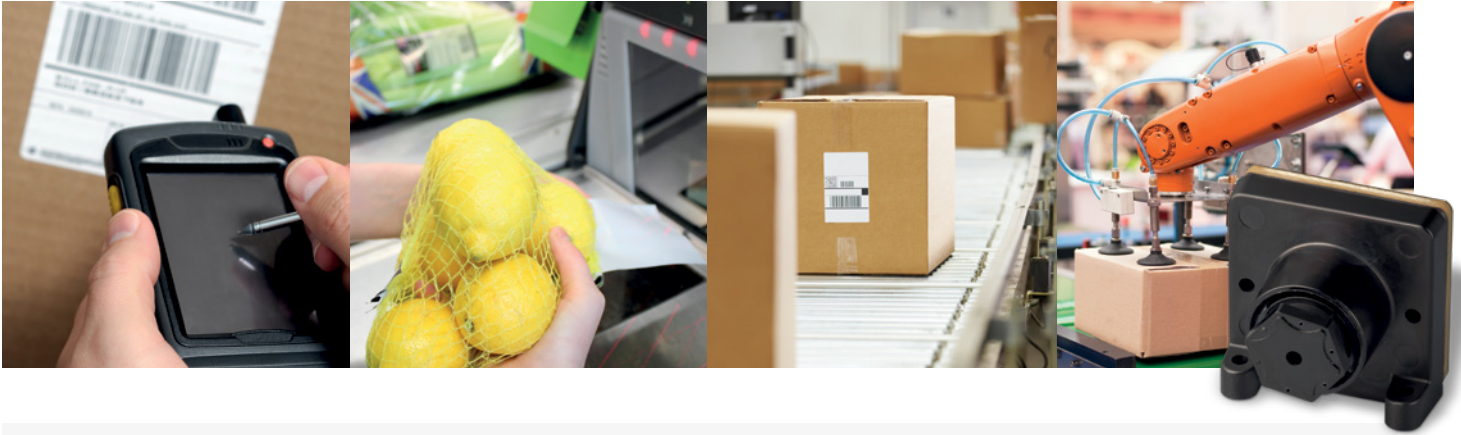


MIPI OPTICAL MODULES REDUCE YOUR DEVELOPMENT TIME AND COSTS



Teledyne e2v has expanded its family of CMOS image sensors by including industrial scanning grade optics in the form of a compact module, which can be used in barcode reading, embedded vision and many other 2D scanning applications. It enables scanning end products to enhance productivity and throughput in logistics, sorting, retail POS, and many other industrial sectors. The MIPI output offers many intelligent camera possibilities in machine vision and embedded vision applications.

Our patented Fast Self-Exposure mode® (FSE®) assures that the first image frame is correctly exposed to enable the fastest possible identification and decoding by the image processing system in rapidly changing light conditions.

The module can use the standard optics or can be semi-customized with an alternative M10 lens source.

KEY BENEFITS

- Fast and easy to integrate with integrated optics
- Small, low noise global shutter CMOS pixel (with 2.8 μm x 2.8 μm)
- Full HD format
- Excellent SNR at low light (yields illumination system cost savings)
- HDR modes for wide dynamic scenes (tolerance to light band reflection on curved reflective surfaces)
- Tracking simultaneous image regions, due to single and multi-ROI modes
- MIPI CSI-2 outputs for embedded imaging systems

FEATURES

- Optical module with mechanical outline 20 x 20 x 16.6 mm
- M10 F/7.5 optic with 31° FoV (standard version)
- FPC connector to connect module to application
- Low noise global shutter with 1,920 x 1,080 active pixels
- 2.8 μm x 2.8 μm pixel size
- B&W and color
- Frame rates: 115 fps @8 bit, 80 fps @10 bits, 60 fps @12 bits (at full resolution)
- Embedded features for barcode reading and other 2D scanning applications
- MIPI CSI-2: 1.2 Gb/s per lane (up to 4 lanes selectable down to one single lane)
- I2C (two wires) control
- 3.3V, 1.2V power supplies



Sensor Characteristics

	PARAMETER	TYPICAL VALUE
Module	Resolution – Megapixels	2.0
	Size – mm	20 x 20 x 16.63
	Pinout	FPC Connector x37
Sensor	Sensor Resolution – pixels	1,920 (V) x 1,080 (H)
	Shutter	Global Shutter
	Output	MIPI CSI-2
	Interface	I2C
	Pixel Size – μm	2.8
	Analog Gain	x1 x1.5 x2 x3 x4 x6 x8
	Digital Gain	x1 to x16
	Dynamic Range – dB	68
	SNR Max – dB	38
	Total Readout Noise – e-	3
	Average Dark Current @60°C – e-/sec	35
	Supply Voltage – V	Analog: 3.3 Digital: 3.3 / 1.2 VDDIO: 1.62~3.6
	Power Consumption – mW	< 300
	Operating T° – °C	[-30; +70]
Storage T° – °C	[-30; +70]	
Lens	Lens	4-elements
	Lens Mount	M10
	Lens Format	1/2.8 inch
	F/#	7.5
	EFL – mm	9.5
	HFOV – deg	31°
	Distortion Abs. – %	< 0.7%
	Relative Illumination – %	>85% @ h=90%
	CRA Max (Deg)	12°
	IR Coating cut-off wavelength – nm	650 (optional)
	Coating	AR coated lenses

ORDER CODES – 2MP MIPI OPTICAL MODULES

2MP B&W	EV2M02MB-OM21000-B	M10 F/7.5 31°FoV with IR cut	EV2M02MB-OM22000-B	M10 F/7.5 31°FoV no IR cut
2MP COLOR	EV2M02MC-OM21000-B	M10 F/7.5 31°FoV with IR cut	EV2M02MC-OM22000-B	M10 F/7.5 31°FoV no IR cut