

user guide

2nd edition



greywhitebalancecolourcard.co.uk

Contents

01 Introduction	05
02 System requirements	06
03 Download and installation	07
04 Getting started	10
Creating a custom white balance	11
Neutral images with the Grey White Balance Card	15
Using the 24 Swatch Colour Card	20
Using the 24 Swatch Colour Card with Xrite ColorChecker Passport	25
Using the 24 Swatch Colour Card with Adobe DNG Profile Editor	37
05 The 24 Swatch colours	49
06 Questions & answers	50
07 Notes	51

01 | Introduction

The **Grey White Balance Colour Card** is a great little addition to your photography bag, It works on a simple principle: by shooting a photograph with a set of reference colours, then using image editing software to make adjustments to match the colour swatches of the card. For precise colour rendering, a calibrated monitor is therefore essential along with good image editing skills. .

Colour profiling is a science! Photography is an art form! Colour profiling for photography is therefore very subjective. There is no magical one stop profile solution for perfect colour, and no Colour Card can replace the artistic subjective adjustments possible in Lightroom or Photoshop.

Using Adobe's DNG Profile Editor or Xrite's ColorChecker Passport will help you to create a faster work-flow and more consistent colour, providing a simple and inexpensive path to creating better colour images using a base profile.

The Grey White Balance Colour Card user guide is a simple step by step guide to help you achieve the best out of the cards. This guide assumes you have a good understanding of your DSLR and knowledge of your preferred images editing software.

Minimum system requirements for using Adobe DNG Profiler & Xrite ColorChecker Passport

Windows

- Intel® Pentium® 4 or AMD Athlon® 64 processor
- Microsoft® Windows Vista® with Service Pack 2 or Windows® 7 with Service Pack 1
- 2GB of RAM
- 1GB of available hard-disk space
- 1024x768 display
- DVD-ROM drive

Macintosh

- Multicore Intel processor with 64-bit support
- Mac OS X v10.6.8 or v10.7
- 2GB of RAM
- 1GB of available hard-disk space
- 1024x768 display.

03 | Download and installation

To create a camera profile you will need to create a DNG file from your RAW image. The easiest way to do this is using **Adobe DNG converter**. This will also do batch images.

To create a camera profile from a DNG file you can use **Adobe DNG Profile Editor** or for a simple drag and drop streamline solution, use **Xrite ColorChecker Passport**.

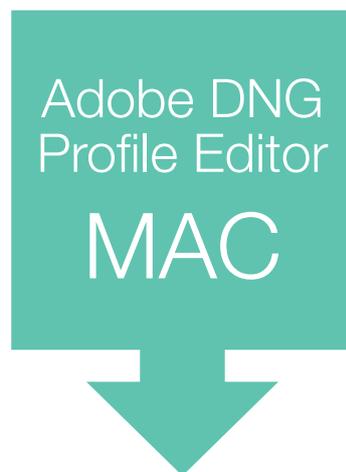
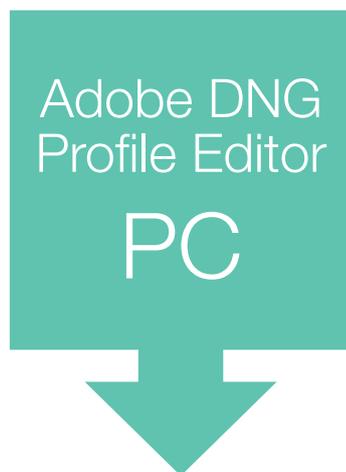
These are all free to use.

* Links correct at going to file. If you have problems with the below links, go to **www.adobe.com** and search for 'DNG Converter and DNG Profile Editor.'

Adobe DNG Converter*



Adobe DNG Profile Editor*



03 | Download and installation

Xrite ColorChecker Passport
download page for MAC & PC



Creating a custom white balance

Neutral images with the
Grey White Balance Card

Using the 24 Swatch Colour Card

Using the 24 Swatch Colour Card
with Xrite ColorChecker Passport

Using the 24 Swatch Colour Card
with Adobe DNG Editor

04 | Getting started

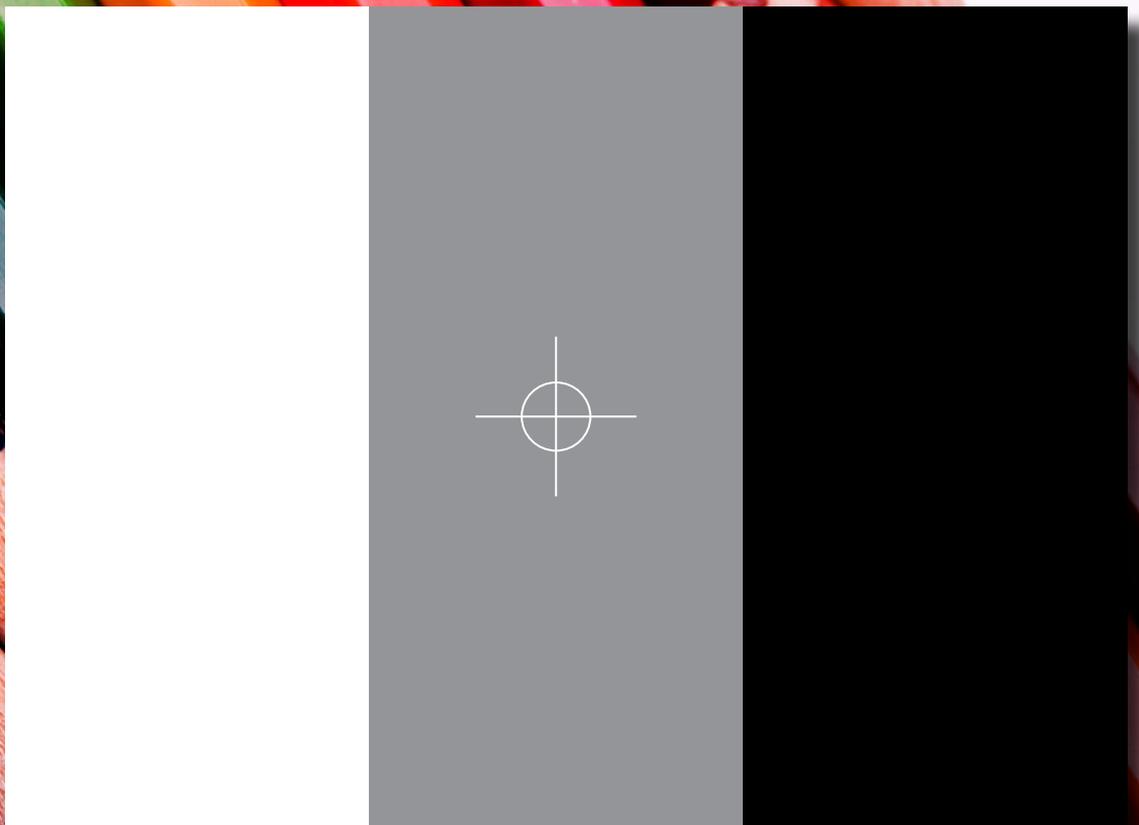
Creating a custom white balance

STEP 1

Setting up

To create a custom white balancing, set your Camera to manual mode, using evaluative or matrix metering, do not use spot, partial, or centre weighted. White balance should also be set to automatic. (AWB)

Set-up your lighting and composition with the Grey White Balance Card. For indoor product photography set your ISO to the lowest setting, this will produce finer detail with less noise. Your camera should also be set to save files as RAW.



04 | Getting started

Creating a custom white balance

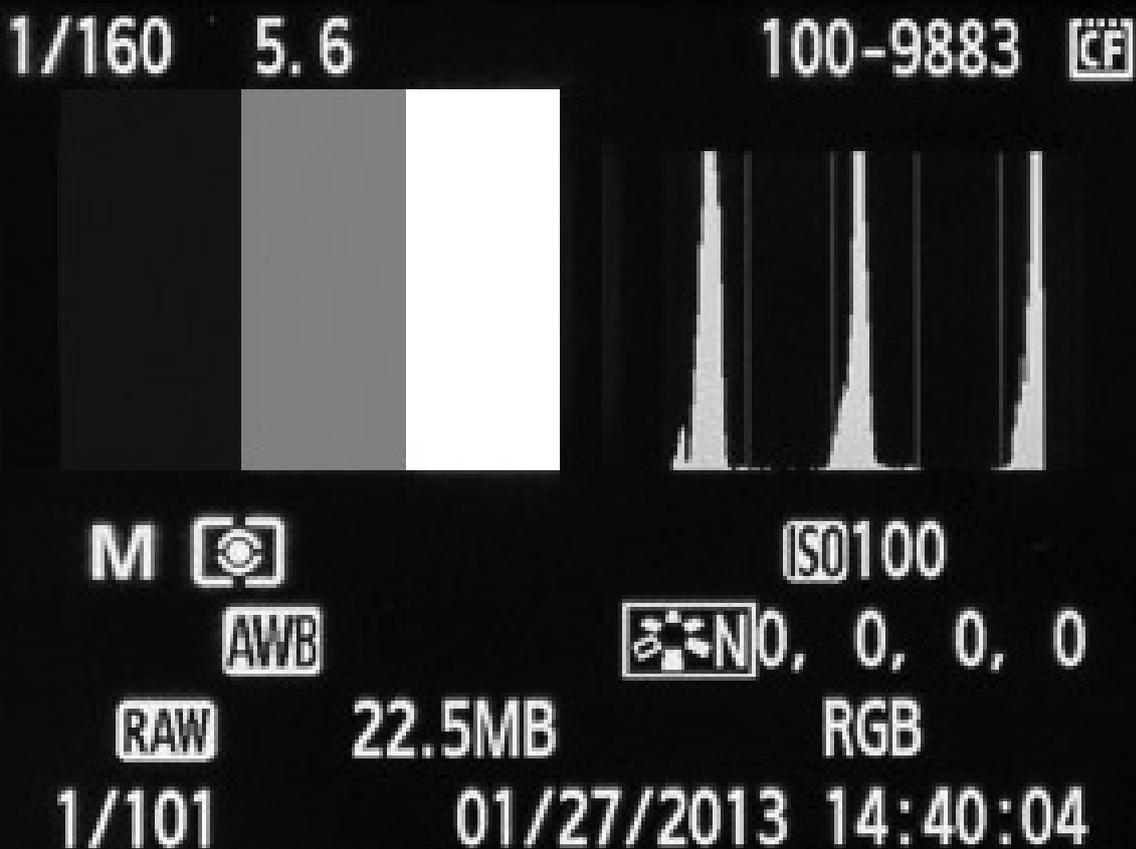
STEP

2

Reading the histogram

Place the Grey White Balance Card in front of the composition. The white band should be on the side of strongest light source. The card should fill your screen. You may need to zoom in or move closer. You may also need to turn your camera to manual focus in order to take a photo of this card. The image doesn't need to be in focus you can take a blurred shot.

Take a photo of the card. The histogram for the file should have fairly defined spikes in the darks, mids and highlights if correctly exposed. If not, adjust the shutter speed, flash or f-stop till you have the best exposure for all three bands.



04 | Getting started

Creating a custom white balance

STEP 3

Setting custom white balance

You now need to set your DSLR to Custom White Balance and load the image of the Grey White Balance Card. Remember to set your white balance to custom instead of AWB.

Your DSLR is now set to use a custom white balance.

The shots you take will now be using the same white balance unless you change back to another white balance setting or load a new image. Refer to your DSLR's user guide for setting a custom white balance as this may differ to the Canon EOS system.



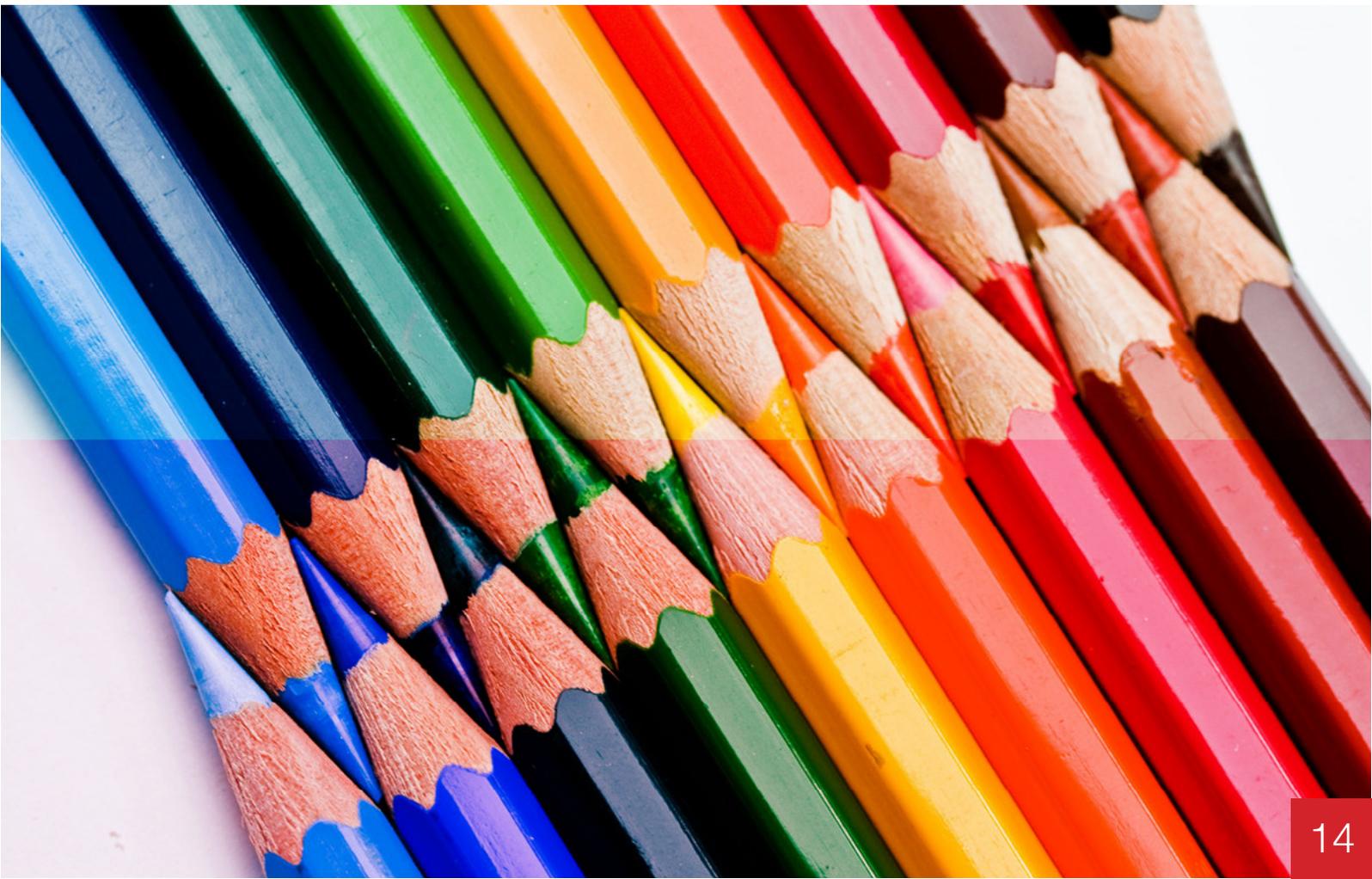
04 | Getting started

Creating a custom white balance

STEP 4

The results

The top image shows the photograph using the Custom White Balance. You can see that the image is more neutrally toned without the reddish colour cast of the shot on the left, the whites also look whiter. As long as you are in the same lighting environment you can now photograph away knowing all your photographs will have the same balance and neutral tone.



04 | Getting started

Neutral images with the Grey White Balance Card

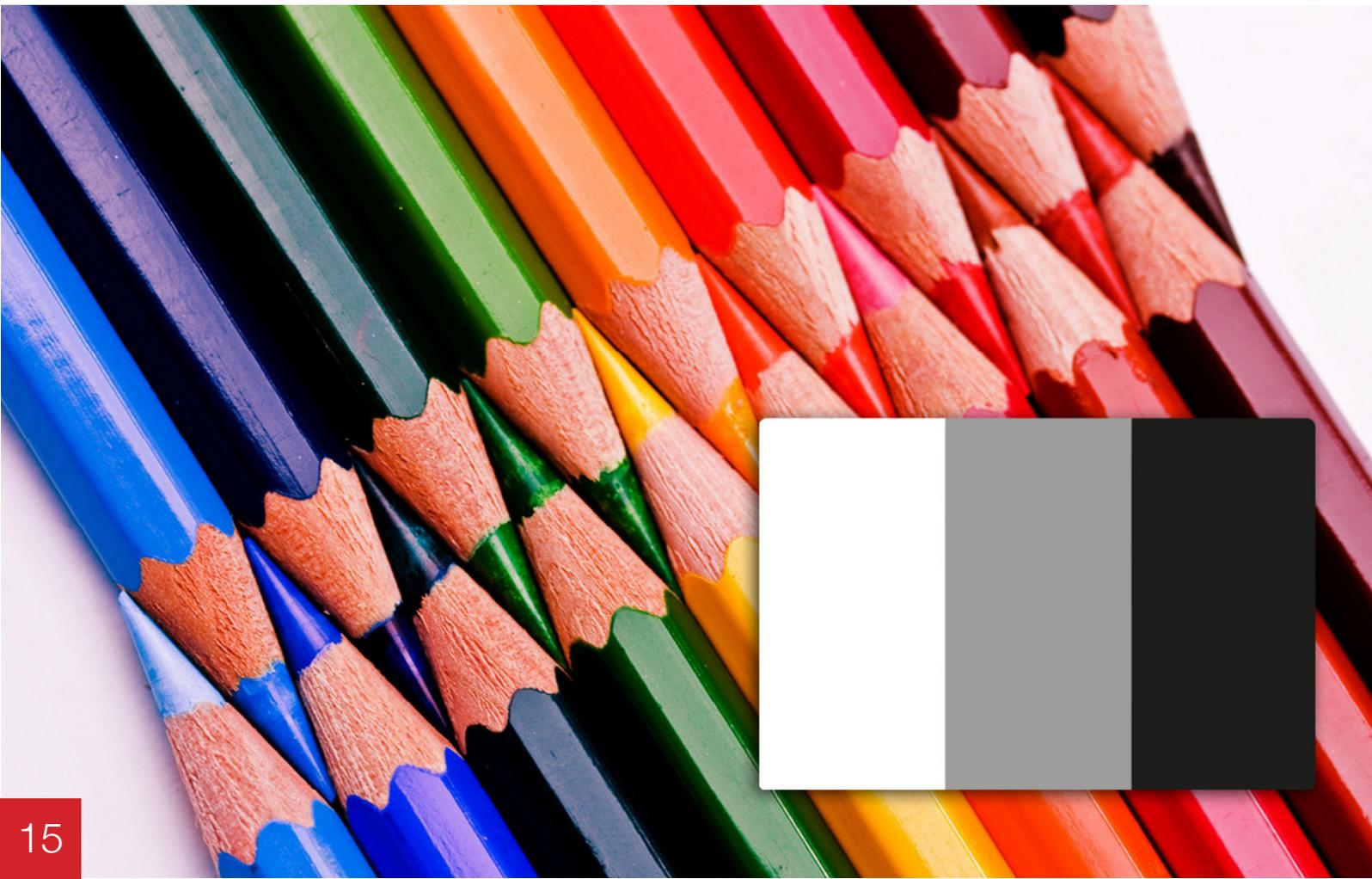
STEP

1

Setting up

It is not always possible to use a custom white balance but you can use the Grey White Balance Card to create a neutral balanced image in Photoshop and apply to several images.

Take a photograph of your composition including the Grey White Balance Card. Now take a photograph of your composition without the card. You will only need to use the Grey White Balance Card if you move to an area where the lighting has changed



04 | Getting started

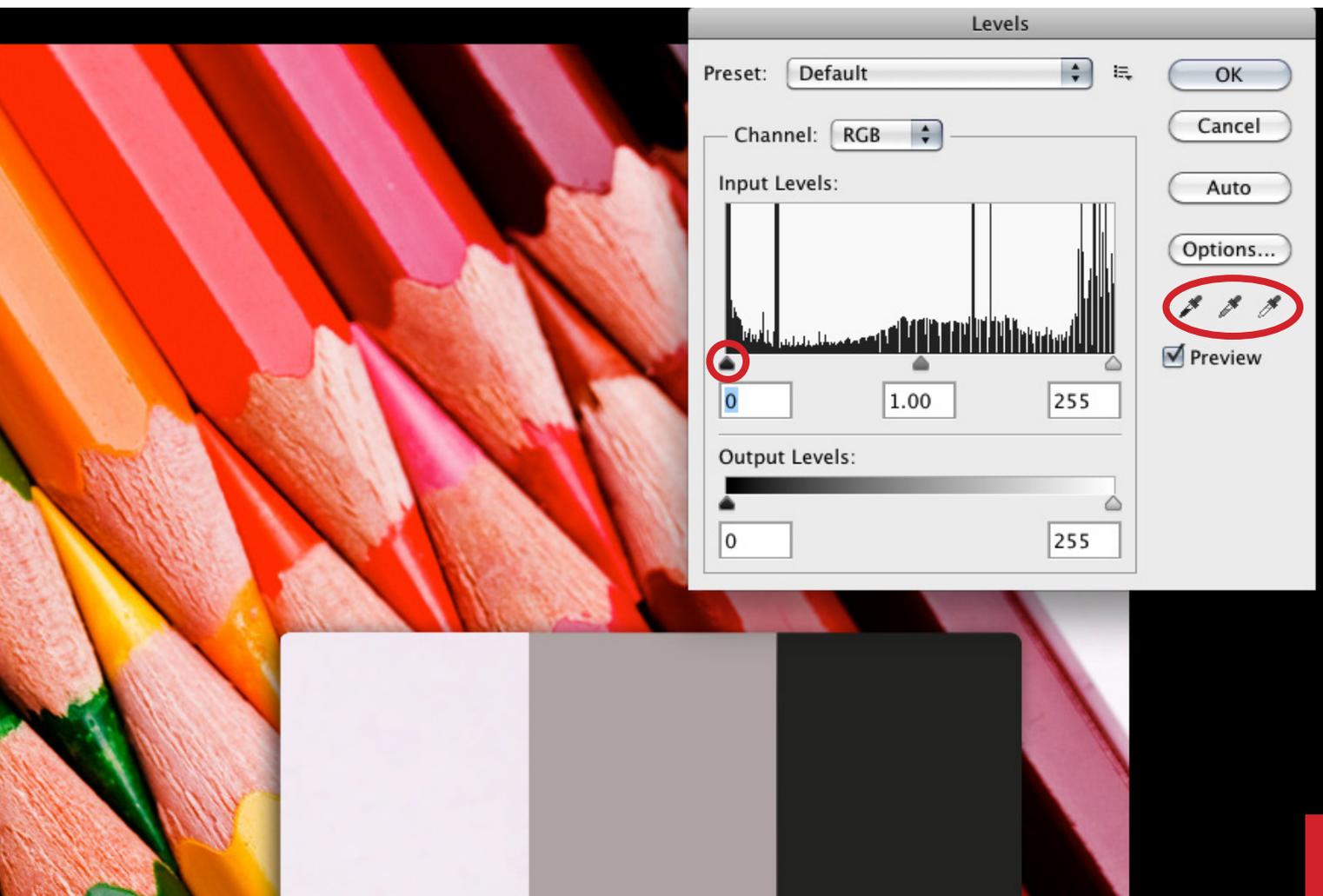
Neutral images with the Grey White Balance Card

STEP 2

Using Levels

In Photoshop open the image of the Grey White Balance Card.

Open the 'Levels' window. Using the white eye dropper click on the white band. Do the same for the middle band using the grey eye dropper. It is not away necessary to set the black eye drop as this may make the image too dark. You will have to use judgment for each photo. If necessary move the black point triangle to get the results you need.



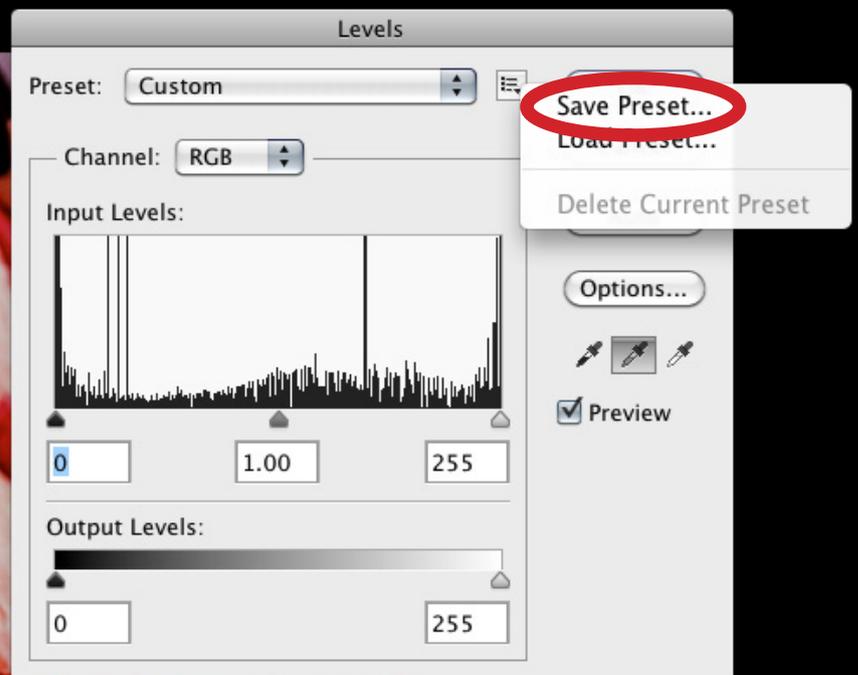
04 | Getting started

Neutral images with the Grey White Balance Card

STEP
3

Save Levels

Once you are happy with the results you will need to save these settings. Click the drop-down options for Levels and select Save Presets.



04 | Getting started

Neutral images with the Grey White Balance Card

STEP 4

Load Levels

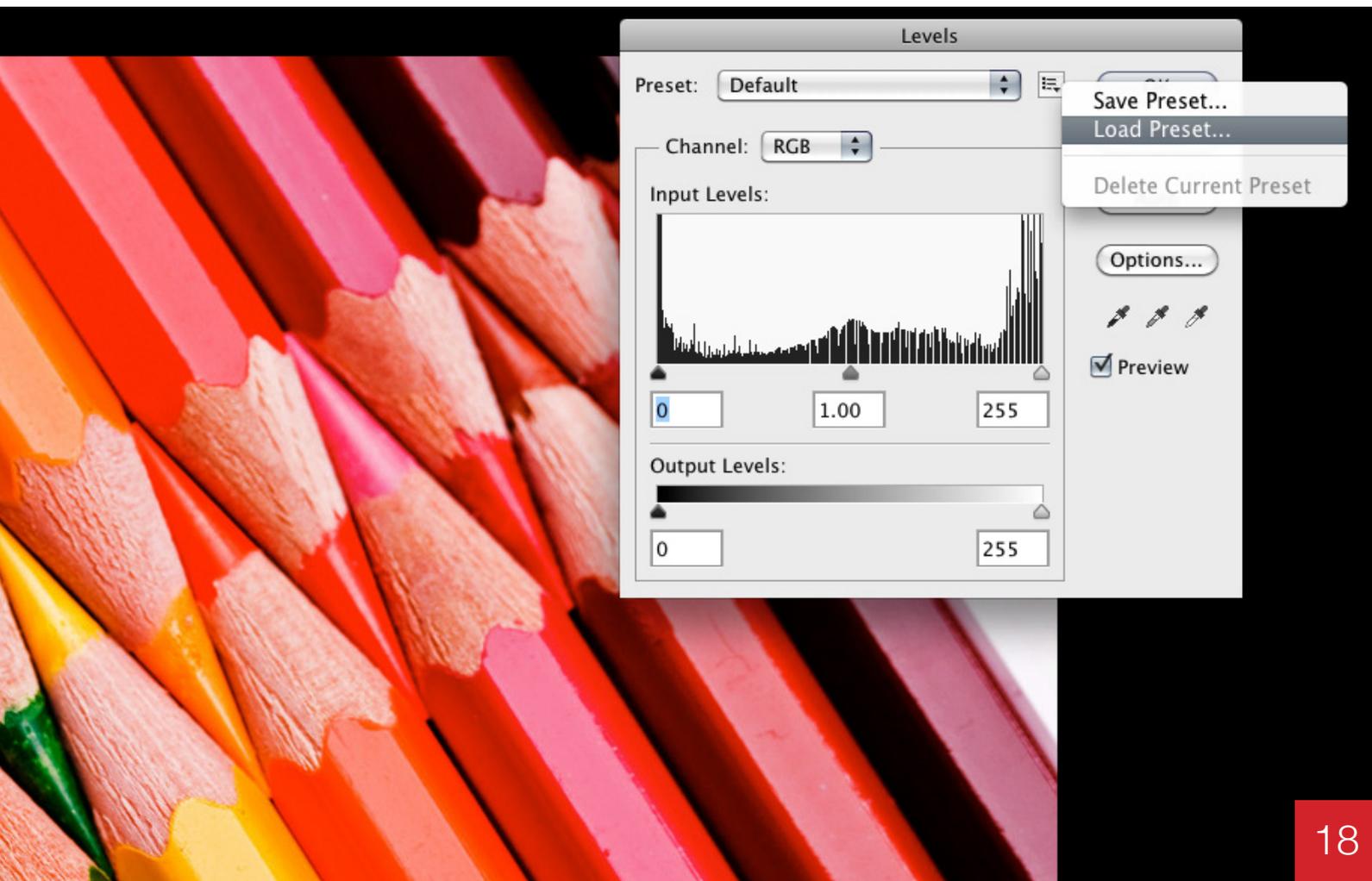
Now open one of the images without the card.

Open Levels again and load the Levels that you just saved.

The Levels for the Grey White Balance Card image will now be applied to this image. You can apply this same technique to the rest of your images.



TIP: If you have a lot of images to edit create a batch process in Photoshop to save time.



04 | Getting started

Neutral images with the Grey White Balance Card

STEP
5

The results

Image with Grey White Balance Card Levels applied.



Using the 24 Swatch Colour Card

STEP 1

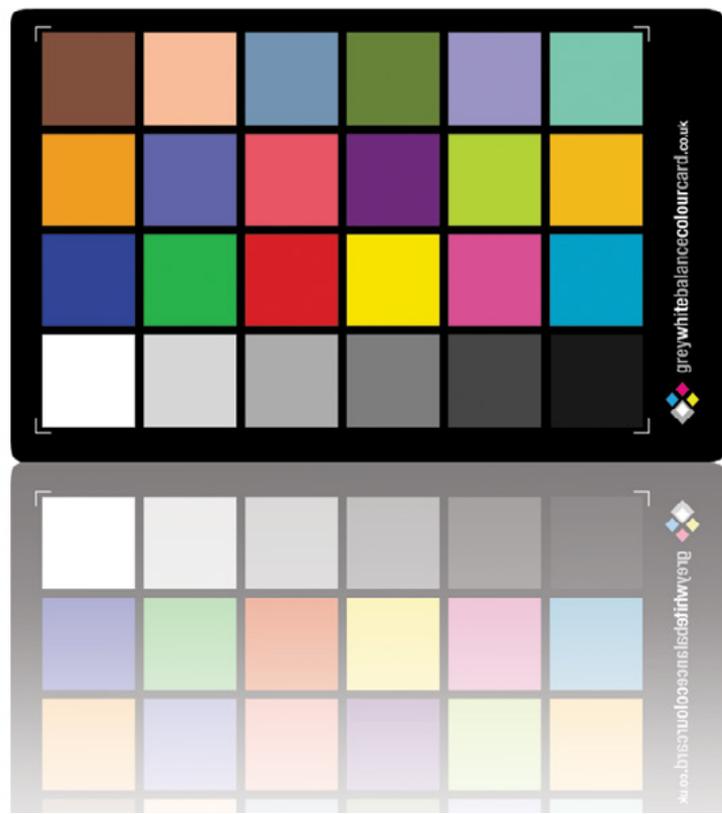
Getting starter

The 24 Swatch Colour Card is ideal for white balancing and more detailed colour correcting. Start by composing your photograph including the 24 Swatch Colour Card. Make the card part of the composition, you are not trying to fill the card in the view finder. Take a photograph of your composition.

Now take the same photograph but this time remove the 24 Swatch Colour Card. You will only need to take the card again if you move to a different lighting condition.



TIP: Under diverse lighting conditions or flash, glare may be picked-up on the matt coating of the card. Angle the card to eliminate this to a minimum. The card does not need to be shot perfectly flat on.



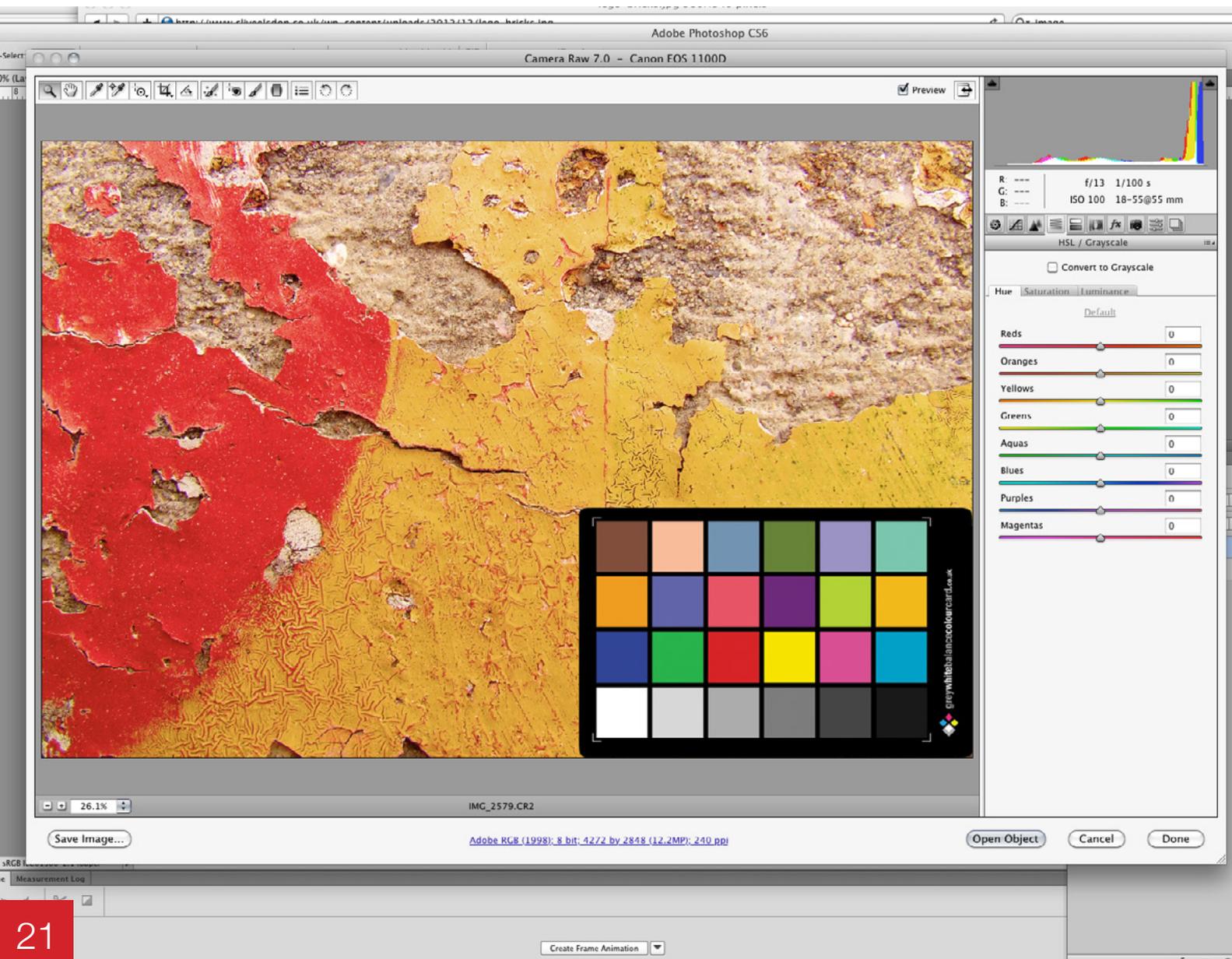
04 | Getting started

Using the 24 Swatch Colour Card

STEP 2

Colour adjustment in RAW

In RAW, load the photograph with the 24 Swatch Colour Card. Using the HSL and or any of the other settings make adjustments to closely match the 24 Swatch Colour Card or to the results you require.



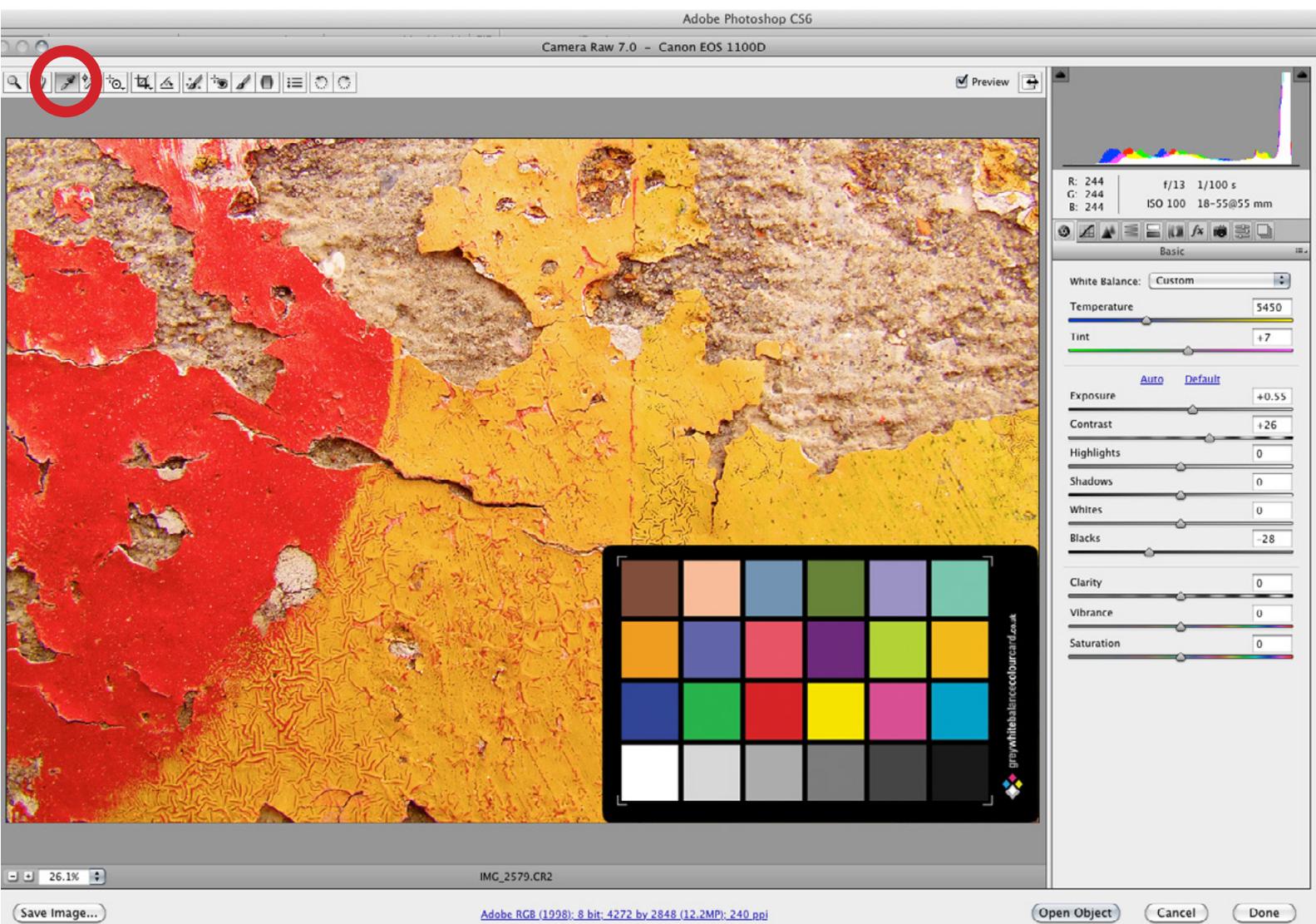
04 | Getting started

Using the 24 Swatch Colour Card

STEP 3

Setting the white balance in RAW

To set the white balance, click on the white eye dropper (circled in red) then select the white swatch or one of the light grey swatches. You can also slide the temperature setting to set your desired results.



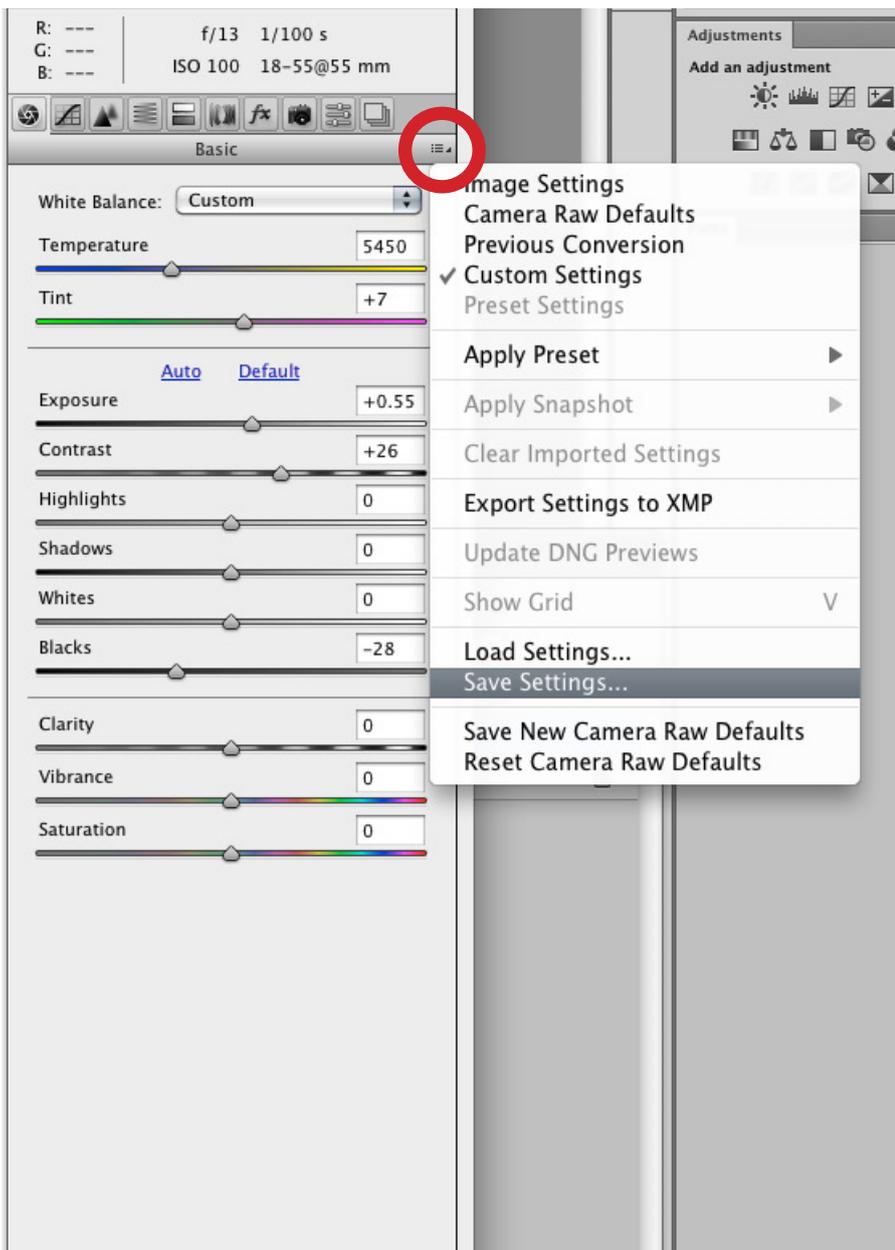
04 | Getting started

Using the 24 Swatch Colour Card

STEP
4

Save settings

Once you are happy with the adjustments, save these settings by selecting Save Settings from the drop-down menu. This will save your colour changes and the white balance temperature for use with your other photographs.



04 | Getting started

Using the 24 Swatch Colour Card

STEP 5

Apply settings

You can now open one of the images taken without the 24 Swatch Colour Card and apply the setting you created by selecting Load Settings.



TIP: Open several RAW images at once, 'Select All' then apply 'Load Settings' to all the images in one sweep.



The screenshot shows the Adobe Camera Raw interface. The top panel displays camera metadata: R: ---, G: ---, B: ---, f/13, 1/100 s, ISO 100, 18-55@55 mm. The Basic tab is active, showing various adjustment sliders and their values:

- White Balance: Custom
- Temperature: 5450
- Tint: +7
- Exposure: +0.55
- Contrast: +26
- Highlights: 0
- Shadows: 0
- Whites: 0
- Blacks: -28
- Clarity: 0
- Vibrance: 0
- Saturation: 0

A context menu is open over the settings, listing the following options:

- Image Settings
- Camera Raw Defaults
- Previous Conversion
- ✓ Custom Settings
- Preset Settings
- Apply Preset
- Apply Snapshot
- Clear Imported Settings
- Export Settings to XMP
- Update DNG Previews
- Show Grid
- Load Settings...
- Save Settings...
- Save New Camera Raw Defaults
- Reset Camera Raw Defaults

04 | Getting started

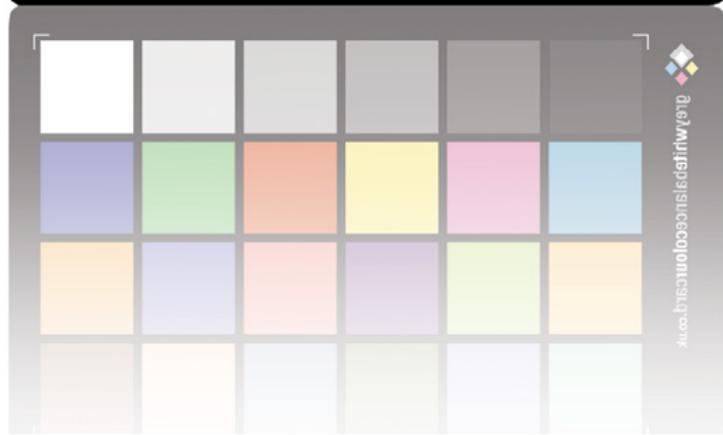
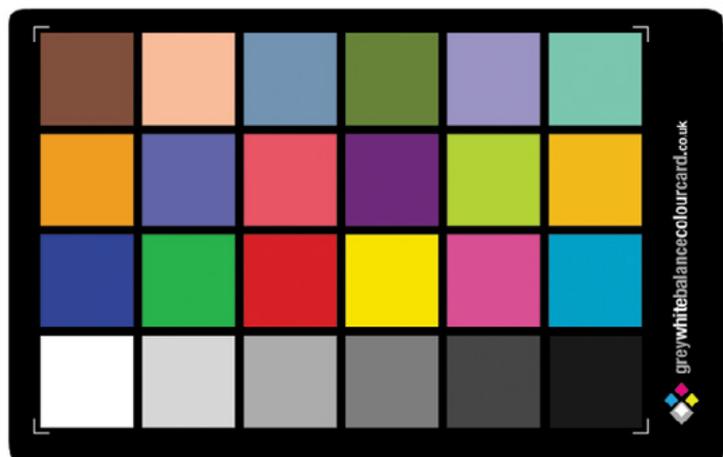
Using the 24 Swatch Colour Card with Xrite ColorChecker Passport

Xrite
ColorChecker
Passport

Getting started

The 24 Swatch colour card can be used with the Xrite ColorChecker Passport to automatically colour correct your reference image and create a camera profile for applying to your RAW images. Passport It is not designed as a 100% replacement for colour editing but as an aid to correcting your images and producing a faster work-flow.

If not already downloaded, use the link on the left.



04 | Getting started

Using the 24 Swatch Colour Card with Xrite ColorChecker Passport

Xrite ColorChecker Passport

ColorChecker Passport is a simple drag and drop streamline solution. Just drop your DNG file onto the image area and the application will automatically isolate the 24 swatch card. Press 'create profile', name and save. It's that simple. A profile will be generated and saved for use in Lightroom or Photoshop.

Now follow this simple guide for creating an automated work-flow and camera profile.

04 | Getting started

Using the 24 Swatch Colour Card with Xrite ColorChecker Passport

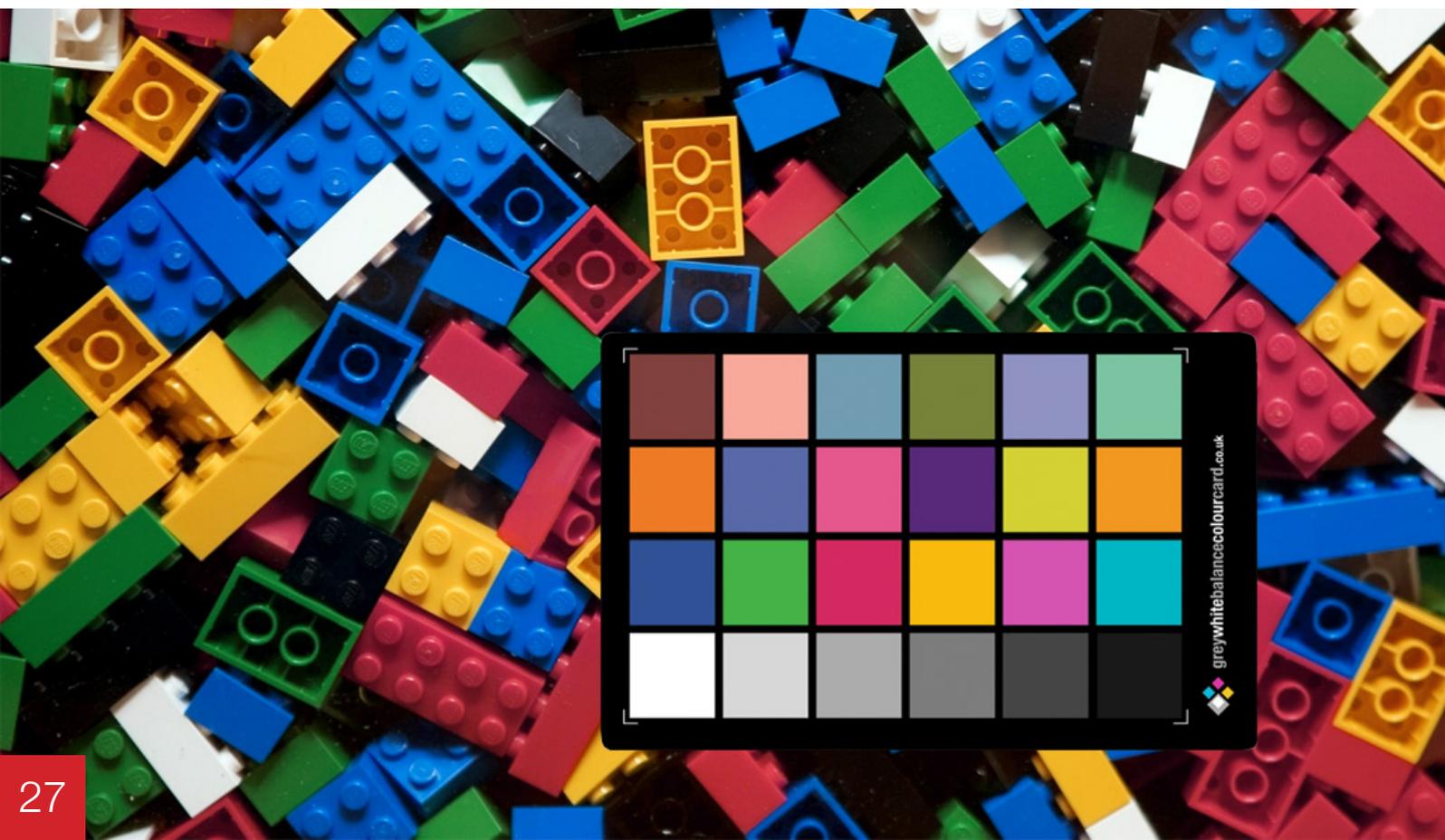
STEP

1

The composition

Set your camera to use RAW. Set your white balance if required. Set-up your composition with the Colour Card.

Take a photograph of your composition, making sure you have a good exposure. This photograph will be used as the reference file for creating the camera profile using ColorChecker Passport. Once this is done you can continue taking your photographs without the card.



04 | Getting started

Using the 24 Swatch Colour Card with Xrite ColorChecker Passport

STEP
2

Creating A DNG file

To use ColorChecker Passport you need to convert your RAW file to DNG format (digital negative). There are free converters on the web and Adobe have their own 'DNG Converter', (see download links on this page) but in this guide we will show you how this is done using Photoshop.

Open your RAW reference file in Photoshop. On the bottom left (circled red) you will see a button 'Save Image'. Select this button and save file to DNG format in a location easy to find.

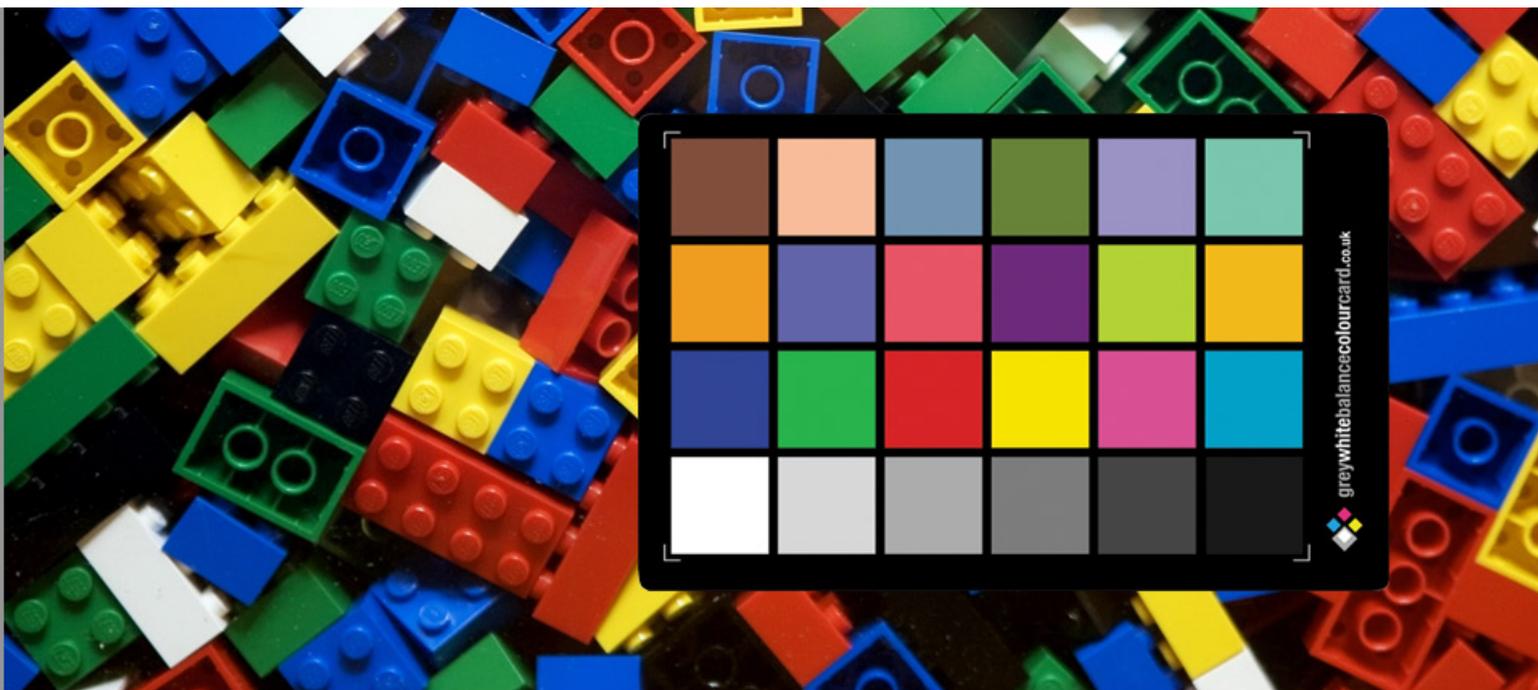
Once this is done quit Photoshop. Photoshop will not read the new camera profile till re-booted.

Adobe DNG Converter

PC

Adobe DNG Converter

MAC



Save Image...

Adobe RGB (1998): 8 bit; 3504 by 2336 (8.2MP); 240 ppi

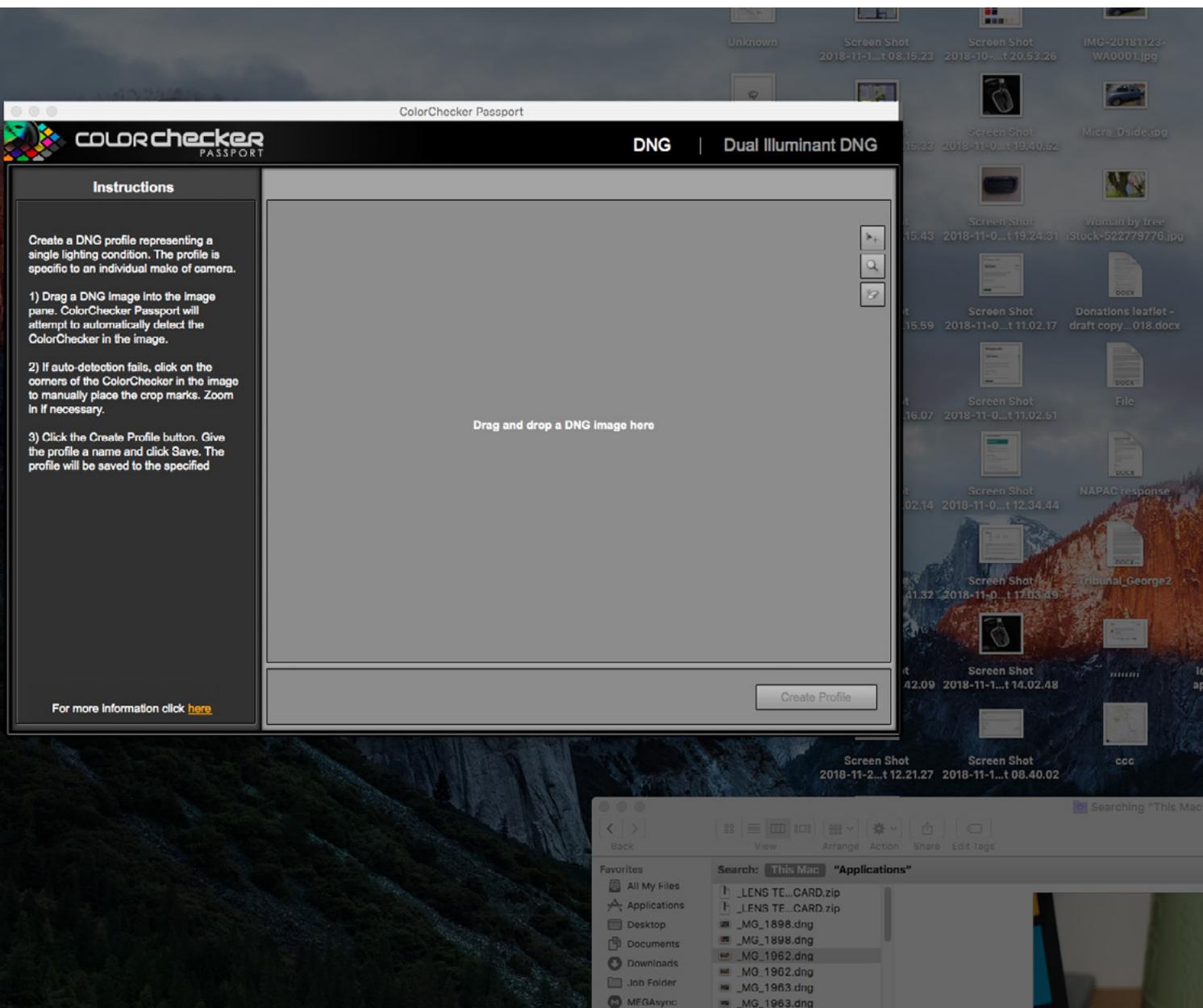
04 | Getting started

Using the 24 Swatch Colour Card with Xrite ColorChecker Passport

STEP 3

Open ColorChecker Passport

Open ColorChecker Passport, you will be presented with the drag and drop DNG box.



04 | Getting started

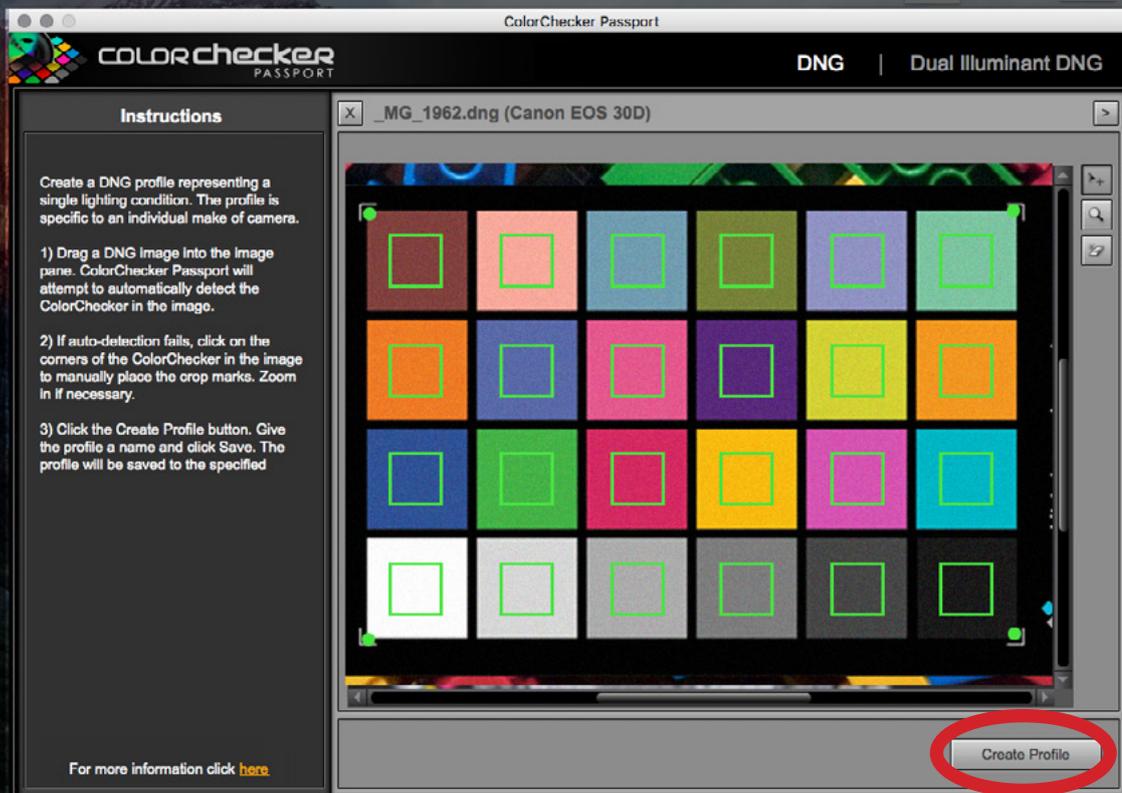
Using the 24 Swatch Colour Card with Xrite ColorChecker Passport

STEP
4

Drag and drop DNG file

Find your DNG file then drag and drop this onto the image area. The card will be isolated.

Now select 'Create Profile'.



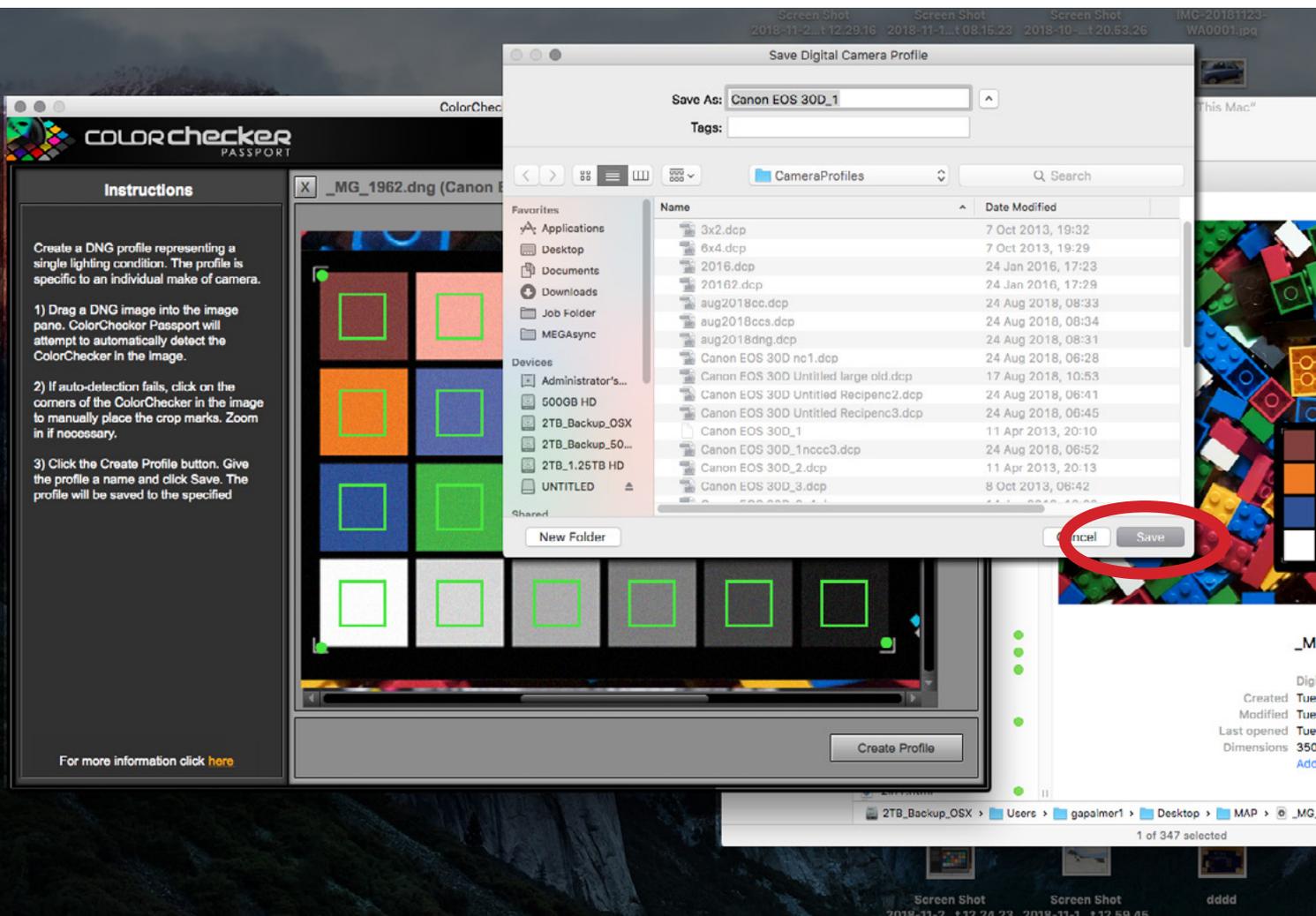
04 | Getting started

Using the 24 Swatch Colour Card with Xrite ColorChecker Passport

STEP 5

Name and save

Name and save your profile. This will be save in the correct location for Lightroom or Photoshop.



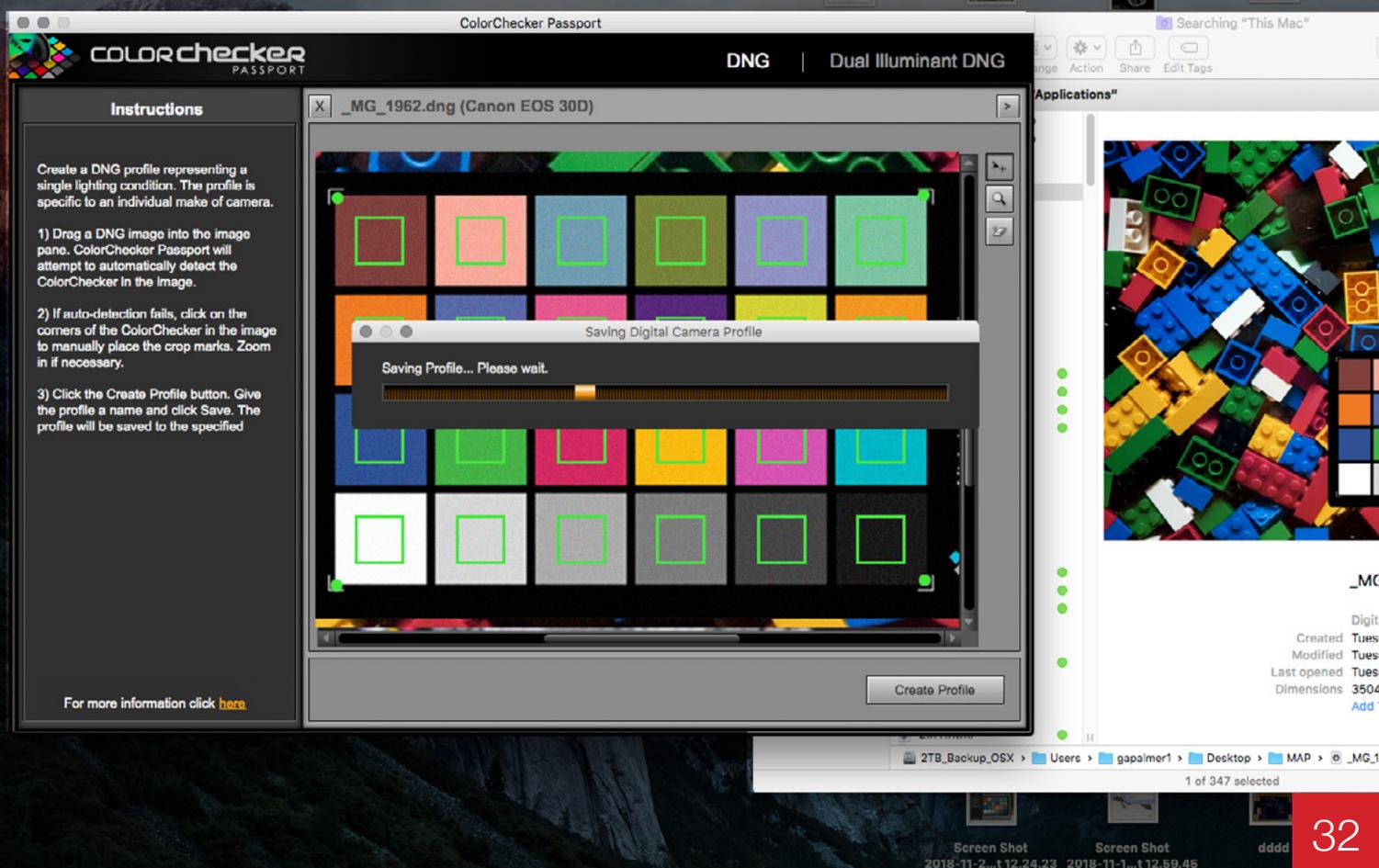
04 | Getting started

Using the 24 Swatch Colour Card with Xrite ColorChecker Passport

STEP 6

Creating Profile

The application will now start to process and save the profile.



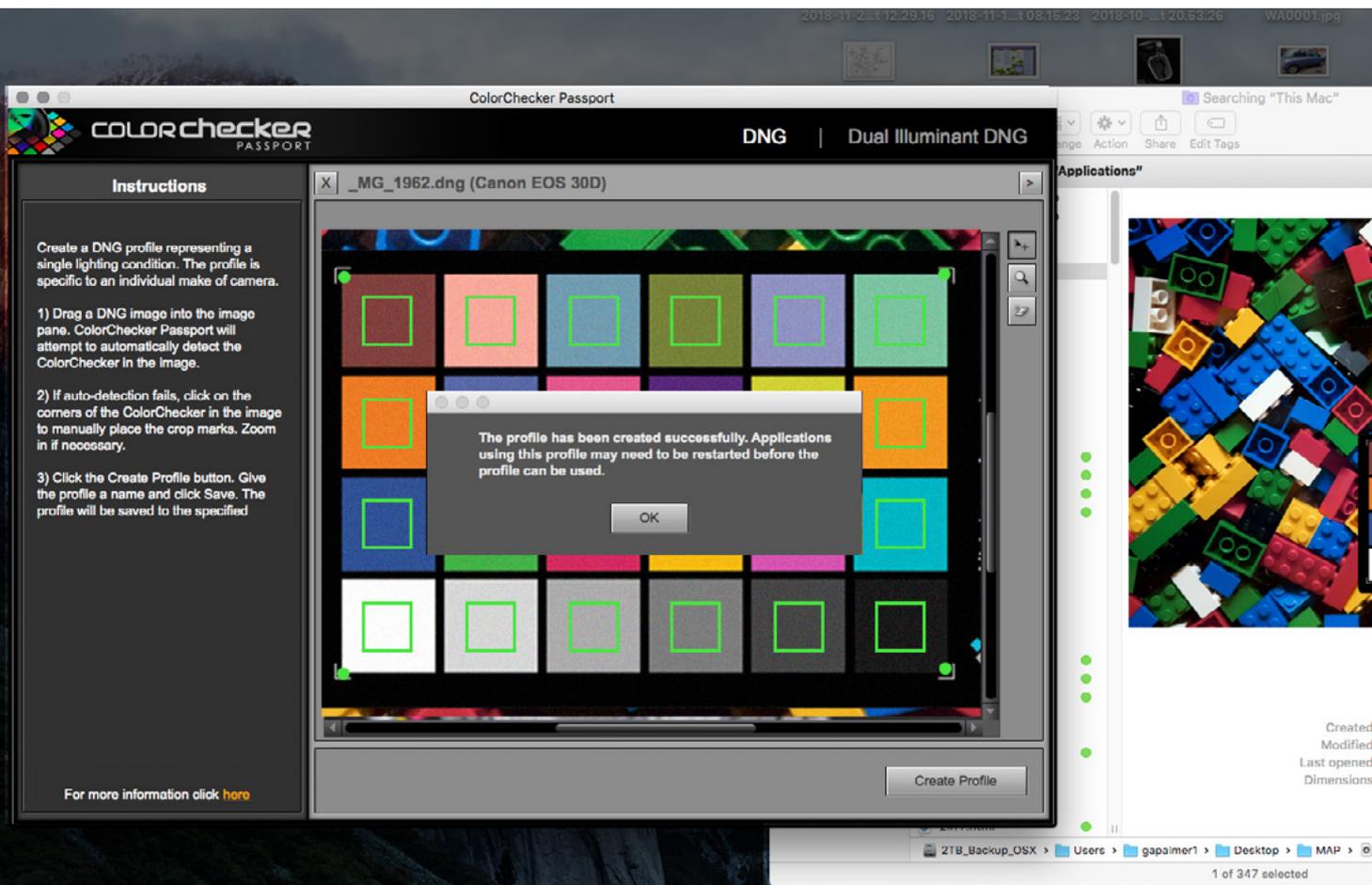
04 | Getting started

Using the 24 Swatch Colour Card with Xrite ColorChecker Passport

STEP 7

Quit Program

Once you have been presented with a 'The profile has been created successfully,' you can now quite the program.



04 | Getting started

Using the 24 Swatch Colour Card with Xrite ColorChecker Passport

STEP
8

Apply profile in RAW

Open Photoshop and the photograph with the Colour Card. In the RAW editor under Camera Profile you will now see the profile you exported in the drop-down menu.

Apply this to the photograph.



04 | Getting started

Using the 24 Swatch Colour Card with Xrite ColorChecker Passport

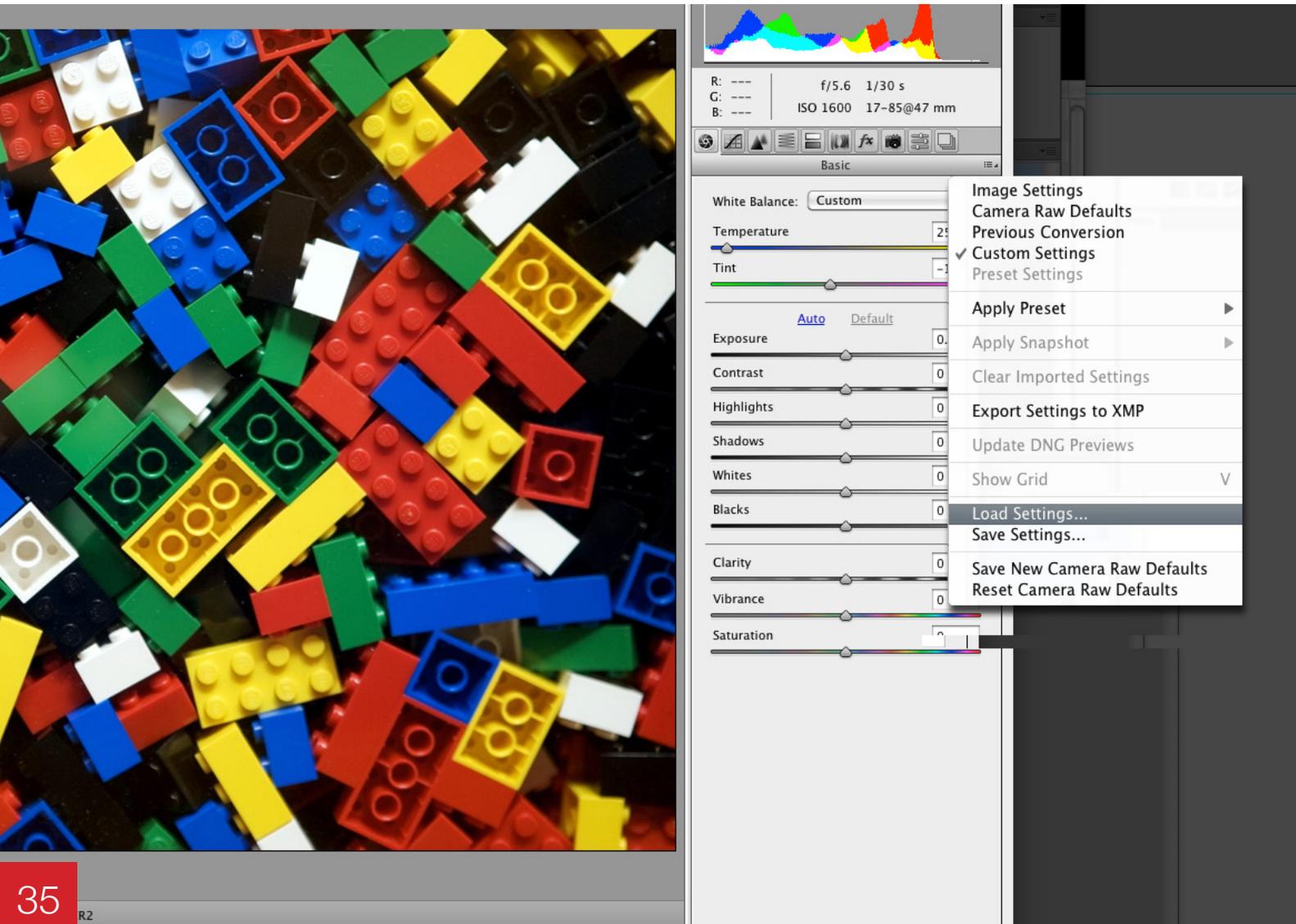
STEP
9

Load Settings

You can now open one of the photographs without the Colour Card. Under the same drop-down menu apply the setting you saved under 'Load Settings'.



TIP: Open several RAW images at once, 'Select All' then apply 'Load Settings' to all the images in one sweep.



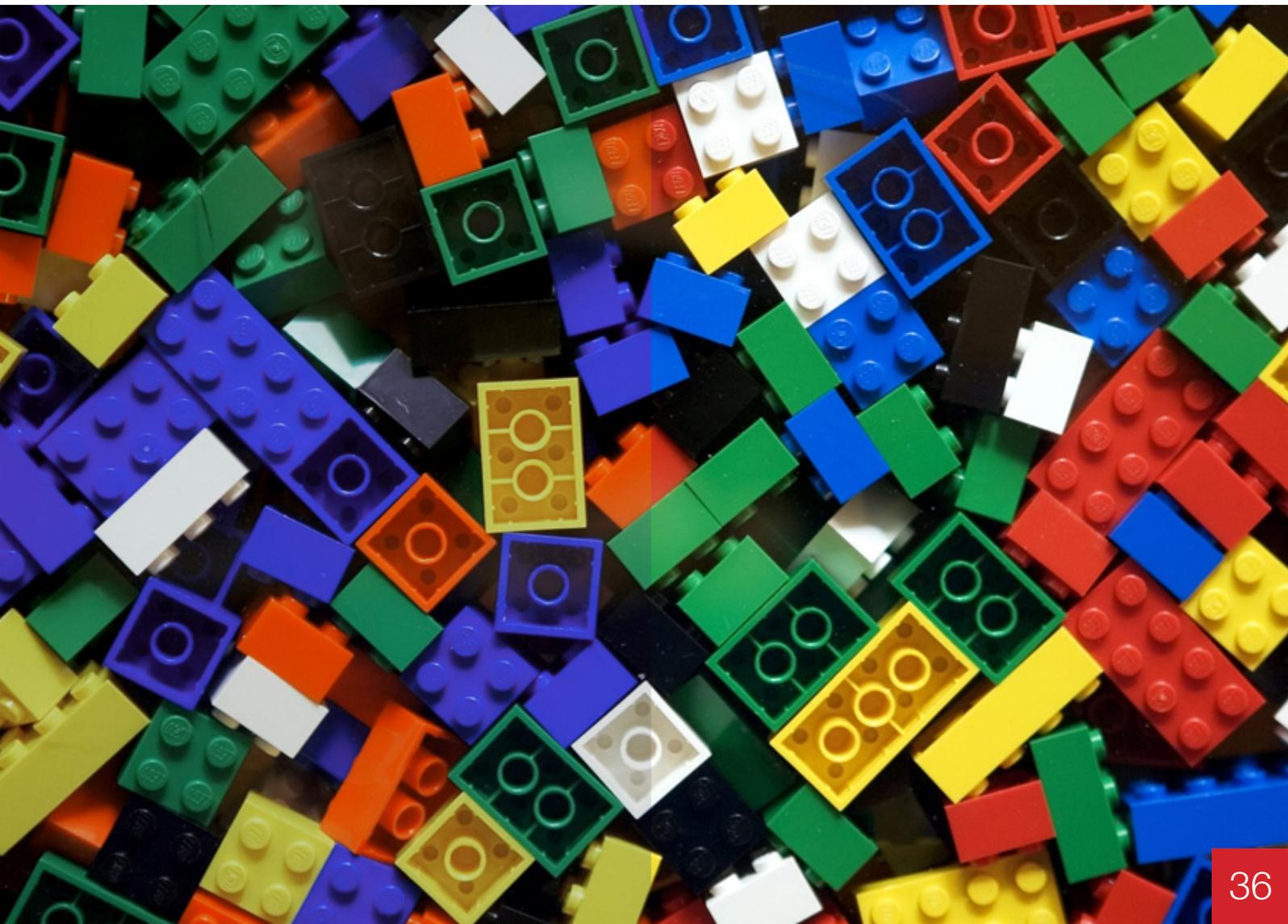
04 | Getting started

Using the 24 Swatch Colour Card with Xrite ColorChecker Passport

STEP 10

Before and after

Before and after image. You can see that the blues on the right are less purple, the reds less orange and the yellows less green. By using Xrite ColorChecker Passport you will achieve consistent colour management and a faster work-flow.



04 | Getting started

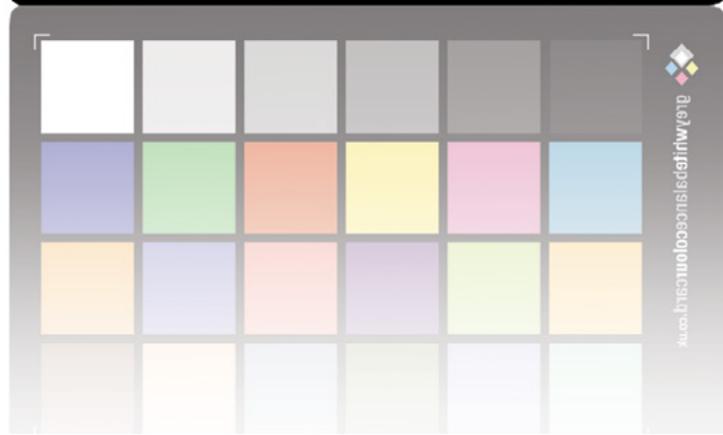
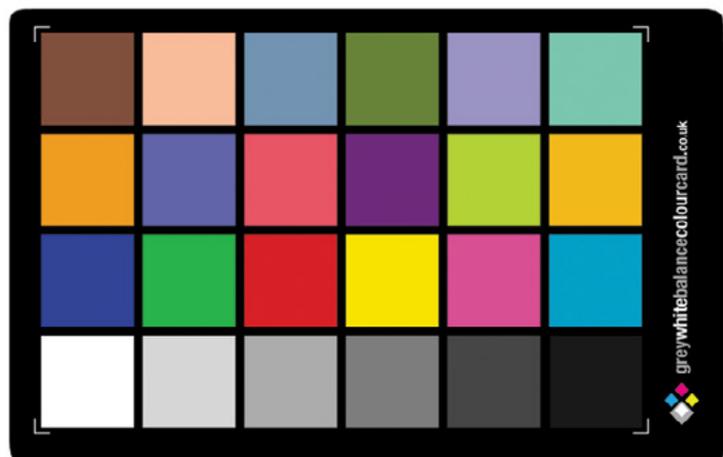
Using the 24 Swatch Colour Card with Adobe DNG Profile Editor

Adobe DNG Profile Editor User Guide

Getting started

The 24 Swatch colour card can be used with the Adobe DNG Profile Editor to automatically colour correct your reference image and create a camera profile for applying to your RAW images. Adobe DNG It is not designed as a 100% replacement for colour editing but as an aid to correcting your images and producing a faster work-flow.

Adobe DNG Profile Editor is a powerful editing tool and is designed for advanced users. The full Adobe DNG Profile Editor guide can be downloaded using the link on the left.



Using the 24 Swatch Colour Card with Adobe DNG Profile Editor

Important note about Adobe DNG Profiler Editor

Within Adobe DNG Profiler Editor colour adjustments will be made and a white balance temperature as if taken in neutral light. However, when it exports the profile for use in Photoshop or Lightroom it makes no assumption about the white balance temperature you require so will only export the colour changes as you may want a cooler or a warm white. If you require the white temperature that Adobe DNG Profiler Editor generates you will need to make a note of the setting and apply them to profile in RAW. This guide will show you how this is done and another means of setting the white temperature.

To use DNG Profile Editor you need to be shooting in RAW.

Now follow this simple guide for creating an automated work-flow and camera profile.

04 | Getting started

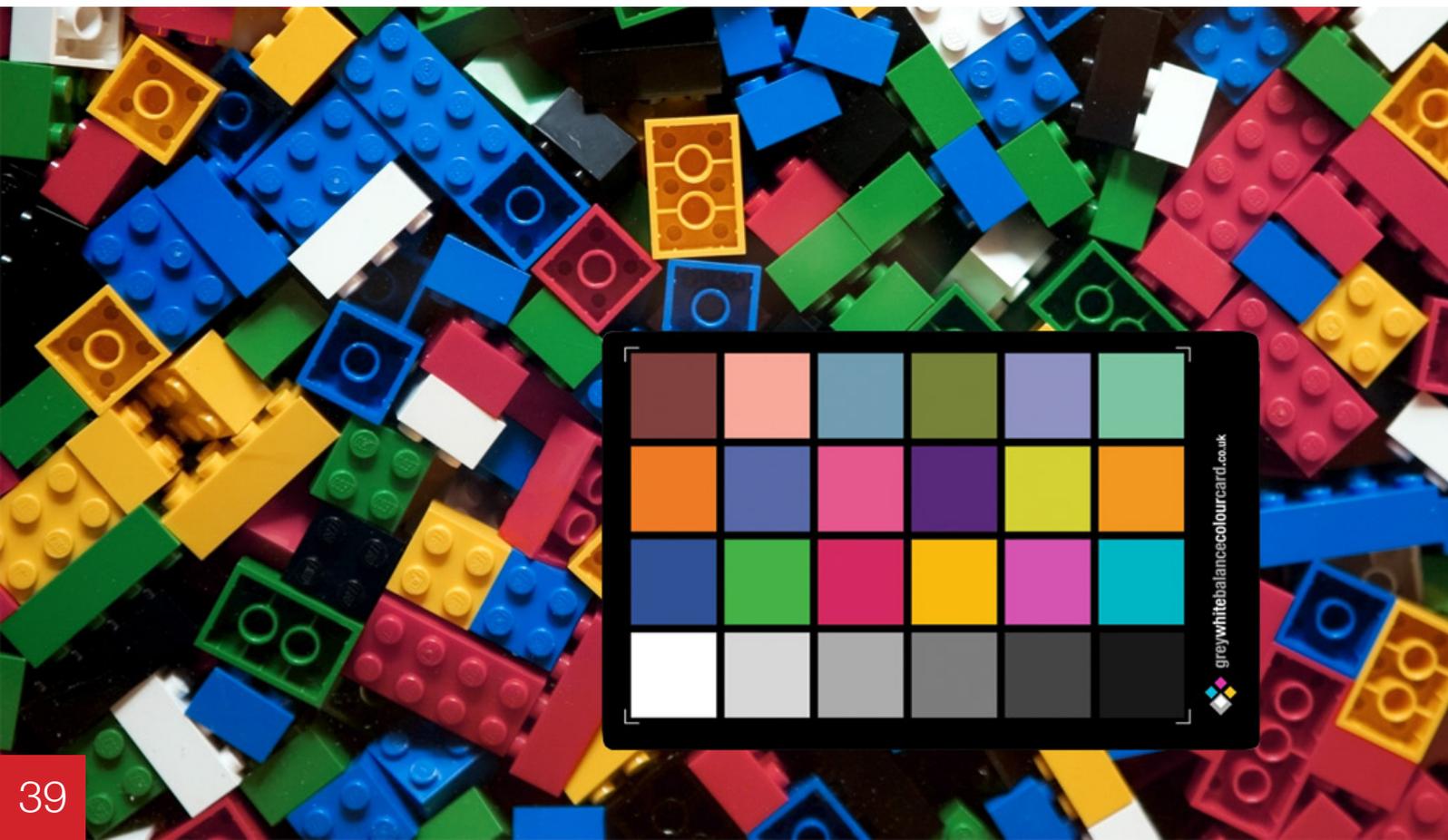
Using the 24 Swatch Colour Card with Adobe DNG Profile Editor

STEP 1

The composition

Set your camera to use RAW. Set your white balance if required. Set-up your composition with the Colour Card.

Take a photograph of your composition, making sure you have a good exposure. This photograph will be used as the reference file for creating the camera profile using Adobe DNG Profile Editor. Once this is done you can continue taking your photographs without the card.



04 | Getting started

Using the 24 Swatch Colour Card with Adobe DNG Profile Editor

STEP
2

Creating A DNG file

To use DNG Profile Editor you need to convert your RAW file to DNG format (digital negative). There are free converters on the web and Adobe have their own 'DNG Converter', (download links on the left) but this guide we will show you how this is done using Photoshop.

Open your RAW reference file in Photoshop. On the bottom left (circled red) you will see a button 'Save Image'. Select this button and save file to DNG format in a location easy to find.

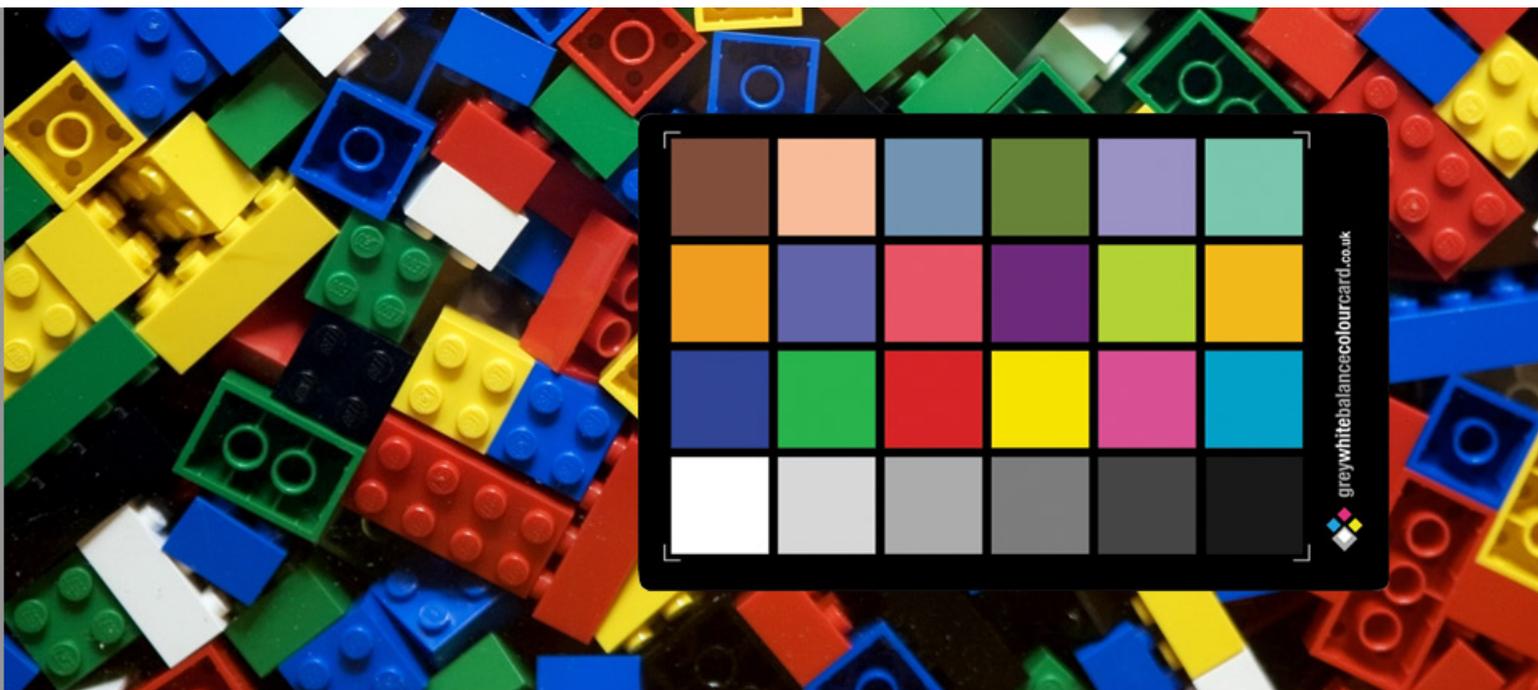
Once this is done quit Photoshop. Photoshop will not read the new camera profile till re-booted.

Adobe DNG Converter

PC

Adobe DNG Converter

MAC



Save Image...

Adobe RGB (1998): 8 bit; 3504 by 2336 (8.2MP); 240 ppi

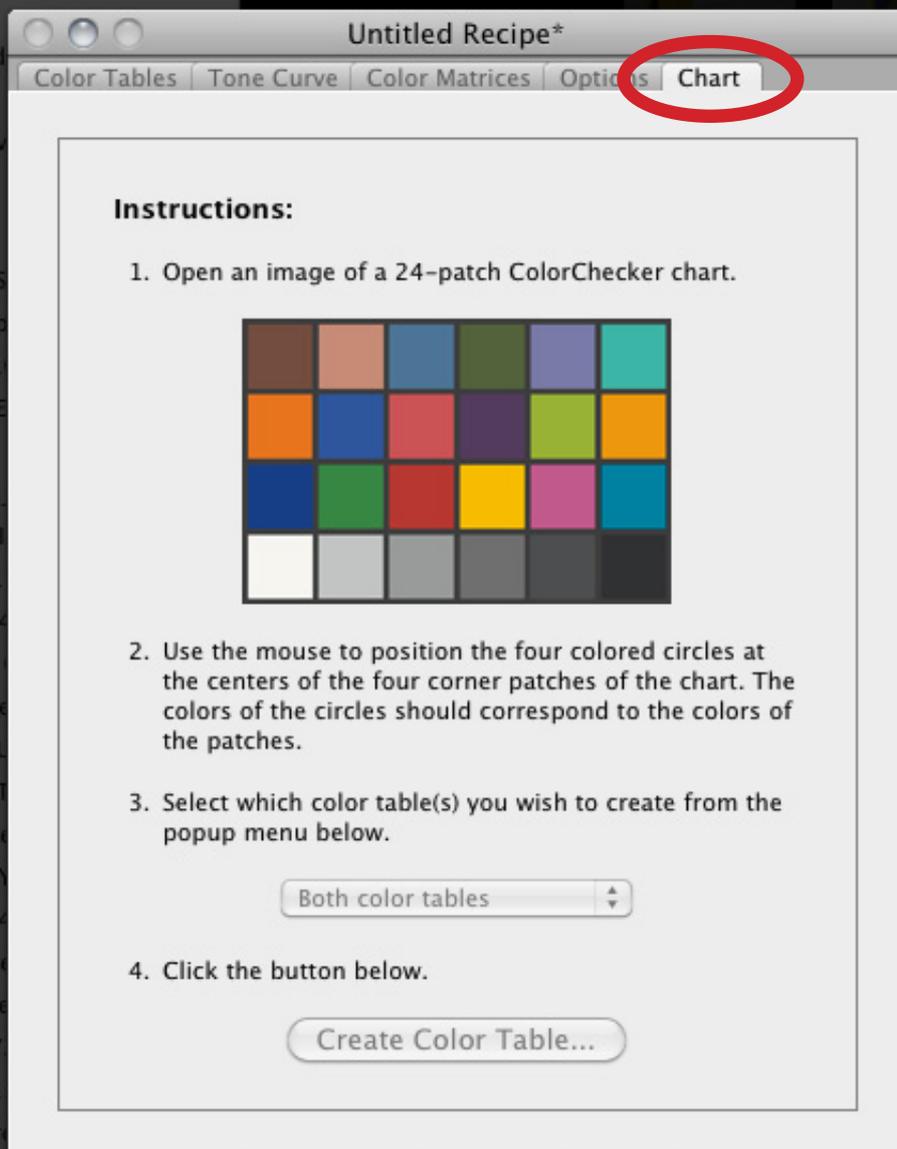
04 | Getting started

Using the 24 Swatch Colour Card with Adobe DNG Profile Editor

STEP
3

Open DNG Profile Editor

Open Adobe DNG Profile Editor and select the 'Chart' tab.



04 | Getting started

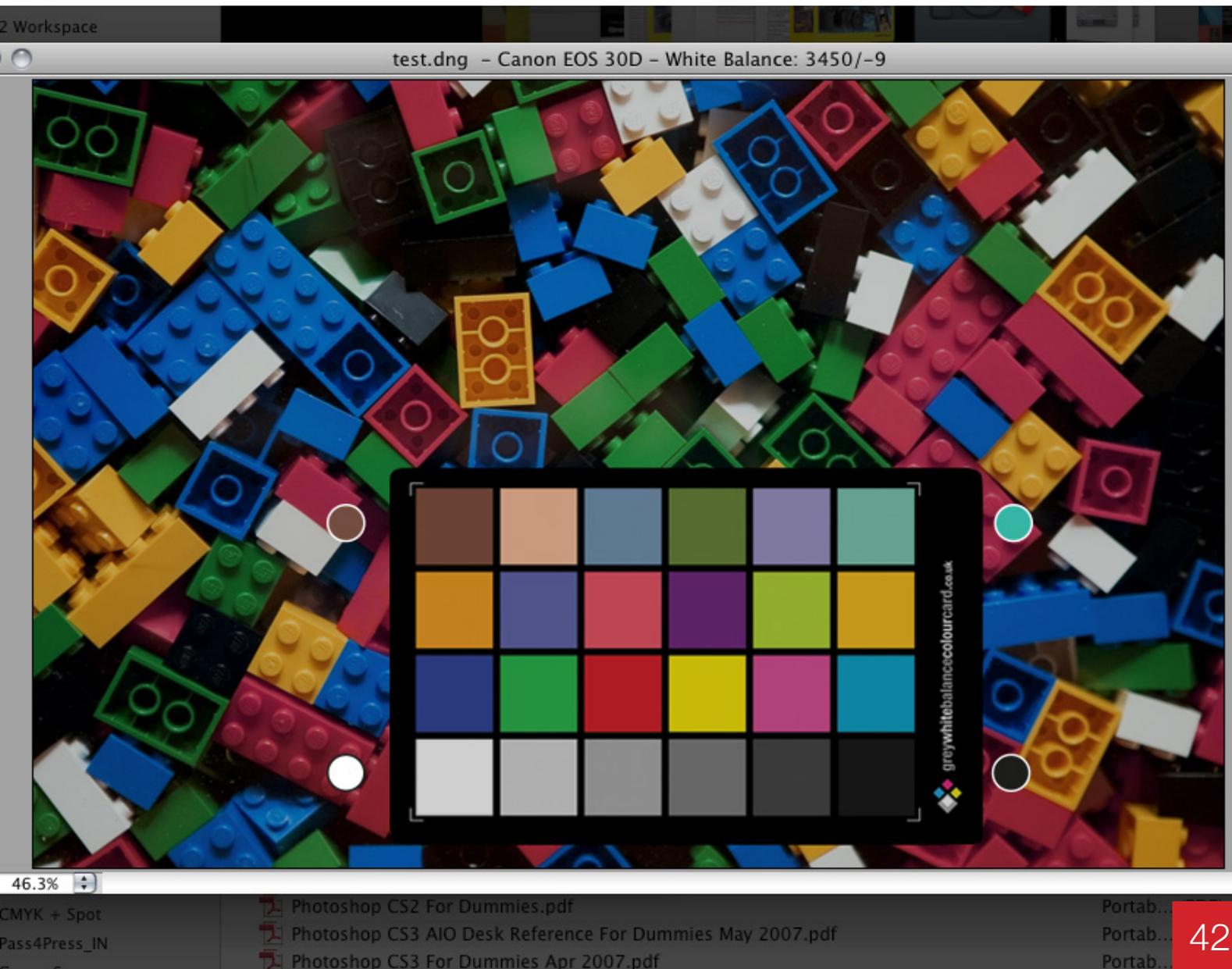
Using the 24 Swatch Colour Card with Adobe DNG Profile Editor

STEP 4

Open the DNG file

Now go to 'File' in the menu and select 'Open DNG Image'. Open the file you saved in DNG format.

Once you open this file you will see 4 coloured dots.



04 | Getting started

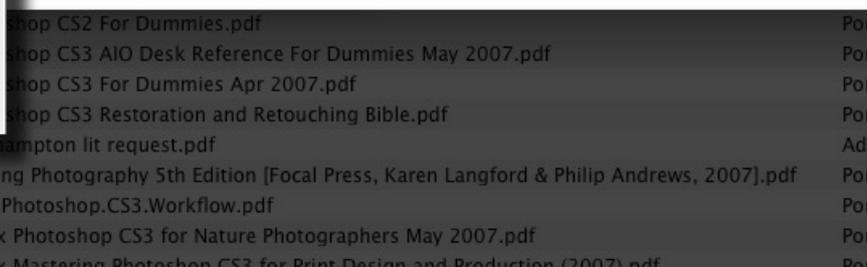
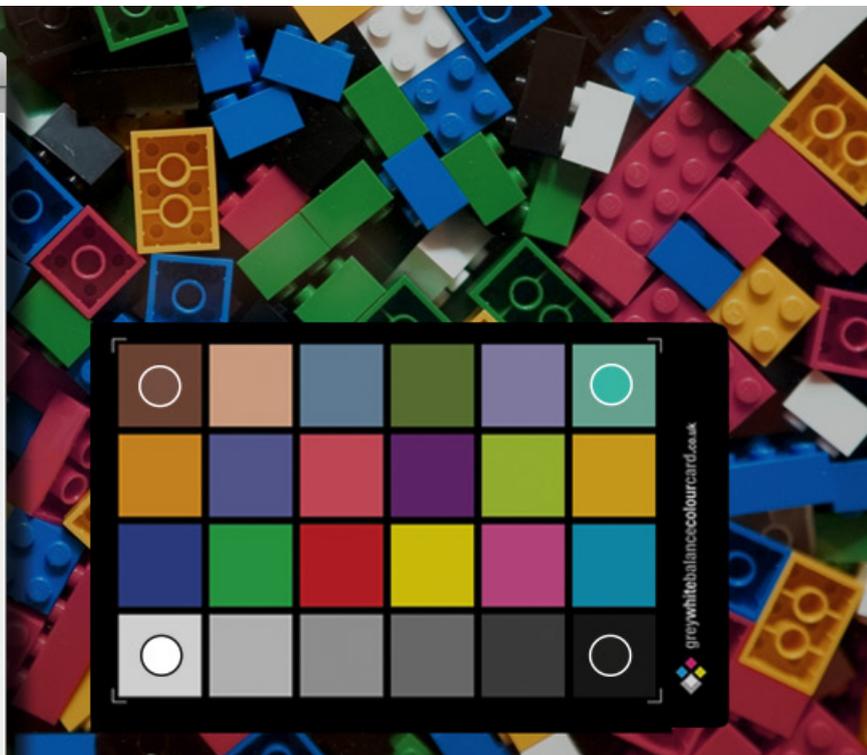
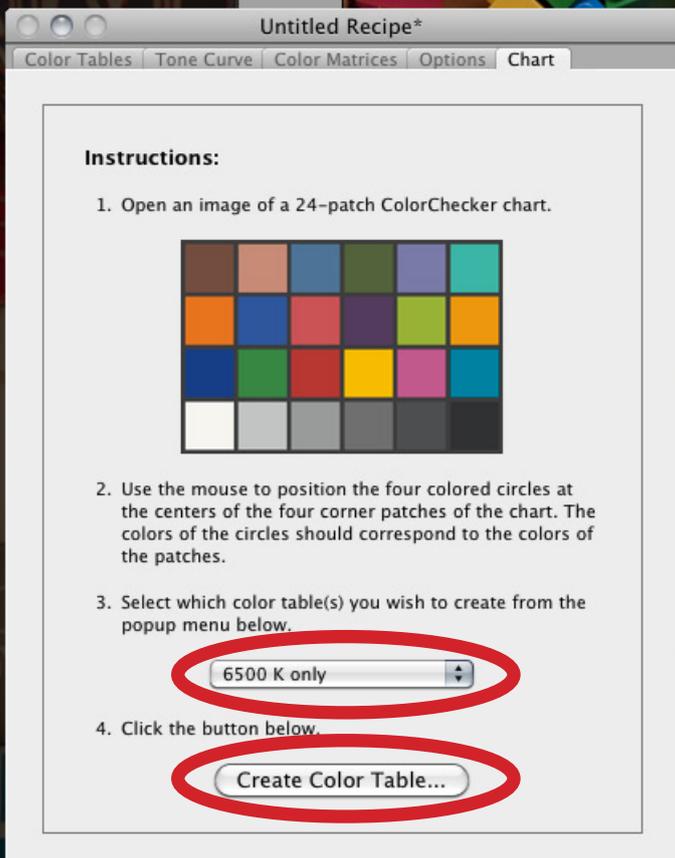
Using the 24 Swatch Colour Card with Adobe DNG Profile Editor

STEP 5

Position the four coloured dots

Using the mouse, position these dots to the middle of each matching corner swatches.

In the 'Chart' tab, select a colour temperature (6500k is the neutral colour temperature). Now select 'Create Colour Table'.



04 | Getting started

Using the 24 Swatch Colour Card with Adobe DNG Profile Editor

STEP 6

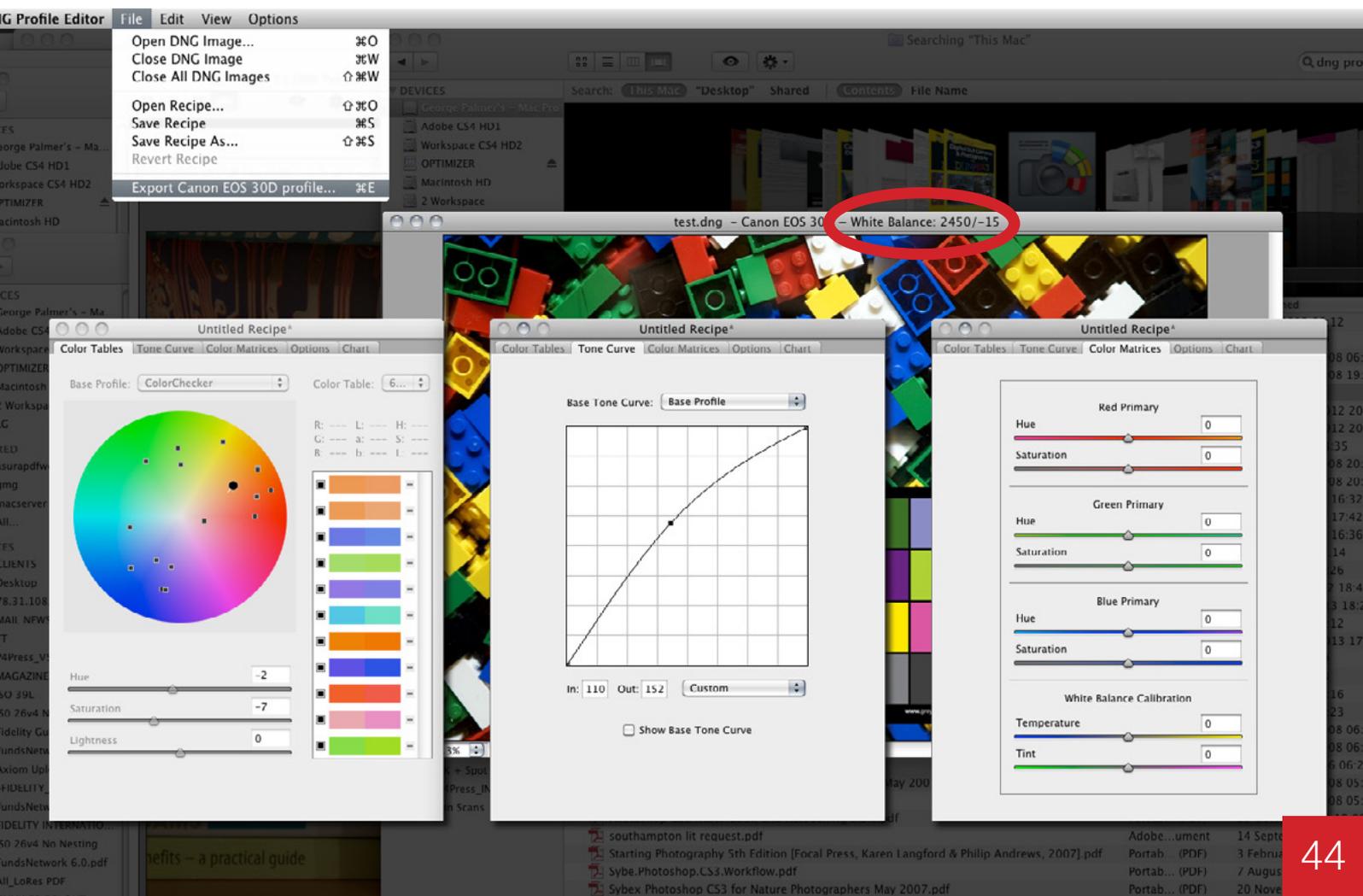
Colour tables, curves and colour matrices

Once a colour table is created it can be edited if required. You can also use the curves and colour matrices for even finer tuning. Make a note of your new White Balance (circled here in red), you will need this reading in RAW.

Once you are happy with the results, export profile from the File menu. Adobe DNG Profile Editor will save it in the correct folder so that your image editing program can read it.



TIP: Name your profile using your white balance setting e.g. 'newprofile_2450_-15'



04 | Getting started

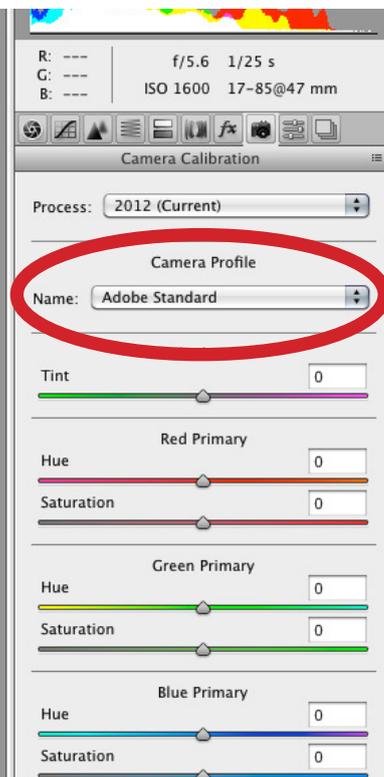
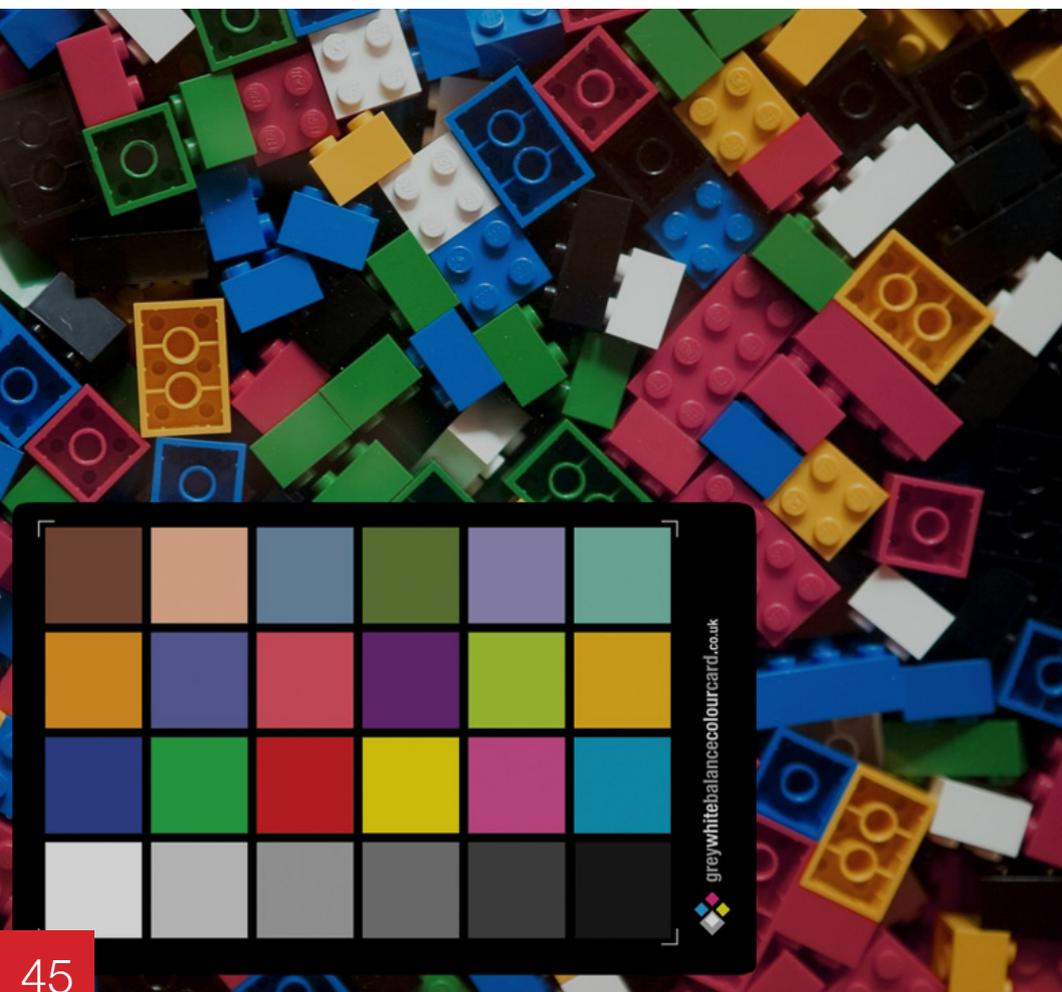
Using the 24 Swatch Colour Card with Adobe DNG Profile Editor

STEP
7

Apply profile in RAW

Open Photoshop and the photograph with the Colour Card. In the RAW editor under Camera Profile you will now see the profile you exported from Adobe DNG Profile Editor in the drop-down menu.

Apply this to the photograph.



04 | Getting started

Using the 24 Swatch Colour Card with Adobe DNG Profile Editor

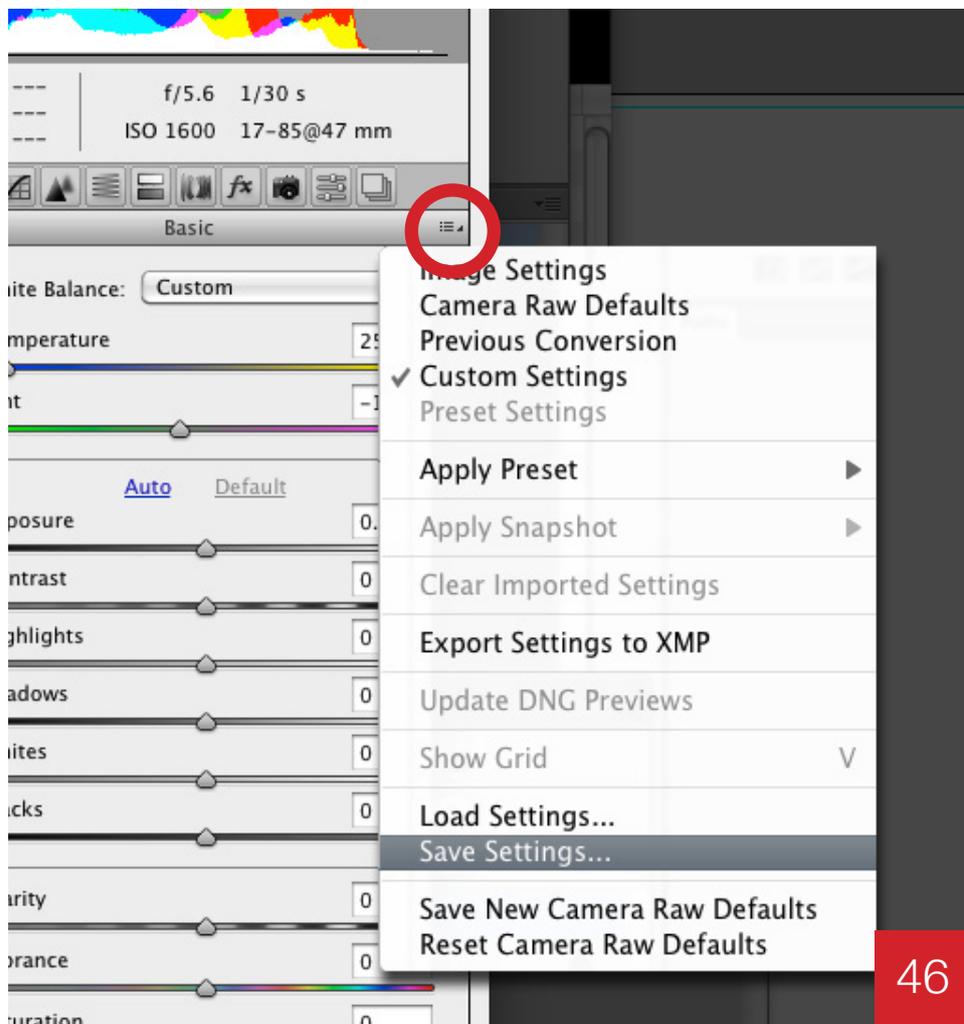
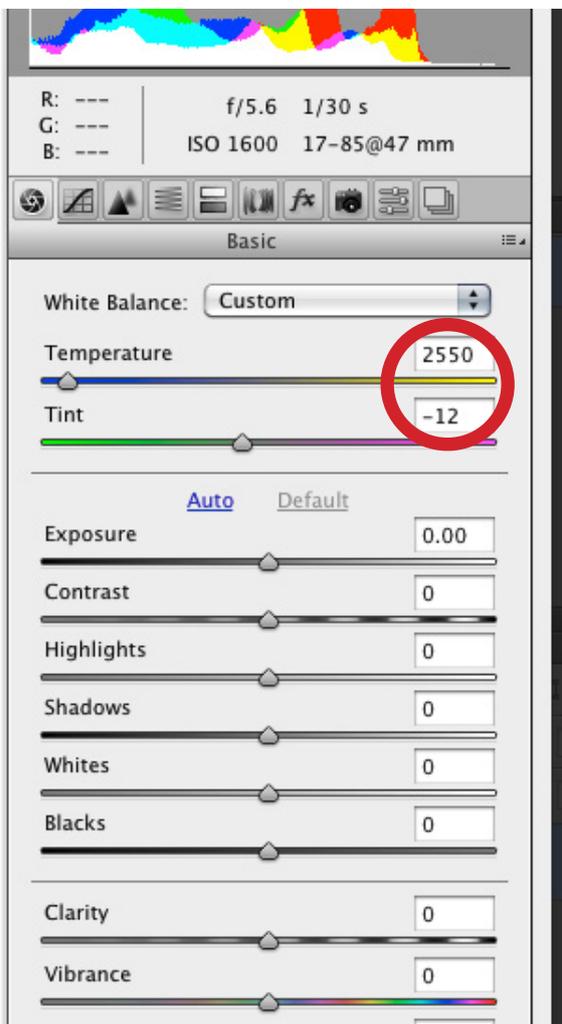
STEP
8

Enter your Temperature and Tint settings

Under Basic, enter your Temperature and Tint settings that you noted in DNG Profile Editor. Save these setting under the options drop-down menu. This will save your White Balance, the Camera Profile applied, and any other changes you have made in RAW.

Creating your own white balance temperature

If you want to set your own white balance temperature refer to [page 20](#), this shows how to use the white eye dropper on the white or one of the grey swatches.



04 | Getting started

Using the 24 Swatch Colour Card with Adobe DNG Profile Editor

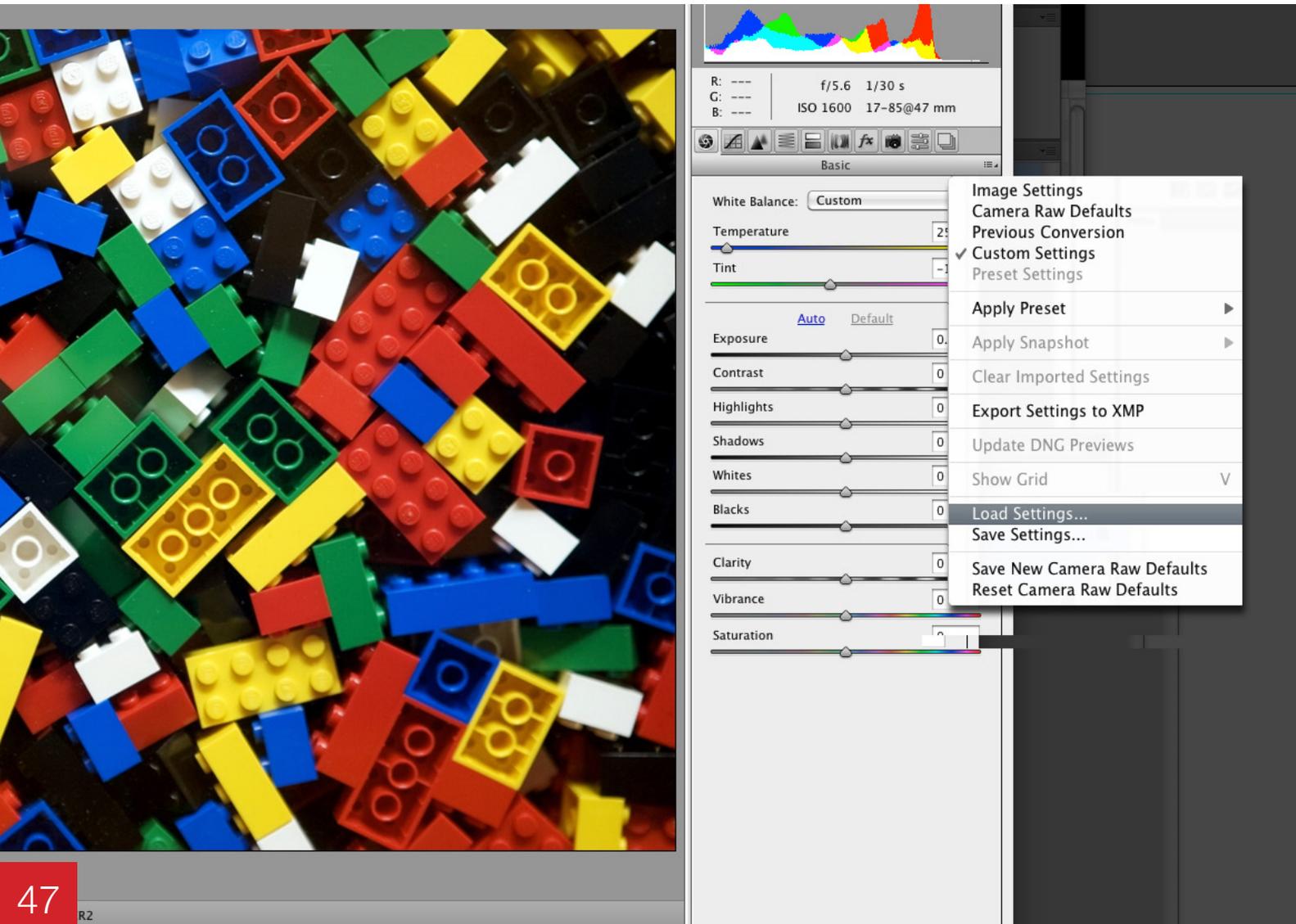
STEP
9

Load Settings

You can now open one of the photographs without the Colour Card. Under the same drop-down menu apply the setting you saved under 'Load Settings'.



TIP: Open several RAW images at once, 'Select All' then apply 'Load Settings' to all the images in one sweep.



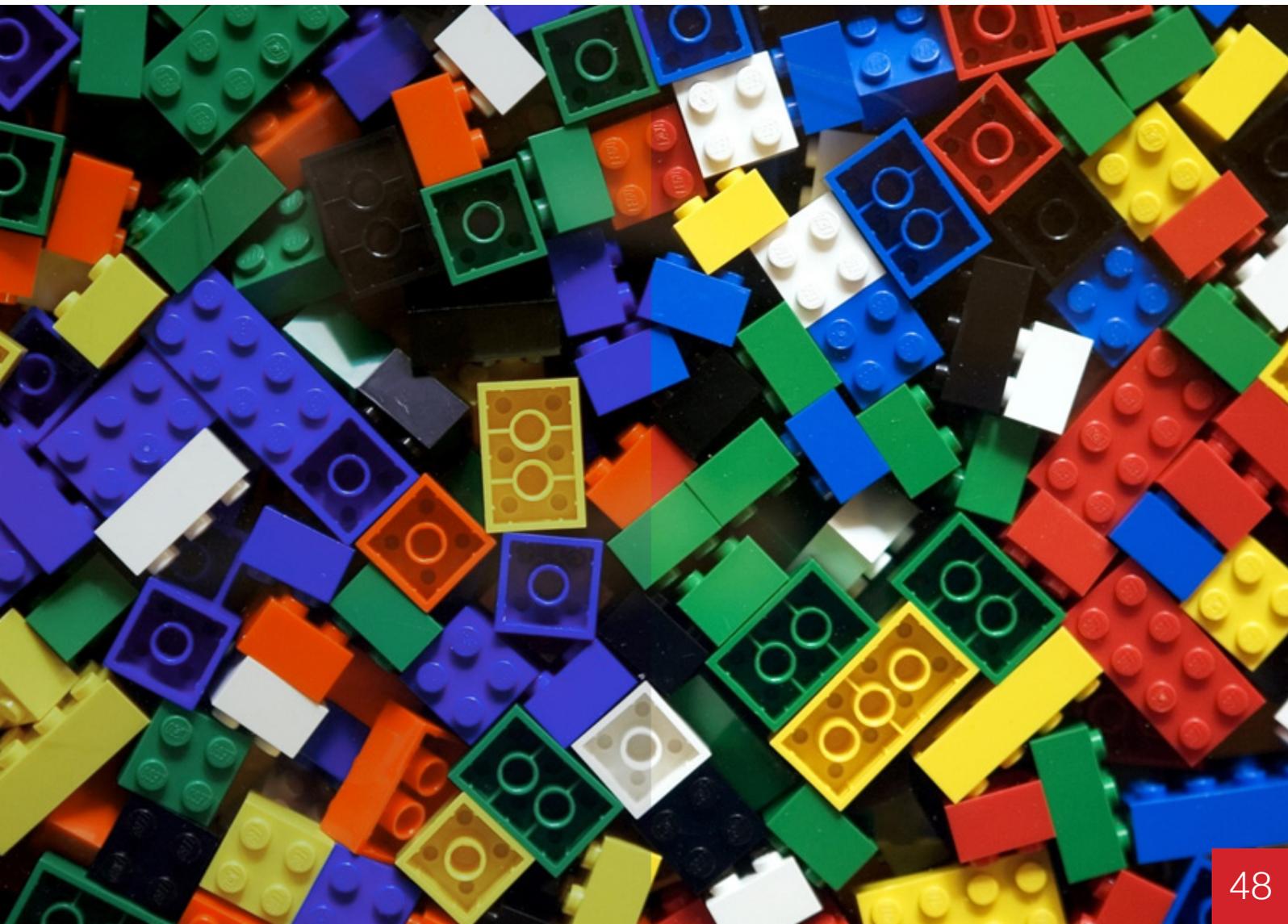
04 | Getting started

Using the 24 Swatch Colour Card with Adobe DNG Profile Editor

STEP 10

Before and after

Before and after image. You can see that the blues on the right are less purple, the reds less orange and the yellows less green. By using Adobe DNG Profile Editor you will achieve consistent colour management and a faster work-flow.



05 | The 24 swatch colours

The 24 swatch colours

You can create your own larger card for a large studio work. By converting the RGB colours to a 39L profile then outputting to your printer you will produce a Colour Card compatible with The Grey White Balance Colour Cards.

R=125 G=80 B=56	R=246 G=172 B=152	R=103 G=130 B=167	R=76 G=114 B=31	R=149 G=146 B=199	R=105 G=191 B=173
R=241 G=132 B=0	R=85 G=103 B=174	R=236 G=96 B=129	R=108 G=31 B=121	R=183 G=205 B=0	R=253 G=191 B=0
R=0 G=80 B=159	R=15 G=165 B=56	R=230 G=49 B=18	R=255 G=229 B=0	R=219 G=81 B=151	R=0 G=163 B=207
R=255 G=255 B=255	R=227 G=227 B=227	R=192 G=192 B=192	R=136 G=134 B=134	R=61 G=61 B=60	R=51 G=51 B=51

www.greywhitebalancecolourcard.co.uk

Why do you need to make a note of the white balance temperature and tint set by Adobe DNG Profile Editor?

The profiler works by correcting the colours and creating a white balance if shot under perfect neutral lighting conditions. However, when you export the profile it only exports the colour correction and leaves white balance alone. You will need to add the WB settings that DNG creates to simulate this. You have the option to leave the white balance alone or add in your own as you may prefer to have a warmer or cooler look to your images rather than the neutral temperatures set in DNG.

What is a Dual Illuminat profile?

A Dual Illuminat profile is a profile that is created by using two images shot under different colour temperatures. When applied to an image a mathematical function is created which calculates the best profile to use for that image. If you choose the illuminants that are very wide apart for example, a warm tungsten and shade, then you would have a DNG profile that would cover a wide range of colour temperatures accurately. Dual Illuminat profiles are good for general photography where the lighting is consistently changing. You can create one profile and use this for most of your photos instead of creating lots of different ones. Single profiles are better for studio work under controlled lighting conditions.

How do you create a Dual Illuminat profile?

A Dual Illuminat profile can be created in Adobe DNG Profile Editor and Colorchecker Passport. See 'Tutorial 6' of the 'Adobe DNG Profile Editor User Guide.'

Error when I hit the Create Color Table button?

I get an error when I hit the Create Colour Table button. 'The gray patch in row 4, column 3, has a significant colour cast. Please reshoot the chart carefully to avoid colour casts and try again.' – This can happen if you have shot the Colour Card and it was under exposed.

To avoid this problem (bracket exposure) take a few shots of the Colour Card under and over-exposed. Don't rely on the one shot. This will also give you more flexibility when building your profiles.

Download and read the Troubleshooting PDF for more information and how this problem may be resolved.

If you get such an error and it is impossible to re-shoot the Colour Card in the same area and conditions you can still create a profile but not using Adobe DNG Profile Editor. You will have to manually create a profile. This is where your true colour correcting skills will come into play. See section **04 | Using the 24 Swatch Colour Card page 18.**

07 | Notes

Add your notes below:



greywhitebalancecolourcard.co.uk