

5.3.3 DCC1545M

Sensor specification		
Sensor type	CMOS	
Shutter system	Electronic rolling shutter	
Readout mode	Progressive scan	
Resolution class	SXGA	
Resolution	1280 x 1024 pixels (1.31 Megapixel)	
Aspect ratio	5:4	
Bit depth	10 bits	
Optical sensor class	1/2 inch	
Exact sensitive area	6.656 x 5.325 mm	
Exact optical sensor diagonal	8.52 mm (1/1.88 inch)	
Pixel size	5.20 μm, square	
Sensor name	Aptina MT9M001 (monochrome)	
Gain		
Monochrome model (master gain)	13x	
Analog gain boost	1.5x	
Camera timing		
Pixel clock range	MHz	5 to 43 ^{*1}
Max. pixel clock with subsampling/binning	MHz	48 ^{*1}
Frame rate (freerun mode)	fps	25.0 ^{*2}
Frame rate (trigger mode, 1 ms exposure)	fps	25.0 ^{*2}
Exposure time in freerun mode	ms	0.037 ^{*2} to 983 ^{*2}
Exposure time in trigger mode	ms	0.037 ^{*2} to 983 ^{*2}
AOI		
Mode		Horizontal ^{*4} + Vertical ^{*4}
AOI image width, step width	Pixels	32 to 1280, 4
AOI image height, step width	Pixels	4 to 1024, 2
AOI position grid horizontal, vertical	Pixels	4, 2
AOI frame rate, 640 x 480 pixels (VGA)	fps	84
Binning		
Mode		none
Subsampling		
Mode		Horizontal ^{*4} + Vertical ^{*4}
Method		H + V: Color subsampling
Factor		2x, 4x, 8x
Frame rate w/ 2x subsampling,	fps	94

640 x 480 pixels		
Frame rate w/ 4x subsampling, 320 x 240 pixels	fps	258
Hardware trigger		
Mode		Asynchronous
Trigger delay with rising edge	μs	22.0 ± 0.25
Trigger delay with falling edge	μs	40.3 ± 0.25
Additive trigger delay (optional)	μs	$15 \mu\text{s} \dots 4 \text{ s}$
Power consumption^{*5}		
	W	0.5 to 1.0

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

*2 Requires maximum pixel clock frequency.

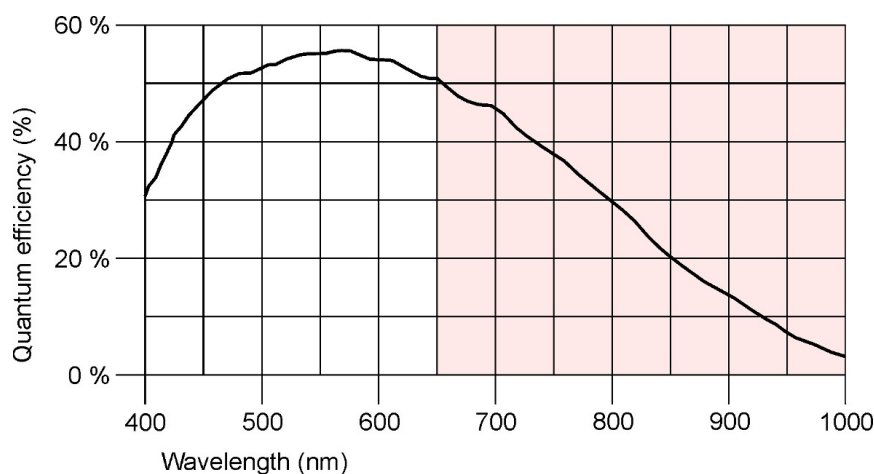
*3 Requires minimum pixel clock frequency.

*4 Use of this function increases the frame rate.

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

Please see also the [DCC1545M Application Notes](#) chapter.

Relative sensor sensitivity



Sensor sensitivity of the DCC1545M (monochrome)

Note

The colored part of above diagram just indicates the IR wavelength range in order to tell it from the visible.