

Certificate of Performance

Sales Order No: 68042
 Purchase Order No: 39-S134333
 Camera Serial No: 2803120001

This document certifies that at the time of manufacture, this **PIXIS eXcelon: 2048B watercooled** camera system was assembled and tested in accordance with applicable Princeton Instruments procedures. A copy of this certification is on file.

Read Noise (e- rms) Low-Noise Output Speed Measured 100 kHz 3.14 2 MHz 13.12 High-Capacity Output Speed Measured 100 kHz 6.80 2 MHz 31.28		Full Well (Ke-) Measured Single Pixel 88 Output-Node (Binned) Measured Low-Noise Output 228 High-Capacity Output 912	
Dark Charge (e-/pixel/sec) Measured: 0.01 @ 60°C			
Conversion Gain (e-/ADU) and Non-Linearity			
Low-Noise Output		Gain (e-/ADU)	
100kHz		#1: 3.29	
		#2: 1.78	
		#3: 0.89	
2MHz		#1: 3.49	
		#2: 1.82	
		#3: 0.90	
High-Capacity Output		Gain (e-/ADU)	
100kHz		#1: 14.72	
		#2: 7.03	
		#3: 3.49	
2MHz		#1: 13.92	
		#2: 6.88	
		#3: 3.43	
Non-Linearity <2% <2% <3% <3%			

The camera system was tested by Danielle Kavulic.

Danielle Kavulic
 Test Technician / Date 3/29/12

Victor Lyman
 Approved by / Date 3/29/12

Certificate of Performance

Sales Order No: 68042
Purchase Order No: 39-S134333
Camera Serial No: 04001312

This document certifies that at the time of manufacture, this **PIXIS: 2048B (Watercooled)** camera system was assembled and tested in accordance with applicable Princeton Instruments procedures. A copy of this certification is on file.

Read Noise (e- rms)		Full Well (Ke-)	
Low-Noise Output		Measured	
Speed	Measured	Single Pixel	81
100 kHz	3.23		
2 MHz	13.231		
High-Capacity Output			
Speed	Measured		
100 kHz	7.12		
2 MHz	29.53		
		Output-Node (Binned)	
		Measured	
		Low-Noise Output	246
		High-Capacity Output	923
Dark Charge (e-/pixel/sec)			
Measured: 0.01 @ -60°C			
Conversion Gain (e-/ADU) and Non-Linearity			
Low-Noise Output	Gain (e-/ADU)	Non-Linearity	
	#1: 3.56		
100kHz	#2: 1.77	<2%	
	#3: 0.90		
	#1: 3.53		
2MHz	#2: 1.74	<2%	
	#3: 0.88		
High-Capacity Output	Gain (e-/ADU)	Non-Linearity	
	#1: 14.15		
100kHz	#2: 7.27	<3%	
	#3: 3.79		
	#1: 14.09		
2MHz	#2: 7.02	<3%	
	#3: 3.52		

The camera system was tested by Danielle Kavulic.

Danielle Kavulic
Test Technician / Date 4/17/12

Victor
Approved by / Date 4/17/12