

IMAGING PERFORMANCE SPECIFICATION

FLIR **BLACKFLY**[®]

GigE Vision



Version 13.3

Revised 1/26/2017



FCC Compliance

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation.

Korean EMC Certification

The KCC symbol indicates that this product complies with Korea's Electrical Communication Basic Law regarding EMC testing for electromagnetic interference (EMI) and susceptibility (EMS).

Hardware Warranty

The warranty for the Blackfly PGE camera is 3 years. For detailed information on how to repair or replace your camera, please see the [terms and conditions on our website](#).

WEEE

The symbol indicates that this product may not be treated as household waste. Please ensure this product is properly disposed as inappropriate waste handling of this product may cause potential hazards to the environment and human health. For more detailed information about recycling of this product, please contact us.



Trademarks

Names and marks appearing on the products herein are either registered trademarks or trademarks of FLIR Systems, Inc. and/or its subsidiaries.

Licensing

To view the licenses of open source packages used in this product please see [What open source packages does firmware use?](#)

1 Specifications

Model	Sensor	Maximum Resolution	Pixel Size	Firmware	Results
BFLY-PGE-03S2M-CS	Sony ICX424, 1/3", Mono	648 x 488	7.4 μm	1.30.3.0	page 2
BFLY-PGE-03S2C-CS	Sony ICX424, 1/3", Color	648 x 488	7.4 μm	1.30.3.0	page 3
BFLY-PGE-03S3M-CS	Sony ICX414, 1/2", Mono	648 x 648	9.9 μm	1.35.3.0	page 4
BFLY-PGE-03S3C-CS	Sony ICX414, 1/2", Color	648 x 648	9.9 μm	1.35.3.0	page 5
BFLY-PGE-05S2M-CS	Sony ICX693, 1/3", Mono	808 x 608	6.0 μm	1.32.3.0	page 6
BFLY-PGE-05S2C-CS	Sony ICX693, 1/3", Color	808 x 608	6.0 μm	1.32.3.0	page 7
BFLY-PGE-09S2M-CS	Sony ICX692, 1/3", Mono	1288 x 728	4.08 μm	1.14.3.0	page 8
BFLY-PGE-09S2C-CS	Sony ICX692, 1/3", Color	1288 x 728	4.08 μm	1.12.3.0	page 9
BFLY-PGE-12A2M-CS	Aptina AR0134, 1/3", Mono	1280 x 960	3.75 μm	1.27.3.0	page 10
BFLY-PGE-12A2C-CS	Aptina AR0134, 1/3", Color	1280 x 960	3.75 μm	1.27.3.0	page 11
BFLY-PGE-13E4M-CS	e2v EV76C560, 1/1.8", Mono	1280 x 1024	5.3 μm	1.26.3.0	page 12
BFLY-PGE-13E4C-CS	e2v EV76C560, 1/1.8", Color	1280 x 1024	5.3 μm	1.26.3.0	page 13
BFLY-PGE-13H2M-CS	Sharp RJ33J4CA3DE, 1/3", Mono	1288 x 964	3.75 μm	1.48.3.0	page 14
BFLY-PGE-13H2C-CS	Sharp RJ33J3CA3DE, 1/3", Color	1288 x 964	3.75 μm	1.48.3.0	page 15
BFLY-PGE-13S2M-CS	Sony ICX445, 1/3", Mono	1288 x 964	3.75 μm	1.46.3.0	page 16
BFLY-PGE-13S2C-CS	Sony ICX445, 1/3", Color	1288 x 964	3.75 μm	1.22.3.0	page 17
BFLY-PGE-14S2C-CS	Sony IMX104, 1/3", Color	1296 x 1032	3.75 μm	1.21.3.0	page 18
BFLY-PGE-20E4M-CS	e2v EV76C570, 1/1.8", Mono	1600 x 1200	4.5 μm	1.43.3.0	page 19
BFLY-PGE-20E4C-CS	e2v EV76C570, 1/1.8", Color	1600 x 1200	4.5 μm	1.43.3.0	page 20
BFLY-PGE-23S2C-CS	Sony IMX136, 1/2.8", Color	1920 x 1200	2.8 μm	1.17.3.0	page 21
BFLY-PGE-23S6M-C	Sony IMX249, 1/1.2", Mono	1920 x 1200	5.86 μm	1.40.3.0	page 22
BFLY-PGE-23S6C-C	Sony IMX249, 1/1.2", Color	1920 x 1200	5.86 μm	1.40.3.0	page 23
BFLY-PGE-31S4M-C	Sony IMX265, 1/1.8", Mono	2048 x 1536	3.45 μm	1.53.3.0	page 24
BFLY-PGE-31S4C-C	Sony IMX265, 1/1.8", Color	2048 x 1536	3.45 μm	1.53.3.0	page 25
BFLY-PGE-50A2M-CS	Aptina MT9P031, 1/2.5", Mono	2592 x 1944	2.2 μm	1.53.3.1	page 26
BFLY-PGE-50A2C-CS	Aptina MT9P006, 1/2.5", Color	2592 x 1944	2.2 μm	1.53.3.1	page 27
BFLY-PGE-50H5M-C	Sharp RJ32S4AA0DT, 2/3", Mono	2448 x 2048	3.45 μm	1.42.3.0	page 28
BFLY-PGE-50H5C-C	Sharp RJ32S3AA0DT, 2/3", Color	2448 x 2048	3.45 μm	1.42.3.0	page 29
BFLY-PGE-50S5M-C	Sony IMX264, 2/3", Mono	2448 x 2048	3.45 μm	1.53.3.0	page 30
BFLY-PGE-50S5C-C	Sony IMX264, 2/3", Color	2448 x 2048	3.45 μm	1.53.3.0	page 31

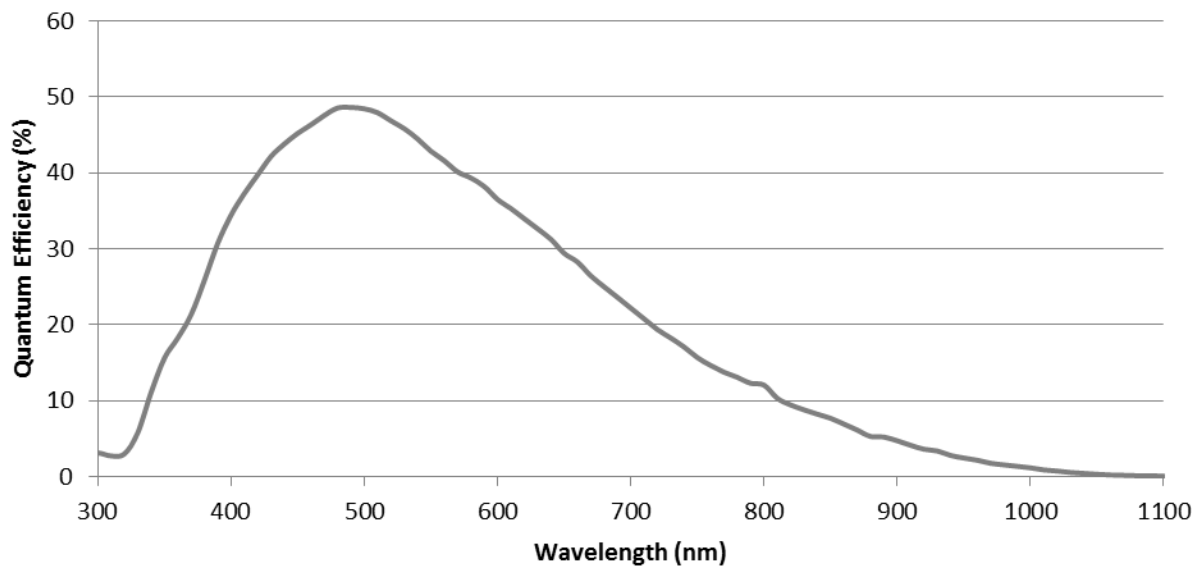


Measurements are taken based on guidelines in the EMVA 1288 standard; the full definition can be found at EMVA.org. Camera settings are at maximum bit depth unless otherwise noted. Temporal Dark Noise is measured at minimum exposure time. The center wavelength is 525 nm unless otherwise noted. The pixel format is Raw 16 or Mono 16 for mono cameras and Raw 16 for color cameras. Results are captured at room temperature (20°C).

2 BFLY-PGE-03S2M-CS Imaging Performance

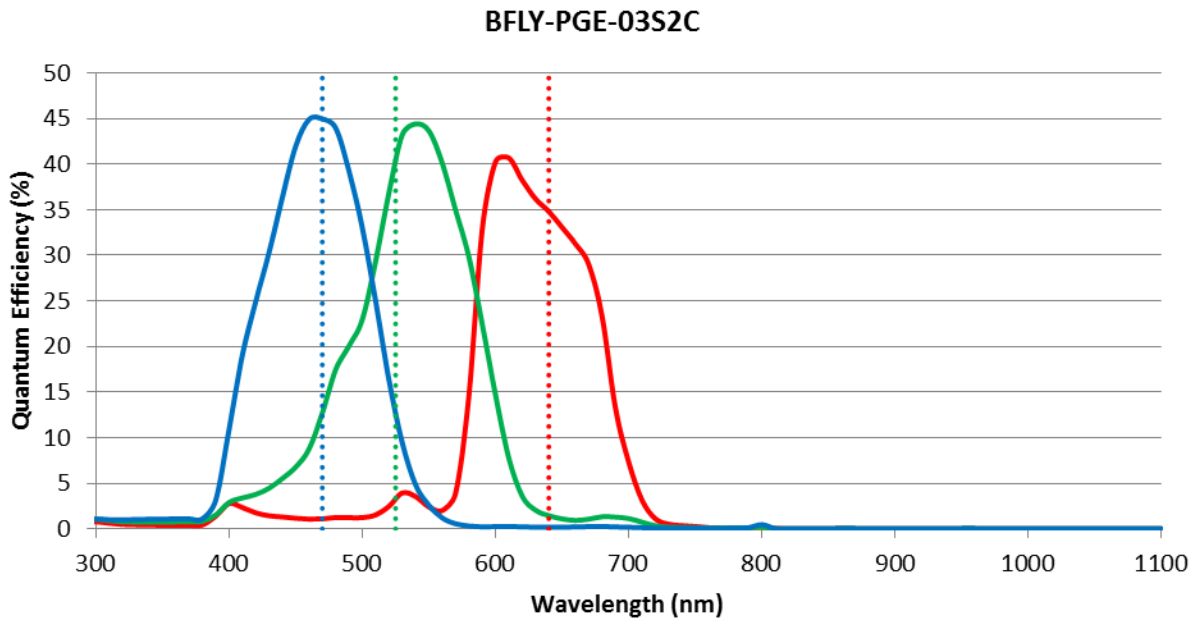
Measurement	Video Mode 0
Pixel Clock (MHz)	36
ADC (Bits)	12-bit
Quantum Efficiency (% at 525 nm)	46
Temporal Dark Noise (Read Noise) (e ⁻)	12.86
Signal to Noise Ratio Maximum (dB)	41.44
Signal to Noise Ratio Maximum (Bits)	6.88
Absolute Sensitivity Threshold (γ)	29.74
Saturation Capacity (Well Depth) (e ⁻)	13932
Dynamic Range (dB)	60.37
Dynamic Range (Bits)	10.03
Gain (e ⁻ /ADU)	0.22

BFLY-PGE-03S2M



3 BFLY-PGE-03S2C-CS Imaging Performance

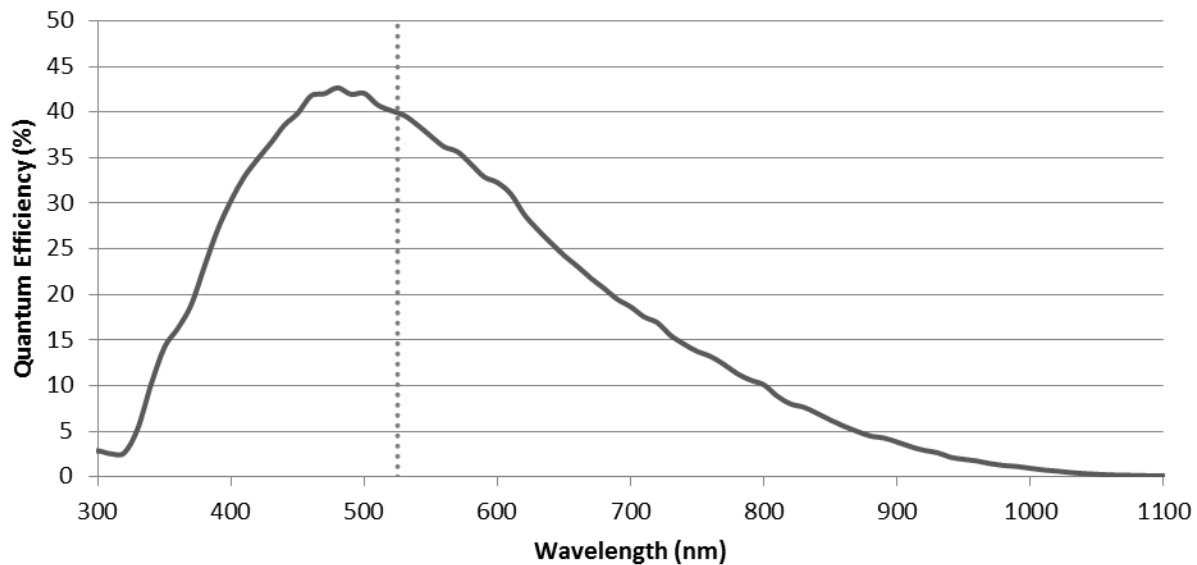
Measurement	Video Mode 0
Pixel Clock (MHz)	36
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	44
Quantum Efficiency Green (% at 525 nm)	40
Quantum Efficiency Red (% at 640 nm)	34
Temporal Dark Noise (Read Noise) (e-)	13.87
Signal to Noise Ratio Maximum (dB)	41.91
Signal to Noise Ratio Maximum (Bits)	6.96
Absolute Sensitivity Threshold (γ)	37.66
Saturation Capacity (Well Depth) (e-)	15506
Dynamic Range (dB)	60.66
Dynamic Range (Bits)	10.08
Gain (e-/ADU)	0.24



4 BFLY-PGE-03S3M-CS Imaging Performance

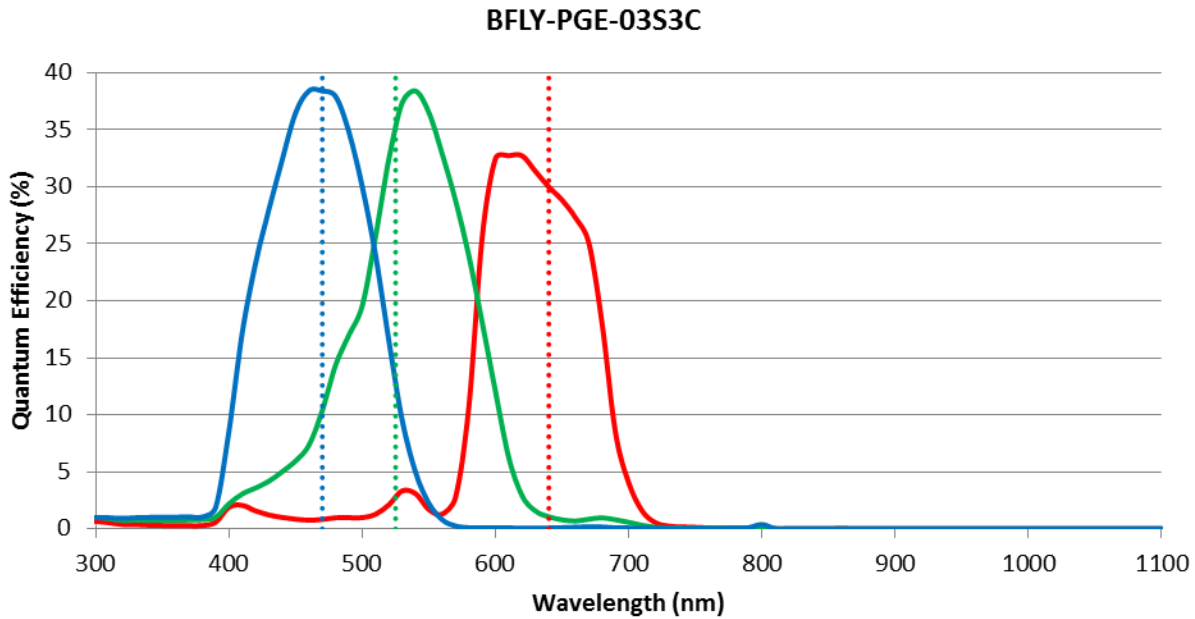
Measurement	Video Mode 0
Pixel Clock (MHz)	36
ADC (Bits)	12-bit
Quantum Efficiency (% at 525 nm)	39
Temporal Dark Noise (Read Noise) (e-)	19.43
Signal to Noise Ratio Maximum (dB)	44.14
Signal to Noise Ratio Maximum (Bits)	7.33
Absolute Sensitivity Threshold (γ)	51.72
Saturation Capacity (Well Depth) (e-)	25949
Dynamic Range (dB)	62.29
Dynamic Range (Bits)	10.35
Gain (e-/ADU)	0.41

BFLY-PGE-03S3M



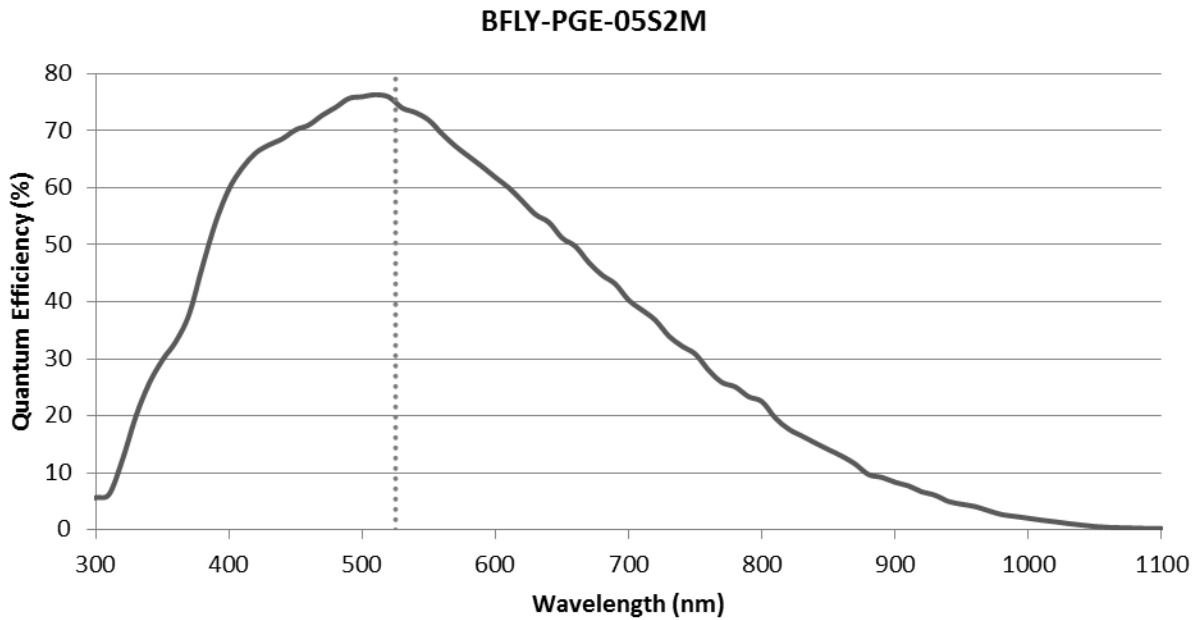
5 BFLY-PGE-03S3C-CS Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	36
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	38
Quantum Efficiency Green (% at 525 nm)	34
Quantum Efficiency Red (% at 640 nm)	29
Temporal Dark Noise (Read Noise) (e-)	19.64
Signal to Noise Ratio Maximum (dB)	44.27
Signal to Noise Ratio Maximum (Bits)	7.35
Absolute Sensitivity Threshold (γ)	60.15
Saturation Capacity (Well Depth) (e-)	26750
Dynamic Range (dB)	62.46
Dynamic Range (Bits)	10.37
Gain (e-/ADU)	0.43



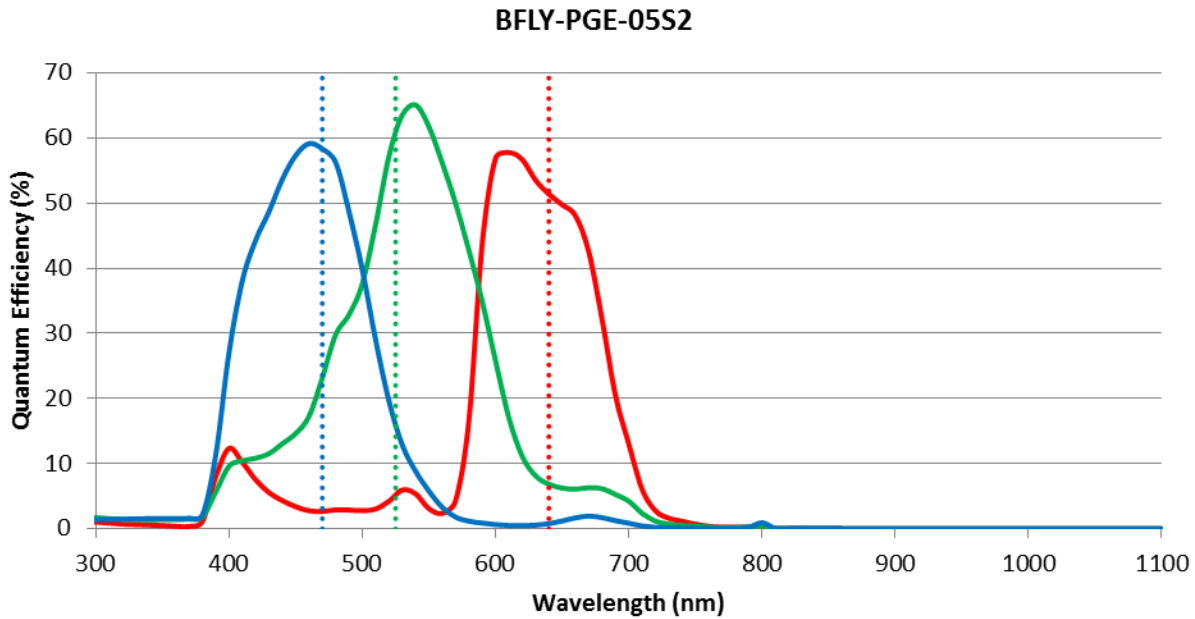
6 BFLY-PGE-05S2M-CS Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	36
ADC (Bits)	12-bit
Quantum Efficiency (% at 525 nm)	74
Temporal Dark Noise (Read Noise) (e-)	9.10
Signal to Noise Ratio Maximum (dB)	43.59
Signal to Noise Ratio Maximum (Bits)	7.24
Absolute Sensitivity Threshold (γ)	13.19
Saturation Capacity (Well Depth) (e-)	22843
Dynamic Range (dB)	67.53
Dynamic Range (Bits)	11.22
Gain (e-/ADU)	0.37



7 BFLY-PGE-05S2C-CS Imaging Performance

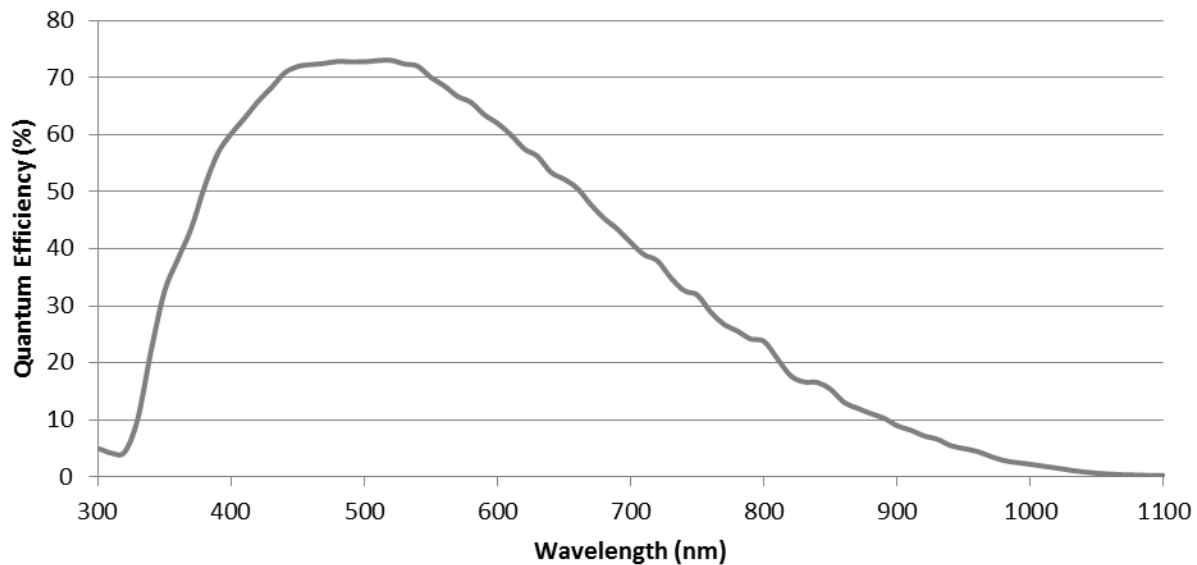
Measurement	Video Mode 0
Pixel Clock (MHz)	36
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	58
Quantum Efficiency Green (% at 525 nm)	60
Quantum Efficiency Red (% at 640 nm)	51
Temporal Dark Noise (Read Noise) (e-)	9.04
Signal to Noise Ratio Maximum (dB)	43.23
Signal to Noise Ratio Maximum (Bits)	7.18
Absolute Sensitivity Threshold (γ)	16.58
Saturation Capacity (Well Depth) (e-)	21047
Dynamic Range (dB)	66.87
Dynamic Range (Bits)	11.11
Gain (e-/ADU)	0.037



8 BFLY-PGE-09S2M-CS Imaging Performance

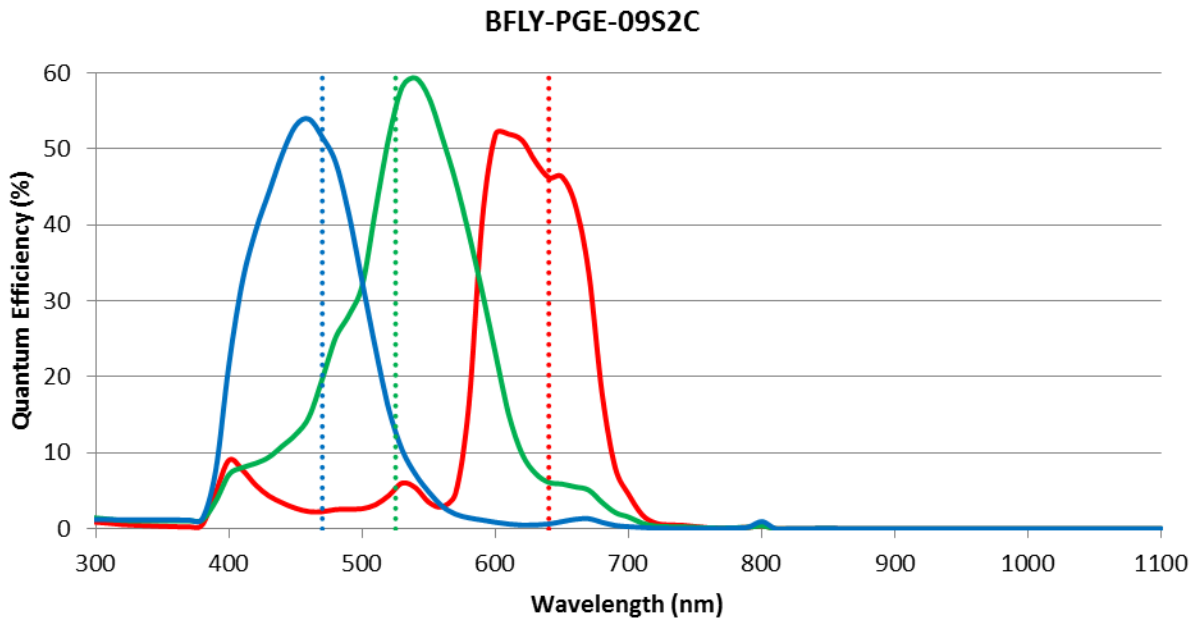
Measurement	Video Mode 0
Pixel Clock (MHz)	36
ADC (Bits)	12-bit
Quantum Efficiency (% at 525 nm)	72
Temporal Dark Noise (Read Noise) (e-)	8.28
Signal to Noise Ratio Maximum (dB)	40.70
Signal to Noise Ratio Maximum (Bits)	6.76
Absolute Sensitivity Threshold (γ)	12.38
Saturation Capacity (Well Depth) (e-)	11747
Dynamic Range (dB)	62.53
Dynamic Range (Bits)	10.39
Gain (e-/ADU)	0.21

BFLY-PGE-09S2M



9 BFLY-PGE-09S2C-CS Imaging Performance

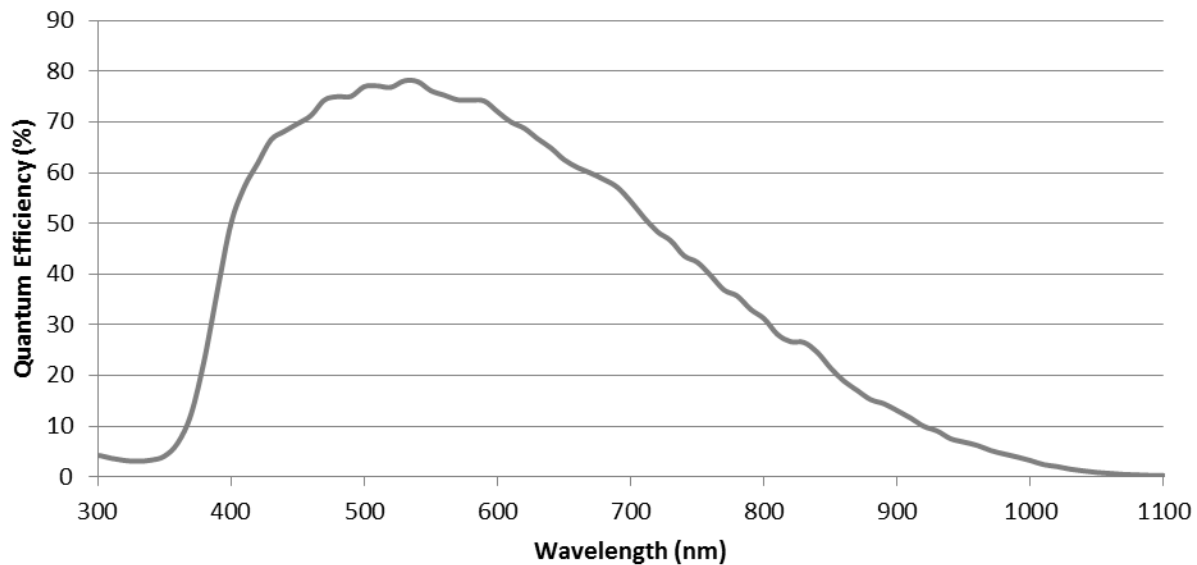
Measurement	Video Mode 0
Pixel Clock (MHz)	36
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	51
Quantum Efficiency Green (% at 525 nm)	54
Quantum Efficiency Red (% at 640 nm)	46
Temporal Dark Noise (Read Noise) (e-)	8.82
Signal to Noise Ratio Maximum (dB)	40.45
Signal to Noise Ratio Maximum (Bits)	6.72
Absolute Sensitivity Threshold (γ)	18.07
Saturation Capacity (Well Depth) (e-)	11078
Dynamic Range (dB)	61.51
Dynamic Range (Bits)	10.22
Gain (e-/ADU)	0.24



10 BFLY-PGE-12A2M-CS Imaging Performance

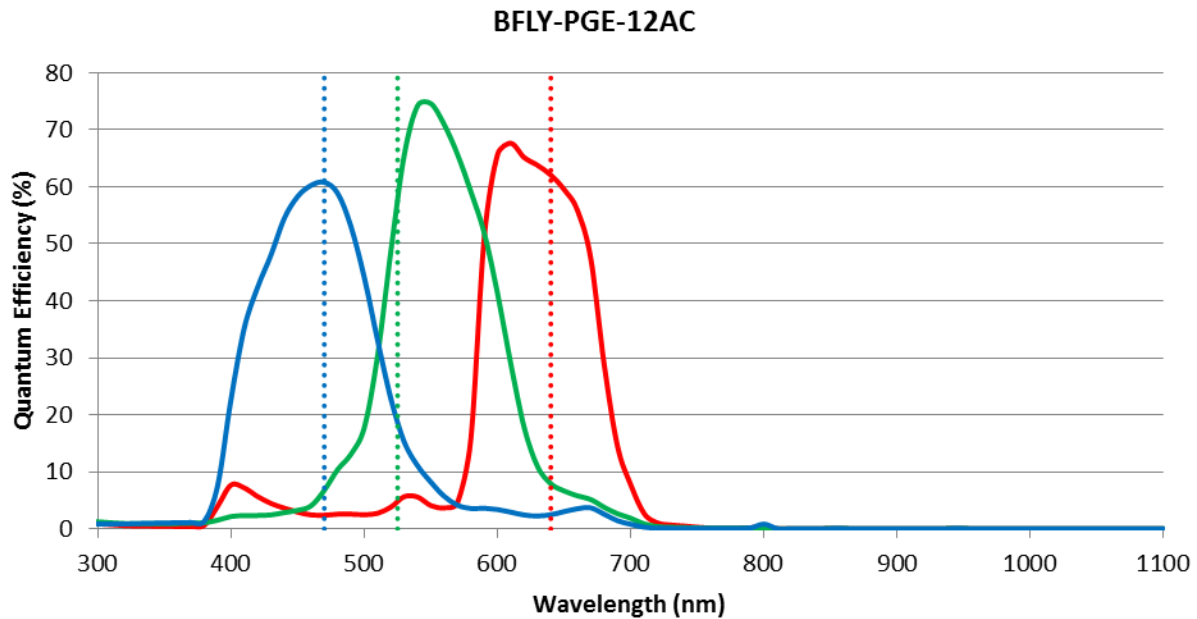
Measurement	Video Mode 0
Pixel Clock (MHz)	74.25
ADC (Bits)	12-bit
Quantum Efficiency (% at 525 nm)	77
Temporal Dark Noise (Read Noise) (e ⁻)	6.58
Signal to Noise Ratio Maximum (dB)	37.44
Signal to Noise Ratio Maximum (Bits)	6.22
Absolute Sensitivity Threshold (γ)	9.30
Saturation Capacity (Well Depth) (e ⁻)	5542
Dynamic Range (dB)	57.87
Dynamic Range (Bits)	9.61
Gain (e ⁻ /ADU)	0.10

BFLY-PGE-12A2M



11 BFLY-PGE-12A2C-CS Imaging Performance

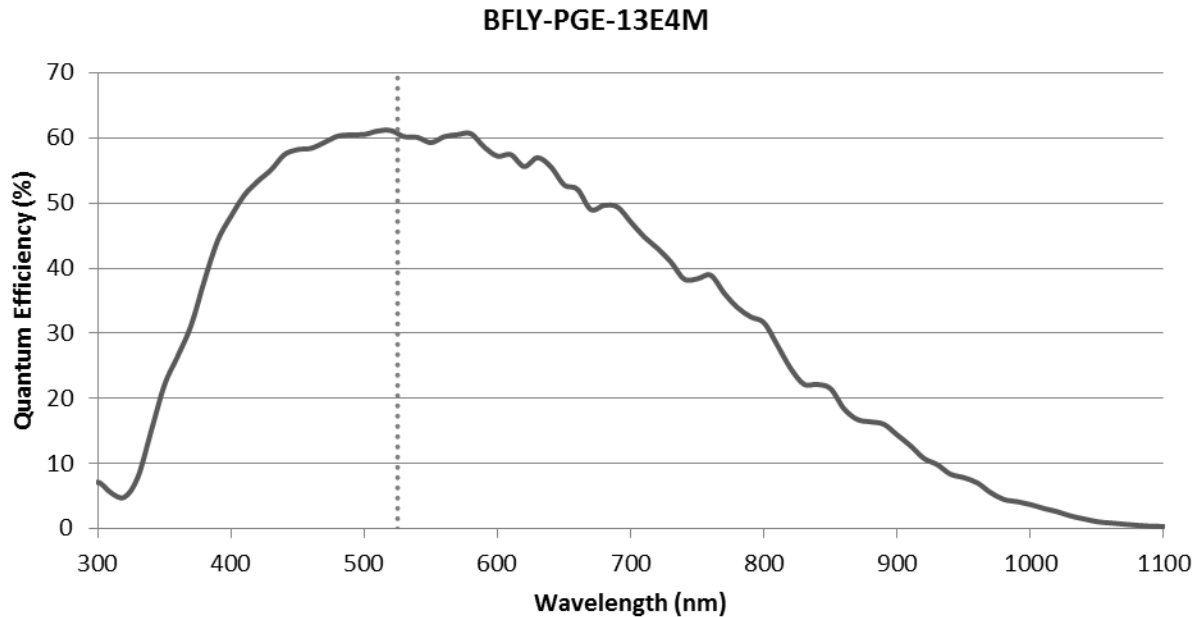
Measurement	Video Mode 0
Pixel Clock (MHz)	74.25
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	60
Quantum Efficiency Green (% at 525 nm)	57
Quantum Efficiency Red (% at 640 nm)	62
Temporal Dark Noise (Read Noise) (e-)	5.12
Signal to Noise Ratio Maximum (dB)	37.49
Signal to Noise Ratio Maximum (Bits)	6.23
Absolute Sensitivity Threshold (γ)	9.73
Saturation Capacity (Well Depth) (e-)	5608
Dynamic Range (dB)	59.97
Dynamic Range (Bits)	9.96
Gain (e-/ADU)	0.10



12 BFLY-PGE-13E4M-CS Imaging Performance

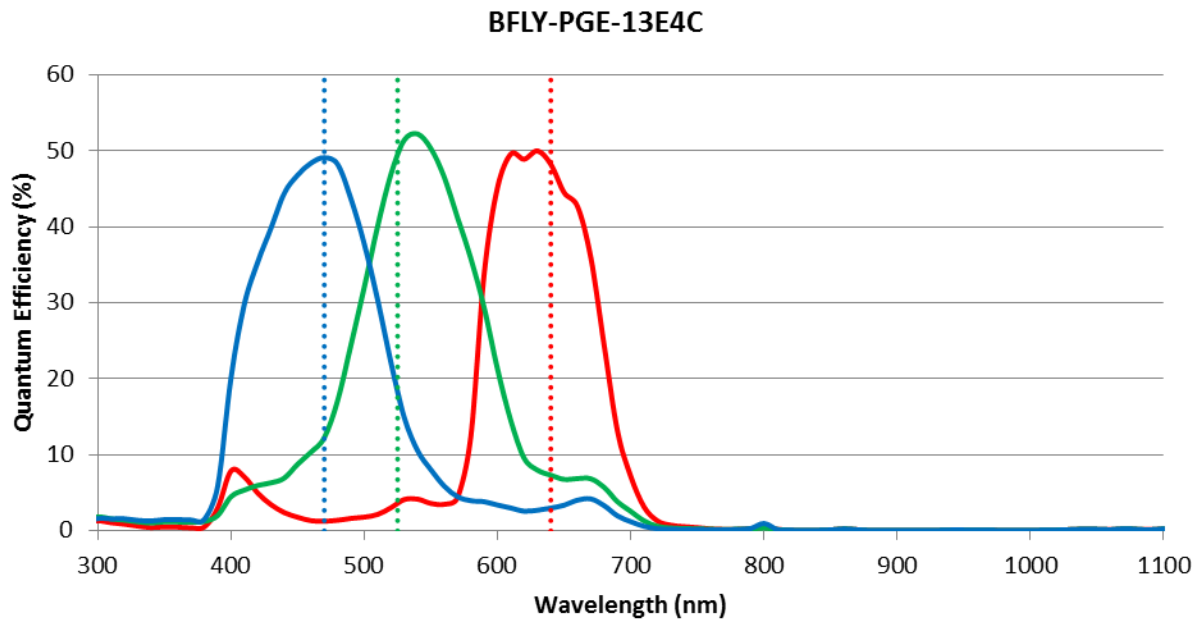
Measurement	Video Mode 0	Video Mode 7
Pixel Clock (MHz)	114	114
ADC (Bits)	10-bit	10-bit
Quantum Efficiency (% at 525 nm)	60	60
Temporal Dark Noise (Read Noise) (e-)	24.57	9.16
Signal to Noise Ratio Maximum (dB)	39.84	39.95
Signal to Noise Ratio Maximum (Bits)	6.62	6.64
Absolute Sensitivity Threshold (γ)	41.87	16.03
Saturation Capacity (Well Depth) (e-)	9632	9893
Dynamic Range (dB)	51.69	60.21
Dynamic Range (Bits)	8.59	10.00
Gain (e-/ADU)	0.16	0.16

Measurements taken at 30 ms maximum exposure.



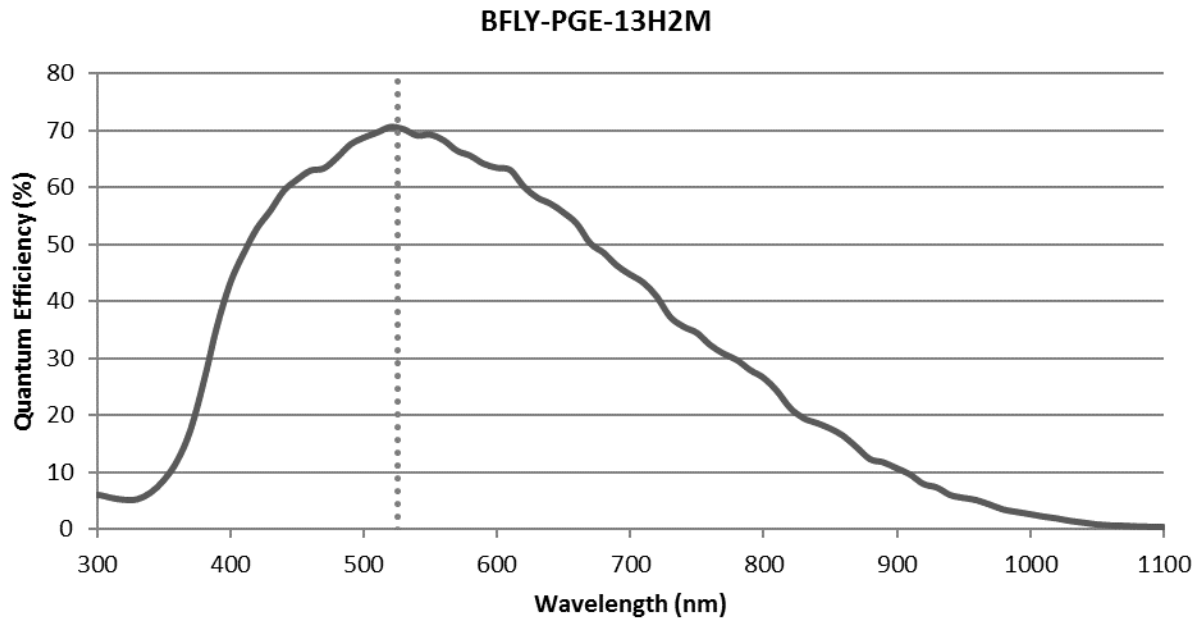
13 BFLY-PGE-13E4C-CS Imaging Performance

Measurement	Video Mode 0	Video Mode 7
Pixel Clock (MHz)	114	114
ADC (Bits)	10-bit	10-bit
Quantum Efficiency Blue (% at 470 nm)	49	48
Quantum Efficiency Green (% at 525 nm)	49	48
Quantum Efficiency Red (% at 640 nm)	48	47
Temporal Dark Noise (Read Noise) (e-)	25.03	9.31
Signal to Noise Ratio Maximum (dB)	39.48	39.66
Signal to Noise Ratio Maximum (Bits)	6.56	6.59
Absolute Sensitivity Threshold (γ)	55.06	21.25
Saturation Capacity (Well Depth) (e-)	8875	9245
Dynamic Range (dB)	50.82	59.48
Dynamic Range (Bits)	8.44	9.88
Gain (e-/ADU)	0.16	0.16



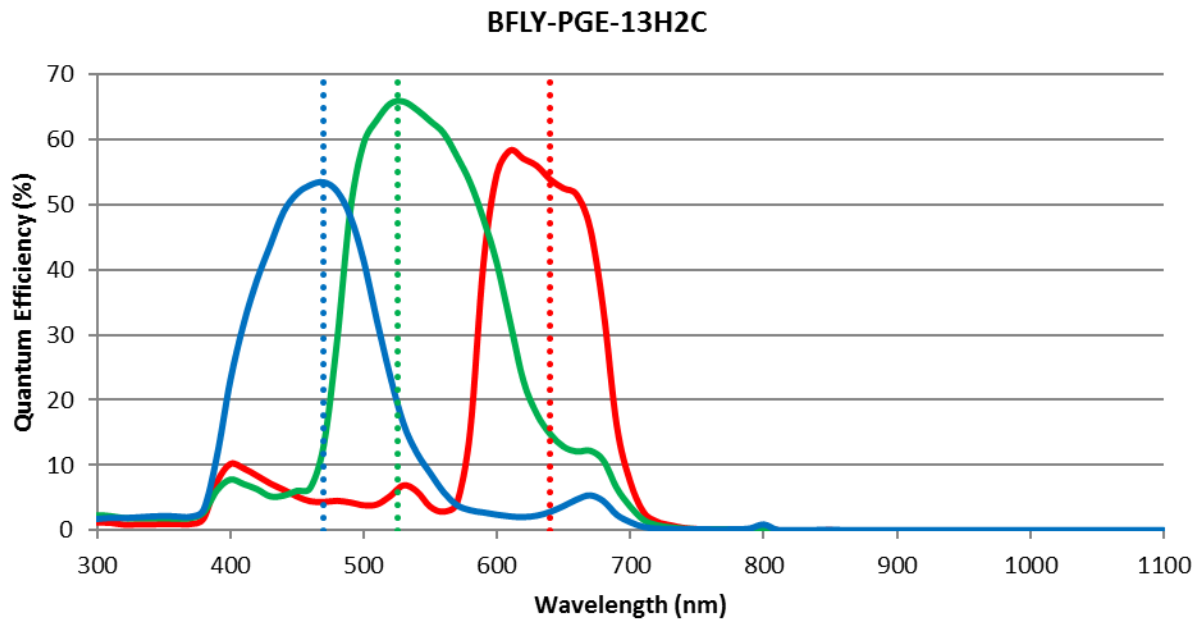
14 BFLY-PGE-13H2M-CS Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	45
ADC (Bits)	12-bit
Quantum Efficiency (% at 525 nm)	70
Temporal Dark Noise (Read Noise) (e-)	5.37
Signal to Noise Ratio Maximum (dB)	38.68
Signal to Noise Ratio Maximum (Bits)	6.43
Absolute Sensitivity Threshold (γ)	8.55
Saturation Capacity (Well Depth) (e-)	7384
Dynamic Range (dB)	61.99
Dynamic Range (Bits)	10.30
Gain (e-/ADU)	0.12



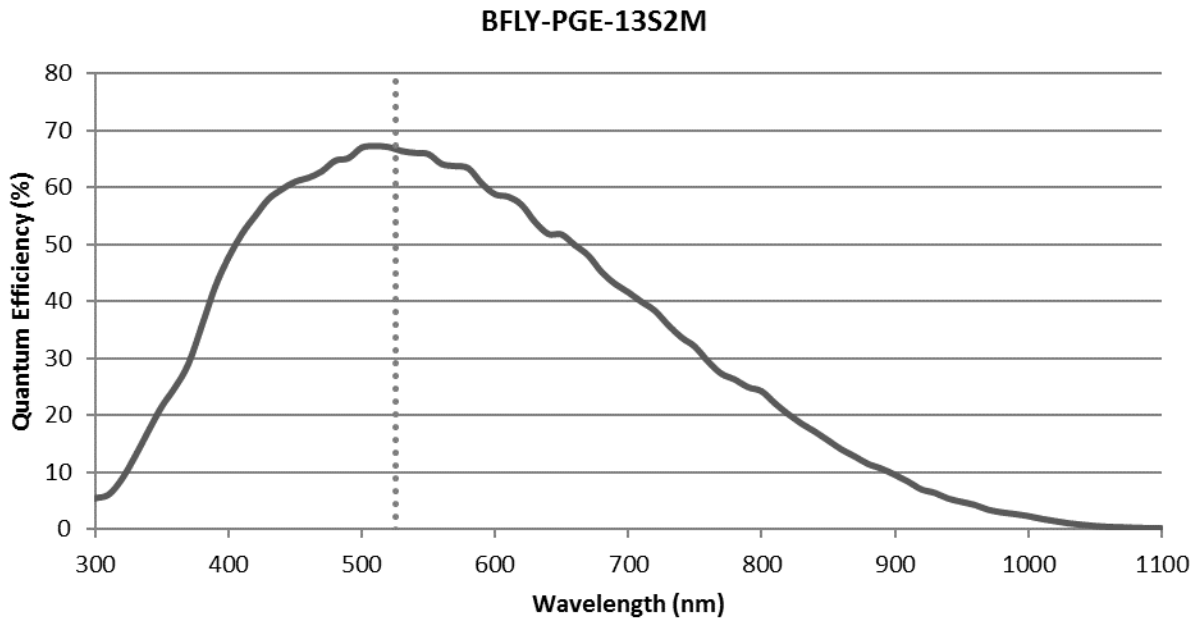
15 BFLY-PGE-13H2C-CS Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	45
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	53
Quantum Efficiency Green (% at 525 nm)	65
Quantum Efficiency Red (% at 640 nm)	53
Temporal Dark Noise (Read Noise) (e-)	4.89
Signal to Noise Ratio Maximum (dB)	38.74
Signal to Noise Ratio Maximum (Bits)	6.44
Absolute Sensitivity Threshold (γ)	8.61
Saturation Capacity (Well Depth) (e-)	7487
Dynamic Range (dB)	62.86
Dynamic Range (Bits)	10.44
Gain (e-/ADU)	0.12



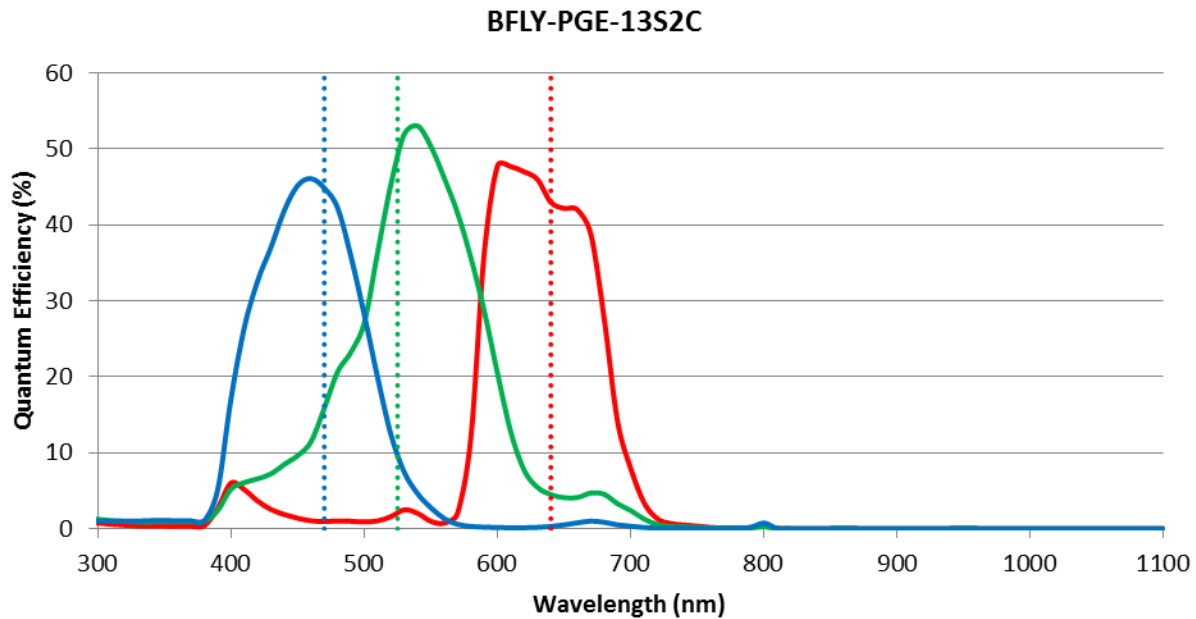
16 BFLY-PGE-13S2M-CS Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	45
ADC (Bits)	12-bit
Quantum Efficiency (% at 525 nm)	66
Temporal Dark Noise (Read Noise) (e ⁻)	10.82
Signal to Noise Ratio Maximum (dB)	39.70
Signal to Noise Ratio Maximum (Bits)	6.59
Absolute Sensitivity Threshold (γ)	17.30
Saturation Capacity (Well Depth) (e ⁻)	9339
Dynamic Range (dB)	58.33
Dynamic Range (Bits)	9.69
Gain (e ⁻ /ADU)	0.15



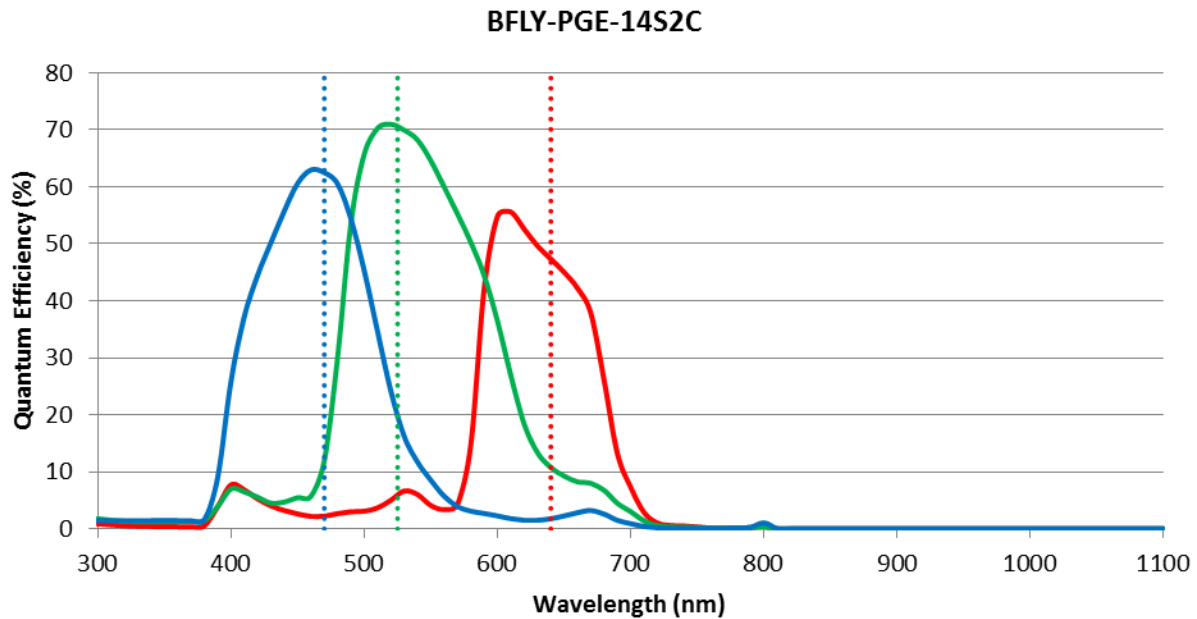
17 BFLY-PGE-13S2C-CS Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	36
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	44
Quantum Efficiency Green (% at 525 nm)	48
Quantum Efficiency Red (% at 640 nm)	43
Temporal Dark Noise (Read Noise) (e-)	8.57
Signal to Noise Ratio Maximum (dB)	39.41
Signal to Noise Ratio Maximum (Bits)	6.55
Absolute Sensitivity Threshold (γ)	19.87
Saturation Capacity (Well Depth) (e-)	8720
Dynamic Range (dB)	59.66
Dynamic Range (Bits)	9.91
Gain (e-/ADU)	0.14



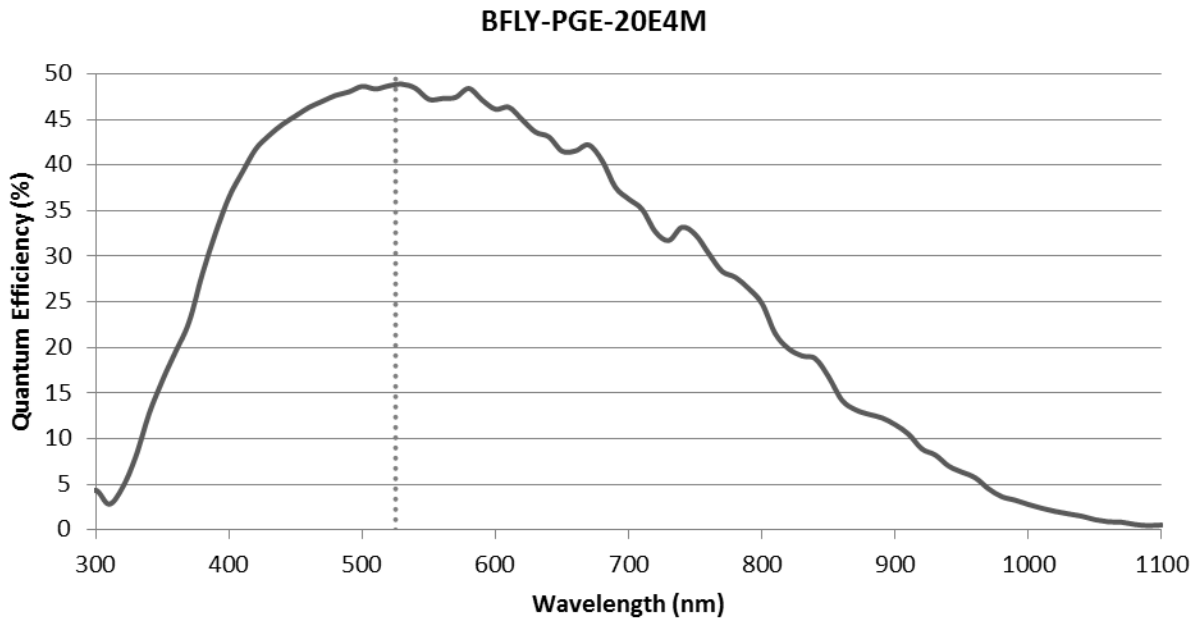
18 BFLY-PGE-14S2C-CS Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	99
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	62
Quantum Efficiency Green (% at 525 nm)	70
Quantum Efficiency Red (% at 640 nm)	48
Temporal Dark Noise (Read Noise) (e-)	3.90
Signal to Noise Ratio Maximum (dB)	42.98
Signal to Noise Ratio Maximum (Bits)	7.14
Absolute Sensitivity Threshold (γ)	6.60
Saturation Capacity (Well Depth) (e-)	19851
Dynamic Range (dB)	73.08
Dynamic Range (Bits)	12.14
Gain (e-/ADU)	0.31



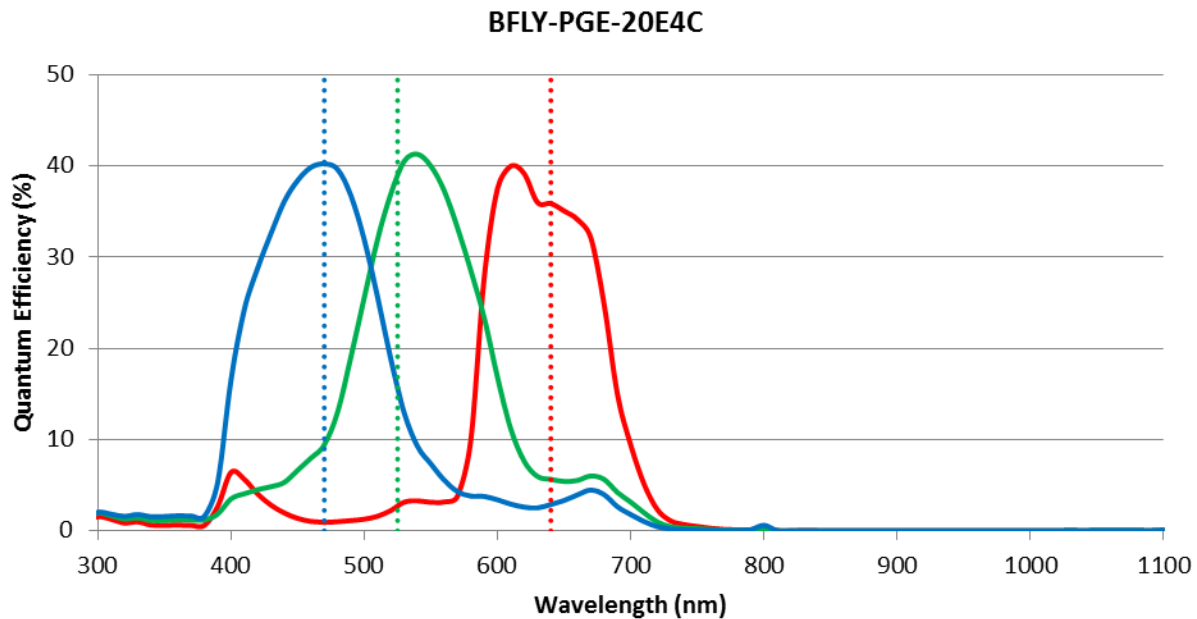
19 BFLY-PGE-20E4M-CS Imaging Performance

Measurement	Video Mode 0	Video Mode 7
Pixel Clock (MHz)	114	114
ADC (Bits)	10-bit	10-bit
Quantum Efficiency (% at 525 nm)	48	49
Temporal Dark Noise (Read Noise) (e-)	21.28	7.37
Signal to Noise Ratio Maximum (dB)	38.94	40.36
Signal to Noise Ratio Maximum (Bits)	6.47	6.70
Absolute Sensitivity Threshold (γ)	42.26	16.00
Saturation Capacity (Well Depth) (e-)	7836	10866
Dynamic Range (dB)	51.12	62.80
Dynamic Range (Bits)	8.49	10.43
Gain (e-/ADU)	0.13	0.20



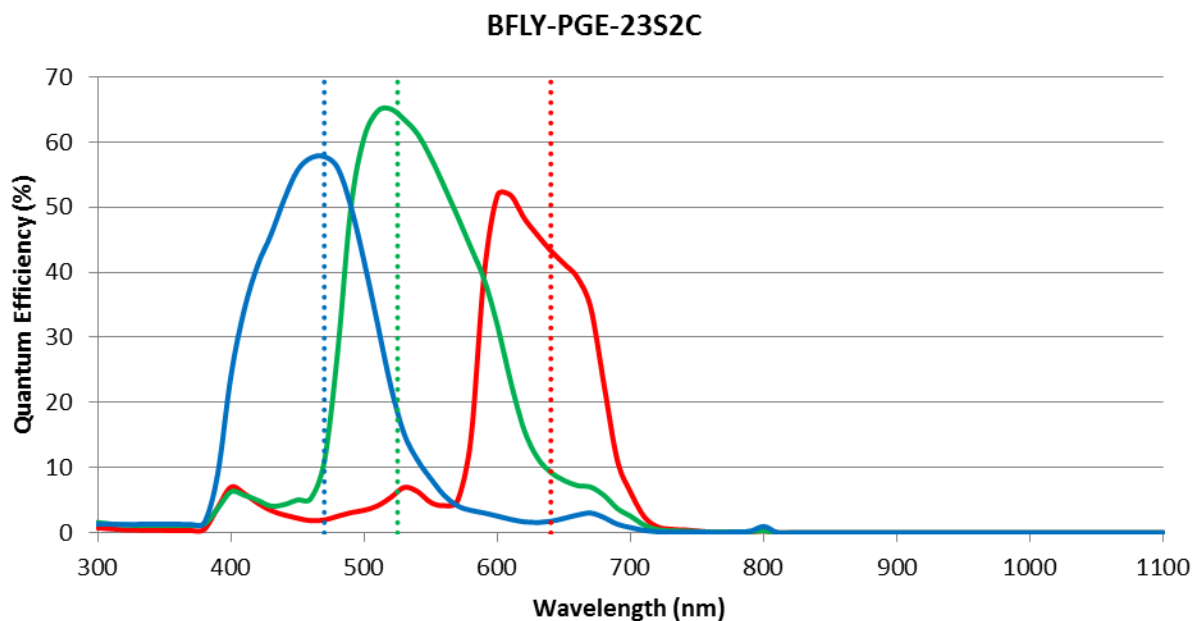
20 BFLY-PGE-20E4C-CS Imaging Performance

Measurement	Video Mode 0	Video Mode 7
Pixel Clock (MHz)	114	114
ADC (Bits)	10-bit	10-bit
Quantum Efficiency Blue (% at 470 nm)	40	41
Quantum Efficiency Green (% at 525 nm)	38	40
Quantum Efficiency Red (% at 640 nm)	35	36
Temporal Dark Noise (Read Noise) (e-)	20.87	6.90
Signal to Noise Ratio Maximum (dB)	38.66	40.26
Signal to Noise Ratio Maximum (Bits)	6.42	6.69
Absolute Sensitivity Threshold (γ)	57.39	19.12
Saturation Capacity (Well Depth) (e-)	7337	10623
Dynamic Range (dB)	50.71	63.14
Dynamic Range (Bits)	8.42	10.49
Gain (e-/ADU)	0.12	0.20



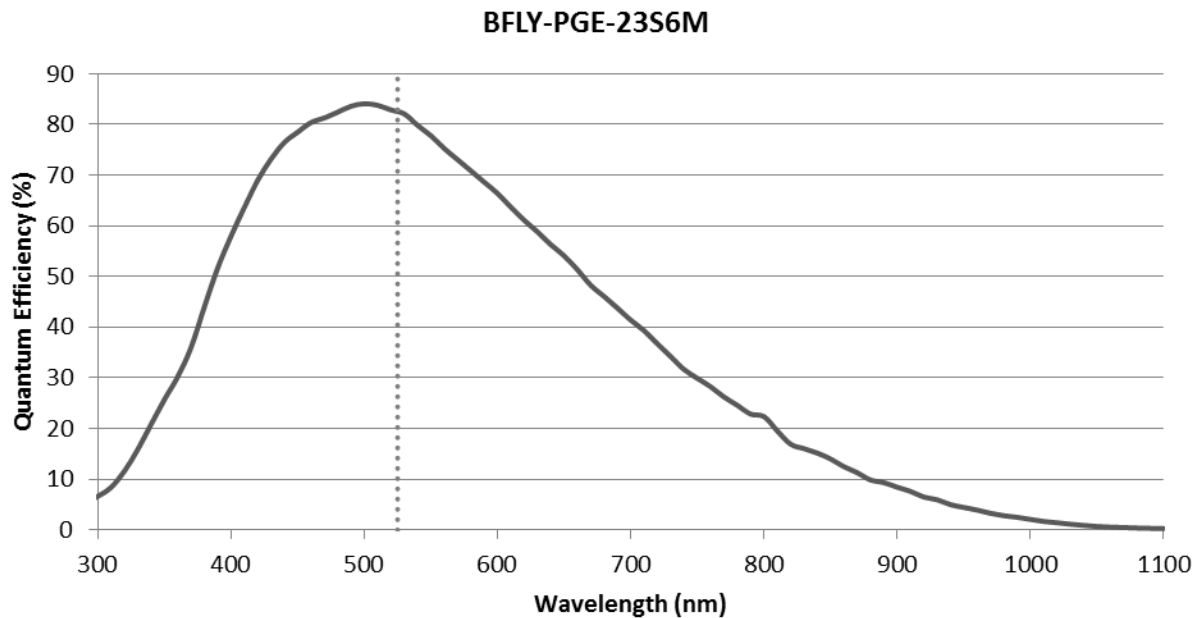
21 BFLY-PGE-23S2C-CS Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	74.25
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	58
Quantum Efficiency Green (% at 525 nm)	64
Quantum Efficiency Red (% at 640 nm)	44
Temporal Dark Noise (Read Noise) (e ⁻)	4.06
Signal to Noise Ratio Maximum (dB)	41.36
Signal to Noise Ratio Maximum (Bits)	6.87
Absolute Sensitivity Threshold (γ)	7.52
Saturation Capacity (Well Depth) (e ⁻)	13688
Dynamic Range (dB)	69.55
Dynamic Range (Bits)	11.55
Gain (e ⁻ /ADU)	0.25



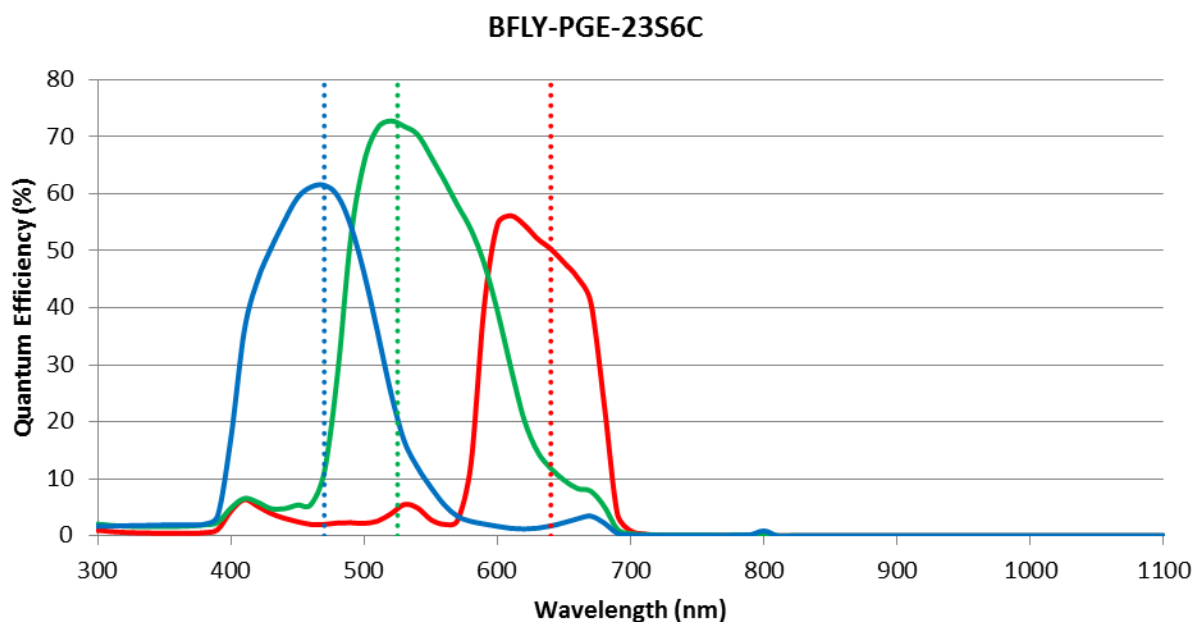
22 BFLY-PGE-23S6M-C Imaging Performance

Measurement	Video Mode 0	Video Mode 7
Pixel Clock (MHz)	37.5	37.5
ADC (Bits)	10-bit	12-bit
Quantum Efficiency (% at 525 nm)	82	83
Temporal Dark Noise (Read Noise) (e-)	14.31	7.11
Signal to Noise Ratio Maximum (dB)	45.16	45.20
Signal to Noise Ratio Maximum (Bits)	7.50	7.51
Absolute Sensitivity Threshold (γ)	18.58	9.45
Saturation Capacity (Well Depth) (e-)	32810	33106
Dynamic Range (dB)	66.71	72.77
Dynamic Range (Bits)	11.11	12.09
Gain (e-/ADU)	0.52	0.52



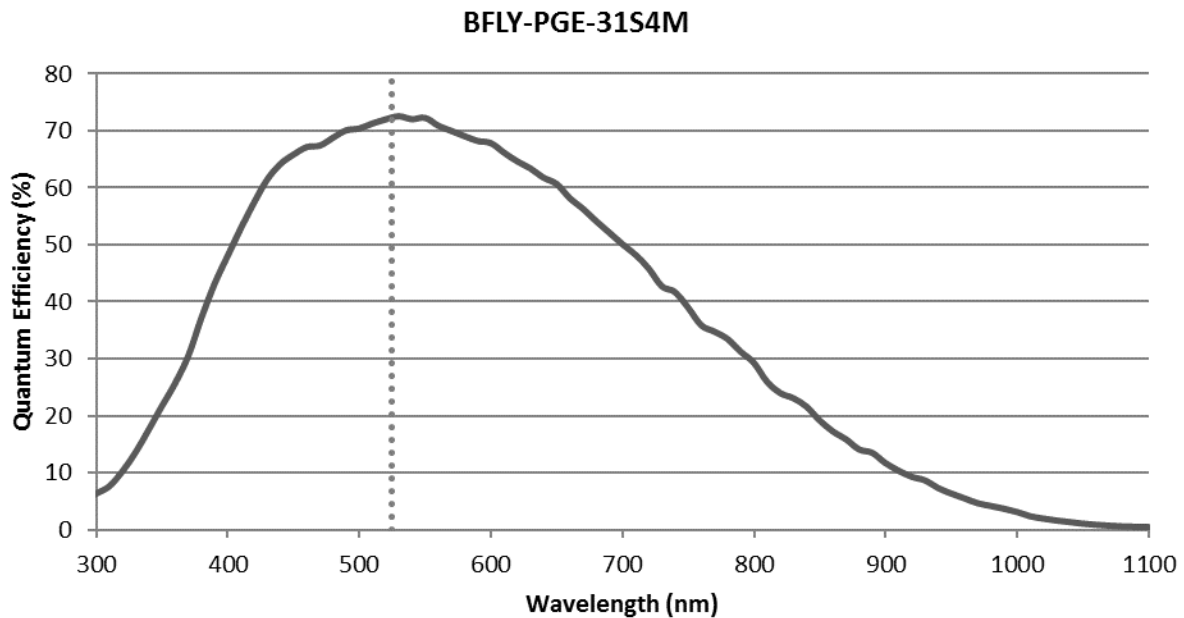
23 BFLY-PGE-23S6C-C Imaging Performance

Measurement	Video Mode 0	Video Mode 7
Pixel Clock (MHz)	37.5	37.5
ADC (Bits)	10-bit	12-bit
Quantum Efficiency Blue (% at 470 nm)	64	62
Quantum Efficiency Green (% at 525 nm)	75	72
Quantum Efficiency Red (% at 640 nm)	52	50
Temporal Dark Noise (Read Noise) (e ⁻)	15.06	6.97
Signal to Noise Ratio Maximum (dB)	45.25	45.28
Signal to Noise Ratio Maximum (Bits)	7.51	7.52
Absolute Sensitivity Threshold (γ)	21.89	10.93
Saturation Capacity (Well Depth) (e ⁻)	33456	33723
Dynamic Range (dB)	66.65	73.09
Dynamic Range (Bits)	11.07	12.14
Gain (e ⁻ /ADU)	0.53	0.53



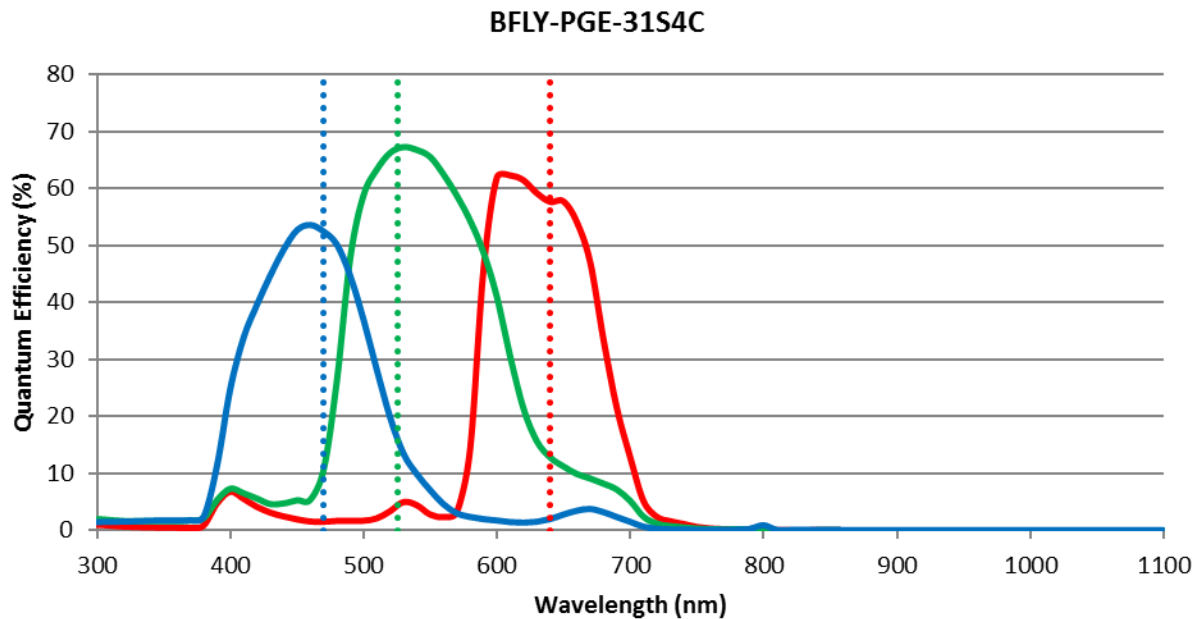
24 BFLY-PGE-31S4M-C Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	37.5
ADC (Bits)	12-bit
Quantum Efficiency (% at 525 nm)	72
Temporal Dark Noise (Read Noise) (e ⁻)	2.31
Signal to Noise Ratio Maximum (dB)	40.14
Signal to Noise Ratio Maximum (Bits)	6.67
Absolute Sensitivity Threshold (γ)	3.93
Saturation Capacity (Well Depth) (e ⁻)	10326
Dynamic Range (dB)	71.31
Dynamic Range (Bits)	11.84
Gain (e ⁻ /ADU)	0.17



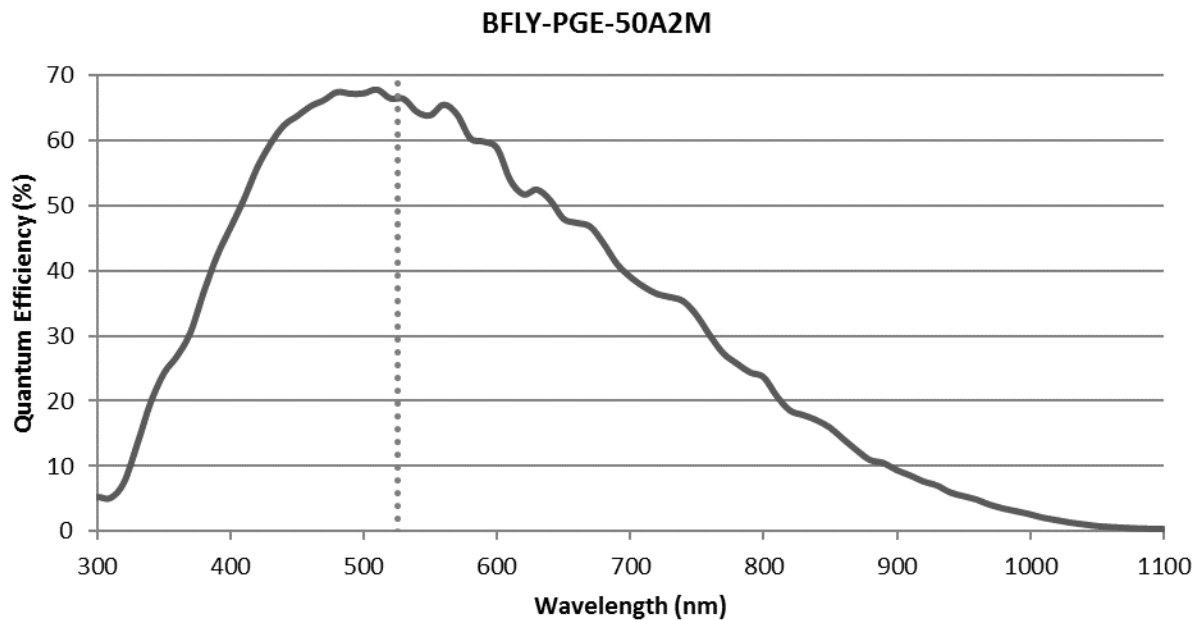
25 BFLY-PGE-31S4C-C Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	37.5
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	52
Quantum Efficiency Green (% at 525 nm)	66
Quantum Efficiency Red (% at 640 nm)	57
Temporal Dark Noise (Read Noise) (e ⁻)	2.27
Signal to Noise Ratio Maximum (dB)	39.83
Signal to Noise Ratio Maximum (Bits)	6.62
Absolute Sensitivity Threshold (γ)	4.29
Saturation Capacity (Well Depth) (e ⁻)	9614
Dynamic Range (dB)	70.80
Dynamic Range (Bits)	11.76
Gain (e ⁻ /ADU)	0.17



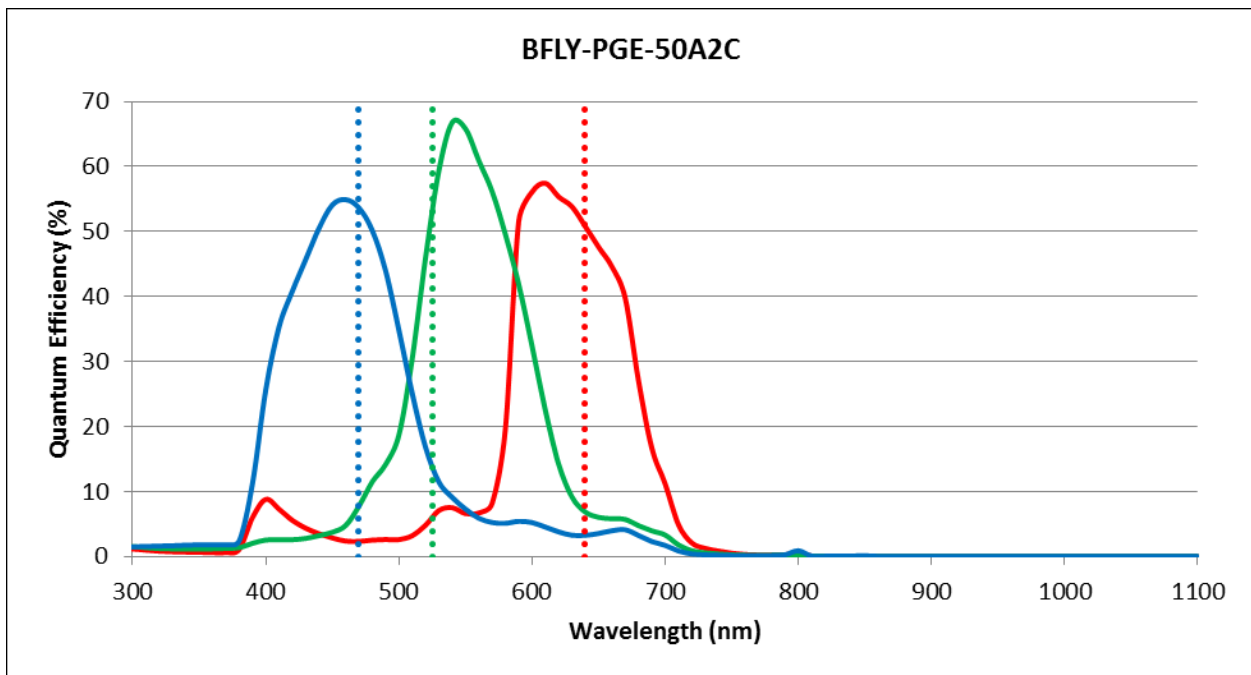
26 BFLY-PGE-50A2M-CS Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	96
ADC (Bits)	12-bit
Quantum Efficiency (% at 525 nm)	66
Temporal Dark Noise (Read Noise) (e-)	6.62
Signal to Noise Ratio Maximum (dB)	38.24
Signal to Noise Ratio Maximum (Bits)	6.35
Absolute Sensitivity Threshold (γ)	10.92
Saturation Capacity (Well Depth) (e-)	6667
Dynamic Range (dB)	59.43
Dynamic Range (Bits)	9.87
Gain (e-/ADU)	0.11



27 BFLY-PGE-50A2C-CS Imaging Performance

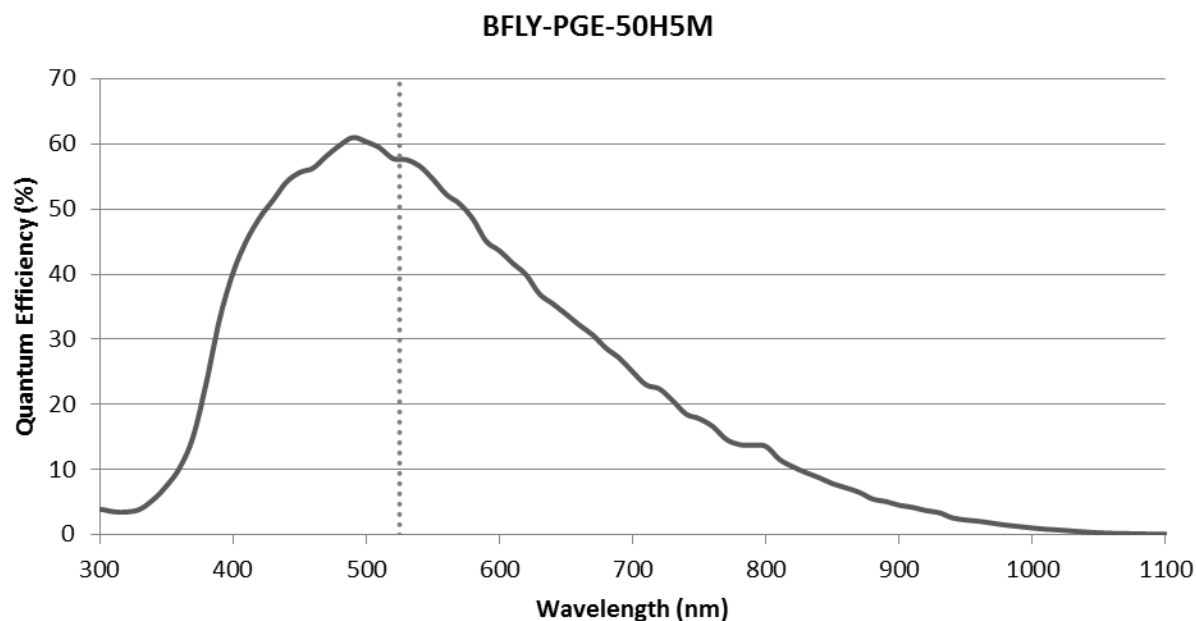
Measurement	Video Mode 0
Pixel Clock (MHz)	96
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	53
Quantum Efficiency Green (% at 525 nm)	52
Quantum Efficiency Red (% at 640 nm)	50
Temporal Dark Noise (Read Noise) (e-)	5.48
Signal to Noise Ratio Maximum (dB)	36.78
Signal to Noise Ratio Maximum (Bits)	6.11
Absolute Sensitivity Threshold (γ)	11.05
Saturation Capacity (Well Depth) (e-)	4769
Dynamic Range (dB)	58.04
Dynamic Range (Bits)	9.64
Gain (e-/ADU)	0.08



28 BFLY-PGE-50H5M-C Imaging Performance

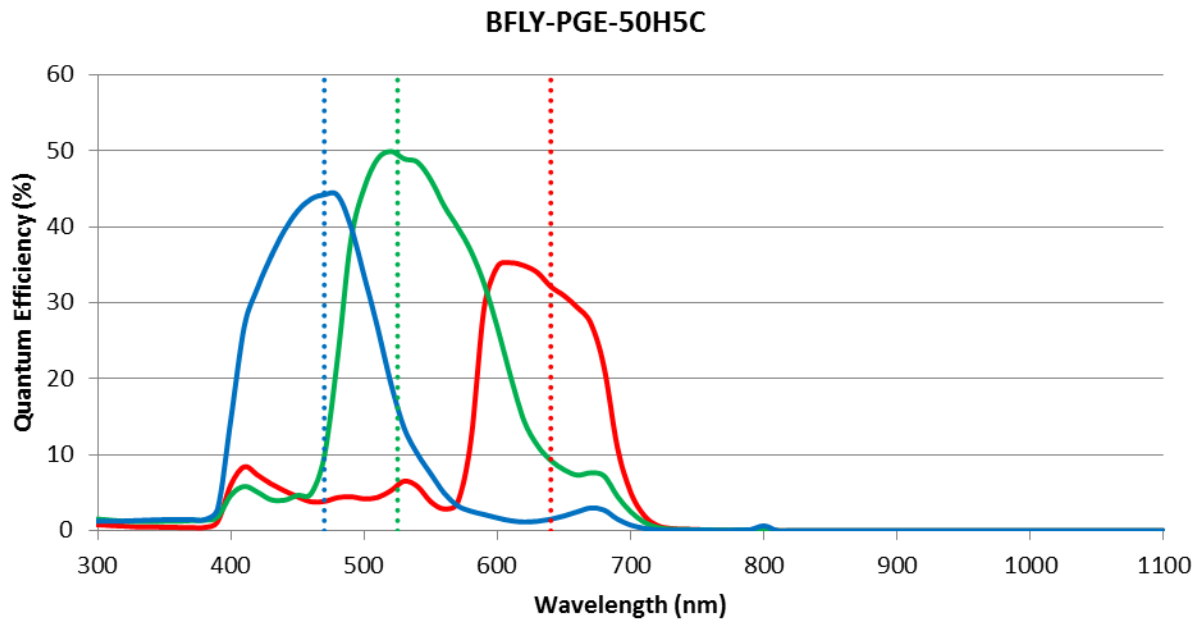
Measurement	Video Mode 0
Pixel Clock (MHz)	45
ADC (Bits)	12-bit
Quantum Efficiency (% at 525 nm)	57
Temporal Dark Noise (Read Noise) (e ⁻)	5.48
Signal to Noise Ratio Maximum (dB)	39.08
Signal to Noise Ratio Maximum (Bits)	6.49
Absolute Sensitivity Threshold (γ)	10.67
Saturation Capacity (Well Depth) (e ⁻)	8086
Dynamic Range (dB)	62.61
Dynamic Range (Bits)	10.4
Gain (e ⁻ /ADU)	0.13

Measurements taken with Raw16 pixel format.



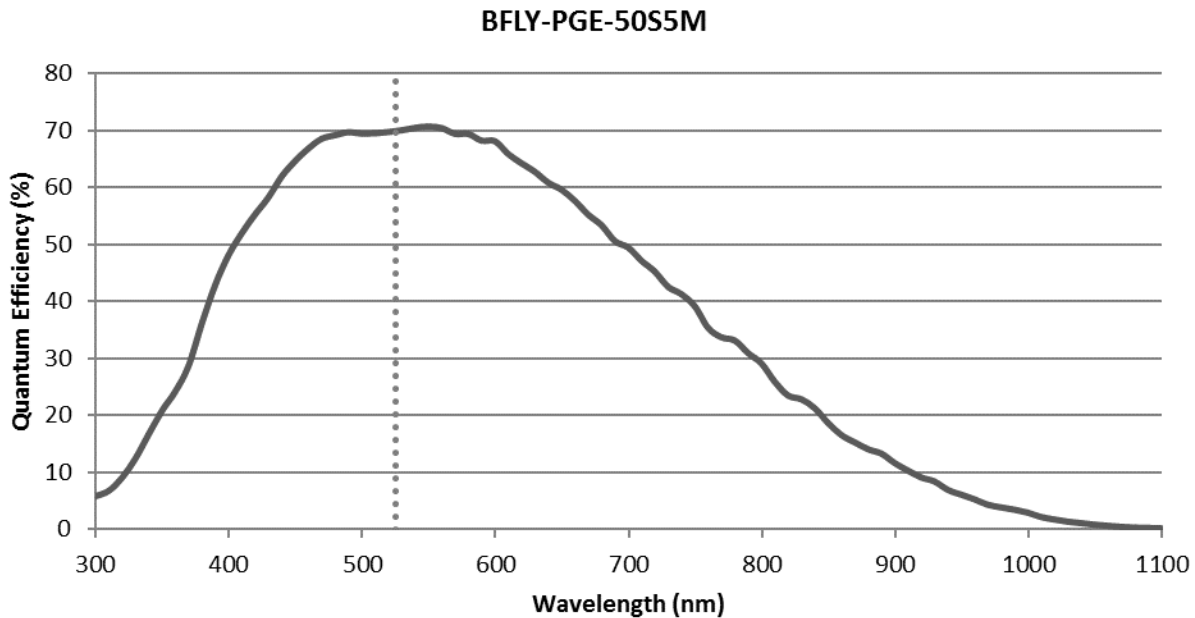
29 BFLY-PGE-50H5C-C Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	45
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	44
Quantum Efficiency Green (% at 525 nm)	49
Quantum Efficiency Red (% at 640 nm)	32
Temporal Dark Noise (Read Noise) (e-)	5.64
Signal to Noise Ratio Maximum (dB)	39.08
Signal to Noise Ratio Maximum (Bits)	6.49
Absolute Sensitivity Threshold (γ)	13.15
Saturation Capacity (Well Depth) (e-)	8096
Dynamic Range (dB)	62.40
Dynamic Range (Bits)	10.36
Gain (e-/ADU)	0.13



30 BFLY-PGE-50S5M-C Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	37.5
ADC (Bits)	12-bit
Quantum Efficiency (% at 525 nm)	69
Temporal Dark Noise (Read Noise) (e-)	2.36
Signal to Noise Ratio Maximum (dB)	39.96
Signal to Noise Ratio Maximum (Bits)	6.64
Absolute Sensitivity Threshold (γ)	4.10
Saturation Capacity (Well Depth) (e-)	9909
Dynamic Range (dB)	70.78
Dynamic Range (Bits)	11.76
Gain (e-/ADU)	0.17



31 BFLY-PGE-50S5C-C Imaging Performance

Measurement	Video Mode 0
Pixel Clock (MHz)	37.5
ADC (Bits)	12-bit
Quantum Efficiency Blue (% at 470 nm)	51
Quantum Efficiency Green (% at 525 nm)	66
Quantum Efficiency Red (% at 640 nm)	58
Temporal Dark Noise (Read Noise) (e ⁻)	2.34
Signal to Noise Ratio Maximum (dB)	39.86
Signal to Noise Ratio Maximum (Bits)	6.62
Absolute Sensitivity Threshold (γ)	4.38
Saturation Capacity (Well Depth) (e ⁻)	9674
Dynamic Range (dB)	70.66
Dynamic Range (Bits)	11.74
Gain (e ⁻ /ADU)	0.17

