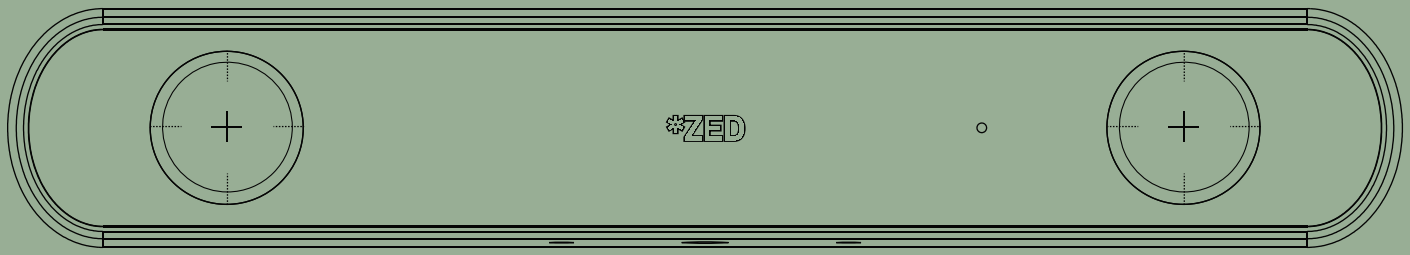
*ZED 2

Camera Overview & Datasheet

The ZED 2 is a stereo camera that provides high definition 3D video and neural depth perception of the environment. It has been designed for the most challenging applications, from autonomous navigation and mapping to augmented reality and 3D analytics.



*ZED 2 Overview

Spatial Object Detection
Detect and track object with spatial context. By combining AI and 3D the ZED 2 localizes the objects in space and provides the tools to create the next-generation spatial awareness.

Neural Depth Sensing
The ZED 2 is the first stereo camera that uses neural networks to reproduce human vision, bringing stereo perception to a new level.

All-Aluminum Case
The ZED 2 comes with a more robust all-aluminium enclosure with thermal control that compensates focal length and motion sensors biases

Built-in Sensor Stack
The most extensive sensor stack is available on ZED 2. Together with inertial data, the ZED 2 also captures elevation and magnetic field in real-time

Camera Control
The ZED 2 is a UVC video camera with low level access to the device. It provides control over all the camera parameters such as exposure, gain, sharpness, etc.

Cloud Connected
Monitor and control your camera remotely. Using the dedicated cloud platform, capture and analyze spatial data anywhere in the world. Manage your application remotely and update you camera at an time.

Technical Specifications

Camera

Output Resolution	2x (2208x1242) @15fps 2x (1920x1080) @30fps 2x (1280x720) @60fps 2x (672x376) @100fps
Field of View	Max. 110°(H) x 70°(V) x 120°(D)
Interface	USB 3.0/2.0 Integrated 1.2m cable (3.97ft)
Depth Range Max	0.3m to 20m (0.98ft to 65.6ft)
Ideal Range	5m to 12m(16.4ft to 39.4ft)
Depth Accuracy	< 0.8% at 2m (6.6ft) < 4% at 12m (39.4ft)

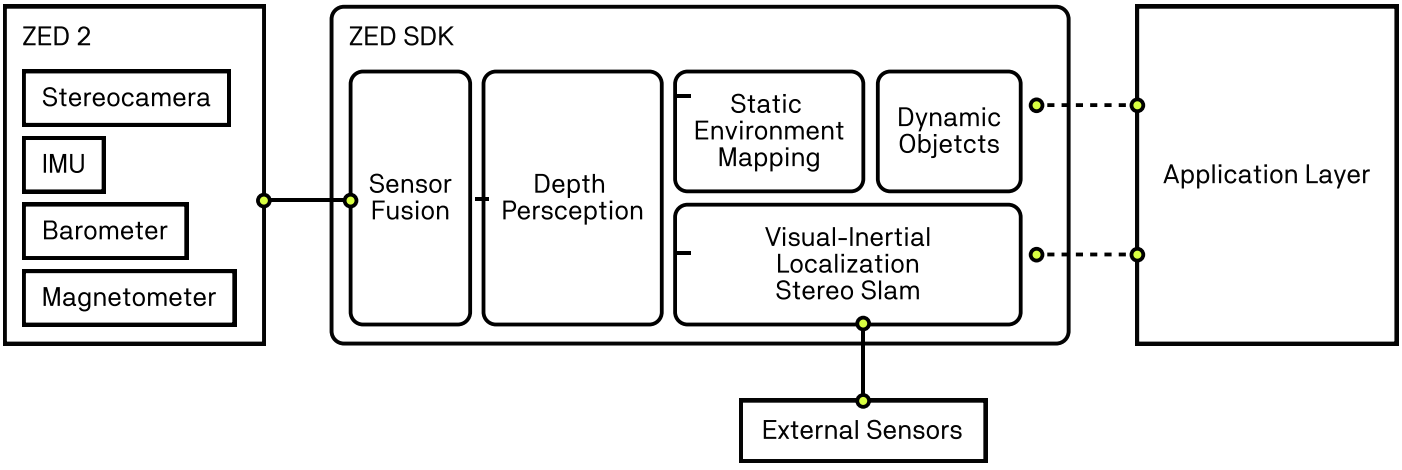
Sensors

Motion	Gyroscope, Accelerometer, Magnetometer
Environmental	Barometer, Temperature

Physical

Dimensions	174.9 x 29.8 x 31.9mm (6.89 x 1.18 x 1.25”)
Weight	164g (0.36 lb.)
Op. Temp.	-10 °C to +45°C (14°F to 113°F)
Power	380 mA / 5V USB Powered

Functional SDK Diagram



*ZED 2 Sensors Specifications

Dual Image Sensors

Sensors	
Sensor Type	⅓” 4MP CMOS
Array Size	2688 x 1520 pixels
Pixel Size	2µm x 2µm
Shutter	Electronic synchronized rolling shutter
Output Resolution	2x (2208x1242) @15fps cropping mode 2x (1920x1080) @15/30fps cropping mode 2x (1280x720) @15/30/60fps binning 2x2 mode 2x (662x376) @15/30/60/100fps binning 4x4 mode
Output Format	YUV 4:2:2 - UYVY (8 bits)
Max S/N Ration	38.3 dB
Dynamic Range	64.6 dB
Sensitivity	1900 mV/Lux-sec

Lenses

Baseline	120mm (4.7”)
Focal Length	2.12mm (0.08”)
Field of View	Max. 110° (H) x 70° (V) x 120° (D)
Aperture	f/2
TV Distortion	<4.8%

System Requirements

Supported OS	Win 10, Win 11 Ubuntu 20 & 22 Debian, CentOS (via Docker) Jetson L4T Dual-core ≥ 2.4GHz processor Minimum 4GB RAM
GPU	NVIDIA GPU ≥ 2GB Memory NVIDIA Compute capability ≥ 3.0
Compatible with	NVIDIA Jetson Xavier/Orin

Motion / Environmental Sensors

Inertial Measurement Unit	
Accelerometer Range	+/- 8G
Accelerometer Resolution	0.244 mg
Accelerometer Noise Density	3.2 mg
Gyroscope Range	+/- 1000 dps
Gyroscope Resolution	0.03 dps
Gyroscope Noise Density	0.16 dps
Sensitivity Error	+/- 0.4%
Output Data Rate	400 Hz

Magnetometer

Magnetic Field Range	+/- 2500 µT (z) +/- 1300 µT (x,y)
Magnetic Field Resolution	0.3 µT
Output Data Rate	10 Hz

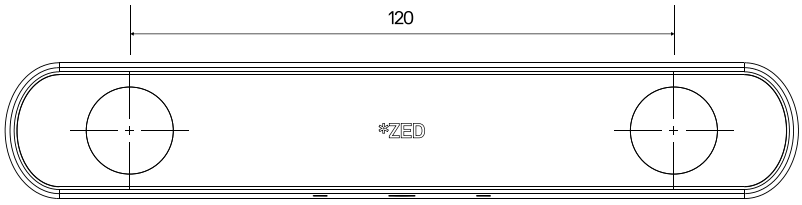
Barometer

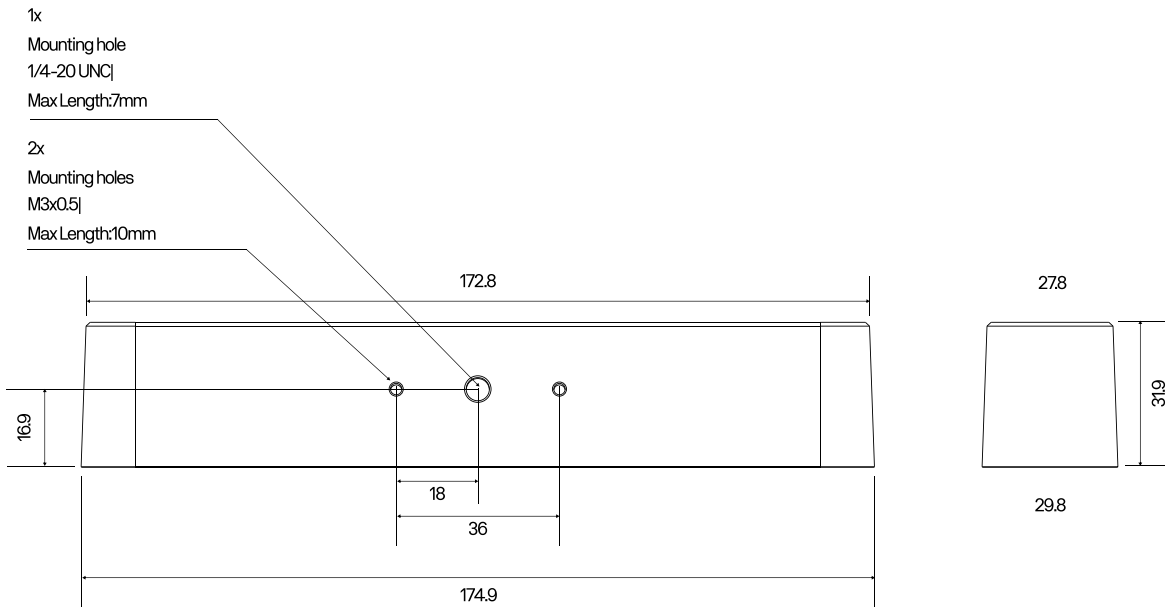
Pressure Range	300 to 1100 hPa
Pressure Resolution	0.18 Pa
Relative Pressure Accuracy	0.12 hPa
RMS Noise	0.2 Pa
Output Data Rate	25 Hz

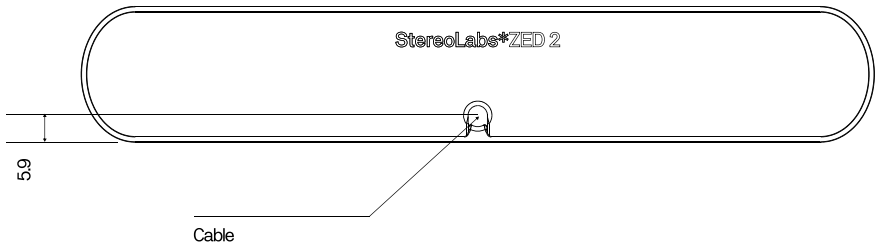
Temperature Sensors

Temperature Range	-40 to 125°C (-40 to 257°F)
Abs. Temperature Accuracy	+/- 0.5°C
Output Data Rate	25 Hz

*ZED 2 Technical Drawings

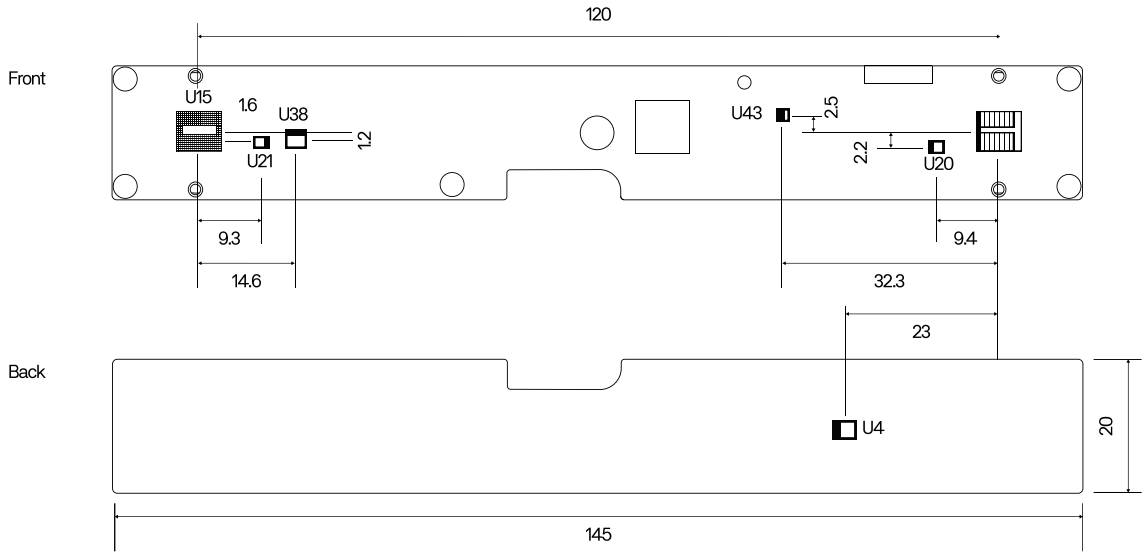






*ZED 2 Technical Drawings

Sensors Diagram



U4	IMU - Accelerometer	U21	Temperature Sensor Right
U12	Image Sensor Left	U38	Barometer
U16	Image Sensor Right	U43	Magnetometer
U20	Temperature Sensor Left		

*ZED 2
Part Number

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Cable	ZED 2
None	ZED-211000