

VISO LabFlicker

User Manual



Preliminary

Last edited 15 January 2018

VISO
SYSTEMS

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Safety Information

Warning! This product is not for household use.

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

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 products are supplied in compliance with Directive 2002/96/EC of the European Parliament and of the Council of the European Union on WEEE (Waste Electrical and Electronic Equipment), as amended by Directive 2003/108/EC, where applicable.

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 products.

Introduction

About the VISO LabFlicker

The VISO LabFlicker expands the ability of the Viso Systems Goniometers series to measure the light Flicker using the same Light Inspector software. The device is easily connected to the computer using USB and automatically detected by the Light Inspector software.

About this document

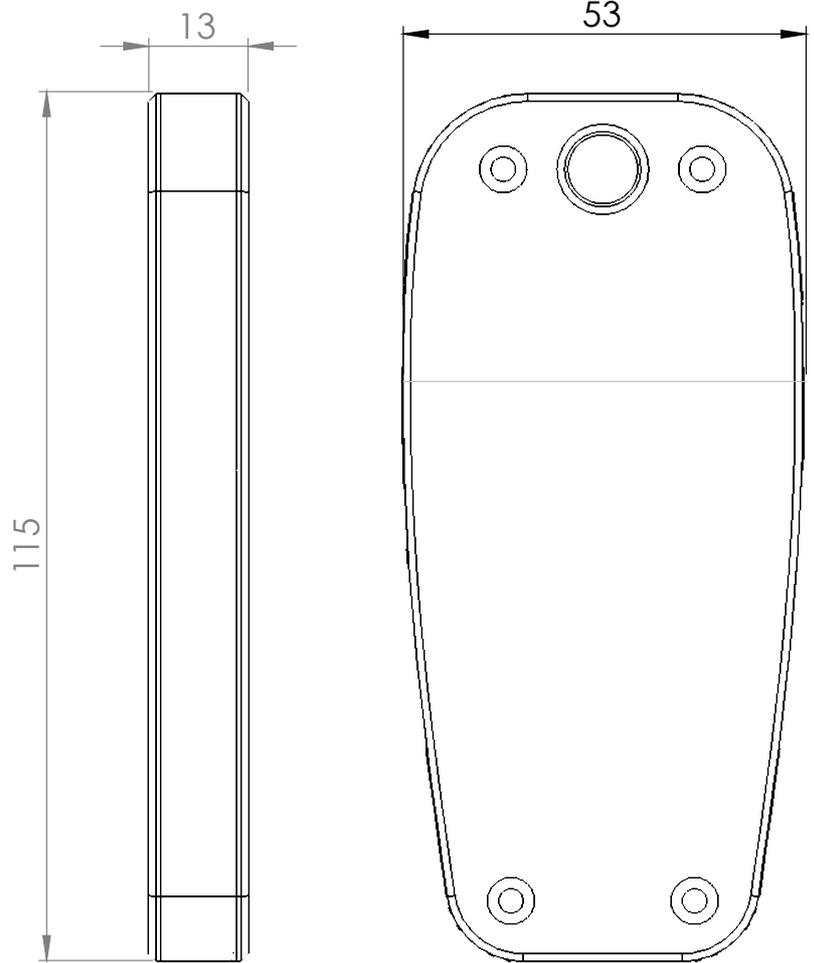
These guidelines describe the installation process of the VISO LabFlicker and how to use it with any of VISO Systems goniometers.

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Dimensions



LabFlicker Package Content



- LabFlicker Unit
- 5m USB Cable
- Test Certificate

Packages and weight

Shipping packages	Shipping dimensions	CBM	Weight
1. LabFlicker	17 x 13 x 7 cm	0,0015	0,5 Kg

Total shipping weight: 0,5 kg.
The shipment is done in a total of 1 package



Software Installation

Before you can start using the VISO LabFlicker, the “Viso Light Inspector” software must be installed. It is supported on all newer windows platforms.

Use the following link to download the latest version:

<http://www.visosystems.com/download-light-inspector/>

- 1) Make sure to install 5.28 or later for LabFLicker, or the LabFlicker will not be supported by the Light Inspector.
- 2) Please make sure the LabFlicker is not connected to the computer during software installation.
- 3) Run the .msi file and follow the installation instruction.
- 4) USB drivers are automatically installed.

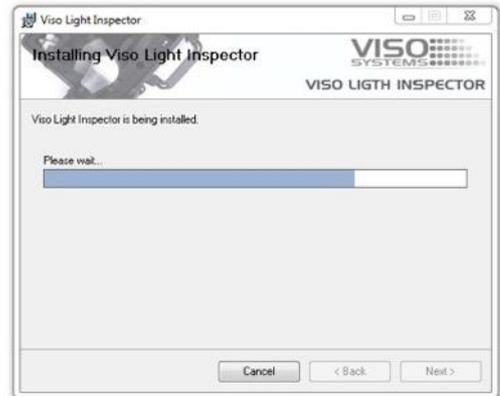
Your measurements are not lost when updating to a newer version or uninstalling and reinstalling. All measurements will always remain in your document folder. If you want to remove all your measurements go to the ‘Light Inspector’ folder and delete them manually.

Typical folder location:

C:\Users\‘Username’\Documents\Viso Systems\Light Inspector

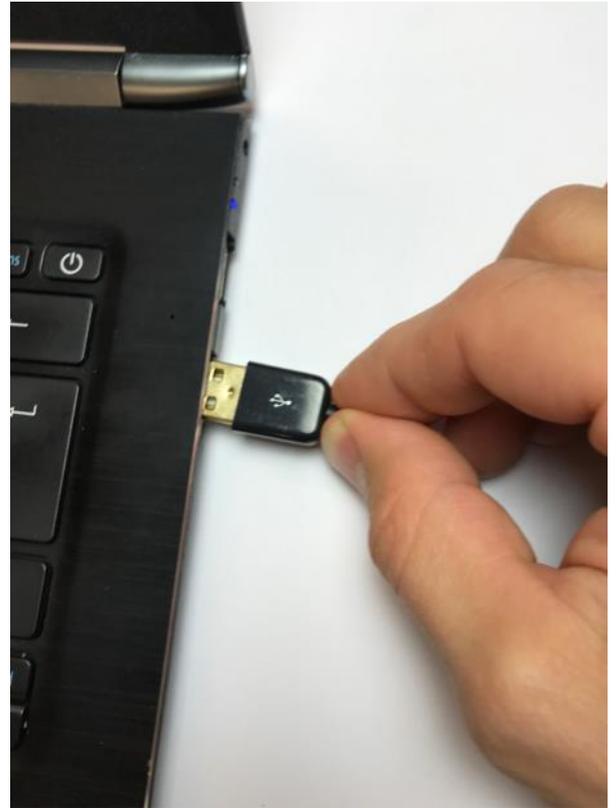
Or if stored in dropbox:

C:\Users\‘username’\Dropbox



Connecting the VISO LabFlicker

Connect the VISO LabFlicker to your Windows computer using the supplied USB cable.



When connected the VISO LabFlicker will wait for connection and when it is ready it will show 'Click to Start' in the display



How to use the VISO LabFlicker

On the front of VISO LabFlicker it has a 'Start/Pause' button which is used for starting and stopping capturing the flicker. On the back you find the sensor at the top. Make sure not to shadow the sensor while measuring and place your hand like shown below.



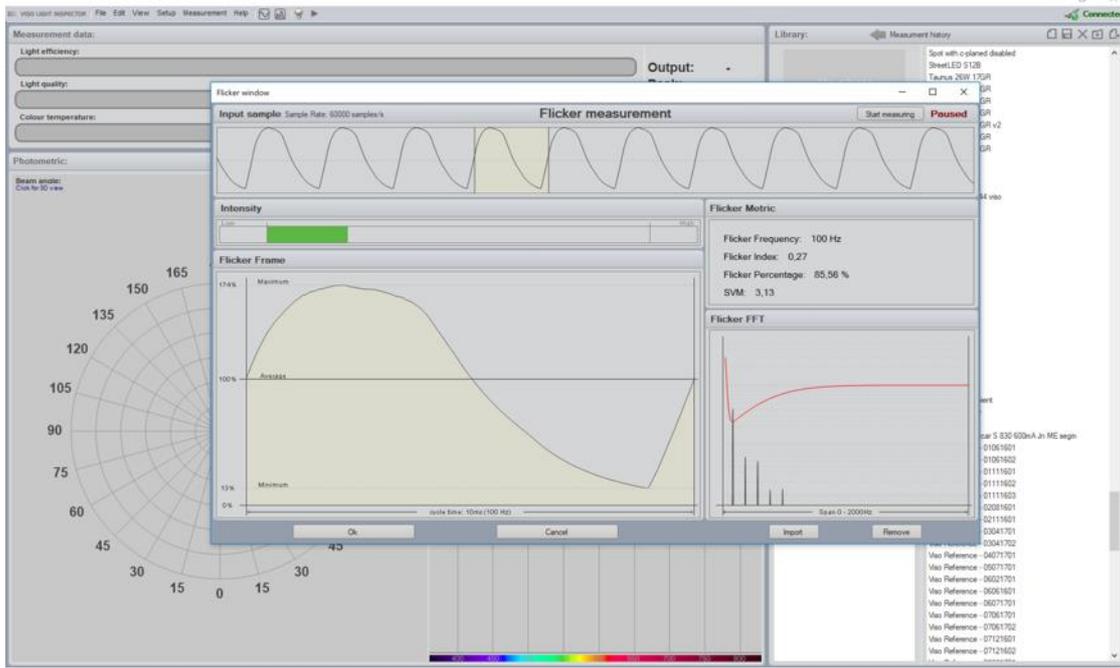
To make a measurement press the Start/Pause button and move the the LabFlicker towards the lamp you want to measure, with the sensor facing the lamp.



Make a measurement

To make a flicker measurement first choose the measurement you want to add the flicker measurement to by selecting it in the library window in the Light Inspector software or choose a new blank sheet if you just want clean flicker measurement.

When the LabFlicker is connected to the Light Inspector software and the 'Start/Pause' button is pressed a window for the flicker measurement will appear. The flicker window gives a live feedback of your flicker data at about 10-20 measurement per second.



To make a correct flicker measurement a bar on the LabFlicker display and in the Light Inspector software, will indicate when the amount of light to make a measurement is sufficient or either too low or too high. Move the VISO LabFlicker closer or further away from the lamp until you get a 'OK' in the display. When 'OK' is shown press the Start/Pause button again to pause the measurement and thereby capturing the latest flicker values. If you want to redo the measurement, press the button again to do another measurement.



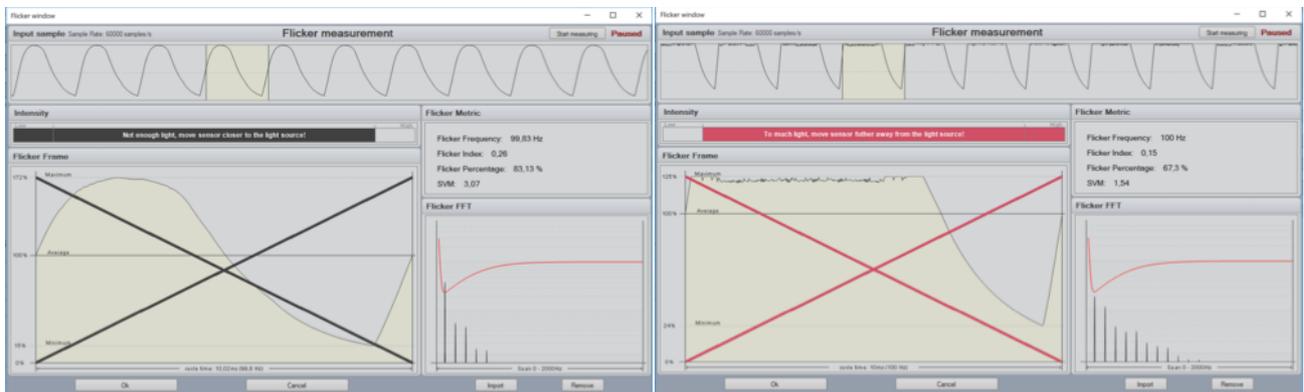
You will not see the flicker measurement on the home screen in Light Inspector, but it can be viewed under View-Flicker. You can choose to export the flicker measurement alone or the complete measurement as a Custom PDF report.

Too much/little light

If a measurement is done with too little light a black cross will indicate this and a red cross indicates too much light, as shown below. This cross will also be shown on the LabFlicker device and a new measurement has to be done, simply press the 'Start/Pause' button again.

If it is not possible to do a measurement within the 'OK' range of the LabFlicker and the cross will be showing in the display and on top of the result in Light Inspector the result can still be saved, but the accuracy of this measurement cannot be guaranteed.

You can choose to save this measurement or export it to PDF, but the accuracy of the result cannot be guaranteed. In the PDF report the black/red cross will not be shown.



Remember to save the measurement after the Flicker Window is closed

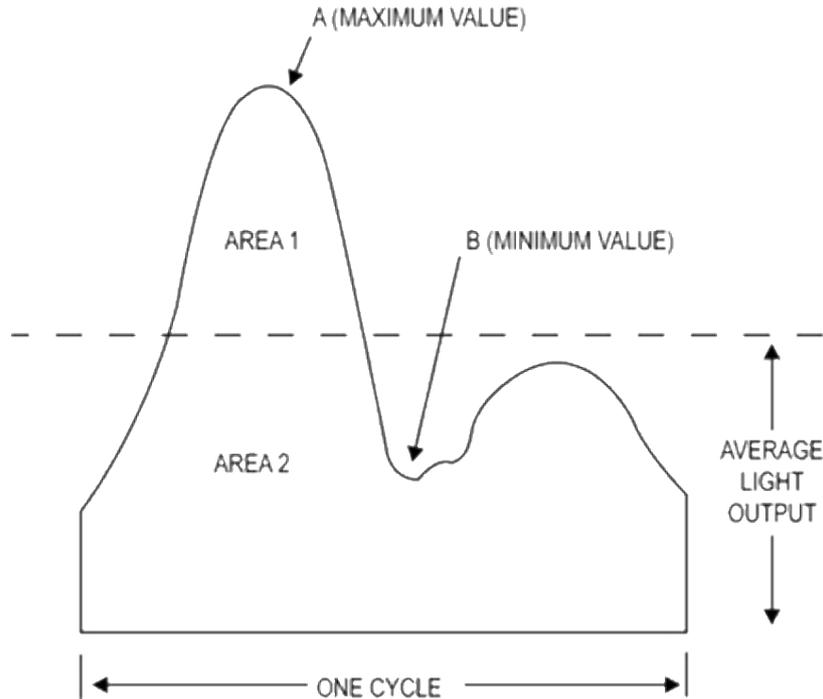
Flicker Measurement Data

Flicker Frequency

Is the flicker frequency of lamp typically caused by the driver and supplied AC current.

Flicker Percentage

Flicker percent is a relative measure of the cyclic variation in the output of a light source (i.e. percent modulation). Sometimes this is also referred to as the “modulation index.”



From the figure: Percent flicker = $100 \times (A - B) / (A + B)$

Flicker Index

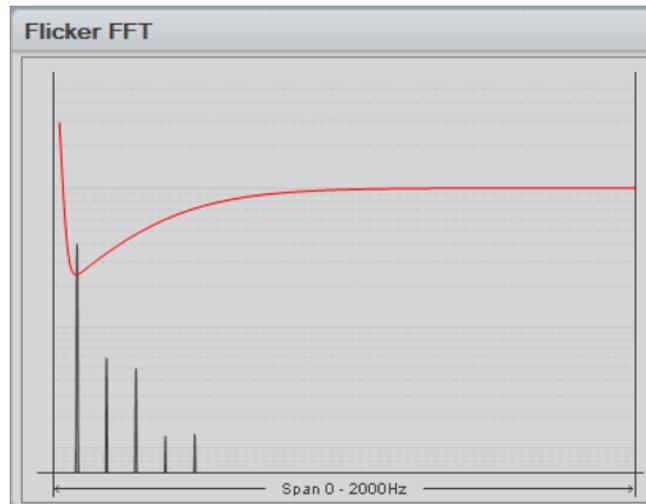
Flicker index is a “reliable relative measure of the cyclic variation in the output of various sources at a given power frequency. It takes into account the waveform of the light output as well as its amplitude,” according to the handbook.

The flicker index assumes values from 0 to 1.0, with 0 for steady light output. Higher values indicate an increased possibility of noticeable lamp flicker, as well as stroboscopic effect.

Again, from the figure: Flicker index = $\text{Area 2} / (\text{Area 1} + \text{Area 2})$

Flicker FFT

The Flicker FFT graph shows the different flickering frequencies represented in the light produces by the AC supply combined with the used light source and driver technology.



SVM

Or 'Stroboscopic visibility measure' is based on several parameters like: Intensity, Flicker Index, frequency etc.

If you for example have 100% flicker at 1000Hz flicker frequency the flicker index is very high but at a 1000Hz the human eye will not observe the flicker, so 'Percent Flicker' and 'Flicker Index' does not tell you the actual stroboscopic effect we humans perceive, therefore, instead of the 'Flicker Index and 'Percent Flicker', the Stroboscopic effect Visibility Measure (SVM) is available that tells you the effect on the human eye.

The SVM curve can be seen in the Flicker FFT graph above and what is below the red SVM is not visible to the human eye. The lower the frequency the more visible it is to the human eye.

The SVM value can be read as:

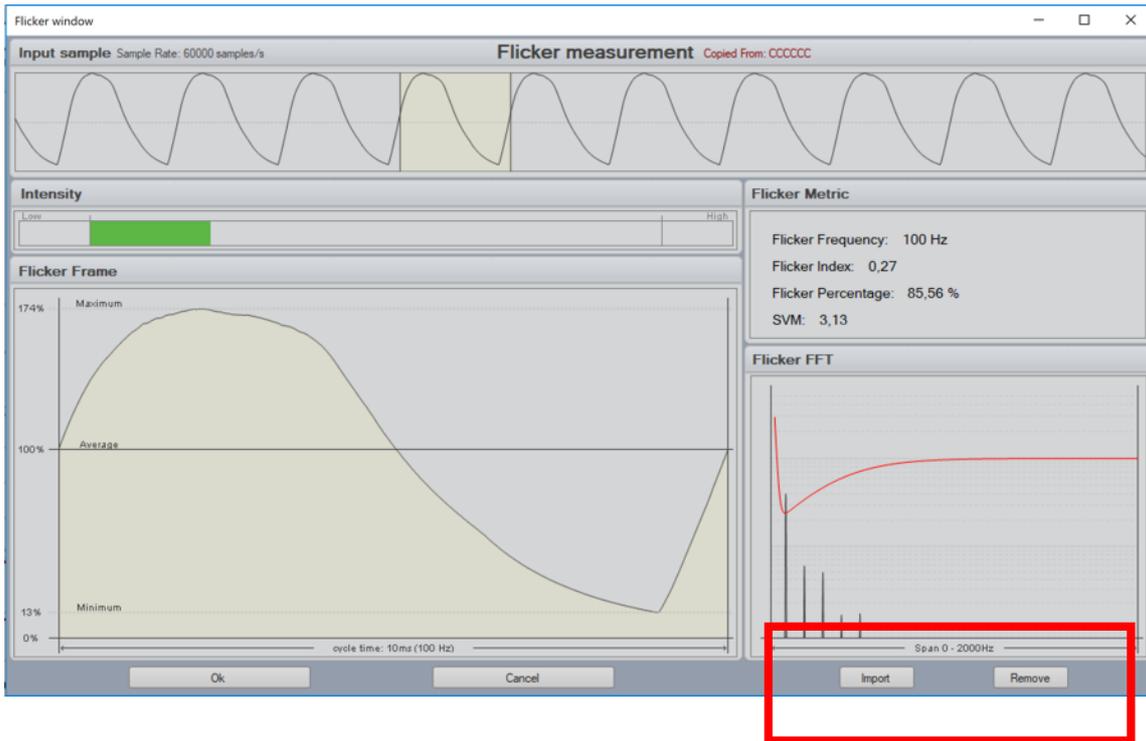
SVM < 1, Not Visible

SVM > 1, Visible

SVM = 1, Just Visible

Import/Remove Flicker Measurement

If you want the flicker data from one measurement added to another, you first select the measurement you want the flicker data to be imported to and then open the Flicker Window. Go to: View – Flicker – Import and choose the measurement you want to import the flicker data from, closed the window and save the measurement again.



In the Flicker Window at the right bottom it is also possible to remove the flicker data from a measurement.

Specifications

Physical dimensions

Dimensions (L x W x H).....	115 x 53 x 13 mm
Weight.....	155 g
Shipping Dimensions (L x W x H)	170 x 130 x 70 mm
Shipping weight.....	500 g
Sensor Distance.....	0 – 300cm

Warranty

Warranty period.....	2 years
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Ordering information

VISO LabFlicker.....	P/N LABFLCK01
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