



ABOUT POINT GREY

POINT GREY is a world-leading designer and manufacturer of innovative, high-performance digital cameras for industrial, life science, and traffic applications. We offer a unique and comprehensive portfolio of USB3 Vision, GigE Vision, FireWire, USB 2.0 and Camera Link products known for their outstanding quality, ease of use, and unbeatable price-performance.

QUICK FACTS

- Founded 1997
- ISO 9001:2008 registered compan
- 170+ staff worldwide
- 120 K camera/year capacity
- Designed and manufactured in Canada
- Global offices & distribution network



INNOVATION

At Point Grey, "innovation" is more than a tagline; it's a way of life. The synergies of a broad range of hardware, software and mechanical engineering skills under one roof allows Point Grey to continually bring innovative and ground-breaking products to market. This drive for innovation has led to many industry firsts, including the world's first and smallest I394b digital camera, the world's smallest GigE camera, and the world's first USB 3.0 camera.

PRODUCT EXCELLENCE

All design, prototyping, manufacturing, testing, and packaging is done out of a state-of-the-art facility in Richmond, BC, Canada. These facilities include dedicated



SMT lines, AOI and X-ray machines, industrial clean room, and automated test stations. The "Seal of Quality" label on each camera cannot be printed until the camera has been 100% inspected and tested. This rigorous quality testing, together with hassle-free product warranties, ensures that customers can rely on Point Grey cameras for their demanding applications.

CUSTOMER CARE

To ensure our customers achieve maximum value from their camera systems, Point Grey offers world-class support on installation, configuration, customization and trouble shooting. Our Customer Support program includes quick response email and phone support, online user



manuals, online knowledge base articles and regular firmware updates.

END-TO-END IMAGING

A critical component of any vision system is the speed and reliability of the imaging pipeline, from light hitting the image sensor to data reaching the host system. Point Grey Research has taken ownership of the entire pipeline, and over the last 16 years has created a diverse portfolio of digital cameras, peripheral components, and software.



2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
First IEEE 1394 stereo vision camera Digiclops	First IEEE 1394 imaging camera Firefly	First spherical vision camera Ladybug	First Flea camera	First IEEE 1394b camera Dragonfly Express	Headquarters expansion New products Dragonfly2 Ladybug2	Office opens in Germany New products Flea2 Firefly MV	New products Grasshopper FirePRO	Headquarters expansion New product USB 2.0 camera Chameleon New product Ladybug3	World's first USB 3.0 Camera	New products Flea3 New product GigE camera Grasshopper2	First Camera Link camera Gazelle First USB 30 camera Flea3 World's smallest GigE camera Flea3 New product Grasshopper Express	China office opens New Product IP camera Zebra2 World's Smallest PoE GigE Camera Blackfly	New USB3 products Ladybug5 Grasshopper3



Point Grey USB 3.0 Camera Features:

- Unique selection of CCD and CMOS sensors
- FPGA and frame buffer-based architecture for optimal reliability
- Point Grey proprietary USB 3.0 link layer and driver stack
- Industry-standard C- and CS- mount
- Fully tested USB 3.0 accessories: interface cards, hubs, cables, and lenses

FLEA[®]3

FL3-U3

FL3-U3

FL3-U3

GRASSHOPPER®3

ULTRA-COMPACT, OPTIMAL VALUE



HIGH PERFOR	MANCE, CCD ANL	CMOS
		0



Model#	Sensor	Specifications		Shutter	Max Res	Max FPS
-13S2C/M-CS	1.3MP	Sony IMX035 CMOS*	1/3"	3.63 µm Rolling	1328 x 1048	120 fps
13Y3M-C	1.3MP	ON Semi VITA 1300 CMOS	1/2"	4.8 µm Global	1280 x 1024	150 fps
13E4C/M-C	1.3MP	e2v EV76C560 CMOS	1/1.8	" 5.3 µm Global	1280 x 1024	60 fps
-32S2C/M-CS	3.2MP	Sony IMX036 CMOS*	1/2.8	" 2.5 µm Rolling	2080 x 1552	60 fps
88S2C-C	8.8MP	Sony IMX121 CMOS**	1/2.5′	″ 1.55µm Rolling	4096 x 2160	21 fps
		*High performance Sony Exmor CN	10S™ **	High performance Son	y Exmor R CMOS™	

INTERFACE	USB 3.0 interface with screw locks for camera control, data, and power	USB 3.0 interface with screw locks for camera control, data, and power
GPIO	8-pin Hirose HR25 GP10 connector for power, trigger, strobe, PWM, and serial I/O: 1 opto-isolated input, 1 opto-isolated output, 2 bi-directional I/O pins	8-pin Hirose HR25 GPIO connector for power, trigger, strobe, PWM, and serial I/O: 1 opto-isolated input, 1 opto-isolated output, 2 bi-directional I/O pins

A/D	12-bit (FL3-U3-13S2, FL3-U3-32S2, FL3-U3-88S2) • 10-bit (FL3-U3-13Y3, FL3-U3-13E4)	14-bit • 10-bit (GS3-U3-23S6, GS3-U3-41C6)
IMAGE DATA FORMATS	Y8, Y16, Mono8, Mono12, Mono16 (all models) RGB8, YUV411, YUV422, YUV444, Raw8, Raw12, Raw16 (color models)	Mono8, Mono12, Mono16 (all models) RGB, YUV411, YUV422, YUV444, Raw8, Raw12, Raw16 (color models)
PARTIAL IMAGE FORMATS	Pixel binning and region of interest (ROI) modes	Pixel binning and region of interest (ROI) modes
GAIN	Automatic*/manual/one-push* (*Free running only) O dB to 24 dB (FL3-U3-1352, FL3-U3-3252, FL3-U3-8852) O db to 18 db (FL3-U3-13Y3, FL3-U3-13E4)	Automatic/manual/one-push modes O dB to 24 dB (GS3-U3-41C6, GS3-U3-28S4, GS3-U3-28S5) -6.158 dB to 24 dB (GS3-U3-6OS6); -9 dB to 24 dB (GS3-U3-91S6)
GAMMA	0.50 to 4.00, programmable lookup table	0.50 to 4.00, programmable lookup table
TRIGGER MODES	Standard, bulb, multi-shot	Standard, bulb, multi-shot, overlapped
SHUTTER	Automatic*/Manual/One-Push*/Extended Shutter** modes (*Free running only) (**except FL3-U3-13Y3) 0.008 ms to 1 second (FL3-U3-13S2) / 0.006 ms to 1 second (FL3-U3-13Y3) / 0.016 ms to 1 second (FL3-U3-13F4) / 0.01 ms to 32 seconds (FL3-U3-32S2) / 0.021 ms to 1 second (FL3-U3-88S2)	Automatic/manual/one-push/extended shutter modes 0.04 ms to 30 seconds (extended shutter mode)
IMAGE BUFFER	32 MB frame buffer	128 MB frame buffer
MEMORY CHANNEL	2 memory channels for custom camera settings	2 memory channels for custom camera settings

SIZE (WxHxD) 29 x 29 x 30 mm excluding lens holder (metal case) 44 x 29 x 58 mm excluding lens holder (metal case) 90 g (Without optics or tripod mounting bracket) 90 g (Without optics or tripod mounting bracket)

POWER 5 V, <3 W, via GPIO or USB 3.0 interface 5-24 V via GPIO or 5 V via USB 3.0 interface, maximum 4.5 W

LENS MOUNT (FL3-U3-1352, FL3-U3-3252), Genount (FL3-U3-13Y3, FL3-U3-13E4, FL3-U3-8852) Cmount

TEMPERATURE 30° to 60°C (storage) ◆0° to 45°C (operating) 3 years

3 years

















NOTE: USB3Vision support available through firmware update.



Point Grey GigE Camera Features:
• Supports GigE Vision 1.2
• Industry's most compact sizes

- GigE image filter driver for reduced latency and maximized bandwidth
- Firmware versions updatable in the field
- On-board temperature, power sensors, and status LED

Shutter Max Res Max FPS

BLACKFLY°

FLEA[®]3

GRASSHOPPER[®]2 ZEBRA[®]2

Shutter Max Res Max FPS

WORLD'S SMALLEST POE CAMERA



WORLD'S SMALLEST GIGE CAMERA



Model#	Sens	or Specificati	ons		:	Shutter	Max Res	Max FPS
FL3-GE-03S1C/M-C	0.3MP	Sony ICX618 (CCD*	1/4"	5.6 µm	Global	648 x 488	120 fps
FL3-GE-03S2C/M-C	0.3MP	Sony ICX424 (CCD	1/3"	7.4 µm	Global	648 x 488	82 fps
FL3-GE-08S2C/M-C	0.8MP	Sony ICX204	CCD	1/3"	4.65 μm	Global	1032 x 776	31 fps
FL3-GE-13S2C/M-C/CS	1.3MP	Sony ICX445	CCD*	1/3"	3.75 µm	Global	1288 x 964	31 fps
FL3-GE-14S3C/M-C	1.4MP	Sony ICX267	CCD	1/2"	4.65 μm	Global	1384 x 1032	18 fps
FL3-GE-20S4C/M-C	2.0MP	Sony ICX274	CCD	1/1.8"	4.4 µm	Global	1624 x 1224	15 fps
FL3-GE-28S4C/M-C	2.8MP	Sony ICX687	CCD**	1/1.8"	3.69 µm	Global	1928 x 1448	14 fps
FL3-GE-50S5C/M-C	5.0MP	Sony ICX655	CCD	2/3"	3.45 µm	Global	2448 x 2048	8 fps

FAST, HIGH-RESOLUTION CCD



Sensor Specifications

GS2-GE-20S4C/M-C 2.0MP Sony ICX274 CCD 1/1.8" 4.4 µm Global 1624 x 1224 29 fps

GS2-GE-50S5C/M-C 5.0MP Sony ICX625 CCD⁺ 2/3" 3.45 μm Global 2448 x 2048 15 fps

*High sensitivity Sony Super HAD CCD II™

HYBRID IP AND MACHINE VISION CAMERA



Model#	Sensor Specifications	Shutter Max Res	Max FPS
ZBR2-PGEHD-20S4C-CS	2.0MP Sony ICX274 CCD 1/1.8"	4.4 µm Global 1624 x 1224	30 fps (HD-SDI 25 FPS)
ZBR2-PGEHD-28S4C-CS	2.8MP Sony ICX687 CCD* 1/1.8"	3.69 µm Global 1928 x 1448	26 fps (HD-SDI 25 FPS)
ZBR2-PGEHD-50S5C-CS	5.0MP Sony ICX625 CCD 2/3"	$3.45\mu m \text{Global} \ \ 2448x2048$	15 fps (HD-SDI 25 FPS)
ZBR2-PGEHD-51S5C-CS	5.0MP Sony ICX655 CCD 2/3"	$3.45\mu m \text{Global} 2448x2048$	10 fps (HD-SDI 25 FPS)

*High sensitivity Sony EXview HAD CCD $II^{\mbox{\scriptsize TM}}$

BFLY-PGE-05S2C/M-CS 0.5MP Sony ICX693 CCD 1/3" 6.0 μm Global 808 x 608 50 fps

BFLY-PGE-09S2C/M-CS 0.9MP Sony ICX692 CCD** 1/3" 4.08 μm Global 1288 x 728 30 fps

BFLY-PGE-12A2C/M-CS 1.2MP Aptina ARO134 CMOS¹ 1/3" 3.75 μm Global 1280 x 960 52 fps

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	BFLY-PGE-13S2C/M-CS	1.3MP	Sony ICX445 CCD*	1/3"	3.75 µm	Global	1288 x 964	22 fps
	BFLY-PGE-13E4C/M-CS	1.3MP	e2v EV76C560 CMOS	1/1.8"	5.3 µm	Global	1280 x 1024	60 fps
	BFLY-PGE-14S2C-CS	1.4MP	Sony IMX104 CMOS***	1/3"	3.75 µm	Rolling	1296 x 1032	60 fps
	BFLY-PGE-20E4C/M-CS	2.0MP	e2v EV76C570 CMOS ¹	1/1.8"	4.5 µm	Global	1600 x 1200	47 fps
	BFLY-PGE-23S2C-CS	2.3MP	Sony IMX136 CMOS***	1/2.8"	2.8 µm	Rolling	1920 x 1200	27 fps
	BFLY-PGE-50A2C/M-CS	5.0MP	Aptina MT9P006/031 CMOS	1/2.5"	2.2 µm	Rolling	2592 x 1944	13 fps
	*High sensitivity Sony EXview HAD CCC)™ **Higl	n sensitivity Sony EXview HAD CCD II	l™ ***High	performance	Sony Exmor	CMOS™ ¹ Coming	Soon
INTERFACE	Gigabit Ethernet interface w Power over Ethernet	ith screv	v locks for camera control	and date	ı;			

1-1 OL-1332C/ M-C3	1.0////	July ICA443 CCD	1/ 0	0.75 hiii	UlUbul	1200 X 704	ZZ 1h2	1L3-0L-1332C/M-C/C3	I.J/MI	201	IY ICA4	13 (()	1/ 0	J./ J þi	III Olobul	1200 X 70	74 JI
Y-PGE-13E4C/M-CS	1.3MP	e2v EV76C560 CMOS	1/1.8"	5.3 µm	Global	1280 x 1024	60 fps	FL3-GE-14S3C/M-C	1.4MP	Sor	y ICX2	67 CCD	1/2"	4.65 µ	m Global	1384 x 10	32 18
/-PGE-14S2C-CS	1.4MP	Sony IMX104 CMOS***	1/3"	3.75 µm	Rolling	1296 x 1032	60 fps	FL3-GE-20S4C/M-C	2.0MP	Sor	y ICX2	74 CCD	1/1.8"	4.4 µm	Global	1624 x 12	24 15
Y-PGE-20E4C/M-CS	2.0MP	e2v EV76C570 CMOS ¹	1/1.8"	4.5 µm	Global	1600 x 1200	47 fps	FL3-GE-28S4C/M-C	2.8MP	Sor	y ICX68	37 CCD**	1/1.8	3.69 µ	m Global	1928 x 14	48 14
/-PGE-23S2C-CS	2.3MP	Sony IMX136 CMOS***	1/2.8"	2.8 µm	Rolling	1920 x 1200	27 fps	FL3-GE-50S5C/M-C	5.0MP	Sor	y ICX6	55 CCD	2/3"	3.45 µr	m Global	2448 x 20)48 8 f
r-PGE-50A2C/M-CS	5.0MP	Aptina MT9P006/031 CM05	5 1/2.5"	2.2 µm	Rolling	2592 x 1944	13 fps			*Hig	h sensitivi	ty Sony EX	view HAD C	.D™ *	*High sensiti	ivity Sony EXviev	v HAD CCD
sensitivity Sony EXview HAD CCC)™ **Higl	h sensitivity Sony EXview HAD CCD I	I™ ***High	performance	Sony Exmor	CMOS™ ¹ Comin	g Soon										

INTERFACE	Gigabit Ethernet interface with screw locks for camera control and data; Power over Ethernet	Gigabit Ethernet interface with screw locks for camera control and data	Gigabit Ethernet interface with screw locks for camera control and data	HD-SDI up to 2.97 Gbit/s for video. Gigabit Ethernet interface with screw locks for camera control and data; Power over Ethernet.	INTERFACE
GPIO	6-pin Hirose HR10A-7R-6PB GPIO connector for trigger, strobe, and power. 1 opto-isolated input, 1 opto-isolated output	8-pin Hirose HR25 GP10 connector for power, trigger, strobe, PWM, and serial I/O, 1 opto-isolated input, 1 opto-isolated output, 2 bi-directional I/O pins	8-pin Hirose HR25 GP10 connector for power, trigger, strobe, PWM, and serial I/O 1 opto-isolated input,1 opto-isolated output, 2 bi-directional I/O pins	6-pin GP10 connector for trigger, strobe, and serial I/O 1 opto-isolated input, 1 opto-isolated output, RS-485 interface	GPIO
A/D	10-bit (BFLY-PGE-13E4, BFLY-PGE-20E4) / 12-bit	12-bit	14-bit	12-bit (ZBR2-PGEHD-51S5) / 14-bit	A/D
IMAGE DATA FORMATS	Mono8, Mono12, Mono16, Raw8, Raw12, Raw16 (all models) RGB, YUV411, YUV422, YUV 444 (color models)	Y8, Y16, Mono8, Mono12, Mono16 (all models) RGB, YUV411, YUV422, YUV 444, Raw8, Raw12, Raw16 (color models)	Y8, Y16, (all models) RGB, YUV411, YUV422, YUV444, Raw8, Raw16, (color models)	Raw8, Raw12, Raw16, RGB, YUV411, YUV422, MJPEG Image Compression	IMAGE DATA FORMATS
PARTIAL IMAGE FORMATS	Pixel binning and region of interest (ROI) modes	Pixel binning and region of interest (ROI) modes	Pixel binning and region of interest (ROI) modes	HD-SDI supports standard SMPTE formats , RTSP/GVSP supports binned	PARTIAL IMAGE FORMATS
GAIN	Automatic*/manual/one-push*/ 0 dB to 18 dB (*free running BFLY-PGE-13E4)	Automatic/manual/one-push/ O dB to 24 dB	Automatic/manual/one-push/ 3.6 dB to 24 dB	Automatic/manual/one-push/ 0 dB to 24 dB	GAIN
GAMMA	0.50 to 4.00, programmable lookup table	0.50 to 4.00, programmable lookup table	0.50 to 4.00, programmable lookup table	0.50 to 4.00, programmable lookup table	GAMMA
TRIGGER MODES	Standard, overlapped, multi-shot	Standard, bulb, skip frames, overlapped, multiple exposure, multi-shot, low smear mode (FL3-GE-13S2, FL3-GE-28S4 models only)	Standard, bulb, skip frames, overlapped, multi-shot	Standard, bulb, skip frames, multi exposure preset, multi exposure pulse width, low smear, overlapped, and multi shot	TRIGGER MODES
SHUTTER	Automatic/manual/one-push* (*free running BFLY-PGE-13E4) 0.015 ms to 32 seconds	Automatic/manual/one-push/extended shutter modes 0.03 ms to 2 sec (FL3-GE-03S2); 0.03 ms to 4 sec (FL3-GE-08S2, FL3-GE-13S2); 0.03 ms to 6 sec (FL3-GE-50S5); 0.03 ms to 32 sec (FL3-GE-03S1, FL3-GE-14S3, FL3-GE-20S4, FL3-GE-28S2)	Automatic/manual/one-push/extended shutter modes 0.03 ms to >30 seconds (extended shutter mode)	Automatic/manual/one-push/extended shutter modes 0.03 ms to 2 seconds (extended shutter mode)	SHUTTER
IMAGE BUFFER	16 MB frame buffer	32 MB frame buffer	32 MB frame buffer	32 MB frame buffer	IMAGE BUFFER
MEMORY CHANNEL	2 memory channels for custom camera settings	2 memory channels for custom camera settings	2 memory channels for custom camera settings	2 memory channels for custom camera settings	MEMORY CHANNEL
SIZE (WxHxD)	29x29x30 mm excluding lens holder, without optics (metal case)	29x29x30 mm excluding lens holder, without optics (metal case)		44x44x87.5 mm excluding lens holder and connectors (metal case)	SIZE (WxHxD)
MASS	36 grams (without optics or tripod mounting bracket)	38 grams (without optics or tripod mounting bracket)	86 grams (without optics or tripod mounting bracket)	150 grams (without optics or tripod mounting bracket)	MASS
POWER	Standard voltage via Power over Ethernet (PoE) or 5 - 16 V via GPIO interface, < 2.5 W	12-24 V, <2.5 W, via GPIO	8-30 V, <2.5 W, via GPIO or interface	8-30 V, <6 W, via 4-pin power connector or GigE interface	POWER
LENS MOUNT	CS-mount (5 mm G-mount adapter sold separately)	C-mount (FL3-GE-13S2 also available with CS-mount)	Cmount	CS-mount with hand-adjustable back focal distance ● DC auto iris	LENS MOUNT
TEMPERATURE	-30° to 60°C (storage) ● 0° to 45°C (operating)	-30° to 60°C (storage) ● 0° to 45°C (operating)	-30° to 60°C (storage) ● 0° to 45°C (operating)	-30° to 60°C (storage) ● 0° to 45°C (operating)	TEMPERATURE



WARRANTY 3 years

































WARRANTY



- Point Grey IEEE 1394 Camera Features:
 Compact sizes including board level options
- Supports IIDC vI.32
- Industry-standard C- mount
- Firmware versions updatable in the field
- On-board temperature, power sensors, and status LED
- Automatic synchronization



GRASSHOPPER EXPRESS®

GRASSHOPPER®2 FLEA[®]2

ULTRA-COMPACT, CCD FAMILY





HIGH RESOLUTION AND SENSITIVITY

Model#	Sens	or Specifications		S	hutter	Max Res	Max FPS
GX-FW-10K3M-C	1.0MP	Kodac KAI-01050 CCD	1/2"	5.5 µm	Global	1024 x 1024	70 fps
GX-FW-28S5C/M-C	2.8MP	Sony ICX674 CCD*	2/3"	4.54 μm	Global	1932 x 1452	26 fps
GX-FW-60S6C/M-C	6.0MP	Sony ICX694 CCD*]"	4.54 µm	Global	2736 x 2192	11 fps

HIGH SENSITIVITY AND LOW NOISE







UP TO 5 MP, ULTRA-COMPACT, CCD

FL3-FW-03S1C/M-C 0.3MP Sony ICX618 CCD* 1/4" 5.6 μm Global 648 x 488 120 fps	GX-FW-10K3M-C 1.0MP Kodac KAI-01050 CCD 1/2" 5.5 µm Global 1024 x 1024 70 fps	GS2-FW-1455C/M-C 1.4MP Sony ICX285 CCD ⁻ 2/3" 6.45 µm Global 1384 x 1036 30 fps	FL2-03S2C/M-C 0.3MP Sony ICX424 CCD 1/3" 7.4 µm Global 648 x 488 80 fps
FL3-FW-03S3C/M-C 0.3MP Sony ICX414 CCD 1/2" 9.9 μm Global 648 x 488 76 fps	GX-FW-2855C/M-C 2.8MP Sony ICX674 CCD* 2/3" 4.54 µm Global 1932 x 1452 26 fps	*High sensitivity Sony EXview HAD CCD **	FL2-08S2C/M-C 0.8MP Sony ICX204 CCD 1/3" 4.65 μm Global 1032 x 776 30 fps
FL3-FW-14S3C/M-C 1.4MP Sony ICX267 CCD 1/2" 4.65 μm Global 1384 x 1032 16 fps	GX-FW-60S6C/M-C 6.0MP Sony ICX694 CCD* 1" 4.54 µm Global 2736 x 2192 11 fps		FL2G-13S2C/M-C 1.3MP Sony ICX445 CCD* 1/3" 3.75 µm Global 1288 x 964 30 fps
FL3-FW-20S4C/M-C 2.0MP Sony ICX274 CCD 1/1.8" 4.4 μm Global 1624 x 1224 15 fps	*High sensitivity Sony EXview HAD CCD II **		FL2-14S3C/M-C 1.4MP Sony ICX267 CCD 1/2" 4.65 μm Global 1392 x 1032 15 fps
*High sensitivity Sony EXview HAD CCD **			FL2-20S4C/M-C 2.0MP Sony ICX274 CCD 1/1.8" 4.4 μm Global 1624 x 1224 15 fps
			FL2G-50S5C/M-C 5.0MP Sony ICX655 CCD 2/3" 3.45 μm Global 2448 x 2048 7.5 fps
			*High sensitivity Sony EXview HAD CCD**
IEEE 1394b interface with screw locks for camera control, data, and power	Two IEEE 1394b interface with screw locks for camera control, data, power, and daisy chaining	Two IEEE 1394b interface with screw locks for camera control, data, power, and daisy chaining	IEEE 1394b interface with screw locks for camera control, data, and power
8-pin Hirose HR25 GPIO connector for power, trigger, strobe,	8-pin Hirose HR25 GPIO connector for power, trigger, strobe,	8-pin Hirose HR25 GPIO connector	8-pin Hirose HR25 GPIO connector opto-isolated pins for trigger and strobe (FL2G only),

GPIO	8-pin Hirose HR25 GPIO connector for power, trigger, strobe, PWM, and serial I/O, 1 opto-isolated input, 1 opto-isolated output, 2 bi-directional I/O pins	8-pin Hirose HR25 GPIO connector for power, trigger, strobe, PWM, and serial I/O, 1 opto-isolated input, 1 opto-isolated output, 2 bi-directional I/O pins	8-pin Hirose HR25 GPIO connector 1 opto-isolated trigger pin, 1 opto-isolated strobe pin 2 bi-directional pins for trigger, strobe, pwm or serial port	8-pin Hirose HR25 GPIO connector opto-isolated pins for trigger and strobe (FL2G only), bi-directional pins for trigger, strobe or serial port	GPIO
A/D	12-bit	14-bit	14-bit	12-bit	A/D
IMAGE DATA FORMATS	Y8, Y16 (all models) RGB, YUV411, YUV422, Raw8, Raw16 (color models)	Y8, Y16, Mono8, Mono12, Mono16 (all models) RGB, YUV411, YUV422, YUV444, Raw8, Raw12, Raw16 (color models)	Y8, Y16, (all models) RGB, YUV411, YUV422, YUV444, Raw8, Raw16, (color models)	Y8, Y16 (all models) RGB, YUV411, YUV422, YUV444, Raw8, Raw16 (color models)	IMAGE DATA FORMATS
PARTIAL IMAGE FORMATS	Pixel binning and region of interest (ROI) modes	Pixel binning and region of interest (ROI) modes	Pixel binning and region of interest (ROI) modes	Pixel binning and region of interest (ROI) modes	PARTIAL IMAGE FORMATS
GAIN	Automatic/manual/one-push/ O dB to 24 dB	Automatic/manual/one-push/ 0 dB to 24 dB	Automatic/manual/one-push/ OdB to 24dB	Automatic/manual/one-push/ O dB to 24 dB	GAIN
GAMMA	0.50 to 4.00, programmable lookup table	0.50 to 4.00, programmable lookup table	0.50 to 4.00, programmable lookup table	0.50 to 4.00, programmable lookup table	GAMMA
TRIGGER MODES	Standard, bulb, skip frames, overlapped, multiple exposure, multi-shot	Standard, bulb, skip frames, overlapped, multi-shot	Standard, bulb, skip frames, overlapped, multi-shot	Standard, bulb, skip frames, overlapped, multiple exposure, multi-shot	TRIGGER MODES
SHUTTER	$Automatic/manual/one-push/extended shutter modes \\ 0.03 ms to > 25 seconds (extended shutter mode)$	Automatic/manual/one-push/extended shutter modes 0.04 ms to >30 seconds (extended shutter mode)	Automatic/manual/one-push/extended shutter modes $0.03~{ m ms}$ to $>330~{ m sec}$ oscarods (extended shutter mode with amp glow disable option)	Automatic/manual/one-push/extended shutter modes $0.02 \ ms \ to > 10 \ s \ (extended \ shutter \ mode)$	SHUTTER
IMAGE BUFFER	32 MB frame buffer	32 MB frame buffer	32 MB frame buffer	32 MB frame buffer (FL2G only)	IMAGE BUFFER
MEMORY CHANNEL	2 memory channels for custom camera settings	2 memory channels for custom camera settings	2 memory channels for custom camera settings	2 memory channels for custom camera settings	MEMORY CHANNEL
SIZE (WxHxD)	29x29x30 mm excluding lens holder, without optics (metal case)	44x29x58 mm excluding lens holder, without optics (metal case)	44x29x58 mm excluding lens holder and connectors (metal case)	29x29x30 mm excluding lens holder, without optics (metal case)	SIZE (WxHxD)
MASS	58 g (without optics or tripod mounting bracket)	86 grams (without optics or tripod mounting bracket)	104 g (without optics or tripod mounting bracket)	58 g (without optics or tripod mounting bracket)	MASS
POWER	8-30 V, <2.5 W via GP10 or 1394b interface	8-30 V, ~5 W, via GPIO or 1394b interface	8-30 V, <2.5 W, via GP10 or 1394b interface	8-30V, <2.5W, via GPIO or 1394b interface	POWER
LENS MOUNT	C-mount	Gmount	C-mount C-mount	Cmount	LENS MOUNT
TEMPERATURE	-30° to 60°C (storage) ● 0° to 45°C (operating)	-30° to 60°C (storage) ● 0° to 45°C (operating)	-30° to 60°C (storage) ● 0° to 45°C (operating)	-30° to 60°C (storage) ● 0° to 45°C (operating)	TEMPERATURE
WARRANTY	3 years	3 years	3 years	3 years	WARRANTY



































INTERFACE





GRASSHOPPER° FIREFLY MV

Shutter Max Res Max FPS

HIGH PERFORMANCE, CCD FAMILY



GRAS-03K2C/M-C 0.3MP Kodak 0340D CCD 1/3" 7.4 µm Global 648 x 480 200 fps **GRAS-03S3M-C** 0.3MP Sony ICX414 CCD 1/2" 9.9 μm Global 648 x 488 74 fps **GRAS-14S3C/M-C** 1.4MP Sony ICX267 CCD 1/2" 4.65 µm Global 1384 x 1032 21 fps **GRAS-14S5C/M-C** 1.4MP Sony ICX285 CCD* 2/3" 6.45 μm Global 1384 x 1036 15 fps

GRAS-20S4C/M-C 2.0MP Sony ICX274 CCD 1/1.8" 4.4 µm Global 1624 x 1224 30 fps **GRAS-50S5C/M-C** 5.0MP Sony ICX625 CCD 2/3" 3.45 μm Global 2448 x 2048 15 fps *High sensitivity Sony EXview HAD CCD™

SMALL, AFFORDABLE, VERSATILE



Model#	Sensor Specifications	Shutter	Max Res	Max FPS	Ma	odel# Sen	sor Specifications		S	hutter	Max Res	Max FP
FMV-03M2C/M-CS	0.3MP Micron MT9V022 CMOS	1/3" 6.0 µm Global	752 x 480	60 fps	DR2-CO	DL/BW-C 0.3/	NP Sony ICX424 CCD	1/3"	7.4 µm	Global	648 x 488	60 fps
					DR2-HIC	COL/BW-C 0.8/	NP Sony ICX204 CCD	1/3"	4.65 µm	Global	1032 x 776	30 fps
					DR2-135	S2C/M-C 1.3A	IP Sony ICX445 CCD*	1/3"	3.75 µm	Global	1296 x 964	20 fps

*High sensitivity Sony EXview HAD CCD™

FLEXIBLE AND FULL-FEATURED

INTERFACE Two IEEE 1394b interface with screw locks for camera control, data, power, and daisy chaining **GPIO** 8-pin Hirose HR25 GPIO connector for power, trigger, strobe, PWM, and RS232

7-pin JST GPIO connector, 4 pins for trigger and strobe,

IEEE-1394a interface for camera camera control, data, and power IEEE-1394a interface for ccamera camera control, data, and power (mini connector option available) 8-pin Phoenix connector for power, trigger, strobe, PWM, and I/O1 pin +3.3 V, 1 VEXT pin for external power

A/D	14-bit	10-bit	12-bit
AGE DATA FORMATS	Y8, Y16 (all models) RGB, YUV411, YUV422, YUV 444, 8- bit and 16-bit raw Bayer data (color models)	YB, Y16 (mono) 8-bit and 16-bit raw Bayer data (color)	Y8, Y16, Mono8, Mono12, Mono16, Raw8, Raw12, Raw16 (all models) RGB, YUV411, YUV422, YUV 444 (color models)
AL IMAGE FORMATS	Pixel binning and region of interest (ROI) modes	Pixel binning and region of interest (ROI) modes	Pixel binning and region of interest (ROI) modes
GAIN	Automatic/manual/one-push/ 0 dB to 24 dB	Automatic/manual/ 0 dB to 12 dB	Automatic/manual/one-push/ O dB to 24 dB
GAMMA	0.50 to 4.00, programmable lookup table	0 to 1	0.50 to 4.00, programmable lookup table
TRIGGER MODES	Standard, bulb, skip frames, overlapped, multi-shot	Standard, skip frames	Standard, bulb, overlapped, multiple exposure, multi-shot
SHUTTER	Automatic/manual/one-push/extended shutter modes 0.08 ms to >10 seconds (extended shutter mode)	Automatic/manual/extended shutter modes 0.03 ms to 512 ms (extended shutter mode)	Automatic/manual/one-push/extended shutter modes 0.031 ms to 66.63 ms at 15 FPS, >5 seconds in extended shutter mode
IMAGE BUFFER	32 MB frame buffer	N/A	N/A
MEMORY CHANNEL	2 memory channels for custom camera settings	2 memory channels for custom camera settings	2 memory channels for custom camera settings
SIZE (WxHxD)	44x29x58 mm excluding lens holder, without optics (metal case)	39x24 (board level) / 44x34x24.4 mm (plastic case) excluding lens holder, without optics	64x51 mm (board level) / 44x34x24.4 mm (metal case)
MASS	104 g (without optics or tripod mounting bracket)	15 g (board level) / 37 g (plastic case) (without optics or tripod mounting bracket)	37 g (board level) / 187 g (metal case) (without optics or tripod mounting bracket)
POWER	8-30 V, <2.5 W via GPIO or 1394b interface	8-30 V, 1 W at 12 V via 1394a interface	8-30 V, 2.5 W at 12 V via 1394a or GPIO connector
LENS MOUNT	Gmount	CS-mount or M12 microlens mount	C-mount / M12 microlens (DR2-03S2 & DR2-08S2)
TEMPERATURE	-30° to 60°C (storage) ● 0° to 40°C (operating)	-30° to 60°C (storage) ● 0° to 40°C (operating)	-30° to 60°C (storage) ● 0° to 45°C (operating)



























- Point Grey Camera Link Camera Features:
- 2 SDR connectors with screw locks
 Industry-standard C- mount
- 8- and 10- bit image modes
- Firmware versions updatable in the field
 On-board temperature, power sensors,
- and status LED

GAZELLE°

HIGH RESOLUTION AND FRAME RATES



Model#	Sensor	Specifications			Shutter	Max Res	Max FPS
GZL-CL-22C5M-C	2.2MP	CMOSIS CMV2000 CMOS	2/3"	5.5 µm	Global	2048 x 1088	280 fps
GZL-CL-41C6M-C	4.1MP	CMOSIS CMV4000 CMOS]″	5.5 µm	Global	2048 x 2048	150 fps

Camera Link LVDS for camera control and video data transmission. Base (2-tap) and Full (8-tap) configurations	INTERFAC
8-pin Hirose HR25 GP10 connector; opto-isolated pins for trigger and strobe	GPIO

10-bit	A/D
Mono8, Mono10	IMAGE DATA FORMATS
Single or multiple region of interest modes	PARTIAL IMAGE FORMATS
Analog and digital programmable via software. Range: 32 - 64 (analog), 1 - 63 (digital)	GAIN
N/A	GAMMA
Single-shot, bulb, software trigger	TRIGGER MODES
Full 8-tap mode 0.07 ms to 54 seconds	SHUTTER
N/A	IMAGE BUFFER
2 memory channels for custom camera settings	MEMORY CHANNEL
44x29x59.5 mm excluding lens holder, without optics (metal case)	SIZE (WxHxD)
90 g (without optics or tripod mounting bracket)	MASS
12 V, 6 W at 12 V	POWER
C-mount C-mount	LENS MOUNT
-30° to 60°C (storage) • -10° to 50°C (operating)	TEMPERATURE
3 years	WARRANTY











Point Grey USB 2.0 Camera Features:

- Industry-standard CS- mount
- Includes CS-C 5 mm adapter
- Firmware versions updatable in the field
- On-board temperature, power sensors, and status LED
 Board-level and custom options available for OEMs

CHAMELEON

FIREFLY MV

COMPACT, COST EFFECTIVE, CCD QUALITY

SMALL, AFFORDABLE, VERSATILE







Model#	Sensor Specifications		Shutter	Max Res	Max FPS
CMLN-13S2C/M-CS	1.3MP Sony ICX445 CCD*	1/3"	3.75 µm Global	1296 x 964	18 fps

*High sensitivity Sony FXview HAD CCD™

Model#	Sensor Specifications		Shutter	Max Res	Max FPS
FMVU-03MTC/M-CS	0.3MP Micron MT9V022 CMOS	1/3″	6.0 µm Global	752 x 480	60 fps
FMVU-13S2C-CS	1.3MP Sony IMX035 CMOS*	1/3″	3.63 µm Rolling	1328 x 1048	23 fps

Mini-B USB2.0 for camera control, video data, and power

7-pin JST GPIO connector. 4 pins for trigger and strobe.

FLYCAPTURE SDK

THE FLYCAPTURE SOFTWARE DEVELOPMENT KIT (SDK) THAT

comes free with every camera provides a common software interface to acquire images from an control all Point Grey FireWire, USB 3.0, USB 2.0 and GigE cameras using the same API under 32- or 64-bit Windows or Linux. FlyCapture supports ActiveX and DirectShow interfaces, and includes the FirePRO low-level 1394b interface driver, enhanced USB 3.0 interface driver, and the GigE image filter driver. A complete software API library, readyto-use demo programs, and comprehensive source code examples enable users to easily build custom imaging applications.



- Proprietary USB 3.0 and FireWire driver stacks for robust diagnostics and, with complete end-to-end control, faster issue resolution
- GigE image filter driver for reduced latency and dropped frames, and maximized bandwidth

char timestampBuff[512]

if (timestamp.seconds != 0)

char ctimeStr[256]:

sprintf(ctimeStr, "Seconds: %s", ctime((con

ctimeStr(strlen(ctimeStr) - 1) = 0; // renc

sprintf(timestampBuff, "Microseconds: %u",

sprintf(timestampBuff, "Camera timestamp second

pCamInfoTreeView->SetItem(m_pLb11394CycleTimeSec

Camera timestamp count: m (m_pLbl1394CycleTimeCou

m (m_plbl1394CycleTimeOff

- | 日 | 日 | 1 | 1 | 1 | 1 | 1 |

Coll

CaminfoTreeView->SetItem(m_plblTimestampMi

stdafx.cop

TreeCtrlX.cpp

- Support for IIDC 1.32 features such as frame buffering and lookup table functionality
- OpenGL and Direct 2D support for better display performance and CPU usage
- Managed interface to decrease development time
- Simple (API) only 3 function calls required to grab an image
- Example programs and source code

MULTIPLE PLATFORM

• WINDOWS® 32/64-bit XP, Vista, 7, 8



• LINUX® Ubuntu® 32/64-bit



MULTIPLE INTERFACES

US3 The SDK provides the same

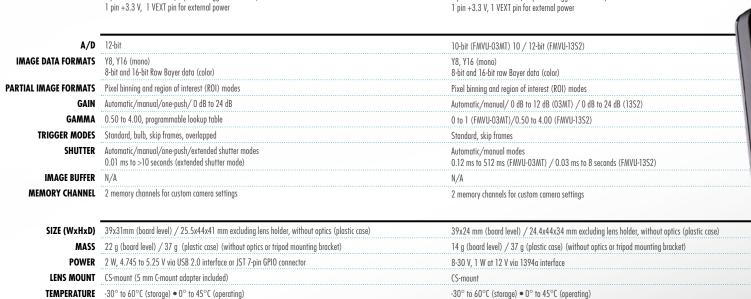
programming interface across USB 3.0*, USB 2.0, GigE and FireWire products.





MULTIPLE LANGUAGES

- C, C++, C#
- Visual Basic .NET
- ActiveX
- DirectShow





WARRANTY 1 year

INTERFACE Mini-B USB2.0 for camera control, video data, and power

GPIO 7-pin JST GPIO connector, 4 pins for trigger and strobe,

















Displayed: 123.20 fpr

Received: 120.15 for

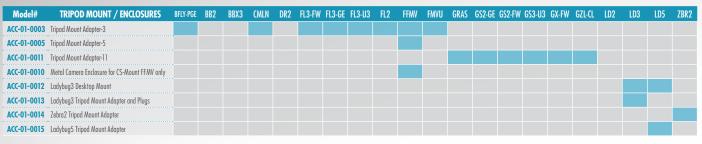
Height: 1048

Seconds: Thu Feb 14 11:28:29 2013

Camera timestamp seconds: 118

		MODEL NUMBER	INTERFACE	SENSOR TYPE	OPTICAL FORMAT	PIXEL SIZE	MAX RES	MAX FPS	SHUTTER	LENS MOUNT	A/D CONVERTER	VIDEO DATA OUTPUT	ON-BOARD MEMORY	SIZE	OPERATING TEMP	WARRANTY
US	Page 2	FL3-U3-13S2C/M-CS FL3-U3-13Y3M-C FL3-U3-13E4C/M-C FL3-U3-32S2C/M-CS FL3-U3-88S2C-C	USB 3.0 USB 3.0 USB 3.0 USB 3.0 USB 3.0	Sony IMXO35 CMOS ON Semi VITA1300 CMOS e2v EV76C560 CMOS Sony IMXO36 CMOS Sony IMX121 CMOS	1/3" 1/2" 1/1.8" 1/2.8" 1/2.5"	3.63µm 4.8µm 5.3µm 2.5µm 1.55µm	1328×1048 1280×1024 1280×1024 2080×1552 4096×2160	120 fps 150 fps 60 fps 60 fps 21 fps	Rolling Global Global Rolling/Global Reset Rolling/Global Reset	CS C C CS	12-bit ADC 10-bit ADC 10-bit ADC 12-bit ADC 12-bit ADC	8, 12, 16, 24-bit	32 MB frame buffer 1 MB flash memory	29 x 29 x 30 mm	0° to 45° C	3 years
		GS3-U3-23S6C/M-C GS3-U3-28S4C/M-C GS3-U3-28S5C/M-C GS3-U3-41C6C/M-C GS3-U3-50S5C/M-C GS3-U3-60S6C/M-C GS3-U3-91S6C/M-C	USB 3.0 USB 3.0 USB 3.0 USB 3.0 USB 3.0 USB 3.0 USB 3.0	Sony IMX174 CMOS Sony ICX687 CCD Sony ICX674 CCD CMOSIS CMV4000 CMOS Sony ICX625 CCD Sony ICX694 CCD Sony ICX814 CCD	1" 1/1.8" 2/3" 1" 2/3" 1" 1"	5.86µm 3.69µm 4.54µm 5.5µm 3.45µm 4.54µm 3.69µm	1920x1200 1928x1448 1920x1440 2048x2048 2448x2048 2736x2192 3376x2704	165 fps 26 fps 26 fps 90 fps 15 fps 13 fps 6 fps	Global Global Global Global Global Global	(((((10-bit ADC 14-bit ADC 14-bit ADC 10-bit ADC 14-bit ADC 14-bit ADC 14-bit ADC	8, 12, 16, 24-bit	128 MB frame buffer 512 KB flash memory	44 x 29 x 58 mm	0° to 45° C	3 years
GiG	Page 3	BFLY-PGE-05S2C/M-CS BFLY-PGE-12A2C/M-CS BFLY-PGE-12A2C/M-CS BFLY-PGE-13S2C/M-CS BFLY-PGE-13F4C/M-CS BFLY-PGE-1452C-CS BFLY-PGE-20E4C/M-CS BFLY-PGE-20S2C-CS BFLY-PGE-23S2C-CS	GigE GigE GigE GigE GigE GigE GigE GigE	Sony ICX693 CCD Sony ICX692 CCD Aptina AR0134 CMOS Sony ICX445 CCD e2v EV76C560 CMOS Sony IMX104 CMOS e2v EV76C570 CMOS Sony IMX136 CMOS Aptina MT9P006/031 CMOS	1/3" 1/3" 1/3" 1/3" 1/1.8" 1/1.8" 1/2.8" 1/2.5"	6.0µm 4.08µm 3.75µm 3.75µm 5.3µm 3.75µm 4.5µm 2.8µm 2.2µm	808x608 1288x728 1280x960 1288x964 1280x1024 1296x1032 1600x1200 1920x1200 2592x1944	50 fps 30 fps 52 fps 22 fps 60 fps 60 fps 47 fps 27 fps 13 fps	Global Global Global Global Rolling Global Rolling Rolling	0 0 0 0 0 0 0 0 0 0 0	12-bit ADC 12-bit ADC 12-bit ADC 12-bit ADC 10-bit ADC 12-bit ADC 10-bit ADC 12-bit ADC 12-bit ADC	8, 12, 16, 24-bit	16 MB frame buffer 512 KB flash memory	29 x 29 x 30 mm	0° to 45° C	3 years
	FLEA3 Page 3	FL3-GE-03S1C/M-C FL3-GE-03S2C/M-C FL3-GE-08S2C/M-C FL3-GE-13S2C/M-C/CS FL3-GE-14S3C/M-C FL3-GE-20S4C/M-C FL3-GE-28S4C/M-C FL3-GE-50SSC/M-C	GigE GigE GigE GigE GigE GigE GigE	Sony ICX618 CCD Sony ICX424 CCD Sony ICX204 CCD Sony ICX445 CCD Sony ICX267 CCD Sony ICX274 CCD Sony ICX687 CCD Sony ICX655 CCD	1/4" 1/3" 1/3" 1/3" 1/2" 1/1.8" 1/1.8"	5.6µm 7.4µm 4.65µm 3.75µm 4.65µm 4.4µm 3.69µm 3.45µm	648x488 648x488 1032x776 1288x964 1384x1032 1624x1224 1928x1448 2448x2048	120 fps 82 fps 31 fps 31 fps 18 fps 15 fps 15 fps 8 fps	Global Global Global Global Global Global Global	((((/(S (((12-bit ADC	8, 12, 16, 24-bit	32 MB frame buffer 1 MB flash memory	29 x 29 x 30 mm	0° to 45° C	3 years
		GS2-GE-20S4C/M-C GS2-GE-50S5C/M-C	GigE GigE	Sony ICX274 CCD Sony ICX625 CCD	1/1.8" 2/3"	4.4μm 3.45μm	1624x1224 2448x2048	29 fps 15 fps	Global Global	C	14-bit ADC	8, 12, 16, 24-bit	32 MB frame buffer 512 KB flash memory	44 x 29 x 58 mm	0° to 45° C	3 years
		ZBR2-PGEHD-20S4C-CS ZBR2-PGEHD-28S4C-CS ZBR2-PGEHD-50S5C-CS ZBR2-PGEHD-50S5C-CS	GigE/ HD-SDI GigE/ HD-SDI GigE/ HD-SDI GigE/ HD-SDI	Sony ICX274 CCD Sony ICX687 CCD Sony ICX625 CCD Sony ICX655 CCD	1/1.8" 1/1.8" 2/3" 2/3"	4.4μm 3.69μm 3.45μm 3.45μm	1624x1224 1928x1448 2448x2048 2448x2048	30 fps (HD-SDI 25 FPS) 26 fps (HD-SDI 25 FPS) 15 fps (HD-SDI 25 FPS) 10 fps (HD-SDI 25 FPS)	Global Global Global Global	CS CS CS CS	14-bit ADC	8, 12, 16, 24-bit	32 MB frame buffer 1 MB flash memory	44 x 44 x 87.5 mm	0° to 45° C	3 years
FireWire	Page 6	FL2-0352C/M-C FL2-0852C/M-C FL2G-1352C/M-C FL2-1453C/M-C FL2-2054C/M-C FL2-65055C/M-C	IEEE 1394b IEEE 1394b IEEE 1394b IEEE 1394b IEEE 1394b IEEE 1394b	Sony ICX424 CCD Sony ICX204 CCD Sony ICX445 CCD Sony ICX267 CCD Sony ICX274 CCD Sony ICX655 CCD	1/3" 1/3" 1/3" 1/2" 1/1.8" 2/3"	7.4µm 4.65µm 3.75µm 4.65µm 4.4µm 3.45µm	648x488 1032x776 1288x964 1392x1032 1624x1224 2448x2048	80 fps 30 fps 30 fps 15 fps 15 fps 7.5 fps	Global Global Global Global Global Global	(((((12-bit ADC	8, 12, 16, 24-bit	32 MB frame buffer 512 KB flash memory	29 x 29 x 30 mm	0° to 45° C	3 years
		FL3-FW-03S1C/M-C FL3-FW-03S3C/M-C FL3-FW-14S3C/M-C FL3-FW-20S4C/M-C	IEEE 1394b IEEE 1394b IEEE 1394b IEEE 1394b	Sony ICX618 CCD Sony ICX414 CCD Sony ICX267 CCD Sony ICX274 CCD	1/4" 1/2" 1/2" 1/1.8"	5.6µm 9.9µm 4.65µm 4.4µm	648x488 648x488 1384x1032 1624x1224	120 fps 76 fps 16 fps 15 fps	Global Global Global Global	(((12-bit ADC	8, 12, 16, 24-bit	32 MB frame buffer 1 MB flash memory	29 x 29 x 30 mm	0° to 45° C	3 years
	GRASSHOPPER EXPRESS Page 5	GX-FW-10K3M-C GX-FW-28S5C/M-C GX-FW-60S6C/M-C	IEEE 1394b IEEE 1394b IEEE 1394b	Kodak KAI-01050 CCD Sony ICX674 CCD Sony ICX694 CCD	1/2" 2/3" 1"	5.5µm 4.54µm 4.54µm	1024x1024 1932x1452 2736x2192	70 fps 26 fps 11 fps	Global Global Global	((14-bit ADC	8, 12, 16, 24-bit	32 MB frame buffer 1 MB flash memory	44 x 29 x 58 mm	0° to 45° C	3 years
	GRASSHOPPER Page 7	GRAS-03K2C/M-C GRAS-03S3M-C GRAS-14S3C/M-C GRAS-14S5C/M-C GRAS-20S4C/M-C GRAS-50S5C/M-C	IEEE 1394b IEEE 1394b IEEE 1394b IEEE 1394b IEEE 1394b IEEE 1394b	Kodak KAI-0340D CCD Sony ICX414 CCD Sony ICX267 CCD Sony ICX285 CCD Sony ICX274 CCD Sony ICX625 CCD	1/3" 1/2" 1/2" 2/3" 1/1.8" 2/3"	7.4µm 9.9µm 4.65µm 6.45µm 4.4µm 3.45µm	648×480 648×488 1384×1032 1384×1036 1624×1224 2448×2048	200 fps 74 fps 21 fps 15 fps 30 fps 15 fps	Global Global Global Global Global Global	(((((14-bit ADC	8, 12, 16, 24-bit	32 MB frame buffer 512 KB flash memory	44 x 29 x 58 mm	0° to 40° C	3 years
	GRASSHOPPER2 Page 6	GS2-FW-14S5C/M-C	IEEE 1394b	Sony ICX285 CCD	2/3″	6.45µm	1384x1036	30 fps	Global	C	14-bit ADC	8, 12, 16, 24-bit	32 MB frame buffer 512 KB flash memory	44 x 29 x 58 mm	0° to 45° C	3 years
	•	FFMV-03M2C/M-CS	IEEE 1394a	Micron MT9V022 CMOS	1/3″	6.0µm	752x480	60 fps	Global	CS	10-bit ADC	8, 16-bit	N/A	44 x 34 x 24.4mm	0° to 45° C	1 year
		DR2-COL/BW-CS DR2-HICOL/BW-CS DR2-13S2C/M-CS	IEEE 1394a IEEE 1394a IEEE 1394a	Sony ICX424 CCD Sony ICX204 CCD Sony ICX445 CCD	1/3" 1/3" 1/3"	7.4µm 4.65µm 3.75µm	648x488 1032x776 1296x964	60 fps 30 fps 20 fps	Global Global Global	CS CS	12-bit ADC	8, 12, 16, 24-bit	512 KB flash memory	75 x 65 x 25.5 mm	0° to 45° C	1 year
\$	•	CMLN-13S2C/M-CS	USB 2.0	Sony ICX445 CCD	1/3″	3.75µm	1296x964	18 fps	Global	CS	12-bit ADC	8, 16-bit	N/A	44 x 41 x 25.5 mm	0° to 45° C	1 year
USB 2.0		FMVU-03MTC/M-CS FMVU-13S2C-CS	USB 2.0 USB 2.0	Micron MT9V022 CMOS Sony IMX035 CMOS	1/3" 1/3"	6.0µm 3.63µm	752x480 1328x1048	60 fps 23 fps	Global Rolling	CS CS	10-bit ADC 12-bit ADC	8, 16-bit	N/A	44 x 34 x 24.4 mm	0° to 45° C	1 year
CAMERA		GZL-CL-22C5-C GZL-CL-41C6-C	Camera Link Base/Full Camera Link Base/Full	CMOSIS CMV2000 CMOS CMOSIS CMV4000 CMOS	2/3" 1"	5.5μm 5.5μm	2048x1088 2048x2048	280 fps 150 fps	Global Global	((10-bit ADC	8, 10-bit	4 MB flash memory	44 x 29 x 59.5 mm	-10° to 50° C	3 years
	& XB3	BB2-03S2C/M (25/38/60) BB2-08S2C/M (25/38/60) BBX3-13S2C/M (38/60)	IEEE 1394a IEEE 1394b IEEE 1394b	Sony ICX424 CCD Sony ICX204 CCD Sony ICX445 CCD	1/3" 1/3" 1/3"	7.4µm 4.65µm 3.75µm	648x488 1032x776 1280x960	48 fps 20 fps 16 fps	Global Global Global	2 x M12 2 x M12 3 x M12	12-bit ADC	8, 16-bit	N/A	157x 36 x 47.4 mm 157 x 36 x 47.4 mm 277 x 37 x 41.8 mm	0° to 45° C	2 years
		LD2-HICOL-KIT LD3-20S4C-33 LD5-U3-51S5C-44	IEEE 1394b IEEE 1394b USB 3.0	Sony ICX204 CCD Sony ICX274 CCD Sony ICX655 CCD	1/3" 1/1.8" 2/3"	4.65μm 4.4μm 3.45μm	1024x768 (x6) 1600x1200 (x6) 2048x2448 (x6)	30 fps 15 fps 10 fps	Global Global Global	N/A N/A N/A	12-bit ADC	8-bit 8-bit 8, 12, 16-bit	N/A	110 x 100 x 141 mm 122 x 141 mm 139.5 x 160 mm	0° to 45° C	1 year 1 year 2 years
	Dailat Carris Da	to the second	and the color of the color	dala a construe and a construe for the large and the		at a Parada conservation	Ale a lake a kanada ali C									

ACCESSORY LIST MAXIMIZE THE EFFECTIVENESS OF YOUR IMAGING PIPELINE For the most up to date list, please visit ptgrey.com/products/accessories



Model#	HOST ADAPTER CARDS	BFLY-PGE	BB2	BBX3	CMLN	DR2	FL3-FW	FL3-GE	FL3-U3	FL2	FFMV	FMVU	GRAS	GS2-GE	GS2-FW	GS3-U3	GX-FW	GZL-CL	LD2	LD3	LD5	ZBR2
	IEEE 1394a OHCI PCI Host Adapter 3 Port																					
	IEEE 1394b OHCI PCI Host Adapter 2 Port																					
ACC-01-1100	Intel PRO 1000 CT Gigabit Ethernet PCIe																					
GIGE-PCIE2-2P02	Gigabit Ethernet PCIe PoE, 2 Port, Intel																					
ACC-01-1201	Generic USB 3.0 PCIe 2.0 x1 2 Port Card																					
ACC-01-1202	Generic USB 3.0 PCIe 2.0 x1 4 Port Card																					
FWB-EC-2PORT	IEEE 1394b 2 Port 800Mbps Express Card																					
	PGR USB 3.0 PCle 2.0 x1 Card, Fresco, 2-port																					

Model#	CABLES	BFLY-PGE	BB2	BBX3	CMLN	DR2	FL3-FW	FL3-GE	FL3-U3	FL2	FFMV	FMVU	GRAS	GS2-GE	GS2-FW	GS3-U3	GX-FW	GZL-CL	LD2	LD3	LD5	ZBR2
ACC-01-2000	4.5 m, 6-pin to 6-pin, 1394a																					
ACC-01-2004	0.3-m, 6-pin to 6-pin, Ultra Thin 1394a (10moq)																					
ACC-01-2003	1.0 m, 6-pin to 6-pin, Ultra Thin 1394a (10moq)																					
	2.0 m, 6-pin to 6-pin, Ultra Thin 1394a (10moq)																					
	4.5 m, 4-pin to 9-pin, 1394a to 1394b																					
	4.5 m, 6-pin to 9-pin, Locking 1394a to 1394b																					
	0.3 m, 9-pin to 9-pin, Locking 1394b																					
	1.0 m, 9-pin to 9-pin, Locking 1394b																					
	4.5 m, 9-pin to 9-pin, 1394b																					
ACC-01-2006	4.5 m, 9-pin to 9-pin, Locking 1394b																					
	4.5 m, 9-pin to 9-pin, Locking 1394b High Flex OK	I																				
	FirePRO 10-m 9-pin to 9-pin, Locking 1394b																					
	10 m Ladybug2 Data																					
	10 m Ladybug2 Power																					
	50 m Ladybug2 Power																					
	5 m CAT 5e Ethernet Locking Cable, High Flex																					
ACC-01-2101	4.5 meter CAT 5e Ethernet Cable																					
ACC-01-2200	3 m 85 MHz Camera Link, 1x MDR , 1x SDR mini																					
	3 m USB 3.0 Cable, Type-A to Micro-B (Locking)																					
ACC-01-2301	5 m USB 3.0 Cable, Type-A to Micro-B (Locking)																					
ACC-01-2302	5 m USB 3.0 Cable, Type-A to Micro-B (Locking) Industrial, 80°C																					

Model#	GPIO CONNECTORS	BFLY-PGE	BB2	BBX3	CMLN	DR2	FL3-FW	FL3-GE	FL3-U3	FL2	FFMV	FMVU	GRAS	GS2-GE	GS2-FW	GS3-U3	GX-FW	GZL-CL	LD2	LD3	LD5	ZBR2
	0 m, Circular 8-pin Prewired GPIO Hirose Conn.																					
	.5 m, Circular 8-pin Prewired GPIO Hirose Conn.																					
	rcular 12PIN Prewired GPIO Hirose Connector																					
ACC-01-3002 7-	pin Prewired GPIO JST Connector																					
ACC-01-3004 8	pin Phoenix Contact GPIO Connector																					
ACC-01-3006 8	pin Circular Hirose HR25 GP10 Connector															251011				_		
ACC-01-3007 4	pin Phoenix Contact Power Connector																					
ACC-01-3008 6	pin Phoenix Contact GPIO Connector																					
ACC-01-3009 1.	Om, Circular 6-pin Prewired GPIO Hirose Conn.																					
ACC-01-3010 4	.5m, Circular 6-pin Prewired GPIO Hirose Conn.																					
ACC-01-3011 6	pin Circular Hirose HR10 GPIO Connector																					
	2-pin Circular Hirose GP10 Cable with Power Jack																				100	

Model#	GENERIC OPTICS	BFLY-PGE	BB2	BBX3	CMLN	DR2	FL3-FW	FL3-GE	FL3-U3	FL2	FFMV	FMVU	GRAS	GS2-GE	GS2-FW	GS3-U3	GX-FW	GZL-CL	LD2	LD3	LD5	ZBR2
	M12 Microlens 4MM																					
ACC-01-4001	M12 Microlens 6MM																					
ACC-01-4002	M12 Microlens 8MM																					
	Auto Iris CS-Mount Lens 1/3" 3.5~8MM																					
			222	22/0		222	51 0 51W	FI 0 0F	E10.110	FI 0		E. 13.01	0010	252.05	252 511	000 110	OV EU	071.61	100	100		-1000
Model#		BFLY-PGE	BB2	BBX3	CMLN	DR2	FL3-FW	FL3-GE	FL3-U3	FL2	FFMV	FMVU	GRAS	GS2-GE	GSZ-FW	653-03	GX-FW	GZL-CL	LD2	LD3	LD5	ZBR2
ACC-01-5004	C- to CS-Mount Mount 5mm Spacer Adapter																					
	CS- to M12 Microlens Adapter																					
ACC-01-5006	Cast Metal M12 Microlens Holder																					
	Cast Metal M12 Microlens Holder with IR Filter																					
Model#	HUBS	BFLY-PGE	RR2	BBX3	CMLN	DR2	FL3-FW	El 3-GE	El 3-II3	FI 2	FFMV	FMVII	GRAS	GS2.GF	GS2-FW	CC3-113	GY-FW	GZL-CL	In2	LD3	LD5	ZBR2
	4-Port USB 3.0 Hub, Screw Locks, Ext Power Adap.	DI EI-I OL	DUZ	טאטע	CIVILIY	DRZ	TES-TW	TLU-UL	110-00	ILZ	IIIMV	TIMTO	UKAJ	032-01	032-1 W	030-03	UA-I W	OZECE	LUZ	LDJ	LUJ	ZUKZ
FWB-HUB-2POR	T FirePRO 1394b 2-Port Repeater																					
FWB-HUB-3POR	T FirePRO 1394b 3-Port Hub																					
FWB-HUB-5POR	T FirePRO 1394b 5-Port Repeater																					
	FirePRO LDR IEEE 1394b 100 m Cat5e repeater																					

Model#	FOWER SUFFLI (F3) / MISC	DELI-FUE	DDZ	DDVO	CIVILIA	DICZ	LT9-LM	FL3-UE	LF9-09	FLZ	LLIMIA	FINITU	UNAS	U3Z-UE	U3Z-FW	נט-ננט	OV-LAA	UZL-CL	LDZ	LDO	כעו	ZDN.
	24V 2.5A 60W PS, Standard DC Barrel Connector																					
ACC-01-9007	20V 2A 40W PS, Standard DC Barrel Connector																					
ACC-01-9008	12V 1.5A (18W) Wall Mount PS, 4-Pin Phoenix Contact																					
ACC-01-9009	12V 1.5A Wall-Mount PS, Plug Adapters, HR25 GPIO Harness																					
ACC-01-9010	12V 2.0A Wall Mount PS for FWB-EG2PORT																					
ACC-01-9011	12V 1.5A Wall-Mount PS, Plug Adapters, HR10 GPIO Harness																					
	19.6W Single Port PoE Injector with NA power cord																					

Model#	REGULAR LENS	Model#
ENS-15F5-125C	Fujinon fixed focal length 12.5mm G-mount lens for 2/3" sensors (HF12.5HA-1B)	LENS-50F5-125C
ENS-15F5-250C	Fujinon fixed focal length 25mm G-mount lens for 2/3" sensors (HF25HA-1B)	LENS-30S6-250C
ENS-15F3-60C	Fujinon fixed focal length 6mm C-mount lens for 1/2" sensors (DF6HA-1B)	LENS-160T5C
ENS-30F2-V80C	Fujinon vari-focal 2.8-8mm CS-mount lens, for 1/3" sensors (YV2.8×2.8SA-2)	LENS-250T5C
ENS-V500F2CS	Fujinon vari-focal 15-50mm CS-mount lens, for 1/3" sensors (YV3.3x15SA-2)	LENS-80T4C
NS-V80F2CS-DC	Fujinon vari-focal 2.8-8mm CS-mount DC iris lens, for 1/3" sensors (YV2.8x2.8SA-SA2)	LENS-160T4C
ENS-V500F2CS-DC	Fujinon vari-focal 15-50mm CS-mount DC iris lens, for 1/3" sensors (YV3.3x15SA-SA2)	
	Position	









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