

LASER TRIANGULATION APPLICATIONS: A LARGE FAMILY OF SENSORS TO MEET YOUR NEEDS



Teledyne e2v has developed several sensors, in collaboration with big players in the market, to answer the specific challenges of laser triangulation applications. They deliver high performance inspection with very high accuracy while also optimizing system development and costs.

HIGHLIGHTS

FLASH

Specifically tailored for high-end laser triangulation with high resolution and very high frame rate

LINCE

High and very flexible frame rate due to its specific ROIs, binning and subsampling features

MARKET REQUIREMENTS

Measure with increased precision

Measure more at the same time

Measure all kinds of surfaces

TELEDYNE E2V SOLUTION

Combine high horizontal resolution with high frame rate even at full frame

High frame rate in standard modes but also with additional features adapted for laser triangulation applications

High dynamic range in linear mode and with HDR features

APPLICATIONS

Measure, detect and inspect:

- Length, width, height, tilt or the volume of any surface
- Shapes and profiles
- Worn or broken parts, roughness, aging, patching, humps, corrugation and waves
- In motion

For many markets:

- Battery inspection
- Electronics/PCB inspection
- Wood, metal, road, rail inspection
- Plus many more



Sensor Characteristics

	FLASH 4K	FLASH 2K	LINC5M181	LINC5M84
Resolution	4096x1024	2048x1024	2560x2048	2560x2048
Pixel size	6 μm	6 μm	5 μm	5 μm
Frame rate – (full frame)	1,786	1,489	250	90
Bit depth	8-10	8-10	8-10-12	8-10-12
Dark noise	22	25	23	23
Qsat	10,000	11,000	19,000	19,000
Dynamic range – dB	53/100	53/100	58/100	58/100
SNRmax – dB	40	40	42	42
FFxQE – % @550 nm	47	53	63	63
Interface	64 LVDS	32 LVDS	24 LVDS	8 LVDS
Package type	380-pin μPGA	228-pin μPGA	181-pin μPGA	84-pin CLCC
Sensor size	49 × 37 mm	27 × 27 mm	28 × 28 mm	29.2 × 29.2 mm
Optics	APS-Like	C-Mount	1"	1"
Max power consumption	3,1	1,4	2	2

EMBEDDED FEATURES

Depending on the sensor you chose, several embedded features are available:

- Region of interest (multiple), binning, flipping
- HDR, concurrent exposure and readout
- Various analog gain controls, offset control, different trigger modes, etc.

WIDE LIBRARY OF DERIVATIVES AVAILABLE

A wide library of derivatives, both soft and hard are also available:

- Different FWC of the pixels, other framing mode, etc.
- Custom color filter array, custom micro-lenses array, adapt the sensor to your specific Scheimpflug angle, etc.

Not enough? More derivatives are available upon request to further differentiate, please contact our sales team!

OUR EVALUATION KITS & REFERENCE DESIGNS

The Evaluation Kit to assess the performance of our sensors

The Evaluation Kit allows you to easily assess the electro-optical performances of our sensors, with virtually any laptop or notebook, using its USB 3 interface. Its camera-like architecture also makes it the perfect solution for end-customer demos and proof of concepts.

The Reference Design to improve your time-to-market

The Reference Design can be used as a working reference during the development of your camera, to save valuable time and resources and drastically reduce your time-to-market. It contains the source code of the Evaluation Kit, including PCB, FPGA code and embedded software.

