

LOM High-speed 3D Sensor Series



- **High-speed industrial CMOS sensor** for superior 3D performance
- **3D profiles at up to 10 kHz in reduced ROI, 340 Hz full format**
- **GigE Vision and GenICam compatible** for ease of use and simplified integration into systems and machine
- **Accurate 3D, reflected light** measurements
- **Modular industrial design, IP67**

LOM High Speed 3D Sensor Series

LOM sensor series consists of highly customizable and user-programmable high-speed laser triangulation sensors based on Optomotive's FPGA camera technology. The series is designed for high performance inspection and can achieve inspection rates up to 10kHz. Excellent data of shiny and other challenging surfaces is generated by optimized optical design, in-camera PEAK Detection and blue laser light.

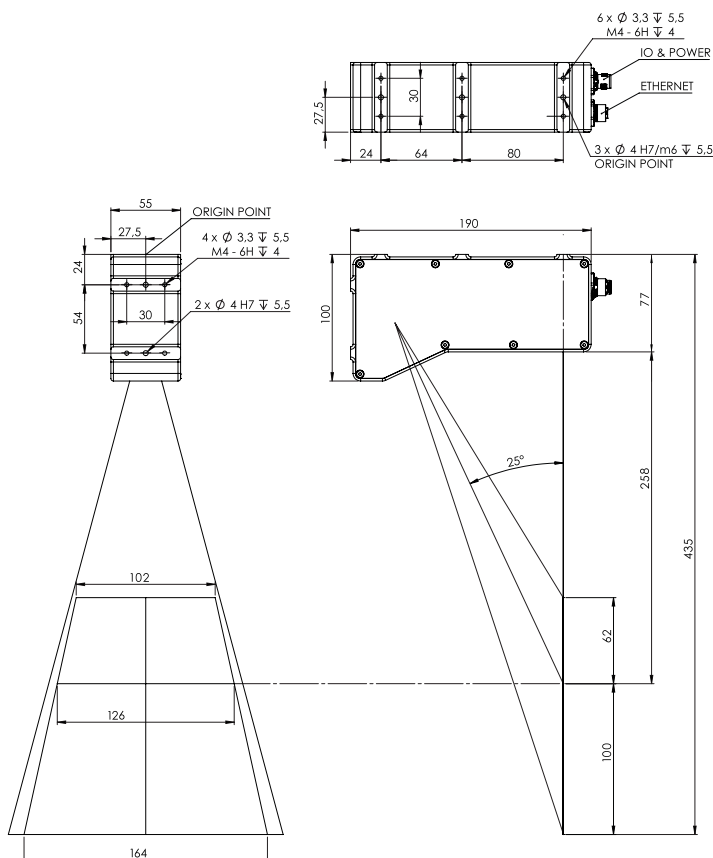
The sensors include high-performance ARM system-on-chip (SoC) technology, combined with turbocharged industrial AMS imaging sensor and top-quality laser line projector. The software on camera can also convert 3D points into mm in real time. Sensor series is factory calibrated and supports two simultaneous streams: image and 3D profile. It can also detect multiple profiles. For OEM and system integrator customers LOM series includes full customizable and user programmable open reference design for high-speed FPGA based camera and application development system. Its emphasis is on an open hardware-software development model, high-frame rates, real-time image processing on FPGA and modern graphical user interface support.

The reference design can be easily edited with standard Xilinx Vivado tools. Optomotive's custom IP cores seamlessly integrate inside the Xilinx Vivado toolchain. Large portion of FPGA (PL) is free for programming and development of additional algorithms, or implementation of additional IP cores. The 700MHz Dual Core ARM Cortex A9 Programmable Subsystem runs Linux OS with custom made EVO control and streaming stack. User applications or custom data post-processing can be easily added to existing design.

The high-quality sensor is capable of capturing min. 333 frames per second with a resolution of 2048x1088 pixels, up to 7435 frames per second with a resolution of 2048x32 pixels. Scanning can take place via a conveyor belt or on the spot so that the objects are exchanged. It uses high-precision hardware to provide you with the most accurate scans. The device is connected via gigabit ethernet for data transfer, through which it is also powered, which means that it does not need an additional power supply connection.

TARGETED FOR:

- Industrial quality control: to inspect defects, cracks or surface blemishes, size, position, dimension, foreign objects, quality.
- Robot guidance: when mounted on a robot arm it can provide feedback to the robot for positioning purposes
- General R&D



Graphic example of LOM125

Model	w	LOM025	LOM100	LOM125	LOM220
Data points / Profile		2048	2048	2048	2048
T angle [°]		35	21	25	19
RESOLUTION X [μm]	near	11	28	50	80
	mid	13	36	62	110
	far	14	50	80	160
RESOLUTION Z [μm]	near	1,5	6	9	18
	mid	1,9	9	14	32
	far	2,3	18	26	77
Field of View [mm]	X near	23	57	102	163
	X mid	25	73	126	219
	X far	28	102	164	332
	Z	21	107	162	400
Working distance		56	98	173	310
Measurement Range (mm)		21	107	162	400
Laser		Blue	Blue	Blue	Blue

	Model	Valid for all models
IMAGING SENSOR	Active pixels	2048 x 1088
	Profile points	2048
	Region of interest	YES, with 8 pixel increments
	Frame rate	331 – 10000 FPS
	Shutter	20 us – 100 ms, 21 ns increments
	Dynamic range	Up to 90 dB with High Dynamic Range
FEATURES	Trigger modes	Free running, trigger, overlap, pulse width
	Trigger features	Delay 0 – 1000 ms LP Filter 1.5Hz - 100 kHz
	Processor	Zynq 7020 with Dual 750Mz ARM Cortex A9
	Volatile memory	512MB LPDDR2
	Non-volatile memory	32MB QSPI flash, 4GB eMMC
MECHANICAL	Temp range	-20°C - 50°C
	Mass	< 1 kg
	Protection	IP67 when mated connectors
ELECTRICAL	Input voltage	9-36 V DC
	Consumption	6W
	Ethernet	10/100/1000BASE-T 8 pin X-coded M12 connector
	Optoisolated IO	2x Input, 2x Output, ABZ Diff Encoder, 17 pin A-coded M12 connector

Software: EVO software: API, filter driver, examples, GUI for image capturing and recording

Cable: Ethernet Cable, IO & Power cable

Power Supply: 100-240V AC to 24V 1A DC