

# ZED 2



## ZED 2 Camera and SDK Overview

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.

## All-Aluminium Case

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

## 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.

## General Specifications

### Camera

Output Resolution	Side by Side 2x (2208x1242) @15fps 2x (1920x1080) @30fps 2x (1280x720) @60fps 2x (672x376) @100fps
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Field of View Max. 110°(H) x 70°(V) x 120°(D)

Interface USB 3.0/2.0 - Integrated 1.2m cable

Depth Range 0.3 m to 20 m (1 to 65.6 ft)

Depth Accuracy < 1% up to 3m  
< 5% up to 15m

## 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.

## 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.

## 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 your camera at any time.

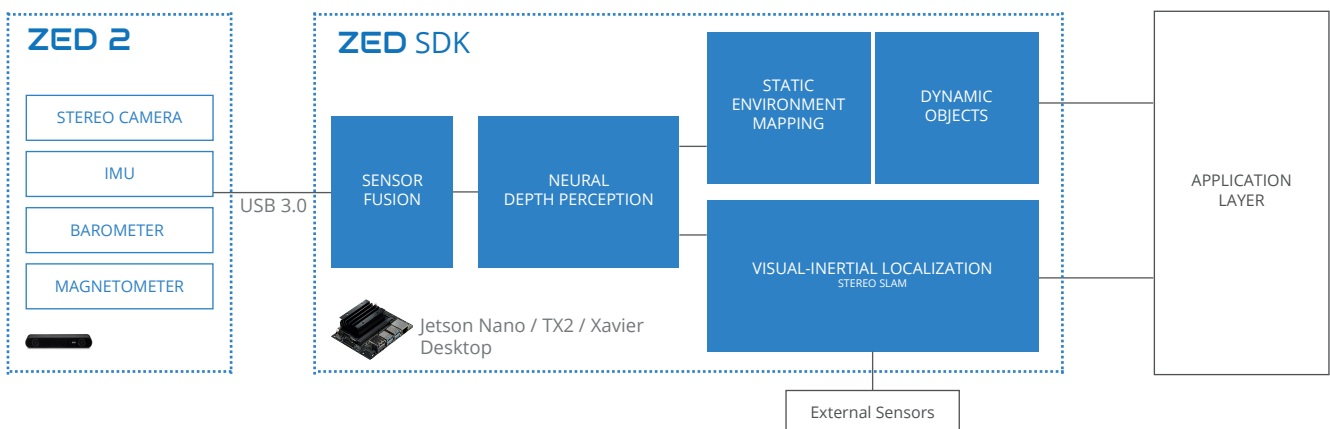
### Sensors

Motion	Gyroscope, Accelerometer Magnetometer
Environmental	Barometer Temperature

### Physical

Dimensions	175 x 30 x 33 mm (6.89 x 1.18 x 1.3")
Weight	166g (0.36 lb)
Operating Temp.	-10°C to +45°C (14°F to 113°F)
Power	380mA / 5V USB Powered

## Functional SDK Diagram



# ZED 2 Detailed Specifications

## Dual Image Sensors

### Sensors

Sensor Type	1/3" 4MP CMOS	
Array Size	2688 x 1520 pixels	
Pixel Size	2µm x 2µm	
Shutter	Electronic synchronized rolling shutter	
Output Resolution (Side by side)		
	2x (2208x1242) @15fps	cropping mode
	2x (1920x1080) @15/30fps	cropping mode
	2x (1280x720) @15/30/60fps	binning 2x2 mode
	2x (672x376) @15/30/60/100fps	binning 4x4 mode
Output Format	YUV 4:2:2 - UYVY (8bits)	
Max S/N Ratio	38.3 dB	
Dynamic Range	64.6 dB	
Sensitivity	1900 mV/Lux-sec	

### Lenses

Baseline	120 mm (4.7")
Focal Length	2.12mm (0.08")
Field of View	Max. 110°(H) x 70°(V) x 120°(D)
Aperture	f/1.8
TV Distortion	5.07%

## System Requirements

### Supported OS

Windows 10 - 64 bit  
Ubuntu 16.04/18.04 - 64 bit  
Debian, CentOS (via Docker)  
Jetson L4T

### CPU

Dual-core ≥ 2.4GHz processor  
Minimum 4GB RAM

### GPU

NVIDIA GPU ≥ 2GB Memory  
NVIDIA Compute capability ≥ 3.0  
Compatible with:  
• NVIDIA Jetson Nano  
• NVIDIA Jetson TX2  
• NVIDIA Jetson Xavier

## 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	50 Hz

### Barometer

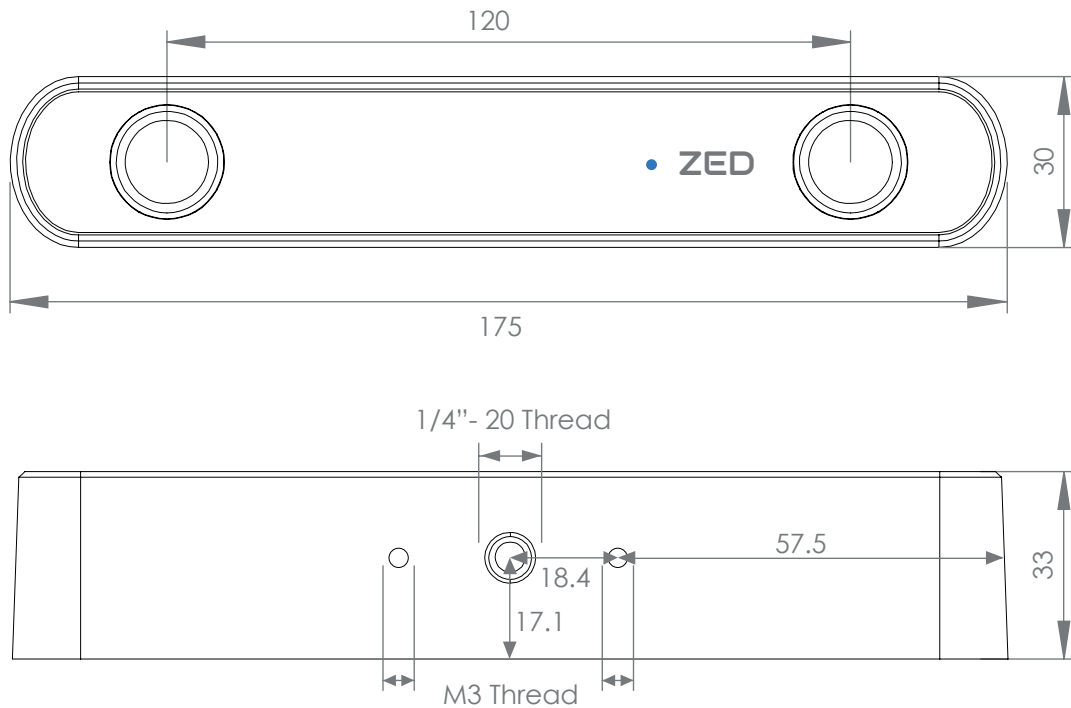
Pressure Range	300 to 1100 hPa
Pressure Resolution	0.18 Pa
Relative Pressure Accuracy	0.12 hPa
RMS Noise	0.2 Pa
Output Data Rate	25 Hz

### Temperature Sensors

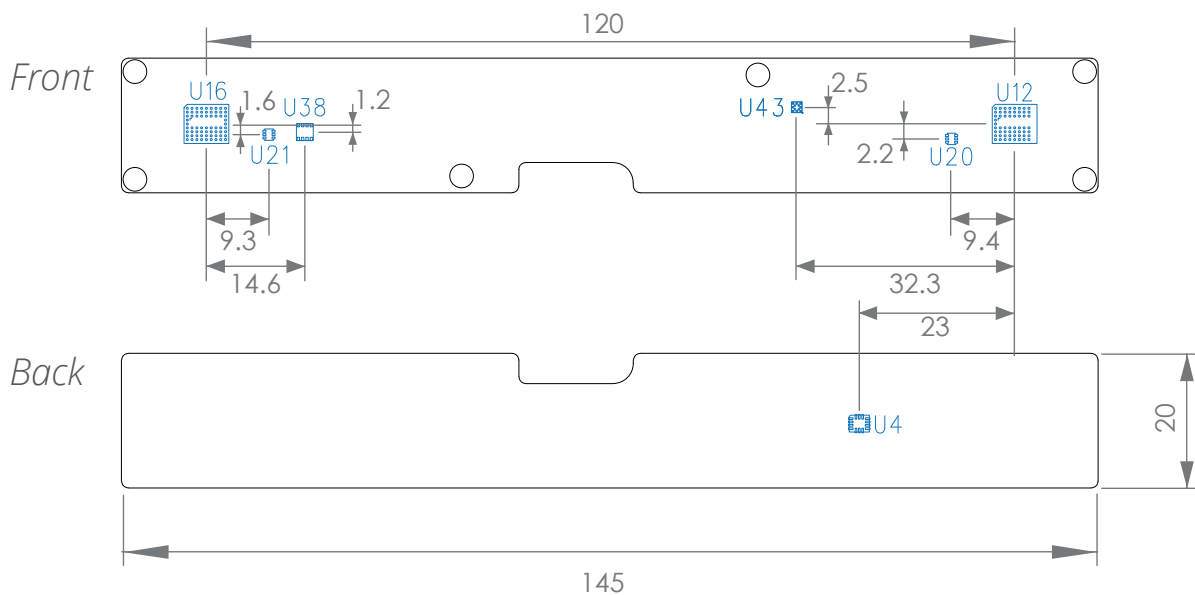
Temperature Range	-40 to 125 °C
Abs. Temperature Accuracy	+/- 0.5 °C
Output Data Rate	25 Hz

# ZED 2 Mechanical Drawing

Dimensions are in mm



## Sensors Diagram



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