



LEOPARD
IMAGING

LI-AR0822-YUV-MIPI-099H



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INTRODUCTION

The LI-AR0822-YUV-MIPI-099H is a MIPI D-PHY Hyperlux LH camera that produces extraordinarily clear, sharp digital pictures, and it has the ability to capture both continuous video and single frames. It's equipped with ON Semiconductor 1/1.8-inch 4K CMOS digital image sensor AR0822 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

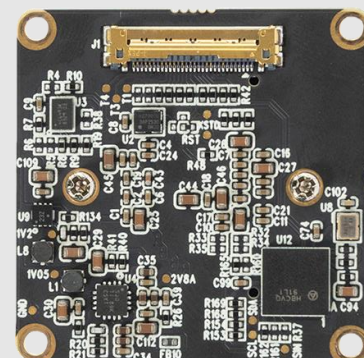
Frame Rate	Linear: 4k @ 60 fps LI-HDR (2exp): 4k @ 30 fps eHDR (3exp): 4k @ 30 fps
Output Format	YUV422
Sensor	ON Semiconductor stacked 1/1.8-inch BSI CMOS digital image sensor AR0822
Optical Format	1/1.8" (8.81 mm diagonal)
Color / Mono	RGB
Pixel Size	2.0 μm x 2.0 μm , BSI
Resolution	3840 (H) x 2160 (V) (active pixels)
xDR (X-tended Dynamic Range)	Supported
ISP	Included
Interface	4-lane MIPI CSI-2
Connector	30-PIN IPEX MIPI Connector
Power Consumption	TBD
Operating Temp	TBD
Storage Temp	TBD
Weight	TBD

APPLICATIONS

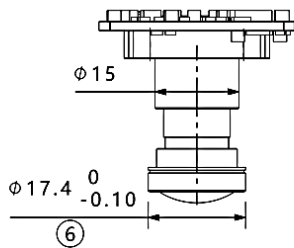
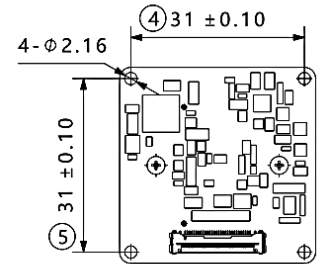
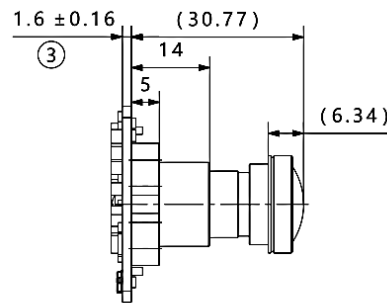
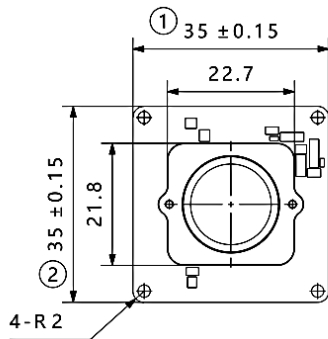
- Security Camera
- IoT
- Car DRV

LENS SPECIFICATIONS

Effective Focal Length	4.5 $\pm$ 5% mm
Aperture, F/#	2.7 $\pm$ 5%
Field of View (FOV)	99° horizontal
IR Filter	650 nm IR CUT Filter
Lens Mount	M12 x P0.5



DIMENSIONS



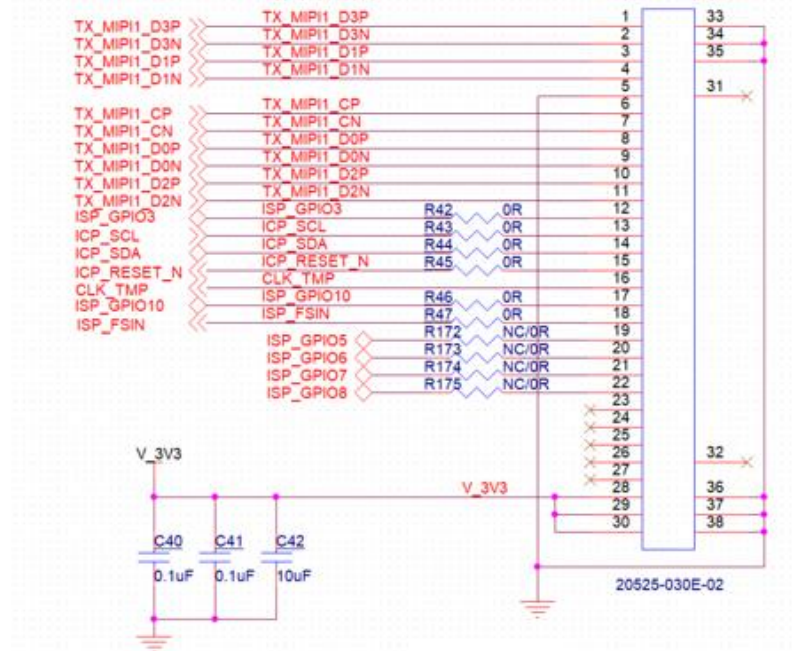
NOTE:

- ⊗ marked are important sizes.
- Tolerances for the unmarked – refer to the Tolerance table.
- All materials are compliant with RoHS requirements.
- 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				

MIPI Connector Interface

- Connector Part#: 20525-030E-02
- Number of Positions: 30
- Mating I-PEX Cable: FAW-1233
- 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	ISP_GPIO5	I/O	1.8V IO ISP Trigger input	1.8V
20	ISP_GPIO6	I/O	1.8V IO ISP Trigger input	1.8V
21	ISP_GPIO7	I/O	1.8V IO ISP Trigger input	1.8V
22	ISP_GPIO8	I/O	1.8V IO ISP Trigger input	1.8V
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.	18 Nov 2025

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