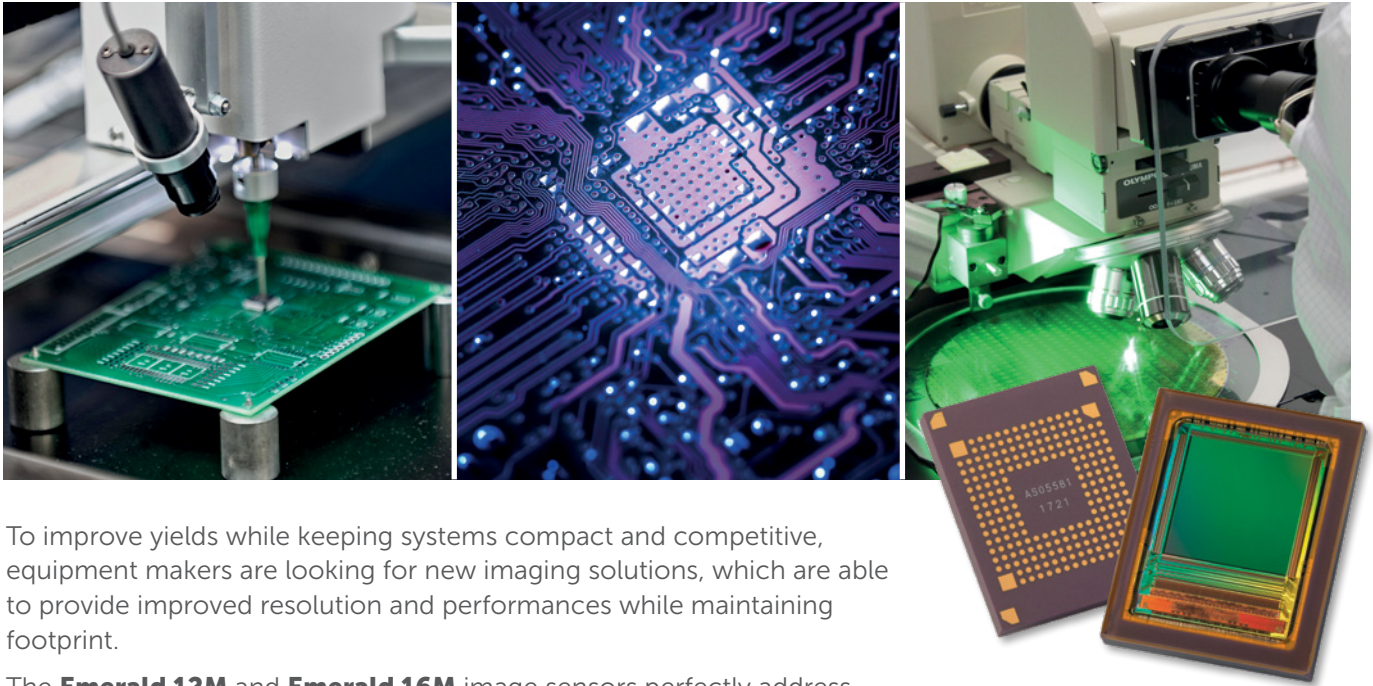


# Emerald 12M & 16M

## High Precision in a 1-inch Format



To improve yields while keeping systems compact and competitive, equipment makers are looking for new imaging solutions, which are able to provide improved resolution and performances while maintaining footprint.

The **Emerald 12M** and **Emerald 16M** image sensors perfectly address these challenges by combining low-noise performances and compactness with exclusive features to overcome the demands of the most demanding vision applications.

### SENSOR FEATURES

**12 and 16 Megapixel** resolution for high accuracy over wide field of views

**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 compact **1" format** and **pin-to-pin compatibility** with other Emerald sensors

### CUSTOMER BENEFITS

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

Simultaneous inspection tasks using a **single sensor**

**Lighting system costs savings** due to improved dynamic range and low-light SNR

Seamless and **cost-effective integration**



## SENSOR CHARACTERISTICS

	EMERALD 12M		EMERALD 16M	
	Standard Speed	High Speed	Standard Speed	High Speed
Resolution – pixels	4096 (H) x 3072 (V)		4096 (H) x 4096 (V)	
Aspect Ratio	4 : 3		1 : 1	
Size Type – inch	1"			
Frame Rate @ 8-10 bit @ 12 bit	31 fps 21 fps	63 fps 44 fps	23 fps 16 fps	47 fps 33 fps
Pixel Type / Size – square	Global Shutter / 2.8 µm			
Readout Noise	2.8 e-			
Dynamic Range	67.5 dB (standard range) 100+ dB (HDR mode)			
SNRmax	38 dB			
Q.E. - %, @ 500 nm	65%			

## SYSTEM INTEGRATION

- » 12 & 16 Megapixel resolution
- » 2.8µm CMOS low-noise global shutter pixel with true CDS
- » Both matching compact 1" optics
- » 2 speed grades
- » Pin-to-pin compatible with Emerald 8.9M & 10M
- » Ceramic LGA package, 20 x 25 mm<sup>2</sup>
- » Up to 63 fps @ full resolution & 10 bits
- » 16 LVDS outputs
- » 8, 10 or 12 bit depth
- » Power consumption: ≤1.6W @ 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

- » Quality Inspection
- » Intelligent Traffic Systems (ITS)
- » Security
- » Drones/UAVs

## ORDER CODES – EMERALD 12M

	STANDARD SPEED	HIGH SPEED
<b>B&amp;W</b>	EV2S12MB-CLV0151-T	EV2S12MB-CLV0351-T
<b>COLOR</b>	EV2S12MC-CLV0151-T	EV2S12MC-CLV0351-T

## ORDER CODES – EMERALD 16M

	STANDARD SPEED	HIGH SPEED
<b>B&amp;W</b>	EV2S16MB-CLV0151-T	EV2S16MB-CLV0351-T
<b>COLOR</b>	EV2S16MC-CLV0151-T	EV2S16MC-CLV0351-T

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