

# CMV50000

## AREA SCAN SENSORS



The CMV50000 is a high speed CMOS image sensor with 7920 x 6004 effective pixels (47.5Mp) developed for machine vision and video applications. The image array consists of 4.6 $\mu$ m pipelined 8T global shutter pixels which allow exposure during read out, while performing true CDS (Correlated Double Sampling) operation. The image sensor has 22 12bit sub-LVDS data outputs. The image sensor also integrates a programmable analog gain amplifier and offset regulation. Each output channel runs up to 830 Mbps maximum which results in 30 fps frame rate at full resolution in 12 bit. Higher frame rates can be achieved in row-windowing mode or row-subsampling mode. These modes are all programmable using the SPI interface. All internal exposure and read out timings are generated by a programmable on-board sequencer. External triggering and exposure programming is also possible. Extended optical dynamic range can be achieved by a dual exposure HDR mode.

### SPECIFICATIONS

<b>Part status</b>	Sampling
<b>Resolution</b>	48MP - 7920 (H) x 6004 (V)
<b>Pixel size</b>	4.6 x 4.6
<b>Optical format</b>	35 mm (36.43 x 27.62 mm <sup>2</sup> )
<b>Shutter type</b>	Global shutter
<b>Frame rate</b>	30 fps
<b>Output interface</b>	22 LVDS @ 830 Mbps
<b>Sensitivity</b>	3.5 x10e7 DN/(W.s/m <sup>2</sup> ) (@ 550 nm)
<b>Conversion gain</b>	0.272 DN/e
<b>Full well charge</b>	14500 e- (with binning 58000 e-)
<b>Dark noise</b>	8.8 e-
<b>Dynamic range</b>	64dB (binning: 68dB)
<b>SNR max</b>	41.6dB (binning: 47.6dB)
<b>Parasitic light sensitivity</b>	1/18000
<b>Extended dynamic range</b>	Yes, odd/even read out
<b>Dark current</b>	0.24e/s @ 20°C; 66.2e/s @60°C
<b>Fixed pattern noise</b>	6.6 DN rms
<b>Chroma</b>	Mono and RGB
<b>Supply voltage</b>	3.3/2.7/1.8/1.2V
<b>Power</b>	3W
<b>Operating temperature range</b>	-30°C to 70°C
<b>RoHS compliance</b>	Yes (TBC)
<b>Package</b>	141 pins PGA ceramic package
<b>Socket</b>	Andon Electronics ( <a href="http://www.andonelectronics.com">http://www.andonelectronics.com</a> ) 575-20-19A-141-01M-R27-L14 (thru-hole) 575-20-19A-141-93M-R27-L14 (surface mount)

## ORDERING INFO - CMV50000

Part Number	Version	Chroma	Microlens	Package	Glass
CMV50000-1E3M1PA	3 um epi	mono	Yes	ceramic 141 pins PGA	double sided AR coated
CMV50000-1E3C1PA (available Q1 2017)	3 um epi	color	Yes	ceramic 141 pins PGA	double sided AR coated