



LEOPARD
IMAGING

LI-OX02C1B-VCSEL-DMS-GM2B-050H



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INTRODUCTION

The LI-OX02C1B-VCSEL-DMS-GM2B-050H is equipped with OmniVision 1/3.52" B&W global shutter CMOS sensor OX02C1B, Maxim serializer MAX96717F and a VCSEL. This camera outputs 10-bit RAW data.

SPECIFICATIONS

Sensor	OmniVision B&W Sensor OX02C1B with PureCel [®] Plus-S and Nyxel [®] Technologies
Optical Format	1/3.52"
Resolution	1920 (H) x 1280 (V) (active pixels)
Pixel Size	2.2 x 2.2 μ m
Output Format	10-bit RAW
Color / Mono	Monochrome
Maximum Frame Rate	120 fps @ 1920 x 1280
Shutter	Global shutter
Serializer	Maxim MAX96717F
Power Supply Range	9 ~ 19 VDC
ISP	Not included
VCSEL	Included
FAKRA Connector	FAKRA Z TYPE
IP Rating	TBD
Power Consumption	121 mA @ 12 VDC (30 fps @ 1920 x 1280, Positive duty cycle: 2.82%)
Operating Temp	-40°C ~ +85°C
Storage Temp	-40°C ~ +85°C
Weight	~ 84 g
Part#	LI-OX02C1B-VCSEL-DMS-GM2B-050H

APPLICATIONS

- Automotive
 - ◆ Autonomous Driving
 - ◆ Driver Monitoring System
 - ◆ Occupant Monitoring System
 - ◆ In-Cabin Monitoring System

LENS SPECIFICATIONS

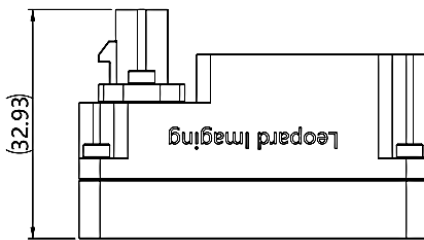
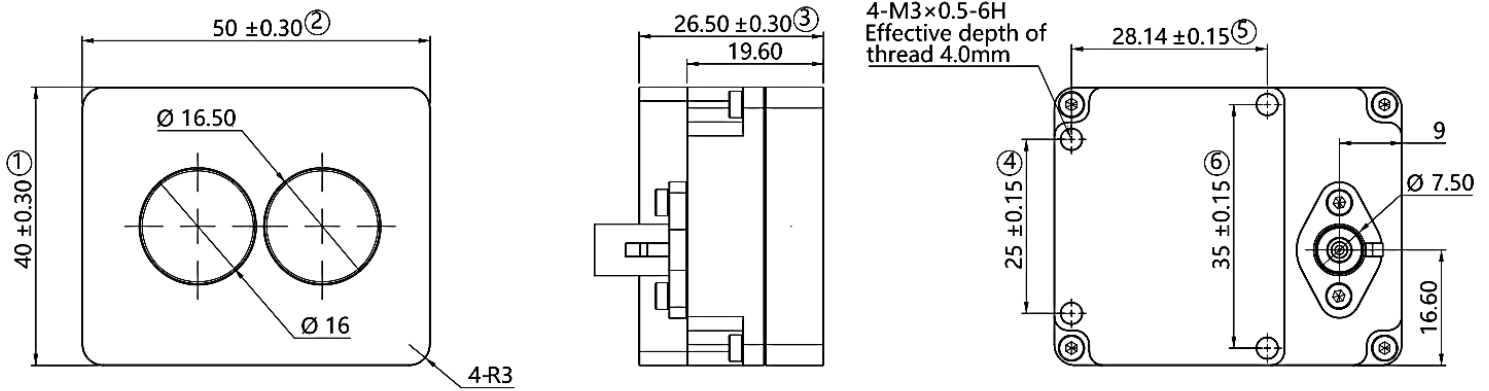
Focal Length	4.579 mm \pm 5%
Aperture, F/#	2.0 \pm 5%
Field of View (FOV)	50° horizontal
Optical Distortion	-2.86% \pm 5% (f-tan θ)
Relative Illumination	\geq 50.00%
IR Filter	940 nm IR filter
Lens Mount	M8 x P0.35

VCSEL SPECIFICATIONS

Wavelength	940 nm
Field of Illumination (FOI)	59° horizontal 42° vertical
QTY on Camera	1



DIMENSIONS



TOLERANCE TABLE					
LENGTH TOLERANCE		CHAMFER TOLERANCE		ANGLE TOLERANCE	
Size X	Tolerance	Size X	Tolerance	Size X	Tolerance
$0.5 < X \leq 3$	± 0.1	$0.5 < X \leq 3$	± 0.2	$X \leq 10$	$\pm 1^\circ$
$3 < X \leq 6$	± 0.1	$3 < X \leq 6$	± 0.5	$10 < X \leq 50$	$\pm 30'$
$6 < X \leq 30$	± 0.2	$6 < X \leq 30$	± 1	$50 < X \leq 120$	$\pm 20'$
$30 < X \leq 120$	± 0.3	$X > 30$	± 2	$120 < X \leq 400$	$\pm 10'$
$120 < X \leq 400$	± 0.5			$X > 400$	$\pm 5'$
$400 < X \leq 1000$	± 0.8				
$X > 1000$	± 1.2				

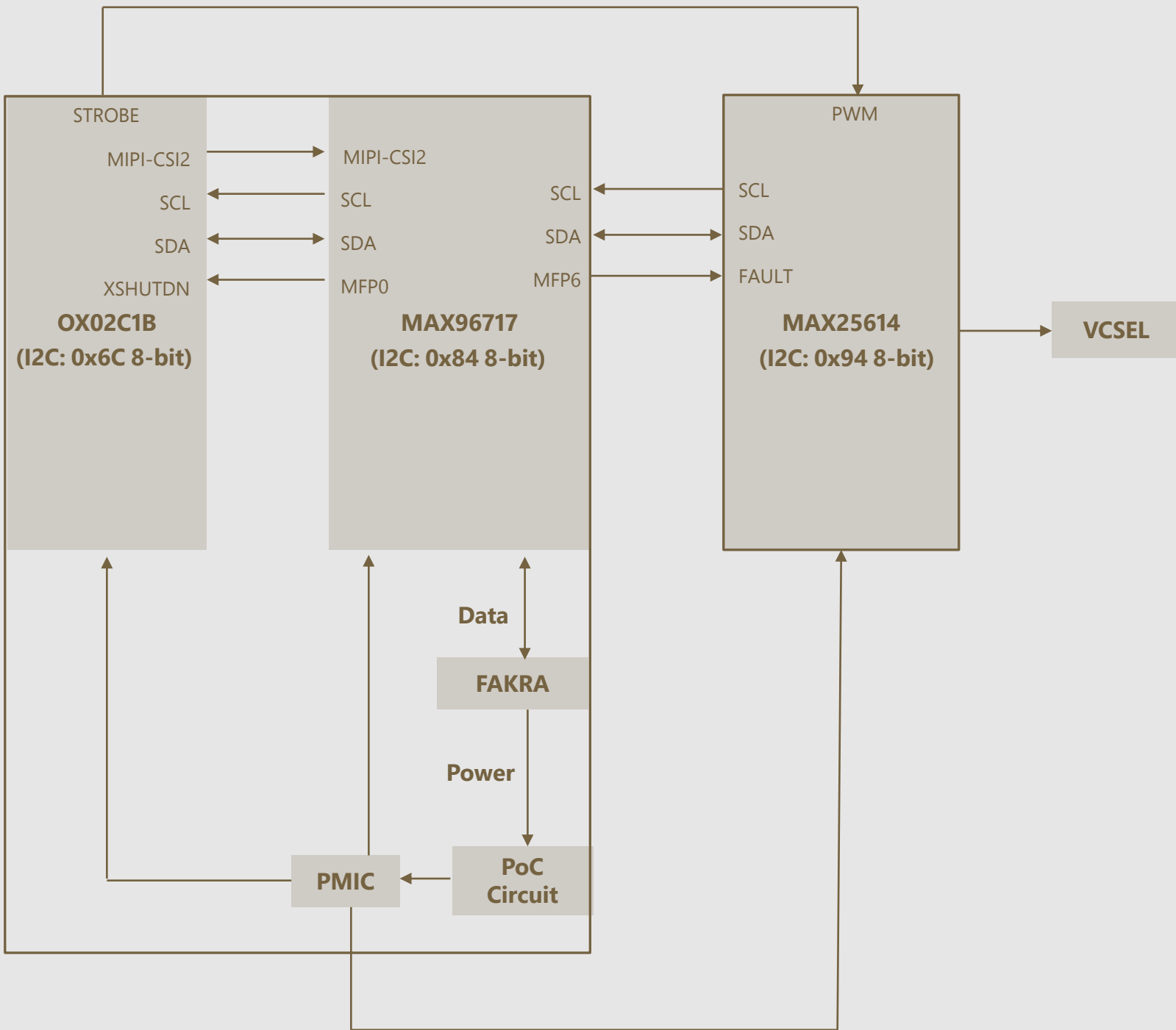
NOTE:

- ⊗ marked are important sizes.
- Tolerances for others unmarked refer to tolerance table.
- All materials are compliant with RoHS requirements.
- Unit: mm

DEFAULT IMAGING DIRECTION

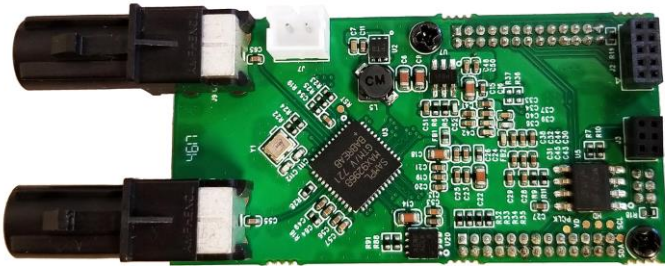


SYSTEM BLOCK DIAGRAM



USB3.0 CAMERA KIT

LI-GMSL2-USB



Top View



Bottom View

LI-OX02C1B-VCSEL-DMS-GM2B-050H can connect to LI-GMSL2-USB as a USB 3.0 camera.

Part#: **LI-USB30-OX02C1B-VCSEL-DMS-GM2B-050H**

SPECIFICATIONS

- USB 3.0 Super Speed support
- UVC compliant
- Global shutter
- Allows customization
- 12 VDC power supply for camera
- Weight: ~ 146 g
- Single Coax Cable transmits up to 12 meters PoC (Power over Cable)
- Resolution: 30 fps @ 1920 x 1280
- Compatible with Windows, Linux OS and other OS which have UVC drivers



BOM

#	Items	QTY
1	LI-OX02C1B-VCSEL-DMS-GM2B-050H	1
2	LI-GMSL2-USB	1
3	3-Meter Fakra Cable	1
4	12 VDC Power Supply for Camera	1
5	USB3.0 Cable	1

SDK SUPPORTED

- Camera Tool Source Code in C#
- Capture & Display
- Register Access Function

- REVISION HISTORY

Revision	Description	Release Date
0.1	Initial draft.	30 Oct 2024
0.2	Updated Operation Temp and Storage Temp.	07 Nov 2024

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