



LEOPARD
IMAGING

LI-OX05C1S / OX05C1B-MIPI-143H



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INTRODUCTION

The LI-OX05C1S / OX05C1B -MIPI-143H is a MIPI CSI-2 camera with OmniVision 1/2.525" CMOS 5MP global shutter image sensor OX05C1S / OX05C1B which has defective pixel cancellation, automatic black level correction, HDR combination and piece-wise linear (PWL) bit depth compression functions. This camera outputs RAW data.

SPECIFICATIONS

Sensor	OmniVision 1/2.525" CMOS 5MP image sensor OX05C1S / OX05C1B	
Optical Format	1/2.525"	
Shutter Type	Global shutter	
Resolution	2592 (H) x 1944 (V) (active pixels)	
Pixel Size	2.2 x 2.2 μm	
Output Format	10-bit / 12-bit / 14-bit / 16-bit HDR RAW	
Maximum Frame Rate	60 fps @ 3-exposure HDR	
HDR (High Dynamic Range)	Supported	
Interface	4-lane MIPI CSI-2	
Operating Temp	- 40°C ~ + 85°C	
Storage Temp	- 40°C ~ + 105°C	
Power Consumption	RGB-IR	115mA @ 3.3 VDC (29.93fps @ 2592 x 1944)
	Mono	TBD
Weight	~ 9 g	

ORDERING INFORMATION

RGB-IR P/N	LI-OX05C1S-MIPI-143H
Mono P/N	LI-OX05C1B-MIPI-143H

APPLICATIONS

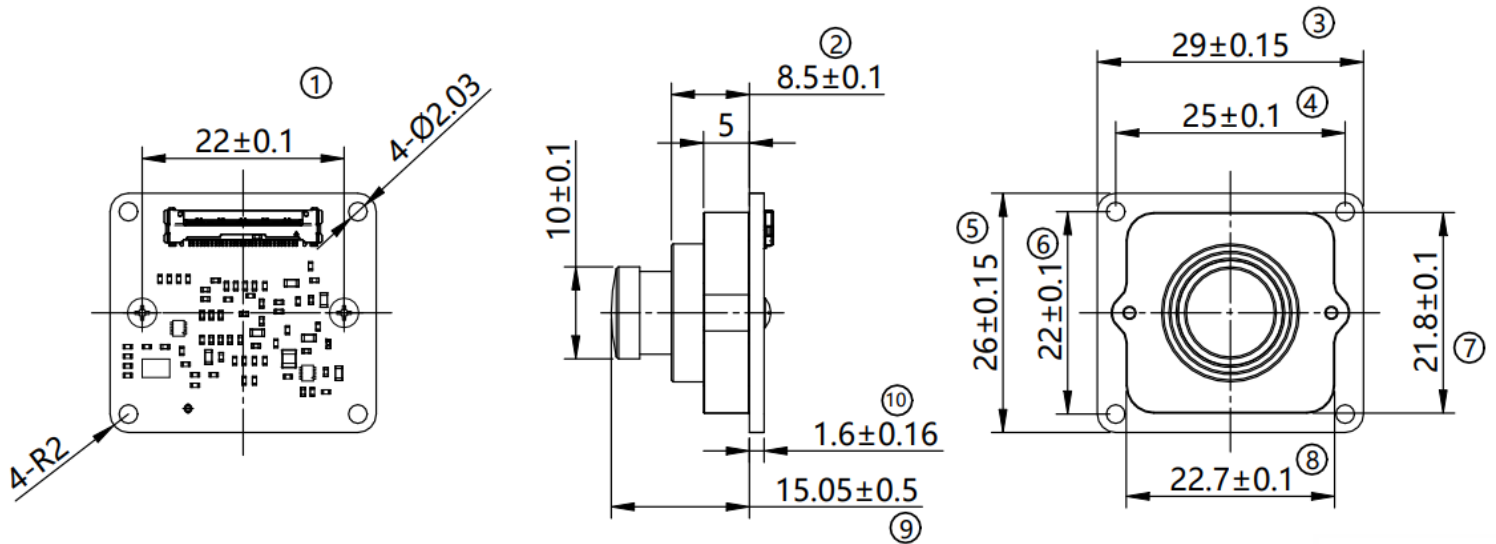
- Autonomous Driving
- Driver Monitoring System
- Occupant Monitoring System
- In-Cabin Monitoring System

LENS SPECIFICATIONS

Focal Length	2.42 $\pm$ 5% mm
Aperture, F/#	2.2 $\pm$ 5%
Field of View (FOV)	143° horizontal
IR Filter (Only for RGB-IR sensor)	940 nm dual bandpass filter
Lens Mount	M12 x P0.5



DIMENSIONS



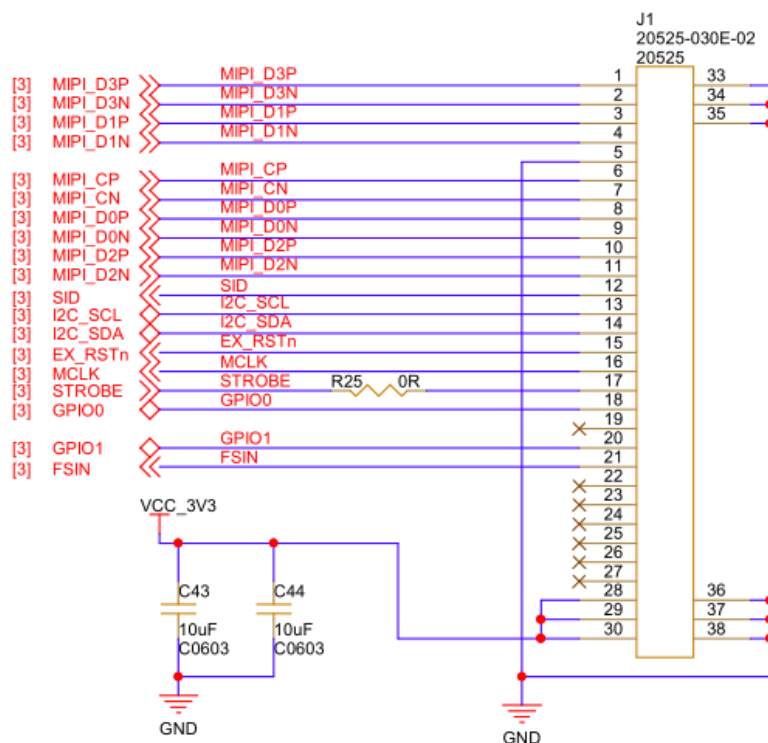
NOTE:

- ⊗ marked are important sizes.
- Tolerances for others unmarked refer to the tolerance table.
- Unit: mm

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				

INTERFACE J1

- Connector Part#: 20525-030E-02
- Number of Positions: 30
- Pitch: 0.4 mm
- Mating I-PEX Cable: FAW-1233-03
- Sensor I2C Address: 0X6C (8-bit)
- External Power Supply: 3.3V



PINOUT DETAILS OF J1

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	MIPI_D3P	OUTPUT	MIPI Clock Data3 Differential Pair +	1.8V
2	MIPI_D3N	OUTPUT	MIPI Clock Data3 Differential Pair -	1.8V
3	MIPI_D1P	OUTPUT	MIPI Clock Data1 Differential Pair +	1.8V
4	MIPI_D1N	OUTPUT	MIPI Clock Data1 Differential Pair -	1.8V
5	GND	POWER	Ground signal for digital and analog	-
6	MIPI_CP	OUTPUT	MIPI Clock Lane Differential Pair +	1.8V
7	MIPI_CN	OUTPUT	MIPI Clock Lane Differential Pair -	1.8V
8	MIPI_D0P	OUTPUT	MIPI Clock Data0 Differential Pair +	1.8V
9	MIPI_D0N	OUTPUT	MIPI Clock Data0 Differential Pair -	1.8V
10	MIPI_D2P	OUTPUT	MIPI Clock Data2 Differential Pair +	1.8V
11	MIPI_D2N	OUTPUT	MIPI Clock Data2 Differential Pair -	1.8V
12	SID	INPUT	Chip ID selection	1.8V
13	I2C_SCL	INPUT	1.8V IO Camera I2C SCL signal with 1.5kΩ pull-up.	1.8V

Pin No	Signal Name	Pin Type	Description	Voltage Level
14	I2C_SDA	I/O	1.8V IO Camera I2C SDA signal with 1.5k Ω pull-up.	1.8V
15	EX_RSTn	INPUT	XSHUTDOWN (Active Low)	1.8V
16	MCLK	INPUT	Reserved CLK for camera	1.8V
17	STROBE	OUTPUT	STROBE output	1.8V
18	GPIO0	I/O	General purpose I/O	1.8V
19	-	-	-	-
20	GPIO1	I/O	General purpose I/O	1.8V
21	FSIN	I/O	FSIN I/O	1.8V
22	-	-	-	-
23	-	-	-	-
24	-	-	-	-
25	-	-	-	-
26	-	-	-	-
27	-	-	-	-
28	3V3	POWER	3.3V power supply	3.3V
29	3V3	POWER	3.3V power supply	3.3V
30	3V3	POWER	3.3V power supply	3.3V

● REVISION HISTORY

Revision	Description	Release Date
0.1	Initial draft.	17 Oct 2025

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