



LEOPARD
IMAGING

LI-OS12D40-CPHY-101H



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INTRODUCTION

The LI-OS12D40-CPHY-101H camera module featuring the OmniVision OS12D40, an 11.3MP image color sensor with a 1/2.49" optical format and 1.4μm pixels. It is optimized for high-end security and surveillance applications, featuring on-chip 4-cell HDR for superior motion artifact elimination, exceptional low-light performance, and a fast switch between 1080p and 4K2K modes. The module supports electronic image stabilization (EIS) and outputs RAW data, making it ideal for AI-enabled security systems and mass-market cameras requiring detailed threat identification and stable, wide-angle video.

SPECIFICATIONS

Maximum Frame Rate	60 fps @ 4512 x 2512
Output Format	10-bit RGB 4-cell pattern Bayer RAW
Sensor	OmniVision 1/2.49" CMOS 11.3MP image sensor OS12D40
Optical Format	1/2.49"
Pixel Size	1.404 μmx 1.404 μm
Color / Mono	Color
Resolution	4512 (H) x 2512 (V) (active pixels)
HDR (High Dynamic Range)	Supported
Interface	2/3 trio C-PHY, up to 1.6Gsps/trio
Operating Temp	TBD
Storage Temp	TBD
Power Consumption	TBD
Weight	~ 16 g

APPLICATIONS

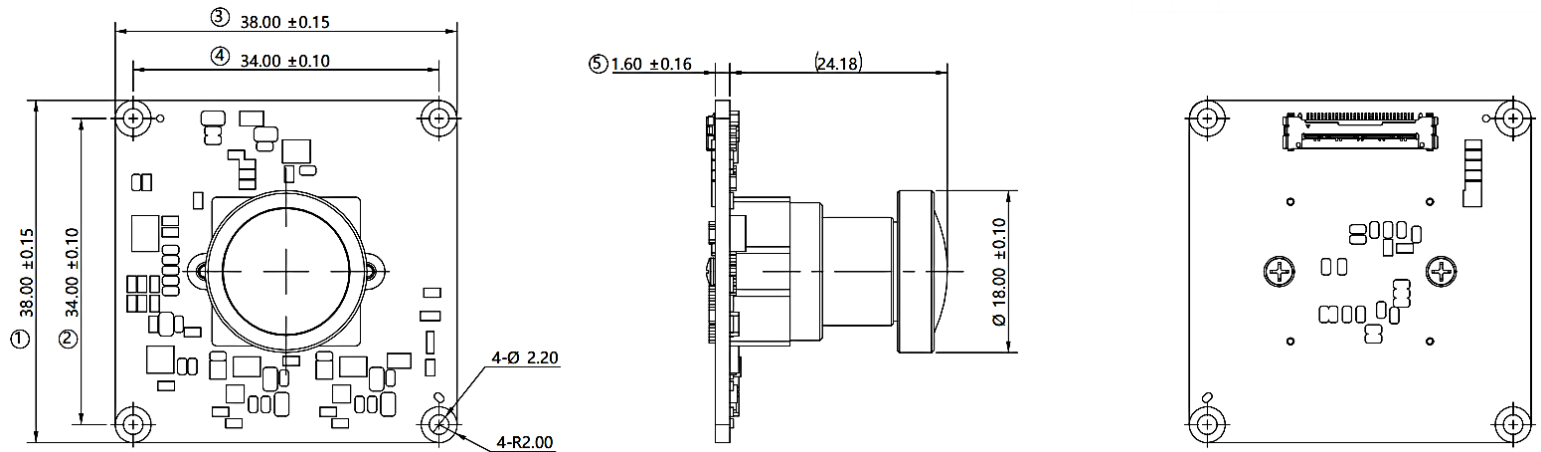
- Security
- Machine Vision
- PC multimedia

LENS SPECIFICATIONS

Focal Length	2.8 mm
Aperture, F/#	2.8
Field of View (FOV)	101° horizontal
IR Filter	660 nm IR cut filter
Lens Mount	M12 x P0.5



DIMENSIONS



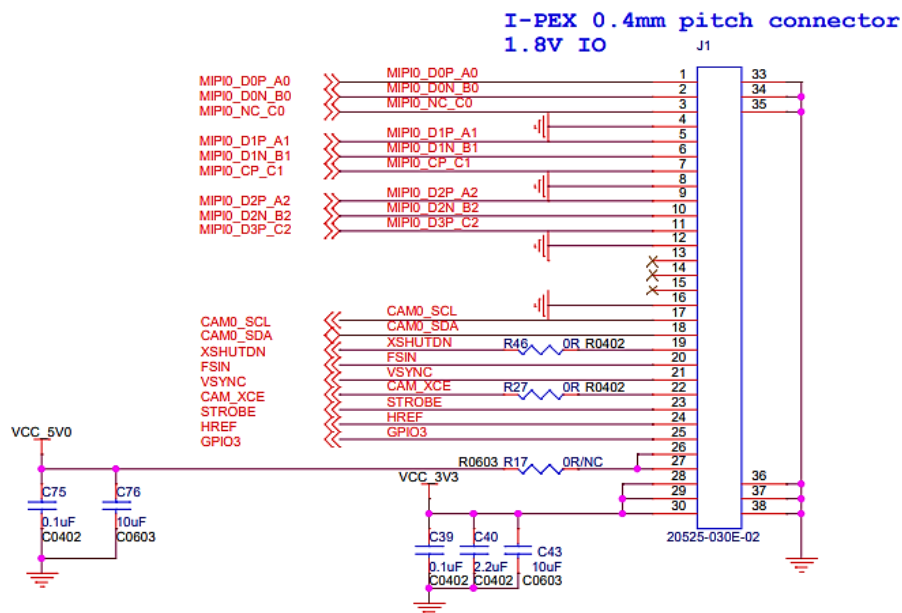
NOTE:

- ⊗ 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: 0XA0 (8-bit)
- External Power Supply: 3.3V



PINOUT DETAILS

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	MIPI0_D0P_A0	OUTPUT	MIPI signal(C-PHY)	1.1V
2	MIPI0_D0N_B0	OUTPUT	MIPI signal(C-PHY)	1.1V
3	MIPI0_NC_C0	OUTPUT	MIPI signal(C-PHY)	1.1V
4	GND	-	-	-
5	MIPI0_D1P_A1	POWER	MIPI signal(C-PHY)	1.1V
6	MIPI0_D1N_B1	OUTPUT	MIPI signal(C-PHY)	1.1V
7	MIPI0_CP_C1	OUTPUT	MIPI signal(C-PHY)	1.1V
8	GND	-	-	-
9	MIPI0_D2P_A2	OUTPUT	MIPI signal(C-PHY)	1.1V
10	MIPI0_D2N_B2	OUTPUT	MIPI signal(C-PHY)	1.1V
11	MIPI0_D3P_C2	OUTPUT	MIPI signal(C-PHY)	1.1V
12	GND	-	-	-
13	-	-	-	-

Pin No	Signal Name	Pin Type	Description	Voltage Level
14	-	-	-	-
15	-	-	-	-
16	GND	-	-	-
17	CAM0_SCL	OUTPUT	The SCL signal of camera I2C	1.8V
18	CAM0_SDA	I/O	The SDA signal of camera I2C	1.8V
19	XSHUTDOWN	INPUT	Reset and power down	1.8V
20	FSIN	I/O	Frame sync trigger signal	1.8V
21	VSYNC	I/O	Vertical sync I/O	1.8V
22	CAM_XCE	INPUT	Power down	1.8V
23	STROBE	OUTPUT	Strobe output	1.8V
24	HREF	I/O	Video output horizontal signal	1.8V
25	GPIO3	I/O	General purpose I/O	1.8V
26	VCC_5V0	POWER	Reserved 5V power supply	5V-
27	VCC_5V0	POWER	Reserved 5V power supply	5V
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.	27 Nov 2025

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