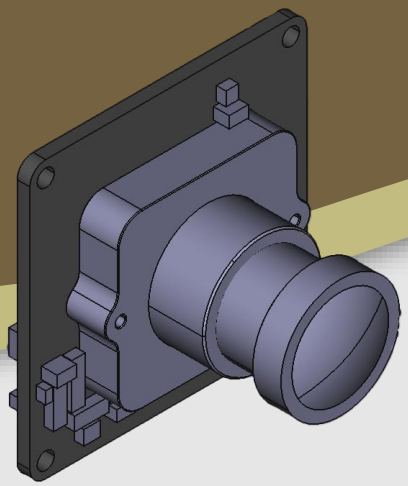
LEOPARD IMAGING

LI-AR0246-YUV-MIPI-088H



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INTRODUCTION

The LI-AR0246-YUV-MIPI-088H is a MIPI camera with ON Semiconductor 1/4-Inch 2Mp CMOS digital image color sensor AR0246 and ISP. This camera has a dedicated Inbuilt high-performance Image Signal Processor (ISP) chip tuned to bring out the best-in-class image quality and color reproduction, making it adaptable to different lighting conditions. This camera outputs YUV image data.

SPECIFICATIONS

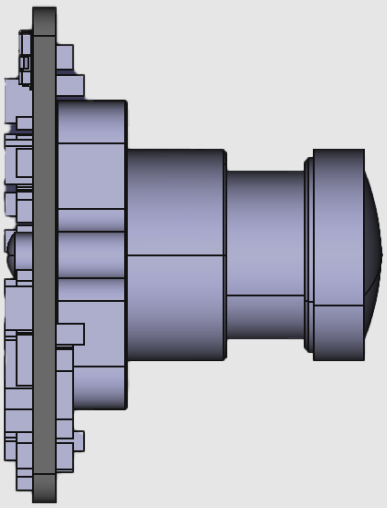
Frame Rate	Linear: 1080p @ 60 fps LI-HDR (2exp): 1080p @ 30 fps eHDR (3 exp): 1080p @ 30 fps eDR (1 exp): 1080p @ 30 fps
Output Format	YUV 422
Sensor	ON Semiconductor 1/4-Inch 2Mp CMOS digital image sensor AR0246
Optical Format	1/4"
Color / Mono	Color
Pixel Size	2.0 µm x 2.0 µm, BSI
Resolution	1920 (H) x 1080 (V) (active pixels)
xDR (X–tended Dynamic Range)	Supported
ISP	Included
Interface	4-lane MIPI D-PHY
Power Consumption	TBD
Operating Temp	TBD
Storage Temp	TBD
Weight	TBD

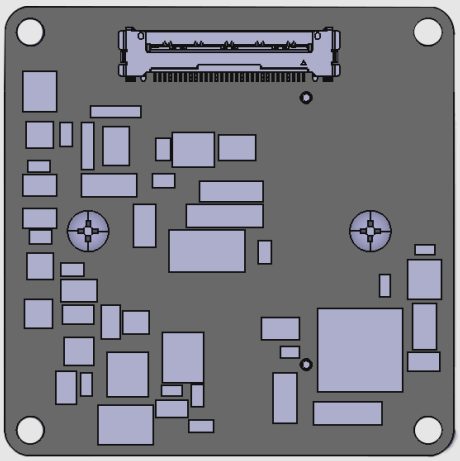
APPLICATIONS

- IoT
- Security
- Robots

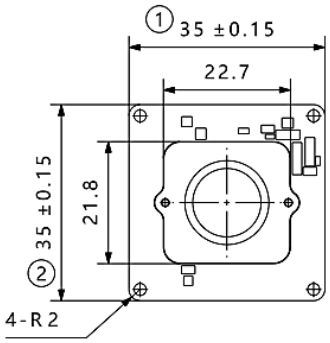
LENS SPECIFICATIONS

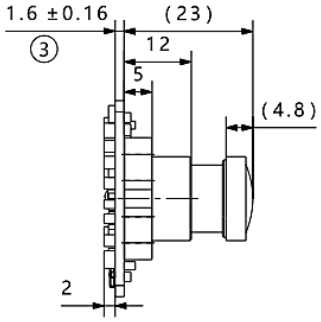
Effective Focal Length	2.5 mm
Aperture, F/#	2.0
Field of View (FOV)	48.8° vertical
	88.9° horizontal
	102.8° diagnoal
TV Distortion	-9.7%
Relative Illumination	94.1%
IR Filter	650nm IR cut filter
Lens Mount	M12 x P0.5

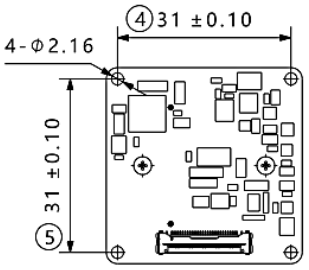


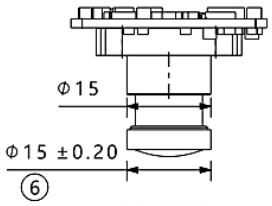


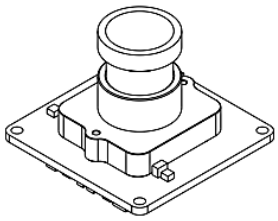
DIMENSIONS











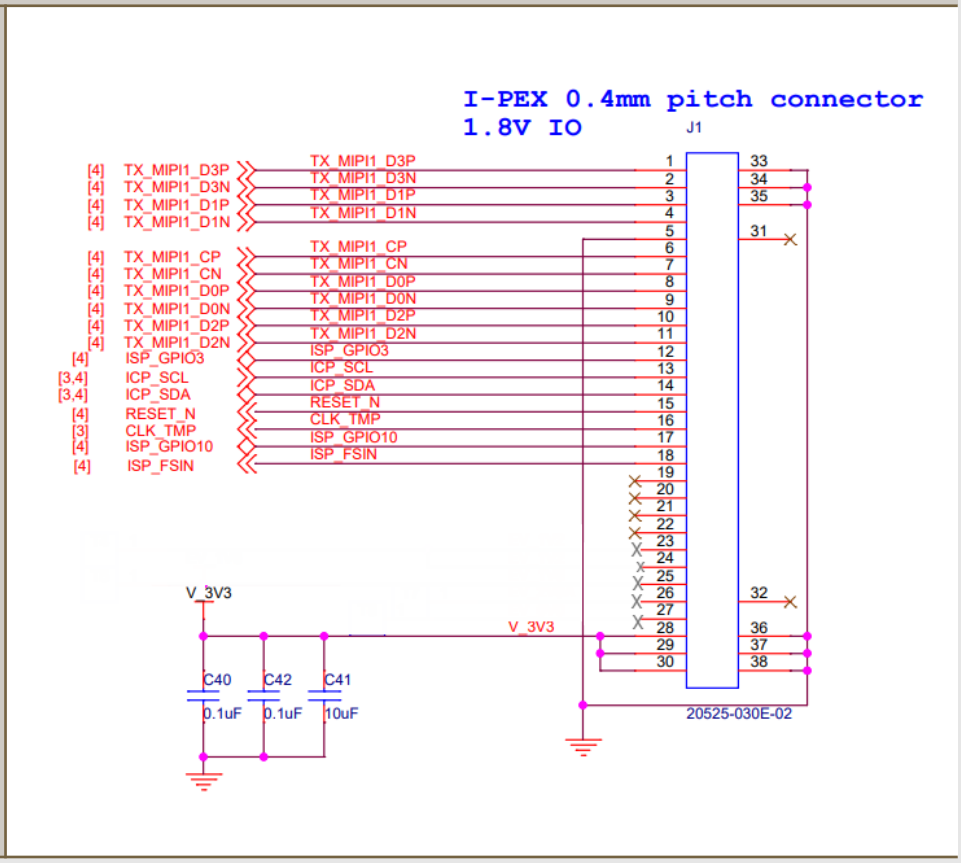
TOLERANCE TABLE					
LENGTH TOLERANCE		CHAMFER TOLERANCE		ANGLE TOLERANCE	
Size X	Tolerance	Size X	Tolerance	Size X	Tolerance
0.5 < X≤3	±0.1	0.5 < X≤3	±0.2	X≤10	±1°
3 < X≤6	±0.1	3 < X≤6	±0.5	10 < X≤50	±30'
6 < X≤30	±0.2	6 < X≤30	±1	50 < X≤120	±20'
30 < X≤120	±0.3	X > 30	±2	120 < X≤400	±10'
120 < X≤400	±0.5			X > 400	±5'
400 < X≤1000	±0.8				
X > 1000	±1.2				

NOTE:

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

INTERFACE

- Connector Part#: 20525-030E-02
- Number of positions: 30
- Pitch: 0.4 mm
- ISP I2C address: 0x78 (8-bit)
- External power supply: 3.3V



PINOUT DETAILS

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	MIPI1_D3P	OUTPUT	MIPI Clock Data3 Differential Pair +	MIPI DPHY
2	MIPI1_D3N	OUTPUT	MIPI Clock Data3 Differential Pair -	MIPI DPHY
3	MIPI1_D1P	OUTPUT	MIPI Clock Data1 Differential Pair +	MIPI DPHY
4	MIPI1_D1N	OUTPUT	MIPI Clock Data1 Differential Pair -	MIPI DPHY
5	GND	POWER	Ground signal for digital and analog	-
6	MIPI1_CP	OUTPUT	MIPI Clock Lane Differential Pair +	MIPI DPHY
7	MIPI1_CN	OUTPUT	MIPI Clock Lane Differential Pair -	MIPI DPHY
8	MIPI1_D0P	OUTPUT	MIPI Clock Data0 Differential Pair +	MIPI DPHY
9	MIPI1_D0N	OUTPUT	MIPI Clock Data0 Differential Pair -	MIPI DPHY
10	MIPI1_D2P	OUTPUT	MIPI Clock Data2 Differential Pair +	MIPI DPHY
11	MIPI1_D2N	OUTPUT	MIPI Clock Data2 Differential Pair -	MIPI DPHY
12	ISP_GIOP3	I/O	General-Purpose Input/Output 3 (ISP)	1.8V
13	ICP_SCL	INPUT	1.8V IO ISP I2C SCL signal (Pulled up to 1.8V with 1.5k)	1.8V

Pin No	Signal Name	Pin Type	Description	Voltage Level
14	ICP_SDA	I/O	1.8V IO ISP I2C SDA signal (Pulled up to 1.8V with 1.5k)	1.8V
15	RESET_N	INPUT	1.8V IO ISP reset signal (Pulled up to 1.8V with 10k)	1.8V
16	CLK_TMP	INPUT	Reserved CLK for camera	1.8V
17	ISP_GPIO10	I/O	General-Purpose Input/Output 10 (ISP)	1.8V
18	ISP_FSIN	INPUT	ISP Frame Signal Input	1.8V
19	-	-	-	-
20	-	-	-	-
21	-	-	-	-
22	-	-	-	-
23	-	-	-	-
24	-	-	-	-
25	-	-	-	-
26	-	-	-	-
27	-	-	-	-
28	VCC_3V3	POWER	3.3V digital power supply	3.3V
29	VCC_3V3	POWER	3.3V digital power supply	3.3V
30	VCC_3V3	POWER	3.3V digital power supply	3.3V

REVISION HISTORY

Revision	Description	Release date
0.1	Initial draft.	12 November 2025

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