



**LEOPARD**  
IMAGING

# LI-AR0820-FP4-xxxH



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## INTRODUCTION

The LI-AR0820-FP4-xxxH is equipped with ON Semiconductor 8.3MP CMOS RCCB image sensor AR0820 and FPD-Link IV serializer TI971. This camera outputs 3840 x 2160 RAW data.

## SPECIFICATIONS

Sensor	ON Semiconductor AR0820 8.3MP CMOS RCCB Sensor
Optical Format	1/2"
Resolution	3840 (H) x 2160 (V) (active pixels)
Pixel Size	2.1 x 2.1 $\mu$ m
Sensor	Color sensor
Output Format	8-bit / 10-bit / 12-bit / 14-bit / 16-bit / 20-bit RAW data
Maximum Frame Rate	40 fps @ 4K (3-exposure HDR) 30 fps @ 4K (4-exposure HDR)
HDR (High Dynamic Range)	Supported
Lens	FOV H 60° / 120°
Serializer	TI971 FPD-Link IV (DS90UB971-Q1)
Power Supply Range	9 ~ 19 VDC
Connector	FAKRA Z TYPE
IP Rating	060H: TBD 120H: IP69K
Power Consumption	119 mA @ 12 VDC (3848 x 2168 @ 12 fps)
Operating Temp	TBD
Storage Temp	TBD
Weight	~ 45 g
Part#	LI-AR0820-FP4-xxxH

## APPLICATIONS

- High Performance ADAS
- Autonomous Driving

## IMAGING ORIENTATION



## CABLE CONNECTOR

- Housing Connector: FAKRA Z Type
- Cable Length: 3 meters
- Cable Part#: FAK-SMZSMZ-3M

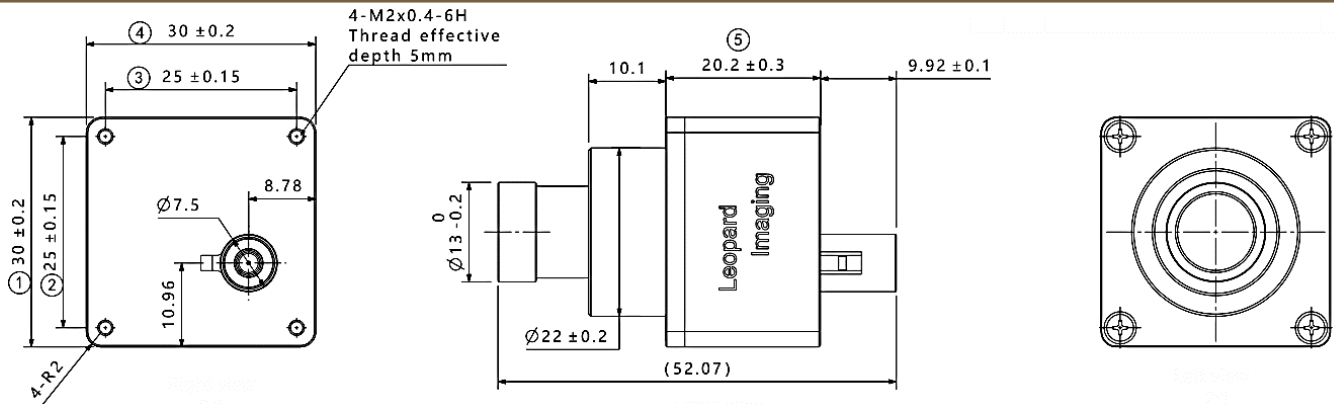


LI-AR0820-FP4-060H



LI-AR0820-FP4-120H

## DIMENSIONS: LI-AR0820-FP4-060H

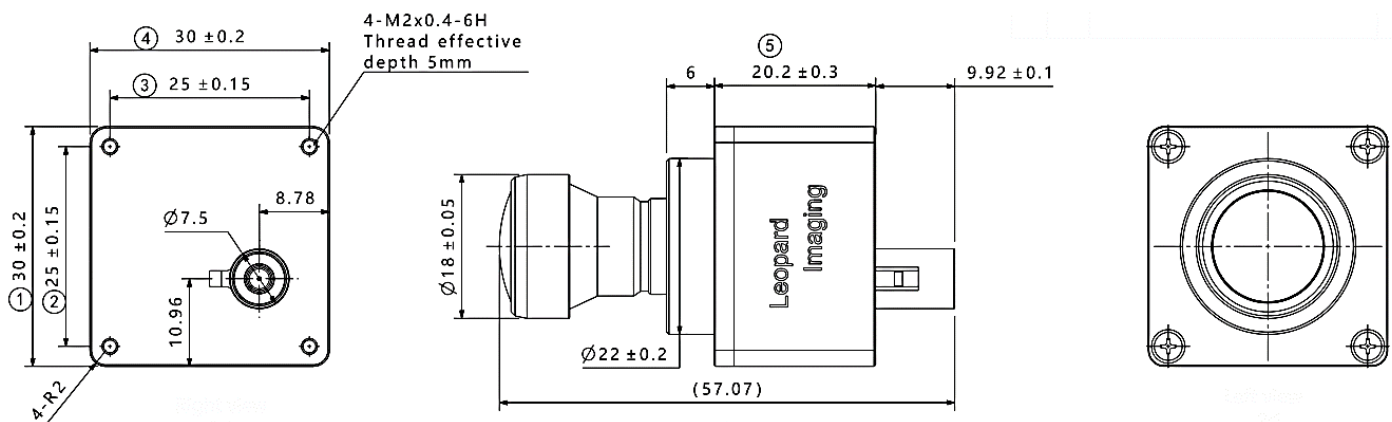


TOLERANCE TABLE					
LENGTH TOLERANCE		CHAMFER TOLERANCE		ANGLE TOLERANCE	
Size X	Tolerance	Size X	Tolerance	Size X	Tolerance
0.5 < X ≤ 3	±0.1	0.5 < X ≤ 3	±0.2	X ≤ 10	±1'
3 < X ≤ 6	±0.1	3 < X ≤ 6	±0.5	10 < X ≤ 50	±30'
6 < X ≤ 30	±0.2	6 < X ≤ 30	±1	50 < X ≤ 120	±20'
30 < X ≤ 120	±0.3	X > 30	±2	120 < X ≤ 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 are refer to tolerance table.
- All materials are compliant with RoHS requirements.
- Unit: mm

## DIMENSIONS: LI-AR0820-FP4-120H



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 are refer to tolerance table.
- All materials are compliant with RoHS requirements.
- Unit: mm

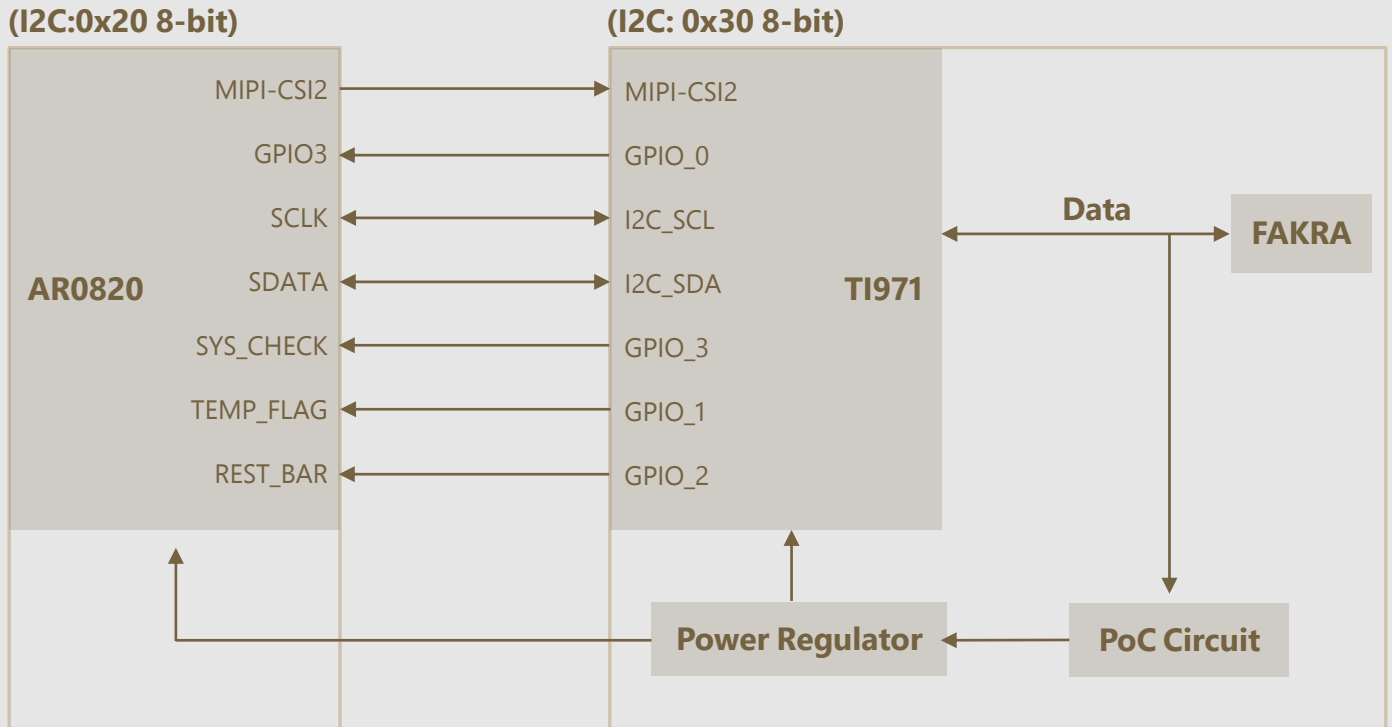
## ORDERING INFORMATION

**NOTE:**

xxxH refers to 060H (FOV H 60°) and 120H (FOV H 120°)

LI-AR0820-FP4-060H	LI-AR0820-FP4-120H
	
Lens EFL: 7.87 mm $\pm$ 0.2	Lens EFL: 3.9 mm $\pm$ 2%
Aperture, F/#: 1.8 $\pm$ 0.1	Aperture, F/#: 1.6 $\pm$ 5%
Field of View (FOV): 60° horizontal	Field of View (FOV): 121.2° horizontal
IR Filter: 650 nm IR cut filter	IR Filter: 650 nm IR cut filter
Mount: M12	Mount: M12

# SYSTEM BLOCK DIAGRAM



## USB3.0 CAMERA KIT

LI-FPDLINKIV-USB



Top View



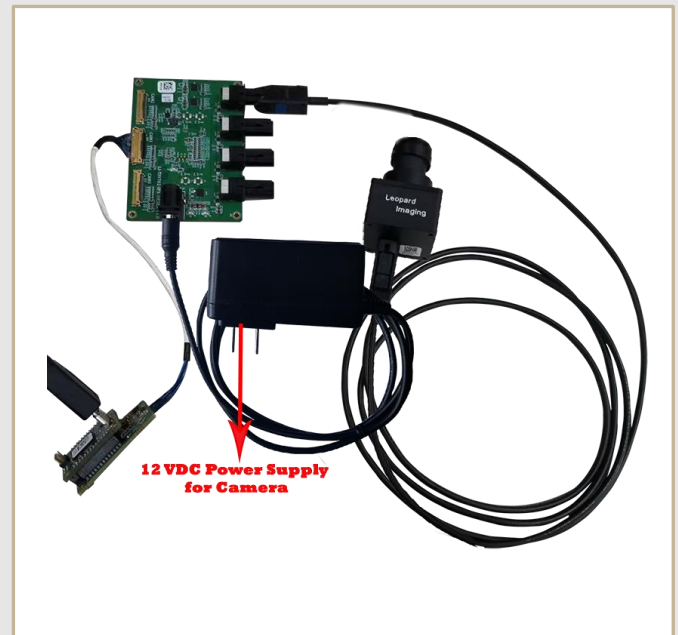
Bottom View

LI-AR0820-FP4-xxxH can connect to LI-FPDLINKIV-USB as a USB 3.0 camera.

Part#: **LI-USB30-AR0820-FP4-xxxH**

### SPECIFICATIONS

- USB 3.0 Super Speed support
- UVC compliant
- Allows customization
- 12 VDC Power Supply for camera
- Weight: ~ 146 g (without power and USB30 cable)
- Single Coax Cable transmits up to 12 meters PoC (Power over Cable)
- Resolution: 3848 x 2168 @ 12 fps
- Power consumption: 119 mA @ 12 VDC
- Compatible with Windows, Linux OS and other OS which have UVC drivers



### BOM

#	Items	QTY
1	LI-AR0820-FP4-xxxH	1
2	LI-FPDLINKIV-USB	1
3	3-Meter Fakra Cable	1
4	12 VDC Power Supply	1
5	USB3.0 Cable	1

### SDK SUPPORTED

- Camera Tool Source Code in C#
- Capture & Display
- Register Access Function

## REVISION HISTORY

Revision	Description	Release Date
1.0	First Release.	14 Dec 2019
1.1	<ol style="list-style-type: none"><li>1. Changed old format to current format.</li><li>2. Updated lens info, power consumption and USB30 tester.</li><li>3. Added SYSTEM BLOCK DIAGRAM, Imaging Orientation and BOM.</li><li>4. Changed Part# from LI-AR0820-FPDLINKIV-xxxH to LI-AR0820-FP4-xxxH</li></ol>	14 Dec 2023

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