

BFS-U3-13Y3 Specifications

General

	BFS-U3-13Y3M	BFS-U3-13Y3C
Firmware Version	1608.0.47.0	1608.0.47.0
Resolution	1280 x 1024	1280 x 1024
Frame Rate*	170 FPS	170 FPS
Megapixels	1.3 MP	1.3 MP
Chroma	Mono	Color
Sensor	On Semi P1300, CMOS, 1/2"	On Semi P1300, CMOS, 1/2"
Readout Method	Global shutter	Global shutter
Pixel Size	4.8 µm	4.8 µm
Lens Mount	C-mount	C-mount
ADC	10-bit	10-bit
Minimum Frame Rate**	1 FPS	1 FPS
Gain Range**	0 to 18 dB	0 to 18 dB
Exposure Range**	6 us to 30 s	6 us to 30 s
Acquisition Modes	Continuous, Single Frame, Multi Frame	Continuous, Single Frame, Multi Frame
Partial Image Modes	Pixel binning, decimation, ROI	Pixel binning, decimation, ROI
Image Processing	Gamma, lookup table, and sharpness	Color correction matrix, gamma, lookup table, hue, saturation, and sharpness
Sequencer	Up to 8 sets using 6 features, including image size	Up to 8 sets using 6 features, including image size
Image Buffer	240 MB	240 MB
User Sets	2 user configuration sets for custom camera settings	2 user configuration sets for custom camera settings
Flash Memory	6 MB non-volatile memory	6 MB non-volatile memory
Opto-isolated I/O	1 input, 1 output	1 input, 1 output
Non-isolated I/O	1 bi-directional, 1 input	1 bi-directional, 1 input
Auxiliary Output	3.3V, 120 mA maximum	3.3V, 120 mA maximum
Interface	USB 3.0	USB 3.0
Power Requirements	8 - 24 V via GPIO or 5 V via USB 3.0 interface	8 - 24 V via GPIO or 5 V via USB 3.0 interface
Power Consumption	3 W maximum	3 W maximum
Dimensions/Mass	29 mm x 29 mm x 30 mm / 36 g	29 mm x 29 mm x 30 mm / 36 g
Machine Vision Standard	USB3 Vision v1.0	USB3 Vision v1.0
Compliance	CE, FCC, KCC, RoHS, REACH. The ECCN for this product is: EAR099.	CE, FCC, KCC, RoHS, REACH. The ECCN for this product is: EAR099.
MTBF***	6,330,000 hours @20°C, GB environment 1,582,000 hours @20°C, GM environment	6,330,000 hours @20°C, GB environment 1,582,000 hours @20°C, GM environment
Temperature	Operating: 0°C to 50°C Storage: -30°C to 60°C	Operating: 0°C to 50°C Storage: -30°C to 60°C
Humidity	Operating: 20% to 80% (no condensation) Storage: 30% to 95% (no condensation)	Operating: 20% to 80% (no condensation) Storage: 30% to 95% (no condensation)
Warranty	3 years	3 years

*Frame rates are measured with Device Link Throughput Limit of 380 MBps and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

**Values are the same in binning and no binning modes.

***Ambient temperature; internal camera temperature is not considered.

BFS-U3-13Y3M Supported Pixel Formats

8-bit	12-bit	16-bit
Mono8	Mono12Packed	Mono16
	Mono12p	

BFS-U3-13Y3M Frame Rates

Width	Height	8-bit	12-bit	16-bit	ISP	Binning Horizontal	Binning Vertical	Decimation Horizontal	Decimation Vertical	ADC
1280	1024	170	170	124	Off	No binning	No binning	No decimation	No decimation	10-bit
800	600	284	284	284	Off	No binning	No binning	No decimation	No decimation	10-bit
600	800	216	216	216	Off	No binning	No binning	No decimation	No decimation	10-bit
640	480	351	351	351	Off	No binning	No binning	No decimation	No decimation	10-bit
480	640	267	267	267	Off	No binning	No binning	No decimation	No decimation	10-bit
320	240	663	663	663	Off	No binning	No binning	No decimation	No decimation	10-bit
240	320	512	512	512	Off	No binning	No binning	No decimation	No decimation	10-bit
640	512	538	538	506	Off	No binning	No binning	2x Sensor	2x Sensor	10-bit
1280	1024	90	90	90	On	No binning	No binning	No decimation	No decimation	10-bit
800	600	151	151	151	On	No binning	No binning	No decimation	No decimation	10-bit
600	800	114	114	114	On	No binning	No binning	No decimation	No decimation	10-bit
640	480	187	187	187	On	No binning	No binning	No decimation	No decimation	10-bit
480	640	142	142	142	On	No binning	No binning	No decimation	No decimation	10-bit
320	240	355	355	355	On	No binning	No binning	No decimation	No decimation	10-bit
240	320	273	273	273	On	No binning	No binning	No decimation	No decimation	10-bit
640	512	90	90	90	On	2x ISP	2x ISP	No decimation	No decimation	10-bit
320	256	90	90	90	On	4x ISP	4x ISP	No decimation	No decimation	10-bit

Frame rates are measured with Device Link Throughput Limit of 380 MBps and Acquisition Frame Rate disabled. Values are rounded down to whole numbers.

BFS-U3-13Y3C Supported Pixel Formats

8-bit	12-bit	16-bit	24-bit	32-bit
Mono8	Mono12Packed	Mono16	RGB8Packed	BGRa8
BayerRG8	BayerRG12Packed	BayerRG16	YUV444Packed	
	Mono12p	YUV422Packed	YCbCr8	
	BayerRG12p	YCbCr422_8	BGR8	
	YUV411Packed			
	YCbCr411_8			

BFS-U3-13Y3C Frame Rates

Width	Height	8-bit	12-bit	16-bit	24-bit	32-bit	ISP	Binning Horizontal	Binning Vertical	Decimation Horizontal	Decimation Vertical	ADC
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Width	Height	8-bit	12-bit	16-bit	24-bit	32-bit	ISP	Binning Horizontal	Binning Vertical	Decimation Horizontal	Decimation Vertical	ADC
1280	1024	170	170	124	N/A*	N/A*	Off	No binning	No binning	No decimation	No decimation	10-bit
800	600	284	284	284	N/A*	N/A*	Off	No binning	No binning	No decimation	No decimation	10-bit
600	800	216	216	216	N/A*	N/A*	Off	No binning	No binning	No decimation	No decimation	10-bit
640	480	351	351	351	N/A*	N/A*	Off	No binning	No binning	No decimation	No decimation	10-bit
480	640	267	267	267	N/A*	N/A*	Off	No binning	No binning	No decimation	No decimation	10-bit
320	240	663	663	663	N/A*	N/A*	Off	No binning	No binning	No decimation	No decimation	10-bit
240	320	512	512	512	N/A*	N/A*	Off	No binning	No binning	No decimation	No decimation	10-bit
640	512	538	538	506	N/A*	N/A*	Off	No binning	No binning	2x Sensor	2x Sensor	10-bit
1280	1024	90	90	90	90	61	On	No binning	No binning	No decimation	No decimation	10-bit
800	600	151	151	151	151	151	On	No binning	No binning	No decimation	No decimation	10-bit
600	800	114	114	114	114	114	On	No binning	No binning	No decimation	No decimation	10-bit
640	480	187	187	187	187	187	On	No binning	No binning	No decimation	No decimation	10-bit
480	640	142	142	142	142	142	On	No binning	No binning	No decimation	No decimation	10-bit
320	240	355	355	355	355	355	On	No binning	No binning	No decimation	No decimation	10-bit
240	320	273	273	273	273	273	On	No binning	No binning	No decimation	No decimation	10-bit
640	512	90	90	90	90	90	On	2x ISP	2x ISP	No decimation	No decimation	10-bit
320	256	90	90	90	90	90	On	4x ISP	4x ISP	No decimation	No decimation	10-bit

Frame rates are measured with Device Link Throughput Limit of 380 MBps and Acquisition Frame Rate disabled. Values are rounded to whole numbers.

*ISP Off is only supported with uninterpolated formats (Mono and Bayer). YUV and RGB formats are not supported.

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Blackfly®S BFS-U3-13Y3
Camera Reference

Sixth Sense*