LEOPARD IMAGING

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

## SPECIFICATIONS

| | |
|---|---|
| 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 | Color sensor |
| Shutter Type | ERS and GRR |
| Active pixels | 3840 (H) x 2160 (V) |
| Output Format | Linear: 10 bit and 12 bit<br>eHDR: 10, 12, 14, 16 20 bit |
| Frame Rate | Linear: 4k @ 60 fps<br>LI–HDR (2exp): 4k @ 30 fps<br>eHDR (3exp): 4k @ 30 fps |
| 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<br>(3840 x 2160 @ 18 fps ) |
| Operating Temp | TBD |
| Storage Temp | TBD |
| Weight | ~ 18 g |

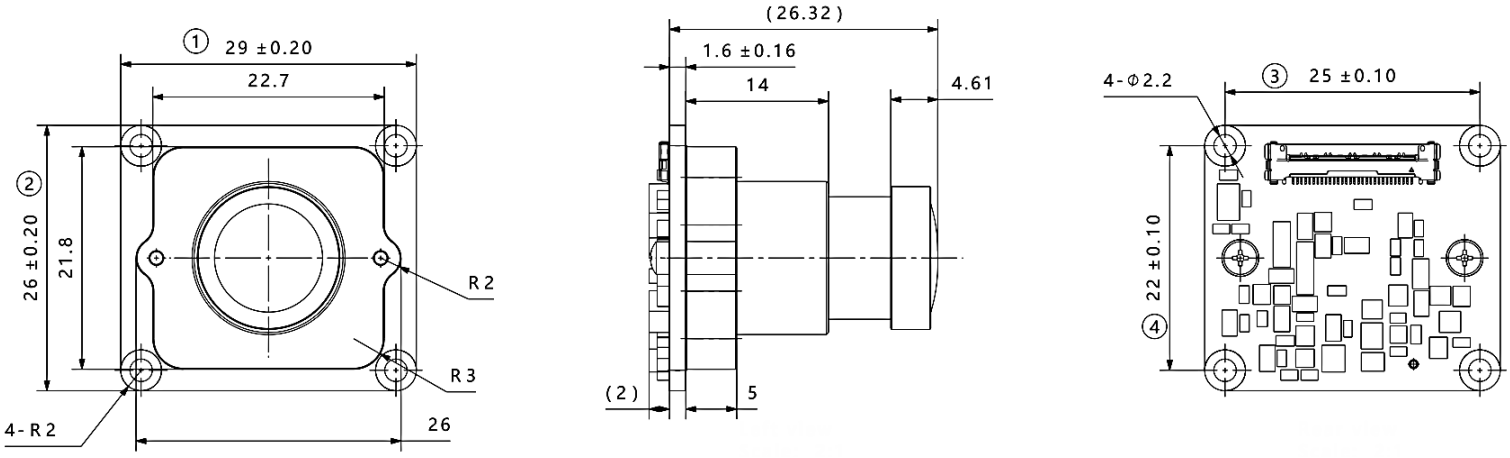
## APPLICATIONS

- Security Camera
- IoT
- Car DRV

## LENS SPECIFICATIONS

| | |
|---|---|
| Effective Focal Length | 3.8 mm |
| Aperture, F/# | 2.6 |
| Field of View (FOV) | 126˚ horizontal |
| IR Filter | 650 nm IR cut filter |
| Lens Mount | M12 x P0.5 |

# DIMENSIONS



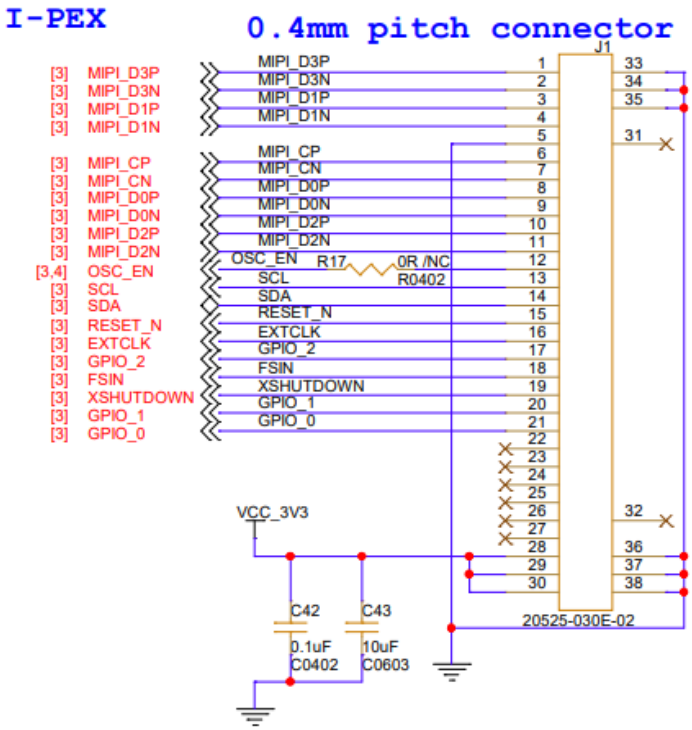

**NOTE:**

- ⊗ 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≤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 | | | | |

# MIPI Connector Interface J1

- 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




## Connector Pinout

| Pin No | Signal Name | Pin Type | Description | Voltage Level |
|---|---|---|---|---|
| 1 | MIPI_D3P | OUTPUT | MIPI Clock Data3 Differential Pair + | MIPI DPHY |
| 2 | MIPI_D3N | OUTPUT | MIPI Clock Data3 Differential Pair - | MIPI DPHY |
| 3 | MIPI_D1P | OUTPUT | MIPI Clock Data1 Differential Pair + | MIPI DPHY |
| 4 | MIPI_D1N | OUTPUT | MIPI Clock 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 Clock Data0 Differential Pair + | MIPI DPHY |
| 9 | MIPI_D0N | OUTPUT | MIPI Clock Data0 Differential Pair - | MIPI DPHY |
| 10 | MIPI_D2P | OUTPUT | MIPI Clock Data2 Differential Pair + | MIPI DPHY |
| 11 | MIPI_D2N | OUTPUT | MIPI Clock 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 ,Internally pulled-up to 1.8V using 10kΩ) | 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 | 3.3V |
| 29 | VCC_3.3V | POWER | 3.3V power supply | 3.3V |
| 30 | VCC_3.3V | POWER | 3.3V power supply | 3.3V |

## REVISION HISTORY

| Revision | Description | Release Date |
|---|---|---|
| 0.1 | Initial draft. | 07 Aug 2025 |

910 Auburn Ct, Fremont, CA 94538, USA
Phone: +1-408-263-0988
Fax: +1-408-217-1960
Email: sales@leopardimaging.com
Website: www.leopardimaging.com