TELEDYNE e2v
Everywhere**you**look™
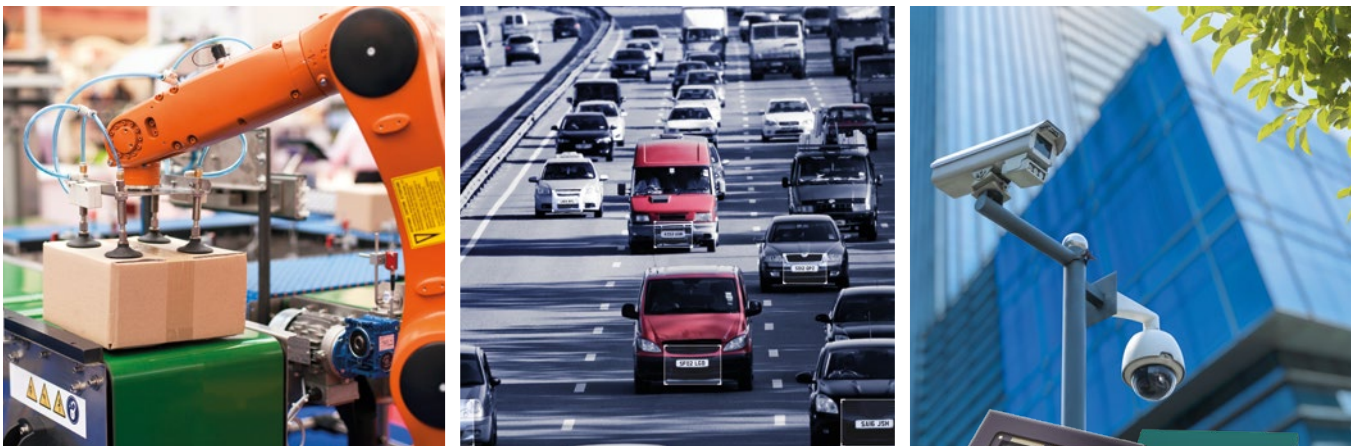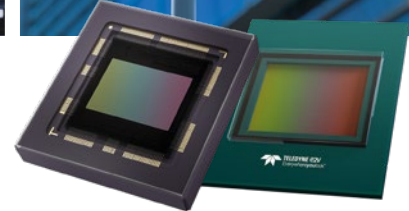Part of the Teledyne Imaging Group

Building Embedded Vision Systems with Application-specific Features

The Emerald family of sensors has been designed to match the unique requirements of machine vision and security applications. From pixel performance and features, to the MIPI output; every aspect of this product has been optimized to address the next challenges of the embedded vision.

SENSOR FEATURES

High precision 5 Megapixel resolution	**MIPI CSI-2 outputs** to interface with leading edge ISP and FPGA
Combining speed and image quality with a single frame HDR mode	**Reduced integration costs** with its compact 1/ 1.8' optical format

CUSTOMER BENEFITS

Accurate and fast operation enabling **an improved detection/control ratio**	Simultaneous verification tasks using **a single sensor**
Lighting system costs saving due to improved dynamic range	Seamless and **cost-effective integration**

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SENSOR CHARACTERISTICS

	EMERALD 5MP		
Resolution – pixels	2,560 x 1,936		
Pixel size – square	2.8µm		
Size type – inch	1 / 1.8		
Aspect ratio	4:3		
Max frame rate	>56fps @8 bit	>50fps @10 bit	>35fps @12 bit
Bit depth	8/10/12		
Readout noise – e-	3		
Qsat – e-	> 7,000		
Dynamic range – dB	65 (normal mode) 100+ (HDR mode)		
SNRmax – dB	>39		
Q.E. – %, @550nm	>62		

SYSTEM INTEGRATION

» B&W and color with 5° or 12° CRA to address CS-mount and S-mount optics
» Footprint compatible with Emerald 2M product
» MIPI CSI-2, 1.2Gbps lanes (up to 4 lanes)
» 112 pins ceramic LGA
» 138 pins fan-out organic BGA
» SPI/I2C (selectable) controls

EMBEDDED FEATURES

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

TYPICAL APPLICATIONS

» Embedded vision systems
» Product inspection and sorting
» Pick & place robot guidance
» ITS system
» Security cameras

ORDER CODES – PRODUCTION

» EV2S05MB-CM20150-T
Emerald 5MP: B&W, CLGA, CRA 5°, Tray = 70 units

» EV2S05MC-CM20150-T
Emerald 5MP: Color, CLGA, CRA 5°, Tray = 70 units

» EV2S05MB-OM20150-T
Emerald 5MP: B&W, Fan-out organic, CRA 5°, Tray = 119 units

» EV2S05MC-OM20150-T
Emerald 5MP: Color, Fan-out organic, CRA 5°, Tray = 119 units

ORDER CODES – SAMPLES

» EV2S05MB-CM20150-P
Emerald 5MP: B&W, CLGA, CRA 5°, Pack = 2 samples

» EV2S05MC-CM20150-P
Emerald 5MP: Color, CLGA, CRA 5°, Pack = 2 samples

» EV2S05MB-OM20150-P
Emerald 5MP: B&W, Fan-out organic, CRA 5°, Pack = 2 samples

» EV2S05MC-OM20150-P
Emerald 5MP: Color, Fan-out organic, CRA 5°, Pack = 2 samples

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