



LEOPARD
IMAGING

LI-AR0822M-MIPI-126H



Address:

910 Auburn Ct
Fremont, CA 94538
USA



Phone:

+1 (408)263-0988

Fax:

+1 (408)217-1960



Sales:

sales@leopardimaging.com

Support:

support@leopardimaging.com

INTRODUCTION

The LI-AR0822M-MIPI-126H is a MIPI D-PHY mono 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 mono sensor AR0822 which features advanced On-Sensor eHDR Reconstruct with Flexible Exposure Ratio Control. This camera outputs RAW data.

SPECIFICATIONS

Frame Rate	Linear: 4k @ 60 fps LI-HDR (2exp): 4k @ 30 fps eHDR (3exp): 4k @ 30 fps
Output Format	Linear: 10 bit and 12 bit eHDR: 10, 12, 14, 16 20 bit
Sensor	ON Semiconductor 1/1.8-inch 8 MP CMOS Image Sensor AR0822
Optical Format	1/1.8" (8.81 mm diagonal)
Pixel Size	2.0 μm x 2.0 μm , BSI
Color / Mono	Mono sensor
Shutter Type	ERS and GRR
Active pixels	3840 (H) x 2160 (V)
ADC resolution	12-bit, on die
Interface	4-lane MIPI CSI-2
Connector	30-PIN IPEX MIPI Connector
Power Consumption	160 mA@ 3.3 VDC (3840 x 2160 @ 18 fps)
Operating Temp	-30 $^{\circ}\text{C}$ ~ +85 $^{\circ}\text{C}$
Storage Temp	-30 $^{\circ}\text{C}$ ~ +85 $^{\circ}\text{C}$
Weight	~ 18 g

APPLICATIONS

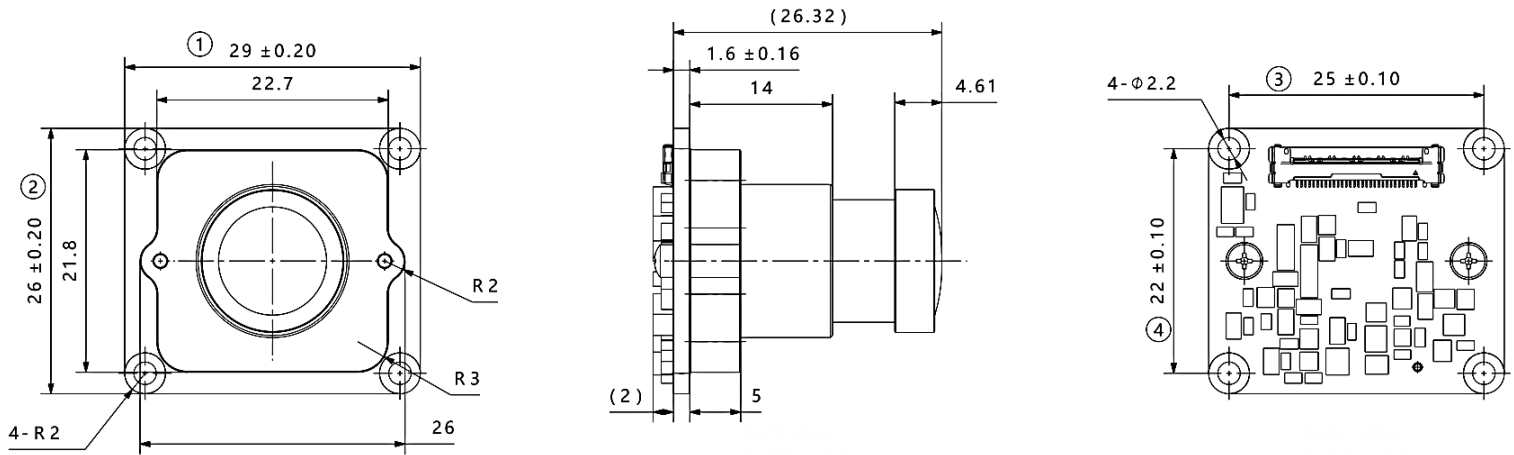
- Security Camera
- IoT
- Car DRV

LENS SPECIFICATIONS

Effective Focal Length	3.8 mm
Aperture, F/#	2.6
Field of View (FOV)	126° horizontal
Lens Mount	M12 x P0.5



DIMENSIONS



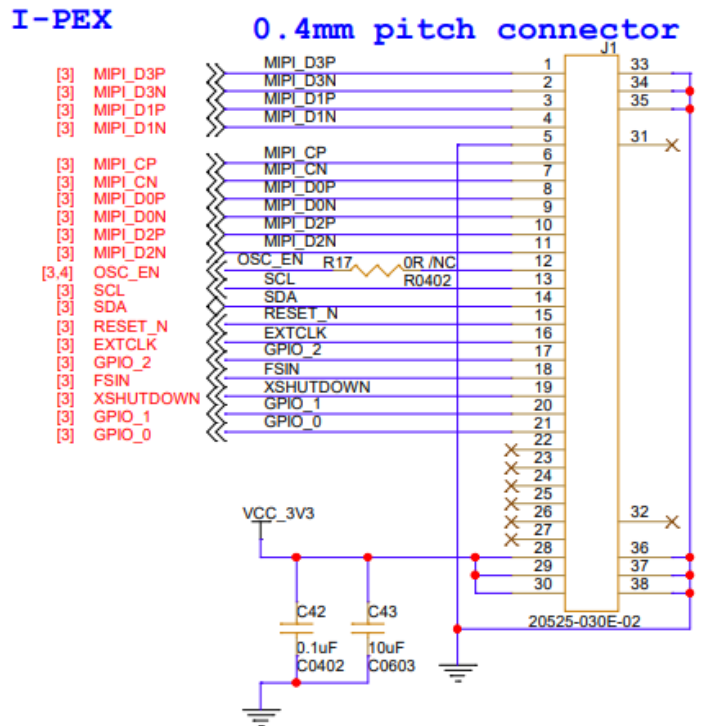
NOTE:

- ⊗ 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
- Sensor I2C Address: 0x10 (7-bit)
- External Power Supply: 3.3V



Pinout Details

Pin No	Signal Name	Pin Type	Description	Voltage Level
1	MIPI_D3P	OUTPUT	MIPI Data3 Differential Pair +	MIPI DPHY
2	MIPI_D3N	OUTPUT	MIPI Data3 Differential Pair -	MIPI DPHY
3	MIPI_D1P	OUTPUT	MIPI Data1 Differential Pair +	MIPI DPHY
4	MIPI_D1N	OUTPUT	MIPI Data1 Differential Pair -	MIPI DPHY
5	GND	-	GND	-
6	MIPI_CP	OUTPUT	MIPI Clock Lane Differential Pair +	MIPI DPHY
7	MIPI_CN	OUTPUT	MIPI Clock Lane Differential Pair -	MIPI DPHY
8	MIPI_D0P	OUTPUT	MIPI Data0 Differential Pair +	MIPI DPHY
9	MIPI_D0N	OUTPUT	MIPI Data0 Differential Pair -	MIPI DPHY
10	MIPI_D2P	OUTPUT	MIPI Data2 Differential Pair +	MIPI DPHY
11	MIPI_D2N	OUTPUT	MIPI Data2 Differential Pair -	MIPI DPHY
12	-	-	-	-
13	SCL		The SCL signal of camera I2C (without pull-up resistor)	1.8V

Pin No	Signal Name	Pin Type	Description	Voltage Level
14	SDA	I/O	The SDA signal of camera I2C (without pull-up resistor)	1.8V
15	RESET_N	INPUT	1.8V IO reset signal, low active (Pulled-up to 1.8V with 10kΩ on board)	1.8V
16	EXTCLK	INPUT	External Clock for Sensor (reserved)	1.8V
17	GPIO_2	BIDIR	General-Purpose Input/Output 2	1.8V
18	FSIN	BIDIR	1.8V IO trigger signal for Sensor	1.8V
19	XSHUTDOWN	INPUT	1.8V IO enable signal for Sensor power up (high active)	1.8V
20	GPIO_1	BIDIR	General-Purpose Input/Output 1	1.8V
21	GPIO_0	BIDIR	General-Purpose Input/Output 0	1.8V
22	-	-	-	-
23	-	-	-	-
24	-	-	-	-
25	-	-	-	-
26	-	-	-	-
27	-	-	-	-
28	VCC_3.3V	POWER	3.3V power supply (Must be provided from host side)	3.3V
29	VCC_3.3V	POWER	3.3V power supply (Must be provided from host side)	3.3V
30	VCC_3.3V	POWER	3.3V power supply (Must be provided from host side)	3.3V

● REVISION HISTORY

Revision	Description	Release Date
0.1	Initial draft.	12 Aug 2026

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