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# VISO SYSTEMS LabRail

## User Manual

Revision: 29 March 2021



*Congratulations on purchasing your new Viso Systems LabRail. Before using this product, please read the Safety Information.*

*This manual contains descriptions and troubleshooting necessary to install and operate your new Viso Systems product. Please review this manual thoroughly to ensure proper installation and operation.*

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## Safety Information

*Warning! This product is not for household use.*

Read this manual before installing and operating the LabRail, follow the safety warnings listed below, and study all the cautions in the manual.

### Preventing electric shocks



Make sure the power supply is always grounded.

Use a source of AC power that complies with the local building and electrical codes, that has both overload and ground-fault protection.

If the controller or the power supply are in any way damaged, defective, wet, or show signs of overheating, disconnect the power supply from the AC power and contact Viso Service for assistance.

Do not install or use the device outdoors. Do not spray with or immerse in water or any other liquid.

Do not remove any covers or attempt to repair the controller or the power supply. Refer any service to Viso.



### Disposing of this Product

Viso Systems products are supplied in compliance with Directive 2012/19/EU on waste - electrical and electronic equipment (WEEE) together with the RoHS Directive 2011/65/EU with amendments 2015/863. Help preserve the environment! Ensure that this product is recycled at the end of its lifetime. Your supplier can give details of local arrangements for the disposal of Viso Systems products.

## Introduction

### About this document

These guidelines describe the installation process of the LabRail and distance calibration procedure.

### About the LabRail

The LabRail is a revolutionary new automatic sensor positioning system, which includes fully motorized sensor positioning include data over power eliminating all cables.

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## Product Dimensions

Coming soon

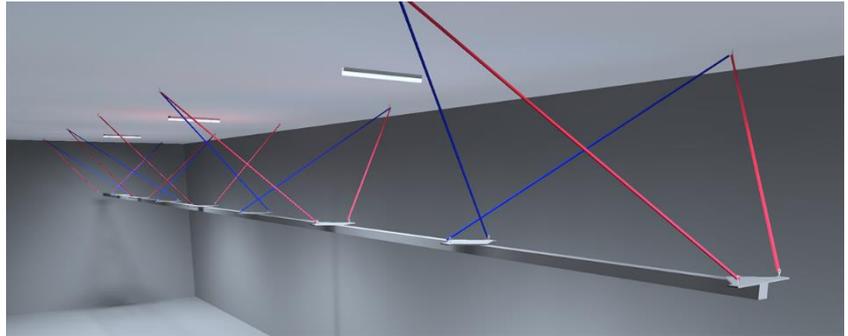
More package content and shipping coming soon

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## Rail installation

The rail consist of 8 pieces of rail sections each being 1.5m long. The rail are inter connected using brackets on top and buttom.

To ensure stability the rail should be mounted as shown below.



Each second wire set is crossed show above in blue preventing the rail from swinging from side to side.

Aligning rail (Coming soon)

Slide in LabRail (Coming soon)

Mount End-stop (Coming soon)

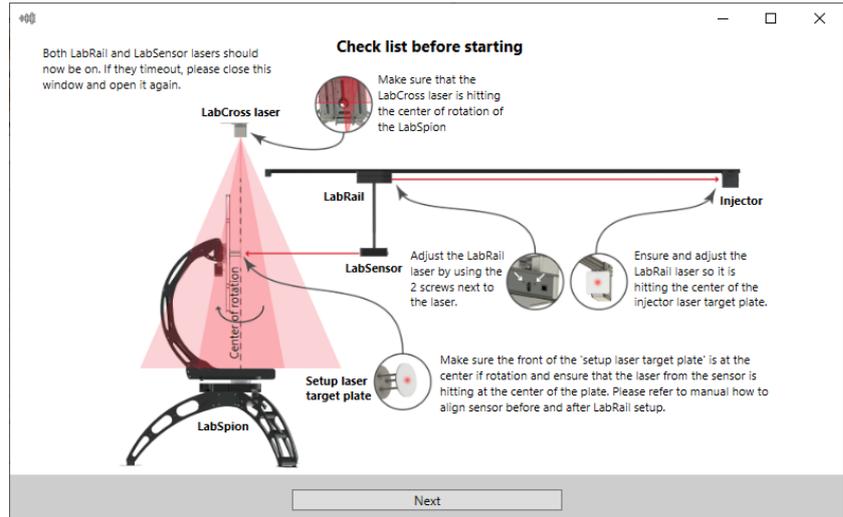
Connecting power (Coming soon)

## Distance calibration

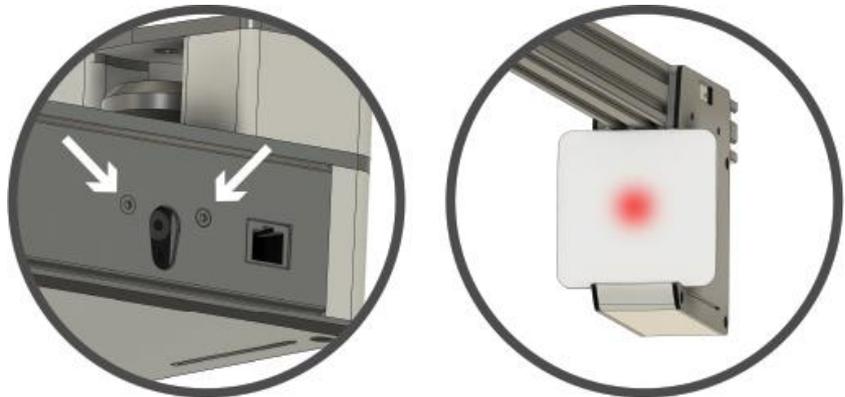
Before the rail can be used must the distance between the mounted sensor and the LabRail be calibrated and stored in the memory of the LabRail.

To make the calibration please make sure you have installed Viso Light Inspector version 6.05.2 or later.

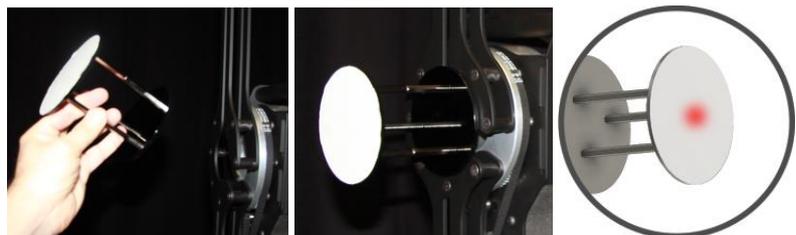
Go to menu Setup->LabRail and the following dialog will appear



Please ensure that the laser is hitting the centre of the target plate on the injector by adjusting the screws next to laser measurement device as shown below.



Also make sure that the "Setup laser target plate" is mounted on the LabSpion with the front being at the center of rotation of the LabSpion.

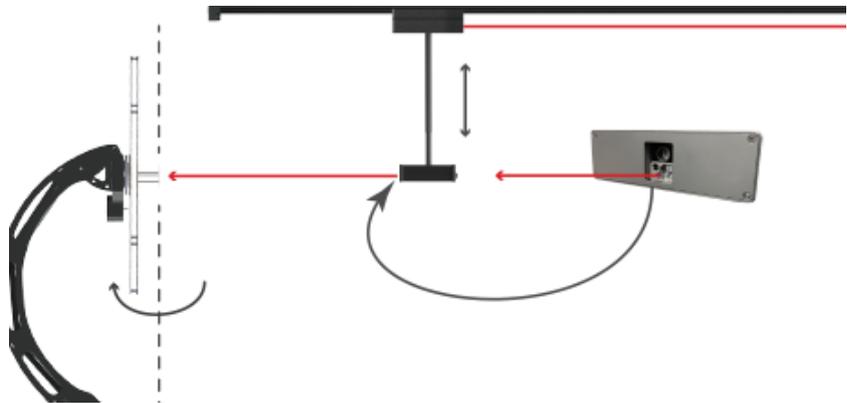


The reason for the "Setup laser target plate" being extended outwards by 10cm is so the software can easily ensure that the laser always hits the plate during the setup

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process, otherwise would a significant error of at least 10cm be detected by the software. The "Setup laser target plate" is only used during the setup and is not needed again after the setup procedure is completed.

The sensor must be adjusted in height so that the laser is pointing completely horizontal to centre of the "Setup laser target plate" as shown below.

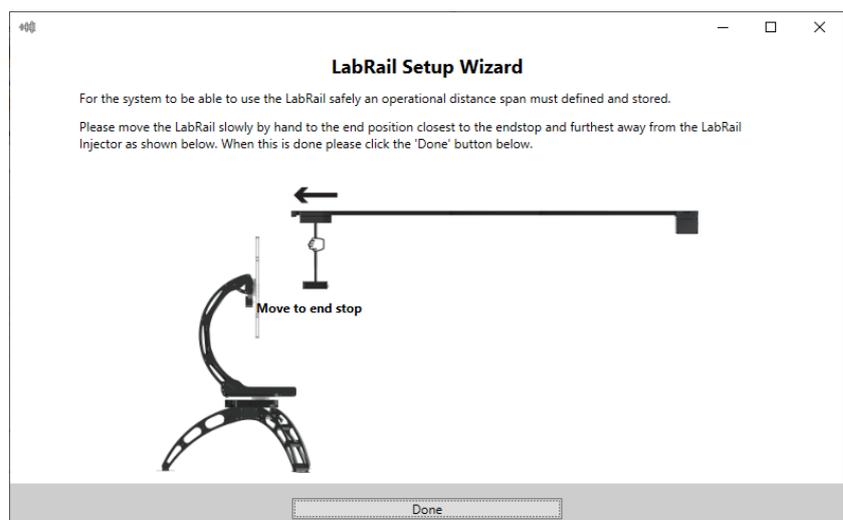


Another laser leveller can be used to ensure the sensor laser is in horizontal level such as the below shown Bosch laser included with the LabSpion.



Aligning the LabCross laser (Coming soon)

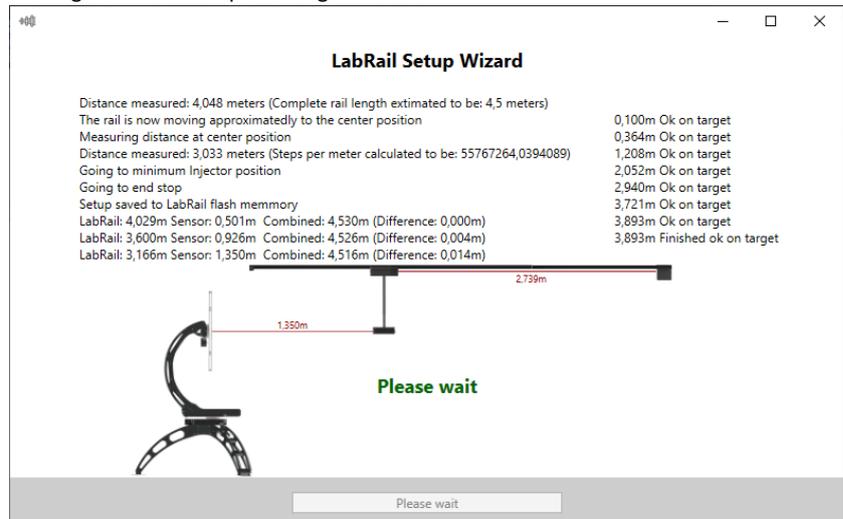
After the steps above have been completed please click "Next".





The system will now ask you to move the sensor to the end-stop. Just use your hand to gently push the sensor until it touches the end-stop and click "Done".

Please make sure there are not obstacles in the room as the sensor will now start moving down the complete range of the rail.



The system will now measure the complete length of rail and ensuring it is hitting the laser target plate at different positions.

If you get errors saying the laser target plate was not hit, please check you rail is straight and that there is no direct strong light hitting the target plate. A sensor is located inside the target plate ensuring the laser always hits the plate, this too ensure that correct distance is always measured from the end of the rail.

If you have strong light hitting the plate from general lighting in your measurement room, you can make a plate and place in such a way it blocks the light hitting the laser target plate.

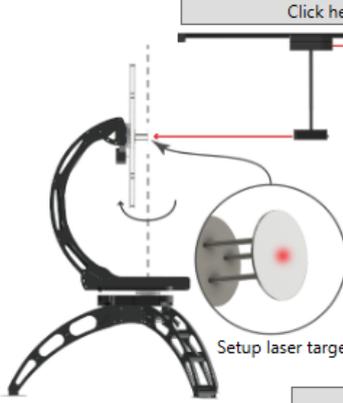
When the rail distance setup has completed will the system get ready to measure the sensor laser distance in combination with the rail laser distance to be stored in the finished calibration. The window below will ask you if you would like make a manual pre-check that sensor laser is hitting the "Setup laser target plate" as shown

below.

x

### Check and adjust sensor laser

Click here to change the position of the LabRail

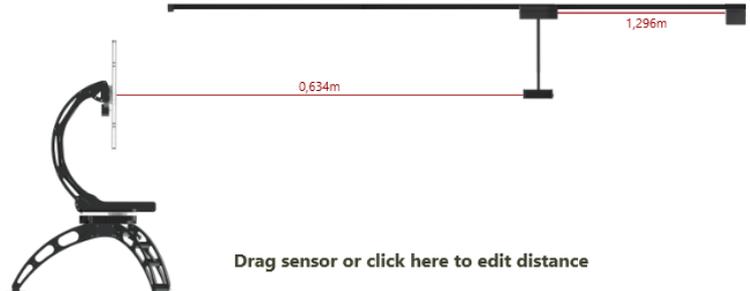


Please check that the sensor is hitting the 'setup laser target plate' when the sensor is at the Endstop and at Injector positions. Use the button above to move the sensor between the 2 position and check that the sensor laser at all times are hitting the 'setup laser target plate'. Please refer to the manual for more information.

Setup laser target plate

Ok finished checking

If you click the large button on top of the rail image will you be able to move the sensor manually using the window shown below.

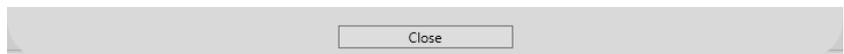
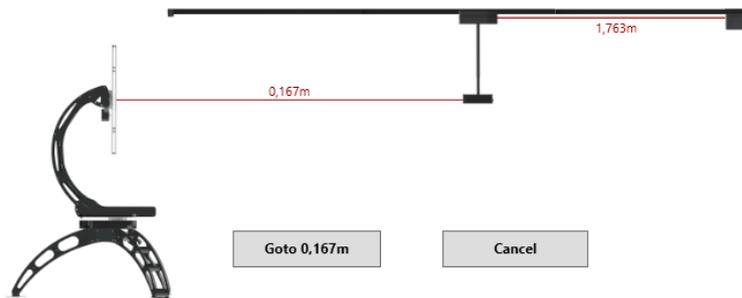


0,634m

1,296m

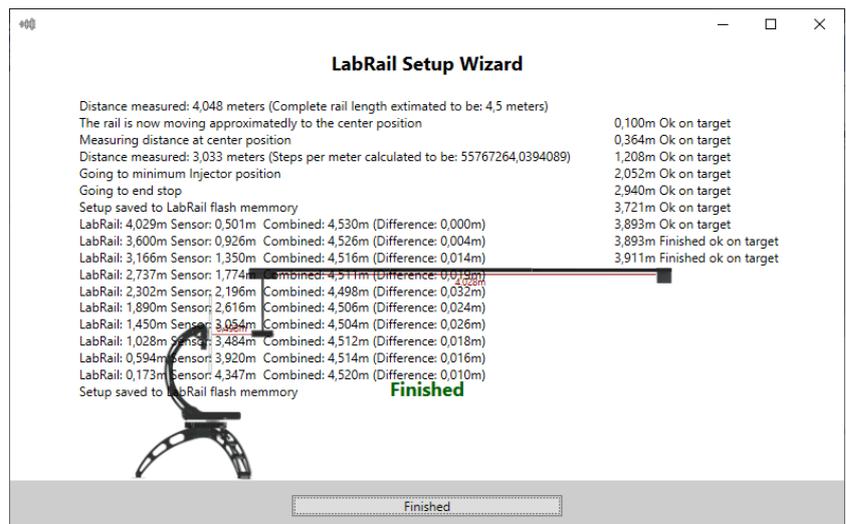
**Drag sensor or click here to edit distance**

Close



While the LabRail is moving are you able to observe that the laser from the sensor is hitting the centre of the “Setup laser target plate” at all position. If this is not the case, please adjust the sensor high and tilt until it does.

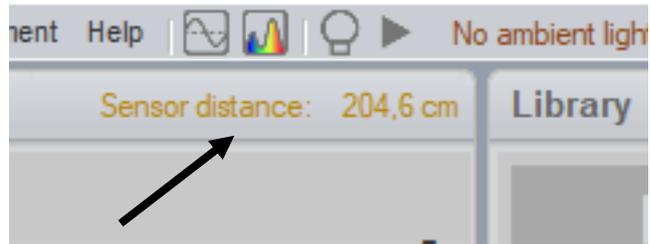
When finished close the window and click “Finished checking”, the system will now start the last part of the calibration.



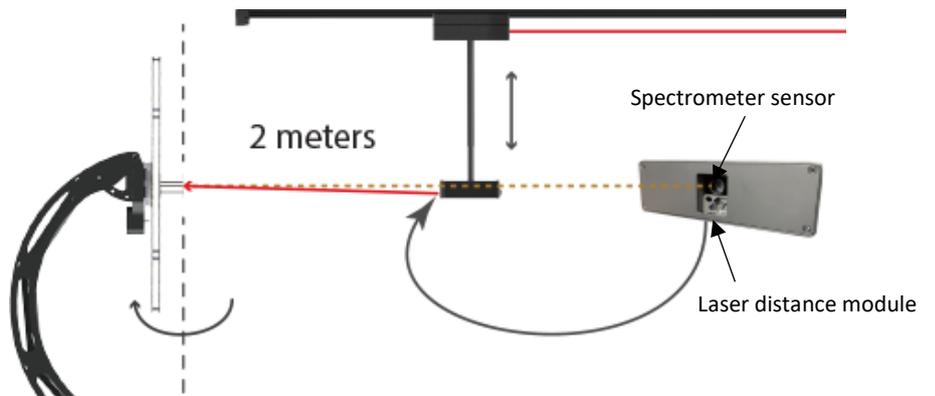
The LabRail calibration is now finished and have been stored in the flash memory of the LabRail so no future calibration is necessary.

You can now click finished.

From this point on when ever you want to set a new measurement distance just click on the distance label in Viso Light Inspector software as shown below.



Finally, you should set the sensor distance to 2 meters and re-adjust the sensor height, so the spectrometer sensor is in the vertical centre of the goniometer as shown below.



The laser module in the sensor is a bit offset in position in comparison with the actual spectrometer sensor position. During factory sensor calibration all spectrometer sensors are aligned to the laser beam at a 2 meter distance. This will give some sensor positioning errors when measuring above or below 2m distances in comparison with the laser point, but these errors are of a low factor and can therefore be accepted without any problems.

## Specifications

Coming soon



Light measurement made easy

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