



# LI-VENUS-ISX031-GMSL2-xxxH



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## INTRODUCTION

The LI-VENUS-ISX031-GMSL2-xxxH is equipped with Sony Diagonal 7.45 mm (Type 1/2.42) CMOS image sensor ISX031 and Maxim GMSL2 serializer MAX9295A/B. This camera outputs YUV 8-bit data.

## SPECIFICATIONS

Sensor	Sony Diagonal 7.45 mm CMOS Image Sensor ISX031
Optical Format	1/2.42"
Resolution	1937 (H) x 1553 (V) (active pixels)
Pixel Size	3.0 x 3.0 $\mu\text{m}$
Output Format	YUV 8-bit
Color / Mono	Color sensor
Frame Rate	30 fps @ 1920 x 1536 (based on ISP)
HDR (High Dynamic Range)	Supported
LFM (LED Flicker Mitigation)	Supported
Serializer	Maxim MAX9295A/B
Lens	FOV H 60° / 118° / 195°
IP Rating	FOV H 60°: IP69K FOV H 118° / 195°: TBD
Power Supply Range	8 ~ 17 VDC
Connector	FAKRA Z TYPE
Power Consumption	97 mA @ 12 VDC (1920 x 1536 @ 30 fps)
Operating Temp	-40°C ~ +85°C
Storage Temp	-40°C ~ +85°C
Weight	~ 34 g
Part#	LI-VENUS-ISX031-GMSL2-xxxH

## APPLICATIONS

- Automotive
  - ◆ Autonomous Driving
  - ◆ Assisted Driving
  - ◆ Digital Video Recording
  - ◆ Machine Vision

## DEFAULT IMAGING DIRECTION

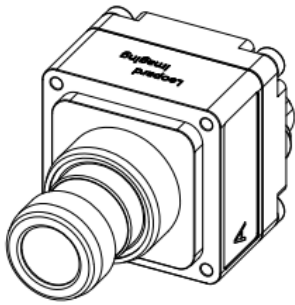
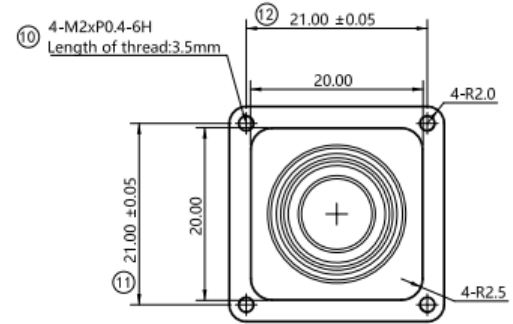
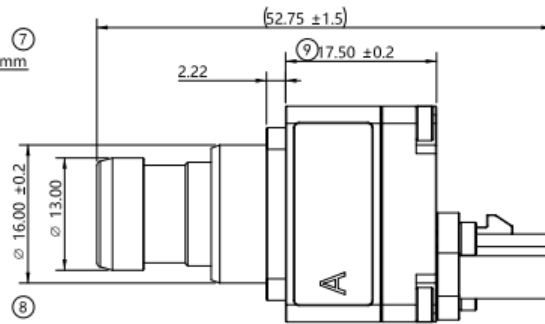
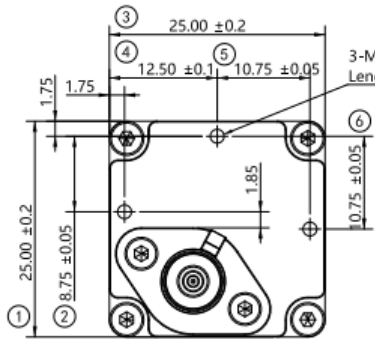
- The logo "Leopard Imaging" is on the TOP.

## CABLE CONNECTOR

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



## DIMENSIONS: LI-VENUS-ISX031-GMSL2-060H



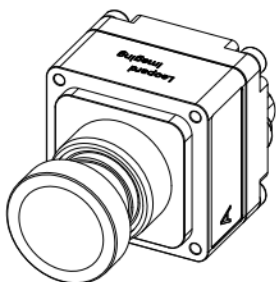
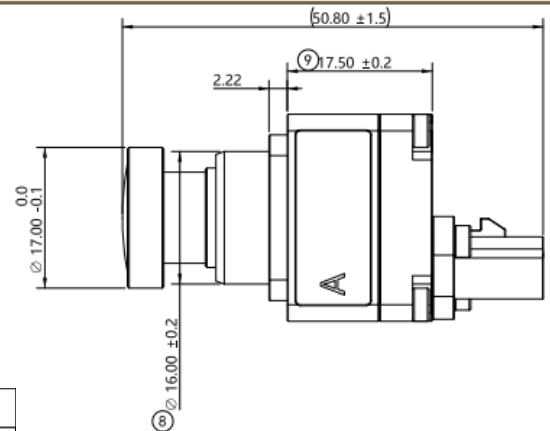
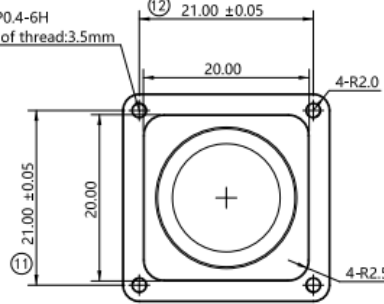
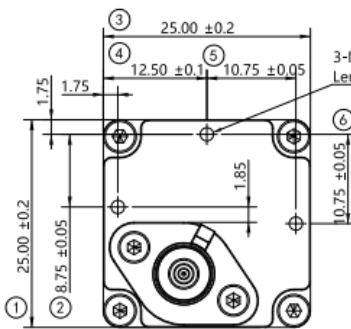
TOLERANCE TABLE		
Size X (mm)	Tolerance (mm)	Angle Tolerance (°)
0.5 < X ≤ 3	±0.1mm	±0.05°
3 < X ≤ 6	±0.1mm	±0.05°
6 < X ≤ 30	±0.2mm	±0.05°
30 < X ≤ 120	±0.3mm	±0.05°
120 < X ≤ 400	±0.5mm	±0.1°
400 < X ≤ 1000	±0.8mm	±0.1°
X > 1000	±1.2mm	±0.1°

### NOTE:

- ⊗ marked are important sizes.
- Tolerances for others unmarked – refer to the Tolerance Table.

Unit: mm

## DIMENSIONS: LI-VENUS-ISX031-GMSL2-118H



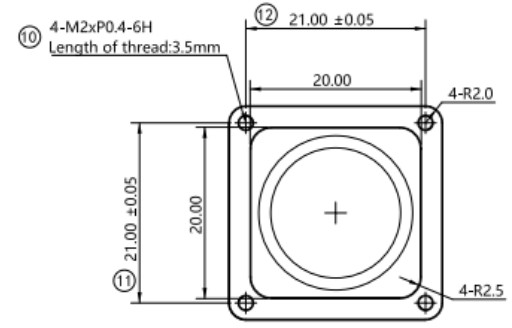
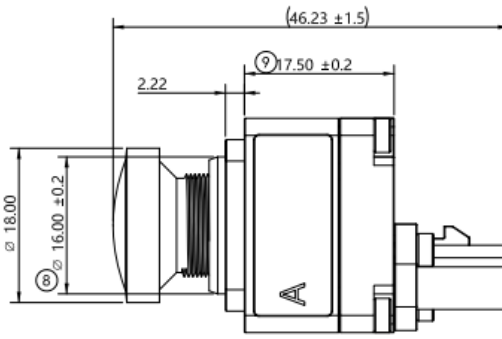
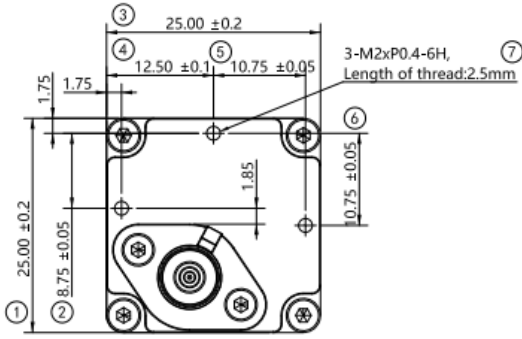
TOLERANCE TABLE		
Size X (mm)	Tolerance (mm)	Angle Tolerance (°)
0.5 < X ≤ 3	±0.1mm	±0.05°
3 < X ≤ 6	±0.1mm	±0.05°
6 < X ≤ 30	±0.2mm	±0.05°
30 < X ≤ 120	±0.3mm	±0.05°
120 < X ≤ 400	±0.5mm	±0.1°
400 < X ≤ 1000	±0.8mm	±0.1°
X > 1000	±1.2mm	±0.1°

### NOTE:

- ⊗ marked are important sizes.
- Tolerances for others unmarked – refer to the Tolerance Table.

Unit: mm

# DIMENSIONS: LI-VENUS-ISX031-GMSL2-195H



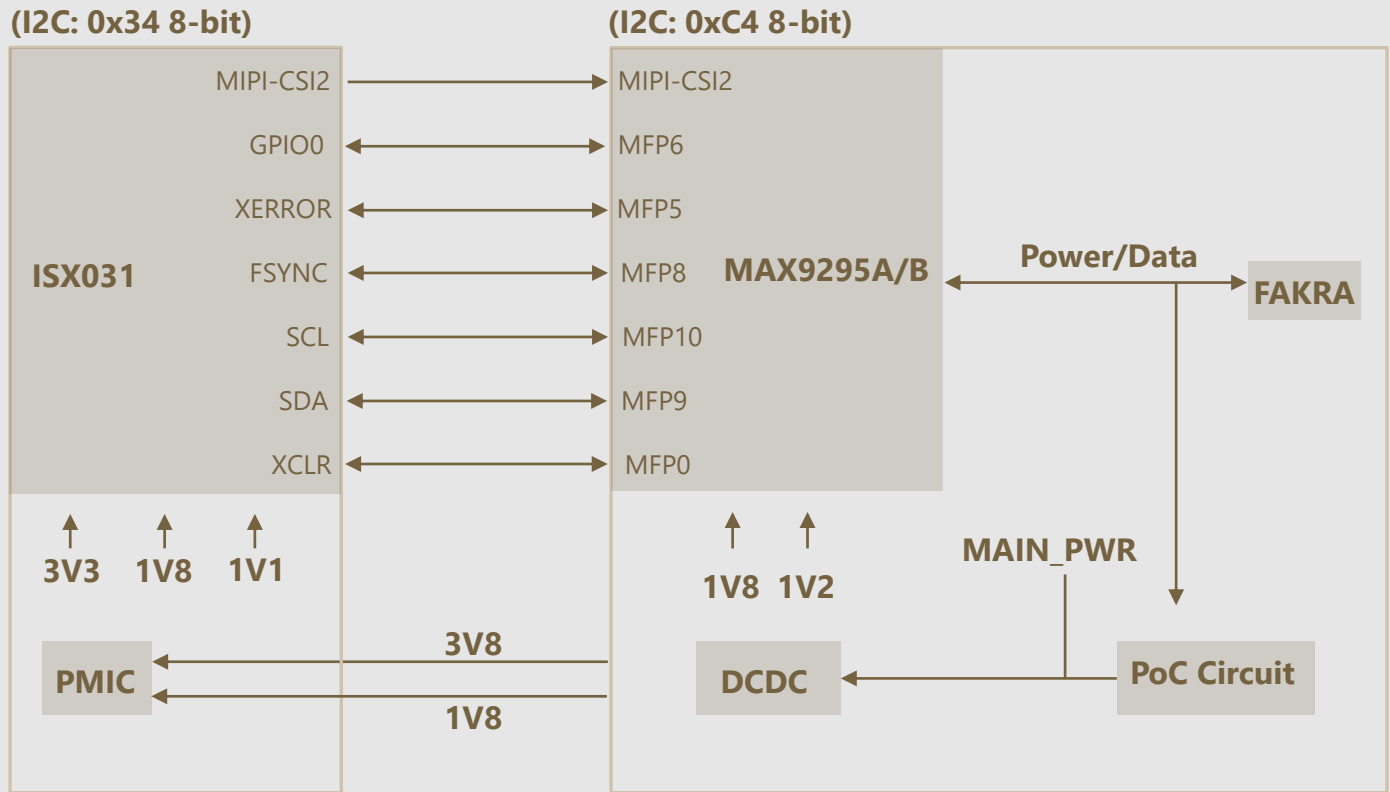
TOLERANCE TABLE		
Size X (mm)	Tolerance (mm)	Angle Tolerance (°)
0.5 < X ≤ 3	±0.1mm	±0.05°
3 < X ≤ 6	±0.1mm	±0.05°
6 < X ≤ 30	±0.2mm	±0.05°
30 < X ≤ 120	±0.3mm	±0.05°
120 < X ≤ 400	±0.5mm	±0.1°
400 < X ≤ 1000	±0.8mm	±0.1°
X > 1000	±1.2mm	±0.1°

**NOTE:**

- ⊗ marked are important sizes.
- Tolerances for others unmarked – refer to the Tolerance Table.

Unit: mm

# PINOUT CONNECTIONS



## LENS SPECIFICATIONS

**NOTE:**

xxxH refers to 060H (FOV H 60°), 118H (FOV H 118°) or 195H (FOV H 195°)

LI-VENUS-ISX031-GMSL2-060H

Lens EFL: 5.83 mm $\pm$ 2%
Aperture, F/#: 1.8 $\pm$ 5%
Field of View (FOV): 60° horizontal
Optical Distortion: < -20.7% (2Y' = 6.826 mm)
TV Distortion: < -10.19% (2Y' = 6.826 mm)
Relative Illumination: 90% (2Y' = 6.826 mm)
IR Filter: 650 nm IR cut filter
Mount: M12
IP Rating: IP69K

LI-VENUS-ISX031-GMSL2-118H	LI-VENUS-ISX031-GMSL2-195H
	
Lens EFL: 3.021 mm $\pm$ 5%	Lens EFL: 1.51 mm $\pm$ 5%
Aperture, F/#: 2.0 $\pm$ 5%	Aperture, F/#: 2.0 $\pm$ 5%
Field of View (FOV): 118° horizontal	Field of View (FOV): 195.9° $\pm$ 3° horizontal (y = 2.880 mm)
Optical Distortion: -62.41% $\pm$ 5% (f-tan $\theta$ )	F- $\theta$ Distortion: -154.2% (y = 3.025 mm)
Relative Illumination: > 45.0%	Relative Illumination: 37% (y = 3.025 mm)
IR Filter: 700 nm IR cut filter	IR Filter: 650 nm IR cut filter
Mount: M12	Mount: M12
IP Rating: IP6K9K	IP Rating: IP69K

# USB3.0 CAMERA KIT

LI-GMSL2-USB



Top View



Bottom View

LI-VENUS-ISX031-GMSL2-xxxH can connect to LI-GMSL2-USB as a USB 3.0 camera.

Part#: **LI-USB30-VENUS-ISX031-GMSL2-xxxH**

## SPECIFICATIONS

- USB 3.0 Super Speed support
- UVC compliant
- Allows customization
- 12 VDC power supply for camera
- Weight: ~ 190 g
- Single Coax Cable transmits up to 12 meters PoC (Power over Cable)
- Resolution: 1920 x 1536 @ 30 fps
- Power consumption: 97 mA @ 12 VDC
- Compatible with Windows, Linux OS and other OS which have UVC drivers



## BOM

#	Items	QTY
1	LI-VENUS-ISX031-GMSL2-xxxH	1
2	LI-GMSL2-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
0.1	Initial draft.	28 Jun 2022
0.2	1. Replaced FOVH120° lens with FOVH118° lens. 2. Updated power consumption, resolution, temp info and pinout connections diagram.	12 Aug 2022
0.3	Replaced 3D images with actual product pics and updated weight info.	25 Aug 2022
0.4	Updated power supply range and frame rate in "SPECIFICATIONS" part.	28 Nov 2022

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