Creating ICC-TIFF Camera Profiles for Standard and Capture One® workflows

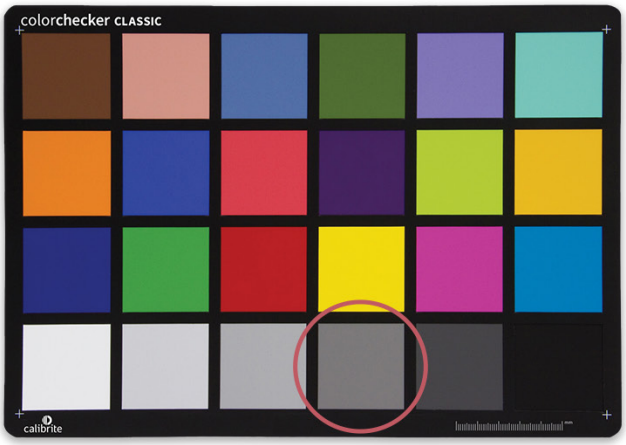
An ICC Profile workflow should be used for Capture One® workflows (ACR calibrations from DNG image files are not supported by Capture One®). An ICC Profile workflow can also be used in other situations where DNG format is not supported, however whenever possible it is preferable to make ACR calibrations for workflows except when using Capture One®.

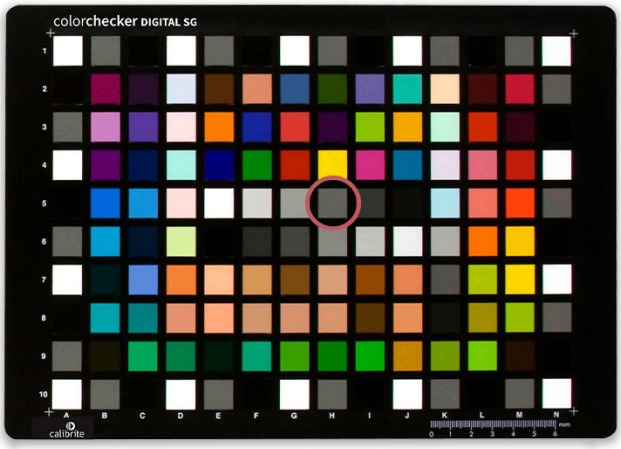
The Calibrite ColorChecker Classic 24 patch targets and the Digital SG 140 patch target can be used for Capture One® ICC workflows, however superior results are achieved from the Digital SG 140 Target. Whereas for other ICC workflows the Classic 24 Target will have limited results and the SG 140 Target should be considered.

A: ColorChecker Target Capture

- For Calibrate PROFILER software to automatically detect the ColorChecker target, its width should fill at lest 10% of the image width (can be smaller for cameras with a resolution greater than 25MP).
- Ensure that your in-camera white balance is set appropriately (not set to Auto), and this in-camera setting should remain for the main session.
- The ColorChecker target should be illuminated uniformly with correct exposure, positioned in the scene of the intended final images.
- **Optimum image capture**
  - The white patch of the chart should fall within the RGB range of 180/180/180 – 242/242/242 (ideally at 235 RGB). The maximum variation between individual RGB channels should ideally not exceed +/- 3
  - The neutral grey patch below the yellow (H5 near the middle of the Digital SG, and the boarder pattern grey) should fall within the RGB range of 128/128/128 +/- 20.
  - For optimum results when using the Calibrite ColorChecker Digital SG 140 target in a studio environment. Check that exposure values of the white border patches on all sides are within +/- 3 of each other. When using Calibrite ColorChecker Classic 24 patch target, take two shots – rotating the chart 180° to check the white values are within +/- 3 of each other (or use two charts).

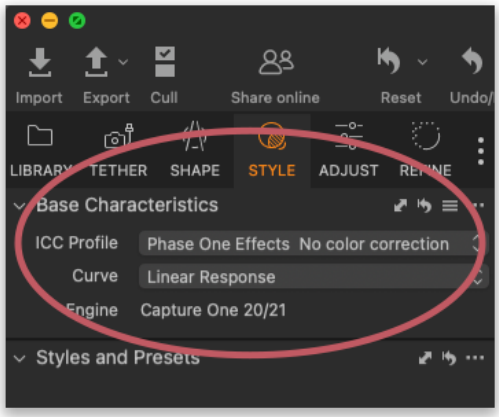
For Capture One ICC profile Workflow settings see Section B-C, for other ICC Profile settings see Section D.

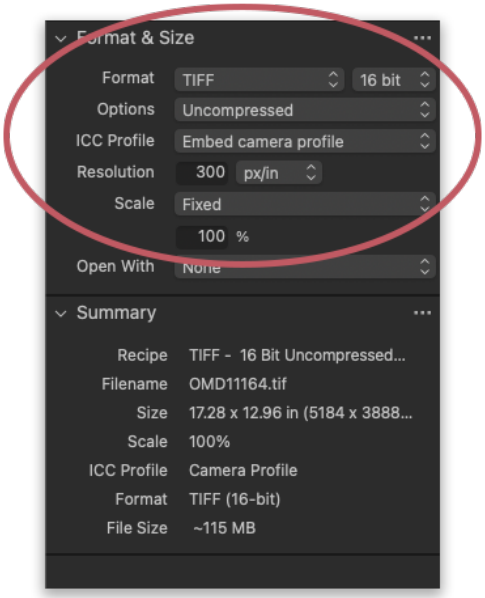




B: Capture One® Workflow Settings

- Import target image into Capture One®.
- Set the Capture One "Base Characteristics" as follows:
- Base Characteristics Tab Setting:
  - ICC Profile > Effects > No Colour Correction
  - Curve > Linear Response
  - Engine > Capture One 20/21
- Check white patch in the RAW target image for correct exposure – to comply with recommendation in Section A.
- For best results if image is under/over exposed, adjust camera settings and reshoot to achieve correct exposure. And if ununiform illumination is detected, likewise adjust and reshoot
- Select the Export icon and export the image as an uncompressed TIFF file using the settings below.
- **Process Recipe Tab Setting:**
  - Format > TIFF 16 Bit
  - Options > Uncompressed
  - ICC Profile > Embed Camera Profile





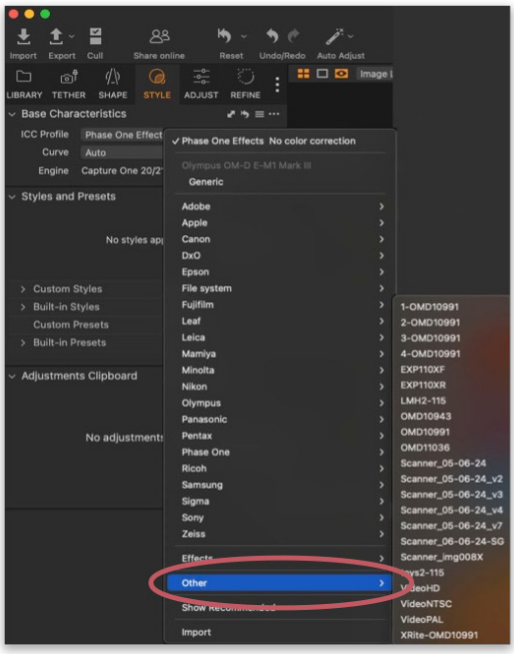
NOTE: Capture One® will automatically process the output to a set file location on the computer. If you are new to Capture One®, it may be best to set the output to your desktop.

The TIFF can now be imported (or drag/drop) into the Calibrite PROFILER application camera module to generate the ICC Profile.

NOTE: Remember to select the ICC Tiff option in the Calibrite Profiler camera module.

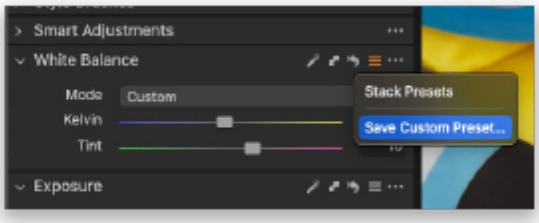
C: Applying ICC Profiles in Capture One Workflow

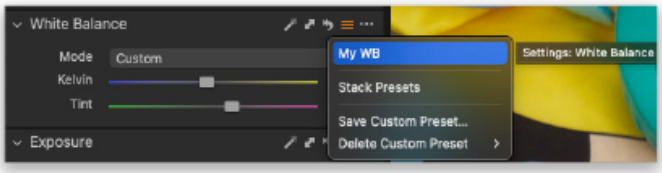
- Re-Start Capture One software to recognize the new profile.
- Open the image that is to be colour corrected.
- Go to the Base Characteristics section of the Style tab:
  - Set contrast – switch the *'Curve'* option back from *'Linear Response'*, to *'Auto'*.
    Style Tab > Base Characteristics > Curve > Auto
  - Set the new custom ICC profile – listed in the *'Other'* section of the ICC profile sub-menu.
    Style Tab > Base Characteristics > ICC Profile > Other > Select Profile



Following setting the custom profile the images white balance can be set.

- Go to the White Balance section of the Adjust tab: With the White Balance eye-dropper, click on your preferred neutral grey – recommended is either the 18% grey patch (below the yellow, which is H5 in the SG target), or alternatively the light grey patch adjacent to the pure white patch (F5 in the SG target).
- To white balance a group of images in the collection, the image with the ColorChecker should be used and its white-balance applied the rest of the images.
    - To save a custom white balance as a present to use with other images from the shoot. Select White Balance Preset and then Save User Preset.
    - Enter a preset name and then click Save.
    - To apply the preset to other images, select the preset from the list.





The above process provides a colour accurate start point for you to continue with your normal Capture One® workflow.

D: Settings for other configurations requiring an ICC workflow

It is possible to create ICC profiles from other photo editing applications. Not every third-party photo editing software is the same. Make sure to use the proper settings when generating the TIFF file used in the Calibrite Camera Calibration module. The TIFF file should ideally be saved from a camera's linear curve output setting.

Make sure there has been no editing applied to the image. The goal is to create a TIFF from the original untouched image.

- No Colour Correction or ICC Profiles should be set to the image.
- Curve set to a Linear Response – if possible.

NOTE: For best results the camera settings should be white balanced and correctly exposed – to comply with settings recommendation in Section A

- Exporting TIFF
    - Image format set to TIFF
    - Bit Depth set to 16 Bit
    - Compression set to Uncompressed or None
    - Export with Embedded Camera Profile if possible

If you are unsure of any settings, please contact the manufacture of your photo editing software.

The TIFF can now be imported (or drag/drop) into the Calibrite PROFILER application camera module to generate the ICC Profile.

On completion of saving your new ICC profile, launch (or relaunch) your preferred image editing application.

Assign the new custom camera profile to your images and it is then recommended to convert into your required working colour space (such as Adobe RGB or P3).

Calibrite PROFILER's Profile Manager

To check ICC Camera profiles, use the calibrite PROFILER utility named Profile Manager, and select > Camera > ICC. Installed ICC Camera profiles can be filtered, renamed and deleted through the utility.