

uEye Camera Manual Version 4.40

UI-124x/UI-324x/UI-524x

Sensor specification					
Sensor type	CMOS				
Shutter system	Electronic global and rolling shutter				
Characteristic	Linear				
Readout mode	Progressive scan				
Resolution class	SXGA				
Resolution	1280 x 1024 pixels (1.3 Megapixel)				
Aspect ratio	5:4				
Bit depth	10 bits				
Optical sensor class	1/1.8 inch				
Exact sensitive area	6.784 mm x 5.427 mm				
Exact optical sensor diagonal	8.69 mm (1/1.84 inch)				
Pixel size	5.30 µm, square				
Micro lens shift	12°				
Sensor name, monochrome	e2v EV76C560ABT				
Sensor name, color	e2v EV76C560ACT				
Sensor name, NIR	e2v EV76C661ABT				
Special features	• Automatic hotpixel correction in the sensor, see is_HotPixel() • Multi AOI with 2 or 4 AOI, see Camera basics: AOI • Sequence AOI • Sensor internal image scaler, downscaling by factor 1...4, see is_SetSensorScaler() and uEye Cockpit: Size) • Allows to switch between global and rolling shutter readout, see is_DeviceFeature() • Monochrome models: line scan mode (see shutter) • Hardware gamma (see uEye Cockpit: Image)				
Gain					
Monochrome model (master gain)	4x				
Color model (master/RGB)	4x/3.96x				
Gain boost	2x				
Camera timing		USB uEye SE/RE/ME/LE/ML	USB 3 uEye CP/LE/ML	GigE uEye CP/LE/SE/RE/RE PoE	GigE uEye HE
Pixel clock range (allowed/recommended)	MHz	7–35/35 ^{*1}	5–85/85 ^{*1}	7–71/71 ^{*1}	7–85/85 ^{*1}
Max. pixel clock with subsampling/binning	MHz	85 ^{*1}	85 ^{*1}	85 ^{*1}	85 ^{*1}
Frame rate (freerun mode)	fps	25.8 ^{*2}	60.0 ^{*2}	50.0 ^{*2}	60.0 ^{*2}
Frame rate (trigger mode, 1 ms exposure)	fps	24.7 ^{*2}	56.9 ^{*2}	48.0 ^{*2}	56.9 ^{*2}
Exposure time in freerun mode	ms	0.009 ^{*2} –2000 ^{*3}	0.009 ^{*2} –2000 ^{*3}	0.009 ^{*2} –2000 ^{*3}	0.009 ^{*2} –2000 ^{*3}
Exposure time in trigger mode	ms	0.009 ^{*2} –2000 ^{*3}	0.009 ^{*2} –2000 ^{*3}	0.009 ^{*2} –2000 ^{*3}	0.009 ^{*2} –2000 ^{*3}
AOI					
Mode		Horizontal + Vertical ^{*4}			
AOI image width, step width	Pixels	16–1280, 4	16–1280, 4	16–1280, 4	16–1280, 4

AOI image height, step width	Pixels	4–1024, 2	4–1024, 2	4–1024, 2	4–1024, 2
AOI position grid horizontal, vertical	Pixels	2, 2	2, 2	2, 2	2, 2
AOI frame rate, 640 x 480 pixels (VGA)	fps	52.0	123.0	102.0	123.0
AOI frame rate, 320 x 240 pixels (CIF)	fps	98.0	229.0	191.0	229.0
Binning					
Mode		Horizontal + Vertical ^{*4}			
Method		H + V combined, mono/color binning, H: additive. V: averaging			
Factors		2x			
Frame rate with 2x binning, 640 x 480 pixels (VGA)	fps	60.0	64.0	60.0	64.0
Subsampling					
Mode		Scaler			
Hardware trigger					
Mode		Asynchronous	Asynchronous	Asynchronous	Asynchronous
Trigger delay with rising edge	µs	20 ±0.25	3 ±0.25 ^{*7}	3 ±0.25	**
Trigger delay with falling edge	µs	33 ±0.25	21 ±0.25 ^{*7}	21 ±0.25	**
Additive trigger delay (optional)	µs	15 µs...4 s	15 µs...4 s	15 µs...4 s	15 µs...4 s
Power consumption^{*5}		USB uEye	USB 3 uEye CP/LE/ML	GigE uEye SE/RE/CP/LE ^{*6}	GigE uEye HE
	W	0.3–0.7	1.3 ^{*5}	2.2–2.9 GigE uEye RE PoE: 2.7 – 3.1	2.4–3.3

** Not yet defined.

*1 The maximum possible pixel clock frequency depends on the PC hardware used.

*2 Requires maximum pixel clock frequency.

*3 Requires minimum pixel clock frequency.

*4 Use of this function increases the frame rate.

*5 The power consumption depends on the sensor model and the pixel clock setting.

*6 When using 12V external power supply without Power over Ethernet.

*7 Not yet confirmed



Please see also the [UI-124x/UI-324x/UI-524x application notes](#) chapter.

Relative sensor sensitivity

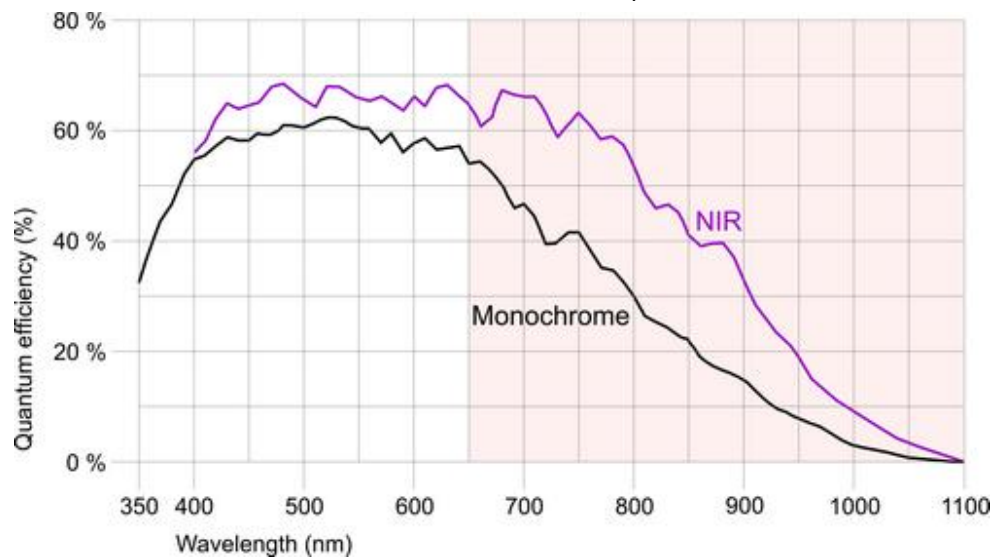


Fig. 196: Sensor sensitivity of the UI-124x/UI-324x/UI-524x (monochrome and NIR)

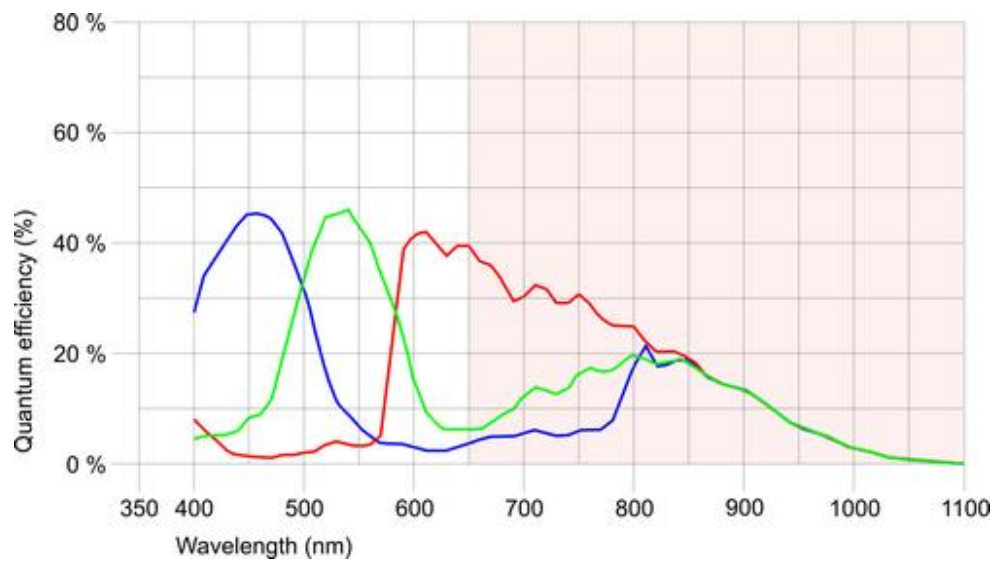


Fig. 197: Sensor sensitivity of the UI-124x/UI-324x/UI-524x (color)