



LEOPARD
IMAGING

LI-AR1223-YUV-MIPI-098H



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INTRODUCTION

The LI-AR1223-YUV-MIPI-098H is a high resolution camera equipped with ON Semiconductor 12MP CMOS digital image color sensor AR1223 and ISP. It 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.

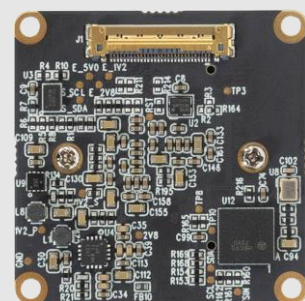
SPECIFICATIONS

Frame Rate	Linear: 12 MP@60 frames/sec LI*HDR (2exp): 12 MP@ 30 frame-pairs/sec eHDR (3 exp): 12 MP@ 24 combined-frames/sec eDR (DGR): 12 MP @ 36 frames/sec LI-eDR+T2: 12 MP @ 24 frame-pairs/sec eHDR-eDR+T2: 12 MP @ 24 combined-frames/se
Output Format	YUV 422
Sensor	ON Semiconductor 12MP CMOS digital image sensor AR1223
Optical Format	1/1.6"
Color / Mono	color
Pixel Size	2.0 μ m
Resolution	4096 (H) x 3046 (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

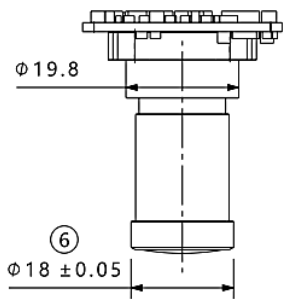
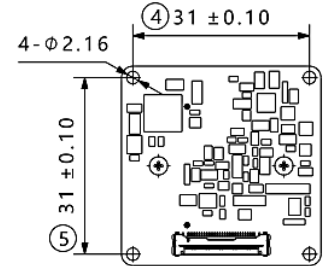
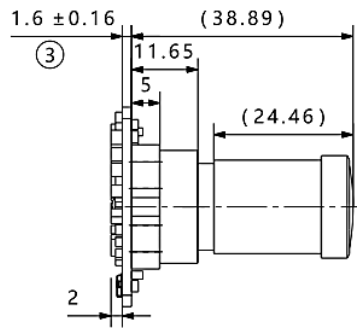
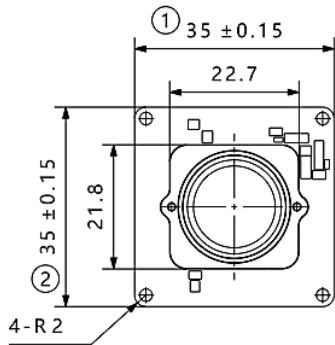
- Security
- IoT
- Car DVR

LENS SPECIFICATIONS

Effective Focal Length	5.17 $\pm$ 5% mm
Aperture, F/#	1.6 $\pm$ 5%
Field of View (FOV)	98° horizontal
IR Filter	650 nm IR CUT filter
Lens Mount	M16 x P0.5



DIMENSIONS



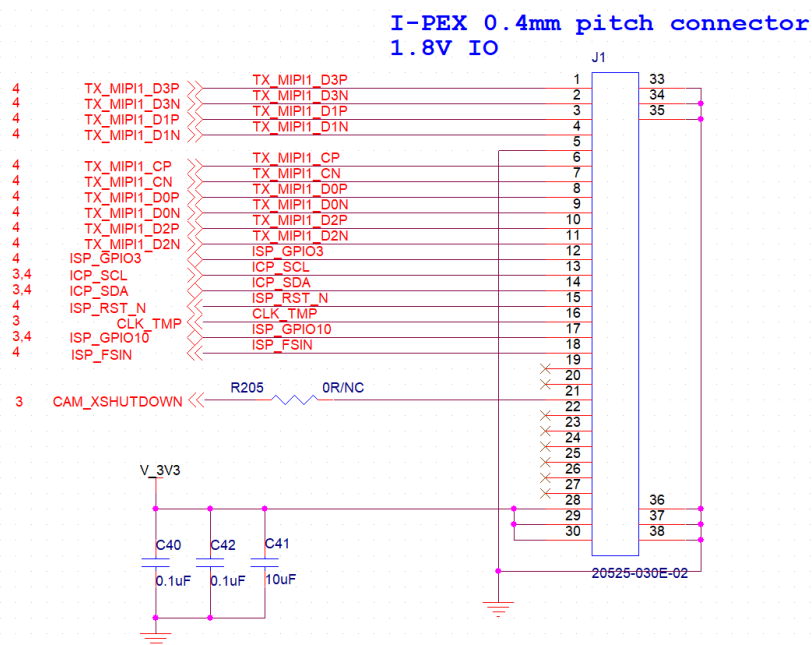
NOTE:

- $\otimes$ 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

- 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	CAM_XSHUTDOWN	INPUT	Reserved XSHUTDOWN for camera	1.8V
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 Nov 2025

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