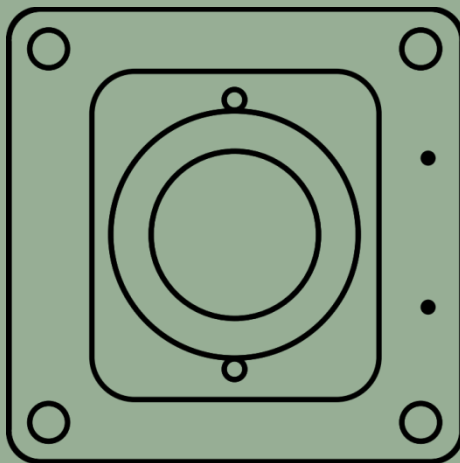


*ZEDx one core

Monocular Camera Overview

The ZED X One Core is a compact, barebone monocular camera designed for OEMs who need a vision module that fits effortlessly into small enclosures and tightly integrated robotic systems.

Its native MIPI interface connects to a capture card for low-latency acquisition, supporting up to four cameras. The capture card is compatible with the NVIDIA Jetson AGX Thor through the NVIDIA Holoscan Sensor Bridge, enabling efficient deployment of advanced edge-AI pipelines. It also supports the NVIDIA Jetson AGX Orin Developer Kit.



Rev0.1

* ZED X One Core Main Features & General Specifications



Bare bone oEM integration

The ZED X One Core is a compact, lightweight camera module designed for seamless OEM integration. Its minimal footprint fits easily into embedded enclosures and tightly integrated robotic systems.

Global shutter HD60fps

The global shutter sensor delivers distortion-free imaging with smooth Full HD capture at 60fps. It ensures sharp detail and reliable performance in fast-moving, high-dynamics applications.

Thor-ready MIPI interface

The native MIPI interface provides deterministic, low-latency data transfer for robotics. Combined with NVIDIA Holoscan and Jetson Thor compatibility, it streamlines edge-AI deployment for advanced perception pipelines.

High-performance IMU

The integrated IMU combines a 16-bit triaxial accelerometer and gyroscope with vibration resistance and ultra-low noise for precise motion tracking in dynamic environments.

Multi-camera synchronization

Hardware synchronization for multiple connected cameras at frame-level within microseconds. Capture images of the machine surroundings with multiple cameras all triggered at the same time.

versatile lens options

Choose from fisheye, wide or narrow lenses to match your field-of-view needs, from fisheye ultra-wide coverage to precise, focused inspection.

camera

sensor Type	1/2.6" 2.3MPC MOS □ Global shutter
output Resolution	1920x1200 @60fps 1920x1080 @60fps 960x600 @120fps
Image Format	16/10
output Format	Raw 10 /yu v4:2:2(Argus)
Field of View	
Fisheye lens	Max. 195° (H) x 115° (V) x 220° (D)
Wide lens	Max. 110°(H) x 80°(V) x 120°(D)
Narrow lens	Max. 80°(H) x 52°(V) x 91°(D)
Focal Length	
Fisheye lens	1.38mm (0.054")
Wide lens	2.2mm (0.086")
Narrow lens	3.8mm (0.150")
Aperture	
Fisheye lens	f/2.0
Wide lens	f/2.2
Narrow lens	f/1.8
Distortion	
Fisheye lens	+18.8% f-theta
Wide lens	< 4.39%
Narrow lens	< 6.9%
Interface	
	MIPI Micro I-PEX cable

sensors

Image	RGB Global shutter sensor
Motion	BOSCH BMI088 IMU

physical specifications

Dimensions	
Fisheye lens	27 x 27 x 29.72 mm (1.06 x 1.06 x 1.17")
Wide lens	27 x 27 x 34.52 mm (1.06 x 1.06 x 1.34")
Narrow lens	27 x 27 x 33.61 mm (1.06 x 1.06 x 1.32")
Mounting	4x 2.2mm diameter holes
Weight	
Fisheye lens	17g (0.04 lb.)
Wide lens	19g (0.04 lb.)
Narrow lens	14g (0.03 lb.)
operating Temp.	-20°C to +60°C (-4°F to 140°F)
Power consumption	
	Power via MIPI 240mA @ 5VDC max.
warranty	2-year warranty

system Requirements

system	NVIDIA Jet son
os	Jet son Linux(L4T)v35.1 or newer

* ZED X One Core Detailed Specifications

Image sensor

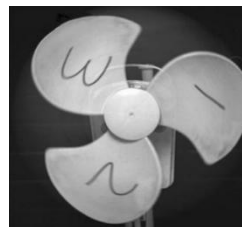
The ZED X One Core sensor delivers 2.3MP clarity and great low-light capabilities, ideal for capturing crisp and distortion-free footage of fast moving objects in robotics applications.

sensor Type	1/2.6" 2.3MPC MOS
Array size	1928x 1208 pixels
pixel size	3um x3um
shutter	Electronic al synchronized global shutter
output Resolution	1920x1200 @60fps 1920x1080 @60fps cropping mode 960x600 @120fps binning mode
output Format	RAW10(v4l2)/NV21 (Argus)
Max s/N Ratio	38dB
Dynamic Range	71.4dB
sen sivity	22.3ke/LUX*s
camera con tro	Exposure, analog & digital gain, gamma, white balance, saturation, sharpness, denoising, brightness, contrast

Distortion free images of fast moving objects



Rolling shutter



Global shutter

Motion sensor B MIO88 IMU

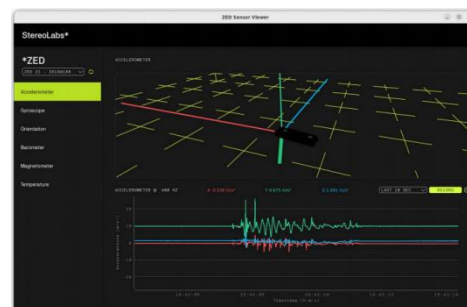
The integrated IMU is a high-performance 6-axis inertial sensor with a 16-bit triaxial accelerometer and gyroscope, providing precise orientation and motion detection of our cameras. Offering high vibration robustness and excellent temperature stability, it's ideal for harsh industrial robotics environments.

Motion sensor	BOSCH BMI088 IMU
Accelerometer Range	+/- 12G
Accelerometer Resolution	0.36 mg
Accelerometer Noise Density	3.2 mg
Gyroscope Range	+/-1000dps
Gyroscope Resolution	0.03dps
Gyroscope Noise Density	0.10dps
sensitivity Error	+/- 0.5%
output Data Rate	400 HZ

sensors AP

You can access these sensors and acquire sensor data by using the Sensors API.

Please visit stereolabs.com/docs for tutorials.



*ZED X One Core Accessories

capture card

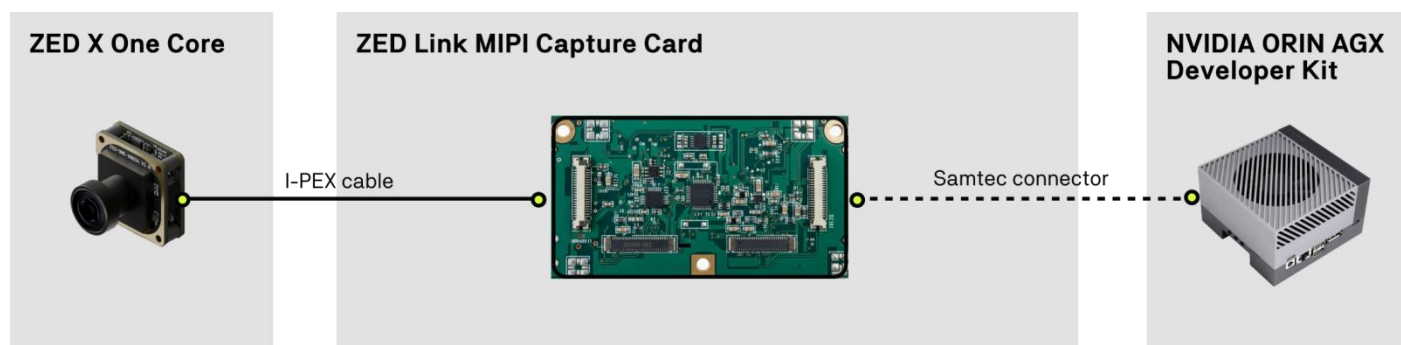
To capture the ZED X One Core on NVIDIA Jetson Thor, use ZED Link MIPI capture card that connects to NVIDIA Holoscan sensor bridge.

For Orin AGX platform, our MIPI capture card that connects directly to the Jetson's CSI port.

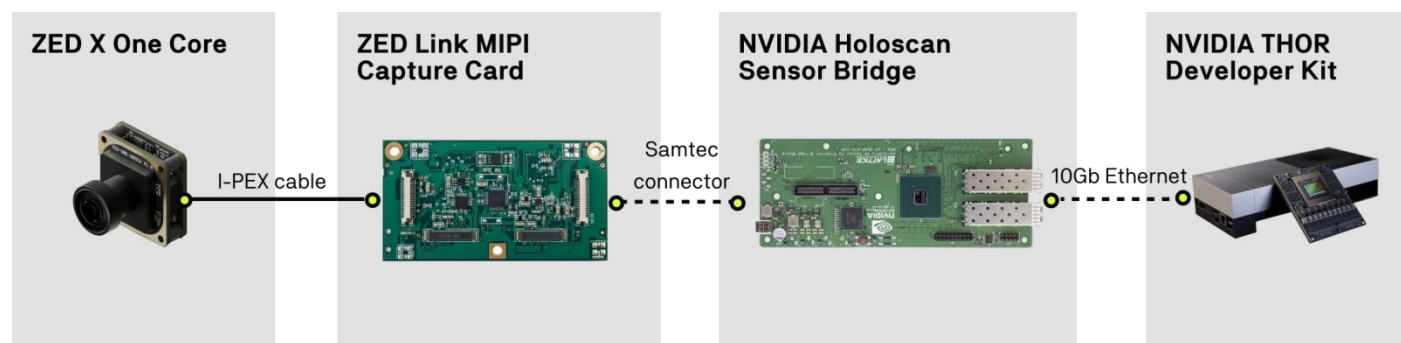


Model	ZED Link MIPI capture card
compatibility	NVIDIA Jetson AGX Orin Developer Kit (J12) NVIDIA Holoscan Sensor Bridge
Max. number of cameras	Capture 4x MIPI camera input in SD/HD, up to 1920x1200@60fps
size	75 x 40 mm

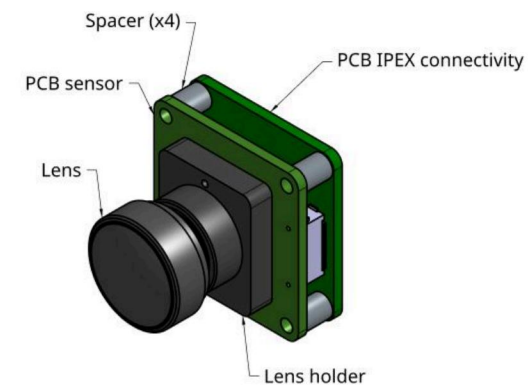
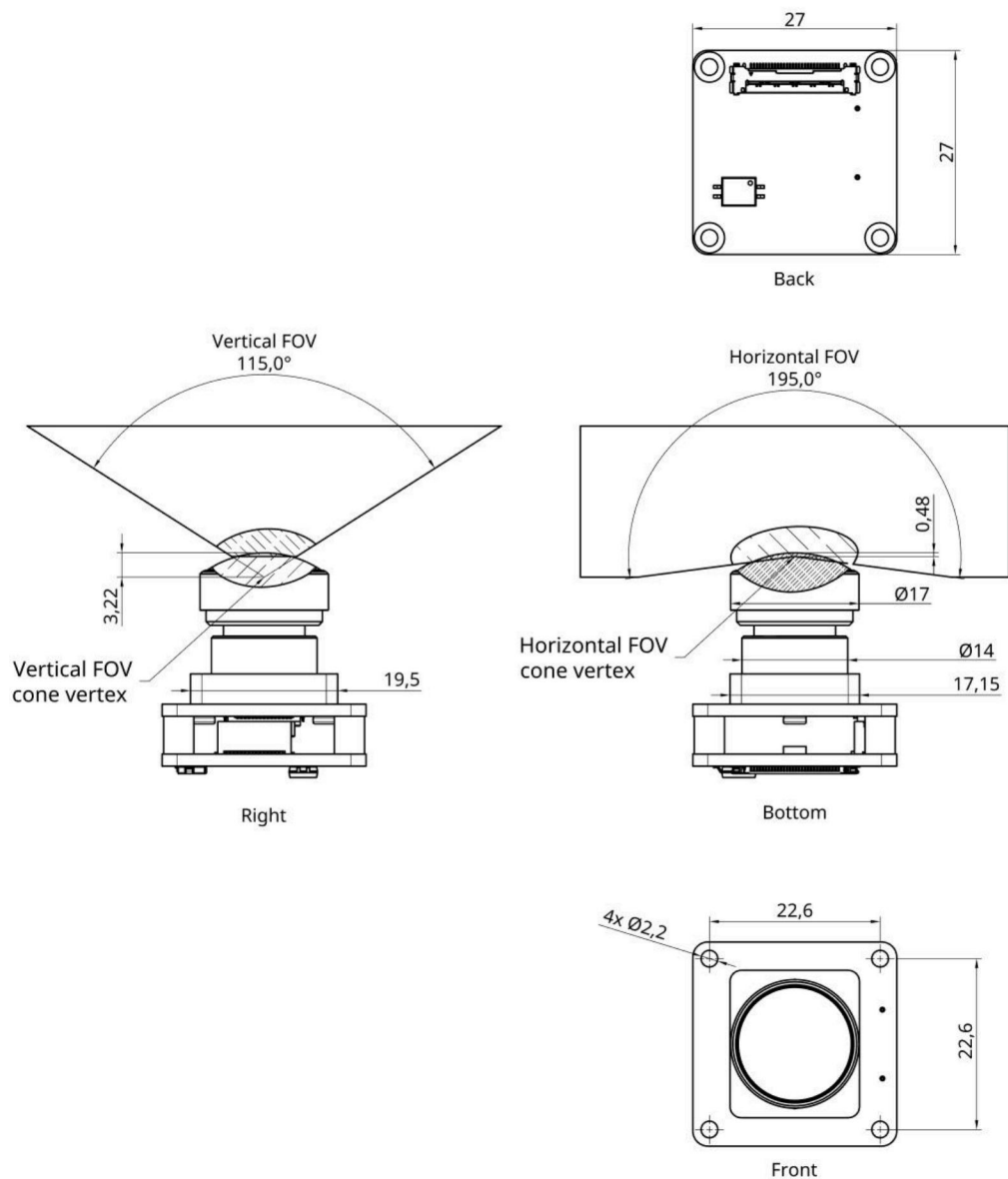
work flow overview with NVIDIA Jet son AG xor in Developer kit



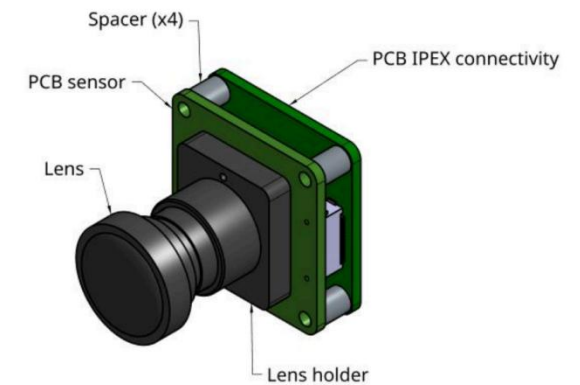
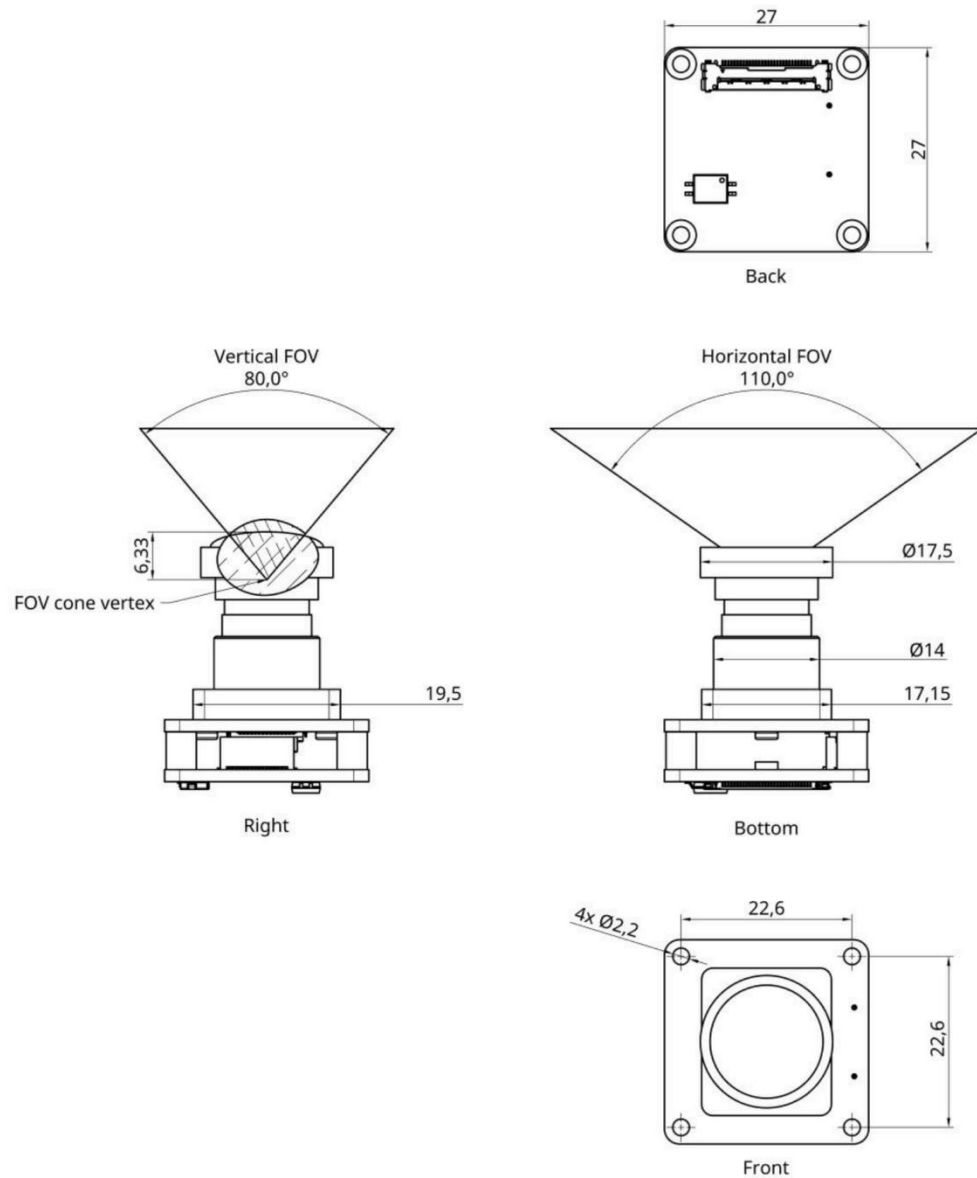
work flow overview with NVIDIA Ho los can and Jet son Thor



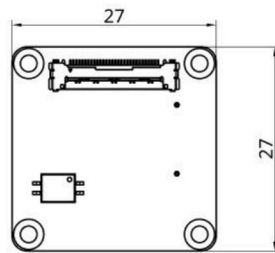
*ZED X One Core - Fisheye lens Technical Drawings



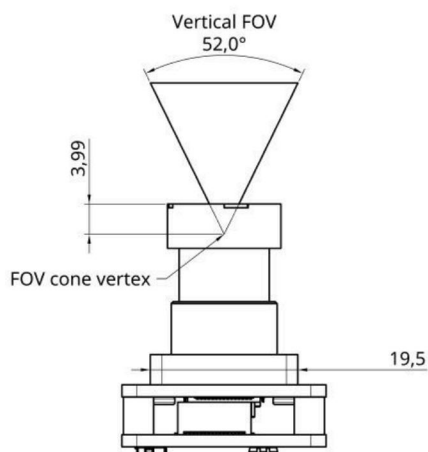
*ZED X One Core - Wide lens Technical Drawings



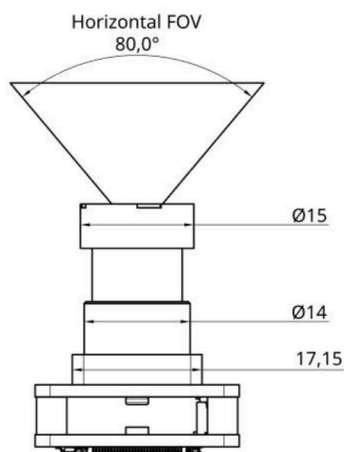
*ZED X One Core - Narrow lens Technical Drawings



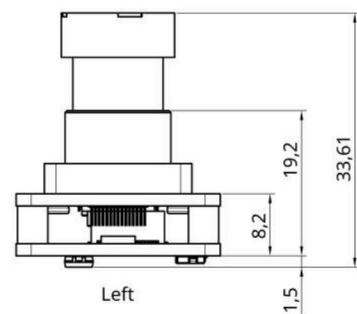
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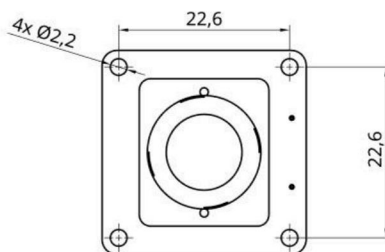
Right



Bottom



Left



Front