EMERALD 36M
BRINGING YOUR SYSTEM TO THE NEXT LEVEL

Emerald 36M is the latest member of the Emerald sensor series and has been specifically designed for applications requiring the highest levels of performance including larger resolution, higher speed and improved electro-optical performance. Emerald 36M will enable you to take your vision system to the next level, by leveraging its high performance global shutter pixel and thoughtful design.

SENSOR FEATURES

Combining 6K resolution and high speed 36MP resolution and 86 fps frame rate	**Highly featured sensor** including functions such as multi-ROI, real-time HDR, or image statistics
Excellent low-noise performances due to its high sensitivity and low readout noise of 3 e-	**Compact format & easy integration** with Four Thirds optics and cost-effective FPGAs

CUSTOMER BENEFITS

Increased throughput with higher frame rate and optimized inspection system path	**Surveillance or mapping of wider areas** in a single high-resolution shot
Improved detection ratio with higher accuracy and excellent low-noise imaging	**Upgraded performance while saving** on the costs of optics, electronics and lighting

Sensor Characteristics

	EMERALD 36M High speed	EMERALD 36M Ultra-high speed
Resolution – pixels	6,144 (H) x 6,144 (V)	
Aspect ratio	1 : 1	
Size type	Four Thirds (21.7mm diagonal)	
Pixel type / size – square	Global Shutter / 2.5 µm	
Maximum frame rate @ 10 bit @ 12 bit	43 fps 21 fps	87 fps 42 fps
Readout noise	2.5 e- @ 8-10 bit / 2.2 e- @ 12 bit	
Dynamic range	64.5 dB @ 8-10 bit / 67 dB @ 12 bit	
SNRmax	37.7 dB	
Dark current	<1 e-/s	
Q.E. - %, @ 500 nm	66	
Shutter efficiency (1/PLS)	10,000 e-	

SYSTEM INTEGRATION

- Options:
  - Color Filter Array: B&W or color
  - Speed grades: High speed or Ultra-high speed
  - AR coating or removable window (upon request)
- Package: ceramic µPGA, 37 x 42 mm²
- Optical center centered in package
- Pin-to-pin compatible with Emerald 67M
- Power consumption: ≤3.5W @ full speed & full resolution
- Scalable LVDS outputs (64, 32 or 16 channels)
- Versatility between 8, 10 or 12 bit depth
- SPI controls

EMBEDDED FEATURES

- ROI (up to 64, overlap and independent configurations allowed)
- High Dynamic Range modes (including real-time HDR)
- Binning
- Sub sampling
- Look-up table
- Defective pixel correction
- FPN correction
- Flipping/mirroring
- Image statistics and context output
- Multiple trigger modes

TYPICAL APPLICATIONS

- High-end electronic and FPD inspection
- 3D AOI & metrology
- High-end surveillance
- Aerial imaging & mapping
- Earth observation
- Scientific cameras and microscopy
- Entertainment
- Medical

ORDER CODES – EMERALD 36M

	STANDARD SPEED	HIGH SPEED
B&W	EV2S36MB-CLV0350-T	EV2S36MB-CLV0650-T
COLOR	EV2S36MC-CLV0350-T	EV2S36MC-CLV0650-T