

# OAK-D-Lite

[docs.luxonis.com/projects/hardware/en/latest/pages/DM9095.html](https://docs.luxonis.com/projects/hardware/en/latest/pages/DM9095.html)



## Overview

OAK-D-Lite takes the affordability idea and pushes it one step forward. By having the same SpatialAI functionality as OAK-D with a smaller weight and form factor, it gives you the opportunity to create all sorts of projects.

It is meant to be used by anyone, anywhere. The Swiss Army Knife of Computer Vision.

## Hardware Specifications

This OAK camera uses USB-C cable for communication and power. It supports both USB2 and USB3 (5Gbps / 10Gbps).

Camera Specs	Color camera	Stereo pair
Sensor	<u>IMX214</u>	<u>OV7251</u>
DFOV / HFOV / VFOV	81° / 69° / 54°	86° / 73° / 58°
Resolution	13MP (4208x3120)	480P (640x480)

Camera Specs	Color camera	Stereo pair
Focus	AF: 8cm - $\infty$ <b>OR</b> FF: 50cm - $\infty$	Fixed-Focus 6.5cm - $\infty$
Max Framerate	60 FPS	200 FPS
F-number	2.2 $\pm$ 5%	2.2
Lens size	1/3.1 inch	1/7.5 inch
Effective Focal Length	3.37mm	1.3mm
Distortion	< 1%	< 1.5%
Pixel size	1.12 $\mu$ m x 1.12 $\mu$ m	3 $\mu$ m x 3 $\mu$ m

## Myriad X inside

This OAK camera has on-board **Myriad X** VPU ([product.pdf](#)). Main features:

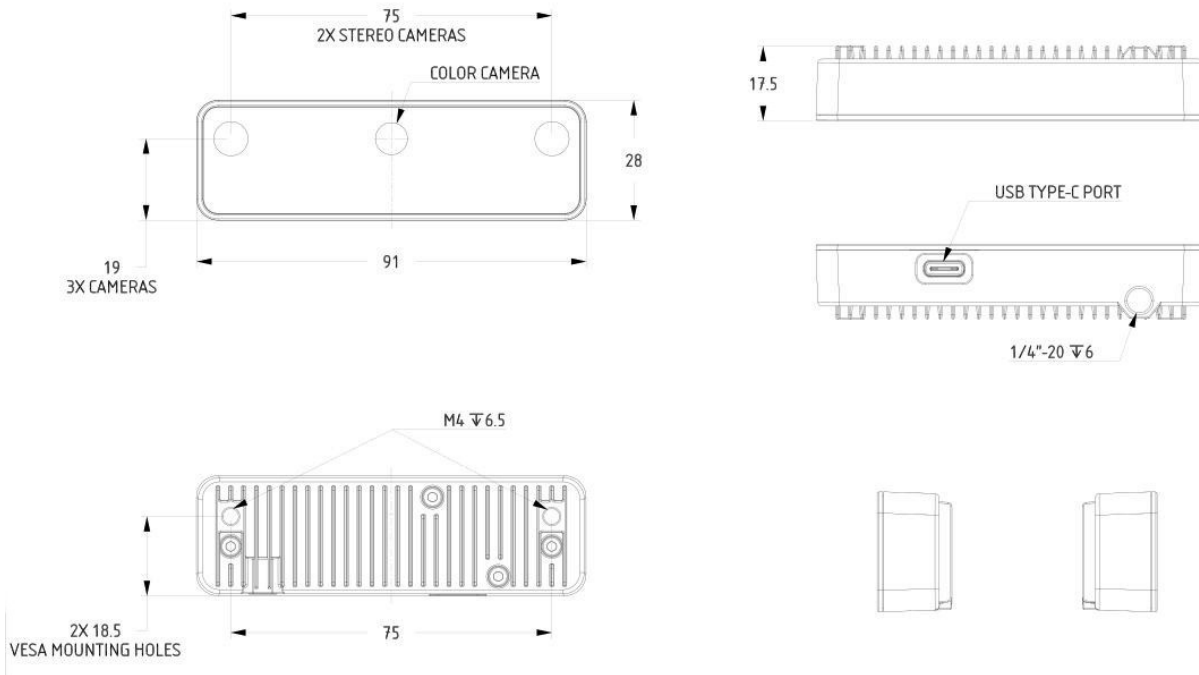
- **4 TOPS** of processing power (1.4 TOPS for AI)
- **Run any AI model**, even custom architected/built ones - models need to be converted.
- **Encoding**: H.264, H.265, MJPEG - 4K/30FPS, 1080P/60FPS
- **Computer vision**: warp/dewarp, resize, crop via [ImageManip](#) node, [edge detection](#), [feature tracking](#). You can also [run custom CV functions](#)
- **Stereo depth** perception with filtering, [post-processing](#), [RGB-depth alignment](#), and high [configurability](#)
- **Object tracking**: 2D and 3D tracking with [ObjectTracker](#) node

## Fixed-focus vs Auto-focus

When ordering the OAK-D-Lite, you can select whether you want **Fixed-focus** (FF) or **Auto-focus** (AF) **on the color camera**. You should select FF if you are mounting OAK camera to something that vibrates. You should select AF when you need things closer than ~50cm to be in focus. More information can be found at [Auto-Focus vs Fixed-Focus](#).

## Dimensions and Weight

- Width: 91 mm
- Height: 28 mm
- Length: 17.5 mm
- Baseline: 75 mm
- Weight: 61 g



## Depth perception

This OAK camera has a baseline of 7.5cm - the distance between left and right stereo camera. Minimal and maximal depth perception depends on camera FOV, resolution, and baseline - more information [here](#).

- Min distance: ~20cm (480P, extended), ~35cm (480P)
- Maximal perceiving distance: ~ 19.1 meters

**Extended** means that StereoDepth node has **Extended disparity** mode enabled, more information [here](#). Maximum perceivable distance calculation [here](#).

## Power consumption

- Standby: 0.6 W
- Running depthai\_demo.py: 4 W

- Max consumption: 4.5 W

Occasional power spikes of 2W may occur when running videoEncoder and/or Neural Network. OAK-D-Lite can be also powered off of USB3.

## Operating temperature

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We have tested OAK-D-Lite with the following command which should inflict the highest consumption:

```
python3 depthai_demo.py -enc color -s color left right depth
```

and after 90 minutes, we received the following temperatures:

- Enclosure: 56.3 °C
- MyriadX: 73.53 °C

The operating temperature range of the Myriad X VPU (die temperature) is -40 °C to 105 °C. The die temperature can get to about +35°C from the ambient temperature. Note that the stable image temperature of the camera sensor is 0 °C to +50 °C (operating temperature -30 °C to +70 °C).

