Cepton Quick Start Guide

Thank you for choosing Cepton. Led by industry veterans with deep experience in lidar and advanced imaging, we aim to provide top-quality, cost-effective lidar solutions for the automotive, security, transport infrastructure, industrial, IoT and mapping markets.

Powered by our patented Micro Motion Technology™ (MMT™), this state-or-the-art lidar sensor features a unique scan pattern to deliver dense and uniformly distributed point cloud for long-range and high-resolution 3D sensing – you should be able to see it soon, so enough advertising – let's get started!

Table of Contents

A. Components

The below equipment is required to operate your Cepton lidar:

- Cepton lidar sensor
- M12 RJ45 Sensor Interface Cable (3m)
- Sensor 12v Power Supply

Figure 1 (left to right): Cepton lidar sensor, M12 RJ45 interface cable, 12V power supply.

In addition, you will need a computer with 64-bit architecture and access to the internet to download the CeptonViewer.

B. Downloading the CeptonViewer and SDK

The CeptonViewer tool enables you to quickly connect to the sensor and visualize the point cloud. CeptonViewer can be downloaded from the /setup folder of the SDK repository. Click on the file that you want and then the download button:

CeptonViewer: https://ceptontech.github.io/cepton_sdk_redist/cepton_viewer.html

Cepton SDK: https://github.com/ceptontech/cepton_sdk_redist

C. Mounting the Sensor

The sensor vibrates during normal operation. We recommend mounting the sensor using vibration isolating rubber or foam. Please see the ***Hardware User Guide*** for more details about the sensors mechanical interface and mounting options.

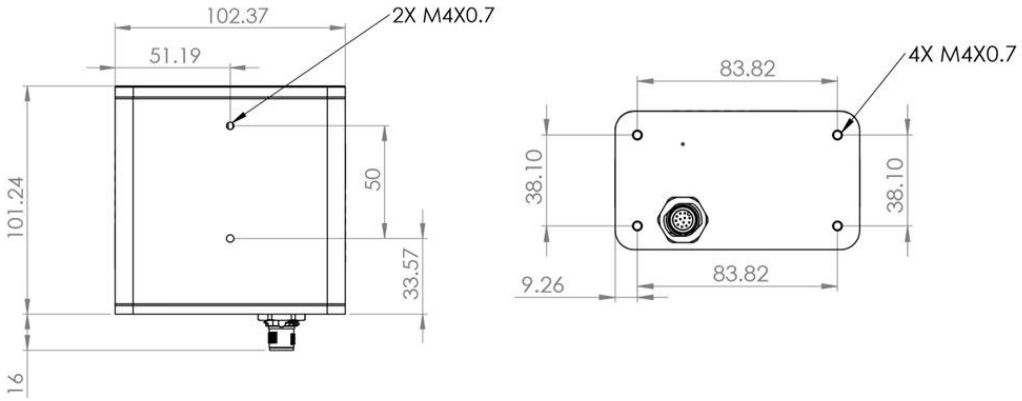


Figure 2 Example of Vista-P60 mounting drawing of the sensor.

D. Connecting and Powering Up the Sensor

1. Take the sensor cable and connect the M12 female to the M12 male located on the back facet of the sensor*. If you are using Linux, please see* Section F*.*

Figure 3 Connecting the M12 connector to the sensor.

The M12 connector is keyed. Please make sure the key is aligned to avoid damaging the pins.

2. Connect the RJ45 ethernet end of the interface cable to your computer
3. Plug in the power supply to a power outlet and connect the power to the barrel connector on the interface cable

The grey DB9 connector is a GPS antenna connector that can attach to common GPS receiver to provide timestamp to the unit. For quick start up it is not needed. Please see the ***Hardware User Guide*** for more details on connecting a GPS to the sensor.

E. Visualizing the Data

After everything is connected and powered on, you can now visualize the data by using the CeptonViewer that you had downloaded earlier. If everything is connected correctly, the screen will show a point cloud. Below is an example of the raw point cloud colored by the Z axis. For additional information on how to use the CeptonViewer and its features, please see the ***Software User Guide***.

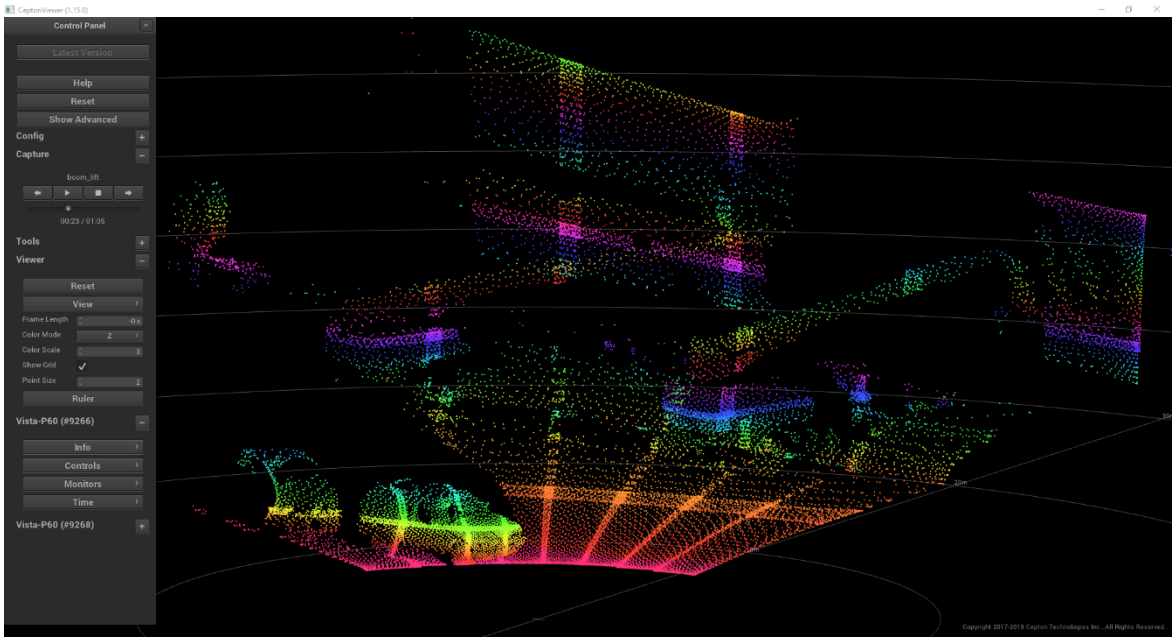


Figure 4 CeptonViewer software with raw point cloud colored by Z axis.

F. Troubleshooting

Linux

On Ubuntu, it is necessary to assign a static IP address to the host computer's Ethernet interface (e.g. IP= 192.168.0.1, Netmask= 16). This can be done through the NetworkManager GUI.

Windows/MacOS

The most likely problem is that the firewall is blocking network access to CeptonViewer.

To fix this on **Windows**, type “Allow an App” into the windows search box in the bottom left hand corner, then select the “Allow an App through Windows Firewall” link that comes up. Click the “Change Settings” button at the top right of the dialog box that appears or you won’t be able to change anything. Then find Cepton Viewer and tick both the private and public tick boxes and confirm.

To fix this on **MacOS**, open “System Preferences” and select “Security & Privacy” from the “System Preference” window. Select the “General” tab and select the lock in the lower left corner to allow changes. You will need to enter your computer username and password to “Unlock”. In the “Allow apps downloaded from:” section, select “Anywhere”.

Another issue may be the network adapter settings. You will need to change the adapter to have a **manual IP address of 192.168.0.xx**, and a **Subnet of 255.255.0.0**. Below is an example where we use 192.168.0.22 as the IP address on a Windows machine.

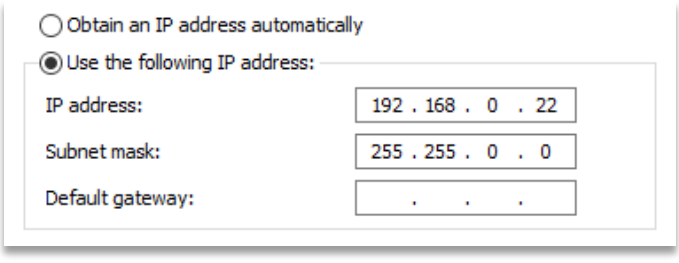


Figure 5 Windows Network Adapter IPV4 settings.

Safety & Legal Notices

CAUTION! All Cepton lidar sensors are sealed units. To reduce risks of laser radiation and electric shock, and to avoid violating the warranty, do not open the sensor body.

Operating Safety

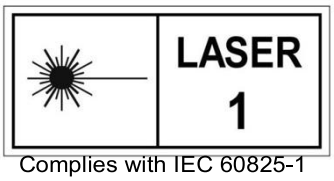
1. **Read** – All safety and operating instructions should be read before the product is operated.
2. **Retain** – All safety and operating instructions should be retained for future reference.
3. **Follow** – All warnings and operating instructions on the product.
4. **Service** – The user should not attempt to modify or service the product beyond what is described in the operating instructions.

Physical Safety

Contact your service representative for all repair issues or questions about safety if there are visible defects or damage to the Cepton lidar sensor. Refer all service and repairs to authorized support and service representatives.

Laser Safety

The Cepton lidar sensor is designed Class 1 eye safe during all procedures of operation, having satisfied IEC AEL and MPE emission requirements per IEC 60825-1 Ed 3 2014.



Complies with IEC 60825-1

CE Compliances

The Cepton lidar sensor complies with the essential requirements of the relevant European health, safety and environmental production legislation as stated in the Harmonized Standards, which are the technical specifications established by European standards agencies.

IP67 Compliance

The Cepton lidar sensor passed Water and Dirt/Dust Ingress Tests in compliance with the IEC 60529 IP67 specification.

Trademarks & Intellectual Property

“Cepton”, “MMT”, “Vista“, “Sora”, “Vista-Edge” and “Helius” are all registered trademarks of Cepton Technologies, Inc., and may not be used without express permission from Cepton.

Your use of the Cepton products is subject to the Terms of Sale signed between you and Cepton or authorized distributor/integrator. It is prohibited by the terms to remove or open the product housing, inspect the internal of the product, reverse-engineer any part of the product, or permit any third party to do any of the foregoing. Please contact info@cepton.com if you have any questions.