Fringer EF-GFX Pro User's Manual

(Firmware v1.40)

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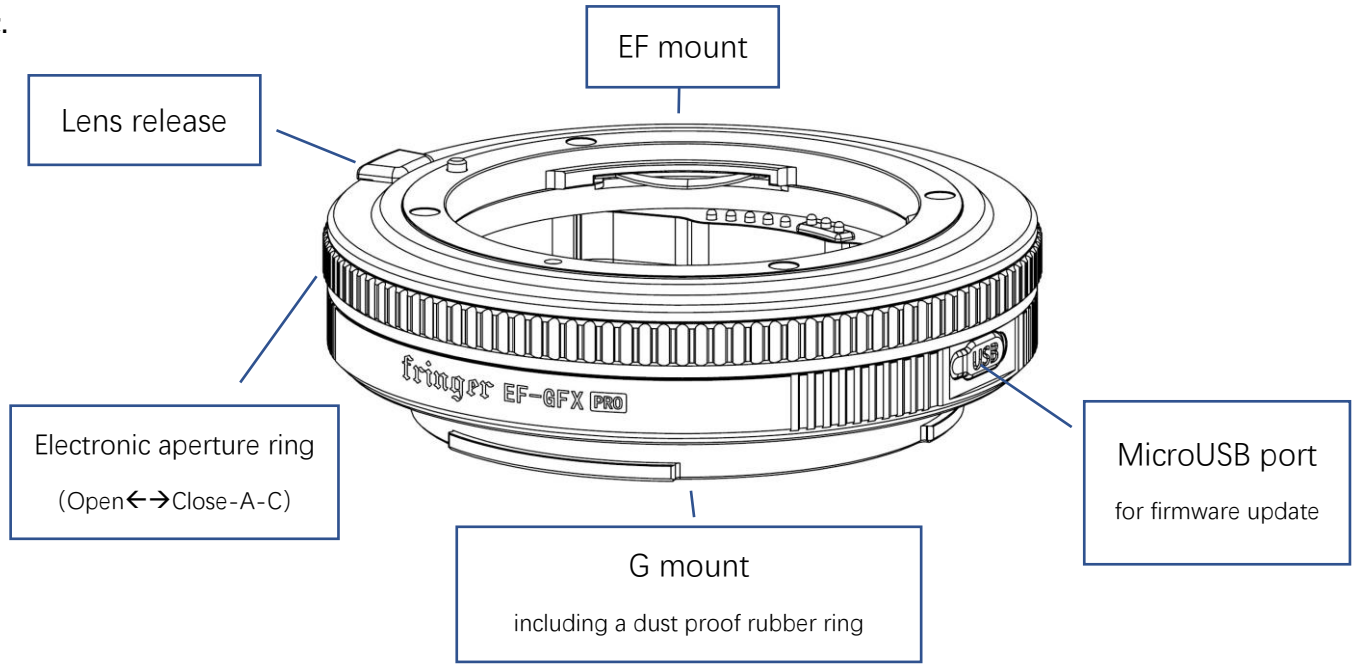
1. Introduction

This product is compatible with Canon EF mount and Fujifilm G mount protocols. It can control lens' aperture electronically, auto focus and report lens information for EXIF recording.

There is a built-in electronic aperture ring just like native GF lenses. And it employs contactless sensors so that you don't need to worry about wearing problems. In addition to the electronic aperture ring, the adapter supports more unique features including Phase Detection AF (on GFX100 & GFX100S only, so far), IBIS, Lens IS and In-camera LaCA (Lateral Chromatic Aberration) Correction, etc.



2. Compatibility

This adapter works on G mount cameras. However, due to capability differences of different camera models, its performance may vary.

On cameras without PDAF support, such as GFX50s, GFX50r and GFX50s II, adapted lenses can only work in the CDAF mode. Most of lenses on the tested and optimized lens list should work normally in the AF-S mode. However, as many EF mount lenses are not designed for contrast AF, AF speed may be slow. And AF accuracy may not be good, either. Meanwhile, AF-C mode is not supported. If AF performance can't satisfy you, MF is recommended.

On cameras with PDAF support, such as GFX100 and GFX100S, tested and optimized lenses AF much faster and more accurate. In some circumstances, the experience of using adapted lenses on these cameras is just like using a DSLR. Thus, if you are about to purchase a new G mount camera to use EF lenses, the 102M pixel models are highly recommended.

We have tested and optimized over 120 models of EF mount lenses. Compare to lenses not on the list, tested and optimized ones work better in both PDAF and CDAF modes. However, the EF mount is a

huge system and there are so many different lens models. A lot of them have not been tested and optimized, yet. Most of them would work on the adapter with a lower performance. And a small amount of them may not be compatible. If you encounter poor AF performance or compatibility issues, please wait for us to test and optimize that lens and support it in future firmware updates.

When using zoom lenses with variable maximum aperture that haven't been tested and optimized, the aperture value displayed may not be correct.

See the attached list at the end for tested and optimized lens models.

3. Function descriptions

3.1 Lens self-test (for lenses NOT tested and optimized only)

When you install a lens not tested/optimized on the adapter and power on the camera for the first time, the adapter may drive the AF module to the close end and then to infinity. After that, the camera will reboot to finish the self-test and calibration process. During the process, please do not touch the focus ring of the lens, or you may interfere with the calibration. If there is something wrong with the self-test procedure, the AF function may not be in a normal state. If that happens, turning on and then turning off the camera at once will clear the calibration data stored. Installing another lens and powering on the camera will do the same.

Tested and optimized lenses don't do this.

3.2 Full frame or medium format selection (35mm mode on/off)

EF mount lenses are designed for full frame cameras. Its image circle covers a 36mm x 24mm sensor. But the dimension of the sensor of GFX cameras is about 44mm x 33mm. Thus, many EF lenses can't fully cover it at all and may cause dark corners/vignetting and distortion, etc. It's normal and not the malfunction of the adapter.

By default, the camera menu item "35mm mode" is set to "auto". Images will be cropped to 36x24mm automatically when an adapter and an EF lens are attached. (Be noted, it won't do that auto crop if focus bracketing support or in-body vignetting and distortion correction for current lens is enabled in SETTINGS.INI on the adapter. Check section 3.7.1 and 3.7.4 for more details.) Thus, usually you won't see the issues mentioned above. But, since some of the EF lenses do cover the medium format sensor, you may force the camera to capture 44x33mm images by setting "35mm mode" to "off" on camera menu.

3.3 Setting aperture and shutter speed value

Setting aperture value through electronic aperture ring:

Looking down to the top of the camera, turning the ring right tells the camera to stopping down, and vice versa. Each step equals to 1/3 EV. When it is turned to the smallest aperture position, one more step brings it to the A (Auto mode) under which the aperture will be decided by the camera (P or S mode). Now if the ring is turned right one more step further, it will be set to C (Command mode). The aperture ring logic described above is exactly the same as native GF lenses.

Setting aperture value through command dial on the camera:

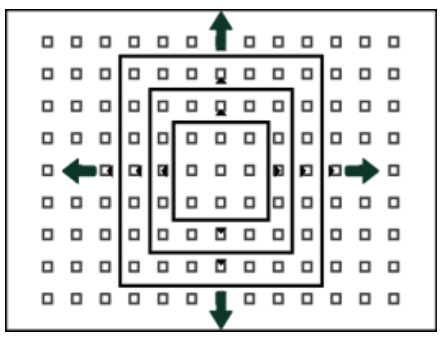
Instead of using the aperture ring, you may also set the aperture value through the command dial on the camera body by turning the aperture ring to the right most, i.e., C position, as described earlier. Be noted that the front dial of some GFX cameras may be used for both ISO and aperture settings. On those camera models, you may need to press the front dial before setting the aperture value if it is in the ISO setting mode. To avoid the conflicts of ISO and aperture settings on those cameras, electronic aperture ring is the preferred way of setting the aperture.

Caution: For zoom lenses with variable maximum aperture, please zoom it to the wide end before moving aperture ring between A/C position and smallest aperture setting position.

Manually setting shutter speed is suggested! If you set shutter speed to auto, when environment brightness changes during view finding, the lens aperture blades may move frequently with a little noise and slightly flashing of LCD or EVF. Native GF lenses behave the same. But their aperture motor moves so fast and silently that you will never notice. However, EF lenses' aperture motor moves slower and noisier. If you want to avoid it, please manually set shutter speed. You may still set shutter speed to auto if that's tolerable. Be noted that if "PREVIEW EXP./WB IN MANUAL MODE" on the camera menu is set to "OFF", the described issue may occur even the shutter speed is set manually.

For zoom lenses with variable maximum aperture that haven't been tested and optimized, aperture values may not be displayed correctly. Primes, zooms with fixed maximum aperture, and all lenses optimized don't have this issue.

3.4 Setting AF modes



Due to the limitation of EF lenses who are designed for 35mm cameras, when using them on GFX cameras, there may be distortions in the edge areas that damage the performance of auto focus. Thus, please avoid using focus points in those areas if possible. Focus points in the 5 or 7 rows in the middle are usually safe to be chosen. In most cases, the rest of focus points work, too. But the AF accuracy and success rate may decrease.

On cameras with PDAF, e.g., GFX100 and GFX100S, the size of the focus points may affect AF

performance. If AF success rate or accuracy issues are encountered, you may try different AF point size settings. Usually, the smaller focus point setting may bring more accuracy. But it may need more lights and details in the small area covered by the focus point to work, or the success rate may become poorer. In contrast, the bigger focus point setting may bring higher AF success rate. But accuracy may decrease.

On cameras with PDAF, e.g., GFX100 and GFX100S, both AF-S and AF-C modes are supported. In many circumstances, AF performance is similar to that of a DSLR. But if the camera doesn't support PDAF, e.g., GFX50S, GFX50R and GFX50S II, only AF-S mode is supported as CDAF is used instead of PDAF. And AF performance is poorer. That is normal and not the malfunction of the adapter. In both PDAF and CDAF modes, face/eye detection AF works.

We have tried our best to make EF lenses work better on G mount. But please understand that different lens and camera system will never collaborate like a native system. Sometimes even lenses optimized may encounter AF issues. You may try to improve its accuracy by half pressing shutter release button **more than once** before releasing the shutter. Or you may try AF-C instead of AF-S mode (on GFX100 and GFX100S only). If necessary, please change to the MF mode.

When you want to use MF mode, please set AF/MF switch on the lens to the MF position. The camera will be set to the MF mode automatically.

Most of lenses that are not on the tested and optimized lens list should work normally. But since PDAF isn't supported and CDAF performs poorer, you may encounter slow and inaccurate AF. Sometimes MF would be the only choice. Or you may wait for the lens to be added to the list by future firmware updates.

3.5 Lens built-in IS and camera IBIS functions

This product supports both lens IS (or OS, VC) and IBIS functions. But they don't work at the same time. You may choose between them. When the camera is powered on or entering the shooting mode from the playback mode, the IS switch on the lens decides which one is activated, lens IS or IBIS. "On" status of the switch at that time enables lens IS and disables IBIS, and vice versa. IBIS will be automatically enabled if the lens doesn't have IS function at all. In most cases, IBIS works better than lens IS unless the lens is a very long telephoto one.

Whatever lens IS or IBIS is chosen, the stabilization function is controlled by "IS MODE" menu item. If it's set to "Continuous" (Mode 1), IS functions are activated all the time. When it's set to "Shooting only" (Mode 2), lens IS function is enabled when the shutter release button being half-pressed and disabled about 2 seconds after its release while IBIS function is only enabled during the exposure. Because of the ages of some EF lenses, the old design may limit their ability of instant activation of IS module. Thus, "Shooting only" mode may not work reliably for them. In that case, "Continuous" mode

is suggested.

Caution: IBIS performance of some lenses may be affected if camera is in native lens mode. If you encountered such a problem when focus bracketing is enabled in SETTINGS.INI, please turn it off to restore IBIS performance. Check section 3.7.1 for more details.

3.6 In-body vignetting and distortion correction

In-body vignetting and distortion correction profiles for some fast primes are embedded in the adapter. See table 1 for the detailed list.

Lens model	Configuration item	Keep IBIS
Canon EF 35mm f/1.4L II USM	ForceNativeEF3514L =	Y
Canon EF 40mm f/2.8 STM	ForceNativeEF4028STM =	Y
Canon EF 50mm f/1.8 STM	ForceNativeEF5018STM =	Y
Canon EF 85mm f/1.2L II USM	ForceNativeEF8512L2 =	Y
Canon EF 85mm f/1.4 L IS USM	ForceNativeEF8514LIS =	Y
Canon EF 100mm f/2.8L IS USM	ForceNativeEF10028LIS =	Y
SIGMA 40mm F1.4 DG HSM A018	ForceNativeSigma4014A =	Y
SIGMA 50mm F1.4 DG HSM A014	ForceNativeSigma5014A =	Y
SIGMA 70mm F2.8 DG MACRO A018	ForceNativeSigma7028A =	Y
SIGMA 85mm F1.4 DG HSM A016	ForceNativeSigma8514A =	Y
SIGMA 105mm F1.4 DG HSM A018	ForceNativeSigma10514A =	Y
TAMRON SP 35mm F/1.8 Di VC USD F012	ForceNativeTamron3518VC =	Y
TAMRON SP 45mm F/1.8 Di VC USD F013	ForceNativeTamron4518VC =	Y
TAMRON SP 85mm F/1.8 Di VC USD F016	ForceNativeTamron8518VC =	Y
Canon EF 70-300mm f/4-5.6L IS USM	ForceNativeEF70300LIS=	N
Canon EF 300mm f/2.8L IS II USM	ForceNativeEF30028LIS2=	N
SIGMA 100-400mm F5-6.3 DG OS HSM C017	ForceNativeSigma100400OSC=	N

Table 1 lenses that support in-body vignetting and distortion correction

Note:

1. As 35mm lenses are not designed for medium format cameras, there may be strong vignetting and distortion. The in-body correction function is to reduce them rather than eliminate them.
2. Because of the limitation of the camera, the corrections work only if the camera is set in native lens mode. But the performance of IBIS of some adapted lenses may be degraded in that mode. Lenses with “keep IBIS” marked as “Y” are not affected by that issue. For lenses marked as “N”, please use lens IS function if possible. Or you may make your own choice on which one goes first, IBIS or in-body correction. If you want IBIS first, please set the relevant configuration item in

SETTINGS.INI to 0. Refer to section 3.7.4 for more details.

3. Some lenses may have very strong vignetting and cause dark corners. In that case it isn't correctable at all. Thus, those lenses won't be added to the list.

3.7 Advanced settings

Begin with firmware 1.10, user configurable software switches are added.

Connect the adapter to a computer with the USB cable coming with the adapter. A drive named "FRINGER" appears. In the root folder there is a file named "SETTINGS.INI". It's in format of ordinary INI files. Do not modify it unless you know how to do that. If you want to restore it to default, just remove it. The adapter will re-generate it when the next time it works on a camera body.

There are two working modes of the GFX cameras, i.e., adapter mode and native lens mode, as described in the following table (table 2):

Function of adapted lenses	Adapter mode	Native lens mode
Focus bracketing	Not supported	Supported
IBIS	Fully supported	Degraded or not supported for some lenses
Vignetting and distortion correction profile	Not supported	Supported
Mount adapter setting menu	Available	Grayed out
35mm format mode "AUTO"	Crop to 35mm	Keep 44 x 33 frame

Table 2 Function differences of two working modes of GFX cameras

To understand which mode the camera is currently in, there are two simple ways. 1. You may set "35mm format mode" to "AUTO" in camera menu. If there is a "35" on the top left of the screen, it's in adapter mode. 2. You may check the "Mount adapter setting" menu item. If it's grayed out, it's in native lens mode.

3.7.1 Focus bracketing support

Description:

By default, the focus bracketing on camera menu is grayed out. To use that function, you need to modify SETTINGS.INI as following.

Item name:

FocusBracketing

Item value:

0 (default): focus bracketing menu item disabled (set the camera in adapter mode)

1: focus bracketing menu item enabled (set the camera in native lens mode)

Caution:

1) When setting focus range and begin position, don't manually turn focus ring! Always use AF to drive focus point to the position you want. Or the focus bracketing function may not work properly.

2) When "FocusBracketing=" is set to 1 in the SETTINGS.INI, the adapter is set to native lens mode and some functions of the camera may change. Check Table 2 for more details.

3.7.2 Move AF to infinity when powering off/switching to playback mode

Description:

On one hand, lenses with external focus design such as some STM lenses may not be convenient to be stored in a bag when its AF isn't on infinity. Moving AF to infinity automatically when powering off (or switching to playback mode) is preferred. On the other, some of them, e.g. EF85/1.2L II, may have very heavy front elements so that the experience of moving it to/from infinity every time switching the camera to/from playback mode is really bad. To make your own choice, you may modify SETTINGS.INI as following.

Item name:

PowerOffInfinity

Item value:

0 (default): Only enabled for some STM lenses, EF50/1.4, Sigma 70/2.8 ART, etc.

1: Enabled for all lenses.

3.7.3 Sigma70/2.8ART fix

Description:

There are two versions of SIGMA70/2.8Art in the market. One of them doesn't work properly on GFX50S/50R/50SII cameras with severe focus shifting and focus hunting problems. The other version works normally. The two versions can't be identified by the appearance of the lens. User may set this configuration item to fix the issue.

Item name:

Sigma70ArtFix

Item value:

0 (default): Do not apply the fix

1: Apply the fix

Caution:

please turn on the patch only if you encountered the said issues. Or it may cause other problems.

3.7.4 Force native lens mode for certain lens models to activate in-body vignetting and distortion correction

Description:

By default, these configuration items activate certain lens' in-body vignetting and distortion correction by setting the camera in native lens mode. See section 3.6 for more details. Users may also turn it off if they want to manually adjust in mount adapter setting menu.

Item name:

ForceNativeXXXX (XXXX corresponds to the lens currently installed)

Item value:

1 (default): Force the camera in native lens mode when using this lens

0: Camera working mode is decided by the value of FocusBracketing.

3.8 Configuration fast switching

To change configuration items, a computer is needed. Sometimes it isn't convenient. Thus, configuration fast switching function is added.

When the camera with the adapter and the lens is powered on and in shooting mode, user may use the aperture ring to enter a 4 digits function code to change certain configuration items.

Detailed steps are as following (Take entering function code "1234" as an example. "Forward" and "Backward" are relative. You may decide which direction is forward by yourself).

1) Half-press the shutter button once and finish step 2) - 6) in 20 seconds.
2) Turn aperture ring 1 step forward. It's the first digit.
3) Turn aperture ring 2 steps backward. It's the second digit.
4) Turn aperture ring 3 steps forward. It's the third digit.
5) Turn aperture ring 4 steps backward. It's the fourth digit.
6) Half-press the shutter button.
7) Now, the camera will reboot automatically. After that, the configuration has changed.

Note: During aperture ring operation, please ignore the response of the camera and the lens. Just pay attention to the feel of steps and the click sounds of the aperture ring.

3.8.1 Focus bracketing support fast switching

Function code: "1234"

Configuration item name: FocusBracketing

Description: Switch the value between 0 and 1

3.8.2 Force native lens mode for current lens fast switching

Function code: "4321"

Configuration item name: ForceNativeXXXX (XXXX corresponds to the lens currently installed)

Description: Switch the value between 0 and 1

4. Firmware update

You need a PC or Mac and a Micro B USB cable, i.e., the one coming with the adapter, to upgrade it.

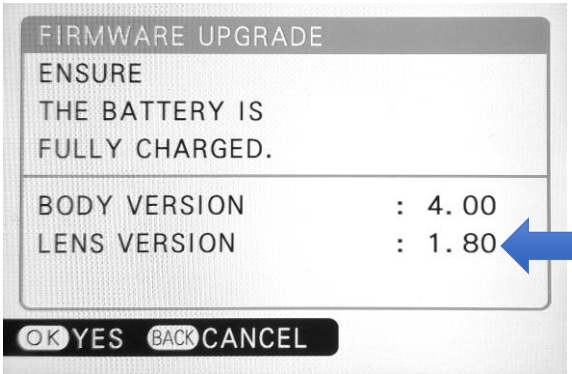
1) Download new firmware from Fringer's website. For example, 'EFGF_100.BIN' is v1.00.
2) Get the adapter off the camera. Make sure not to connect the adapter with the computer while it is installed on a camera body.
3) Plug the USB cable to the Micro USB port on the adapter.
4) Connect the other end of the cable to a USB port of your PC or MAC. Then a mobile drive named 'FRINGER' emerges. Open 'VERSION.TXT' on that drive and check current firmware version (the line begins with 'Version:').
5) If upgrading is needed, copy the downloaded firmware file to the drive named 'FRINGER'. Wait for about 20 seconds. Ignore any error messages about the drive. The adapter would disconnect itself and reconnect. The 'FRINGER' drive would appear again. If it doesn't reconnect automatically, you may manually disconnect the USB cable and reconnect it with the computer.
6) Check VERSION.TXT again and make sure its firmware version has changed to the new one.

Note: Do not copy files other than the official firmware to the adapter.

Troubleshooting:

Some of the cables in the market are for charging only and not suitable for data transfer. Thus, if you can't find the "FRINGER" drive when adapter is connected to the computer, check your cable!

You may also read the adapter's firmware version by Fujifilm's method, i.e., press and hold DISP button before powering on the camera. The "Lens version" on the screen is actually the adapter's firmware version. See the following figure.



5. Tested and optimized lens list

(firmware v1.40)

1	Canon EF 14mm f/2.8 L II USM	3	Canon EF 28mm f/1.8 USM
2	Canon EF 24mm f/1.4L II USM	4	Canon EF 35mm f/1.4L USM

5	Canon EF 35mm f/1.4L II USM
6	Canon EF 35mm f/2 IS USM
7	Canon EF 40mm f/2.8 STM
8	Canon EF 50mm f/1.2L USM
9	Canon EF 50mm f/1.4 USM
10	Canon EF 50mm f/1.8 STM
11	Canon EF 85mm f/1.2L USM
12	Canon EF 85mm f/1.2L II USM
13	Canon EF 85mm f/1.4 L IS USM
14	Canon EF 85mm f/1.8 USM
15	Canon EF 100mm f/2.8L IS USM
16	Canon EF 135mm f/2 L USM
17	Canon EF 135mm f/2 L USM + 1.4X
18	Canon EF 135mm f/2 L USM + 2X
19	Canon EF 180mm f/3.5 L USM
20	Canon EF 180mm f/3.5 L USM + 1.4X
21	Canon EF 180mm f/3.5 L USM + 2X
22	Canon EF 200mm f/1.8L USM
23	Canon EF 200mm f/1.8L USM + 1.4X
24	Canon EF 200mm f/1.8L USM + 2X
25	Canon EF 200mm f/2 L IS USM
26	Canon EF 200mm f/2 L IS USM + 1.4X
27	Canon EF 200mm f/2 L IS USM + 2X
28	Canon EF 200mm f/2.8L II USM
29	Canon EF 200mm f/2.8L II USM + 1.4X
30	Canon EF 200mm f/2.8L II USM + 2X
31	Canon EF 300mm f/2.8L IS USM
32	Canon EF 300mm f/2.8L IS USM + 1.4X
33	Canon EF 300mm f/2.8L IS USM + 2X
34	Canon EF 300mm f/2.8L IS II USM
35	Canon EF 300mm f/2.8L IS II USM + 1.4X
36	Canon EF 300mm f/2.8L IS II USM + 2X
37	Canon EF 300mm f/2.8L USM
38	Canon EF 300mm f/2.8L USM + 1.4X
39	Canon EF 300mm f/2.8L USM + 2X
40	Canon EF 300mm f/4 L USM
41	Canon EF 300mm f/4 L USM + 1.4X
42	Canon EF 300mm f/4 L IS USM
43	Canon EF 300mm f/4 L IS USM + 1.4X
44	Canon EF 400mm f/2.8L IS II USM
45	Canon EF 400mm f/2.8L IS II USM + 1.4X
46	Canon EF 400mm f/2.8L IS II USM + 2X
47	Canon EF 400mm f/4 DO IS II USM
48	Canon EF 400mm f/4 DO IS II USM + 1.4X
49	Canon EF 400mm f/5.6 L USM
50	Canon EF 600mm f/4L IS USM
51	Canon EF 600mm f/4L IS USM + 1.4X
52	Canon EF 11-24mm f/4L USM
53	Canon EF 16-35mm f/4L IS USM
54	Canon EF 16-35mm f/2.8L II USM
55	Canon EF 16-35mm f/2.8L III USM
56	Canon EF 17-40mm f/4L USM
57	Canon EF 24-105mm f/4L IS II USM
58	Canon EF 24-70mm f/2.8L II USM
59	Canon EF 24-70mm f/2.8L USM
60	Canon EF 24-70mm f/4L IS USM
61	Canon EF 70-200mm f/2.8L IS USM
62	Canon EF 70-200mm f/2.8L IS USM + 1.4X
63	Canon EF 70-200mm f/2.8L IS USM + 2X
64	Canon EF 70-200mm f/2.8L IS II USM
65	Canon EF 70-200mm f/2.8L IS II USM + 1.4X
66	Canon EF 70-200mm f/2.8L IS II USM + 2X
67	Canon EF 70-200mm f/2.8L IS III USM
68	Canon EF 70-200mm f/2.8L IS III USM + 1.4X
69	Canon EF 70-200mm f/2.8L IS III USM + 2X
70	Canon EF 70-200mm f/4L USM
71	Canon EF 70-200mm f/4L USM + 1.4X
72	Canon EF 70-200mm f/4L IS USM

73	Canon EF 70-200mm f/4L IS USM + 1.4X
74	Canon EF 70-200mm f/4L IS II USM
75	Canon EF 70-200mm f/4L IS II USM + 1.4X
76	Canon EF 70-300mm f/4.5-5.6 DO IS USM
77	Canon EF 70-300mm f/4-5.6 IS II USM
78	Canon EF 70-300mm f/4-5.6L IS USM
79	Canon EF 100-400mm f/4.5-5.6 L IS II USM
80	Canon EF 200-400mm f/4L IS USM
81	SIGMA 14mm F1.8 DG HSM A017
82	SIGMA 20mm F1.4 DG HSM A015
83	SIGMA 24mm F1.4 DG HSM A015
84	SIGMA 28mm F1.4 DG HSM A019
85	SIGMA 35mm F1.4 DG HSM A012
86	SIGMA 40mm F1.4 DG HSM A018
87	SIGMA 50mm F1.4 DG HSM A014
88	SIGMA 50mm F/1.4 EX DG HSM
89	SIGMA 70mm F2.8 DG MACRO A018
90	SIGMA 85mm F1.4 DG HSM A016
91	SIGMA 105mm F1.4 DG HSM A018
92	SIGMA 105mm F2.8 EX DG OS HSM MACRO
93	SIGMA 135mm F1.8 DG HSM A017
94	SIGMA APO MACRO 180mm F2.8 EX DG OS HSM
95	SIGMA APO MACRO 180mm F2.8 EX DG OS HSM + 1.4X
96	SIGMA 500mm f/4.5 EX DG APO HSM
97	SIGMA 14-24mm f/2.8 DG HSM A018
98	SIGMA 24-35mm F2.0 DG HSM A015
99	SIGMA 24-70mm f/2.8 DG OS HSM A017
100	SIGMA 60-600mm f/4.5-6.3 DG OS HSM S018

101	SIGMA 70-200mm f/2.8 DG OS HSM S018
102	SIGMA 70-200mm f/2.8 DG OS HSM S018 + 1.4X
103	SIGMA 70-200mm f/2.8 DG OS HSM S018 + 2X
104	SIGMA APO 70-200mm f/2.8 EX DG OS HSM
105	SIGMA APO 70-200mm f/2.8 EX DG OS HSM + 1.4X
106	SIGMA APO 70-200mm f/2.8 EX DG OS HSM + 2X
107	SIGMA 100-400mm F5-6.3 DG OS HSM C017
108	SIGMA 120-300mm f/2.8 DG OS HSM S013
109	SIGMA 120-300mm f/2.8 DG OS HSM S013 + 1.4X
110	SIGMA 120-300mm f/2.8 DG OS HSM S013 + 2X
111	SIGMA 150-500mm f/5-6.3 APO DG OS HSM
112	SIGMA 150-600mm F5-6.3 DG OS HSM C015
113	SIGMA 150-600mm F5-6.3 DG OS HSM S014
114	TAMRON SP 35mm F1.4 Di USD F045
115	TAMRON SP 35mm F/1.8 Di VC USD F012
116	TAMRON SP 45mm F/1.8 Di VC USD F013
117	TAMRON SP 85mm F/1.8 Di VC USD F016
118	TAMRON SP 15-30mm F/2.8 Di VC USD A012
119	TAMRON SP 15-30mm F/2.8 Di VC USD G2 A041
120	TAMRON 17-35mm f/2.8-4 Di OSD A037
121	TAMRON SP 24-70mm F/2.8 Di VC USD G2 A032
122	TAMRON 35-150 f/2.8-4 Di VC OSD A043
123	TAMRON SP 70-200mm F/2.8 Di VC USD G2 A025
124	TAMRON SP 70-210mm F/4 Di VC USD A034
125	TAMRON 100-400mm F/4.5-6.3 Di VC USD A035
126	TAMRON SP 150-600mm F/5-6.3 Di VC USD G2 A022
127	TAMRON SP 200-500mm F/5-6.3 Di LD (IF)
128	TOKINA Opera 50mm f/1.4 FF