract options are particularly useful for perfectly targeting halos (and also avoid extraneous selection of other details).
    - When using the manual method, you may choose an edge radius if you wish to define a thicker edge. The default 1 is typically best.
    - When using the manual method, you may choose to expand/contract the selection. Shifting the edge by a pixel or two may be very helpful to more precisely target the halo, depending on how you have created the initial selection. Positive values expand and negative values contract.
    - After you click "Select" or "Mask" to start the process, you will be offered the opportunity to adjust the amount of blurring applied to the edge. The default works well, but you may wish to use slightly larger values for some images.
    - (Tip: you should ideally tweak levels in the orange preview layers to create a relatively hard preview as grey pixels will either be defined as edges or not, so harder selections help create more predictable results).

Suggested use cases:

- **Remove blending or dodging halos**: Create a sky selection then use Edge to refine it into an edge selection and paint the halo areas in your mask (with black or white depending on the cause of the halo).
    - You can create that initial sky selection using the Quick Select tool in Photoshop, or by creating a luminosity preview in Lumenzia (for example: click L2 to isolate the sky, adjust levels to get a relatively hard preview, and then click "Edge" to convert it to an edge selection).
- **Remove sharpening halos**: Add a surface mask to your sharpening layer.
    - Halos are best targeted with the manual method (same workflow as noted in the previous use case).
- **Remove sharpening noise**: Add an edge mask to your sharpening layer so that only areas of detail are sharpened.
    - If the surface mask removes too much sharpening, you may use the mask density to reveal some degree of sharpening in the protected areas (select the mask, <alt/option>-click the

slider in Lumenzia so that it turns yellow for density, and then slide to reveal the desired amount).
    - (Note that may deal with both sharpening halos and noise at the same by using selections and a brush to paint custom layer masks).
- **Graphic art**. Convert the image to a simple line drawing by using the "layer" output (just <ctrl/cmd>-click "Edge" to do this automatically). This works best with simple, graphic subjects (such as artchitecture).

The most important factors when isolating edges are the starting selection (typically a Quick Selection) and the expand/contract radius. It is helpful to zoom in very close to the edge to make important decisions. You may review the output of "Edge" by clicking "✓Sel" to see how well the selection truly targets the halo. You may need to undo and try the process again with different choices for expand/contract to gain better alignment, radius if you need to cover a larger width, or feather to soften the results.

Video tutorial: Avoid sharpening halos with edge protection

Also, the last video in the Sidelight / Sea Stack demo in the Dodging & Burning Master Course shows how to target and fix a halo edge.

Refine Existing Edges

This tool utilizes the Refine Mask/Edge tool to create more natural transitions at the edges of a mask or selection. This is very useful to avoid artifacts that may occur when blending exposures (particularly sharp transitions such as buildings/trees against the sky) or when cutting a subject from the background (such as selecting hair on a model to be placed on a new background). "Edge" will use the layer mask on the active layer if one exists (and get rid of any selection if there is both a mask and selection). If the active layer has no mask, the active selection will be refined, if such a selection is active.

After refining a mask, you will be prompted asking if you wish to paint in the refined edges via brush. This allows you to selectively paint in the refine edge adjustments only where needed. This is a great way to avoid unwanted changes to edges which do not need refinement, or to use different refine edge settings in different parts of the image.

The default behavior of "Edge" is optimized for landscapes / exposure blending. Hold <alt/option> when clicking "Edge" to use settings optimized for portraits / cutting objects from a background.

The Refine Mask/Edge dialogue box in Photoshop contains many options. Here is the approach I use to optimize the settings when needed:

View mode

You need to see what you're doing, and this is where you get to determine how to visualize the changes that are being made. These settings only help you visualize the refinements, they don't actually do anything to change the output of the Refine Edge tool. There are many options here, I only use a few of them:

- "On Layers". This is what your layered image will look like after applying the refinements and is therefore the most important view. Press <L> for a shortcut to this view.
- "Black and White". This is your mask, plain and simple. Press <K> for a shortcut to this view.

- If you are trying to cut an object out from the background, then the "On black" and "On white" visualizations are helpful to see if you've accurately selected your subject.
- If you are trying to brush in areas that weren't originally in the mask (such as strands of hair), "Reveal Layer" can be helpful to see where to brush.
- "Show Original" checkbox. This shows your layered image before any refinements. Press <P> to turn this on and off to check how much your refinements have improved the image.
- "Show Radius" checkbox: This shows where the edge/smart radius are refining the mask. If you don't see important edges here, it is likely that they are low contrast (which is common with luminosity masks). This is your queue to use the brush tool below to make sure these edges get cleaned up as well. Press <J> to turn this view on and off to check that you are refining important edges.

And, just like elsewhere in Photoshop, you can use <space> to get the hand tool to move around the view and <ctrl/cmd> +/- to quickly zoom in and out.

Edge Detection

This is the "magic" in Refine Edge. By magic, I mean both the incredible power to make stunning masks that you could never make by hand, as well as a black box full of confusion. I'll do my best to demystify the options here, as using them correctly will allow you to make some funny looking masks look amazing. My general approach is to tweak the radius for the best overall look, try the smart radius, and then brush in areas that were missed by the radius, or erase out areas that should be protected from it. ***The edge detection tools evaluate both the image pixels and the mask pixels (i.e., image pixels will be used to refine the mask in mask areas that are either within the radius or have been painted).***

- Radius. Determines how far from the edges to refine the mask. Within this zone (which you can view by turning on "show radius"), Refine Edge will try to add and remove areas of the mask automatically. For manual exposure blending of high contrast edges, I tend to keep this value pretty low, around 1-3 pixels, depending mostly on the resolution of the image. For hair selections and other messiness, a larger radius may be needed. Radius will typically do a pretty good job finding and fixing high contrast edges, but will tend to ignore subtler edges, which can mean that it misses edges in luminosity masks if the mask edge is more gray than white. You can quickly spot missed edges by turning on "show radius". When radius isn't finding these edges, the brush tool comes to the rescue...
- Smart radius. This option can improve masks when the edges are a mix of hard and soft. In a nutshell, when this is on, Refine Edge will use a smaller radius in areas with a clean edge, and a larger radius (larger area of refinement) in areas with complex/messy edges. When in doubt, just turn it on and off to see which works best on your mask. I typically leave this off for cityscapes (since buildings have clean edges), but occasionally use it when I have trees, hair, or other complex edges.
- Refine Radius Tool (the brush). This allows you to selectively tell Refine Edge to target areas outside the radius (rather than increasing the radius globally). This will include more edge details (lightens stuff that was missed). This is a critical tool for smoothing edges in luminosity masks if the mask isn't white enough at the edge. This is also a great option for extraneous details such as a railing or antenna on top of some building or random strands of hair in a portrait. Use a brush width large enough to brush over the target edges, but don't make it so large that you start adjusting non-target areas. If you make a brush stroke and don't like the result, you can always press <cmd/ctrl>-Z to undo.
- Erase Refinements tool (the eraser). This is the opposite of the brush and will cause Refine Edge to leave these targeted areas alone (i.e., this tells Refine Edge to keep the original mask edge in the erased areas). Note that not only will the erase cause Refine Edge to ignore anything you brushed in, it will also cause the tool to ignore anything detected with the radius. If you erase the wrong area, <cmd/ctrl>-Z is your friend, or you might consider cancelling and starting over. While you can click and hold on the brush to switch to the eraser, a much easier option is

to always leave the brush on and just hold <alt/option> when you need to use the eraser.

Adjust Edge

These tools are a little more straight-forward. Most of the time, I just use a tiny bit of feathering and leaving the rest of these settings alone. ***The adjust edge tools evaluate only the mask pixels.***

- Feather: Blurs (softens) the edges of the mask. Unlike the radius tool (which analyzes the edges to try to include just the right detail), feather is a dumb tool that affects all edges - so you typically don't want to use much here. But a little can be helpful, so I try 0.5-1 pixels when manually blending exposures at a hard edge (such as a bright sunset sky at the edge of a building/trees).
- Shift edge: Positive values increase the white area (expand the mask), and negative values decrease it (make the mask smaller). This can be helpful in some scenarios, such as when working with translucent objects, when trying to remove the impact of colored backgrounds in a cutout, or when blending two exposures where the bright edge shifts slightly in the brighter image at a high contrast edge. I generally leave this in the 0-10% range for my landscape work.
- Smooth: Reduces sharp areas of the mask. I never use this and can't think of a good reason to (maybe to tweak a "sloppy border" effect?)
- Contrast: Creates a sharper edge to the mask. I never use this, but you might find a scenario where you want to tighten up a loose/blurry edged mask.

Output

- *Output to*: Leave this on "layer mask" or "selection" (and Refine Edge should generally show these as the defaults, so you shouldn't have to do anything).
- Decontaminate Colors: Used to get rid of fringing (not just color cast) when cutting something out from the background. Adjust the amount as needed. If you use this, you will be forced to output to a new layer or document, as Photoshop is going to change the pixel data, not just the mask.
- If you don't want Photoshop to create a new layer or make destructive changes to your pixel layer, Lumenzia will offer to create a non-destructive decontaminate layer for you after you apply refine edge. This new layer is clipped to your adjusted layer (so that it only affects that layer) and is set to color blend mode (so that you can easily update the color without affecting tonality). To use it, click "yes", then use the eye dropper tool <I> to sample colors you want to use and the brush <b> to paint color on the decontaminate layer.

"Edge" supports the ability to use both the non-destructive decontaminate layer and to "paint forward". *[Requires Photoshop CC]*

Video tutorial: Using the Edge tool to clean up edges/transitions

Isolate Subject and Refine Edge [requires Photoshop CC 2018 or later]

When there is no active selection nor a layer mask on the active layer, Edge will offer an option to select or mask subjects (people or animals) and then continue to refine those edges as above. This is designed to help work more efficiently, but you should expect to take additional steps to finish the cutout for precision results – such as using luminosity selections to refine the edges or decontaminate to remove background color casts.

Before (formerly "History")

The "Before" button allows you to toggle between before and after views of the document. It also allows you to paint back to an older state of the document (via keyboard shortcut as noted below).

By default, the before state is the oldest history state for the document, but you may manually set it to some other state of the document by <cmd/ctrl>-clicking "Before" (and may clear that manual before state to return to the default comparison by <alt/option>-clicking "Before"). If you wish to set an older state of the document as the before state, temporarily click on it in the History Panel, then <cmd/ctrl>-click "Before", then click in the History Panel to get back to the current state of the document.

While viewing the before state (in Photoshop CC), the "Before" button and Lumenzia will turn **red**. This not only helps know which version you are viewing, but also serves as a cautionary reminder to not make changes to the image while viewing the before state, or you will overwrite your history.

In case of any accidental change:

- On OSX, you may immediately undo the first change and restore all of your history (Lumenzia will warn you if you make any changes while viewing the "Before" state). If you make more than one change, the history will be permanently cleared. Note that Photoshop does not appear to support this for Windows users.
- Lumenzia also saves a snapshot ('Backup of "After" state) when using the Before button. You may go to the history panel (Window/History) and click on this snapshot to get back to the previous state of the document. This will not recover the various history steps, just the final state.
- Note that Lumenzia is designed to help keep you out of trouble, so it won't overwrite the "After" state (it will only clear it when you are toggling Before/After in the intended way). So if you do make changes to the Before state and try to click on "Before", you will be warned that you must first manually delete that backup snapshot if you want to proceed. Do not delete it if it is the active history state (just make a selection or something to advance the history, so that you can delete it while another history state is active).

You may also easily paint back to the before state by <shift>-clicking "Before". In Photoshop CC, the "Before" button will turn **blue** while painting back (to clear the blue button color, you can switch to a tool other than the history brush or <alt/option>-click Before again). **Painting back this way is an ideal way to non-destructively paint white (add to) a layer mask (because group masks can only be used to effectively add black or subtract from the target mask).**

Tips for working with "Before":

- Set Photoshop Preferences/Performance/History States to a large number (300+), as painting through luminosity selections tends to generate a lot of history quickly.
- Note: CS6 users may see a quick flicker if the document's bit depth has been changed since it was opened, most likely after opening an 8-bit document that Lumenzia recommends converting to 16-bits. You may wish to save and re-open after converting the document to avoid this small quirk. CC is not affected.

Video tutorial: Before and After
Video tutorial: Painting white non-destructively

Section #4: PreBlend and Visualizations

Pre-Blend

PreBlend is designed to help simplify the process of combining multiple exposures for manual blending. This feature sorts exposures, aligns, provides black masks to start blending, protects pixels from accidental changes, and even offers BlendIf blending capability.

There are three ways you can provide source material to use with PreBlend: layers, documents, and variants.

Layers:
Prepares existing layers in the current document for blending. This is the recommended method for Lightroom users, as it allows for high quality and an easy way to save the blended file back to the same folder as the source images. Just select the desired exposures and right click to Edit In / Open as Layers in Photoshop. If you are working with a single RAW file in Lightroom, create virtual copies to send multiple versions to Photoshop.

Documents:
Combines open (single-layer) documents into layers in a new document and prepares them for blending. If you are working with Smart Objects from Lightroom, changing the output to use one of the open documents (instead of a new document) makes it easy to save the file back to the source folder (if the source file has been previously saved).

Variants:
You will be presented with the option to create exposure variants from -3 to +3 stops. After selecting the exposures you want, they will be automatically created and stacked with the original on the bottom. The source image will be converted to a smart object (you may still edit it by double-clicking the smart object).

Note that "Blend Variants" uses the Camera RAW Smart Filter (for technical reasons), which is inferior to RAW adjustments made by double-clicking the Smart Object's thumbnail or exporting multiple layers from Lightroom. So Blend Variants is a convenient option, but if you want the ultimate quality (especially when making significant adjustments to recover details), you should manually create multiple variations of your RAW image and then use the other PreBlend options (Layers/Documents) to get everything ready. See the 8 minute mark of this video for more details: 3 Common Misconceptions about Camera RAW Smart Objects

Note:

- **Align** will let Photoshop attempt to automatically align the images. Good for handheld photos, unless there is a lot of moment in the image (water, etc). Automatic alignment of the images is not possible with Photoshop CS6 due to limitations of Photoshop scripting. Alignment is also not possible with Smart Objects. The images will only be stacked as layers and sorted by exposure in that case.
- Align includes options to crop or fill transparent edges. This helps ensure maximum image quality and detail edge to edge.
- **Check alignment (difference)** will put the upper layers into "difference" blend mode. This makes it easy to verify or manually align edges in the image. When you are doing manually aligning, just switch the layers to "normal" blend mode (you can <shift>-click multiple layers to change them all at once).
- **BlendIf** is designed for quick blending. Click on the various options (L2, L3), etc to find the best blend and then use a white brush on the group mask to paint in the final result as desired.
- **Add black masks** leaves the upper layers ready to start painting through a luminosity selection.
- **Rename layers from document names.** Depending on how you export images to Photoshop, you may wish to use the document name to replace the default layer names when blending.

- Variants (single exposure) requires RGB color mode and Photoshop CC (as they are required to use the Camera RAW filter). If you attempt to use single document pre-blend, Lumenzia will offer to put the LAB image into a smart object and convert to RGB. This retains all image quality. If you wish to subsequently edit further in LAB, you will need to either rasterize/flatten the exposure layers or put them into a smart object and then convert to LAB.

New in v8: <shift>-click PreBlend to create a New Smart Object "via copy" (an independent Smart Object). This is a fast way to multi-process a RAW file, and is recommended over the "Create Variants" option (as the Camera RAW Smart Filter does not actually work on the RAW data. See common misperceptions about Smart Objects for more info).

Video tutorial: PreBlend
Video tutorial: Blend exposures with BlendIf in PreBlend

Map

The "zone map" function creates a visualization layer which shows where each of zones 0-10 are within your image. This gives you a visual way to help determine which zones may need to be targeted/adjusted. While the zone map is active, the wide and narrow zones in the panel are shown in color for easy reference. You may of course use any of the previews in the panel (only the zone buttons are colored, to avoid visual confusion or clutter by coloring all the available buttons).

Note that "zone map" is intended to show where a given zone is MOST selected; it does not show how the zone masks feather. The zones in Lumenzia are designed to naturally feather for smooth selections, and therefore overlap significantly. So, while the zone map will show zone 9 in a dark red, an actual zone 9 mask will include some of zones 8 and 10, and even a little bit of 7. The zone map is effectively showing which zone mask best selects a given area but does not tell you about how that mask feathers at the edges. You can always adjust the levels slider in the orange previews to tighten up your zone mask if desired (just pull in the black and white sliders, or move the middle slider to the right), which would create more of a match between the visualization and the mask. However, high contrast masks are generally best to avoid, as that reduces the natural feathering that makes luminosity masks ideal in many situations.

You may now use the zone and range pickers while the Zone Map is active. When using this approach, the generic zones will be used. So, using the pickers while the zone map is hidden allows for more precise targeting between the zones when needed.

You may <alt/option>-click "Map" to show the map only over areas with extremely dark or bright pixels. This helps to check for ares where there may be blown pixels.

Video tutorial: Zone Map

Split

This button splits the screen and allows you to simultaneously view the layer mask and the actual image. This is extremely helpful for refining existing masks (for example, when you want to a brush to clean up the mask). Hold <alt/option> while clicking "Split" to toggle between the default horizontal/vertical split. You can close either view at any time (closing all views closes the document and you will be prompted to save any changes). Click "Split" again to sync the views if you have zoomed or moved around one of the views.

If you click outside your mask in the layers pallet, you will see two copies of the layered image. Simply <alt/option> click the mask to see it in the active view, or close one view and click "Split" again.

If you need more room to see the image when splitting the screen, be sure to use the PS shortcut <TAB> to toggle panels and toolbars off and on to free up more space.

Due to technical limitations when working with multiple open documents, you will get a new view each time you click "Split". You may <ctrl/cmd>-click "Split" if you wish to sync views without creating new views. If you create additional views, just close them as you would if there was only one additional view. Photoshop will always notify you about saving changes if you try to close the last open view of an image with unsaved changes.

The views stay synced when zooming in and out. [Requires Photoshop CC and is only supported when working with a single open document.] You may also determine how this behaves via "Synchronize Split Screens" in the Lumenzia menu preferences (see top-right three bars icon for the menu). You will be offered the following options:

- Do not sync. You may prefer to disable the syncing if you like to see the entire blended image while zoomed into the mask.
- Sync zoom only a single open image. This is the default behavior. It does not support syncing when using "Split" with multiple documents open.
- Sync zoom always. This option allows you to stay synced while zooming and panning with "Split". However, due to limitations in Photoshop, this will cause all open images to resize at all times (whether you use "Split" or not). This is probably not desirable for most users, but this gives you an option to sync while working with multiple images.

Video tutorial: Split-screen overview
Video tutorial: Split-screen luminosity masking
Video tutorial: Split-screen luminosity masking #2

If

The "If" button lets you see BlendIf masks. These are shown as a green overlay on top of your image, rather than as a black and white mask. This allows for live selection or adjustment of BlendIf:Under, so that you can get exactly the mask you need. BlendIf:This is visualized differently and is not live, but you may simply click "If" twice to remove and update the If visualization when working with BlendIf:This.

Video tutorial: If
Video tutorial: If

✓Sel

This button serves two purposes: (1) to visualize selections, and (2) to refine selections visually.

To **visualize** selections, click this button to see the active selection previewed full screen in black and white (just like a layer mask). This is very helpful to see your exact luminosity selection, when trying to confirm the true edges of the current selection, modify selections, or other situations where the current selection is not obvious. Click "✓Sel" once to see the preview, and a second time when finished with the preview.

To **refine** selections, you may adjust the new red layer in any way you wish before clicking "✓Sel" a second time. Whatever the image shows will be reloaded. You can paint with a brush on the selection, modify it with a levels adjustment, or pretty much anything you can do with a mask. The only real difference from editing a mask is that you cannot use the Refine Edge tool (since you are working on a pixel layer, not an actual mask). In addition to refining the pixels, you can also overlay a selection just like when working with orange preview layers. If there is an active selection when you reload the red layer, it will be used to constrain the selection. This is a convenient way to quickly and visually remove portions of the selection with a lasso.

You may revise an active selection with a luminosity selection. This is a great way to tweak something like a Quick Selection, which may be a little rough at the edges. To use this feature, click ✓Sel and a preview button such as L3 (in either order) and then the Sel button. This will give you a selection visualization and an L3 luminosity selection, at which point you can paint black or white through the selection onto the visualization and then click ✓Sel when done. If you have an active selection when you click ✓Sel to reload, you will be given the following options:

- **Ignore**: Use this if you don't want to use the selection. This would most likely occur because you used a selection to paint on the preview and forgot to discard
- **Intersect**: This is a handy way to keep just the preview inside a lasso, marquee, or quick selection.
- **Add**: This is a handy way to expand the existing selection, so as to allow painting in an area not included in the preview.
- **Subtract**: This is a handy way to remove something from the existing selection, such as extraneous highlights apart from the sky.
- **Feather**: This allows you to feather the active selection before using it with intersect/add/subtract, so as to give *softer and more natural transitions*.

Other tips:

- You may now click "✓Sel" while viewing orange preview layers. This converts the current luminosity preview directly into a selection visualization for editing. This is the same as clicking "Sel" and then "✓Sel". This may be useful for advanced editing of selections (such as by using the Camera RAW Filter), or if you wish to paint on the preview but hadn't enabled the optional orange layers for painting/dodging.
- **<ctrl/cmd>-click "✓Sel" to use Adobe Camera RAW (ACR) to modify the orange preview layers**. This gives you more flexibility in creating advanced luminosity selections (note that if you wish to do this for a luminosity mask, just select the mask and click the "RAW" button in the Basics panel).
- If you are not using an optimal gray space for the current document, you will be warned and given the opportunity to switch to the recommended gray space.

Note: There are a couple of scenarios where you may see that the red layer preview (editable) looks different from the orange layers (luminosity preview):

- False banding in Photoshop shown with the orange adjustment layers does not affect the flat pixel layer in the red layers preview. The two should look identical when viewed at 100% or greater, but the orange preview may suffer from false banding. This does not affect your image in any way, just the appearance of the image in Photoshop. For more details, see my tutorial on false banding.
- Your Gray working space (under Edit / Color Settings) is not optimized to match the "gamma" of the RGB profile of your document. The working RGB space is not important, it is the RGB profile of the working document which should match (therefore if you use different RGB spaces in different documents, you may see this warning repeatedly because **there is no single gray working space which is optimal for all RGB working spaces**).

Video tutorial: Visualize Selections (and how marching ants work)

✓L

This button is designed to help see luminosity, saturation, or hue in the image by itself, which can be very helpful for retouching getting good matches in composites, finding and fixing subtle problems, or simplifying adjustments by allowing you to separate tonal adjustments from color adjustments.

The default behavior is to show luminosity. Alternatively, you may use this tool to view saturation in the image by holding <alt/option> or hue by holding <shift>.

When creating a visualization for luminosity, you have a few additional options:

- Boost contrast to better visualization midtone luminosity by holding <ctrl/cmd>-click the button to select a range of tones to highlight. When you use ✓L, a red group will be created in the layers pallet
- Or boost contrast over a custom range. First, create a lasso selection and then click ✓L. The selected area will automatically be analyzed to boost contrast between the darkest/lightest tones selected

Click the "X" button to delete any of the visualizations.

Video tutorial: Check luminosity

✓Dust

This button is designed to help find dust spots and other subtle blemishes. While it is usually preferable to use the dust spot visualization tools in Lightroom or Adobe Camera RAW on the image initially, these tools are typically not helpful once you have created a layered image. Just click on "dust" to get a temporary red layer that boosts contrast to show dust. You may click on it a few times to get different visualizations. To clear the dust visualization, click the "dust" button a few times, click the "X" button in Lumenzia, or simply delete the red layer manually. When you use clone stamp or healing layers with an active dust visualization layer, be sure to set your tools to same "current / below" rather than "all layers" (as the latter would cause the visualization to be included in the cloning/healing).

Tutorial: Remove dust spots

"?"

Click this button once to make it change color, then click on any other button to pull up help specific to the selected button. This makes it easy to find the tutorial video you need. This feature is only available on Photoshop CC.

Tutorials (formerly "Help")

The Tutorials button will open the private Lumenzia support page in your web browser. The help page is where you will find all of the included Lumenzia training videos. The help button is somewhat limited in Photoshop CS6 (provides a link for you to manually open the web page).

Tips for selecting the "right" mask

There are no absolutely right or wrong answers, but some masks are clearly much better than others for a given purpose. I recommend the following decision process to help quickly find the best mask (in normal / live mode):

1. Determine which general type of mask you need.
    a. The D/M/L masks are best for general adjustments.
    b. The L masks are best for exposure blending (assuming darker exposures are stacked on top).
    c. The zone masks/pickers and range mask are best for targeted adjustments.
    d. Diff (+/-) is useful for dealing with variation in the light source on a subject and selecting edges.
    e. Vibrance/Saturation is best when adjusting vibrance/saturation
    f. The color options (both the color masks and the "Color" group button discussed later) are best for separating pixels which have the same luminosity but different colors (such as a yellow building in front of a blue sky)
2. Click on your best guess and evaluate the preview. A good preview should be:
    a. Relatively light or white in areas targeted for adjustment. If some interior areas are dark, that's typically easy to fix by painting white in the mask.
    b. Very dark or black in areas adjacent to the areas you want to adjust. You can safely ignore areas that are some distance away from your subject, as it is very easy to add a lasso selection to target the preview or otherwise refine the mask to eliminate these issues. What is important is that the edges have good separation, because it is very hard to fix a poor edge.
3. If the result doesn't look close, click on other similar preview options (i.e., if zone 8 isn't right, try zone 9, etc).
4. Customize the preview as needed (see details in section 1a above). This can often take a decent preview based on the presets and turn it into exactly the mask you need.

When using BlendIf masks, I recommend the following process to help quickly find the best mask:

1. Determine which general type of mask you need (DML or zone/range)
2. Click on your best guess and evaluate the blended result. If the result is hard to evaluate or you haven't yet made any, click the red "If" button at the bottom of the panel to get a preview of the BlendIf's mask.
3. As with normal/live masks, iterate as needed to find the closest fit. And you can again ignore areas removed from your subject, as you can easily remove them from the mask by using a group mask.
4. Once you have the closest fit from the presets, you may wish to customize the BlendIf (see details in section 1a above).

Miscellaneous

General info:

- Lumenzia will remember the settings you last used for most dialog boxes in order to work more quickly. For example, if you last clicked to use a hard mask instead of feathering, that button will become the default next time you apply a lasso selection. Note that some dialog options are intentionally not remembered (such as the radius used for Lighter/Darker masks, as the optimal setting varies from document to document and therefore reusing the last value is not helpful).
- Lumenzia has had numerous improvements over the past few years. For a full list of changes, please see the release notes.

Notes on working on images in 32-bit mode:

- In order to get accurate preview of the layer mask, please be sure not to use an exposure offset (such as the "32-bit exposure" slider at the bottom of the document).
- It is important to get the proper layer mask when created. Unlike the 32-bit document, layer masks in 32-bit mode are actually 16-bit and are clipped at the visible black and white values (ie, pixel values less than 0.000 or greater than 1.000 are not possible in the mask). This is just how layer masks work in Photoshop. You'd get the same result with any approach in Photoshop (such as trying to brush paint values >1.000, using Apply Image from the 32-bit data, etc). Lumenzia is providing the highest quality masks possible in 32-bit mode.

Notes on working on images in LAB and other modes:

- Lumenzia natively supports both the RGB and LAB color modes. Functionality in either mode is nearly identical. However, some features are not available in LAB, such as Selective Color, and Sat/Vib masks, Diff(+/-) due to Photoshop limitations in LAB mode.
- You may use images in other color spaces (such as CMYK) and Lumenzia will automatically offer to enclose them in a Smart Object in RGB (the content inside the smart object will remain in its original color space).

Notes on working with artboards:

- Artboards are a relatively new feature in Photoshop CC intended for graphic designers, web designers, and others who may wish to create multiple variations of a layer or interface (ie, this isn't something most photographers will use). See Adobe's documentation for more info.
- In order to keep file sizes small, Lumenzia will automatically limit the new layer mask to the visible boundaries of the artboard where you are working (in other words, everything outside the

targeted artboard will show as white in the layer mask – but it will not affect other artboards because this layer is inside an artboard).

- If you originally mask a layer above the artboards, Lumenzia will retain the full layer mask across all artboards.