

EMERALD 8.9M & 10M

HIGH PRECISION IN A COMPACT FORMAT



To improve production yields and speed up throughput, industrial and machine vision companies are seeking new imaging solutions, which are able to operate with high precision at high speed.

The **Emerald 8.9M** and **Emerald 10M** image sensors meet this challenge by combining low-noise performance with exclusive features to overcome the demands of machine vision applications.

SENSOR FEATURES

4K high precision
8.9 and 10 Megapixel resolution

More objects captured in a single high resolution shot with their ROI feature

Combine speed and contrast
with a new real-time HDR mode

Reduced integration costs with their compact 2/3" and 1" optical formats

CUSTOMER BENEFITS

Accurate and quick inspection enabling an improved defect detection ratio during high throughput

Simultaneous verification tasks using a **single sensor**

Lighting system costs saving
due to improved dynamic range

Seamless and **cost-effective integration**



Sensor Characteristics

	EMERALD 8.9M		EMERALD 10M	
	Standard Speed	High Speed	Standard Speed	High Speed
Resolution – pixels	4,096 (H) x 2,160 (V)		4,096 (H) x 2,460 (V)	
Aspect Ratio	17:9		17:10	
Size Type – inch	2/3"		1"	
Pixel Type / Size – square	Global Shutter / 2.8 μm			
Readout Noise	2.8 e-			
Dynamic Range	67.5 dB (normal range) 100+ dB (HDR mode)			
SNRmax	38 dB			
Q.E. - %, @ 500 nm	65%			
Frame Rates @ 8-10 bit	47 fps	91 fps	42 fps	80 fps
@ 12 bit	34 fps	68 fps	30 fps	60 fps

SYSTEM INTEGRATION

- 4K or 10 Megapixel resolution for an extended vertical field of view
- 2.8 µm CMOS global shutter pixel allowing true CDS
- Up to 91 fps @ full resolution & 10 bits
- 2 speed grades
- Pin-to-pin compatible with Emerald 12M and 16M
- Ceramic LGA package, 20 x 21 mm², 224 pins
- 16 LVDS outputs @ 800 Mbps
- 8, 10 or 12 bit depth
- Power consumption: ≤1.8 W @ full speed & full resolution

EMBEDDED FEATURES

- ROI (independent configurations allowed)
- High Dynamic Range modes
- Binning
- Sub sampling
- Look-up table
- Defective pixel correction
- Flipping/mirroring
- Image statistics and context output
- Multiple trigger modes

TYPICAL APPLICATIONS

- Machine vision
- Product inspection and sorting
- Pick & place robot guidance

ORDER CODES – EMERALD 8.9M

	STANDARD SPEED	HIGH SPEED
B&W	EV2S8M9B-CLV0151-T	EV2S8M9B-CLV0351-T
COLOR	EV2S8M9C-CLV0151-T	EV2S8M9C-CLV0351-T

ORDER CODES – EMERALD 10M

	STANDARD SPEED	HIGH SPEED
B&W	EV2S10MB-CLV0151-T	EV2S10MB-CLV0351-T
COLOR	EV2S10MC-CLV0151-T	EV2S10MC-CLV0351-T