



Version 3.14 Manual



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1 Introduction

1.1 Description

MetaRaw extends the functionality of the Adobe Camera Raw plugin in Photoshop and Photoshop Elements. It lets you open camera raw files with Adobe Camera Raw, which are normally not supported by it, and allows applying Adobe Camera Raw as a filter to image layers. In Photoshop Elements MetaRaw provides automatic lens correction and chromatic aberration removal features for Adobe Camera Raw. Additionally MetaRaw includes its own raw converter, which has several advantages over Adobe Camera Raw.

With MetaRaw you do not have to upgrade to the latest version of Photoshop or Photoshop Elements if you only need support for a new camera raw file type or want to apply Adobe Camera Raw as a filter to image layers and smart objects. Before MetaRaw became available, Photoshop users had to upgrade to a newer version of Photoshop, Photoshop Elements or the Creative Cloud if they wanted to open a new kind of camera raw file. MetaRaw solves this dilemma by empowering users to open the latest variety of raw files with Adobe Camera Raw, even if they use such old applications as Photoshop CS1 and Photoshop Elements 3 under Windows or Photoshop CS3 and Photoshop Elements 8 under MacOS X. MetaRaw also applies the Camera Raw effects to image layers and smart objects. This provides users of older Photoshop versions and Photoshop Elements with a similar functionality as the new Camera Raw filter in Photoshop CC.

MetaRaw seamlessly runs three different raw converters directly within Photoshop and Photoshop Elements: Adobe Camera Raw, Adobe DNG Converter and MetaRaw's built-in raw converter. If one of them does not support a certain raw file, one of the others is automatically used. No matter which raw converter you choose, its output can be processed with Adobe Camera Raw.

The built-in MetaRaw Converter produces images that are up to 0.4 megapixel larger than those of Adobe Camera Raw. It is able to open camera raw files from unknown future cameras and supports 280 camera models and 13 raw file extensions that are not supported with the latest version of Adobe Camera Raw. The output of the MetaRaw Converter looks quite similar to Adobe Camera Raw and can be further processed with Adobe Camera Raw. MetaRaw Converter produces images with better details and less moire, preserves more shadow and highlight details at default settings than Adobe Camera Raw and produces a more natural look for certain raw files. Additionally you can also use the JPEG Extractor option to open the JPEG data that is embedded inside almost every raw file. This way you can have a look at the original conversion of the camera or use it as an alternative if none of the three raw converters support a certain raw file.

In Photoshop Elements the Adobe Camera Raw window offers a limited number of controls. MetaRaw provides two additional features in Photoshop 10 and higher: automatic lens correction and chromatic aberration removal. This avoids two additional image processing steps, which otherwise have to be done manually. MetaRaw lets you open raw images without displaying the Camera Raw dialog, which can be handy at times. You can also choose to open a raw file as smart object for readjusting the Camera Raw settings without reopening the raw file again. For archival purposes MetaRaw is able to automatically save a DNG or TIFF file while opening a raw file.

New in Version 3

- Support for Adobe DNG Converter 10.2 (and higher), which is finally a 64-bit executable under Windows 64-bit.
- The Lens Correction and CA Removal options finally work with MetaRaw Converter
- When using MetaRaw Converter the Camera Raw settings are now stored in .xmp files and are restored when opening the same raw file again
- MetaRaw Converter now outputs demosaiced DNG files by default
- UI Enhancements
- Action / Batch Processing Enhancements
- Support for 10 new cameras

Features

- Open raw files with Adobe Camera Raw that are normally not supported by it
- Apply Adobe Camera Raw as a filter in Photoshop and Photoshop Elements
- Create smart objects that can be edited with Adobe Camera Raw
- Apply automatic lens corrections and remove chromatic aberration with Adobe Camera Raw in Photoshop Elements 10 and higher
- Choose between Adobe Camera Raw, Adobe DNG Converter and MetaRaw's own converter for opening camera raw files. If one of them does not support a certain raw file, one of the others is used automatically.
- Automatically process the output of the Adobe DNG Converter and the MetaRaw Converter with Adobe Camera Raw
- Advantages of the MetaRaw Converter:
 - ◆ Produces images that are up to 0.4 megapixel larger than those of Adobe Camera Raw
 - ◆ Is able to open raw files from unknown future cameras (even without an update)
 - ◆ Supports 280 camera models and 13 raw file extensions that are not supported by the latest version of Adobe Camera Raw
 - ◆ Produces images with better details and less moire than Adobe Camera and DNG Converter with its "Very High" or "High (Moire Removal)" settings
 - ◆ Produces more natural looking images than Adobe Camera Raw from cameras with an Fujifilm X-Trans sensor
 - ◆ Preserves more shadow and highlight details at default settings than Adobe Camera Raw
 - ◆ Produces more natural skin colors in some cases
 - ◆ Its output looks quite similar to Adobe Camera Raw
- Option to open raw images in Photoshop and Photoshop Elements without displaying the Camera Raw dialog

1.2 FAQ

I use Adobe Camera Raw in Photoshop or Photoshop Elements. Why do I need MetaRaw?

MetaRaw allows you to open camera raw files, which are normally not supported by your version of Adobe Camera Raw. You can also apply Adobe Camera Raw as a filter with the help of MetaRaw and create smart objects from normal layers that can be edited with Adobe Camera Raw.

Additionally MetaRaw's own raw converter produces images that are up to 0.4 megapixel larger than those of Adobe Camera Raw. It is able to open camera raw files from unknown future cameras and supports 280 camera models and 13 raw file extensions that are not supported with the latest version of Adobe Camera Raw. It converts some raw files a bit slower than Adobe Camera Raw, but you may like its output better, e.g. better details, less moire, its skin colors, its preservation of shadow and highlight details or the more natural look of converted X-Trans raw files.

Futhermore, in Photoshop Elements 10-14 MetaRaw lets you apply two hidden settings of Adobe Camera Raw: auto lens correction and chromatic aberration removal. Another feature of MetaRaw is hiding the Adobe Camera Raw dialog when opening a raw file.

If you use Photoshop Elements or a pre-CC version of Photoshop, you can utilize all features of MetaRaw. If you use Photoshop CC, your benefits are MetaRaw's own raw converter and the Camera Raw Smart Object feature.

Photoshop (or Photoshop Elements) does not allow me to open raw files from the camera that I recently bought. Can I use MetaRaw instead?

Yes, MetaRaw definitely lets you to open raw files of newer camera models in Photoshop and Photoshop Elements. MetaRaw lets you work around the fact that Adobe only provides new Camera Raw updates for the latest version of Photoshop and Photoshop Elements. So if you are using an older version of Photoshop or Photoshop Elements and do not plan to update to the latest version, you can use MetaRaw to compensate for the missing raw file support.

Why should I use MetaRaw instead of an external raw converter?

MetaRaw allows you to open camera raw files directly in Photoshop with Camera Raw, even if the Camera Raw plugin does not support the files. So you do not need to leave Photoshop and use an external application or tool to process your raw files before you can return to Photoshop to open them. This saves you quite some time and hassle.

Additionally you do not have to worry about the conversion quality of an external tool. MetaRaw makes sure that you get the same premium image quality that you expect from Photoshop.

Which raw converters does MetaRaw support and what are their advantages and disadvantages?

MetaRaw currently supports three raw converters and manages to utilize their advantages while bypassing their disadvantages. Here are the pro and cons of these three raw converters:

Adobe Camera Raw:

- + Works as a plugin in Photoshop and Photoshop Elements
- + Many image adjustment options
- + Relatively fast raw conversion
- You have to update to the latest version of Photoshop or Photoshop Elements to get support for the latest camera raw files.
- Does not open raw files from unknown or exotic cameras

Adobe DNG Converter:

- + Supports the latest camera raw file types
- + Available for free
- +/- Produces DNG files, which still need to be converted with Adobe Camera Raw, but this also means that the resulting images are identical.
- Is only available as a standalone application and not as a plugin
- It is inconvenient to use and only allows you to process a whole folder of raw files from its UI
- You have to use an outdated version of it under Windows XP/Vista as well as MacOS X 10.10 and older

MetaRaw Converter:

- + Built into the MetaRaw plugin
- + Produces up to 0.4 megapixel larger images than Adobe Camera Raw
- + Supports 280 cameras and 13 raw file extensions that are not supported by Adobe Camera Raw
- + Is able to open raw files from unknown future cameras (even without an update)
- + Produces images with better details and less moire than Adobe Camera and DNG Converter with its "Very High" or "High (Moire Removal)" settings
- + Produces a more satisfying result than Adobe Camera Raw in some cases
- +/- Its output looks quite similar but not identical to Adobe Camera Raw
- Conversion speed for a few raw formats is a bit slower than Adobe Camera Raw and Adobe DNG Converter

MetaRaw compensates the disadvantages of Adobe Camera Raw by running Adobe DNG Converter or the MetaRaw converter when Adobe Camera Raw does not know a certain raw file type. MetaRaw evens out the inconvenience of Adobe DNG Converter by running it from within Photoshop and automatically processing its output with Adobe Camera Raw. The tiny speed disadvantage of the MetaRaw converter (which will diminish in future updates) can be minimized by using the other two converters whenever possible.

I use the Adobe Bridge version that was installed with my older version of Photoshop and do not see thumbnail images of newer raw files. Can MetaRaw help here?

Actually we thought about creating a MetaRaw plugin for Adobe Bridge, but as Adobe Bridge CC is now available for free, there is no need for it. You can download Adobe Bridge CC [from here](#). Once you have it installed you can see the thumbnails and previews of newer raw files with it. To make sure that it supports the latest raw files, choose Help > Updates on its menu to download and install the latest Camera Raw version.

Bridge CC requires at least Windows 7, so if you are still using Windows XP or Vista, please get a free image viewer like [XnView](#) or [IrfanView](#) for viewing the thumbnails of your raw files.

I do not see a difference when activating the Auto Lens Correction feature of MetaRaw. What is the problem?

There are different factors that determine if the Auto Lens Correction feature works in Photoshop Elements 10 and higher:

1. If the Auto Lens Correction does not work with MetaRaw Converter, try selecting "Adobe Camera Raw" or "Adobe DNG Converter" as the raw converter on the MetaRaw dialog.
2. The raw file has to have the lens data mentioned in its EXIF data. If you use a lens of the same brand as the camera or the lens is an auto focus lens, that is usually the case.
3. A lens profile of the used lens has to be available. If you installed the latest version of [Adobe DNG Converter](#), Adobe Camera Raw has access to the latest lens profiles.
4. If the photo was taken with a focal length near 50mm (this value can be different for different cameras), no lens correction is necessary, so none will be applied.

If you do not see a difference in the opened image when Auto Lens Correction is activated, one of the mentioned points may be the problem.

Is MetaRaw Converter based on the free dcraw converter?

Yes, MetaRaw's own converter is based on dcraw, but it has some advantages over it:

1. MetaRaw is updated much more often than dcraw, so it offers support for new raw files much sooner. It also supports some raw files that dcraw does not support.
2. MetaRaw Converter uses dcraw for opening the raw files, but uses own demosaicing and post processing algorithms, which run on multiple cores. As a result it converts raw files much faster than dcraw.
3. MetaRaw Converter produces a better conversion result for most raw files than dcraw, because of its improved demosaicing and post processing algorithms.
4. MetaRaw offers a graphical user interface and automatically opens the converted images in Photoshop and Photoshop Elements whereas dcraw has to be used from the command line.

1.3 Compatibility

MetaRaw works under Windows (10, 8, 7, Vista, XP) as well as MacOS X (10.9 and higher).

The **MetaRaw format plugin**, which provides extended raw file support, requires one of the following applications to be installed:

- Windows:
 - ◆ Adobe Photoshop CS2 to CS6, CC and higher
 - ◆ Adobe Photoshop CS1 (*with Camera Raw 2.4 update*)
 - ◆ Adobe Photoshop Elements 4 and higher
 - ◆ Adobe Photoshop Elements 3 (*with Camera Raw 2.4 update*)
- MacOS X:
 - ◆ Adobe Photoshop CS3 to CS6, CC to CC 2015 (CC 2015.5/2017 not yet)
 - ◆ Adobe Photoshop Elements 8 and higher

MetaRaw's **Camera Raw Filter** feature, which allows applying Adobe Camera Raw as a filter, supports the following image modes: RGB, Grayscale, CMYK, Lab with 8-bit and 16-bit per channel. It requires one of the the following applications to be installed:

- Windows:
 - ◆ Adobe Photoshop CS3 to CS6, CC and higher
 - ◆ Adobe Photoshop Elements 6 and higher
- MacOS X:
 - ◆ Adobe Photoshop CS3 to CS6, CC to CC 2015 (CC 2015.5/2017 not yet)
 - ◆ Adobe Photoshop Elements 8 and higher

MetaRaw's **Camera Raw Smart Object** feature, which allows applying Adobe Camera Raw as a filter, supports the following image modes: RGB, Grayscale, CMYK, Lab with 8-bit and 16-bit per channel. It requires one of the the following applications to be installed:

- Windows:
 - ◆ Adobe Photoshop CS4 to CS6, CC and higher
 - ◆ Adobe Photoshop Elements 7 and higher
- MacOS X:
 - ◆ Adobe Photoshop CS3 to CS6, CC to CC 2015 (CC 2015.5/2017 not yet)
 - ◆ Adobe Photoshop Elements 8 and higher

The MetaRaw dialogs are available in English or German language.

Supported Cameras

The MetaRaw Converter supports raw files from the following 1275+ cameras. If your camera is not mentioned here, please try MetaRaw anyway, as it can also open raw files from unknown cameras. Sigma cameras are not mentioned here, but MetaRaw is able to extract the embedded JPEG.

AgfaPhoto DC-833m	Huawei Honor View 10 (DNG format)	Panasonic FZ100
Alcatel 5035D	Huawei Honor View 20 (DNG format)	Panasonic FZ150
Alcatel 5235D	Huawei Mate 8 (DNG format)	Panasonic FZ200
Apple QuickTake 100	Huawei Mate 9 (DNG format)	Panasonic FZ270
Apple QuickTake 150	Huawei Mate 10 (DNG format)	Panasonic FZ272
Apple QuickTake 200	Huawei Mate 10 Pro (DNG format)	Panasonic FZ300
Apple iPad Pro 9.7" (DNG format)		Panasonic FZ330
Apple iPhone 6s (DNG format)		Panasonic FZ1000
Apple iPhone 6s Plus (DNG format)		Panasonic FZ1000 X

Apple iPhone 7 (DNG format)	Huawei Mate 20 Lite (DNG format)	Panasonic FZ1000 II
Apple iPhone 7 Plus (DNG format)	Huawei Mate 20 Pro (DNG format)	Panasonic FZ2000
Apple iPhone 8 (DNG format)	Huawei P9 (DNG format)	Panasonic FZ2500
Apple iPhone 8 Plus (DNG format)	Huawei P10 (DNG format)	Panasonic FZH1
Apple iPhone 12 (DNG format)	Huawei P10 Plus (VKY-L09) (DNG format)	Panasonic G1
Apple iPhone 13 Pro (DNG format)	Huawei P20 (DNG format)	Panasonic G2
Apple iPhone SE (DNG format)	Huawei P20 Pro (DNG format)	Panasonic G3
Apple iPhone X (DNG format)	Huawei P30 (DNG format)	Panasonic G5
Apple iPhone XS (DNG format)	Huawei P30 Pro (DNG format)	Panasonic G6
Asus ZenPhone 4 (DNG format)	Huawei P40 Pro (DNG format)	Panasonic G7
Asus ZenPhone 6 (DNG format)	Ikonoskop A-Cam dll	Panasonic G8
AVT F-080C	Ikonoskop A-Cam dll	Panasonic G8
AVT F-145C	Imacon Ixpress 16-megapixel	Panasonic G9
AVT F-201C	Imacon Ixpress 22-megapixel	Panasonic G10
AVT F-510C	Imacon Ixpress 39-megapixel	Panasonic G10
AVT F-810C	ISG 2020x1520	Panasonic G70
Autel EVO II Standard Pr	KanDao QooCam	Panasonic G80
Autel Robotics XB015	Kinefinity KineMINI	Panasonic G81
Baumer TXG14	Kinefinity KineRAW Mini	Panasonic G85
Blackmagic Cinema Camera (DNG format)	Kinefinity KineRAW S35	Panasonic G85
BlackMagic Micro Cinema Camera (DNG format)	Kodak C330	Panasonic G90
BlackMagic Pocket Cinema Camera (DNG format)	Kodak C603	Panasonic G91
Blackmagic Pocket Cinema Camera 6k Pro (DNG Format)	Kodak DC20	Panasonic G95
BlackMagic Production Camera 4k (DNG format)	Kodak DC25	Panasonic G99
Blackmagic URSA (DNG format)	Kodak DC40	Panasonic G100
Blackmagic URSA 4K (DNG format)	Kodak DC50	Panasonic G110
Blackmagic URSA Mini (DNG format)	Kodak DC120	Panasonic GF1
Blackmagic URSA Mini 4k (DNG format)	Kodak DCS200	Panasonic GF2
Blackmagic URSA Mini 4.6k (DNG format)	Kodak DCS315C	Panasonic GF3
Blackmagic URSA Mini Pro 4.6k (DNG format)	Kodak DCS330C	Panasonic GF5
Canon EOS-1D	Kodak DCS420	Panasonic GF6
Canon EOS-1D C	Kodak DCS460	Panasonic GF7
Canon EOS-1DS	Kodak DCS460A	Panasonic GF8
Canon EOS-1D X	Kodak DCS460D	Panasonic GF9
Canon EOS-1D X Mark II	Kodak DCS520C	Panasonic GF10
Canon EOS-1D X Mark III	Kodak DCS560C	Panasonic GF90
Canon EOS-1D Mark II	Kodak DCS620C	Panasonic GH1
Canon EOS-1D Mark II N	Kodak DCS620X	Panasonic GH2
Canon EOS-1D Mark III	Kodak DCS660C	Panasonic GH3
Canon EOS-1D Mark IV	Kodak DCS660M	Panasonic GH4
Canon EOS-1Ds Mark II	Kodak DCS720X	Panasonic GH5
Canon EOS-1Ds Mark III	Kodak DCS760C	Panasonic GH5S
Canon EOS 5D	Kodak DCS760M	Panasonic GM1
Canon EOS 5D Mark II	Kodak DCS Pro 14n	Panasonic GM1s
Canon EOS 5D Mark III	Kodak DCS Pro 14nx	Panasonic GM5
Canon EOS 5D Mark IV	Kodak DCS Pro SLR/c	Panasonic GX1
Canon EOS 5DS	Kodak DCS Pro SLR/n	Panasonic GX7
Canon EOS 5DS R	Kodak Ektra	Panasonic GX7 Mark II
Canon EOS 6D	Kodak EOS DCS1	Panasonic GX7 Mark III
Canon EOS 6D Mark II	Kodak EOS DCS 3B	Panasonic GX8
Canon EOS 7D	Kodak NC2000F	Panasonic GX80
Canon EOS 7D Mark II	Kodak KAI-0340	Panasonic GX85
Canon EOS 10D	Kodak NC2000F	Panasonic GX800
Canon EOS 20D	Kodak P712	Panasonic GX850
Canon EOS 20Da	Kodak P850	Panasonic GX880
Canon EOS 30D	Kodak P880	Panasonic GX9
Canon EOS 40D	Kodak PixPro AZ901	Panasonic L1
Canon EOS 50D	Kodak ProBack	Panasonic L10
Canon EOS 60D	Kodak PB645C	Panasonic LC1
Canon EOS 60Da	Kodak PB645H	Panasonic LF1
Canon EOS 70D	Kodak PB645M	Panasonic LX1
Canon EOS 77D	Kodak S-1	Panasonic LX2
Canon EOS 80D	Kodak Z980	Panasonic LX3
Canon EOS 90D	Kodak Z981	Panasonic LX5
Canon EOS 100D / Rebel SL1 / Kiss X7	Kodak Z990	Panasonic LX7
Canon EOS 200D / Rebel SL2 / Kiss X9	Kodak Z1015	Panasonic LX9
Canon EOS 250D / Rebel SL3 / Kiss X10		Panasonic LX10
Canon EOS 300D / Rebel / Kiss		Panasonic LX15
Canon EOS 350D / Rebel XT / Kiss N		Panasonic LX100
		Panasonic LX100 II
		Panasonic S1
		Panasonic S1H
		Panasonic S1R

Canon EOS 400D / Rebel XTi / Kiss X	Konica KD-400Z	Panasonic S5
Canon EOS 450D / Rebel XSi / Kiss X2	Konica KD-510Z	Panasonic TX1
Canon EOS 500D / Rebel T1i / Kiss X3	Leaf AFi 5	Panasonic TX2
Canon EOS 550D / Rebel T2i / Kiss X4	Leaf AFi 6	Panasonic TZ60
Canon EOS 600D / Rebel T3i / Kiss X5	Leaf AFi 7	Panasonic TZ61
Canon EOS 650D / Rebel T4i / Kiss X6i	Leaf AFi-II 6	Panasonic TZ70
Canon EOS 700D / Rebel T5i / Kiss X7i	Leaf AFi-II 7	Panasonic TZ71
Canon EOS 750D / Rebel T6i / Kiss X8i	Leaf AFi-II 10	Panasonic TZ80
Canon EOS 760D / Rebel T6S / Kiss 8000D	Leaf AFi-II 10R	Panasonic TZ81
Canon EOS 800D / Rebel T7i / Kiss X9i	Leaf AFi-II 12	Panasonic TZ82
Canon EOS 850D / Rebel T8i / Kiss X10i	Leaf Aptus 17	Panasonic TZ85
Canon EOS 1000D / Rebel XS / Kiss F	Leaf Aptus 22	Panasonic TZ90
Canon EOS 1100D / Rebel T3 / Kiss X50	Leaf Aptus 54S	Panasonic TZ91
Canon EOS 1200D / Rebel T5 / Kiss X70	Leaf Aptus 65	Panasonic TZ92
Canon EOS 1300D / Rebel T6 / Kiss X80	Leaf Aptus 65S	Panasonic TZ93
Canon EOS 1500D / Rebel T7 / KISS X90	Leaf Aptus 75	Panasonic TZ95
Canon EOS 2000D / Rebel T7 / Kiss X90	Leaf Aptus 75S	Panasonic TZ96
Canon EOS 3000D	Leaf Aptus-II 5	Panasonic TZ100
Canon EOS 4000D / Rebel T100	Leaf Aptus-II 6	Panasonic TZ101
Canon EOS C500	Leaf Aptus-II 7	Panasonic TZ110
Canon EOS D30	Leaf Aptus-II 8	Panasonic TZ200
Canon EOS D60	Leaf Aptus-II 10	Panasonic TZ202
Canon EOS D2000C	Leaf Aptus-II 10R	Panasonic TZ220
Canon EOS M	Leaf Aptus-II 12	Panasonic ZS8
Canon EOS M2	Leaf Aptus-II 12R	Panasonic ZS40
Canon EOS M3	Leaf Cantare	Panasonic ZS50
Canon EOS M5	Leaf Cantare XY	Panasonic ZS60
Canon EOS M6	Leaf CatchLight	Panasonic ZS70
Canon EOS M6 Mark II	Leaf CMost	Panasonic ZS100
Canon EOS M10	Leaf DCB2	Panasonic ZS110
Canon EOS M50	Leaf Valeo 6	Panasonic ZS200
Canon EOS M100	Leaf Valeo 11	Panasonic ZS220
Canon EOS M200	Leaf Valeo 17	Parrot Anafi
Canon EOS R	Leaf Valeo 17wi	PARROT Bebop 2 (DNG format)
Canon EOS Ra	Leaf Valeo 22	PARROT Bebop Drone (DNG format)
Canon EOS R5	Leaf Valeo 22wi	PARROT Bebop 2 (DNG format)
Canon EOS R6	Leaf Volare	PARROT Bebop Drone (DNG format)
Canon EOS R7	Lenovo A820	PARROT Bebop 2 (DNG format)
Canon EOS RP	Leica C (Typ 112)	PARROT Bebop Drone (DNG format)
Canon Ixus 95 IS (CHDK hack)	Leica CL	Pentax 645D
Canon Ixus 160 (CHDK hack)	Leica C-Lux (DNG format)	Pentax 645Z
Canon Ixus 900 Ti (CHDK hack)	Leica Digilux 2	Pentax *ist D
Canon PowerShot 600	Leica Digilux 3	Pentax *ist DL
Canon PowerShot A5	Leica D-LUX 2	Pentax *ist DL2
Canon PowerShot A5 Zoom	Leica D-LUX 3	Pentax *ist DS
Canon PowerShot A50	Leica D-LUX 4	Pentax *ist DS2
Canon PowerShot A410 (CHDK hack)	Leica D-LUX 5	Pentax GR
Canon PowerShot A460 (CHDK hack)	Leica D-LUX 6	Pentax K10D
Canon PowerShot A470 (CHDK hack)	Leica D-LUX 7	Pentax K20D
Canon PowerShot A530 (CHDK hack)	Leica D-Lux y	Pentax K100D
Canon PowerShot A540 (CHDK hack)	Leica D-LUX (Typ 109)	Pentax K100D Super
Canon PowerShot A550 (CHDK hack)	Leica Digital-Modul-R (DNG format)	Pentax K110D
Canon PowerShot A570 (CHDK hack)	Leica M Monochrom (DNG format)	Pentax K200D
Canon PowerShot A590 (CHDK hack)	Leica M (Typ 240) (DNG format)	Pentax K2000/K-m
Canon PowerShot A610 (CHDK hack)	Leica M Monochrom (Typ 246) (DNG format)	Pentax K-01 (DNG format)
Canon PowerShot A620 (CHDK hack)	Leica M (Typ 262) (DNG format)	Pentax K-1 (DNG format)
Canon PowerShot A630 (CHDK hack)	Leica M8 (DNG format)	Pentax K-1 II (DNG format)
Canon PowerShot A640 (CHDK hack)	Leica M8.2 (DNG format)	Pentax K-3
Canon PowerShot A650 (CHDK hack)	Leica M9 (DNG format)	Pentax K-3 II
Canon PowerShot A710 IS (CHDK hack)	Leica M10 (DNG format)	Pentax K-30 (DNG format)
Canon PowerShot A720 IS (CHDK hack)	Leica M10-D (DNG format)	Pentax K-5
Canon PowerShot A3200 IS (CHDK hack)	Leica M10-P (DNG format)	Pentax K-5 II
Canon PowerShot A3300 IS (CHDK hack)	Leica M10-R (DNG format)	Pentax K-5 II s
Canon PowerShot D10	Leica M11 (DNG format)	Pentax K-50 (DNG format)
Canon PowerShot ELPH 130 IS (DNG Format)	Leica M-D (Typ 262) (DNG format)	Pentax K-500 (DNG format)
Canon PowerShot ELPH 160 (DNG Format)	Leica M-E (DNG format)	Pentax K-7
Canon PowerShot Pro70		Pentax K-70 (DNG format)
Canon PowerShot Pro90 IS		Pentax KP (DNG-Format)
Canon PowerShot Pro1		
Canon PowerShot G1		

Canon PowerShot G1 X	Leica M-P (DNG format)	Pentax K-r
Canon PowerShot G1 X Mark II	Leica Q (DNG format)	Pentax K-S1
Canon PowerShot G1 X Mark III	Leica Q (Typ 1) (DNG format)	Pentax K-S2
Canon PowerShot G2	Leica Q (Typ 116) (DNG format)	Pentax K-x
Canon PowerShot G3	Leica Q2 (DNG format)	Pentax MX-1 (DNG format)
Canon PowerShot G3 X	Leica Q2 Monochrom (DNG format)	Pentax Q (DNG format)
Canon PowerShot G5	Leica R8 (DNG format)	Pentax Q7 (DNG format)
Canon PowerShot G5 X	Leica S (DNG format)	Pentax Q10 (DNG format)
Canon PowerShot G5 X Mark II	Leica S (Typ 007) (DNG format)	Pentax QS-1 (DNG format)
Canon PowerShot G6	Leica S2 (DNG format)	Pentax Optio S
Canon PowerShot G7 (CHDK hack)	Leica SL (Typ 601) (DNG format)	Pentax Optio S4
Canon PowerShot G7 X	Leica SL2 (DNG format)	Pentax Optio 33WR
Canon PowerShot G7 X Mark II	Leica SL2-S (DNG format)	Pentax Optio 750Z
Canon Powershot G7 X Mark III	Leica TL (Typ 701) (DNG format)	Phase One Achromatic
Canon PowerShot G9	Leica TL (DNG format)	Phase One Achromatic+
Canon PowerShot G9 X	Leica TL2 (DNG format)	Phase One LightPhase
Canon PowerShot G9 X Mark II	Leica V-LUX1	Phase One H 10
Canon PowerShot G10	Leica V-LUX2	Phase One H 20
Canon PowerShot G11	Leica V-LUX3	Phase One H 25
Canon PowerShot G12	Leica V-LUX4	Phase One IQ3 50MP
Canon PowerShot G15	Leica V-LUX5	Phase One IQ3 60MP
Canon PowerShot G16	Leica V-LUX (Typ 114)	Phase One IQ3 80MP
Canon PowerShot S2 IS (CHDK hack)	Leica X VARIO (Typ 107) (DNG format)	Phase One IQ3 100MP
Canon PowerShot S3 IS (CHDK hack)	Leica X (Typ 113) (DNG format)	Phase One IQ4 (IIQ files only)
Canon PowerShot S5 IS (CHDK hack)	Leica X-E (Typ 102) (DNG format)	Phase One IQ140
Canon PowerShot SD300 (CHDK hack)	Leica X1	Phase One IQ150
Canon PowerShot SD450 (CHDK hack)	Leica X2	Phase One IQ160
Canon PowerShot SD750 (CHDK hack)	Leica X-U (Typ 113) (DNG format)	Phase One IQ180
Canon PowerShot SD950 (CHDK hack)	LG G3 (LG-D855) (DNG format)	Phase One IQ180 IR
Canon PowerShot S30	LG G4 (DNG format)	Phase One IQ250
Canon PowerShot S40	LG G7 (DNG format)	Phase One IQ260
Canon PowerShot S45	LG Nexus 5 (DNG format)	Phase One IQ280
Canon PowerShot S50	LG Nexus 5X (DNG format)	Phase One P 20
Canon PowerShot S60	LG V20 (DNG format)	Phase One P 20+
Canon PowerShot S70	Logitech Fotoman Pictura	Phase One P 21
Canon PowerShot S90	Mamiya ZD	Phase One P 21 +
Canon PowerShot S95	Matrix 4608x3288	Phase One P 25
Canon PowerShot S100	Meizy MX4	Phase One P 25+
Canon PowerShot S110	Micron 2010	Phase One P 30
Canon PowerShot S120	Microsoft Lumia 950 (DNG format)	Phase One P 30+
Canon PowerShot SX1 IS (CHDK hack)	Minolta RD175	Phase One P 40+
Canon PowerShot SX10 IS (CHDK hack)	Minolta DiIMAGE 5	Phase One P 45
Canon PowerShot SX20 IS (CHDK hack)	Minolta DiIMAGE 7	Phase One P 45+
Canon PowerShot SX30 IS (CHDK hack)	Minolta DiIMAGE 7i	Phase One P 65
Canon PowerShot SX40 (DNG Format)	Minolta DiIMAGE 7Hi	Phase One P 65+
Canon PowerShot SX50 HS (CHDK hack)	Minolta DiIMAGE A1	Photron BC2-HD
Canon PowerShot SX70 HS	Minolta DiIMAGE A2	Pixelink A782
Canon PowerShot SX100 IS (CHDK hack)	Minolta DiIMAGE A200	Plustek OpticFilm 8100
Canon PowerShot SX110 IS (CHDK hack)	Minolta DiIMAGE G400	Polaroid x530
Canon PowerShot SX120 IS (CHDK hack)	Minolta DiIMAGE G500	Ricoh GR (DNG format)
Canon PowerShot SX130 IS (DNG format)	Minolta DiIMAGE G530	Ricoh GR II (DNG format)
Canon PowerShot SX160 IS	Minolta DiIMAGE G600	Ricoh GR III (DNG format)
Canon PowerShot SX220 HS (CHDK hack)	Minolta DiIMAGE Z2	Ricoh GR IIIx (DNG format)
Canon PowerShot SX230 HS (CHDK hack)	Minolta Alpha/Dynax/Maxxum 5D	Ricoh GR Digital (DNG format)
Canon PowerShot SX260 (DNG Format)	Minolta Alpha/Dynax/Maxxum 7D	Ricoh GR Digital II (DNG format)
Canon PowerShot SX510 HS (DNG format)	Motorola Moto G (5S) Plus (DNG format)	Ricoh GR Digital III (DNG format)
Canon PowerShot SX60 HS	Motorola Moto G(7) Play (DNG format)	Ricoh GR Digital IV (DNG format)
Casio EX-F1 (DNG format)	Motorola Nexus 6 (DNG format)	Ricoh GX100 (DNG format)
Casio EX-FC300S (DNG format)	Motorola PIXL	Ricoh GX200 (DNG format)
Casio EX-FC400S (DNG format)	Nikon Coolscan	Ricoh GXR, S10 24-72mm
Casio EX-FH20 (DNG format)	Nikon Coolpix A	F2.5-4.4 VC (DNG format)
Casio EX-FH25 (DNG format)	Nikon Coolpix A1000	Ricoh GXR, GR A12 50mm
Casio EX-FH100 (DNG format)	Nikon Coolpix B700	F2.5 MACRO
Casio EX-10 (DNG format)	Nikon Coolpix P330	Ricoh GXR, GR LENS A12
Casio EX-100 (DNG format)	Nikon Coolpix P340	28mm F2.5
Casio EX-100F (DNG format)		Ricoh GXR MOUNT A12
Casio EX-100PRO (DNG format)		
Casio EX-ZR700 (DNG format)		
Casio EX-ZR710 (DNG format)		
Casio EX-ZR750 (DNG format)		

Casio EX-ZR800 (DNG format)	Nikon Coolpix P1000	Ricoh GXR MOUNT A16
Casio EX-ZR850 (DNG format)	Nikon Coolpix P6000	24-85mm F3.5-5
Casio EX-ZR1000 (DNG format)	Nikon Coolpix P7000	Ricoh GXR, GXR P10 (DNG format)
Casio EX-ZR1100 (DNG format)	Nikon Coolpix P7100	Rollei d530flex
Casio EX-ZR1200 (DNG format)	Nikon Coolpix P7700	RoverShot 3320af
Casio EX-ZR1300 (DNG format)	Nikon Coolpix P7800	Samsung EX1
Casio EX-ZR1500 (DNG format)	Nikon Coolpix P950	Samsung EX2F
Casio EX-ZR3000 (DNG format)	Nikon Coolpix S6 (DIAG RAW hack)	Samsung Galaxy NX (EK-GN120)
Casio EX-ZR3100 (DNG format)	Nikon D1	Samsung Galaxy S3
Casio EX-ZR3500 (DNG format)	Nikon D1H	Samsung Galaxy S6 (DNG format)
Casio EX-ZR3600 (DNG format)	Nikon D1X	Samsung Galaxy S7 (DNG format)
Casio EX-ZR4000 (DNG format)	Nikon D2H	Samsung Galaxy S7 Edge (DNG format)
Casio EX-ZR5000 (DNG format)	Nikon D2Hs	Samsung Galaxy S8 (DNG format)
Casio EX-S20	Nikon D2X	Samsung Galaxy S8+ (DNG format)
Casio EX-S100	Nikon D2Xs	Samsung Galaxy S9 (DNG format)
Casio EX-Z4	Nikon D3	Samsung Galaxy S9+ (DNG format)
Casio EX-Z50	Nikon D3s	Samsung Galaxy Note 8 (DNG format)
Casio EX-Z500	Nikon D3X	Samsung Galaxy Note 9 (DNG format)
Casio EX-Z55	Nikon D3X	Samsung Galaxy S10 (DNG format)
Casio EX-Z60	Nikon D4	Samsung Galaxy S10+ (DNG format)
Casio EX-Z75	Nikon D40	Samsung Galaxy S20 (DNG format)
Casio EX-Z750	Nikon D4s	Samsung Galaxy S20 Plus (DNG format)
Casio EX-Z8	Nikon D40X	Samsung Galaxy S20 Ultra (DNG format)
Casio EX-Z850	Nikon D5	Samsung Galaxy S21 Ultra (DNG format)
Casio EX-Z1050	Nikon D50	Samsung Galaxy Nexus
Casio EX-Z1080	Nikon D500	Samsung GX-1S
Casio EX-ZR100	Nikon D6	Samsung GX-1L
Casio EX-ZR4100 (DNG format)	Nikon D60	Samsung GX10 (DNG format)
Casio EX-ZR5100 (DNG format)	Nikon D70	Samsung GX20 (DNG format)
Casio Exlim Pro 505	Nikon D70s	Samsung NX mini
Casio Exlim Pro 600	Nikon D780	Samsung NX U
Casio Exlim Pro 700	Nikon D80	Samsung NX1
Casio QV-2000UX	Nikon D90	Samsung NX5
Casio QV-3000EX	Nikon D100	Samsung NX10
Casio QV-3500EX	Nikon D200	Samsung NX11
Casio QV-4000	Nikon D300	Samsung NX20
Casio QV-5700	Nikon D300s	Samsung NX30
Casio QV-R41	Nikon D600	Samsung NX100
Casio QV-R51	Nikon D610	Samsung NX200
Casio QV-R61	Nikon D700	Samsung NX210
Contax N Digital	Nikon D750	Samsung NX300
Creative PC-CAM 600	Nikon D3000	Samsung NX300M
Digital Bolex D16	Nikon D3100	Samsung NX500
Digital Bolex D16M	Nikon D3200	Samsung NX1000
DJI 4384x3288	Nikon D3300	Samsung NX1100
DJI Air 2S	Nikon D3400	Samsung NX2000
DJI Inspire 2 (M43RAW)	Nikon D3500	Samsung NX3000
DJI Mavi (FC220)	Nikon D5000	Samsung NX3300
DJI Mavic Air 2	Nikon D5100	Samsung Pro 815 (DNG format)
DJI Mavic 3 Cine	Nikon D5200	Samsung S85 (hacked)
DJI Mini 2	Nikon D5300	Samsung S850 (hacked)
DJI Mini 3 Pro	Nikon D5500	Samsung TL350
DJI Osmo Action	Nikon D5600	
DJI Phantom 4 (FC330)	Nikon D7000	
DJI Phantom 4 Pro (FC6310)	Nikon D7100	
DJI Phantom 4 Pro+ (DNG format)	Nikon D7200	
DJI Pocket 2	Nikon D7500	
DJI X5 (FC550) (DNG Format)	Nikon D800	
DJI Zenmuse X5R (DNG format)	Nikon D800E	
DxO One	Nikon D810	
Epson R-D1	Nikon D810A	
Epson R-D1s	Nikon D850	
Epson R-D1x	Nikon Df	
Eyedeas E1 (DNG format)	Nikon 1 AW1	
FIMI X8SE (DNG format)	Nikon 1 J1	
Foculus 531C	Nikon 1 J2	
Fujifilm E505	Nikon 1 J3	
Fujifilm E550	Nikon 1 J4	
Fujifilm E900	Nikon 1 J5	
Fujifilm F505EXR	Nikon 1 S1	

Fujifilm F550EXR	Nikon 1 S2	Samsung TL500
Fujifilm F600EXR	Nikon 1 V1	Samsung WB550
Fujifilm F605EXR	Nikon 1 V2	Samsung WB2000
Fujifilm F700	Nikon 1 V3	Sarnoff 4096x5440
Fujifilm F710	Nikon E700 (DIAG RAW hack)	Sealife DC2000 (DNG format)
Fujifilm F770EXR	Nikon E800 (DIAG RAW hack)	Seitz Roundshot D3
Fujifilm F775EXR	Nikon E880 (DIAG RAW hack)	Seitz Roundshot D2X
Fujifilm F800	Nikon E900 (DIAG RAW hack)	Seitz Roundshot D2Xs
Fujifilm F800EXR	Nikon E950 (DIAG RAW hack)	Sigma fp (DNG format)
Fujifilm F810	Nikon E990 (DIAG RAW hack)	Sigma fp L (DNG Format)
Fujifilm F900EXR	Nikon E995 (DIAG RAW hack)	Sinar 3072x2048
Fujifilm FinePix S1	Nikon E2100 (DIAG RAW hack)	Sinar 4080x4080
Fujifilm GFX 50R	Nikon E2500 (DIAG RAW hack)	Sinar 4080x5440
Fujifilm GFX 50S	Nikon E3200 (DIAG RAW hack)	Sinar eMotion 22
Fujifilm GFX 50S II	Nikon E3700 (DIAG RAW hack)	Sinar eMotion 54
Fujifilm GFX 100 IR	Nikon E4300 (DIAG RAW hack)	Sinar eSpirit 65
Fujifilm GFX 100 S	Nikon E4500 (DIAG RAW hack)	Sinar eMotion 75
Fujifilm HS10	Nikon E5000	Sinar eVolution 75
Fujifilm HS11	Nikon E5400	Sinar Sinarback 54
Fujifilm HS20EXR	Nikon E5700	SMaL Ultra-Pocket 3
Fujifilm HS22EXR	Nikon E8400	SMaL Ultra-Pocket 4
Fujifilm HS30EXR	Nikon E8700	SMaL Ultra-Pocket 5
Fujifilm HS33EXR	Nikon E8800	Sony A7 (ILCE-7)
Fujifilm HS35EXR	Nokia 1200x1600	Sony A7 II (ILCE-7 II)
Fujifilm HS50EXR	Nokia Lumia 930 (DNG Format)	Sony A7 III (ILCE-7 III)
Fujifilm IS-1	Nokia Lumia 950 XL (DNG Format)	Sony A7C (ILCE-7C)
Fujifilm S2Pro	Nokia Lumia 1020 (DNG Format)	Sony A7R (ILCE-7R)
Fujifilm S3Pro	Nokia Lumia 1520 (DNG format)	Sony A7R II (ILCE-7R II)
Fujifilm S5Pro	Nokia N9	Sony A7R III (ILCE-7RM3)
Fujifilm S20	Nokia N95	Sony A7R IV (ILCE-7RM4)
Fujifilm S20Pro	Nokia N95	Sony A7S (ILCE-7S)
Fujifilm S205EXR	Nokia X2	Sony A7S II (ILCE-7S II)
Fujifilm S100FS	Nikon Z5	Sony A7S III (ILCE-7M3)
Fujifilm S5000	Nikon Z6	Sony A9 (ILCE-9)
Fujifilm S5100	Nikon Z6 II	Sony A9 II (ILCE-9M2)
Fujifilm S5500	Nikon Z7	Sony A33 (SLT-A33)
Fujifilm S5200	Nikon Z7 II	Sony A35 (SLT-A35)
Fujifilm S5600	Nikon Z9	Sony A37 (SLT-A37)
Fujifilm S6000fd	Nikon Z30	Sony A55V (SLT-A55V)
Fujifilm S6500fd	Nikon Z50	Sony A57 (SLT-A57)
Fujifilm S7000	Nikon Z fc	Sony A58 (SLT-A58)
Fujifilm S9000	Olympus AIR A01	Sony A65 (SLT-A65)
Fujifilm S9100	Olympus C3030Z	Sony A65V(SLT-A65V)
Fujifilm S9500	Olympus C5050Z	Sony A68 (SLT-A68)
Fujifilm S9600	Olympus C5060WZ	Sony A68 (ILCA-68)
Fujifilm S200EXR	Olympus C5060Z	Sony A77 (SLT-A77)
Fujifilm SL1000	Olympus C7070WZ	Sony A77 II (ILCA-77M2)
Fujifilm X10	Olympus C70Z	Sony A99 (SLT-A99V)
Fujifilm X20	Olympus C7000Z	Sony A99 II (ILCA-99 II)
Fujifilm X30	Olympus C740UZ	Sony A100 (DSLR-A100)
Fujifilm X70	Olympus C770UZ	Sony A200 (DSLR-A200)
Fujifilm X100	Olympus C8080WZ	Sony A230 (DSLR-A230)
Fujifilm X100F	Olympus X200	Sony A290 (DSLR-A290)
Fujifilm X100S	Olympus D560Z	Sony A300 (DSLR-A300)
Fujifilm X100T	Olympus C350Z	Sony A330 (DSLR A330)
FujiFilm X100V	Olympus E-1	Sony A350 (DSLR-A350)
Fujifilm X-A1	Olympus E-3	Sony A380 (DSLR-A380)
Fujifilm X-A2	Olympus E-5	Sony A390 (DSLR-A390)
Fujifilm X-A3	Olympus E-10	Sony A450 (DSLR-A450)
Fujifilm X-A5	Olympus E-20	Sony A500 (DSLR-A500)
Fujifilm X-A7	Olympus E-30	Sony A550 (DSLR-A550)
Fujifilm X-A10	Olympus E-300	Sony A560 (DSLR-A560)
Fujifilm X-A20	Olympus E-330	Sony A580 (DSLR-A580)
Fujifilm X-E1	Olympus E-400	Sony A700 (DSLR-A700)
Fujifilm X-E2	Olympus E-410	Sony A850 (DSLR-A850)
Fujifilm X-E2S	Olympus E-420	Sony A900 (DSLR-A900)
Fujifilm X-E3	Olympus E-450	Sony A3000 (ILCE-3000)
Fujifilm XF1	Olympus E-500	Sony A3500 (ILCE-3500)
Fujifilm XF10	Olympus E-510	Sony A5000 (ILCE-5000)
Fujifilm X-H1	Olympus E-520	Sony A5100 (ILCE-5100)

Fujifilm X-H2S	Olympus E-600	Sony A6000 (ILCE-6000)
Fujifilm X-M1	Olympus E-620	Sony A6100 (ILCE-6100)
Fujifilm X-Pro1	Olympus E-M1	Sony A6300 (ILCE-6300)
Fujifilm X-Pro2	Olympus E-M1 Mark II	Sony A6400 (ILCE-6400)
Fujifilm X-Pro3	Olympus E-M1 Mark III	Sony A6500 (ILCE-6500)
Fujifilm X-S1	Olympus E-M1X	Sony A6600 (ILCE-6600)
Fujifilm X-T1	Olympus E-M10	Sony F828 (DSC-F828)
Fujifilm X-T1 IR	Olympus E-M10 Mark II	Sony HX95
Fujifilm X-T2	Olympus E-M10 Mark III	Sony HX99
Fujifilm X-T3	Olympus E-M10 Mark IV	Sony IMX135-mipi 13mp
FujiFilm X-T4	Olympus E-M5	Sony IMX135-QCOM
Fujifilm X-T10	Olympus E-M5 Mark II	Sony IMX072-mipi
Fujifilm X-T20	Olympus E-M5 Mark III	Sony IMX214
Fujifilm X-T30	Olympus E-P1	Sony IMX219
Fujifilm X-T30 II	Olympus E-P2	Sony IMX230
Fujifilm X-T100	Olympus E-P3	Sony IMX298-mipi 16mp
Fujifilm X-T200	Olympus E-P5	Sony IMX219-mipi 8mp
Fujifilm XQ1	Olympus E-PL1	Sony NEX-3
Fujifilm XQ2	Olympus E-PL1s	Sony NEX-3N
Gione E7	Olympus E-PL2	Sony NEX-5
GITUP GIT2	Olympus E-PL3	Sony NEX-5N
GITUP GIT2P	Olympus E-PL5	Sony NEX-5R
Google Pixel (DNG format)	Olympus E-PL6	Sony NEX-5T
Google Pixel XL (DNG format)	Olympus E-PL7	Sony NEX-6
Google Pixel 2 (DNG format)	Olympus E-PL8	Sony NEX-7
Google Pixel 2 XL (DNG format)	Olympus E-PL9	Sony NEX-C3
Google Pixel 3 (DNG format)	Olympus E-PL10	Sony NEX-F3
Google Pixel 3 XL (DNG format)	Olympus E-PM1	Sony NEX-VG20
Google Pixel 3a (DNG format)	Olympus E-PM2	Sony NEX-VG30
Google Pixel 3a XL (DNG format)	Olympus PEN-F	Sony NEX-VG900
Hasselblad A6D-100c	Olympus SH-2	Sony R1 (DSC-R1)
Hasselblad CF-22	Olympus SH-3	Sony RX0 (DSC-RX0)
Hasselblad CF-22MS	Olympus SP310	Sony RX0 II (DSC-RX0M2)
Hasselblad CF-31	Olympus SP320	Sony RX1 (DSC-RX1)
Hasselblad CF-39	Olympus SP350	Sony RX1R (DSC-RX1R)
Hasselblad CF-39MS	Olympus SP500UZ	Sony RX1R II (DSC-RX1RM2)
Hasselblad CF-132	Olympus SP510UZ	Sony RX10 (DSC-RX10)
Hasselblad CFH	Olympus SP550UZ	Sony RX10 II (DSC-RX10M2)
Hasselblad CFH-22	Olympus SP560UZ	Sony RX10 III (DSC-RX10M3)
Hasselblad CFH-39	Olympus SP565UZ	Sony RX10 IV (DSC-RX10M4)
Hasselblad CFV	Olympus SP570UZ	Sony RX100 (DSC-RX100)
Hasselblad CFV-2	Olympus Stylus 1	Sony RX100 II
Hasselblad CFV-50	Olympus Stylus 1s	(DSC-RX100M2)
Hasselblad CFV-50c	Olympus TG-4	Sony RX100 III
Hasselblad CFV II 50C/907X	Olympus TG-5	(DSC-RX100M3)
Hasselblad H2D (DNG format)	Olympus TG-6	Sony RX100 IV
Hasselblad H2D-22 (DNG format)	Olympus XZ-1	(DSC-RX100M4)
Hasselblad H2D-39 (DNG format)	Olympus XZ-2	Sony RX100 V
Hasselblad H3D-22	Olympus XZ-10	(DSC-RX100M5)
Hasselblad H3D-31	OmniVision 4688	Sony RX100 VI
Hasselblad H3D-39	OmniVision 13860	(DSC-RX100M6)
Hasselblad H3D-50	OmniVision OV5647 (Raspberry Pi)	Sony RX100 VII
Hasselblad H3DII-22	OmniVision OV5648	(DSC-RX100M7)
Hasselblad H3DII-31	OmniVision OV8850	Sony RX100 VA
Hasselblad H3DII-39	OnePlus One A0001 (DNG format)	Sony QX1 (ILCE-QX1)
Hasselblad H3DII-39MS	OnePlus 3 (DNG format)	Sony V3 (DSC-V3)
Hasselblad H3DII-50	OnePlus 3T (DNG format)	Sony XCD-SX910CR
Hasselblad H3DII-50MS	OnePlus 5 A5000 (DNG format)	Sony Xperia 5 II
Hasselblad H4D-31	OnePlus 6 (DNG format)	Sony Xperia 5 III
Hasselblad H4D-40	OnePlus 6T (DNG format)	Sony Xperia L (DNG Format)
Hasselblad H4D-50	OnePlus 7 Pro (DNG format)	Sony Xperia Pro-I
Hasselblad H4D-60	OnePlus Pro 8 (DNG format)	Sony ZV-1
Hasselblad H5D-40	OnePlus 9 Pro (DNG format)	Sony ZV-E10
Hasselblad H5D-50	Oppo Realme 3 Pro (DNG format)	STV680 VGA
Hasselblad H5D-50c	Panasonic CM1	Vivo X51
Hasselblad H5D-50cMS	Panasonic CM10	Xiaomi Note 10 (DNG Format)
Hasselblad H5D-200cMS	Panasonic FX150	Xiaomi Note 10 Plus (DNG Format)
Hasselblad H6D-100c	Panasonic FZ18	Xiaomi MI3 (DNG Format)
Hasselblad H6D-100cMS		Xiaomi MI 8 (DNG Format)
Hasselblad HV		

Hasselblad Lusso	Panasonic FZ28	Xiaomi Mi 9 Lite (DNG Format)
Hasselblad Lunar	Panasonic FZ30	Xiaomi Mi Sphere 4K (DNG Format)
Hasselblad True Zoom	Panasonic FZ35	Xiaomi Redmi Note3 Pro (DNG Format)
Hasselblad RT	Panasonic FZ38	Xiaomi Redmi Note 7 (DNG Format)
Hasselblad Stellar	Panasonic FZ4	Xiaoyi YIAC 3 (DNG Format)
Hasselblad Stellar II	Panasonic FZ40	Xiaoyi YDXJ 2 (DNG Format)
Hasselblad V96C	Panasonic FZ42	Xiro Xplorer V
Hasselblad X1D	Panasonic FZ45	Yi Xiaoyi M1 (DNG Format)
Hasselblad X1D II 50C	Panasonic FZ50	YuneeC CGO3 (DNG format)
HTC 10 (DNG format)	Panasonic FZ7	YuneeC CGO3P (DNG format)
HTC One (A9) (DNG format)	Panasonic FZ70	Zeiss ZX1
HTC One (M9) (DNG format)	Panasonic FZ72	
HTC MyTouch 4G (DNG format)	Panasonic FZ8	
HTC UltraPixel (DNG format)	Panasonic FZ80	
HTC U12 Plus (DNG format)	Panasonic FZ82	
Huawei Honor 6A (DNG format)	Panasonic FZ85	
Huawei Honor 7A Pro (DNG format)		
Huawei Honor 9 (DNG format)		
Huawei Honor 10 (DNG format)		
Huawei Honor 10 Lite (DNG format)		
Huawei Honor 20 (DNG format)		
Huawei Honor 20 Pro (DNG format)		

Here is a list of 281 cameras which are supported by MetaRaw Converter but not by Adobe Camera Raw:

AgfaPhoto DC-833m	Hasselblad CF-31	Nikon E2100 (DIAG RAW hack)
Alcatel 5035D	Hasselblad CFH	Nikon E2500 (DIAG RAW hack)
Alcatel 5235D	Hasselblad CFV-2	Nikon E3200 (DIAG RAW hack)
Apple QuickTake 100	Hasselblad CFV-50	Nikon E3700 (DIAG RAW hack)
Apple QuickTake 150	Hasselblad H3D-31	Nikon E4300 (DIAG RAW hack)
Apple QuickTake 200	Hasselblad H3D-50	Nikon E4500 (DIAG RAW hack)
AVT F-080C	Hasselblad H3DII-50MS	Nikon E5000
AVT F-145C	Hasselblad H4D-31	Nikon E5400
AVT F-201C	Hasselblad H4D-50	Nikon E5700
AVT F-510C	Hasselblad H5D-50cMS	Nikon E8400
AVT F-810C	Hasselblad H5D-200cMS	Nikon E8700
Baumer TXG14	Hasselblad Lusso	Nikon E8800
Canon EOS C50	Hasselblad Stellar	Nokia 1200x1600
Canon EOS D2000C	Hasselblad V96C	Nokia N9
Canon Ixus 160 (CHDK hack)	Ikonoskop A-Cam dII Panchromatic	Nokia N95
Canon Ixus 900 Ti (CHDK hack)	Ikonoskop A-Cam dII	Nokia X2
Canon PowerShot A410 (CHDK hack)	Imacon Ixpress 16-megapixel	Olympus C3030Z
Canon PowerShot A460 (CHDK hack)	Imacon Ixpress 22-megapixel	Olympus C70Z
Canon PowerShot A470 (CHDK hack)	Imacon Ixpress 39-megapixel	Olympus C7000Z
Canon PowerShot A530 (CHDK hack)	ISG 2020x1520	Olympus C740UZ
Canon PowerShot A540 (CHDK hack)	Kinefinity KineMINI	Olympus C770UZ
Canon PowerShot A550 (CHDK hack)	Kinefinity KineRAW Mini	Olympus X200
Canon PowerShot A570 (CHDK hack)	Kinefinity KineRAW S35	Olympus D560Z
Canon PowerShot A590 (CHDK hack)	Kodak C330	Olympus C350Z
Canon PowerShot A610 (CHDK hack)	Kodak C603	Olympus SH-3
Canon PowerShot A620 (CHDK hack)	Kodak DC20	OmniVision 4688
Canon PowerShot A630 (CHDK hack)	Kodak DC25	OmniVision 13860
Canon PowerShot A640 (CHDK hack)	Kodak DC40	OmniVision OV5647 (Raspberry Pi)
Canon PowerShot A650 (CHDK hack)	Kodak DC50	OmniVision OV5648
Canon PowerShot A710 IS (CHDK hack)	Kodak DC120	OmniVision OV8850
Canon PowerShot A720 IS (CHDK hack)	Kodak DCS200	Panasonic FZ4
Canon PowerShot A3200 IS (CHDK hack)	Kodak DCS315C	Panasonic FZ42
Canon PowerShot A3300 IS (CHDK hack)	Kodak DCS330C	Panasonic FZ7
Canon PowerShot G7 (CHDK hack)	Kodak DCS420	Panasonic FZ70
Canon PowerShot S2 IS (CHDK hack)	Kodak DCS460	Panasonic FZ72
Canon PowerShot S3 IS (CHDK hack)	Kodak DCS460A	Panasonic FZ8
Canon PowerShot S5 IS (CHDK hack)	Kodak DCS520C	Panasonic FZ80
Canon PowerShot SD300 (CHDK hack)	Kodak DCS560C	Panasonic FZ82
Canon PowerShot SD450 (CHDK hack)	Kodak DCS620C	Panasonic FZ1000 X
Canon PowerShot SD750 (CHDK hack)	Kodak DCS620X	Panasonic G70
Canon PowerShot SD950 (CHDK hack)	Kodak DCS660C	Pentax GR
Canon PowerShot SX1 IS (CHDK hack)	Kodak DCS660M	Pentax Optio S
Canon PowerShot SX10 IS (CHDK hack)	Kodak DCS Pro SLR/c	Pentax Optio S4

Canon PowerShot SX20 IS (CHDK hack)	Kodak EOS DCS1	Pentax Optio 33WR
Canon PowerShot SX30 IS (CHDK hack)	Kodak EOS DCS 3B	Pentax Optio 750Z
Canon PowerShot SX50 HS (CHDK hack)	Kodak KAI-0340	Phase One Achromatic
Canon PowerShot SX100 IS (CHDK hack)	Kodak NC2000F	Phase One Achromatic+
Canon PowerShot SX110 IS (CHDK hack)	Kodak ProBack	Phase One LightPhase
Canon PowerShot SX120 IS (CHDK hack)	Kodak PB645C	Phase One H 10
Canon PowerShot SX220 HS (CHDK hack)	Kodak PB645H	Phase One IQ180 IR
Canon PowerShot SX230 HS (CHDK hack)	Kodak PB645M	Phase One P 65
Casio EX-S20	Kodak S-1	Photron BC2-HD
Casio EX-S100	Kodak Z1015	Pixelink A782
Casio EX-Z4	Konica KD-400Z	Polaroid x530
Casio EX-Z50	Konica KD-510Z	Ricoh GXR, GR A12 50mm F2.5
Casio EX-Z500	Leaf AFi 5	MACRO
Casio EX-Z55	Leaf AFi 6	Ricoh GXR MOUNT A12
Casio EX-Z60	Leaf AFi 7	Ricoh GXR MOUNT A16 24-85mm
Casio EX-Z75	Leaf AFi-II 10	F3.5-5
Casio EX-Z750	Leaf AFi-II 10R	Rollei d530flex
Casio EX-Z8	Leaf AFi-II 12	RoverShot 3320af
Casio EX-Z850	Leaf Aptus-II 10	Samsung Galaxy S3
Casio EX-Z1050	Leaf Aptus-II 12R	Samsung Galaxy Nexus
Casio EX-Z1080	Leaf Aptus 65S	Samsung NX mini
Casio EX-ZR100	Leaf Cantare	Samsung NX300M
Casio Exlim Pro 505	Leaf Cantare XY	Samsung NX1100
Casio Exlim Pro 600	Leaf CatchLight	Samsung S85 (hacked)
Casio Exlim Pro 700	Leaf CMost	Samsung S850 (hacked)
Casio QV-2000UX	Leaf DCB2	Samsung WB550
Casio QV-3000EX	Leaf Valeo 17wi	Sarnoff 4096x5440
Casio QV-3500EX	Leaf Valeo 22wi	Seitz Roundshot D3
Casio QV-4000	Leaf Volare	Seitz Roundshot D2X
Casio QV-5700	Lenovo A820	Seitz Roundshot D2Xs
Casio QV-R41	Leica V-LUX2	Sinar 3072x2048
Casio QV-R51	Leica X1	Sinar 4080x4080
Casio QV-R61	Logitech Fotoman Pictura	Sinar 4080x5440
Creative PC-CAM 600	Matrix 4608x3288	Sinar eMotion 22
Digital Bolex D16	Meizy MX4	Sinar eMotion 54
Digital Bolex D16M	Micron 2010	Sinar eSpirit 65
DJI 4384x3288	Minolta RD175	Sinar eMotion 75
Foculus 531C	Minolta DiIMAGE G400	Sinar eVolution 75
Fujifilm E505	Minolta DiIMAGE G500	Sinar Sinarback 54
Fujifilm E550	Minolta DiIMAGE G530	SMaL Ultra-Pocket 3
Fujifilm F710	Minolta DiIMAGE G600	SMaL Ultra-Pocket 4
Fujifilm F800	Minolta DiIMAGE Z2	SMaL Ultra-Pocket 5
Fujifilm F810	Motorola PIXL	Sony IMX135-mipi 13mp
Fujifilm HS11	Nikon Coolscan	Sony IMX135-QCOM
Fujifilm S100FS	Nikon Coolpix S6 (DIAG RAW	Sony IMX072-mipi
Fujifilm S5100	hack)	Sony IMX214
Fujifilm S5500	Nikon E700 (DIAG RAW hack)	Sony IMX219
Fujifilm S5600	Nikon E800 (DIAG RAW hack)	Sony IMX230
Fujifilm S9500	Nikon E880 (DIAG RAW hack)	Sony IMX298-mipi 16mp
Fujifilm S9600	Nikon E900 (DIAG RAW hack)	Sony IMX219-mipi 8mp
Fujifilm S200EXR	Nikon E950 (DIAG RAW hack)	Sony XCD-SX910CR
Gione E7	Nikon E990 (DIAG RAW hack)	STV680 VGA
GITUP GIT2	Nikon E995 (DIAG RAW hack)	

1.4 Installation

Uninstallation

If you want to install the full version and already installed the trial version, you normally do not need to uninstall the trial version. The trial version will be overwritten when installing the full version - provided that you install the full version to the same location as the trial version and under Windows choose the same application(s) in Plugin Installer. If you are not sure, you can nevertheless uninstall the trial version before installing the full version.

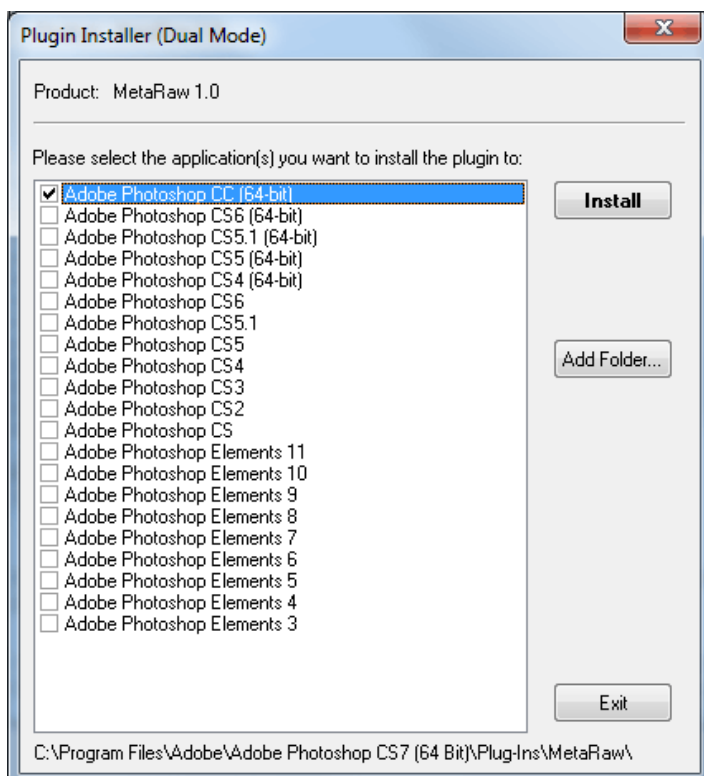
To uninstall MetaRaw under Windows go to Start > Control Panel > Uninstall a program (Windows 7) or right click the Start button, select Control Panel and click on "Programs and Features" (Windows 8 & 10). On the appearing dialog double click the appropriate item to uninstall it. Under MacOS X you have to manually delete the "MetaRaw.plugin" file or the MetaRaw folder from the Plug-Ins folder of Photoshop or Photoshop Elements. Alternatively you can use the Uninstall icon of the .dmg file to remove all copies of MetaRaw.

Installation under MacOS X

Double click the downloaded .dmg file and then drag and drop MetaRaw.plugin file or the MetaRaw folder onto the one of the icons on the right in the same window. For example if you are using Photoshop CS6, please drag and drop the MetaRaw onto the "Photoshop CS6" icon. If Photoshop should be running, quit and start it again in order to use MetaRaw. Alternatively double click the Install icon to install MetaRaw into all available Photoshop and Photoshop Elements versions.

Installation under Windows

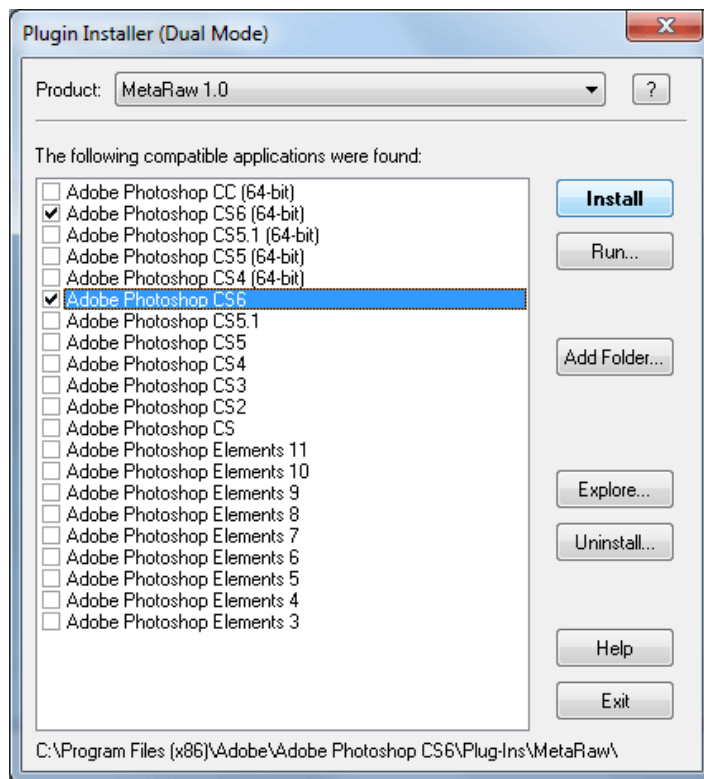
Double click the downloaded .exe file and follow the installation instructions. When Plugin Installer shows up, activate the check boxes of your preferred application(s) and press the **Install** button.



You can run Plugin Installer at any time from **Start > All Programs > The Plugin Site > MetaRaw > Plugin Installer**.

Then you have more options than during installation, e.g. an Uninstall button.

If you install a new version of Photoshop Elements and MetaRaw is already installed, you do not need to run the full MetaRaw installation again. You can run Plugin Installer from the Start menu and use it to install MetaRaw into the newly installed version of Photoshop Elements.



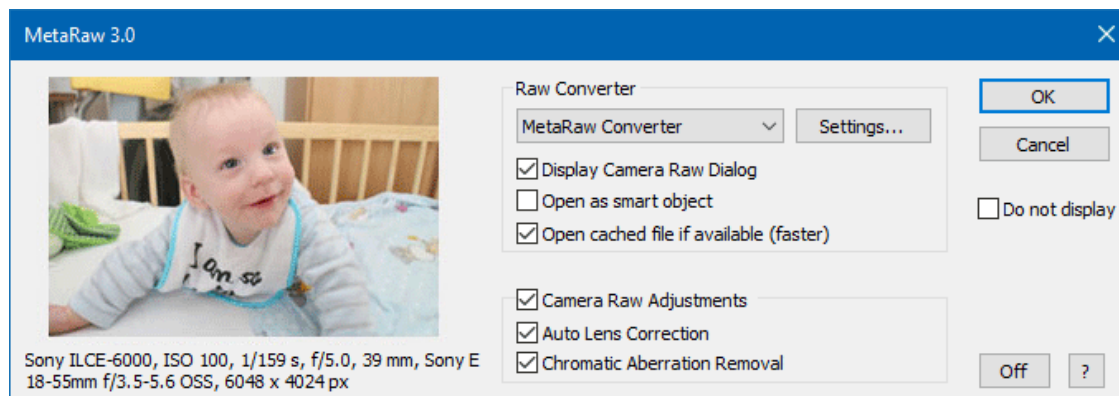
1.5 Step by Step

1.5.1 Applying Adobe Camera Raw as a Filter

1. Open an image in Photoshop or Photoshop Elements.
2. Choose File > Automate / Automation Tools > Camera Raw Filter from the menu
3. Adjust the settings on the Camera Raw dialog.
4. Click the *OK* button on the Camera Raw dialog to apply the effect.

1.5.2 Opening Raw Files with MetaRaw

1. Open one or more raw images in Photoshop or Photoshop Elements.



2. On the MetaRaw [main dialog](#) choose your settings. If you chose Adobe DNG Converter or MetaRaw Converter as the raw converter, you can click on the Settings button to adjust their settings.
3. If you want to use Camera Raw for adjusting the image(s), make sure that the *Display Camera Raw Dialog* check box is active. If you do not want to see this dialog the next time, activate the *Do not display* check box.
4. Click *OK* to continue.
5. Adjust the image(s) on the Adobe Camera Raw dialog. If you opened multiple raw files, you will see thumbnails on the left hand side of the dialog for adjusting each image independently or all at once. (Only in Photoshop CS1/CS2 and Photoshop Elements 3-5, which do not support bulk opening, the MetaRaw and Camera Raw dialogs show up for each raw file.)
6. If you opened multiple images, click the *Select All* button above the thumbnail in order to really open all files. Click on the *Open Image(s)* button.
7. The images now show up as new documents.

1.5.3 Setting up MetaRaw For Regular Usage

In general you will probably not want to see the MetaRaw dialog when opening raw files, especially when you open up the same type of raw files constantly. Only if you often want to open different raw file with the different raw converters of MetaRaw or want to open various files with different MetaRaw settings, you may want to have the MetaRaw dialog displayed all of the time. After using MetaRaw for some time and exploring its possibilities, you may want to decide on settings for regular usage and hide the MetaRaw dialog.

1. To setup MetaRaw for regular usage either open a raw file or go to Help > About Plugins > Camera Raw on the menu. The MetaRaw [main dialog](#) shows up now.
2. Choose your options and also click on the [Settings button](#) to adjust the settings for the Adobe DNG Converter or MetaRaw Converter.
3. Activate the *Do not display* check box on the main dialog and click on the *OK* button. Now the MetaRaw dialog will not show up when opening raw files. Only the MetaRaw progress window will appear in the top left corner of the Photoshop and Photoshop Elements window.
4. In case you need to change the MetaRaw settings again either go to Help > About Plugins > Camera Raw or hold down the Alt key when opening a raw file. If you want the MetaRaw dialog to display again, deactivate the *Do not display* check box once more.

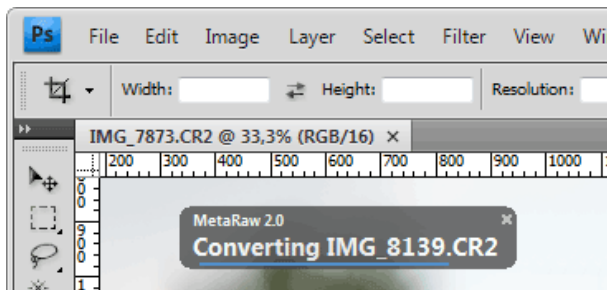
2 Functionality

The MetaRaw product includes two plugins. A format plugin, also called MetaRaw, for extending the raw file support and an automation plugin, called [Camera Raw Filter](#), for using Adobe Camera Raw as a filter. The following section refers to the MetaRaw format plugin.

2.1 General Usage

2.1.1 Opening Raw Files with MetaRaw

The MetaRaw format plugin comes into play when you open one or more raw files in Photoshop or Photoshop Elements. You can do that by dragging and dropping the raw files on the Photoshop (Elements) window, by using one of the Open items on the File menu or by opening the files with Bridge or Organizer.



MetaRaw displays a progress window in the top left corner of the Photoshop or Photoshop Elements window. This progress window is semi-transparent and has rounded corners. It tells you what MetaRaw is currently doing.

Firstly the progress windows says "Analyzing ...", which means that it is checking if the raw files are supported by Adobe Camera Raw. Usually this happens so fast (unless the Adobe Camera Raw plugin still needs to be loaded) that you do not see it.

Next, the [main dialog](#) of MetaRaw shows up (if it was not suppressed with the *Do not display* option) and lets you adjust the MetaRaw settings. If the dialog does not show up, MetaRaw reacts according to the previously adjusted settings.

If the progress window displays "Converting ...", the Adobe DNG Converter or MetaRaw Converter is currently converting a file. You will see a blue progress bar that indicates how long it will still take. If Camera Raw is used for conversion, you will not see this message.

Then the Adobe Camera Raw dialog shows up (unless you deactivated the *Display Camera Raw Dialog* check box on the [main dialog](#)). Here you can make various image adjustments. Click the *Open Image(s)* button to continue.

In the final step the progress window shows "Opening ...", which occurs right before the images appear as documents in Photoshop or Photoshop Elements.

If there was a problem and the Metaraw progress window does not vanish, you can click the x icon in the top right corner to close it.

2.1.2 Using MetaRaw from the Open As file dialog

The Open As command in Photoshop lets you open a file as a certain file format. This is useful if Photoshop does not recognize a certain file extension or if you want a non-raw file to be opened with Camera Raw. With MetaRaw installed you will see two Camera Raw items on the *Open As* combo box of the Open As file dialog. The item with more file extension is MetaRaw. If you want to temporarily bypass MetaRaw, you can choose the Camera Raw item with the fewer file extensions.

Please note: Photoshop would normally run Adobe Camera Raw instead of MetaRaw, so MetaRaw internally uses the name "Camera Raw" to avoid this. That is why you do not see a MetaRaw item but two Camera Raw items on the Open As file dialog and the Help > About Plugins sub menu. In Photoshop CS3 and higher this could be avoided by deactivating the *Prefer Adobe Camera Raw for Supported Raw Files* check box under Edit > Preferences > File Handling. It would probably also be possible for MetaRaw to deactivate a similar hidden setting in Photoshop Elements 6 and higher. But MetaRaw also supports Photoshop CS1/CS2 and Photoshop Elements 3-5, which do not have such a setting, which is why this strategy was chosen.

2.1.3 Batch Processing with MetaRaw

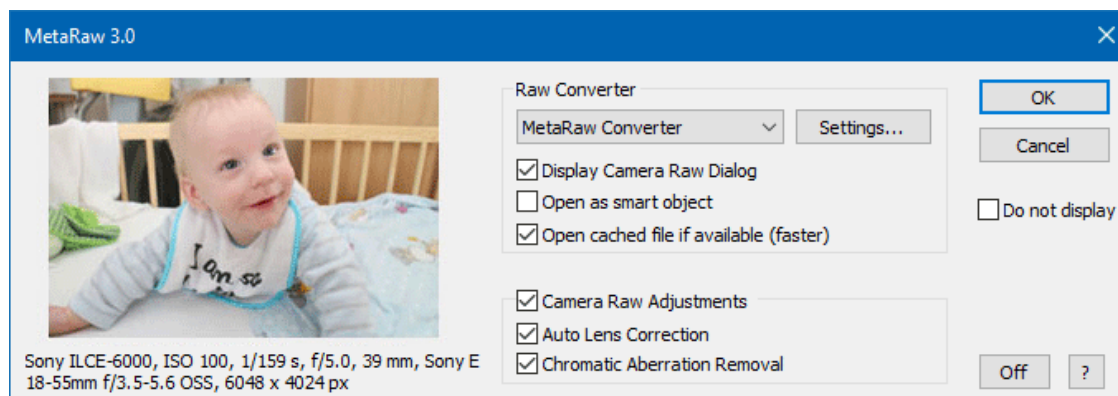
Batch processing raw files with MetaRaw installed does not differ from your normal workflow with Adobe Camera Raw. In Photoshop you have to record an action that opens a raw file, applies some effects, saves the raw file and closes it. On the File > Automate > Batch dialog you have to choose this action and activate the two Override check boxes. In Photoshop Elements you choose File > Process Multiple File from the menu and activate the *Convert File to check box*. After adjusting the other batch settings, you can click OK.

During batch processing the [MetaRaw dialog](#) will show up for each file (except if you use the batch processing feature of ActionsXXL 1.05 (or higher)) unless you previously activated the *Do not display* check box. So if the MetaRaw dialog shows up, choose your settings, activate the *Do not display* check box and click OK. Now it will not show up again for the remaining files.

If you want MetaRaw to show its dialog again by default, go to Help > About Plug-Ins > Camera Raw (under Windows) or Adobe Photoshop (Elements) > About Plug-Ins > Camera Raw (under MacOS), deactivate the *Do not display* check box and click OK. If there was a problem and the Metaraw progress window does not vanish, you can click the x icon in the top right corner to close it.

Alternatively you can suppress the MetaRaw dialog during batch processing in Photoshop, if you record an open step in your action and activate the "Override Action 'Open'commands" check box on the Batch dialog.

2.2 Main Dialog



After initiating the opening of one or more raw files, MetaRaw's main dialog shows up (unless you activated the *Do not display* check box described below). It lets you define how MetaRaw works. Clicking the **OK button** continues opening raw files whereas the **Cancel button** aborts the opening process. The **? button** displays this help page.

2.2.1 Thumbnail Preview

On the left side of the MetaRaw dialog you can see a preview of the opened raw file. If you opened multiple raw files, you will only see the first one. For a few raw file types no preview will be shown, because they contain no embedded JPEG image.

The preview shows the embedded JPEG image of the raw file, so you see the photo as it was converted by the camera. The raw conversion result of MetaRaw may look very similar or sometimes even different. Below the thumbnail you can see some EXIF data of the raw file, e.g. camera name, ISO value, exposure time, focal range and pixel dimensions.

2.2.2 Raw Converter

MetaRaw supports three raw file converters: Adobe Camera Raw, Adobe DNG Converter and MetaRaw's built-in converter. You can choose one of these four options from the combo box. The chosen converter will be used for the raw conversion process provided that it recognizes the raw file. Otherwise one of the other options will be automatically used.

In addition to the three raw converters there is also a JPEG Extractor option, which extracts the JPEG preview data that is embedded in raw files instead of converting the raw data. The JPEG image that will be opened was produced by the camera itself. Extracting the JPEG data is much faster than raw conversion but you will get an 8-bit image in jpeg quality. Many cameras store full resolution JPEGs in raw files, but some embed only a sized-down image. So depending on the raw file you may not get a full size image. This feature can also be used to compare the raw conversion of the camera to the raw conversion of the converters used by MetaRaw.

It is best to keep the combo box set to "Adobe Camera Raw". If Adobe Camera Raw is selected and it does not recognize a raw file, MetaRaw tries converting it with Adobe DNG Converter. If Adobe DNG Converter also fails, the MetaRaw Converter is used. If MetaRaw Converter should fail, the JPEG Extractor is triggered. Setting this combo box to "Adobe DNG Converter" only makes sense if you want to produce DNG files while opening raw files. In this case you have to click the [Settings](#) button and activate the *Keep converted files* option.

If you want to make use of the special abilities of the MetaRaw Converter, e.g. larger image size or higher quality demosaicing, select "MetaRaw Converter" from the combo box. Otherwise it will only be used if Adobe Camera Raw and DNG Converter do not know the raw file type.

Settings

The Settings button displays the [Settings dialog](#) for choosing the output parameters for the Adobe DNG Converter as well as the MetaRaw Converter.

Display Camera Raw dialog

This check box is activated by default and makes sure that the dialog of Adobe Camera Raw shows up regardless which raw converter you have chosen. If you want to open raw files without displaying this dialog, deactivate the check box. If you prefer to edit your images in Photoshop and Photoshop Elements rather than with Adobe Camera Raw, this saves you one or more clicks.

Open as smart object

This check box has the same functionality as the *Open as Smart Object* menu item of the Photoshop's File menu. It opens the raw file as a smart object for applying non-destructive image adjustments, the so-called smart filtering.

Photoshop Elements normally does not support smart filtering, but our other [ElementsXXL](#) product enables it. *Please note:* Photoshop Elements does not support smart objects for images with 16-bit per channel. So please choose 8-bit per channel in Adobe Camera Raw to open the raw file as a smart object, otherwise you will be asked to convert it to 8-bit per channel or to a normal layer.

Open cached file if available

This check box is only enabled if you choose *Adobe DNG Converter* or *MetaRaw Converter* from the top combo box, so it has no meaning for Adobe Camera Raw and JPEG Extractor. Even if you mainly use Adobe Camera Raw you should keep it activated, in case the other raw converters are automatically used for opening a raw file that is not known by Adobe Camera Raw.

If activated, MetaRaw searches for a converted version of the raw file and opens it instead of converting the raw file again, which saves some time. It looks for a dng or tiff file with the same file name in the following way:

1. A .dng file in the folder of the raw file
2. A .dng file in dng sub folders of the raw file folder
3. A .tiff file in the folder of the raw file
4. A .tif file in the folder of the raw file
5. A .tiff file in tiff sub folders of the raw file folder
6. A .dng file in tiff sub folders of the raw file folder
7. A .dng file in the MetaRaw cache folder
8. A .tiff file in the MetaRaw cache folder

The likelihood of finding a converted file is higher if you have the the *Keep converted files* or *Delete on Exit* option activated on the [Settings dialog](#).

2.2.3 Camera Raw Adjustments

These features are only available if you use MetaRaw in Photoshop Elements 10 and higher or Photoshop CS5 and higher. Older versions of Camera Raw in Photoshop 7 to CS4 and Photoshop Elements 3 to 9 do not support them anyway.

MetaRaw is able to activate two image correction features of Camera Raw, which are not accessible from the Adobe Camera Raw dialog in Photoshop Elements. This way you can benefit from an automatic lens correction and chromatic aberration removal when opening raw files. In Photoshop CS5 (and higher) you can access them from the Adobe Camera Raw dialog itself, but having them automatically activated by MetaRaw saves some additional clicks.

Automatic lens correction means that if Adobe Camera Raw has a profile for the lens that was used to take the photo, it applies the correction described in the corresponding lens profile. Landscape photos may look better, but portrait shots are sometimes negatively affected as they may look better with the lens distortion. *Please note:* This feature does not work if MetaRaw Converter is used for the conversion. It will be supported in a future update.

Chromatic aberration removal tries to remove tiny color shifts along object edges in a photo. Chromatic aberration is more visible with lower quality lenses and caused by reflecting different wave lengths of the light differently, especially in the outer areas of the lens.

First of all, you have to activate the *Camera Raw Adjustments* check box. Then you can activate or deactivate the other two check boxes (*Automatic lens correction* and *Chromatic aberration removal*) as needed.

Please note: If you have the *Camera Raw Adjustments* check box activated and the other two check boxes are deactivated, the automatic lens correction and chromatic aberration removal features will be deactivated in Adobe Camera Raw. This only concerns the case where these two features were previously activated or deactivated when opening the same raw file with MetaRaw or in Photoshop. So if you want to open the raw file with the same automatic lens correction and chromatic aberration removal settings as last time, deactivate the *Camera Raw Adjustments* check box.

2.2.4 Do Not Display

By default the main dialog of MetaRaw is displayed whenever you try to open one or more raw files. Once you have found the settings that work best for you, you usually do not need to have this dialog displayed all of the time. You can avoid it by activating the *Do not display* check box.

In case you want to use other settings for MetaRaw, you can make it display again by holding down the Alt key when opening a raw file or by choosing the following menu command: Help > About Plug-Ins > Camera Raw (under Windows) or Adobe Photoshop (Elements) > About Plug-Ins > Camera Raw (under MacOS). You will see two Camera Raw items on the About Plug-Ins menu. Try both until you see the MetaRaw dialog.

However, there are two exceptions when MetaRaw does not display its dialog:

- 1) When a raw file is opened from an action in Photoshop.
- 2) While ActionsXXL is batch processing. ActionsXXL 1.05 and higher is required to make it work.

Unfortunately there is no way for MetaRaw to check if Photoshop or Photoshop Elements are performing batch processing. So in order to suppress the MetaRaw dialog during batch processing in Photoshop, you have to record an open step in your action and activate the "Override Action 'Open' commands" check box on the Batch dialog. Otherwise you have to use the "Do no display" check box on the MetaRaw dialog.

2.2.5 Off

Under special circumstances it may be necessary to deactivate MetaRaw completely. Luckily, you do not need to uninstall MetaRaw to achieve it. If you click on the Off button on the MetaRaw dialog, you can switch off MetaRaw. MetaRaw will then be bypassed when a camera raw file is opened and lets Adobe Camera Raw do the work.

To activate MetaRaw again simple go to the Help > About Plug-Ins > Camera Raw (under Windows) or Adobe Photoshop (Elements) > About Plug-Ins > Camera Raw (under MacOS) menu item. Once the MetaRaw dialog shows up, you can be assured that it is active again.

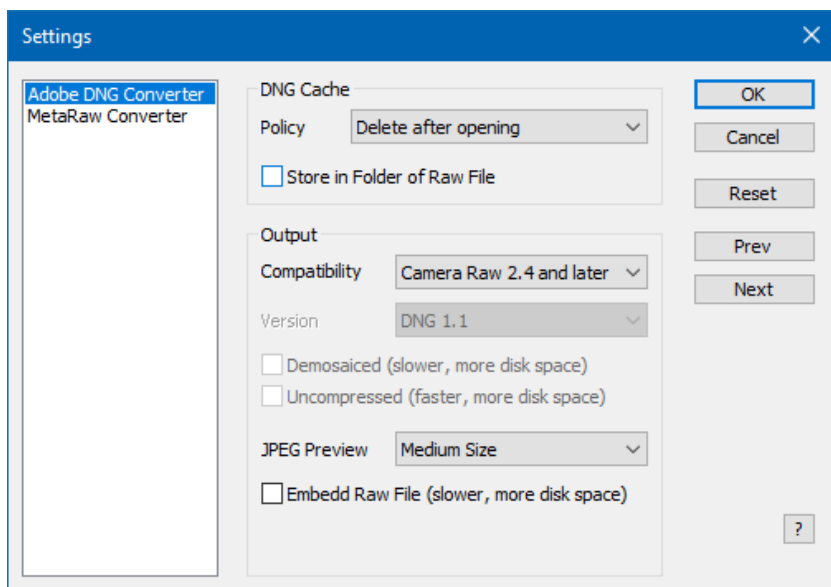
2.3 Settings

The Settings window lets you adjust the parameters of the Adobe DNG Converter and MetaRaw's own raw converter.

2.3.1 General Usage

The Settings dialog is similar to the Preferences dialog of Photoshop and Photoshop Elements. The **list box** on the right works similar to a tab sheet. Click its entries to display different control groups. The **Prev and Next buttons** switch between the items in the list box. The **Reset button** restores the default settings. The **OK button** leaves the dialog and stores the changed settings. The **Cancel button** also exits the dialog but restores the old settings. The **? button** displays this help page.

2.3.2 Adobe DNG Converter



DNG Cache

The Adobe DNG Converter converts all kinds of raw files to DNG files which MetaRaw then passes to Adobe Camera Raw. DNG files are also a type of raw files, but they are supported by all versions of Adobe Camera Raw. They are usually a bit smaller than the raw files themselves.

By default the produced DNG files are stored in the MetaRaw cache folder and deleted after opening them in Photoshop or Photoshop Elements. This corresponds to the **Delete after opening** option of the Policy combo box.

If you often repeatedly open the same raw file in Photoshop or Photoshop Elements, better activate the **Delete on exit** option. Then the MetaRaw cache folder will be emptied when exiting Photoshop or Photoshop Elements. This makes opening the same raw files much faster if you have the *Open cached file if available* check box on the [main dialog](#) activated. If you batch process hundreds of raw files, better not use this option, otherwise your main hard drive could be filled up by the cache files.

By default the cache folder is located in the temp folder on the system drive. If the **Store in Folder of Raw File** check box is activated, the temporary files are saved in the folder where the raw file is located - provided the folder is writable. This has the advantage that you do not need to select this folder manually on the Save Image(s) dialog of Adobe Camera Raw. However, if the drive of the raw files is slower than the system drive the conversion process may take longer.

Should you want to keep the DNG files indefinitely, you have to activate the **Keep converted files** option of the Policy combo box. As a result the **Location combo box** will be displayed. It lets you decide whether you want to store the files

in the same folder as the raw file or in a sub folder called "dng".

Output

The **Compatibility** combo box defines which version of Adobe Camera Raw is able to open the file. By default it is set to the most compatible setting of *Camera Raw 2.4 and higher*. This setting produces the most compatible and smallest DNG files and usually ensures the fastest conversion process. When using Adobe DNG Converter for converting raw files for Adobe Camera Raw, we recommend keeping this setting. If you choose the *Custom* option from the Compatibility combo box, three new settings can be manually adjusted for producing other types of DNG files.

The DNG format has been improved over time, so there are a few specifications available, which can be chosen with the **Version** combo box. By default it is set to the most compatible setting of *DNG 1.1*.

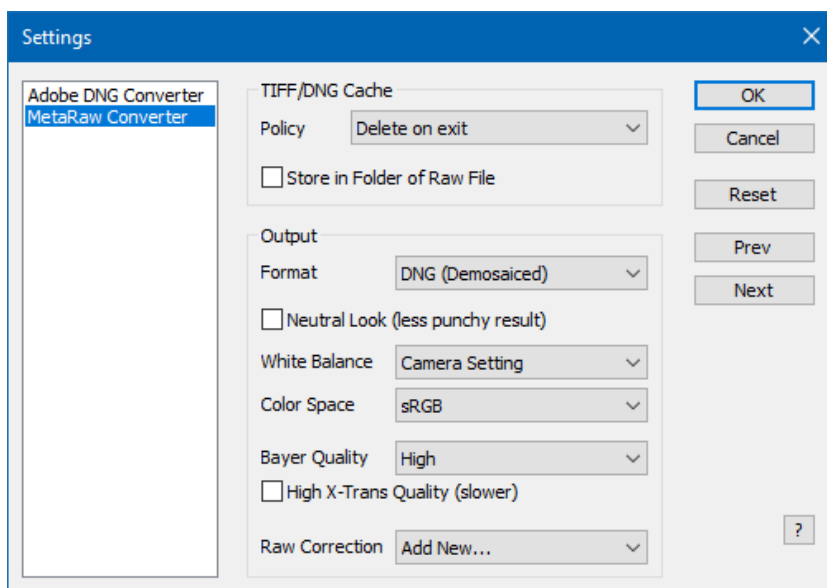
The **Demosaiced** check box makes Adobe DNG Converter convert the raw data. As a result image data and not raw data will be stored in the DNG file and the file size increases by a factor of 3-4 with compression and 6 without compression. This also means that the conversion will take longer, but the image will be opened a bit faster in Photoshop. Unless you want to keep such a DNG file (a so-called linear DNG file) for a special purpose, we advice against activating this setting.

The **Uncompressed** check box makes Adobe DNG Converter produce uncompressed DNG files, which usually consume up to two times more disk space. If you do not have the Demosaiced check box deactivated, an activated Uncompressed check box does normally not speed up the conversion process. If you have Demosaiced activated, the conversion is faster with the Uncompressed check box activated.

The **JPEG Preview** combo box determines if a preview image in JPEG format is embedded in the DNG file and what size it has. The *None* option will make the DNG files only slightly smaller, but prevents a faster image preview. The *Large Size* option embeds a full size JPEG into the DNG files, which will make it much larger and slow down the conversion process. We recommend to keep this setting at *Medium Size*.

The **Embed Raw File** check box embeds the original raw file in the DNG file. This makes the DNG at least twice as large as normal. This option is only recommended if you want to delete the original raw file and only keep the DNG file. Should you ever need the original raw file again, you can extract it again with Adobe DNG Converter. We do not recommend to use this option.

2.3.3 MetaRaw Converter



TIFF Cache

MetaRaw Converter saves converted raw files as DNG (or TIFF) files, which are then passed to Adobe Camera Raw. By default these files are stored in the MetaRaw cache folder and deleted after they were opened in Photoshop or Photoshop Elements. This corresponds to the **Delete after opening** option of the Policy combo box. If you repeatedly open the same raw file in Photoshop or Photoshop Elements, better activate the **Delete on exit** option. Then the MetaRaw cache folder will be emptied when exiting Photoshop or Photoshop Elements. This makes opening the same raw files much faster,

provided that you have the *Open cached file if available* check box on the [main dialog](#) activated.

By default the cache folder is located in the temp folder on the system drive. If the **Store in Folder of Raw File** check box is activated, the temporary files are saved in the folder where the raw file is located - provided the folder is writable. This has the advantage that you do not need to select this folder manually on the Save Image(s) dialog of Adobe Camera Raw. However, if the drive of the raw files is slower than the system drive the conversion process may take longer.

If you want to keep the TIFF/DNG files indefinitely, you have to activate the **Keep converted files** option of the Policy combo box. As a result the **Location combo box** will be displayed. It lets you decide if you want to store the files in the same folder as the raw file or in a sub folder called "tiff".

Output

MetaRaw Converter saves raw files as demosaicked DNG files (or TIFF files) before they are handed over to Adobe Camera Raw. Whereas raw files (and mosaiced DNG files) store the unprocessed data of the camera sensor, demosaiced DNG files (or TIFF files) contain the final processed image and are thus much bigger. A 25 megapixel uncompressed TIFF file is 150 MB large and a 50 megapixel one is 300 MB large. So demosaiced DNG files are usually six times larger than raw files (and mosaiced DNG files).

You can use the **Format check box** to switch between DNG and TIFF format. The default is "DNG (Demosaiced)" and we recommend to keep this setting, because it offers three advantages:

- 1) The Lens Correction and Chromatic Aberration Removal options on the MetaRaw main dialog work in Photoshop Element 10 and higher.
- 2) The lens profile is preselected in Camera Raw and lens correction is automatically activated in Photoshop CS5 and higher.
- 3) The Camera Raw settings are stored in .xmp files and can be used again when opening the raw file again.
- 4) When clicking the Done button on the Camera Raw dialog there is no error message anymore.

On the other hand if you set the format to TIFF you can produce a stronger noise reduction effect with the same settings in Camera Raw, which is the only advantage of using TIFF. In Photoshop CS1/CS2 and Photoshop Elements 3-5 MetaRaw Converter only outputs demosaiced DNG files, because Adobe Camera Raw 2 and 3 do not support TIFF files. The Format combo box is disabled in this case.

The MetaRaw Converter tries to produce a similar look like Adobe Camera Raw. If you like to have a less punchy image in order to adjust the shadows and highlights yourself manually, you can activate the **Neutral Look** check box. This produces a less bright and contrasty image.

The **White Balance** combo box defines which white balance operation is applied if any. The **Camera Setting** option applies a color correction that corresponds to the color temperature recorded by the camera. If no color temperature was stored or is found by MetaRaw, an automatic color correction will be performed. The **Automatic** option ignores the stored color temperature and performs an automatic color correction. In some cases this may produce better colors, but we recommend to use the *Camera Setting* option nevertheless and adjust the color with Adobe Camera Raw or directly in Photoshop or Photoshop Elements. The **None** option does not perform any white balancing and usually produces incorrect or dirty colors. This is only something for color correction experts, who want to want to do this step manually.

The **Color Space** combo box lets you choose the color space of the image produced by the MetaRaw Converter. We recommend to set it to the color space that you use for your workflow. In most cases it is sRGB or Adobe RGB.

Please note: The color space of the image is actually determined by the color space setting in Adobe Camera Raw. So if you choose sRGB here in MetaRaw and have Adobe Camera Raw set to Adobe RGB, the image opened in Photoshop or Photoshop Elements will be Adobe RGB. But the net result is that some color values will be lost on the way, even if there is no visible difference. So make sure that this combo box has the same color space as the corresponding setting in Adobe Camera Raw.

The **Bayer Quality** combo box lets you choose the quality of the conversion for raw file that were captured with a conventional Bayer sensor. Such a sensor is used in all cameras except those with a X-Trans sensor (some Fujifilm cameras) or a Foveon sensor (only Sigma cameras). This option basically defines the demosaicing algorithm that is used. Here are some comments about the different options:

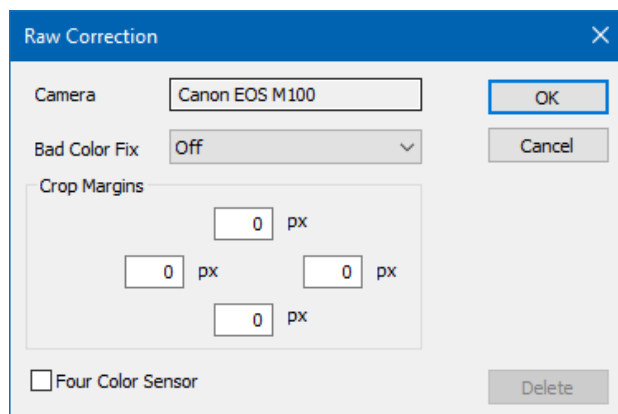
- **Very High:** Uses AMaZE demosaicing, which produces great details and removes most moire artifacts. It is five times slower than the default High option. If conversion speed is not your concern, we recommend activating it.
- **High:** This is the default setting, which used AFD demosaicing. It is extremely fast, but does not reduce moire. A few details may get a bit too sharp with it. It is quite similar to the demosaicing of Adobe Camera Raw and DNG Converter.

- **High (Moire Removal):** It uses LMMSE demosaicing and is a bit slower than the High option. It removes Moire artifacts very effectively, but may add grain to tiny details that are 2-3 pixel large.
- **Good (MetaRaw 1.x):** This is an improved version of the AHD demosaicing algorithm of MetaRaw 1. It is a bit slower than the High setting and tends to produce maze artifacts. We do not recommend using it with high ISO raw files, because it smears the noise and does not produce fine grain, which would be easier to remove with noise reduction. But it is included for backward compatibility with MetaRaw 1.

The **High X-Trans Quality** check box only concerns raw files that were recorded with a Fujifilm X-Trans sensor. If you activate it there are less colored edges in the converted image, but the conversion time is 2.5 times longer. You usually only see a difference at zoom ratios of 400% or higher if you look really close, so we do not really recommend activating this check box.

The **Raw Correction combo box** provides options for fixing the colors and cropping of raw files of unknown future cameras. To add a new correction and display the Raw Correction dialog please select the "Add New ..." item of this combo box. If you already added corrections for cameras, you will see their names here. To edit (or delete) an existing correction, simply select it. All options display the following dialog.

2.3.4 Raw Correction



The Raw Correction dialog appears when you choose an option of the Raw Correction combo box on the Settings dialog. It allows fixing the colors and cropping of raw files of unknown future cameras. This way you can increase the raw format support of MetaRaw Converter. Once MetaRaw officially supports a camera, for which you added a raw correction manually, please delete the corrections again, otherwise you may, for example, crop away pixels unnecessarily.

The **Camera text field** shows the camera name of the currently opened raw file. You cannot edit this entry as it has to be identical with the camera name in the EXIF data of the raw file. So please open a raw file of the camera for which you want to add corrections.

The **Bad Color Fix combo box** provides options for fixing faded, extreme or otherwise false colors. The values correspond to the intensity of the color correction. If the colors are faded start with a value of 512. If the colors are too strong, start with a value of 128. Then open the raw file again. Now if the color are faded, try a higher value. If the colors are too extreme, try a lower value. Repeat this process and adjust the value until the image looks good.

Please note: If the image needs to be cropped, first try adjusting the cropping with the Crop Margins options. In some cases this also fixes bad colors and you do not need to use the Bad Color Fix option.

The four **Crop Margins text boxes** let you define how many pixels will be cropped at the top, left, right and bottom of the image. This is needed if you noticed that the opened raw images have either a black border or contain artifacts at the margins. As Bayer sensors consist of a 2 x 2 grid, it can happen that cropping the top and left margin produces bad colors. In such a case try increasing the top value and then the left value by one.

Some cameras use a four color Bayer sensor grid. In case MetaRaw does not detect it correctly and you see strange artifacts in the image at 100% zoom, you can try to activate the **Four Color Sensor** check box.

The **OK button** will add the new correction to the Raw Correction combo box of the previous dialog, the **Cancel button** cancels it and **Delete button** deletes an existing correction.

2.4 Camera Raw Filter / Smart Object

In addition to providing enhanced support for raw files, MetaRaw includes other features, which allows you to apply the effects of Adobe Camera Raw to an already opened image as well as create a smart object that can be edited with Camera Raw. The file format of the opened image does not matter. The mode of the image has to be RGB, Grayscale, CMYK or Lab with 8-bit or 16-bit per channel. If it is not the case, MetaRaw asks for conversion into RGB image mode.

Camera Raw Filter

MetaRaw's Camera Raw Filter feature allows you to apply the effects of Adobe Camera Raw to an already opened image. You can run it in Photoshop from the **File > Automate > Camera Raw Filter** menu item and in Photoshop Elements from the **File > Automation Tools > Camera Raw Filter** menu item. Then the Adobe Camera Raw dialog shows up and you can choose your effect settings. Finally click the *OK* button (or *Open Image* button) to apply the effect to the image.

This feature supports layers, selections and transparent areas (alpha channel) of layers. It does not touch layer masks, vector masks and layer effects. However, if you apply it to a smart object, you are asked whether you want to rasterize it. This means that the smart object will be transformed into a normal layer. So best apply Camera Raw before you convert a layer to a smart object. If you try to apply it to a non-image layer or if there is no layer selected, you will get a warning. If you have multiple layers selected, they will be merged into one layer before Camera Raw is applied.

Better not crop the image in Adobe Camera Raw, otherwise the resulting smaller image will be centered in the original image and you have to crop it again. So it makes more sense to crop the image after applying Camera Raw.

Camera Raw Smart Object

MetaRaw's Camera Raw Smart Object feature creates a smart object from the selected layer(s), which can be edited with Camera Raw. You can run it in Photoshop from the **File > Automate > Camera Raw Smart Object** menu item and in Photoshop Elements from the **File > Automation Tools > Camera Smart Object** menu item. Then the Adobe Camera Raw dialog shows up and you can choose your effect settings. Finally click the *OK* button (or *Open Image* button) to turn the selected layers into a smart object.

Please note: If you selected more than one layer before running the Camera Raw Smart Object command, the layers will be merged before they are converted into a smart object. This is necessary because Camera Raw cannot process multiple layers.

To edit the created smart object double click its thumbnail in the Layers panel. As a result the Camera Raw dialog appears and you can change the settings non-destructively. In Photoshop Elements this is only possible if ElementsXXL 3 (or higher) for Windows or ElementsXXL 1.03 (or higher) for MacOS X is installed.

