

LumiCam 4000B/2400B

2D imaging colorimeter

Key features at a glance

- ▲ Motorized objective lenses
- ▲ 12 MP / 5MP camera for high resolution images
- ▲ Approx. 20 % smaller footprint for compact design
- ▲ Various analysis features such as spotmeter, polygons, and flexible polylines
- ▲ Straightforward determination of luminance distributions, color coordinates / Black Mura, dot or line defects, or contrast



\\ TECHNICAL SPECIFICATIONS

	LumiCam 4000B			LumiCam 2400B		
Variants	Mono	Color	Advanced	Mono	Color	Advanced
Quantities						
Photometric quantities	Luminance (cd/m ²), luminous intensity (cd), contrast					
Colorimetric quantities	-	Color coordinates (x,y), color coordinates (u',v'), tristimulus values (X, Y, Z), dominant wavelength (nm), color saturation, correlated color temperature CCT (K)		-	Color coordinates (x,y), color coordinates (u',v'), tristimulus values (X, Y, Z), dominant wavelength (nm), color saturation, correlated color temperature CCT (K)	
Camera data						
Sensor	Sony IMX304LLR CMOS Sensor			Sony IMX264LLR CMOS Sensor		
Sensor size	1.1" (17.52 mm diagonal)			2/3", 11.1 mm diagonal		
Effective number of pixels (h x v)	4096 x 3000 pixels (12 megapixels, CMOS)			2428 x 2028 (5 megapixels)		
Pixel size	3.45 μm x 3.45 μm			3.45 μm x 3.45 μm		
AD converter	12 bit			12 bit		
Exposure time	40 μs to 30 s			40 μs to 30 s		
Luminance measurement						
Measurement range ¹⁾	0.3 mcd/m ² – 4.3 Mcd/m ²			0.3 mcd/m ² – 2.5 Mcd/m ²		
Extended measurement range ²⁾	4.3 x 10 ¹⁰ cd/m ²			2.5 x 10 ¹⁰ cd/m ²		
Measurement time (at 10 cd/m ²) ³⁾	0.75 s			0.65 s		
Measurement time (at 100 cd/m ²) ³⁾	0.58 s			0.44 s		
Accuracy for std. illuminant A ⁴⁾	±3 %	±3 %	±3 %	±3 %	±3 %	±3 %
Accuracy for LED color light ⁸⁾	-	-	±2 %	-	-	±2 %
Repeatability ⁵⁾	±0.03 %			±0.03 %		
Linearity	±0.5 %			±0.5 %		
Uniformity ⁶⁾	±0.5 %			±0.5 %		
Filter match ⁷⁾	f ₁ ' < 3 %			f ₁ ' < 3 %		

\\ TECHNICAL SPECIFICATIONS

Variants	LumiCam 4000B			LumiCam 2400B		
	Mono	Color	Advanced	Mono	Color	Advanced
Color measurement						
Measurement time (at 10 cd/m ²) ³⁾	-	8.5 s	12.3 s	-	9.2 s	12.3 s
Measurement time (at 100 cd/m ²) ³⁾	-	5.3 s	8 s	-	8 s	12 s
Accuracy (x, y) for std. illuminant A ⁴⁾	-	±0.003	±0.003	-	±0.003	±0.003
Accuracy (x, y) for color light ⁸⁾	-	±0.010	±0.010	-	±0.010	±0.010
Accuracy (x, y) for LED color light ⁹⁾	-	-	±0.005	-	-	±0.005
Repeatability (x, y) ⁵⁾	-	±0.0003	±0.0003	-	±0.0001	±0.0003
Uniformity (x, y) ⁶⁾	-	±0.001	±0.001	-	±0.001	±0.001
Filter match	f ₁ ' (Y) < 3 %	f ₁ ' (Xb) < 6 % f ₁ ' (Xr) < 6 % f ₁ ' (Y) < 3 % f ₁ ' (Z) < 4 %	f ₁ ' (Xb) < 6 % f ₁ ' (Xr) < 6 % f ₁ ' (Y) < 3 % f ₁ ' (Z) < 4 %	f ₁ ' (Y) < 3 %	f ₁ ' (Xb) < 6 % f ₁ ' (Xr) < 6 % f ₁ ' (Y) < 3 % f ₁ ' (Z) < 4 %	f ₁ ' (Xb) < 6 % f ₁ ' (Xr) < 6 % f ₁ ' (Y) < 3 % f ₁ ' (Z) < 4 %
General						
Interface	Gigabit Ethernet					
Operating system	Windows 10 (64 bit)					
Dimensions (L x W x H) (incl. 50 mm objective lens, no handle)	210 mm x 105 mm x 100 mm	235 mm x 119 mm x 133 mm		210 mm x 105 mm x 100 mm	235 mm x 119 mm x 133 mm	
Weight	1.5 kg	3 kg		1.5 kg	3 kg	
Power supply	24 V external					
Operating conditions	10 to 40 °C, max. 70 % relative humidity (non-condensing)					

Instrument Systems is continually working to develop and improve products. Technical changes, errors or misprints do not constitute grounds for compensation. The company's terms of delivery and payment apply in all other respects.

- ¹⁾ The lower limit corresponds to the maximal exposure time and smallest f-number at SNR 10:1 and vice versa.
²⁾ Valid for OD4 filter.
³⁾ Value calculated from 100 repetitions without taking data saving time into account.
⁴⁾ Calculated from 100 repetitions; refers to the deviation of the mean from the reference value.
⁵⁾ Calculated from 50 repetitions. Refers to the double standard deviation of the measured values.

- ⁶⁾ Refers to the maximum deviation from the mean value calculated from flat-field verification image.
⁷⁾ Deviation of the filter transmission from the V(λ) curve integrated over the entire visible spectrum.
⁸⁾ Maximum deviation from the reference source (illuminant A with set of color glass filters).
⁹⁾ Derived from 20 repetitions for R, G, and B - LEDs with optimized signal level. Refers to the double standard deviation.