# Capture One 8

THE PROFESSIONAL CHOICE IN IMAGING SOFTWARE



RELEASE NOTES
English

# PHASEONE

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# Capture One 8.1 Release Notes

Capture One Pro 8 is a professional RAW converter offering you ultimate image quality with accurate colors and incredible detail from more than 300 high-end cameras – straight out of the box. It offers state-of-the-art tethered capture, powerful digital asset management, extensive adjustment tools and a flexible workflow.

With an updated processing engine, market-leading performance and powerful new features, Capture One Pro 8 is the professional choice in imaging software. The highly responsive tools give you the power to create stunning images from your camera's RAW files, in a time-saving workflow that can be customized to fit your needs.

Capture One 8 is made by Phase One (the World's leading manufacturer of high-end digital camera systems) in collaboration with the World's leading professional photographers.

Capture One 8 is available in four versions: Pro, DB, Pro (for Sony) and Express (for Sony).

# Highlights, Capture One 8.1

This is a feature release providing new features, bug fixes, stability improvements, camera and lens support.

#### **New features**

- Editing in Photoshop
- Improved Auto Adjust
- Quick Cursor Tools
- Find/replace renaming
- Additional and improved naming tokens
- Multiple Guides
- Incremental Camera Controls
- Up to 16 Adjustments Layers
- Additional TIFF processing options

### **Bug fixes**

- Windows: Fixed an issue where browsing images would stop preview generation
- Windows: Improved support for importing, adjusting and processing images with non-English characters in their path
- Mac: Fixed an issue where Export to Originals did not include LCC or ICC profiles
- Mac: Fixed an issue where incorrect dates would be applied to imported images
- Mac: Fixed an issue where using the Spot tool together with a Heal Layer would result in a crash
- Fixed some stability issues
- Fixed 100+ other bugs

### **Camera Support**

- Support for Phase One A-series cameras
- Live View for Sony A7S, A7R and Sony A7 Mark II
- Tether support for Sony a5100
- File and tether support for Sony A7-II
- Tether support for Canon 7D mark II
- File support for Fujifilm X100T and X30
- File support for Canon G7X
- File support for Panasonic FZ1000
- Improved support for Leica T

### Lens support

- Alpagon 5.6/23 mm
- Alpar 4.0/35 mm
- Alpagon 5.6/70mm
- Rodenstock HR Digaron-S 5.6/23 mm
- Rodenstock HR Digaron-S 4.0/35 mm
- Rodenstock HR Digaron-W 4.0/40 mm
- Rodenstock HR Digaron-W 4.0/50 mm
- Rodenstock HR Digaron-W 5.6/70 mm
- Zeiss Distagon T\* 2/35mm ZF.2
- Zeiss Distagon T\* 1.4/35mm ZF.2
- Zeiss Planar T\* 1,4/50mm ZF.2
- Zeiss Makro Planar T\* 2/50mm ZF.2
- Zeiss Planar T\* 1.4/85mm ZF.2
- Zeiss Makro Planar 2/100mm ZF.2
- Zeiss Apo Sonnar T\* 2/135mm ZF.2
- Canon G7X

# System Requirements

Capture One may run on other and older equipment than what's listed below but to ensure the best possible results we recommend that your computer conforms to the following specifications:

# Microsoft® Windows® minimum requirements

- Intel® Core™ 2 Duo or better
- 4 GB of RAM
- 10 GB of free hard disk space
- Color calibrated monitor with 1280x800, 24-bit resolution at 96dpi screen ruling
- Windows 7<sup>®</sup> SP1 64-bit, Windows 8<sup>®</sup> 64-bit
- Microsoft® .NET Framework version 4.5.2 (will be installed if not present)
- A PDF reader is needed to read the Release Notes
- An Internet connection is needed when activating Capture One.

## Apple® Macintosh® minimum requirements

- Intel® Core™ 2 Duo or better
- 4 GB of RAM
- 10 GB of free hard disk space
- Calibrated color monitor with 1280x800, 24-bit resolution at 96dpi
- Mac OS X 10.9 or 10.10
- An Internet connection is needed when activating Capture One.

#### **Recommended system requirements**

Working with high-resolution images and doing calculation heavy adjustments may put too much pressure on the minimum requirements system to work properly. In such cases and to optimize performance, please follow the recommendations below:

- Use processors with multiple cores, e.g. Intel Core i7<sup>™</sup> or better
- Have 16 GB of RAM or more
- Leave plenty of hard disk space free for your images
- A fast hard disk e.g. a Solid State Disk (SSD)
- A fast Graphics card from NVIDIA or AMD, e.g. AMD Radeon 7950 (Mac) / AMD R9 290 (Win) or newer, with minimum 2GB RAM. We recommend using the Mac Pro (late 2013) containing the dual AMD D700 GPU.

# Installation

Capture One is compatible with previous 7.x, 6.x, 5.x and 4.x versions.

If you upgrade from Capture One 7, 6, 5 or 4 the settings will be migrated. If you upgrade from Capture One 3 the original settings cannot be reused. If you want to keep your existing versions of Capture One you can install this newer version of Capture One 8 in a different location. However, it is generally recommended that you only install one version of Capture One.

#### **Install on Windows**

Capture One includes an easy-to-use installer that will install all the software you need to run the application on a Windows based computer.

To install the software, please follow the procedure below:

- 1. Load the Capture One USB, CD or download the application from the Phase One website: http://www.phaseone.com
- 2. Run the executable software install file.
- 3. Read and accept the license agreement when presented.
- 4. Follow the on-screen instructions to complete the installation.

#### Install on OS X

Capture One includes an easy-to-use installer that will install all the software necessary to run the application on OS X.

To install the software, please follow the procedure below:

- 1. Load the Capture One USB, CD or download the application from the Phase One website: http://www.phaseone.com
- 2. Open the Capture One disk image.
- 3. Drag the Capture One icon to the Applications folder.
- 4. Start the Capture One application from your Applications folder.
- 5. Read and accept the license agreement when presented.

In addition Leaf and Mamiya DM Back users should install specific Leaf drivers before connecting their back by selecting Install Leaf Drivers from the Capture One menu in the application. We recommend that you Quit Capture One and restart the computer after the installation.

# Recommendations and limitations

#### All users

- When you have disconnected a camera do not reconnect a camera until the Camera tool status changes to "No Camera Attached".
- DNG support is for raw DNG only is not optimized for specific cameras.

#### Other camera users

- Connecting some Canon cameras to the computer after launching Capture
   One might result in tethered capture being unavailable. If you experience this, connect the camera to the computer prior to launching Capture One.
- This functionality is not supported for Fujifilm RAW files: processing/exporting to DNG, auto mask, healing with Repair Layers and LCC.
- This functionality is not supported for sRAW/mRAW files: LCC analysis and healing with Repair Layers.
- Canon Live View: The image is not rotated according to camera orientation, as Canon does not report the orientation during Live View.

### **Digital Back users**

- Battery charging on IQ systems can cause issues with stability over Thunderbolt adapters or in low power devices such as Laptops. Switch charging off if you suffer repeated disconnections.
- For tethered shooting with Phase One digital backs make sure that your system can either supply at least 10W power via Firewire (more than most laptops can supply) or make sure to activate the "Force Battery" setting on the back. Use the 4.5m Phase One Firewire cable.
- For tethered shooting with Leaf and Mamiya DM digital backs make sure that your system can supply at least 12W power via Firewire (more than most laptops can supply). Use a Leaf or Mamiya Firewire cable.
- Unless otherwise specified for your Phase One camera system, do not open the shutter on the camera prior to opening the Live View window. Doing so

will generate errors on the digital back after closing the Live View window. The recommended procedure for using Live View is to first open the Live View window, then open the shutter on the camera, use Live View as desired, when done, close the shutter on the camera, and close the Live View window.

- For Leaf Backs and Mamiya DM systems, the camera body must be selected in preferences before connecting the back.
- For Leaf Backs and Mamiya DM systems, in the case of a communication error during firmware upload, please wait 10 minutes before disconnecting the FireWire cable.
- Leaf Aptus II 8 only works with black and white Live View.
- Focus controls for iXR and iXA cameras are only supported by IQ and Credo backs.

# Known issues

Below you will find a list of known issues for Capture One 8 at the time of shipping.

#### All users

- Browsing folders containing unsupported image files may affect application performance.
- Previews from earlier versions of Capture One may be updated. In some
  cases, this can affect the application performance the first time images are
  viewed in this version of Capture One.
- Using e.g. a US laptop keyboard it might be preferable to change some of the standard keyboard shortcuts.
- Editing images in external applications other than Adobe Photoshop might result in unexpected behavior.

#### Mac users

- It is only possible to show the Capture One toolbar in "Icon Only" mode.
- Live View over USB can stall without the use of a repeater.

#### Windows users

- Windows drivers are required for some older models of Canon DSLR cameras to be able to shoot tethered. These drivers are available from Canon's web site.
- If you have Bonjour 2.0.3 installed you may experience problems with Capture Pilot. Bonjour 2.0.2 (shipping with Capture One 8) and 2.0.4 (shipped with iTunes) have been tested to work with Capture Pilot. To check the version number of Bonjour, go to 'Control Panel' and select 'Programs and Features'.
- Importing a catalog can result in the last picture not getting imported.

# **Supported Cameras**

# **File Support: Capture One DB**

Capture One DB offers file support for the following cameras or digital backs:

Phase One	IQ280 IQ260 IQ260 Achromatic IQ250 IQ180 IQ160 IQ160 Achromatic IQ150	IQ140 iXU150 P65+ P40+ P45+ P30+ P21+	P25+ P20+ Achromatic+ P45 P30 P25 P21	P20 H 25 H 20 H 101 H 10 H 5 LightPhase	
Mamiya	DM56 DM40 DM33 DM28	DM22 M31 M22 M18			
Leaf	Credo 80 Credo 60 Credo 50 Credo 40	Aptus-II 12R Aptus-II 12 Aptus-II 10R Aptus-II 10	Aptus-II 8 Aptus-II 7 Aptus-II 6 Aptus-II 5	AFi-II 12 AFi-II 10 AFi-II 7 AFi-II 6	

# **File Support: Capture One Pro**

In addition to the above cameras, Capture One Pro offers file support for the following cameras or digital backs:

Leaf	Aptus 75S Aptus 65S Aptus 54S	AFi 7 AFi 6 AFi 5	Aptus 75 Aptus 65	Aptus 22 Aptus 17
Sony	A7R A7S A7-II A7 A99 A77 II A77 A65 A58 A57 A55 A37 A35 A33 A900	A850 A700 A580 A560 A550 A500 A450 A390 A380 A350 A330 A300 A290 A230	A200 A100 a6000 a5100 a5000 a3000 RX1R RX1 R1 RX10 RX100 III RX100 III RX100 II	NEX-6 NEX-5T NEX-5R NEX-5N NEX-5 NEX-3N NEX-73 NEX-73 NEX-C3 NEX-C3 NEX-3 NEX-VG20 NEX-VG30 NEX-VG900 QX-1

Canon	1D C 1D X 1D Mark IV 1Ds Mark III 1D Mark III 1D Mark II N 1Ds Mark II 1D Mark II 1D Mark II 5D Mark III 5D Mark II 5D 6D 7D Mark II	7D 70D 60D 50D 40D 30D 20D 10D 700D/Rebel T5i 650D/Rebel T4i 600D/Rebel T2i 500D/Rebel T1i 450D/Rebel XSi 400D/Rebel XTi	350D/Rebel XT 300D/Rebel 100D/Rebel SL1 1200D/Rebel T5 1100D/Rebel T3 1000D/Rebel XS 100D/Rebel SL1 D60 D30 M Pro 1 G7X G1 X mk II G1 X G16	G15 (preliminary) G12 G11 G10 G9 G6 G5 G3 G2 S120 S110 S100 S95 S90
Leica	D4s D4 DF D3s D3X D3 D2Xs D2Xs D2H D1H D810 D800 M (Typ 240) M (Typ 220)	D800E D750 D700 D610 D600 D300s D300s D300 D200 D100 D90 D80 D70s D70 D60 X1 X Vario	D50 D40X D40 D7100 D7100 D7000 D5300 D5200 D5100 D5000 D3300 D3200 D3100 D3000 P340 T (Typ 701) C (Typ 112)	P330 P7800 P7700 P7100 P7000 P6000 1 AW1 J3 J2 J1 V2 V1 S1 Coolpix A D-Lux 5 D-Lux 4
Fujifilm	M-Monochrom X2 X-T1 XQ1 X-A1 X-M1 X-Pro1	M9 M8 X-S1 X-E2 X-E1 XF1 X100T	V-Lux 4 D-Lux 6 X100S X100 X30 X20 X10	Digilux 3 Digital Module R  S5 Pro S3 Pro S2 Pro
Olympus	E-M1 E-M5 E-M10 Stylus 1 E-5 E-P5 E-PL5 E-PL3 E-PL2	E-PL1 E-PM2 E-PM1 XZ-2 iHS XZ-1 XZ-10 E-620 E-3 E-520	E-510 E-450 E-P3 E-P2 E-P1 E-420 E-410 E-500 E-1	E-10 E-20 E-30 E-330 E-300 E-400 C-7070 C-8080
Panasonicc	GX7 (preliminary) GX1 GF6 (preliminary) GF5 GF3 GF2 GF1	GM1 GH4 GH3 GH2 GH1 G6 G5	G3 G2 G1 G10 LX7 LX5 LX3	FZ1000 FZ72 FZ45 FZ200 FZ150 FZ100 LF1

Pentax	K-01 MX-1 K-3 K-5 IIs K-5 II K-5	K-30 K-r K20D K10D K7 KX K200D	K110D K100D Super K100D K2000/K-m *istDL2	*istD *istDS2 *istDS Q10 Q7 (FW 1.0.0 Only) Q (PEF Only)
Ricoh	GR GR DIGITAL IV GR DIGITAL III	GR DIGITAL II GR DIGITAL GX100	GX200 GRX S10 GXR P10	GXR A16 GXR A12
Samsung	EX2F NX30 NX20 NX11	NX10 NX5 NX300	NX210 NX200	NX100 NX1000

Mamiya: MZD, ZD Back. Epson: R-D1s, R-D1.

Konica Minolta: Alpha 5 D, Alpha 7 D, A1, A2.
Other files: CinemaDNG, Linear DNG, DNG 1.2

# File Support: Capture One Pro and Express (for Sony)

Capture One Pro (for Sony) and Capture One Express (for Sony) have file support for the Sony cameras above.

# **Tethered Support: Capture One DB**

Capture One DB has tethered support for these cameras or digital backs:

Phase One	IQ280 IQ260 IQ260 Achromatic IQ250 IQ180 IQ160 IQ160 Achromatic IQ150	IQ140 iXU150 P65+ P40+ P45+ P30+ P21+	P25+ P20+ Achromatic+ P45 P30 P25 P21	P20 H 25 H 20 H 101 H 10 H 5 LightPhase
Mamiya	DM56 DM40 DM33 DM28	DM22 M31 M22 M18		
Leaf	Credo 80 Credo 60 Credo 50 Credo 40	Aptus-II 12R Aptus-II 12 Aptus-II 10R Aptus-II 10	Aptus-II 8 Aptus-II 7 Aptus-II 6 Aptus-II 5	AFi-II 12 AFi-II 10 AFi-II 7 AFi-II 6

# **Tether Support: Capture One Pro**

In addition to the above cameras, Capture One Pro offers tethered support for the following cameras:

Leaf	Aptus 75S Aptus 65S Aptus 54S	AFi 7 AFi 6 AFi 5	Aptus 75 Aptus 65	Aptus 22 Aptus 17
Sony	A7R A7S	A7-II A7 A99	A77 II a6000	a5100 a5000
Canon	1D C 1D X 1D Mark IV 1D Mark III 1Ds Mark III 5D Mark III 5D Mark II	6D 7D Mark II 7D 70D 60D 50D 40D	700D/Rebel T5i 650D/Rebel T4i 600D/Rebel T3i 550D/Rebel T2i 500D/Rebel T1i	450D/Rebel XSi 1200D/Rebel T5 1100D/Rebel T3 1000D/Rebel XS 100D/Rebel SL1
Nikon	D4s D4 D3s D3X D3 D810 D800	D800E D700 D610 D600 D300s D300 D200 <sup>i</sup>	D90 D80 <sup>ii</sup> D60 D40X D40 D7100	D7000 D5300 D5200 D5100 D5000 DF

# **Tether Support: Capture One Pro (for Sony)**

Capture One Pro (for Sony) offers tethered support for these cameras:

Sony	A7R	A7-II	A77 II	a5100
	A7S	A7	a6000	a5000
• • •		A99		5.000

<sup>i</sup> Tethered support for Nikon D200 and D80 is not available on Windows

# **Supported Lenses**

These are the lenses with automatic lens corrections in Capture One 8:

	Phase One	Digital AF 28mm f/4.5 Aspherical Digital AF 35mm f/3.5 Digital AF 45mm f/2.8 Digital AF 80mm f/2.8 Digital AF 150mm f/2.8 IF	Digital AF 150mm (2x Tele) f/5.6 Digital AF 120mm f/4 Macro Digital Zoom AF 75-150mm f/4.5 MF 120mm f/4 Macro 45mm TS f/3.5
	Schneider-Kreuznach	LS 28mm f/4.5 Aspherical LS 40-80mm f/4.0-5.6 LS 55mm f/2.8 LS 75-150mm f/4-5.6 LS 80mm f/2.8 LS 110mm f/2.8 LS 150mm f/3.5 LS 150mm (2x Tele) f/7.0 LS 240mm f/4.5 LS 240mm (2x Tele) f/9.0	
	Mamiya	Sekor AF 120mm f/4.0 Macro Sekor MF 120mm f/4.0 Macro Sekor AF 150mm IF D (2x Tele) f/5.6 Sekor AF 150mm f/2.8 IF D Sekor AF 28mm f/4.5 Aspherical D Sekor AF 80mm f/2.8 D Sekor LS 110mm f/2.8 D Sekor LS 150mm (2x Tele) f/7.0 Sekor LS 40mm IF (2x Tele) f/9.0	Sekor LS 240mm f/4.5 Sekor LS 55mm f/2.8 D Sekor LS 80mm f/2.8 D A 200mm f/2.8 APO A 300mm f/2.8 APO A 500mm f/4.5 APO AF 35mm f/3.5 AF 45mm f/2.8
	Alpa	Alpagon 5.6/23 mm Alpar 4.0/35 mm Alpagon 5.6/70mm	
	Rodenstock	HR Digaron-S 5.6/23 mm HR Digaron-S 4.0/35 mm HR Digaron-W 4.0/40 mm HR Digaron-W 4.0/50 mm HR Digaron-W 5.6/70 mm	
Carl Zeiss	(Hasselblad V)	Distagon T* 2.8/80 CF Distagon T* 3.5/60 CF Distagon T* 4/40 IF CFE Makro-Planar T* 4/120 CFE	
Carl Zeiss	(Contax 645)	Apo-Makro-Planar T* 4/120 Distagon T* 2.8/45 Distagon T* 3.5/35 Distagon T* 3.5/55	Planar T* 2/80 Sonnar T* 2.8/140 Sonnar T* 4/210

Hasselblad	HC 2.2/100 HC 2.8/80 HC 3.2/150 HC 3.5-4.5/50-110	HC 3.5/35 HC 4/120 HCD 4/28
Canon	EF 16-35mm f/2.8L II USM EF 17-40mm f/4L USM EF 20mm f/2.8 USM EF 24-70mm f/2.8L II USM EF 24-70mm f/2.8L II USM EF 24-70mm f/4L IS USM EF 24-105mm f/4L IS USM EF 24mm /1.4L II USM EF 35mm f/1.4L USM EF 50mm f/1.4L USM EF 50mm f/1.8 II EF 70-200mm f/2.8L IS II USM EF 70-200mm f/2.8L IS USM	EF 70-200mm f/4 L IS USM EF 85mm f/1.2L II USM EF 85mm f/1.8 USM EF 100mm f/2.8L Macro IS USM EF 100-400mm f/4.5-5.6L IS USM EF 135mm f/2L USM EF 300mm f/4L IS USM EF-S 10-22mm f/3.5-4.5 USM EF-S 17-55mm f/2.8 IS USM EF-S 17-85mm f/4-5.6 IS USM EF-S 18-135mm f/3.5-5.6 IS STM EF-S 18-55mm f/3.5-5.6 IS
Nikon	AF NIKKOR 20mm f/2.8D AF NIKKOR 28-105mm f/3.5-4.5 D IF AF NIKKOR 35-70mm f/2.8D AF NIKKOR 35-70mm f/2.8D AF NIKKOR 35mm f/2D AF NIKKOR 50mm f/1.8D AF-S NIKKOR 20mm f/1.8G ED AF-S DX NIKKOR 16-85mm f/3.5-5.6G ED VR AF-S DX NIKKOR 18-105mm f/3.5-5.6G ED VR AF-S DX NIKKOR 18-200mm f/3.5-5.6G ED VR AF-S DX NIKKOR 18-300mm f/3.5-5.6G ED VR AF-S DX NIKKOR 18-55mm f/3.5-5.6G ED VR AF-S DX NIKKOR 18-55mm f/3.5-5.6G VR AF-S DX NIKKOR 18-55mm f/2.8G ED VR AF-S NIKKOR 14-24mm f/2.8G ED AF-S NIKKOR 16-35mm f/4G ED VR AF-S NIKKOR 17-35mm f/2.8 ED AF-S NIKKOR 24-120mm f/4G ED VR AF-S NIKKOR 24-120mm f/4G ED VR AF-S NIKKOR 24-70mm f/2.8G ED AF-S NIKKOR 24-85mm f/3.5-4.5G ED VR AF-S NIKKOR 24-85mm f/3.5-4.5G ED	AF-S NIKKOR 24mm f/1.4G ED AF-S NIKKOR 28-300mm f/3.5-5.6G ED VR AF-S NIKKOR 28-70mm f/2.8D IF-ED AF-S NIKKOR 35mm f/1.4G AF-S NIKKOR 50mm f/1.4G AF-S NIKKOR 50mm f/1.8G AF-S NIKKOR 70-200mm f/2.8G ED VR II AF-S NIKKOR 70-200mm f/2.8G ED VR AF-S NIKKOR 70-200mm f/4G ED VR AF-S NIKKOR 85mm f/1.4G AF-S NIKKOR 85mm f/1.4G AF-S NIKKOR 85mm f/1.8G AF-S NIKKOR 58 mm 1.4G AF-S VR Micro-Nikkor 105mm f/2.8G IF-ED AF-S VR Zoom 70-300mm f/4.5-5.6G IF- ED 1 NIKKOR 11-27.5mm f/3.5-5.6 1 NIKKOR AW 11-27.5mm f/3.5-5.6
Pentax	SMC-D FA 100mm F2.8 WR SMC-DA 15mm F4 Al Limited SMC-DA 18-55mm F3.5-5.6 AL WR SMC-DA 21mm F3.2 Al Limited	SMC-DA 70mm F2.4 Limited SMC-FA 31mm F1.8 Limited SMC-FA 43mm F1.9 Limited
Panasonic	LEICA DG SUMMILUX 25mm / F1.4 ASPH LUMIX G 14mm F2.5 ASPH. LUMIX G 20mm F1.7 ASPH.	LUMIX G VARIO 14-42 f3.5-5.6 II ASPH. O.I.S. LUMIX G X VARIO 12-35mm F2.8 ASPH. POWER O.I.S

M.ZUIKO DIGITAL 14-42mm 1:3.5-5.6 II R ZUIKO DIGITAL ED 7-14mm 1:4.0 M.ZUIKO DIGITAL 17mm 1:2.8 Pancake ZUIKO DIGITAL ED 9-18mm 1:4.0-5.6 M.ZUIKO DIGITAL 25mm 1:1.8 ZUIKO DIGITAL 11-22mm 1:2.8-3.5 M.ZUIKO DIGITAL 45mm 1:1.8 ZUIKO DIGITAL ED 12-60mm 1:2.8-4.0 SWD M.ZUIKO DIGITAL ED 12-40mm 1:2.8 ZUIKO DIGITAL ED 14-35mm 1:2.0 SWD M.ZUIKO DIGITAL ED 40-150mm f/2.8 Pro ZUIKO DIGITAL 14-54mm 1:2.8-3.5 II M.ZUIKO DIGITAL ED 12-50mm 1:3.5- 6.3 EZ ZUIKO DIGITAL ED 50mm 1:2.0 Macro M.ZUIKO DIGITAL ED 12mm 1:2.0 ZUIKO DIGITAL ED 150mm 1:2.0 M.ZUIKO DIGITAL ED 17mm 1:1.8 ZUIKO DIGITAL ED 300mm 1:2.8. M.ZUIKO DIGITAL ED 60mm 1:2.8 Macro ZUIKO DIGITAL ED 50-200mm 1:2.8-3.5 SWD M.ZUIKO DIGITAL ED 75-300mm 1:4.8-6.7 **ZUIKO DIGITAL ED 90-250mm 1:2.8** M.ZUIKO DIGITAL ED 75mm 1:1.8 ZUIKO DIGITAL ED 35-100mm 1:2.0 M.ZUIKO DIGITAL ED 9-18mm 1:4.0-5.6 10-20mm F3.5 EX DC HSM 24mm F1.8 EX DG ASP Macro 105mm F2.8 EX DG OS HSM Macro 28mm F1.8 EX DG ASP Macro 120-400mm F4.5-5.6 DG APO OS HSM 30mm F1.4 EX DC HSM 150-500mm F5-6.3 APO DG OS HSM 50mm F1.4 EX DG HSM 150mm F2.8 EX DG OS HSM APO Macro 50mm F2.8 EX DG Macro 17-50mm F2.8 EX DC OS HSM 85mm F1.4 EX DG HSM 17-70mm F2.8-4 DC Macro OS HSM | C APO 50-150mm F2.8 EX DC OS HSM 18-200mm F3.5-6.3 II DC OS HSM APO 70-200mm F2.8 EX DG OS HSM 18-250mm F3.5-6.3 DC MACRO OS HSM 10-20mm F4-5.6 EX DC HSM 18-35mm F1.8 DC HSM | A 50- 500mm F4.5-6.3 APO DG OS HSM 24-105mm F4 DG OS HSM | Art 70-300mm F4-5.6 APO DG Macro 24-70mm F2.8 IF EX DG HSM APO Macro 180mm F2.8 EX DG OS HSM 120-300mm F2.8 EX DG OS APO HSM 70-300mm F4-5.6 DG OS 20mm F1.8 EX DG ASP RF 70mm F2.8 EX DG Macro 35mm F1.4 DG HSM | Art 12-24mm F4.5-5.6 DG HSM II 19mm f2.8 EX DN 30mm F2.8 EX DN 60mm F2.8 DN A A 50mm F1.4 (SAL50F14) E 18-55mm f/3.5-5.6 OSS (SEL1855) E PZ 16-50 mm F3.5-5.6 OSS (SELP1650) FE 28-70mm F3.5-5.6 OSS (SEL2870) A 50 mm F2.8 Macro (SAL50M28) A Carl Zeiss Distagon T\* 24mm F2 ZA SSM (SAL24F20Z) A Carl Zeiss Vario-Sonnar T\* 24-70 mm F2.8 ZA SSM (SAL 2470Z) A Carl Zeiss Planar T\* 85 mm F1.4 ZA (SAL85F14Z) A 70-300mm F4.5-5.6 G SSM (SAL 70300G) E 50mm F1.8 OSS (SEL50F18) A 100mm F2.8 Macro (SAL100M28) A 85 mm F2.8 SAM (SAL85F28) A 35 mm F1.4G (SAL 35F14G) A Carl Zeiss Vario-Sonnar T\* 16-35mm F2.8 ZA SSM (SAL1635Z) A Carl Zeiss Sonnar T\* 135 mm F1.8 ZA (SAL 135F18Z) A DT 11-18 mm F4.5-5.6 (SAL1118) A DT 16-50mm F2.8 SSM (SAL1650)

50mm f/2 Summicron-M

Zeiss	Otus 55mm f1.4 Otus 85mm f1.4 Distagon T* 2/35mm ZF.2 Distagon T* 1.4/35mm ZF.2 Planar T* 1,4/50mm ZF.2	Makro Planar T* 2/50mm ZF.2 Planar T* 1.4/85mm ZF.2 Makro Planar 2/100mm ZF.2 Apo Sonnar T* 2/135mm ZF.2
Fixed Lens cameras	Canon PowerShot G7X Canon PowerShot G1X mk II Canon PowerShot G1X Canon PowerShot G12 Canon PowerShot G15 Canon PowerShot G16 Canon PowerShot S100/S110 Canon PowerShot S120 Fujifilm FinePix X100 Nikon COOLPIX A	Nikon COOLPIX P7700 Nikon COOLPIX P7800 Olympus XZ 6-24mm Olympus XZ-10 Ricoh GR Sony Cyber-shot DSC- RX100 II Sony Cyber-shot DSC-RX100 Sony Cyber-shot DSC-RX10 Sony RX1/RX1R