

dp.oak



dp.oak is a plugin for the [Cycling '74 Max](#) development environment to use the [Luxonis OAK sensor](#) with a Windows computer.



Get started

Download, trial, license

Get a [download, trial, or license](#) from the store.

System requirements

- Windows 11 is best. Windows 10 is [possible](#). Always 64-bit.
- [Cycling74 Max requirements](#)
- [Luxonis OAK requirements](#)
- Luxonis OAK [RVC2 generation sensor](#)

Setup

- 1 Install [Cycling'74 Max](#) version 6.1.9 or newer (64-bit)
- 2 Download dp.oak from <https://hidale.com/shop/dp-oak/>

▼ QUICK JUMP

[Get started](#)[Download, trial, license](#)[System requirements](#)[Setup](#)[Register](#)[Learn](#)[Tutorials](#)[Attributes](#)[Methods](#)

- 3 [Decompress](#) all the files in this download into an empty folder
- 4 [Register](#) dp.oak

OPTIONAL BODY TRACKING

This neural net enables body tracking for six people.

- 1 Download the neural net model for body tracking
 - Open the dp.oak help file, click on the `body joints` tab, click download
 - Or download [movenet_multipose_lightning_1_int32_op15_H160_W256.onnx](#)
- 2 Place the model in the same folder as the dp.oak plugin

WINDOWS 10 SUPPORT

We recommended Windows 11. Windows 10 19H1 (version 1903) or newer is possible, but may include an outdated DirectML, causing Max console warnings. If you see these warnings and need GPU support for machine learning or skeleton tracking, move `DirectML.dll` from the plugin's `optional` folder into the same folder as `onnxruntime.dll`. Restart Max.


POWER OVER ETHERNET (POE)

Luxonis PoE sensors are now long-term reliable by updating the OAK PoE factory bootloader to v0.0.28+ and using plugin v1.3.20240825+. ⚠️ Firmware updates are at your own risk! Luxonis made this [requirement](#) and [recommends using their Device Manager](#) to fix their bugs.

Register

- 1 Evaluate dp.oak with a 14-day no-cost trial. When the plugin meets your needs, please visit <https://hidale.com/shop/dp-oak/> to purchase a license from the store.
- 2 Open the help file or patch included within the dp.oak download.
- 3 Click the top-left `Register` tab.
- 4 Optional: Start a 14-day no-cost trial by clicking `register trial` then skip to the last step.
- 5 Type your registration name in the field beside the `register` button. You received your registration name in an email from the online store. 🤖 Your registration name is usually *not your email address*.
- 6 Click the register button and use the dialog box that appears to select your dp.oak registration key (.dpreg file)
- 7 You should see a successful registration. If not, please look at the Max console for any warnings or errors.

Learn

Use search  at the top or all below to find tutorials, features, attributes, methods, and more.

Tutorials

[Skeleton Joint](#) Learn how to get the real-world XYZ position of your left hand relative ...

[Changes Color:](#)

[View Sensor](#) Learn how to view depth data (depthmap) as a monochrome image. A

[Depthmap:](#) depthma...

Attributes

[@accel:](#) Acceleration XYZ vector usually pointing towards gravity (where 1 unit = ...

[@align:](#) Align data to the perspective of the depth or color camera. This affects...

[@anim:](#) Parent jit.anim.node name adds plugin to jit.anim.node hierarchy.

[@colorexposure:](#) Color camera exposure in microseconds (μ s) and ISO sensitivity.

[@colorfocus:](#) Color camera focus position; automatic or manual.

[@colormap:](#) Color image output in choice of pixel format on the second outlet.

[@colormapres:](#) Resolution of color image that was enabled with @colormap

[@colortype:](#) Color component in 8-bit unsigned integer or 32-bit normalized float. Th...

[@decodercolor:](#) Decoder for color images (e.g. MJPEG sensor data). Deprecated.

[@depthconf:](#) Filter depth pixels by the normalized confidence of their depth value. T...

[@depthfps:](#) Depth camera native capture frame rate expressed as frames per second (H...

[@depthmap:](#) Depth output on the first outlet. This combined with resolution @depthma...

[@depthmapres:](#) Resolution of depth image that was enabled with @depthmap.

[@depthvis:](#) Depth visibility filter removes double images and edge artifacts in imag...

[@distmeter:](#) Distance output in meters 1 or millimeters 0. This affects all distance ...

[@flipx:](#) Flip or negate X-axis values of output (matrix images, joint positions, ...

[@floorout:](#) Calculate the floor plane on each bang, update the @floor attribute, and...

[@hardware:](#) Identify/select sensor hardware model. It is read-only on some plugins. ...

[@idsensor:](#) Bind specific sensor to the plugin. If @idsensor is not set when the plu...

[@indicator:](#) Enable streaming/recording indicator (e.g. LED) on the sensor. Not all s...

[@irdot:](#) Infrared (IR) laser dot projector brightness normalized to [0.0..1.0].

@irflood:	Infrared (IR) flood light brightness normalized to [0.0..1.0].
@irgamma:	Apply gamma correction to infrared image enabled with @irmap. Use to bri...
@irmap:	Infrared (IR) image output on the third outlet. This, resolution @irmapr...
@irtype:	Infrared (IR) values in 8-bit unsigned integer, long signed integer, or ...
@mlcompute:	Machine learning compute engine and device. Enable multiple compute devi...
@mlcrop:	Crop inference input. Replaced by @mlinput
@mlinput:	Machine learning input and preprocessing actions. For example, color in ...
@mlmean:	Subtract mean from inference input values. Replaced by @mlinput
@mlmodel:	Run machine learning inference with an ONNX model.
@mlscale:	Scale inference input values. Replaced by @mlinput
@mlswapch:	Swap inference input channels. Replaced by @mlinput
@monoexposure:	Monochrome camera exposure in microseconds (μ s) and ISO sensitivity.
@mount:	Mount rotation of sensor in clockwise degrees; may optimize ai models li...
@name:	Unique plugin instance name. Other Max objects can bind to this name.
@opencl:	OpenCL device for image processing (e.g. flipx, undistort, align, etc.) ...
@orientformat:	Skeleton joint orientation as quaternion, 4x4 matrix, hierarchical, or a...
@pipeline:	Sensor data transforms and output can be multi-threaded and triggered wi...
@pointcloud:	Format of pointcloud output as three or four floating point values.
@posconfidence:	Filter skeleton body, joints, and face by their confidence. This confide...
@position:	Offset the origin of sensor data to this XYZ value. That is, translate s...
@powerfreq:	Reduce video banding and flicker related to regional power frequency.
@quat:	Rotate data by a quaternion in the form: i j k w. This is always synchro...
@register:	Register a license or get the status of registration.
@rotate:	Rotate data by an angle (degrees) around an XYZ vector in the form: angl...
@rotatemethod:	Rotate data to compensate for gravity. This compensation is combined wit...
@rotatexyz:	Rotate data by Euler angles (degrees) around the positive x, y, and z ax...

- @scale:** Scale the sensor data by this XYZ value. That is, multiply sensor data a...
- @skelcompute:** Skeleton tracking compute engine and device. Enable multiple compute dev...
- @skeleton:** Skeleton, joint, and user tracking output on the fifth outlet. Output fo...
- @skeletonformat:** Message format for skeleton joints, users, faces, etc. Native Max messag...
- @skelmodel:** Machine learning model used for skeleton and joint tracking
- @smoothing:** Smoothing for skeleton joint values with either a simplified one paramet...
- @timestamp:** Timestamps for skeleton and matrix data as microseconds since the Epoch.
- @transcoder:** Transcoder for image formats, e.g. transcoding MJPEG sensor data to colo...
- @type:** Depthmap value in signed integer, 32-bit float, or 64-bit float. This ty...
- @undistort:** Undistort the depth, color, infrared, and playermap output. The undistor...
- @undistortscale:** Scale factor for undistortion and cropping of unwanted/invalid pixels wh...
- @unique:** Unique-only matrices and messages; bang may not output when no changes. ...
- @verbose:** Verbose warnings and errors output to the Max Window for troubleshooting...
- @whitebalance:** White balance in degrees Kelvin temperature to adjust for lighting condi...

Methods

- bang:** Query the plugin for updated data. Then, output matrices and messages fr...
- close:** Close and teardown the currently open connection to a sensor.
- firmware:** Firmware version query and update for supported sensor devices.
- getports:** Get status of sensor ports; like those for synchronization.
- getusblist:** Output supported sensor identifiers on the dumpout outlet. These identif...
- open:** Open and initialize the connection to a sensor. When @idsensor has not b...
- unregister:** Unregister and remove a license.

© Dale Phurrough