TELEDYNE e2v
Everywhere**you**look™

Part of the Teledyne Imaging Group

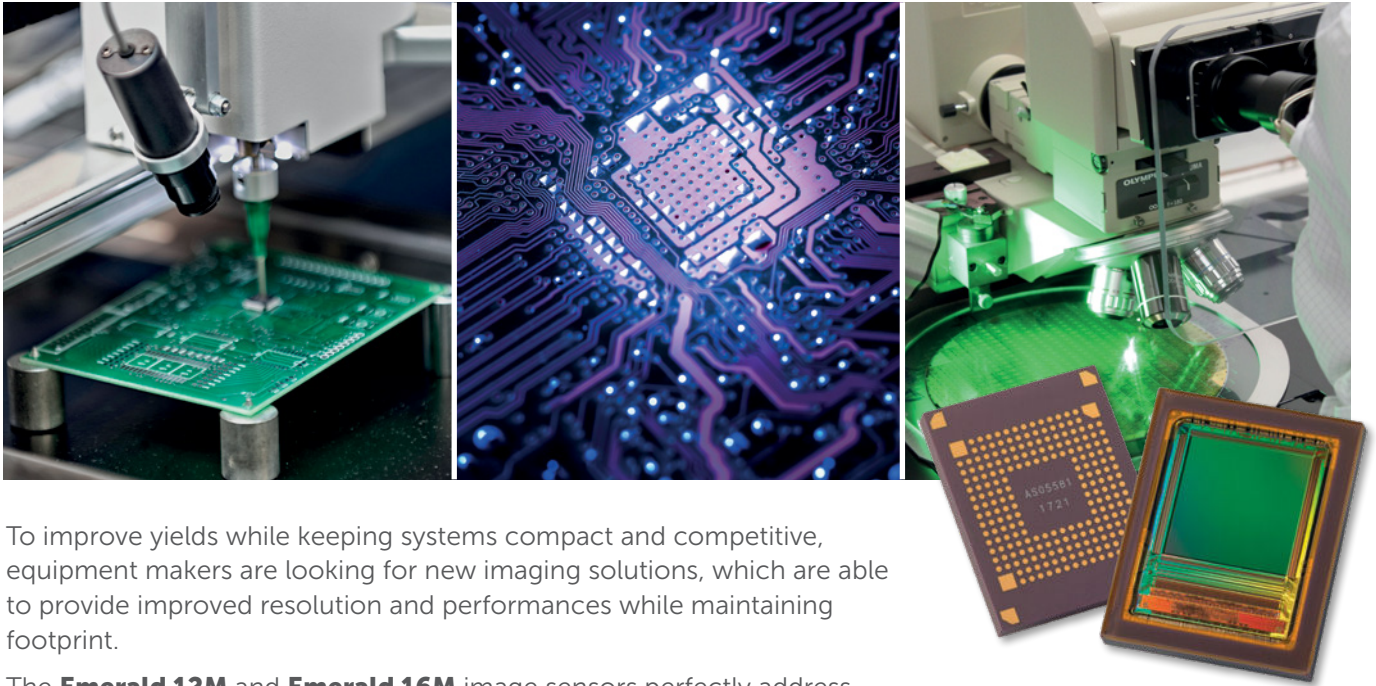**EMERALD 12M & 16M CMOS SENSOR**
EV2S12M/EV2S16M
B&W and Color

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**

imaging.teledyne-e2v.com

FIND OUT MORE!

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^2
» Up to 63 fps @ full resolution & 10 bits
» 16 LVDS outputs
» 8, 10 or 12 bit depth
» Power consumption: $\leq$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&W	EV2S12MB-CLV0151-T	EV2S12MB-CLV0351-T
COLOR	EV2S12MC-CLV0151-T	EV2S12MC-CLV0351-T

ORDER CODES – EMERALD 16M

	STANDARD SPEED	HIGH SPEED
B&W	EV2S16MB-CLV0151-T	EV2S16MB-CLV0351-T
COLOR	EV2S16MC-CLV0151-T	EV2S16MC-CLV0351-T

imaging.teledyne-e2v.com

TELEDYNE e2v
Everywhere**you**look™

Part of the Teledyne Imaging Group