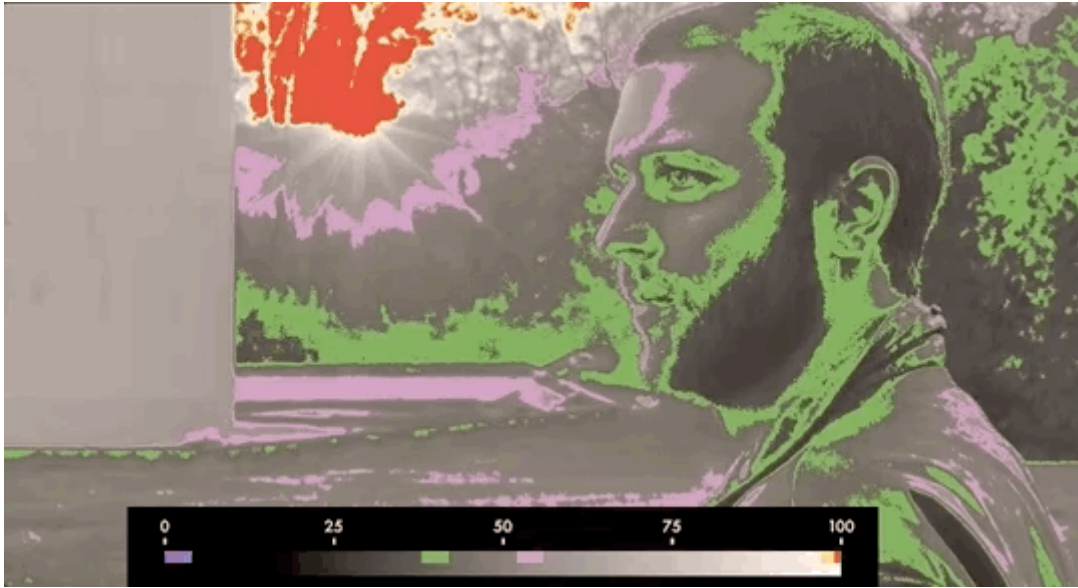


Exposure Assist (False Color)



Exposure Assist is a **highly visible, quick** and **accurate** guide to setting exposure for your shots by 'painting' pixels when they hit a specified luma (brightness) value. This helps you **pinpoint** the exact areas your image may be **clipping** and quickly roll exposure to adjust for it, particularly in difficult viewing conditions (outdoors or on a gimbal or crane)

Exposure Assist - Overview

Use this section to compare Exposure Assist with SmallHD's other exposure tools to help you find what suits your personal preference.

Because Exposure Assist 'paints' your image different colors depending on what their luma (brightness) value is, it can be beneficial to memorize these colors to make the most sense of your exposure range. Alternately you can now [create your own exposure/color scale](#) if you find the presets not to your tastes or suitable for your camera.



Exposure Assist is a very fast tool for finding proper exposure because you can simply look at your image - if a desired portion of the picture is being painted the color designated for highlights for example, that typically means you'll have to bring down the exposure to regain the detail in that area. As an example it can be used for shots that need to have an even exposure, like a keyed background (green screen).

💡 If the colorizing effect of Exposure Assist is too distracting for your other on-set tasks, try creating a new page specifically for it so that you can flip back and forth for a quick exposure spot-check when needed.

Because the Exposure Assist scale can now be [customized](#) allowing you to map many colors to many brightness ranges, it can give you an incredibly comprehensive look at your exposure values. The [Waveform](#) only offers slightly more utility in that it can be used to gauge chrominance (color) in addition to luminance (exposure) when using [Parade](#) or [RGB](#) modes.

💡 If you would rather look at a graph to expose your image than to have it 'painted over', have a look at the [Waveform](#).

Because of the nature of Exposure Assist and how it paints the image various colors, it can become distracting to other necessary jobs on set. Tools like the [Zebra](#), though less comprehensive, may work better for you. This is a simplified single spectrum IRE tool. EXPOSURE ASSIST is meant for more complicated exposure level monitoring of the image.

Exposure Assist - Settings

Access Exposure Assist's settings menu by navigating right or pressing the right arrow when the [Waveform](#) is highlighted.

On

Toggles Exposure Assist Off/On. You can also do this on the tool bar by selecting the tool and activating or deactivating it. It will be green when active and grey when inactive.



Style

Choose from a preset exposure assist scale or start with a generic map that you can customize.

You will have the Following Options:

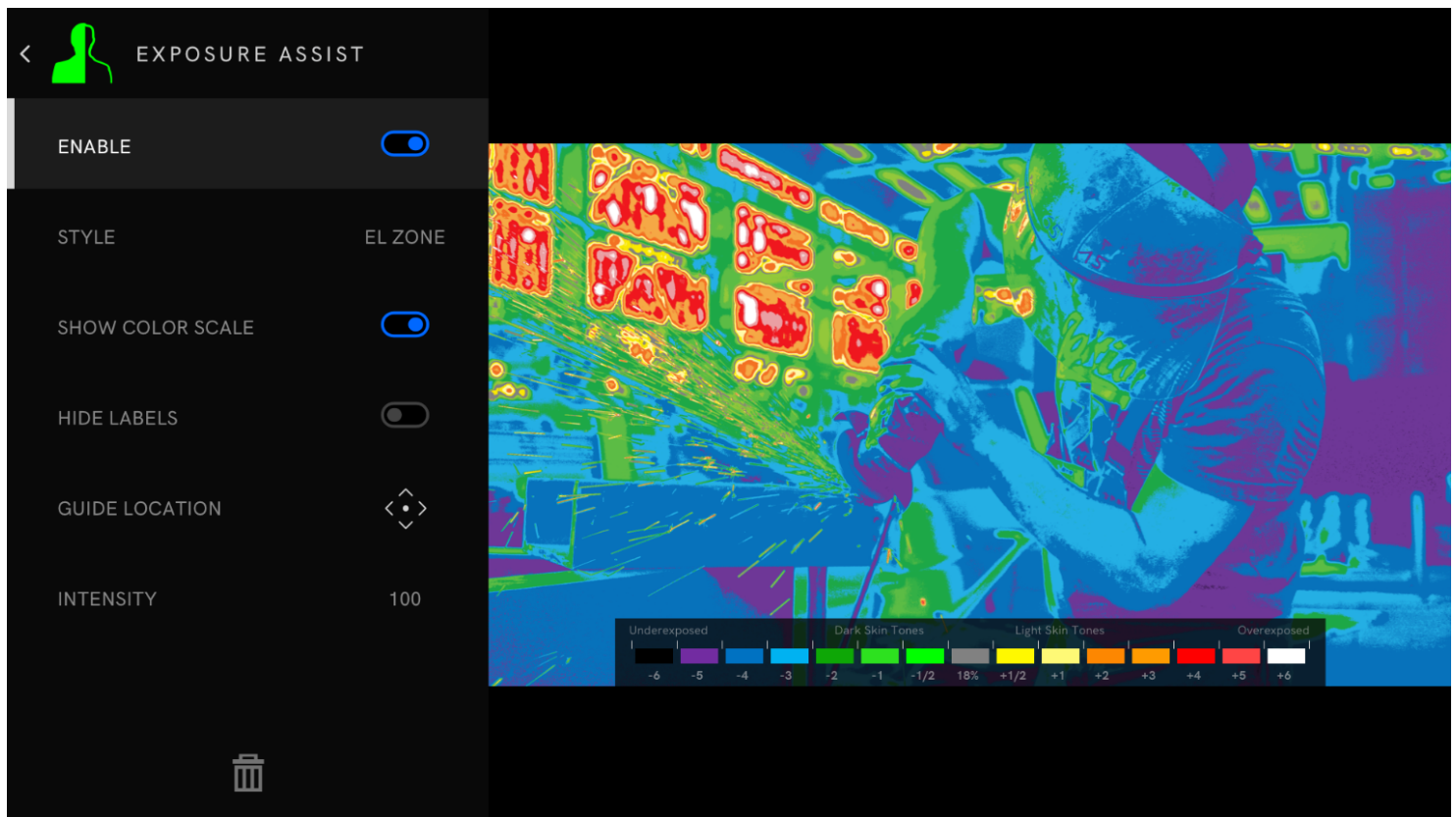
ARRI - R(99-100),Y(97-99),Pk(52-56),G(38-42),B(2.5-4),Pu(0-2.5)

SPECTRUM (1,2) - Rainbow Gradient from Pink(0) to Red(0)

EL ZONE - Stops represented by color between Black (underexposed) and White (overexposed)

MAP (1,2,3) - Custom settings that you create

EL Zone



EL Zone is a stop-based exposure map tool—developed in collaboration with legendary cinematographer Ed Lachman, ASC that works like a virtual spot meter, replacing IRE exposure values with stops. Sensor data from the camera provides a reference point, and a false color represents each stop above and below 18% gray, allowing for easier, more intuitive on-set communication.



EL Zone requires a Log signal in order for the monitor to understand & display accurate stop values. If you wish to use a LUT, apply it to a monitoring page using the Look tool (instead of applying a LUT on the camera).

To enable EL Zone, make sure you create a color pipe in your monitor's settings menu. You will need to create and send the monitor a LOG signal and select the log signal you will send. Once the Color Pipe has been set to match the camera's LOG setting, the EL Zone Tool can be assigned to any Page. Below is an example of how to configure your Color Pipe settings and add the EL Zone tool.

Configure EL Zones with RED

1. Navigate to **Settings > COLOR PIPE > NEW COLOR PIPE +**, then enter the following:
 - Input Type = **LOG**
 - Camera = **RED**
 - Color Space = **RED WIDE GAMUT RGB**
 - Curve = **RED Log3G10**
 - Range = **SDI FullDisplay = Do Not Convert**
2. Tap the screen of the page you're working on, then tap the plus (+) sign at the bottom of the toolbar.
3. Select **EXPOSURE ASSIST**, tap **STYLE**, then select **EL ZONE**.

NOTE: Make sure you select "Do Not Convert" in the Color pipe options.

Edit (MAP)

You can make up to 3 different MAP styles.

You can have up to 10 different gradient selections on a single MAP setting.

The new customizable MAP allows you to really fine tune your exposure settings to your liking.

Once a MAP is selected, entering edit mode will bring up the IRE guide.

Select the [+]

This will add a line with a COLOR box, MIN value, MAX value and GRADIENT slider.

Adjusting the MIN and MAX will set your values for start and stop for that color against your exposed image.

This will be represented on the slider. Selecting the slider, you can adjust the overall position of the MIN/MAX against the overall gradient from 0-100.

Selecting the trashcan will delete that line/ color.

Once finished you can hit save to store your settings.



Ignore Look

Allows Exposure Assist to work on the signal directly from the camera even if you have a Look (3D LUT) applied as a tool on the monitor which would otherwise affect the results on the scale. Uncheck if you wish to monitor exposure values AFTER a look has been applied to see what effect it may bring to the final image.

 We recommend leaving this on for most shooting scenarios unless you are baking a LUT into your footage on set and do not intend to color grade in post.

Show IRE Guide

Display a visual 'legend' to help make sense of the colors that correspond to brightness values. This is helpful as a reminder if you have a wide variety of aspects you are monitoring.

Guide Location

Set the location of the IRE guide to a spot of your choosing.

This can be moved to 6 positions on the monitor:

TOP = Left, Center, Right

BOTTOM = Left, Center, Right

Intensity

Dial in the intensity of Exposure Assist to make its effect more subtle, allowing an easier view of the original image. Dialing back the Intensity will also decrease Exposure Assist's greyscale influence, bringing saturation back into your image.

Exposure Assist - Customization

NEW with firmware version 3.0! - Continue this section to learn how to get the most out of Exposure Assist by [creating your own preset \(MAP\)](#).



Many cameras, particularly when shooting in 'log' mode keep their **brightest** highlight and **darkest** shadow at values **other than 100% and 0%** respectively. Full shadow clipping might be as high as 10% and highlights might be as low as 90% for example. **Customizing the Exposure Assist** scale ensures these settings are **tuned** to your **specific camera** for **guaranteed accuracy**.



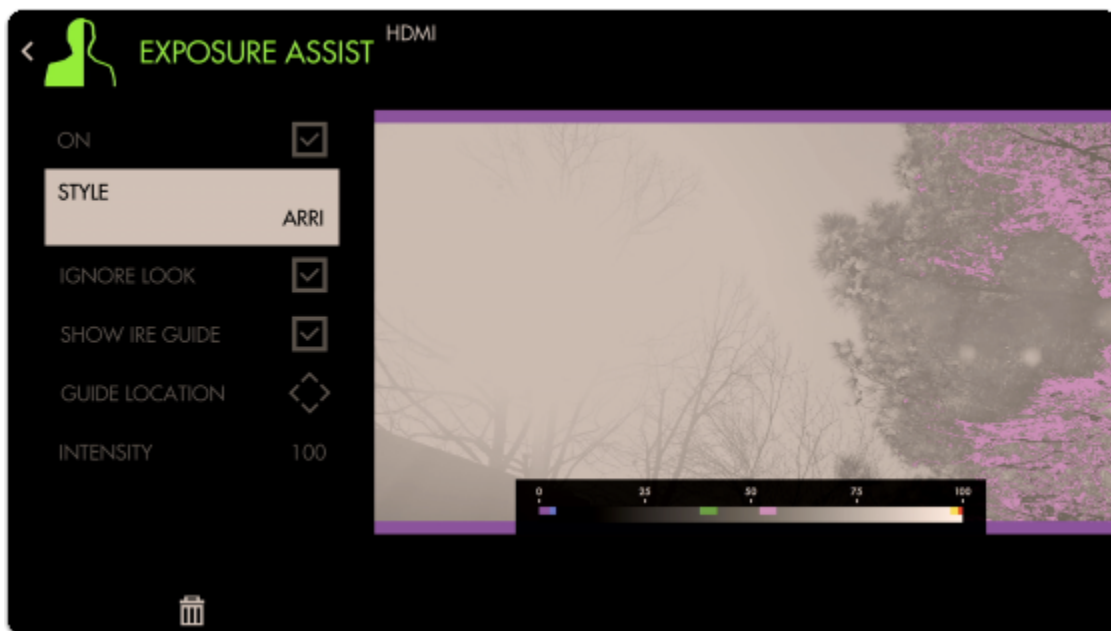
To begin setting the scale we need to first **find the limits**. For the following example I'm using a DVX200 set to V-Log gamma but this procedure applies to any camera or gamma.

First, point the camera toward any **bright** objects that will **overexpose** the shot (a white car or exposed concrete on a bright day will do fine) - **turn off ND filters, open the aperture** and **decrease the shutter speed** if needed:



I briefly pointed the camera towards the sun during midday for this shot - this is generally not advisable to keep the sensor safe but I did it so you don't have to ;-)

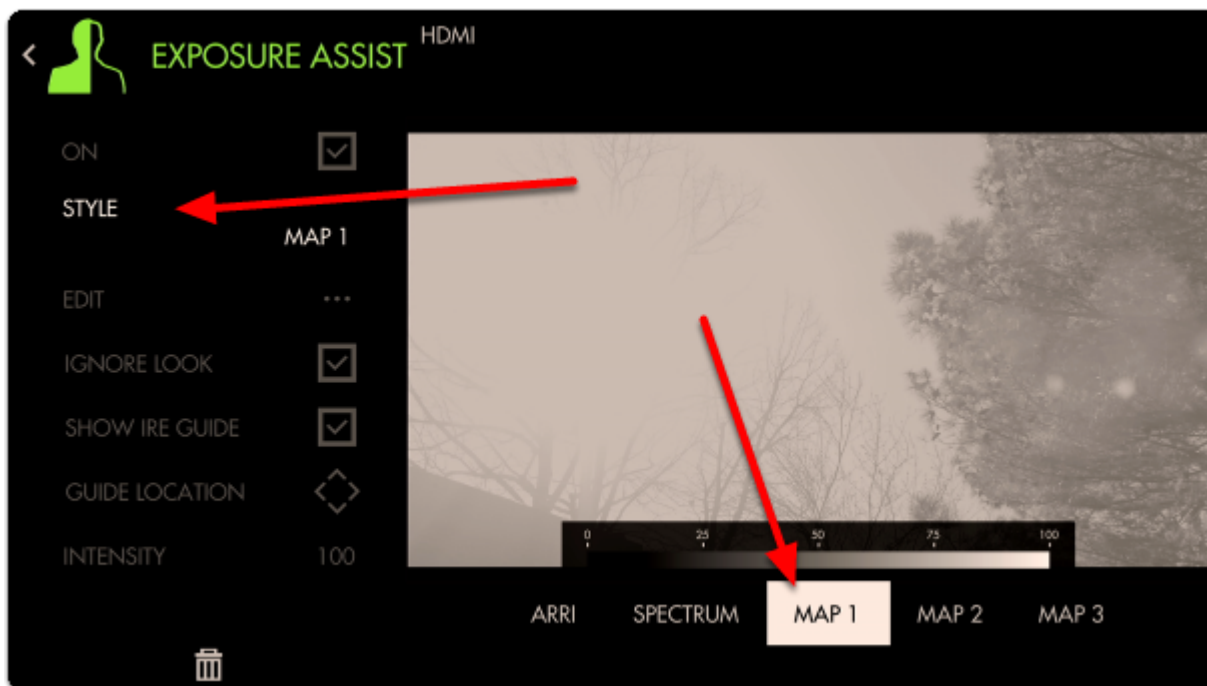
Add an Exposure Assist via **Add Tool > Expose > Exposure Assist** if not already applied.





Even though the **sun** area is **clearly clipping**, the Arri false color scale doesn't pick it up - **we need to fix this for an accurate reading**.

Select '**Style**' and choose '**Map1**' to start with an empty preset that we can modify.



Select '**EDIT**' to begin customization



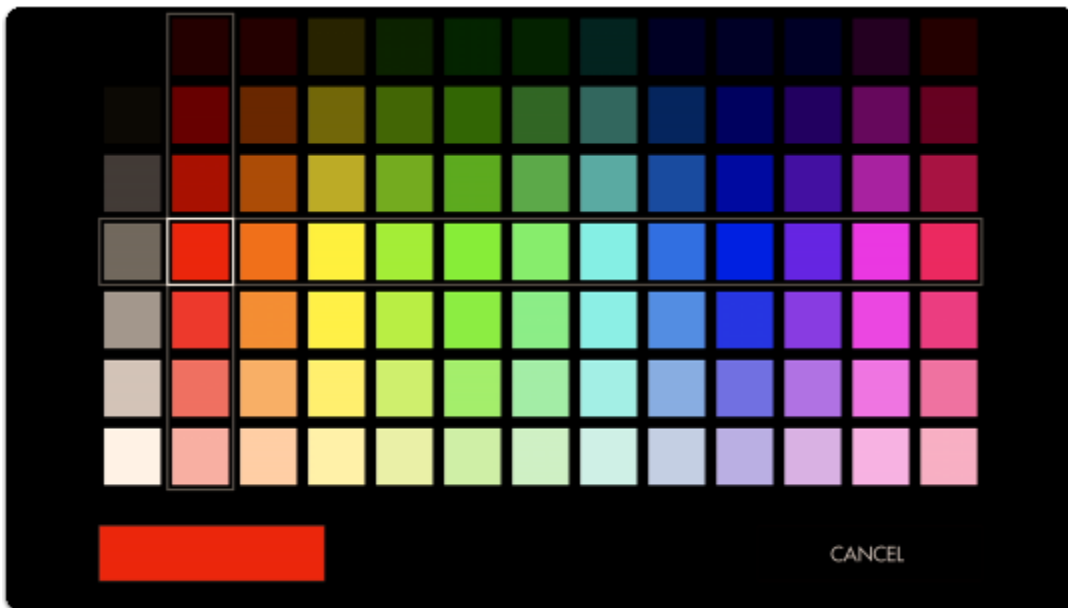
To begin adding a range, **select the '+'**



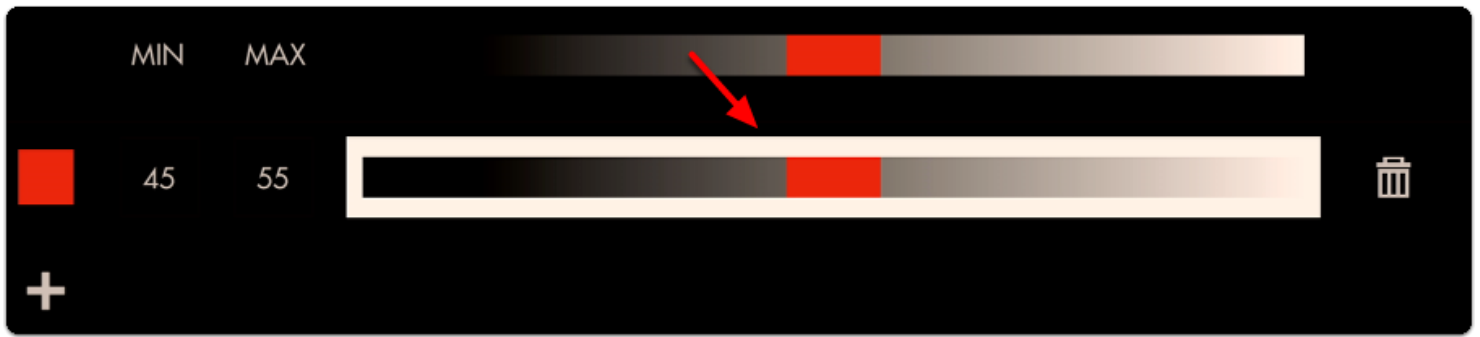
A default color and range is placed onto the scale; let's **change** this color by **selecting** it



Let's choose **red** to act as an overexposure clip warning.



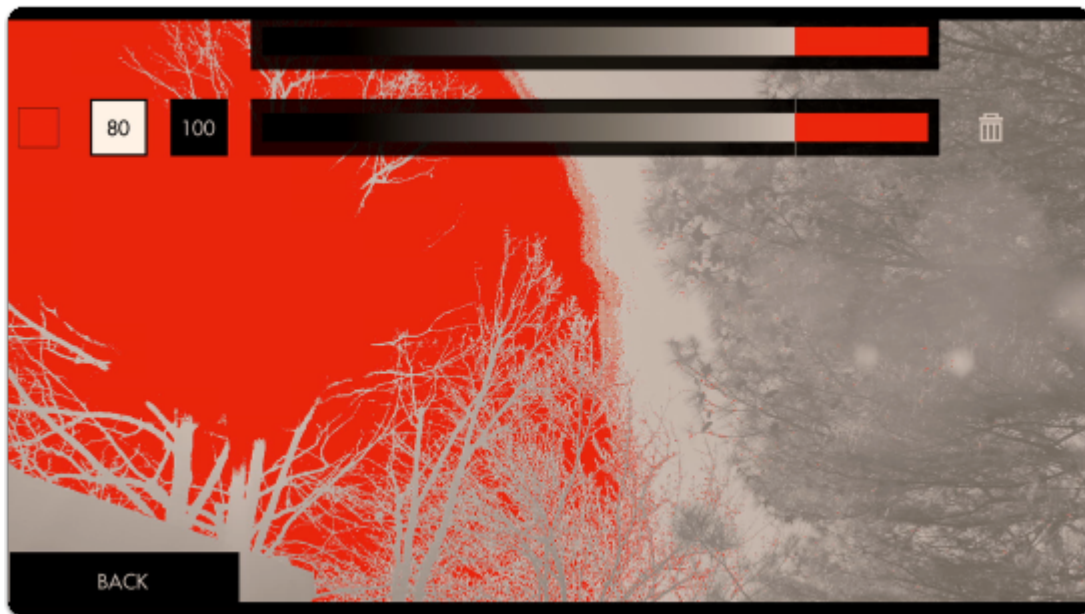
Next we can **edit the position** of this color on the luminosity scale by **selecting it** and dragging in either direction



Move the color block to the far right - now any **values in the 90%-100% range will get painted red**. As can be seen none of the values in this image even reach 90% so we need to **decrease the 'MIN'** until we see a **red blob** appear where the sun is located.



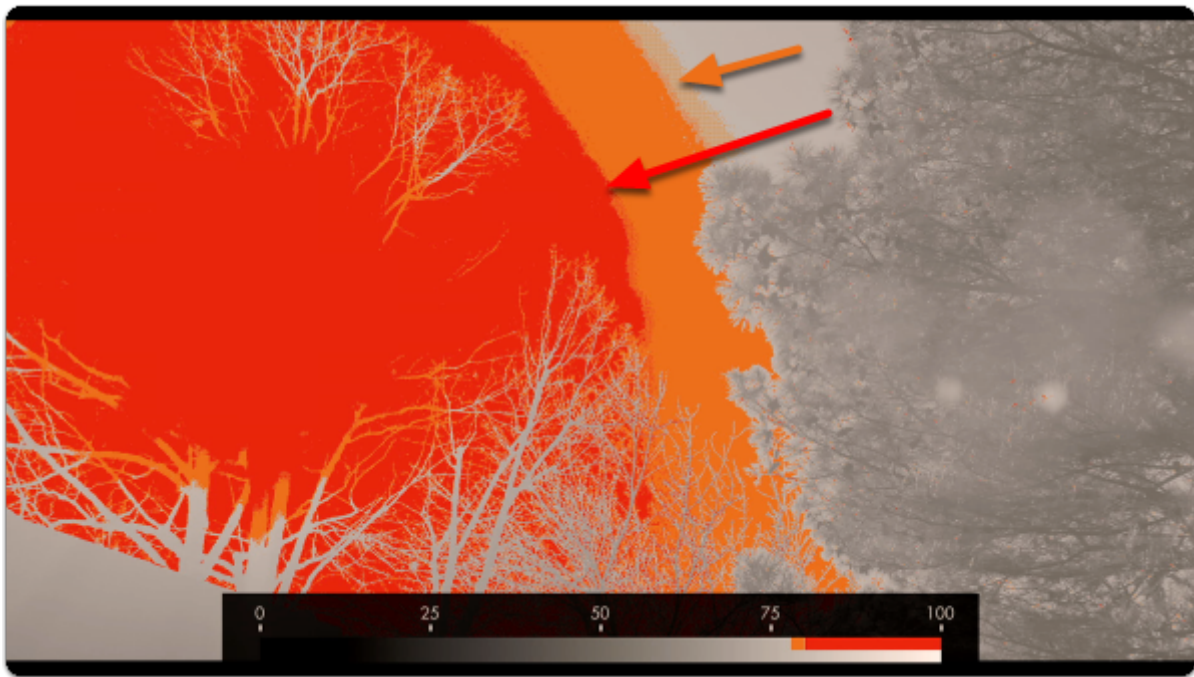
When decreased to **80%**, we have finally found the **limit** at which this camera **clips highlights**.



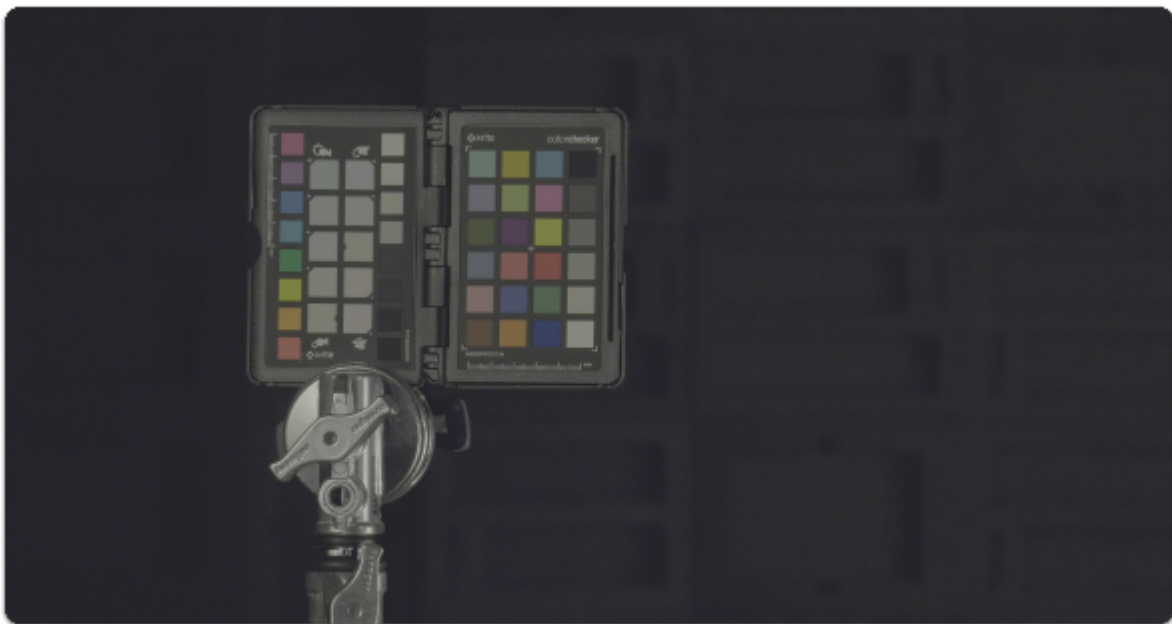
This red area is telling you 'this data is getting clipped' so let's set up another small color value immediately beside this one to act as a warning:



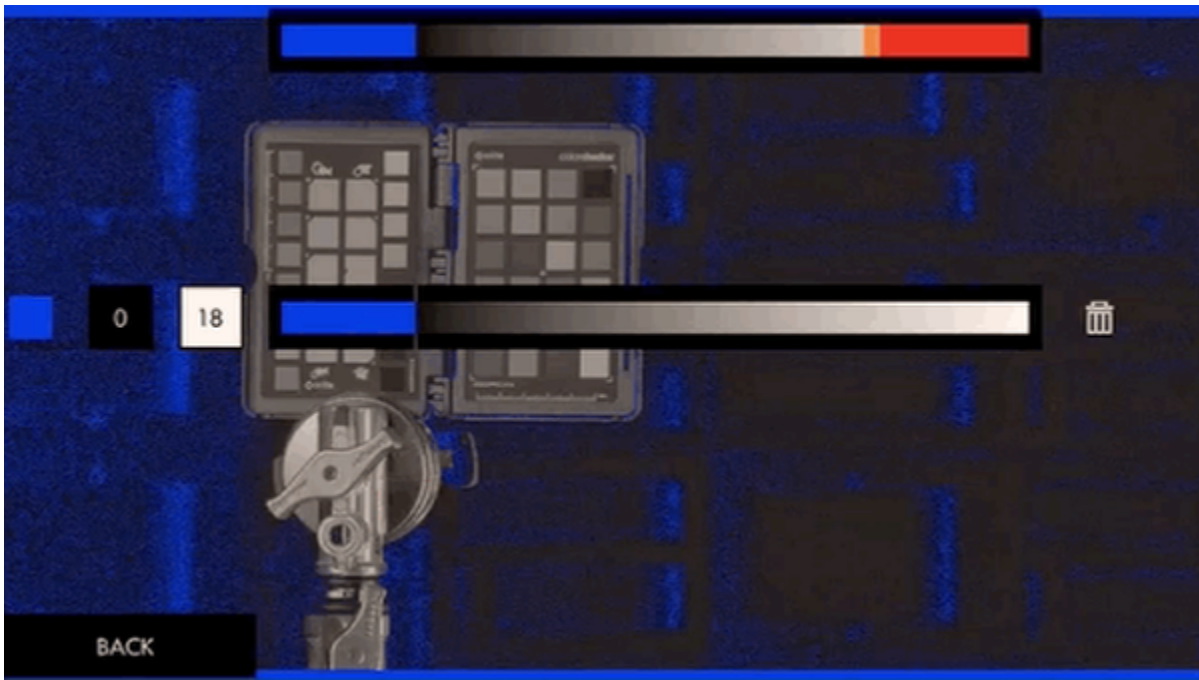
Now if you see orange it means you're **almost clipping highlights** and if you see red you **are clipping highlights**.



Repeat the same process but this time to the **darker extremes** - I have my shot set up in a dark environment but you may simply cover the lens for this stage when looking to pinpoint the camera & gamma's **native black point**.



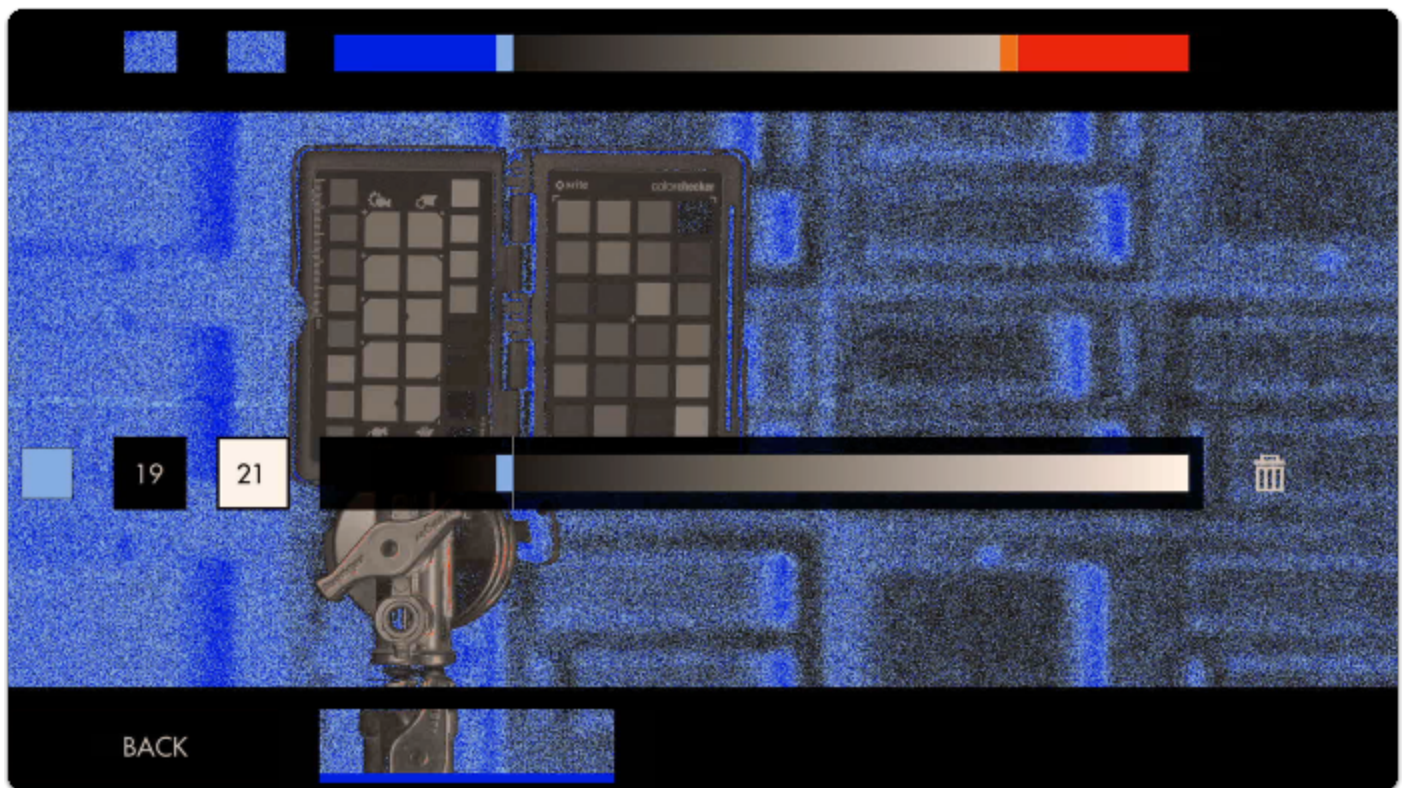
Create a new color band for the **shadows** - I prefer 'cool' colors for dark areas and normally set highlights to 'warm' colors to help me identify each zone quickly but feel free to use any configuration that makes sense to you!



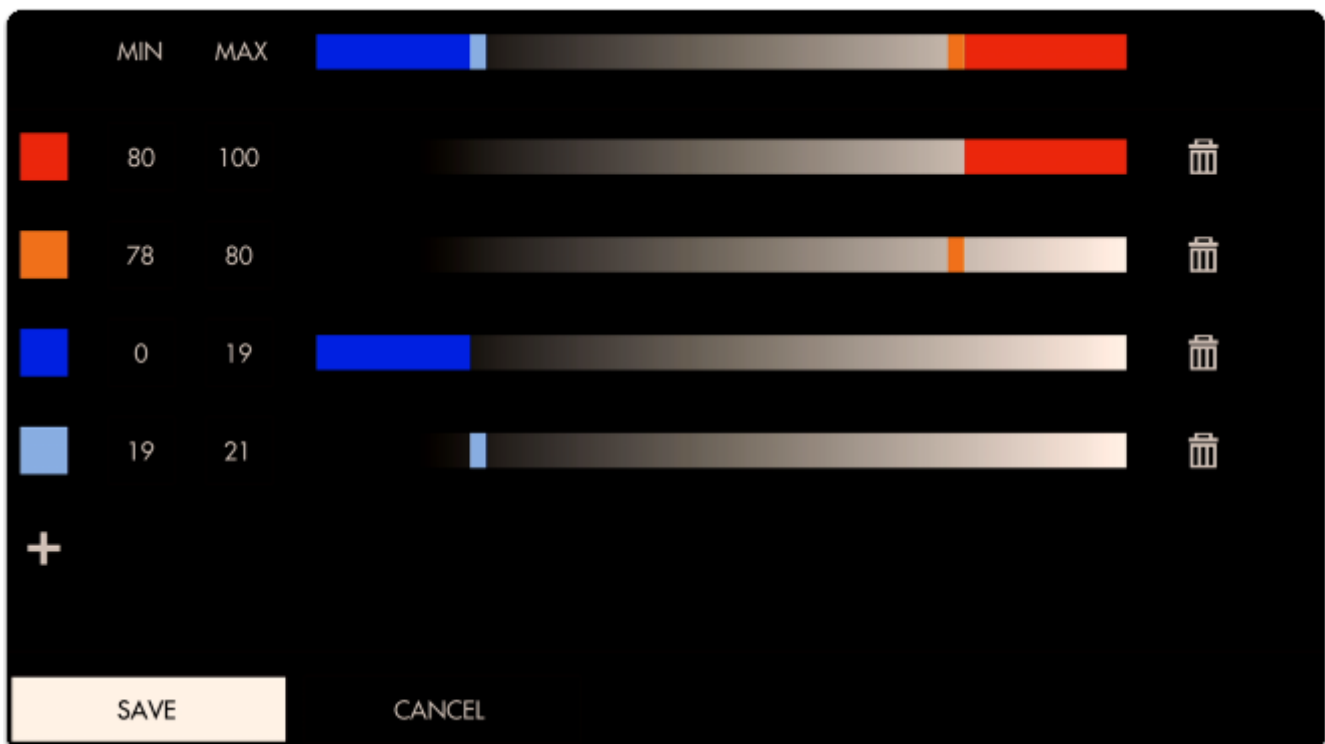
Set the **MIN** to **0** and adjust the **MAX** value to the point where color starts being introduced - You can customize this value until the **noise level** is acceptable to you (anything that gets painted blue is considered 'clipped', so increase the **MAX** to 'clip' more of the noise).

💡 Because Exposure Assist is ultimately a guide, setting these ranges is for keeping us aware of issues as soon as they show up. In this case if we see a **deep blue** on someone's face, we'll need to **increase exposure** or the footage will be **noisy**.

Next we can add a small 'warning zone' next to our 'clipping zone' just like with the highlights:



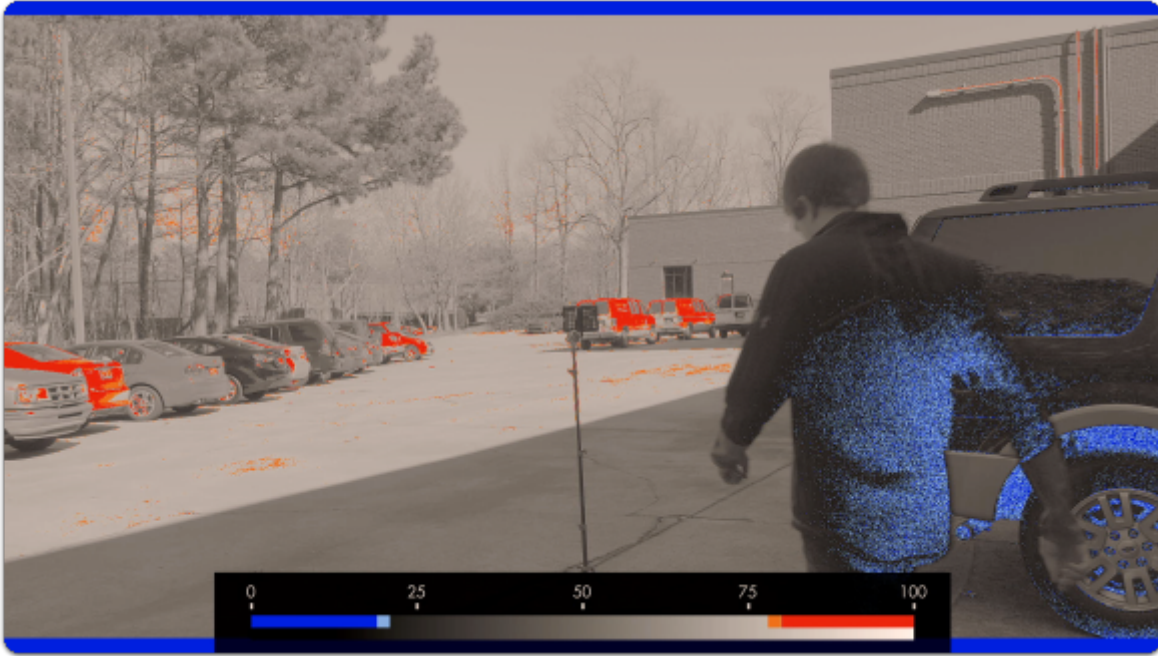
This is what our scale looks like with the upper and lower ranges applied:





Here is what a shot looks like when we're employing the new exposure scale. The colors reveal precisely which areas are **recoverable** and which are **lost**.

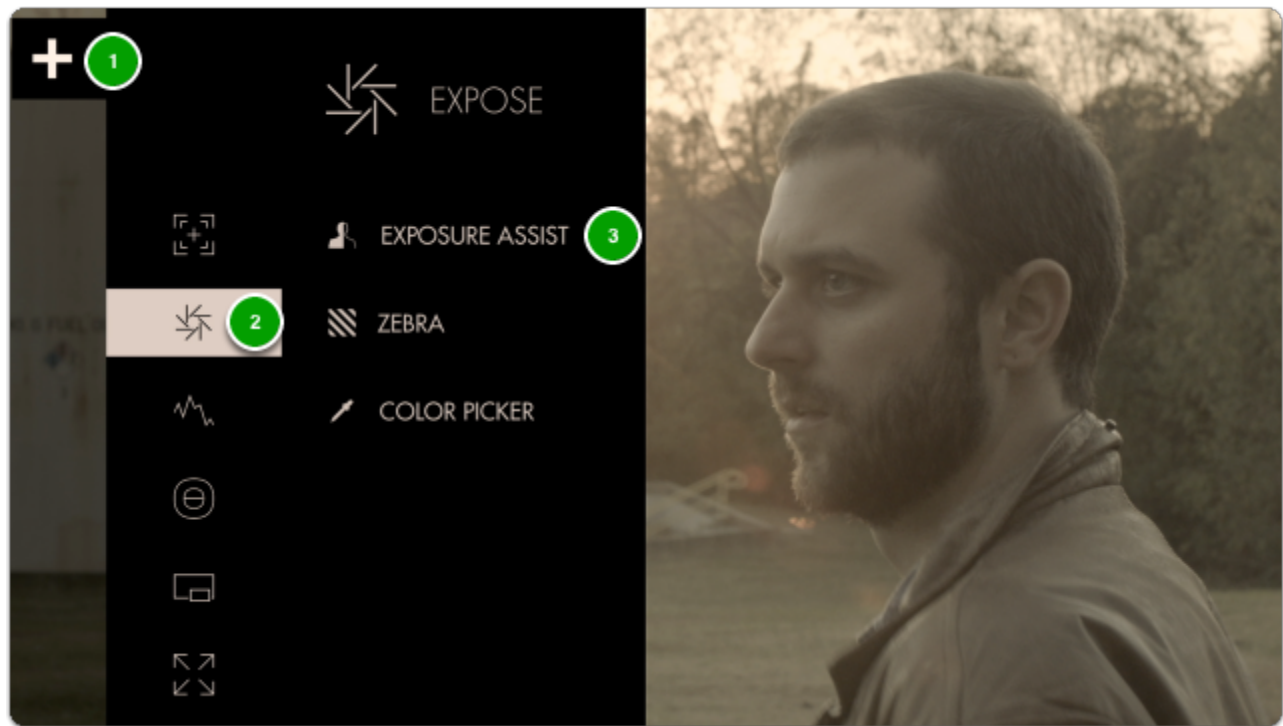
Red areas are clipped highlights, **blue areas are noisy/clipped shadows**.



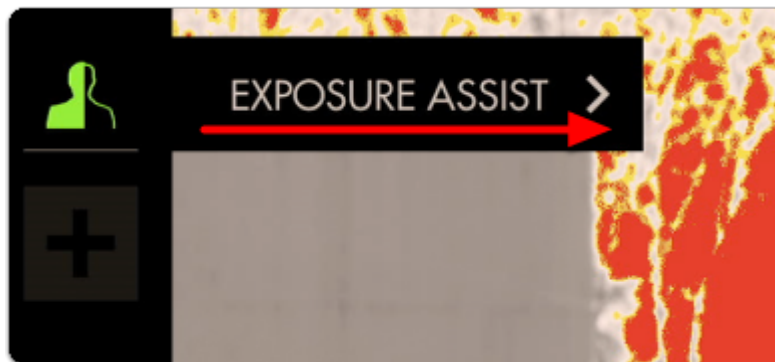
You may continue to add colors to the scale, for example a **midpoint** to represent **skin tones** or an 18% grey card/chart.

Exposure Assist - Quick Start

From any page, click the joystick or tap the screen to bring up **(1) 'Add New Tool'** and navigate to **(2) Expose > (3) Exposure Assist** and select to add it to the current page.



Once added you can **edit** the settings by **navigating right** or tapping the right arrow when 'Exposure assist' is highlighted.



By default the **Arri False Color** scale is used which is a great place to start. Another scale is the **Spectrum** False color, which is a gradient of color from Pink-Blue-Green-Yellow-Red. This is easily seen on the Guide bar.

EL Zone replaces IRE exposure values with stops. The stops are represented by color between Black (underexposed) and White (overexposed) You can also create your own custom set, up to 3.

The chart below describes what each color means for **ARRI**- essentially when an **element** in your scene gets **colorized**, that means it is **within the brightness range specified** here.



Color	Level	Description
red	99 – 100%	White clipping
yellow	97 – 99%	Just below white clipping/white shoulder
pink	52 – 56%	One stop over medium gray (Caucasian skin)
green	38 – 42%	18% neutral gray
blue	2.5 – 4.0%	Just above black clipping/black slope
purple	0 – 2.5%	Black clipping

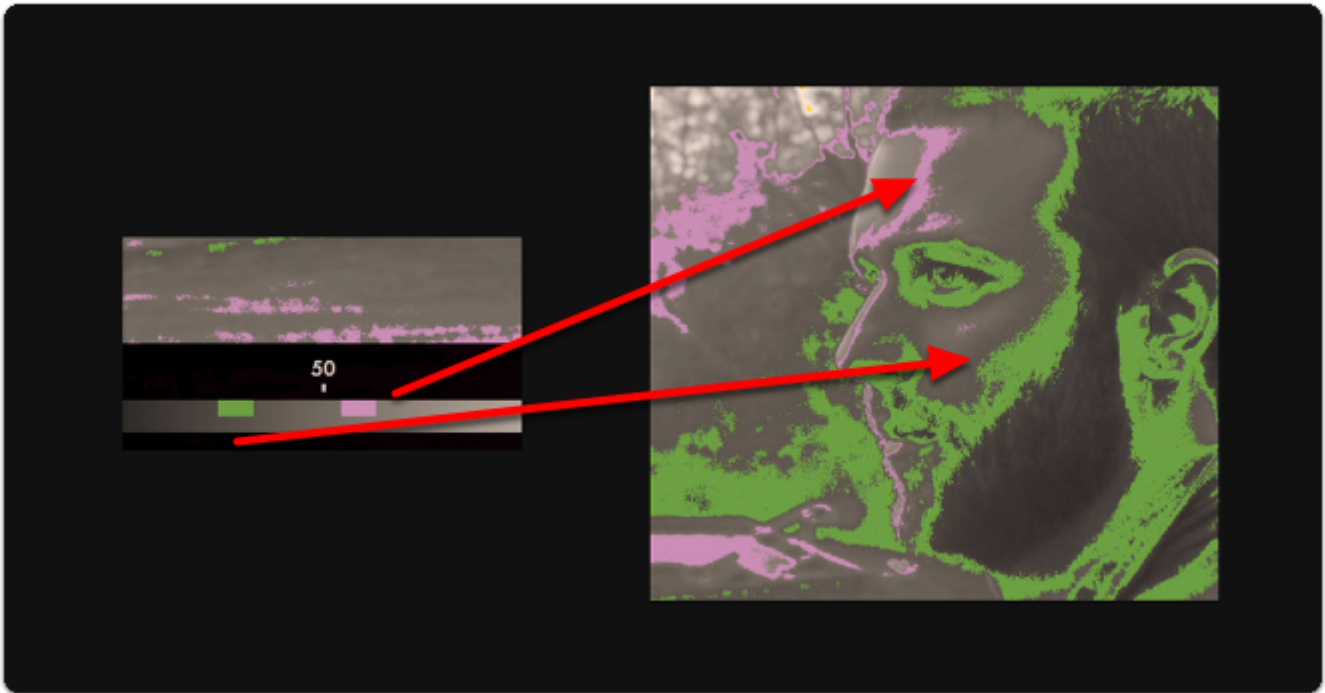
(ARRI FALSE COLOR SCALE)

This allows you to make exposure decisions that are based on **numeric values** as opposed to simply how the image **appears**, which depending on viewing environment and many other factors can yield inconsistent results.

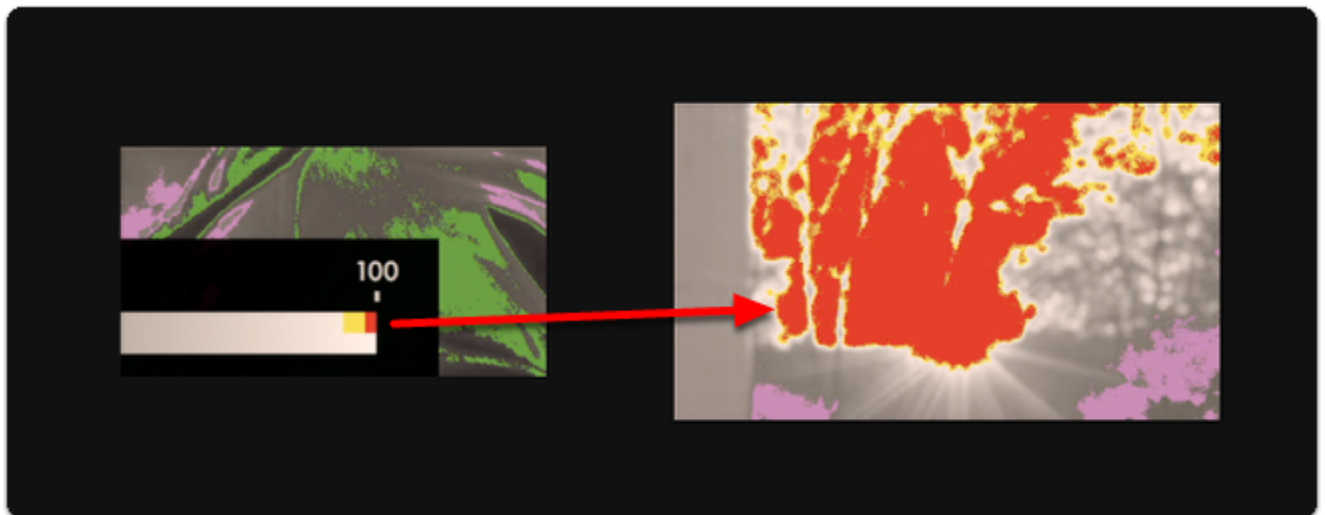
Enable '**SHOW IRE GUIDE**' to get an on-monitor view of which **values** are getting **mapped** to the colors on the scale.



Exposure values near the **50%** mark on the scale will generally provide the most **natural result** on **human skin**. With the **Arri scale** this means the **pink** and **green** bands provide a great guide as the **upper** and **lower** range for exposing faces.

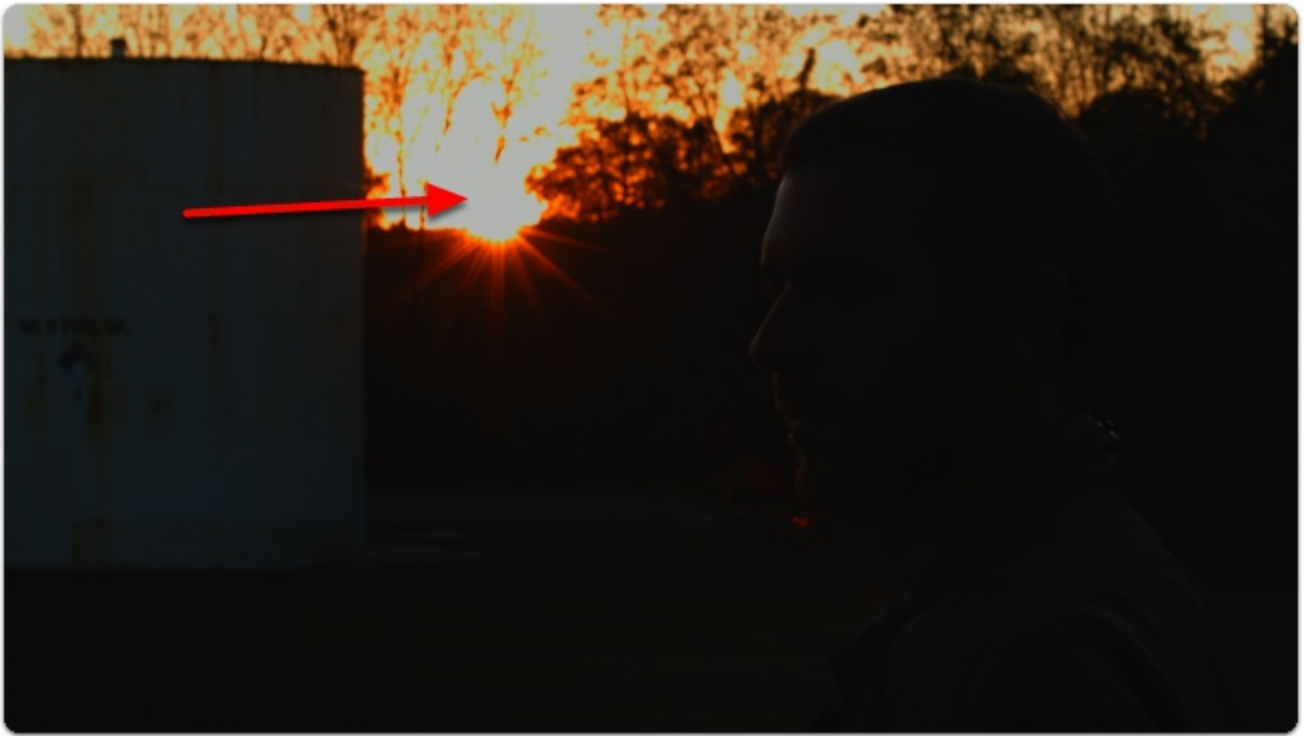


Sticking with this exposure value means we'll be **clipping** a portion of the sky & sun - Exposure Assist makes it clear which areas will be clipping/losing detail as a result of overexposure by painting such areas **red**.



Clipped areas are tricky to manipulate in post production because they are effectively comprised of a single 'blob' of color/value.

If I **darken the entire shot**, the clipped areas of the sky & sun appear quite unnatural:



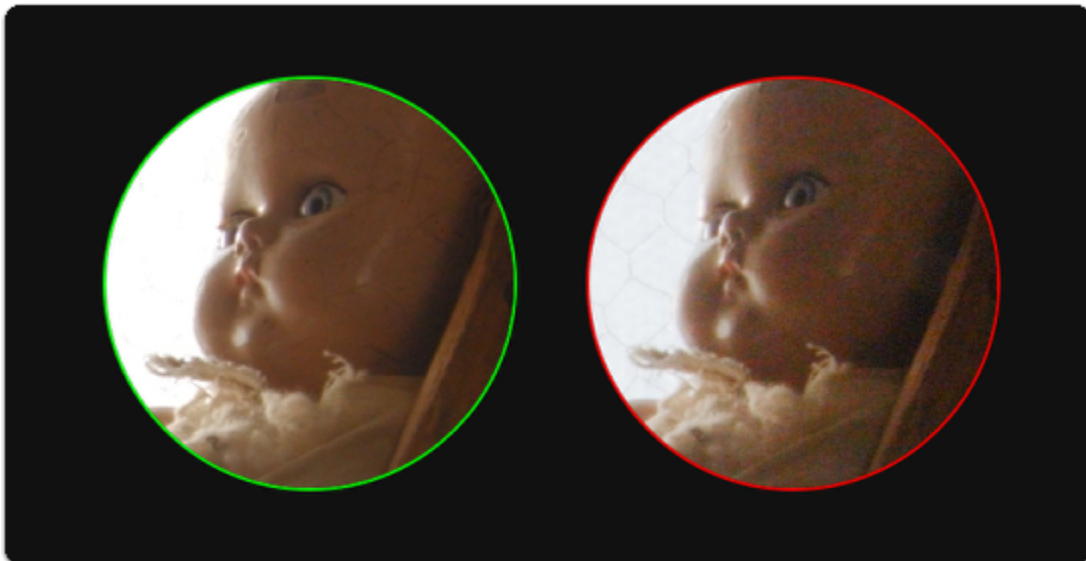
If I darken **everything but** the sky/sun, they each appear much more acceptable:



When graded normally, **skin tones maintain plenty of detail** due to being exposed in an optimal range.



Below-left is an example of **normally-exposed face**, **below-right** is an example of an **underexposed face** that has been brought up in color grading - take note the difference in **image noise**.



Exposing a shot 'just right' will vary greatly between shoots, operators and cameras but is always a compromise in some way. You must decide **how important** are your **highlights** and **shadows** and what will contribute to the better final image, and this can vary depending on many elements including



intended color grade, delivery methods, VFX and of course the camera itself - some handle highlights better than shadows for example, others vice-versa.