Flea3 GigE

GigE Digital Camera

Imaging Performance Specification

Version 1.0

Revised 10/25/2013

Point Grey Research® Inc.

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1 Specifications

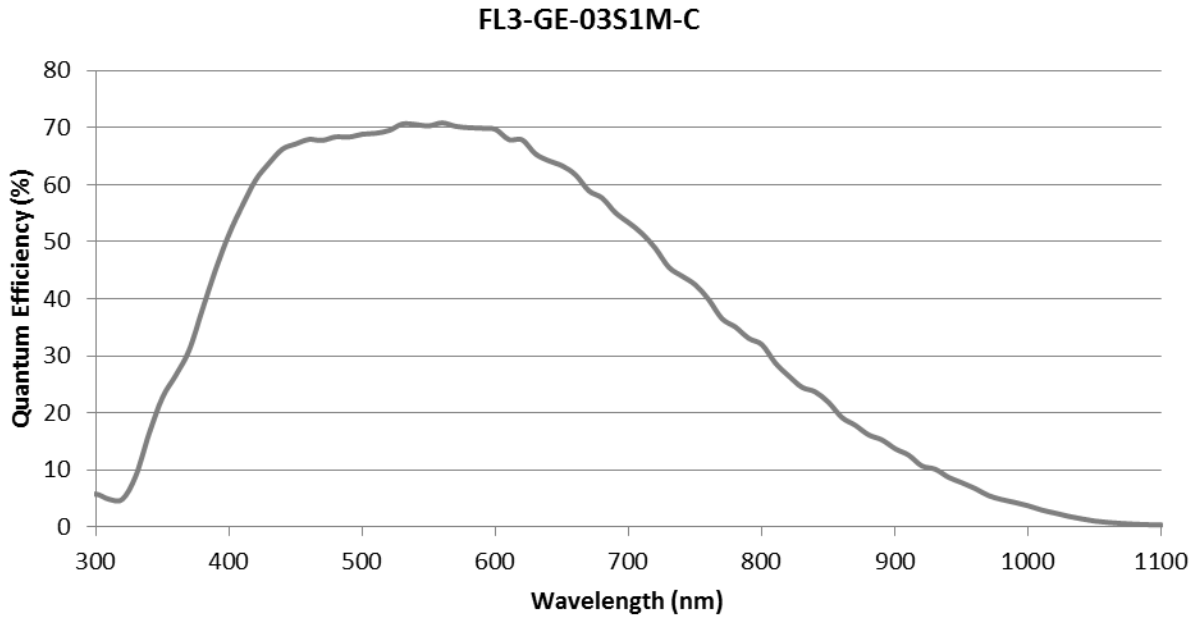
Model	Sensor	Maximum Resolution	Maximum Frame Rate	Pixel Size	Firmware	Results
FL3-GE-03S1M-C	Sony ICX618 CCD, 1/4", Mono	648 x 488	120 FPS	5.6 µm	1.24.3.0	page 3
FL3-GE-03S1C-C	Sony ICX618 CCD, 1/4", Color	648 x 488	120 FPS	5.6 µm	1.24.3.0	page 4
FL3-GE-03S2M-C	Sony ICX424 CCD, 1/3", Mono	648 x 488	82 FPS	7.4 µm	1.27.3.0	page 5
FL3-GE-03S2C-C	Sony ICX424 CCD, 1/3", Color	648 x 488	82 FPS	7.4 µm	1.27.3.0	page 6
FL3-GE-08S2M-C	Sony ICX204 CCD, 1/3", Mono	1032 x 776	31 FPS	4.65 µm	1.14.3.0	page 7
FL3-GE-08S2C-C	Sony ICX204 CCD, 1/3", Color	1032 x 776	31 FPS	4.65 µm	1.14.3.0	page 8
FL3-GE-13S2M-C	Sony ICX445 CCD, 1/3", Mono	1288 x 964	31 FPS	3.75 µm	1.8.3.0	page 9
FL3-GE-13S2C-C	Sony ICX445 CCD, 1/3", Color	1288 x 964	31 FPS	3.75 µm	1.8.3.0	page 10
FL3-GE-14S3M-C	Sony ICX267 CCD, 1/2", Mono	1384 x 1032	18 FPS	4.65 µm	1.20.3.0	page 11
FL3-GE-14S3C-C	Sony ICX267 CCD, 1/2", Color	1384 x 1032	18 FPS	4.65 µm	1.20.3.0	page 12
FL3-GE-20S4M-C	Sony ICX274 CCD, 1/1.8", Mono	1624 x 1224	15 FPS	4.4 µm	1.23.3.0	page 13
FL3-GE-20S4C-C	Sony ICX274 CCD, 1/1.8", Color	1624 x 1224	15 FPS	4.4 µm	1.23.3.0	page 14
FL3-GE-28S4M-C	Sony ICX687 CCD, 1/1.8", Mono	1928 x 1448	15 FPS	3.69 µm	1.27.3.0	page 15
FL3-GE-28S4C-C	Sony ICX687 CCD, 1/1.8", Color	1928 x 1448	15 FPS	3.69 µm	1.26.3.0	page 16
FL3-GE-50S5M-C	Sony ICX655 CCD, 2/3", Mono	2448 x 2048	8 FPS	3.45 µm	1.19.3.0	page 17
FL3-GE-50S5C-C	Sony ICX655 CCD, 2/3", Color	2448 x 2048	8 FPS	3.45 µm	1.19.3.0	page 18

1288 EMVA Standard Compliant

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 exposure time and bit depth unless otherwise noted. The pixel format is Mono 16 for mono cameras and Raw 16 for color cameras. Results are captured at room temperature (20°C).

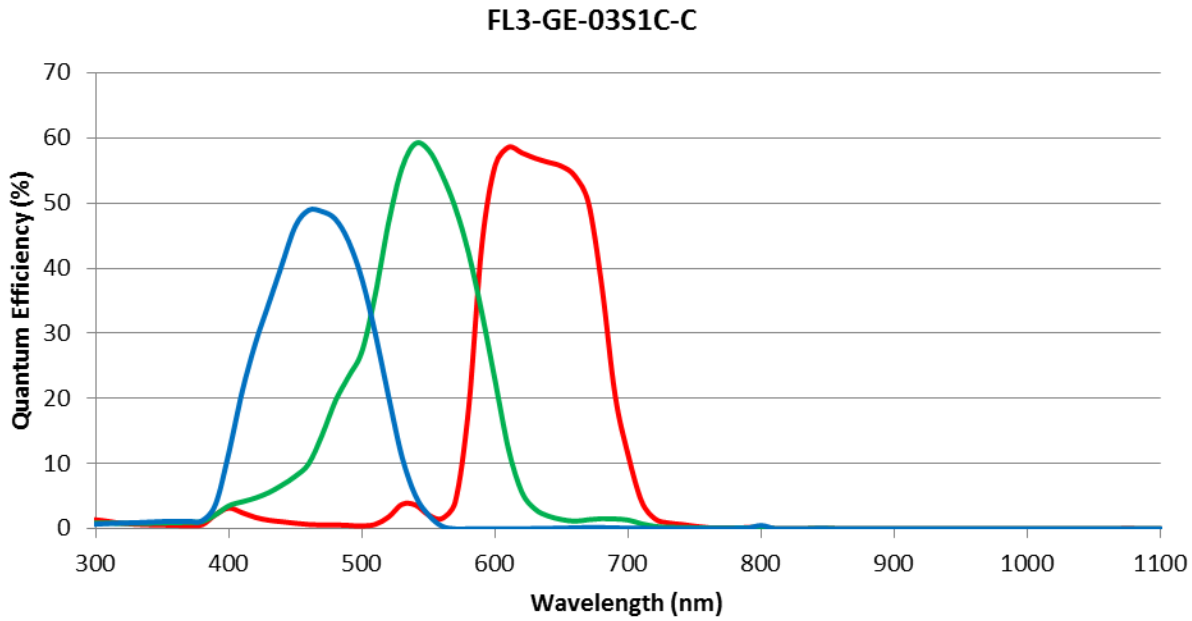
2 FL3-GE-03S1M-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency	70	% at 525 nm
Temporal Dark Noise (Read Noise)	11.73	e-
Signal to Noise Ratio Maximum	41.62	dB
Signal to Noise Ratio Maximum	6.91	Bits
Absolute Sensitivity Threshold	17.57	γ
Saturation Capacity (Well Depth)	14508	e-
Dynamic Range	61.49	dB
Dynamic Range	10.21	Bits
Gain	0.22	e-/ADU



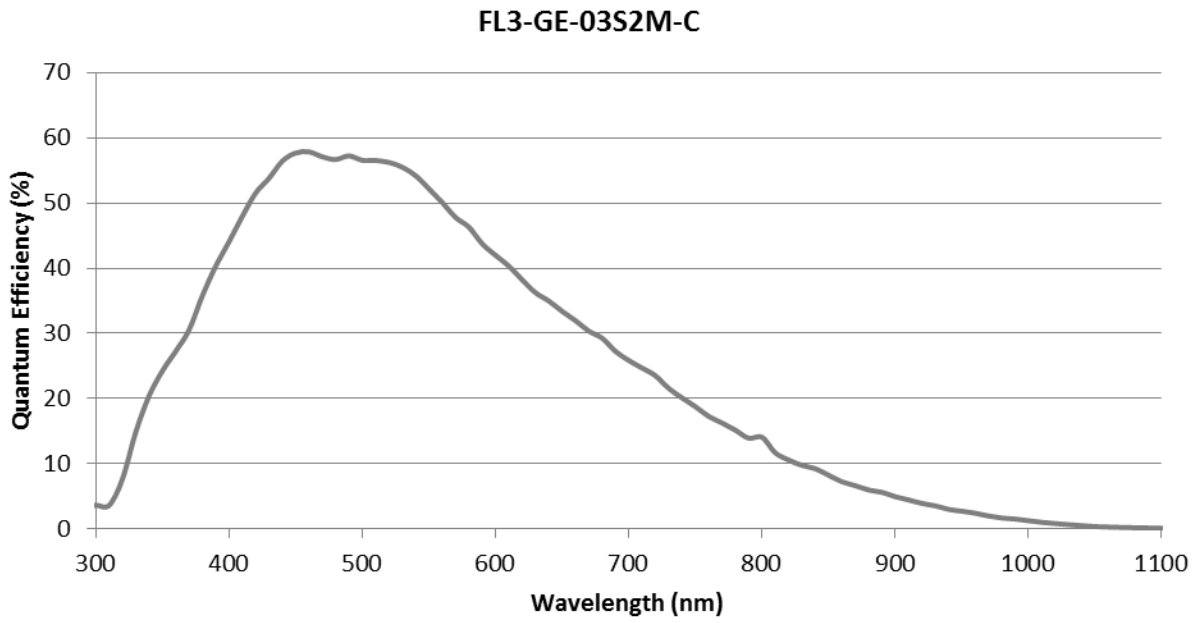
3 FL3-GE-03S1C-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency Blue	49	% at 470 nm
Quantum Efficiency Green	51	% at 525 nm
Quantum Efficiency Red	56	% at 640 nm
Temporal Dark Noise (Read Noise)	12.59	e-
Signal to Noise Ratio Maximum	41.62	dB
Signal to Noise Ratio Maximum	6.91	Bits
Absolute Sensitivity Threshold	26.20	γ
Saturation Capacity (Well Depth)	14528	e-
Dynamic Range	60.91	dB
Dynamic Range	10.12	Bits
Gain	0.22	e-/ADU



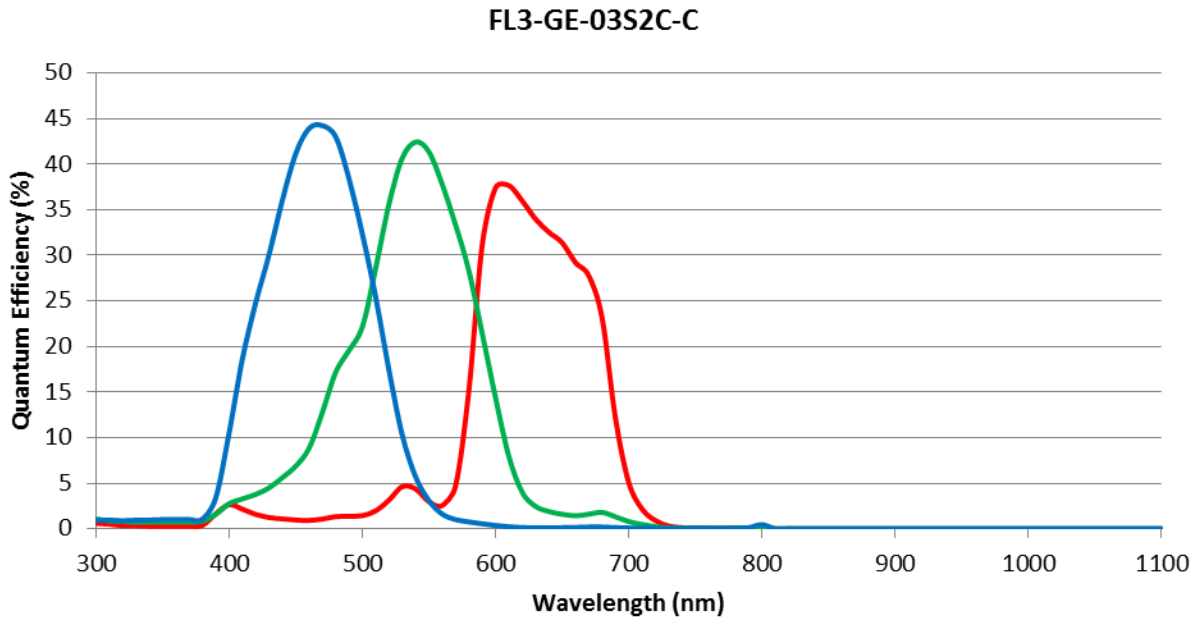
4 FL3-GE-03S2M-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency	56	% at 525 nm
Temporal Dark Noise (Read Noise)	13.50	e-
Signal to Noise Ratio Maximum	40.77	dB
Signal to Noise Ratio Maximum	6.77	Bits
Absolute Sensitivity Threshold	25.07	γ
Saturation Capacity (Well Depth)	11977	e-
Dynamic Range	58.63	dB
Dynamic Range	9.74	Bits
Gain	0.21	e-/ADU



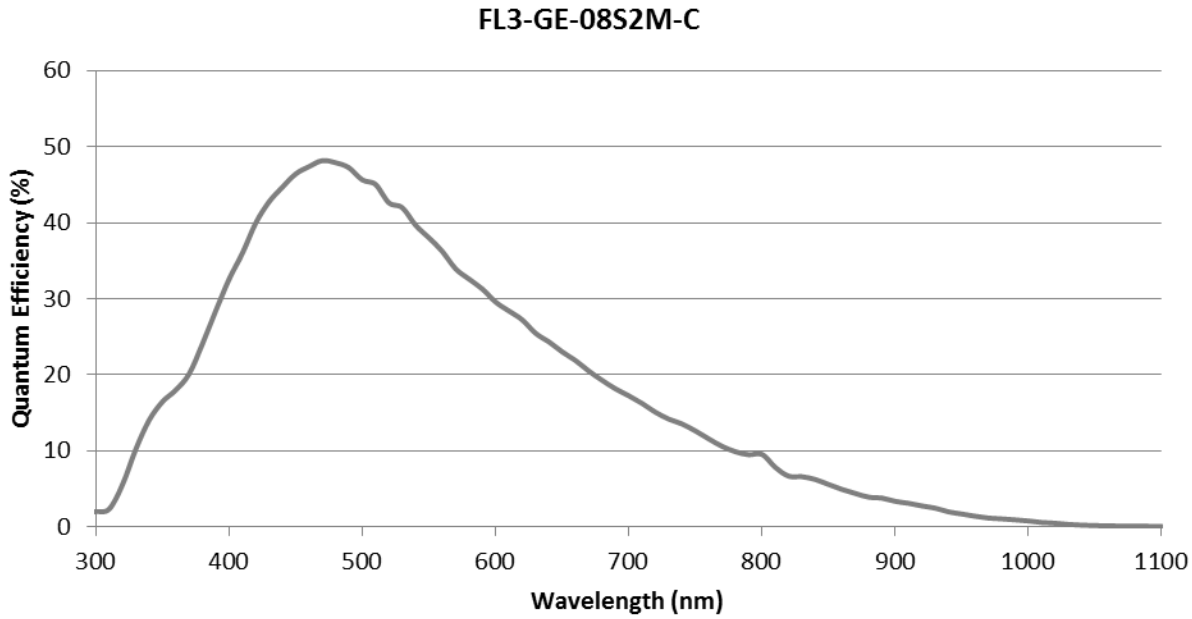
5 FL3-GE-03S2C-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency Blue	44	% at 470 nm
Quantum Efficiency Green	38	% at 525 nm
Quantum Efficiency Red	33	% at 640 nm
Temporal Dark Noise (Read Noise)	12.22	e-
Signal to Noise Ratio Maximum	40.40	dB
Signal to Noise Ratio Maximum	6.71	Bits
Absolute Sensitivity Threshold	34.93	γ
Saturation Capacity (Well Depth)	10971	e-
Dynamic Range	58.72	dB
Dynamic Range	9.75	Bits
Gain	0.20	e-/ADU



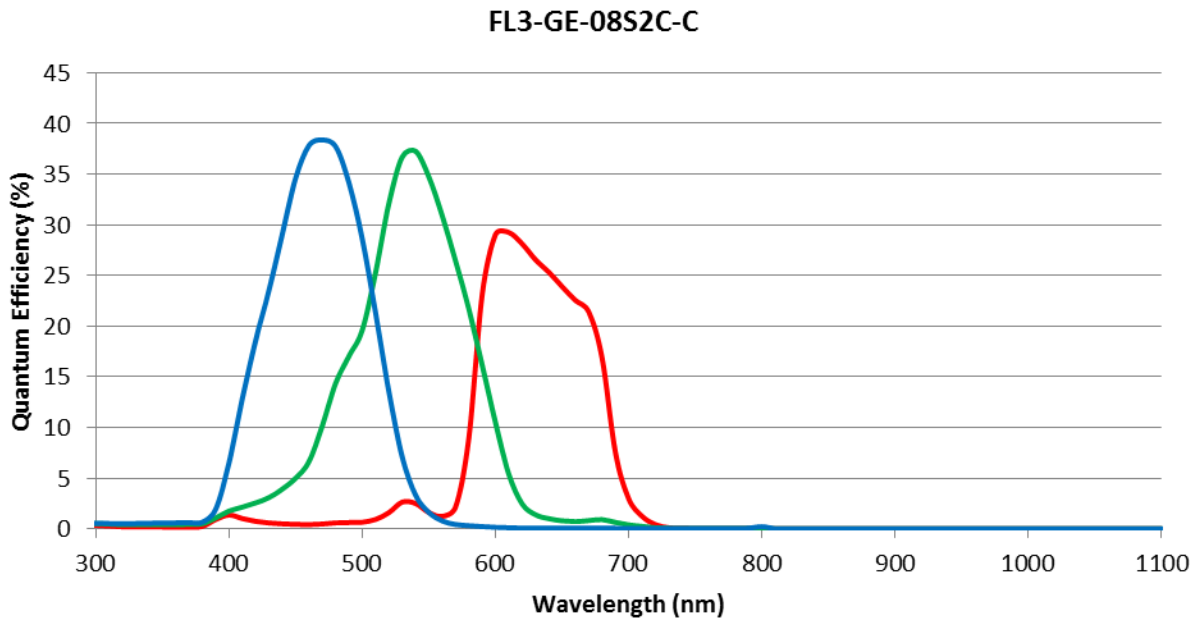
6 FL3-GE-08S2M-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency	42	% at 525 nm
Temporal Dark Noise (Read Noise)	12.13	e-
Signal to Noise Ratio Maximum	40.77	dB
Signal to Noise Ratio Maximum	6.77	Bits
Absolute Sensitivity Threshold	30.70	γ
Saturation Capacity (Well Depth)	11944	e-
Dynamic Range	59.51	dB
Dynamic Range	9.89	Bits
Gain	0.19	e-/ADU



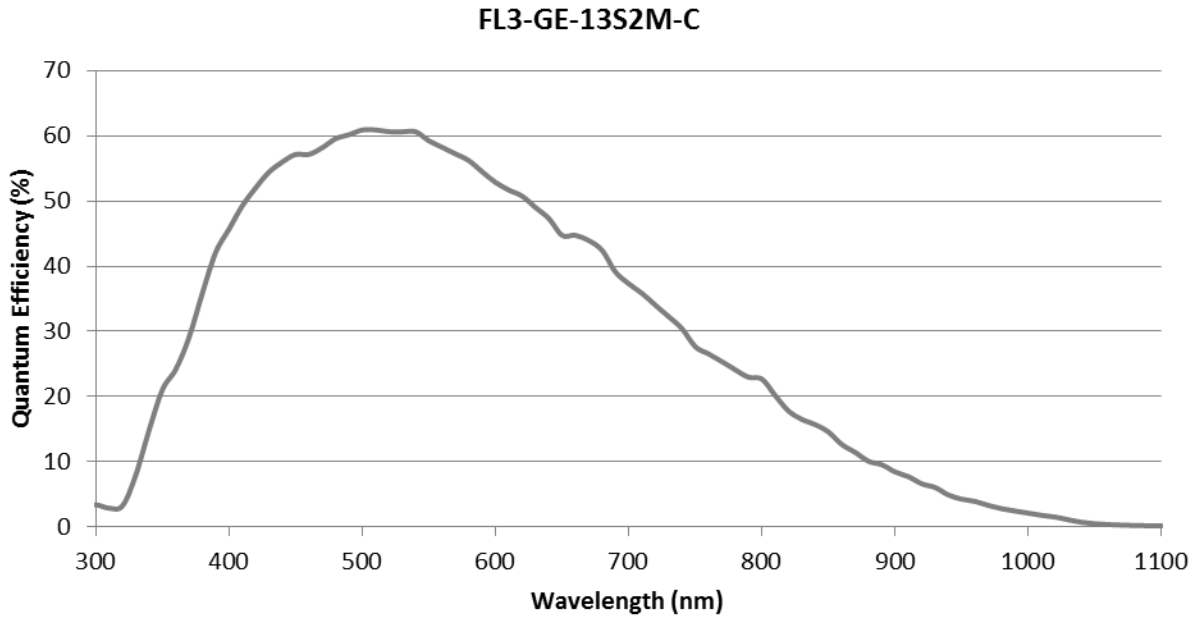
7 FL3-GE-08S2C-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency Blue	38	% at 470 nm
Quantum Efficiency Green	34	% at 525 nm
Quantum Efficiency Red	25	% at 640 nm
Temporal Dark Noise (Read Noise)	12.62	e-
Signal to Noise Ratio Maximum	40.62	dB
Signal to Noise Ratio Maximum	6.75	Bits
Absolute Sensitivity Threshold	40.27	γ
Saturation Capacity (Well Depth)	11543	e-
Dynamic Range	58.89	dB
Dynamic Range	9.78	Bits
Gain	0.20	e-/ADU



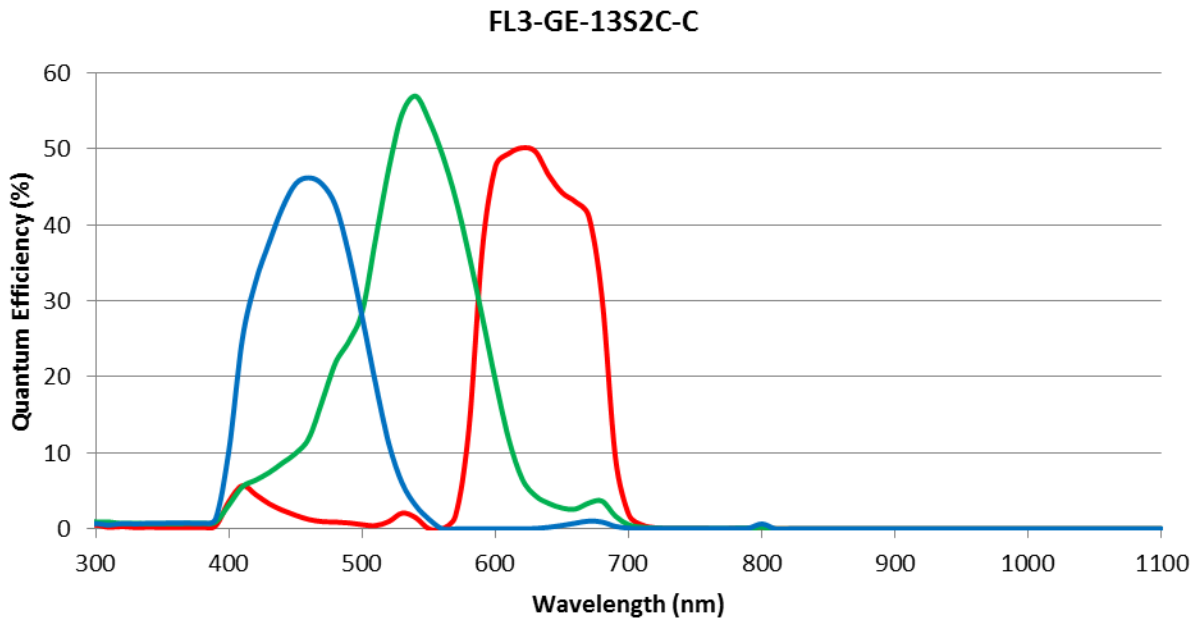
8 FL3-GE-13S2M-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency	61	% at 525 nm
Temporal Dark Noise (Read Noise)	7.61	e-
Signal to Noise Ratio Maximum	38.66	dB
Signal to Noise Ratio Maximum	6.42	Bits
Absolute Sensitivity Threshold	13.63	γ
Saturation Capacity (Well Depth)	7347	e-
Dynamic Range	59.14	dB
Dynamic Range	9.82	Bits
Gain	0.12	e-/ADU



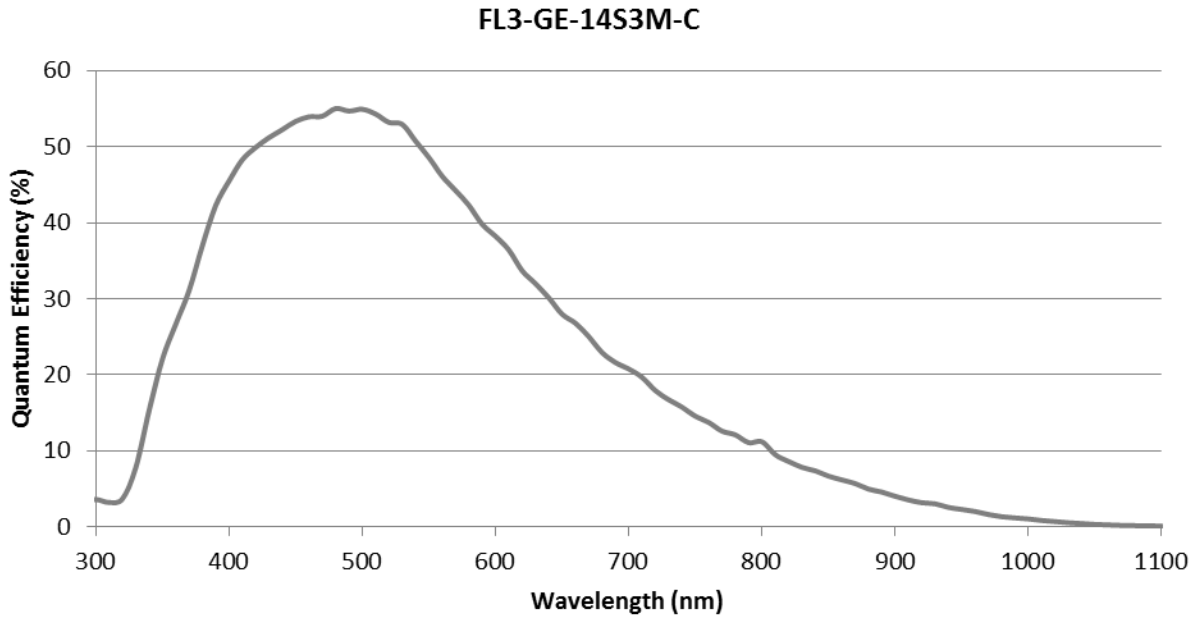
9 FL3-GE-13S2C-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency Blue	45	% at 470 nm
Quantum Efficiency Green	51	% at 525 nm
Quantum Efficiency Red	47	% at 640 nm
Temporal Dark Noise (Read Noise)	8.71	e-
Signal to Noise Ratio Maximum	38.87	dB
Signal to Noise Ratio Maximum	6.46	Bits
Absolute Sensitivity Threshold	19.10	γ
Saturation Capacity (Well Depth)	7701	e-
Dynamic Range	58.44	dB
Dynamic Range	9.71	Bits
Gain	0.12	e-/ADU



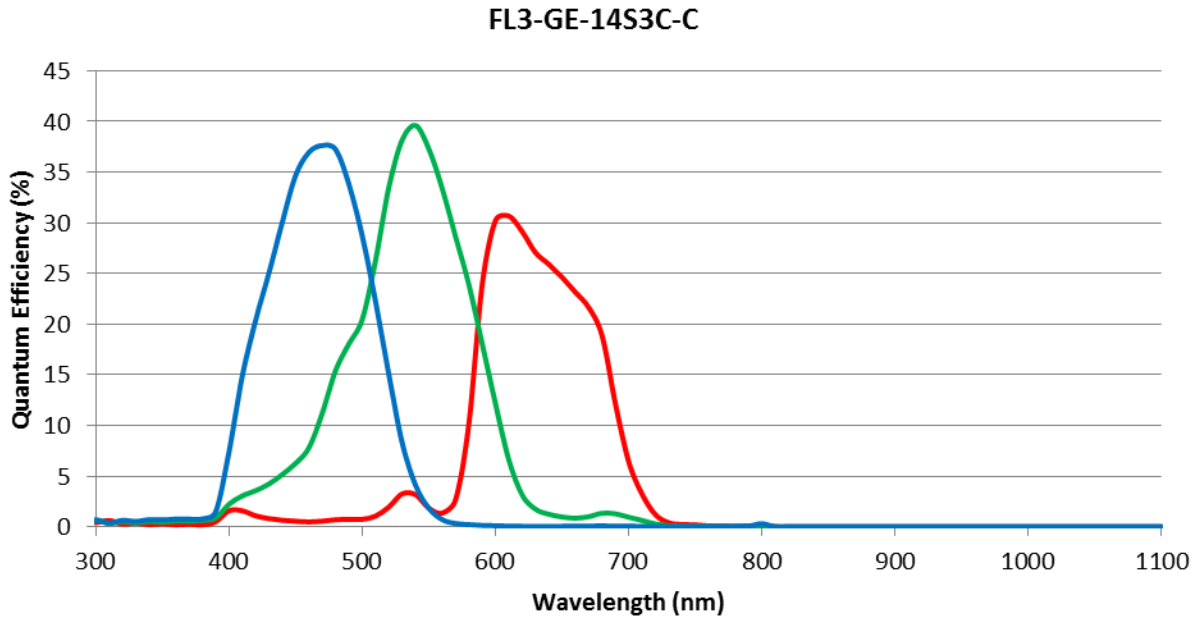
10 FL3-GE-14S3M-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency	53	% at 525 nm
Temporal Dark Noise (Read Noise)	11.48	e-
Signal to Noise Ratio Maximum	40.16	dB
Signal to Noise Ratio Maximum	6.67	Bits
Absolute Sensitivity Threshold	23.63	γ
Saturation Capacity (Well Depth)	10366	e-
Dynamic Range	58.75	dB
Dynamic Range	9.76	Bits
Gain	0.18	e-/ADU



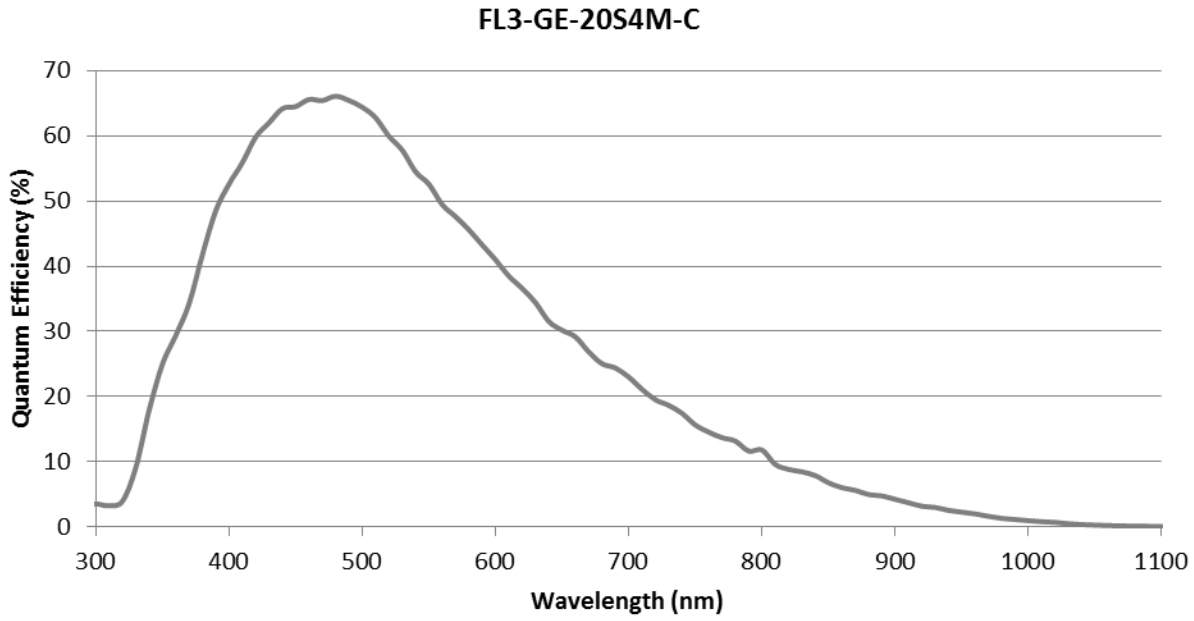
11 FL3-GE-14S3C-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency Blue	38	% at 470 nm
Quantum Efficiency Green	36	% at 525 nm
Quantum Efficiency Red	26	% at 640 nm
Temporal Dark Noise (Read Noise)	10.52	e-
Signal to Noise Ratio Maximum	39.81	dB
Signal to Noise Ratio Maximum	6.61	Bits
Absolute Sensitivity Threshold	32.94	γ
Saturation Capacity (Well Depth)	9573	e-
Dynamic Range	58.78	dB
Dynamic Range	9.76	Bits
Gain	0.17	e-/ADU



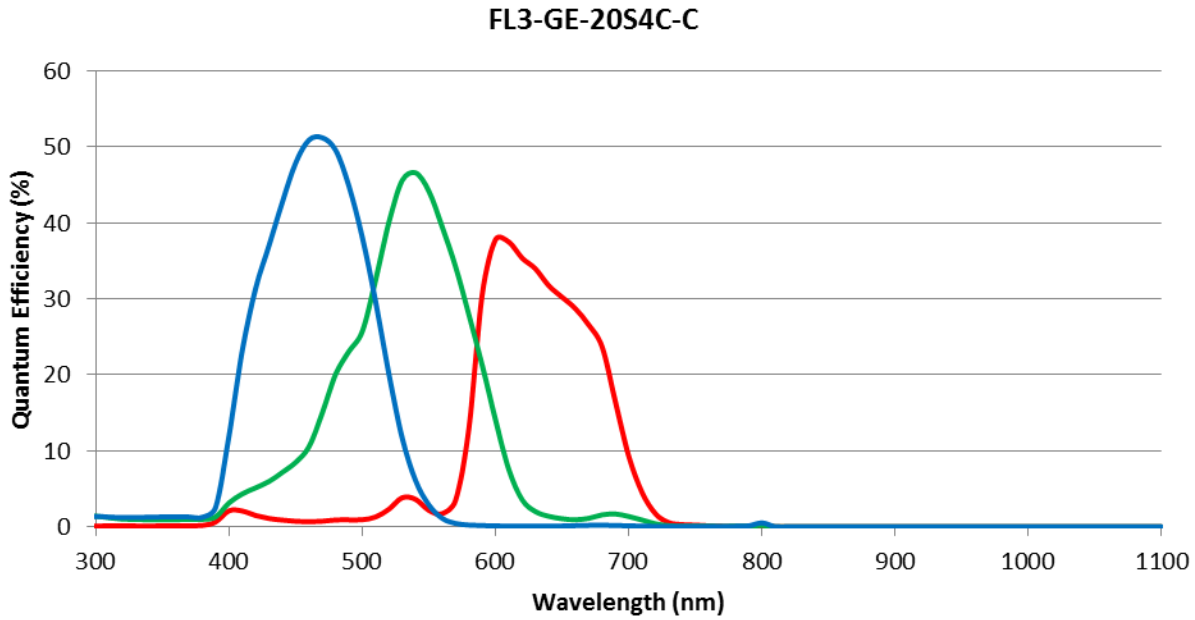
12 FL3-GE-20S4M-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency	59	% at 525 nm
Temporal Dark Noise (Read Noise)	8.35	e-
Signal to Noise Ratio Maximum	39.01	dB
Signal to Noise Ratio Maximum	6.48	Bits
Absolute Sensitivity Threshold	15.77	γ
Saturation Capacity (Well Depth)	7969	e-
Dynamic Range	59.09	dB
Dynamic Range	9.82	Bits
Gain	0.13	e-/ADU



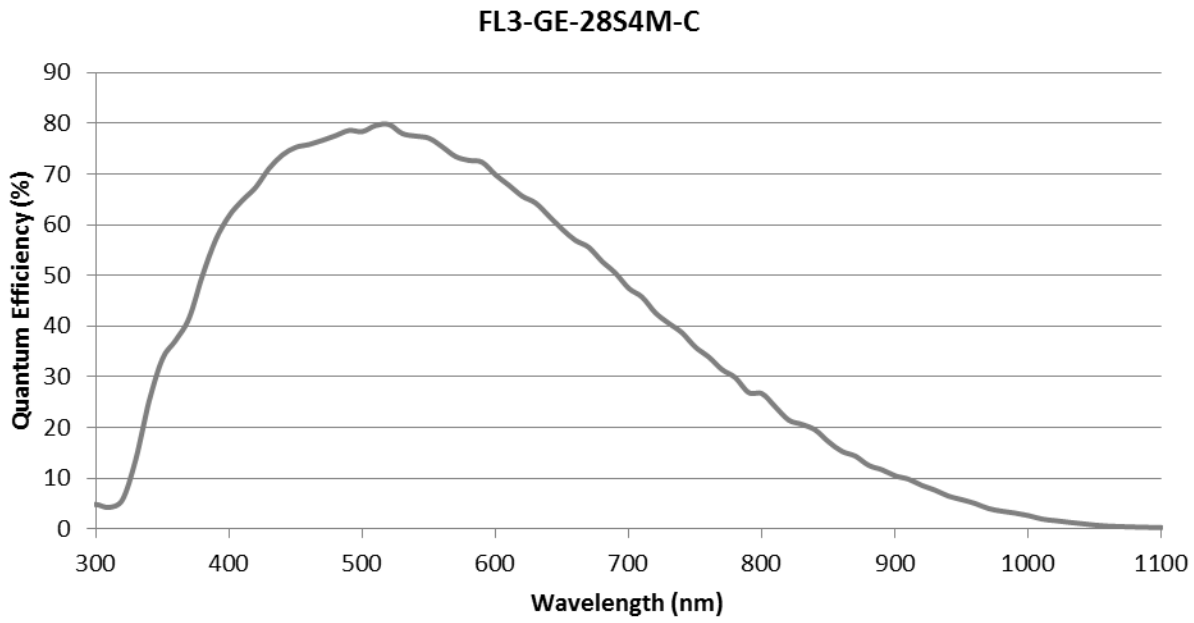
13 FL3-GE-20S4C-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency Blue	51	% at 470 nm
Quantum Efficiency Green	43	% at 525 nm
Quantum Efficiency Red	32	% at 640 nm
Temporal Dark Noise (Read Noise)	8.34	e-
Signal to Noise Ratio Maximum	39.12	dB
Signal to Noise Ratio Maximum	6.50	Bits
Absolute Sensitivity Threshold	22.04	γ
Saturation Capacity (Well Depth)	8162	e-
Dynamic Range	59.30	dB
Dynamic Range	9.85	Bits
Gain	0.13	e-/ADU



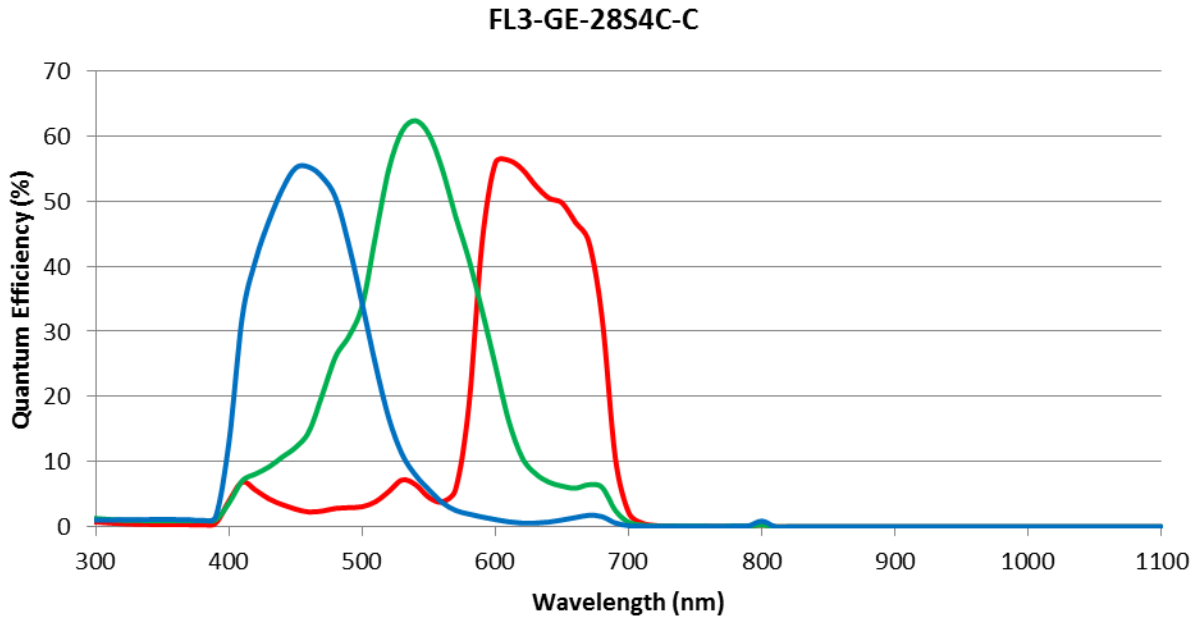
14 FL3-GE-28S4M-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency	79	% at 525 nm
Temporal Dark Noise (Read Noise)	9.68	e-
Signal to Noise Ratio Maximum	40.64	dB
Signal to Noise Ratio Maximum	6.78	Bits
Absolute Sensitivity Threshold	13.13	γ
Saturation Capacity (Well Depth)	11586	e-
Dynamic Range	61.12	dB
Dynamic Range	10.15	Bits
Gain	0.19	e-/ADU



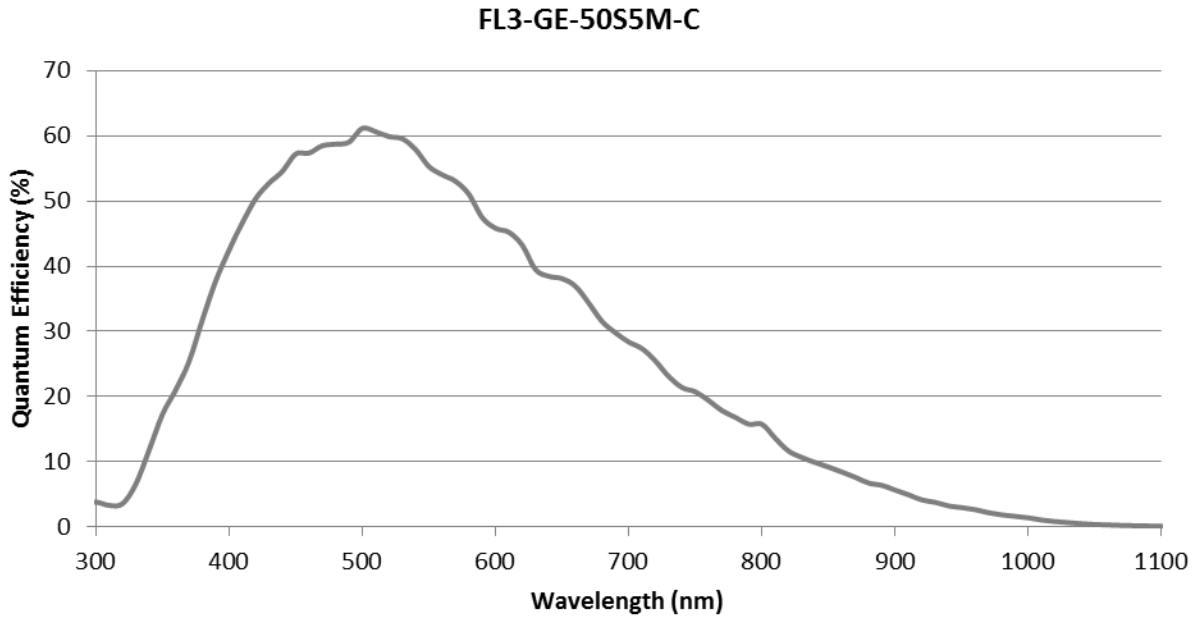
15 FL3-GE-28S4C-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency Blue	54	% at 470 nm
Quantum Efficiency Green	58	% at 525 nm
Quantum Efficiency Red	50	% at 640 nm
Temporal Dark Noise (Read Noise)	9.01	e-
Signal to Noise Ratio Maximum	40.65	dB
Signal to Noise Ratio Maximum	6.75	Bits
Absolute Sensitivity Threshold	17.55	γ
Saturation Capacity (Well Depth)	11618	e-
Dynamic Range	61.74	dB
Dynamic Range	10.25	Bits
Gain	0.19	e-/ADU



16 FL3-GE-50S5M-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency	60	% at 525 nm
Temporal Dark Noise (Read Noise)	9.43	e-
Signal to Noise Ratio Maximum	37.68	dB
Signal to Noise Ratio Maximum	6.26	Bits
Absolute Sensitivity Threshold	17.23	γ
Saturation Capacity (Well Depth)	5856	e-
Dynamic Range	55.42	dB
Dynamic Range	9.20	Bits
Gain	0.09	e-/ADU



17 FL3-GE-50S5C-C Imaging Performance

Measurement	Value	Unit
Quantum Efficiency Blue	44	% at 470 nm
Quantum Efficiency Green	48	% at 525 nm
Quantum Efficiency Red	38	% at 640 nm
Temporal Dark Noise (Read Noise)	7.95	e-
Signal to Noise Ratio Maximum	37.38	dB
Signal to Noise Ratio Maximum	6.21	Bits
Absolute Sensitivity Threshold	19.04	γ
Saturation Capacity (Well Depth)	5467	e-
Dynamic Range	56.22	dB
Dynamic Range	9.34	Bits
Gain	0.09	e-/ADU